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## **Female employment under export-propelled industrialization: Prospects for internalizing global opportunities in the apparel sector in Bangladesh**

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### **I. Introduction**

#### **1. Issues of concern**

Current adjustment policies in Bangladesh, coupled with ongoing industrial restructuring, are expected to create employment opportunities in export-propelled activities. Data on the short-run impact of recent industrialization efforts in Bangladesh indicate that women constitute the majority of the incremental labour absorption in the country's export-oriented manufacturing enterprises. Available information also suggests that conventional measures of gender bias (such as wage gaps, access to employment and lack of job security) are relatively inconspicuous in this organized segment of the manufacturing sector (Bhattacharya, 1994). This is true for manufacturing units located in both export processing zones (EPZs) and the domestic tariff area (DTA). It is characteristic of the labour force of foreign-owned units in particular — which tend to have the most advanced technology and the highest productivity levels in the country (Bhattacharya, 1998).

Notwithstanding such ostensibly positive features of part of the country's evolving labour market, concerns have been raised about the real nature and prospects for sustainability of these trends. It is

widely held that “cheap and readily employable” labour underpins the competitive advantage of the country’s export sector. To begin to understand the nature of women’s industrial employment in Bangladesh, the pull and push factors that have contributed to the feminization of trade-oriented manufacturing employment must be examined. Concretely, it is important to analyse whether it is the gender gap in the effective wage structure that underpins the growth of female labour in export-oriented industries. In other words, given the low opportunity cost of female labour in Bangladesh, is female labour attractive because women are paid less than men for similar jobs — even when productivity differentials are accounted for? This particular concern is heightened by the fact that entrepreneurs prefer to employ young, single, literate women in export-oriented units. Accordingly, non-wage factors (such as social docility and amenability to repetitive process functions) prompt entrepreneurs to opt for a distinctive set of female labour. Thus non-wage factors clearly influence employment patterns as well.

From a neoclassical perspective, one would expect that economic reforms leading to deregulation and liberalization would cause prices in the various factor markets in different countries to converge over time. Accordingly, stimulated by an increasingly competitive labour market, a gender-neutral equilibrium price of labour would gradually evolve, particularly in the export-oriented industrial sector, since this sector is relatively more exposed to the dynamics of factor prices in the global market. However, the pattern of structural changes in employment in the export sector may inhibit the gradual evolution of gender-neutral wage levels expected from global integration. This rigidity may be accentuated by women’s lack of occupational mobility. For example, the introduction of new technologies may affect women’s employment through automation, de-skilling of workers and/or increased skill requirements in key jobs. Admittedly, the effects of such technological shifts have not been uniform either for women or for men. But persistent functional gender segregation in export-oriented units may prevent transformation of the structure of the female labour force, reinforcing a possible gender-based wage differential.

The sustainability of current trends in female labour absorption in the organized manufacturing sector is linked to the broader issue of competitiveness of Bangladesh’s industry. The major source of creation and protection of industrial competitive advantage in the global economy lies in the adoption and diffusion of new technologies, which lead to growth in the productivity of factors of production. It

is thus important to endow women workers with basic education and vocational training (including computer literacy). Female-oriented investment in human resource development may therefore be the most dependable deterrent to technological redundancies. Alternatively, with the changing nature of national competitive advantage, a mismatch may emerge between the skill and quality endowments of female labour and the skill and quality endowments demanded. Under these circumstances, if certain supply-side constraints are not addressed through public policy interventions (e.g., in the areas of skill development and health care), female employment in the export sector cannot be maintained and enlarged — in absolute or relative terms.

One also needs to take into account the fact that the level of export-supported female employment is vulnerable to fluctuating global demand. This may be reinforced by the “footloose” nature of foreign investment (one of the major sources of female employment), which may shift production locations in search of cost-effective sources of labour, usually for their “old” technologies. While global demand may be an exogenous variable (predicated largely on the economic activity rate in the developed countries), the extent to which an exporting country can create a niche for itself depends on the availability of a quality workforce within a conducive policy framework.

It is thus important to look beyond the immediate benefits accruing to women workers in Bangladesh through increased access to wage employment as a result of trade expansion. A new set of issues with far-reaching implications for the industrial employment of women in the context of economic globalization requires attention. While women’s short-term material interests are served by such employment opportunities, fulfilment of longer term strategic gender interests may only be evaluated in terms of continued access to such opportunities in the future, coupled with enhanced gender equity in the labour market.

## **2. The nature of the study**

### **a. Objective and scope**

The primary objective of the present chapter is to assess the adjustment dynamics of the export-oriented manufacturing sector in Bangladesh in view of the opportunities and constraints created by changes in technology and the economy. This line of investigation has been pursued in the concrete context of the apparel industry in

Bangladesh, which, with a predominantly female labour force, has experienced significant growth in the recent past.

An attempt has been made to identify structural changes in Bangladesh's manufacturing sector, and in apparel in particular, and their implications for the burgeoning female labour force. In this context, the chapter examines the firm-level behaviour of ready-made garment and knitwear producers and its implications for the welfare of women workers. Apart from the domestic factors underpinning the prospects for female industrial employment growth, the analysis also considers the impact of global demand for textiles. Finally, the chapter highlights the micro-macro linkages of public policies that affect the sustainability of female industrial employment in Bangladesh.

#### **b. Data and methodology**

The study builds on analysis of the available empirical information as well as new evidence on the ready-made garment (RMG) sector in Bangladesh. In particular, sectoral estimates generated by two independent research studies have been adapted to trace the inter-temporal changes in operational behaviour in the RMG sector. Projections prepared at the Ministry of Commerce and the Ministry of Textiles, as well as data maintained by the Bangladesh Garment Exporters and Manufacturers Association and Export Promotion Bureau, have been extensively used in the study. Sources of secondary data also include various publications of the Bangladesh Bureau of Statistics and the General Agreement on Tariffs and Trade (GATT).

Primary data on the RMG sector were collected for the present study through micro surveys and debriefing of key informants. A survey carried out in February 1997 elicited information on employment structure and wage rates for different types of jobs in the country's RMG industry. To generate the required data, a checklist was completed by the chief executives of 10 RMG units of average size (i.e., approximately 400 workers). Information provided by the chief executives was cross-checked through focus group discussions involving 126 randomly selected workers (mostly female) in the sample RMG units.

#### **c. Structure**

The chapter is divided into six sections. Section II analyses the general features of female employment in Bangladesh's manufacturing sector. Section III takes a closer look at the growth trends in the country's apparel industry and their implications for

female employment. Section IV considers adjustment behaviour of the RMG units and its consequences for female employment. Future prospects for female employment in Bangladesh's export-oriented apparel sector are assessed in section V, taking into account the evolving international trade regime and the projected global demand for textile products. The concluding section draws out some policy implications.

## **II. Female participation in industrial employment in Bangladesh**

### **1. Participation rate**

Compared to their male counterparts, women's participation in the formal economy has remained low in Bangladesh. This mirrors the general trend observed in the labour markets of developing countries. According to the most recent Labour Force Survey (1995-96), women's share in Bangladesh's total labour force (i.e., the economically active population over 15 years of age) is around 38 per cent, or 19 million (see Table 1). The labour force participation rate (LFPR) of women is lower in the urban areas (26.1 per cent) than in rural areas (40.6 per cent), where women are extensively involved in household-based and agricultural activities.

However, women's LFPR increases, particularly in urban areas, in the 15-19 and 20-24 years age categories: 36.4 per cent compared to the overall urban average of 26.1 per cent. Information on the female economic activity rate (EAR) reveals a similar trend: the 20-24 years age group in urban areas demonstrates the highest female EAR — 33.1 per cent — in comparison to the overall urban average of 30.4 per cent. This implies that the rate of female labour absorption is perceptibly higher among younger women in urban areas, where manufacturing units in Bangladesh are concentrated.

Less than a quarter (22.6 per cent) of the total number of employed females in Bangladesh are engaged in non-agricultural activities. While almost 15 per cent of the total number of employed females belong to the services/commerce sector, only a little over 7 per cent are involved in manufacturing activities. According to the 1995-96 Labour Force Survey (LFS), more than 1.5 million women were engaged in the manufacturing sector, including both formal and informal activities. The present study is more concerned with female employment in the organized manufacturing sector — to which

almost all the export-oriented processing units in the country belong. Before we turn to this subject, it may also be noted from Table 1 that the proportions of women occupying professional-technical and administrative-managerial positions in Bangladesh are 34.7 per cent and less than 5 per cent, respectively, of total employment in these categories.

Table 1 provides a static picture of the state of female participation in Bangladesh's labour force in 1995-96. Have these indicators registered any improvement over time? Unfortunately, frequent changes in the definition of the categories used in the LFS do not readily allow comparisons. In spite of data discrepancies, however, LFS data do suggest that women's LFPR in the national economy in general, and in non-agricultural and manufacturing activities in particular, has increased in recent years.

**Table 1: Participation indicators of women's employment (1995-96)  
(per cent)**

Indicators	Age group (years)				
	15+	15-29	15-19	20-24	25-29
Women's Labour Force Participation					
Rate*	37.77	43.28	37.50	48.39	44.00
Rural	40.63	45.45	37.74	50.98	47.54
Urban	26.09	33.33	36.36	36.36	28.57
Women's Economic Activity Rate**	55.65	55.73	47.59	59.14	60.04
Rural	63.60	64.03	54.61	67.27	69.26
Urban	30.44	30.80	28.99	33.14	30.56
Share of female employees in total employment (10+ years)				38.10	
Share of female employees in total female labour force (i.e., not managerial or administrative)				97.73	
Women's share in non-agricultural labour force				23.38	
Women in non-agricultural activities: share in total employed female				22.60	
Women's share in total manufacturing labour force				36.59	
Female-male gap in manufacturing labour force (female per 100 male)				57.69	
Women in manufacturing: share in total employed female				7.04	
Women's share in total employed persons in service sector				20.81	
Women in services/commerce: share in total employed female				14.90	
Women's share in total employed persons in agriculture				46.67	
Women in agricultural sector: share in total employed female				77.40	
Women's share in total professional-technical personnel				34.72	
Women's share in total administrative-managerial personnel				4.92	

\* Share of women in respective age cohort in total labour force.

\*\* Share of economically active women in respective age cohort.

Source: BBS, 1996b.

## 2. Manufacturing employment

According to the Census of Manufacturing Industries (CMI), approximately 200,000 women were employed in the manufacturing sector in Bangladesh in 1991-92 (the latest reference year for which information on sectoral aggregates is available from an official source). The CMI essentially covers formal sector registered enterprises with 10 or more employees. These are usually located in urban areas. However, in addition to being quite dated, the census estimate suffers from serious undercoverage. For example, in 1991-92, the RMG sector alone employed 700,000 female workers (as we will see later), whereas the comparable CMI (1991-92) figure is 150,000. In the absence of more reliable aggregate estimates, we may still analyse the CMI data assuming that it provides a representative set of cross-section information.

According to the figures presented in Table 2, women accounted for 15.3 per cent of the total number of manufacturing sector employees in Bangladesh in 1991-92. More than 88 per cent of the women engaged in the sector were regular production workers ("operatives", in CMI terms) and another 9.6 per cent constituted hired casual workers. Less than 1 per cent of the women employees were involved in administrative and clerical activities, and about 0.3 per cent belonged to the entrepreneur category.

**Table 2: Trend in female employment and wage in the manufacturing sector**

Indicator	1988-89	1989-90	1990-91	1991-92
Women's share in total mfg employment	14.1	14.20	15.72	15.30
Women's share in total operatives	16.41	16.55	17.76	18.06
Female-male wage ratio (all employees)	0.40	0.55	0.52	0.52
Female-male wage ratio (operatives)	0.46	0.51	0.47	0.57

Source: BBS, 1996a.

On average, a manufacturing enterprise in the organized sector in Bangladesh has seven women employees. Female employment is highest in joint ventures (56 female employees per unit), followed by state-owned enterprises (more than 12 female employees per unit).

The figure for the exclusively locally-owned private sector units is a little above seven. The overwhelming majority (98.7 per cent) of the women employees are located in private sector enterprises (local and joint ventures taken together).

It may be observed from Table 2 that, between 1988-89 and 1991-92, women's share in total manufacturing employment increased from 14.1 per cent to 15.3 per cent, whereas operatives increased from 16.4 per cent to 18.1 per cent. The share of female workers in total manufacturing employment registered a fall between 1990-91 and 1991-92, but the extent to which this is a statistical artefact or a reflection of recent reform measures affecting the manufacturing sector remains to be seen.

### **Sectoral distribution**

The sectoral distribution of female manufacturing employment in Bangladesh remains highly skewed, as shown in Table 3 and annex Table 1. The wearing apparel sector, categorized under Bangladesh Standard Industrial Code (BSIC) 323, alone employs about 85 per cent of the female industrial employees (which is about 12.9 per cent of total manufacturing employment). This is followed by textile manufacturing including cotton, synthetic and jute textiles (BSIC 321 and 322), which account for about 6 per cent of female industrial employees or approximately 1 per cent of total manufacturing employment. The third most important provider of female employment is food processing (BSIC 311 and 312), which account for just over 3.2 per cent of female industrial employees or 0.5 per cent of all manufacturing employment. Wood work, cigarette manufacturing and pharmaceutical industries employ about 1.84 per cent, 1.47 per cent and 0.58 per cent of female industrial employees respectively. Annex Table 1 shows that this pattern of sectoral distribution for all types of female employees also holds true for female production workers.

The current state of industrial statistics, unfortunately, does not allow us to readily relate the market orientation of the enterprises with the gender composition of their labour force. Nonetheless, it is quite evident from the above figures that at least 91 per cent of female manufacturing employment is concentrated in enterprises that either produce for direct export (e.g., garments and jute), or that produce outputs "deemed exports", because they constitute export linkage industries.



**Table 3: Share of women in employment and wage bill in the manufacturing sector**

Ind Code	Sub-sectors	Total employees (no.)	Female as % total mfg employment	Total operatives employee (no.)	Female as % of total operatives	Total wage bill (000 Tk)	Share of female in total wage bill	Total operative wage bill (000 Tk)	Share of female in total operative wage bill (%)
311	Food mfg.	44005	0.30	32609	0.34	774081	0.12	448017	0.16
312	Food mfg.	62099	0.19	42649	0.19	1777793	0.14	1071183	0.10
313	Beverage ind.	1715	0.01	873	0.01	55071	0.00	20026	0.01
314	Cigarettes	32829	0.22	30240	0.26	358954	0.04	296521	0.06
315	Animal feeds	63	0.00	42	0.00	886	0.00	416	0.00
321	Textile mfg.	563969	0.80	500750	0.90	12634680	0.49	10001408	0.60
322	Textiles mfg.	19203	0.11	16390	0.13	348607	0.04	280379	0.05
323	Wearing apparel	215838	12.9	201074	15.18	2865818	6.78	2428562	9.45
324	Leather & its prod.	10802	0.00	8807	0.00	244659	0.00	156023	0.00
325	Footwear except rubber	5290	0.01	4224	0.01	281313	0.00	157641	0.00
326	Ginning pressing	3997	0.00	3188	0.00	63968	0.00	38576	0.00
327	Embroidery of textile goods	529	0.04	510	0.05	3240	0.01	3156	0.02
331	Wood & cork prod.	13252	0.28	11357	0.32	213588	0.10	156371	0.13
332	Furniture mfg.	2304	0.00	1930	0.00	41841	0.00	30897	0.00
341	Paper & its prod.	16743	0.02	11138	0.01	945490	0.26	516360	0.00
342	Printing & publishing	15447	0.01	10646	0.00	442984	0.01	263093	0.00
351	Drugs & pharma.	18103	0.09	7847	0.09	913031	0.19	316354	0.22
352	Industrial chemicals	9766	0.03	5609	0.01	572957	0.16	266581	0.02
353	Other chemical products	15306	0.03	11794	0.03	688702	0.05	363504	0.04
354	Petroleum refining	889	0.00	620	0.00	150157	0.00	98366	0.00
355	Misc. petroleum prod.	204	0.00	113	0.00	5019	0.00	2243	0.00
356	Rubber prod.	3663	0.00	3057	0.00	69042	0.00	54466	0.00
357	Plastic prod.	3214	0.00	2391	0.00	90918	0.00	59752	0.00
361	Pottery & chinaware	3387	0.00	2598	0.01	57128	0.00	36040	0.00
362	Glass & its prod.	2051	0.02	1746	0.02	72664	0.01	43214	0.01
369	Non-metallic mineral prod.	20567	0.03	18054	0.02	260746	0.02	153156	0.01
371	Iron & steel basic indus.	14795	0.00	10689	0.00	590386	0.00	392604	0.00
372	Non-ferrous metal ind.	459	0.00	324	0.00	15772	0.00	10410	0.00
381	Structural metal prod.	13155	0.01	10949	0.01	219282	0.00	161279	0.00
382	Fabricated metal prod.	6155	0.00	5342	0.00	121005	0.00	89123	0.00
383	Non-electrical machinery	6594	0.01	4366	0.00	241794	0.01	128283	0.00
384	Electrical machinery	13021	0.03	9733	0.03	359781	0.04	214736	0.04
385	Transport equipment	12588	0.00	9530	0.00	434463	0.01	248502	0.00
386	Scientific precision, etc.	172	0.00	130	0.00	3328	0.00	2481	0.00
387	Photographic optical goods	117	0.00	91	0.00	1764	0.00	1204	0.00
389	Mfg of sports goods	198	0.00	170	0.00	3920	0.00	3238	0.00
391	Decorative handicrafts	135	0.00	120	0.00	1279	0.00	1088	0.00
393	Other mfg. industries	3312	0.09	2870	0.11	41913	0.03	32234	0.04
394	Other mfg. industries	286	0.00	220	0.00	4139	0.00	2806	0.00
Total		1156222	15.30	984790	17.76	25972163	8.52	18550293	10.96

Source: BBS, 1996a.

### 3. Wage differentials

A little more than 8.5 per cent of the total wage bill in Bangladesh's manufacturing sector is attributable to all female employees, while the corresponding figure for women production workers is about 11 per cent (see Table 3). These shares compare unfavourably with their respective employment shares (15.3 per cent and 17.8 per cent). The divergence between shares of female employment and their wage bill is an explicit indication of the female-male wage differential prevailing in the sector. The compensation packages for female employees are systematically low across the sub-sectors. The average female-male wage ratio in Bangladesh's manufacturing sector in 1991-92 was 0.52 for all employees and 0.57 for production workers, suggesting a smaller gender differential in wage determination among production-related workers. The time series data presented in Table 2 indicate that while the female-male wage ratio for production workers improved somewhat between the late 1980s and early 1990s, the ratio in effect remained stagnant (or deteriorated) when all employees are accounted for.

It is also worth noting that female-male wage differentials are much lower in export-oriented industries. While we return to this issue later, it may be pointed out, based on data presented in annex Table 2, that in the wearing apparel industry (BSIC 323), female wages as a share of male wages constitute 70 per cent in the case of all employees and 90 per cent in the case of production workers — both these proportions are higher than their respective sectoral averages.

### 4. Growth patterns

Prospects for growth in women's industrial employment are clearly conditioned by the pattern of manufacturing growth in Bangladesh. Bakht's 1993 study of the performance of the country's manufacturing sector in the 1980s found that the top 10 sub-sectors in terms of growth in value-added were the following (in descending order of their trend rate of growth): ready-made garments, silk and synthetic textiles, dyeing and bleaching textiles, compressed liquefied gas, soft drinks, fertilizer, hand and edge tools, china and ceramic wares, fish and seafood, and tanning and finishing. In the best-performing sub-sector (RMG) women constituted 70 per cent of all employees, while in most other sub-sectors female employment was negligible.

In sum, the economic activity rate of women in general, and the

share of women in manufacturing employment in particular, are quite low in Bangladesh. However, there is evidence that both these indicators are experiencing an up-turn, particularly in the urban areas, and among relatively young women. The sectoral distribution of female manufacturing employment remains highly concentrated in RMG, although virtually all sub-sectors demonstrating growth in recent years are important from the point of view of the female-intensity of their labour force. There are substantial female-male wage differentials in the country's manufacturing sector, but these gaps are lower in the export-oriented industries. Wage differentials are also lower among production workers, and there are indications that the situation is improving. It is possible that such apparently positive trends in industrial employment of women in Bangladesh are a result of the increasing integration of the national economy into the global trade circuit. This, in turn, has been propped up by the deregulation and liberalization measures that characterize current macroeconomic policies. The mechanisms that have led to such positive outcomes must be identified rather than assumed.

### III. Bangladesh's apparel sector: Growth correlates

#### 1. Genesis

Female workers in Bangladesh were traditionally linked to global markets through export of tea and raw jute. It is only with the emergence of the RMG sector in the late 1980s as Bangladesh's leading export industry that the country's female labour force was integrated into international markets in a more direct and intense way. The transition from traditional to non-traditional export-oriented activities is of considerable significance, because it brings out some critical dimensions of the evolving pattern of female employment in Bangladesh. First, export-oriented RMG, a manufacturing activity, differs from the previous agro-based exports. Second, RMG units are concentrated mostly in urban areas, whereas earlier female-intensive processing activities were located in rural areas. Third, the rapid growth of the apparel sector and its increasing share in the export basket testifies to the importance and potential of female employment in exports, as well as industrialization, in Bangladesh. These three distinguishing features, *inter alia*, have important implications from a gender perspective, particularly in terms of employment opportunities, skill development and wage level.

Bangladesh's RMG industry has come a long way since 1977 when Reaz Garment made its first shipment of products to France. The Dosh-Daewoo collaboration in 1978 catapulted Bangladesh's unknown RMG industry onto a trajectory of fast growth. Several factors contributed to this remarkable success. In 1980, the Bangladesh Bank (the central bank of the country) granted "back-to-back" letters of credit (L/C) and bonded warehouse facilities to RMG producers/exporters, decreasing their working capital requirements and allowing duty-free access to inputs for the sector. Quotas imposed on some neighbouring countries compelled intermediate buyers to shift sourcing of RMG products to countries like Bangladesh where prevailing low wages ensured competitive prices. Moreover, in the US and Canadian markets quotas imposed on imports of apparel meant guaranteed access for developing countries like Bangladesh, while in the countries of the European Union preferential treatment under various schemes, such as the General System of Preferences (GSP), provided crucial price support and, consequently, a competitive edge for RMG exports from Bangladesh.

According to a recent study (Bhattacharya, 1996b), knit and woven RMG accounted for 7 per cent of units, 11 per cent of fixed assets, 21 per cent of annual investment, 30 per cent of the employment and wage bill, and 23.5 per cent of gross value added and returns on capital attributable to the private manufacturing sector in Bangladesh in 1992. More than 95 per cent of the output of the RMG units and about 90 per cent of that of the knitwear units catered to foreign markets.

**Table 4: Inter-temporal compound growth rates of RMG exports (1987-1997)**

Exports	FY 1987-FY 1997	FY 1990-FY 1997	FY 1992-FY 1997
Woven RMG	21.6%	19.5%	14.7%
Knit RMG	-	75.5%	45.0%
Total RMG	25.4%	24.4%	19.4%

*Source:* Computed from Export Promotion Bureau (EPB) database.

Annex Table 3 shows that, in just over 15 years, the share of RMG in total exports increased from less than 2 per cent to about 66 per cent. Table 4 provides information on export growth rates registered by Bangladesh's RMG sector. Between 1987 and 1997, the compound growth rate of RMG exports was more than 25 per cent.

The annual compound growth rate of exports between 1992 and 1997 was a robust 19.4 per cent, four times higher than the GDP growth rates registered in the country over the same period.

## **2. Employment growth**

The rapid growth of Bangladesh's RMG exports also meant a very high rate of employment expansion. In 1995-96, about 1.3 million workers were employed in approximately 2,350 RMG factories in the country. Table 5 presents information about the growth of employment in the RMG sector between 1981/82 and 1995/96. In 1991-92 (the most recent year for which activity-specific data are available), about 92.4 per cent of all employees in the RMG sector were production workers. It is of critical significance that women constitute the majority of this workforce. According to the Bangladesh Garment Manufacturers and Exporters Association (BGMEA), in 1996 almost 1.2 million female workers (i.e., 90 per cent of total employment in the industry) were employed in the export-oriented RMG units.

As can be seen from Table 6, in 1994-95 about 46.7 per cent of the total workers employed in the textile sector of Bangladesh were women. It is interesting to note here that in almost all countries, irrespective of the level of economic development, women on average constitute almost three fourths of the total labour force in the textile sector. In contrast, in Bangladesh it is only in the export-oriented RMG industry and the silk sub-sector that women constitute the majority of the workforce: 9 out of 10 in the export-oriented RMG sector and almost 1 in 2 in the silk industry. The other notable female-intensive sub-sector is the handloom sector, where women constitute a little less than half of the workforce. In the spinning and knitting sub-sectors, the female participation rates are not significant.

A substantial discrepancy in the female participation ratio is discernible between local and export-oriented RMG (see Tables 6 and 7). This is explained by the fact that in Bangladesh the RMG units catering to the local markets are mainly small tailoring outfits with a majority of male workers, while the export-oriented RMG units are relatively large units with a predominance of female labour.

Table 7 also shows that between 1991-92 and 1994-95, the share of women in total employment registered an increase from 5 per cent to 10 per cent in spinning and from 4 per cent to 14 per cent in knitting. Ministry of Commerce projections (presented in section V) envisage a substantial increase in the share of women in the workforce of these sub-sectors in the near future. But given the relatively low share of

**Table 5: Growth of employment in the RMG sector**

Year	Workers	Supervisors	Managers	Total
1981-82	4,200	315	28	4,543
1982-83	6,400	480	44	6,924
1983-84	24,000	1,800	172	25,972
1984-85	99,350	7,451	720	107,521
1985-86	323,200	24,240	2,348	349,788
1986-87	346,850	26,014	2,520	375,384
1987-88	362,250	27,169	2,632	392,051
1988-89	391,950	29,396	2,848	424,194
1989-90	405,700	30,428	2,948	439,076
1990-91	514,050	38,554	3,736	556,340
1991-92	729,100	54,683	5,300	789,083
1992-93		-	-	804,000
1993-94		-	-	827,000
1994-95		-	-	1,200,000
1995-96		-	-	1,294,000

Source: BGMEA.

**Table 6: Gender composition of employment in the textile sector (1991-92 and 1994-95) (million person-years)**

Sub-sectors	1991-92			1994-95		
	Male	Female	Total	Male	Female	Total
RMG						
Local	0.720	0.080	0.800	0.752	0.084	0.836
Export-oriented	0.080	0.720	0.800	0.120	1.080	1.200
Dyeing/finishing	0.200	0.004	0.204	0.212	0.005	0.217
Weaving (powerloom)	0.191	0.006	0.197	0.100	0.003	0.103
Handloom	0.572	0.455	1.027	0.409	0.324	0.733
Silk	0.100	0.100	0.200	0.110	0.120	0.230
Knitting/hosiery	0.043	0.002	0.045	0.044	0.007	0.051
Spinning	0.115	0.006	0.121	0.120	0.013	0.133
Total	2.021	1.373	3.394	1.867	1.636	3.503

Source: Ministry of Commerce, Government of Bangladesh, 1996.

**Table 7: Share of female employment in total employment of the textile sector (1991-92 and 1994-95)**

Sub-sectors	1991-92	1994-95
RMG		
Local market-oriented	1/10	1/10
Export-oriented	9/10	9/10
Dyeing & finishing	1/50	1/50
Weaving (powerloom)	3/100	3/100
Handloom	11/25	11/25
Silk	1/2	13/25
Knitting & hosiery	1/25	7/50
Spinning	1/20	1/10

Source: Ministry of Commerce, Government of Bangladesh, 1996.

female workers in the non-export-oriented sub-sectors in Bangladesh's textile industry, these must be viewed with some scepticism.

### 3. Wages

Female participation in the RMG sector in Bangladesh is confined mainly to the low-paid segments of the production process. In general, the level of wages in the RMG sector is low, for both males and females. The daily wage rate of RMG workers compares unfavourably with that of similar categories of workers in both the public and private sectors. Low wages go a long way in explaining the attractiveness of Bangladesh-made garment to foreign buyers. Table 8 gives an indication of comparative wage levels in the RMG sector in some of the major textile producing countries. As can be seen from the table, Bangladesh's wage level is relatively low, even by South Asian

**Table 8: Average hourly wage rates in the RMG sector across countries**

Country	Wage/hour (US\$)
Germany	25.00
USA	16.00
South Korea	5.00
Mexico	2.40
Poland	1.40
Sri Lanka	0.45
China	0.35
India	0.35
Nepal	0.30
Bangladesh	0.15

Source : *The Financial Express*, 15 June 1995, Dhaka.

standards. For instance, the average hourly wage in the RMG industry in Bangladesh is 50 per cent, 42 per cent and 33 per cent of those of Nepal, India and Sri Lanka respectively.

Abundant, readily available labour and its low opportunity cost lead to low wage levels, providing a comparative advantage to female labour in particular operations in the RMG production cycle. At the same time, inter-industry wage differentials indicate a depressed wage situation in the export-oriented RMG sector. This needs to be interpreted in the light of structural rigidities (e.g., enforcement of national minimum wages) that characterize the wage determination process in other formal manufacturing units, particularly in the public sector. In other words, wage rates in the RMG sector can be interpreted as market clearing wages established in a more or less flexible labour market.

Substantial differences in wage levels between male and female workers for comparable jobs are not discernible in the RMG sector. However, there is a caveat to this observation. In RMG production, female workers are predominantly concentrated in “low-skill, low-wage” operations and, thus, are low paid. As shown in Table 9, most women are either production workers or “helpers” (female workers constitute 40-60 per cent of the total workforce in the latter category). Women employed as production managers, supervisors, finishing and machine operators, and “in-charges” (drawing salaries varying from 2-10 times that of the average operator, depending on the type of operations) are extremely rare.

Export-oriented RMG entrepreneurs in Bangladesh argue that low wages in the RMG sector reflect the low productivity of workers in the sector. Yet it is noteworthy that the overwhelming majority of the workforce in the RMG sector are non-unionized women, which has also enabled entrepreneurs to keep the wage levels depressed. Moreover, workers in RMG factories in the export processing zones (EPZs) are barred by law from organizing trade unions of their own. Workers often try to complement their low wages by working overtime, which, in effect, is a mandatory practice in Bangladesh's RMG factories. As labour standards and labour rights are gaining prominence on the WTO's agenda (in addition to that of the ILO, which has long treated such issues), the working environment in Bangladesh's RMG sector is likely to undergo substantial changes. Furthermore, complaints by some US NGOs and the Harkin Bill (which calls for sanctions on imports to the United States from countries using child labour) forced Bangladesh to take urgent measures to enforce a Memorandum of Understanding on the phase-



out of child labour in the RMG industry. The threat of similar sanctions and measures underscores the need to implement policies to improve the working environment for all RMG employees in Bangladesh.

The global textile and apparel markets are becoming fiercely

**Table 9: Gender intensity of participation and wage rates in export-oriented RMG**

	Wage/pay per month (Tk)	Average female participation rate
Production workers		
Plain and overlock	1,200-1,600	80-95%
Flat lock	1,500-1,800	40-60%
Helper	500-700	40-60%
Supervisors	2,000-3,500	10-20%
Finishing in charge	4,000-5,000	0-5%
Production manager	12,000-25,000	Extremely rare

*Source:* Based on 1) debriefing of chief executives of 10 RMG units and 2) focus group discussions involving 126 RMG workers (mostly female). The survey was carried out for the present study.

competitive. In the coming years Bangladesh's reliance on low paid labour-based, low productivity-induced, low value-added intensive exports, such as RMG, will be severely tested. With countries such as China, India and Vietnam with higher productivity, albeit with somewhat higher wage rates, expected to offer stiff competition in the quota-free post-Multi Fibre Agreement (MFA) phase, Bangladesh must ensure the competitiveness of its RMG exports through critical policy interventions and firm-level adjustments.

#### IV. The performance of Bangladesh's apparel sector and female employment: Dynamic aspects

Growth of the apparel sector in Bangladesh has been supported by a regulated international trade regime and a proactive domestic policy framework. But there is growing concern that in a more liberal trading environment, as envisaged by the post-Uruguay Round provisions, Bangladesh's RMG sector may not be able to sustain and enhance its export capacity. The other concern for the sector relates to the fact that the potential for Bangladesh to assert its cheap labour-based competitive advantage is circumscribed by the modest share

of labour in the cost structure of RMG products and the marginal presence of backward linkages in processing activities. The present section identifies changes in the RMG sector in the face of competitive pressure; the implications for the sector of further globalization will be discussed in the subsequent section.

## 1. Strategic choices

Bangladesh's RMG sector is encountering growing competition on a number of fronts: the threat of new entrants, the bargaining power of suppliers and buyers, and rivalry among existing competitors. If the country is to retain its competitive advantage (and, by implication, female industrial employment is to grow) Bangladesh will need to restructure its RMG sector at an accelerated pace. This would entail developing appropriate backward and forward linkages; substantially improving its capital, labour and managerial efficiency; and formulating and implementing product and market diversification strategies. In truth, prospects for expanding female employment in the RMG sector lie in implementing any or all of the following corporate approaches:

- 1) a marketing approach (i.e., more international subcontracting and transition to direct sales abroad);
- 2) a product approach (i.e., more production for the profitable high-value international apparel market and diversification into leather- and silk-based garments);
- 3) a production approach (i.e., increasing value added by decreasing dependence on imported raw materials, particularly fabrics).

It has been argued elsewhere (Bhattacharya, 1996b) that current structural changes in the RMG sector encompass elements of all three approaches. Analysis has revealed that the competitiveness of RMG firms in Bangladesh is being shaped more than ever before by their ability to exploit modern technologies. In other words, the ability of Bangladesh's RMG sector to improve its global market share will largely depend on the technological capability of firms to build the human skills required to set up and operate industries efficiently over time. Clearly, generating such technological capability implies endowing female workers, who constitute the overwhelming majority of the workforce, with the necessary capacity.

## 2. Production costs

Sample surveys show that RMG units in Bangladesh have experienced robust growth during the 1990s in terms of number of employees and wage bill, stock and flow of capital, and output. It is also documented that growth in the cost of employment exceeded the rate of employment expansion, indicating an increase in the wage level. The high levels of investment and export growth suggest substantial capacity expansion and some technological upgrade (Bhattacharya, 1996b).

Such positive trends in employment, output and gross capital formation are usually underwritten by changes in the structure of production costs, such as economies of scale and increased technological endowment per unit of labour. Consistent time series data tracing the evolution of firms are lacking, but the two sector studies referred to earlier can be used to trace adjustments in the RMG sector in Bangladesh. Table 10 presents the shares of different items in the gross value of output as revealed by the two surveys.

**Table 10: Cost structure and profit margin of RMG units**

Indicators	ISS study (1991-92)	BIDS study (1994-95)
Value of output	100.00	100.00
Costs	87.00	76.00
Industrial costs (excluding wage)*	73.00	64.00
Non-industrial costs**	03.00	05.00
Employment cost (wage bill)	11.00	07.00
Gross value added	23.00	31.00
Profit margin	13.00	24.00

\*Industrial costs include expenditures on raw materials, packaging materials, fuel and electricity, spares and sub-contracting.

\*\* Non-industrial costs include expenditures on overheads, i.e. costs other than direct material and labour expenditures. These costs include advertisement and facilitation expenses, selling and distribution costs, interest payments and taxes.

Source: Adapted from the survey results of 72 RMG units in 1992 (ISS, 1993) and 38 RMG units in 1995 (Bhattacharya, 1996b).

Table 10 indicates that between 1992 and 1994, the proportion of costs in the gross value of output decreased from 87 per cent to 76 per cent, leading to an increase in the profit margin from 13 per cent to 24 per cent. Concurrently, the share of industrial cost (excluding salaries and wages) fell from 73 per cent to 64 per cent, resulting in a

growth of the share of gross value added from 23 per cent to 31 per cent. During the corresponding period, within the gross value of output, the share of non-industrial cost increased from 3 per cent to 5 per cent.

The shift towards a higher share of non-industrial costs is characteristic of products of high market value, which is corroborated by the increase in the share of value added. The fall in the share of employment costs does not signify a decrease in the wage rate in real terms, but it does point to an intra-firm redistribution of income from workers to owners. Since owners tend to be males and workers mostly females, there would also appear to be an inter-gender redistribution of income in the RMG sector, away from females. The cost structure comparison reveals the price-restraining measures deployed by firms and a concomitant increase in both capital and labour productivity, though they remain low in comparison to regional and global standards. Once again, this price restraint appears to have been largely realized by denying the teenage female labour force wage gains commensurate with productivity growth.

**Table 11: Trend in factor intensity and factor productivity of RMG units**

Indicator	ISS study (1991-92)	BIDS study (1994-95)*
Capital-labour ratio** (000 taka/worker)	31	29
Gross value added capital ratio (dimensionless)	1.34	3.5
Gross value added labour ratio (000 taka/worker)	40	79

\* In 1991-92 constant price.

\*\* Capital cost excludes value of land and building.

Source: ISS (1993) and Bhattacharya (1996b).

### **3. Factor productivity and factor intensity**

Comparison of the two surveys reveals that the factor intensity, or capital-labour ratio, may have gone down marginally in the RMG units in the early 1990s. It is worth noting that the samples drawn for the 1992 survey were biased toward larger firms (in terms of employment), which explains why upward movement of the output-labour ratio was not associated with a similar change in the capital labour ratio. But a higher rate of capacity utilization may also explain

the situation. Higher factor productivity of the units sampled for the 1995 survey may also reflect performance behaviour by size class following a path shaped like an inverted U. In other words, productivity registers growth as the scale of production increases and then falls for enterprises beyond a certain size.

Analysis of the time-series data on investment, employment and output generated by the two surveys reveals that the firms producing RMGs for export have replenished and expanded their capital stock, leading to higher partial factor productivity. However, in regard to changes in the two measures of partial factor productivity, the gains accruing to capital were notably higher than those accruing to labour. From a gender perspective, the relative growth in the capital- and labour-output ratios suggests that the redistribution of incremental income did not favour women workers.

#### 4. Wages

Evidence of increasing wage rates in various skill categories is shown in Table 12. During the period 1991/92-1994/95, the average monthly employment cost in a RMG unit increased from Tk 1,608 to Tk 1,717 (in constant terms) — implying a real increase in unit employment cost of about 6.8 per cent. In fact, wages across various categories of employees increased by the same extent (just over 6.7 per cent). This suggests that, while benefits to female labour may not have been proportional to growth in the RMG sector, the modest rise in real wages may have marginally mitigated the situation. But it is

**Table 12: Average monthly employment cost per person by skill level in RMG units (taka per month)**

Category	ISS study (1991-92)	BIDS study (1994-95)*	Growth rate (%)
Professional	5,643	6,025	6.74
Skilled worker	1,781	1,901	6.74
Semi-skilled worker	1,377	1470	6.75
Unskilled worker	923	985	6.71
Clerical staff	2,665	2,846	6.79
Support staff	1,932	2,063	6.78
Workers outside factory	772	-	-
Labour-all types	1,608	1,717	6.78

\* In 1991-92 constant price.

Source: ISS (1993) and Bhattacharya (1996b).

not possible to infer from the data whether these increases have been eroded by the longer working hours demanded of these workers. Nonetheless, with the large reserve of unskilled labour in Bangladesh, real income growth is certainly a “pull” factor, influencing female employment expansion in the RMG sector.

Statistical evidence thus points to some positive processes at work in Bangladesh's RMG sector, although reality is a bit more complex. For example, favourable changes in wage rates have been accompanied by restructuring of employment composition in terms of skill categories of the workers.

**Table 13: Trend in nominal and real wage in garment by skill category (taka per month)**

Worker category	1980	1985	1988	1990	1993	1997	(%) change (1980-1997)
Trainee/helper							
- Nominal	130	300	400	500	500	500	-
- Real	195	300	267	337	296	242	24.10
Semi-skilled							
- Nominal	300	500	600	800	1000	1000	-
- Real	423	500	420	540	591	484	14.42
Skilled							
- Nominal	500	800	1000	1500	1800	2200	-
- Real	760	800	762	1012	1064	1065	40.13

Note: Figures indicate the highest wage offered to different category of workers, and real wage rates are in 1984-1985 constant price.

Source: Based on memory recall of 17 chief executives and senior executives of 10 RMG units. The interviews were carried out in 1997 for the present study.

In their bid to retain markets in the face of competitive pressures, RMG entrepreneurs in Bangladesh have made both price and non-price adjustments to their products. Because exogenous factors (e.g., the state of infrastructure) influence non-price adjustment behaviour (e.g., timely shipment of goods), entrepreneurs seem to have opted for a more active price adjustment strategy. The latter has entailed production of the existing range of outputs at lower cost, as well as product diversification in favour of high-value products. Both strategies precipitated an apparently contradictory situation in the RMG units. On the one hand, labour costs were kept down by hiring more unskilled workers and, on the other, demand for skilled workers increased due to the introduction of high-value products in the output range. Since the supply of unskilled labour is more elastic than that

of skilled workers, the latter group benefited more, at least in terms of wages and possibly also in terms of employment, from the restructuring process (see Table 13). Because female employment in the RMG sector is concentrated in low-skill jobs, the bulk of female workers could not benefit from restructuring at the firm level.

## **5. The gender implications of technological improvements**

Recent changes in the composition of outputs in the country's RMG sector have led to a diffusion of technological innovations. These innovations, such as computer-aided design (CAD) systems for grading patterns and marking, have been concentrated in the pre-assembly (pre-sewing) phase of garment manufacture, where female employment is marginal. As a result, if gender segregation in the manufacturing process cannot be dismantled, women workers will simply be bypassed by the introduction of these new technologies. The key to breaking down this gendered division of labour lies in enhancing the skills of the female workers in the RMG sector, particularly through:

- 1) increased formal schooling (to improve language and mathematical skills);
- 2) enhanced availability of RMG-oriented training facilities at an affordable price (such as market-responsive, publicly funded training programmes); and
- 3) greater possibilities for on-the-job training (geared to facilitate upward occupational mobility).

Thus, developing the capacity of female workers will allow them to take advantage of the opportunities offered by the introduction of new technologies in garment manufacturing. For example, the computer-controlled automated cutting systems replacing manual cutting techniques are more gender-friendly but require special training. Such techniques diminish the need for physical strength and, thus, will not drive away female workers from this segment of the garment processing chain. Similar examples may be cited for the post-sewing phase.

In other words, enhanced educational qualification coupled with targeted skill development of the female workers in the RMG enterprises constitutes the real basis for sustained access to more remunerative jobs. Incidentally, success in the unfolding global economic scenario will increasingly require firms to foster such skills; those failing to do so will have to accept an erosion in their market share and depressed rates of return. The inability of entrepreneurs

(and the government) to elaborate forward-looking (positive) restructuring strategies based on enhancing the skills of female labour will lead to redundancy for their workers.

Thus the response to this fast-evolving situation in the RMG sector must come from both government and entrepreneurs. It is imperative that the government increase gender equity-sensitive allocations, particularly social sector expenditure targeted toward female education and skill development. The picture emerging in countries where industrial restructuring has taken place without attention to gender concerns is a swing back from female intensity in manufacturing, where women have been effectively replaced by male workers (Joeke, 1995; Pearson, 1998). Entrepreneurs, on the other hand, will have to appreciate that they tend to lose out in the long run by not investing in the capability development of women workers. However, entrepreneurs can argue for a cost sharing arrangement with the government in order to underwrite the risks of seeing trained female workers desert to their competitors.

## **V. The implications of globalization for female employment in Bangladesh's apparel sector**

As indicated above, the phenomenal growth of the export-oriented RMG sector has led to a high degree of feminization of formal manufacturing employment in Bangladesh. The sector retained its growth momentum in the face of stiff competitive pressure and, in fact, has been able to offer increased wage rates to its workforce over time. However, the female workers remain trapped in the low-skill, low-wage segment of processing activities in RMG factories. Whether current RMG growth rates will be sustainable in the future, whether women will be able to continue to access employment opportunities stimulated through such growth, and whether there will be transfer of technology and increase in productivity to the extent that will lead to wage increases in real terms are important issues of concern for Bangladesh's RMG sector. Some of them are taken up in this section.

### **1. The post-MFA textile and apparel trade**

The dynamics of global trade in textiles and apparel has important ramifications and implications for Bangladesh's export-oriented RMG sector. World trade in textiles and apparel developed since 1974 under the restraining rules of the Multi-Fibre Agreement



(MFA). The nine developed-country signatories to this agreement were Austria, Canada, the European Community (EC), Finland, Norway, Sweden, Switzerland and the United States. During negotiations of the GATT Uruguay Round, it was decided to integrate the MFA into the GATT (WTO) over a transitional period of 10 years (in four phases) beginning on 1 January 1995. According to the Agreement on Textiles and Clothing (ATC) of the Uruguay Round, the MFA phase-out schedule is as follows:

- 1) At the beginning of the first phase on 1 January 1995, each country would integrate products from the specific list in the Agreement accounting for not less than 16 per cent of its total volume of imports in 1990;
- 2) At the beginning of the second phase on 1 January 1998, products accounting for not less than 17 per cent of the 1990 import volume would be integrated;
- 3) In the third phase starting on 1 January 2002, products accounting for not less than 18 per cent of the 1990 import volume would be integrated; and
- 4) The remaining 49 per cent of the volume of 1990 imports would be integrated at the end of the transition period on 1 January 2005.

Following full integration, trade in these products will be governed by the general rules of the WTO. In each of the four phases, products for integration are chosen from the following categories: tops and yarns, fabrics, made-up textile products and clothing. Importing countries determine the schedule of integration.

During the transition period, quotas are increased for items remaining outside the integration process according to the following schedule:

- 1) From 1 January 1995, the annual growth rates applicable to these quotas would be increased by 16 per cent;
- 2) From 1 January 1998, the annual growth rates applicable to these quotas would be increased by 25 per cent; and
- 3) From 1 January 2002, the annual growth rates applicable to these quotas would be increased by 27 per cent.

In 1994, the GATT Secretariat projected phenomenal growth in world trade in textiles and apparel once the restraining rein of the MFA was phased out. Annual growth rates from 1.2 per cent to 4.3 per cent for textiles, and 4.1 per cent to 8.6 per cent for apparel are projected through 2005. As Table 14 shows, global trade in textiles and apparel combined is expected to increase from approximately US\$ 199.5 billion in 1992 (base year) to between US\$ 289.2 and 469.9

billion by 2005. The table also indicates that the global trade in apparel is expected to rise from around US\$ 105.6 billion (in 1992) to between US\$ 178.9 and 307.9 billion by 2005, and that of textiles from US\$ 93.9 billion to between US\$ 110.3 and 162.0 billion over the same period.

**Table 14: Expected annual growth rate of world trade in textiles and clothing (1992-2005)**

Projections	1992 (billion \$)	2005 (billion \$)	Growth rate (percentage change)	Annual growth rate during 1992-2005
<b>Version 1</b>				
Textiles	93.9	110.3	17.5	1.2
Clothing	105.6	178.9	69.4	4.1
Total	199.5	289.2	45.0	2.9
<b>Version 2</b>				
Textiles	93.9	111.4	18.6	1.3
Clothing	105.6	197.6	87.1	4.9
Total	199.5	309.0	54.9	3.4
<b>Version 3</b>				
Textiles	93.9	162.0	72.5	4.3
Clothing	105.6	307.9	191.6	8.6
Total	199.5	469.9	135.5	6.8

*Source:* GATT, 1994.

## **2. The future of apparel in Bangladesh**

Will Bangladesh be able to share in the gains from the expansion of the global apparel market? This will depend, in part, on the extent to which MFA phase-out affects the performance of the country's textiles and apparel sectors. At present, a quota is imposed on Bangladesh's apparel exports in only two of the nine countries signatories to the MFA: the United States and Canada. Market access is restrained on 31 categories of RMG exports in the US market and nine categories in the Canadian market. These two markets currently account for about 60 per cent of total RMG exports from Bangladesh. Quota utilization in these countries has been around 85 per cent and 65 per cent respectively, indicating that the quotas did not have a restrictive impact on Bangladesh's RMG exports (World Bank, 1993). As a matter of fact, the quotas have played an important role in providing Bangladesh with a guaranteed market in these two countries.

With the phasing out of the MFA and the elimination of quotas on these major categories of exports, some of the traditional RMG exporters, such as Bangladesh, are expected to face serious competition from a number of newcomers, which, under the MFA, faced restricted entry in the US and Canadian markets (Blackhurst et al., 1995). Bangladesh's RMG firms currently import a large proportion of their raw materials (grey fabrics) from countries such as China, India and Thailand under back-to-back L/Cs. In a quota-free environment, however, these countries may increase exports of finished apparel to North American markets. Whether Bangladesh's RMG sector will be able to withstand the challenge from these countries in the post-MFA period is thus an issue of critical significance for the future of the industry. The key issue here will be the competitive strength of Bangladesh's textile sector in general, and its RMG sector in particular.

If we juxtapose the phase-out programme on the structure of apparel exports from Bangladesh, we find that most items of export interest are to be integrated into the WTO in the last year of the phase-out (2004). Bangladesh thus has about four years to prepare for the post-MFA trade regime.

Other market access problems may also threaten the future performance of Bangladesh's RMG sector. For example, Bangladesh's exports enjoy preferential access in many European markets under the EC's Generalized System of Preference (GSP) schemes. These provide Bangladesh access to the EC market at zero tariffs. It is notable that, although substantial across-the-board reductions in tariff rates were negotiated in the Uruguay Round, reductions on textiles and apparel were relatively shallow. For example, tariff rates on imports of textiles and apparel by EC countries have remained relatively high, at about 12.5 per cent. Preferential treatment under the GSP allows EC importers to claim a duty rebate equivalent to 12.5 per cent of import value on imports of garment from Bangladesh. In recent years this preferential treatment has contributed to robust growth of Bangladesh's apparel sector through substantial market expansion in the EC market. The EC accounts for about 35 per cent of Bangladesh's global exports of apparel.

However, problems of market access recently faced by Bangladesh indicate that such facilities cannot be expected on a guaranteed basis. For example, access to the EC's GSP scheme is subject to compliance with "rules of origin" (ROO) requirements. Under these requirements, a two-stage transformation is required for woven RMG and, for knit RMG, a three-stage transformation (cotton to yarn, yarn to fabric, fabric to RMG) is required. Since Bangladesh's

indigenous capacity in spinning is negligible (about 5 per cent of total requirement), it is not possible to comply with the three-stage criterion. At present, most of the yarn used by the knit RMG factories of Bangladesh is imported (mainly from India). Although the EC ignored this non-compliance until recently, it has had to revise its position under pressure from Bangladesh's competitors. In October 1997, the Government of Bangladesh reached agreement with the EC under which Bangladeshi entrepreneurs would refund the duties (amounting to about US\$ 60 million) previously waived by the EC. Although the EC has agreed to a flexible approach to this issue, the incident reveals the types of problems countries like Bangladesh may encounter in the global market — despite trends towards liberalization in the post-MFA phase.

There is every indication that Bangladesh's apparel sector currently stands at an important crossroads. As we have seen, the wages of RMG workers in Bangladesh are the lowest in South Asia. But because backward linkages in the RMG sector are few, the local value addition has so far been very small — only 25-30 per cent of gross exports. Bangladesh can produce locally only 4 per cent of the 2.2 billion square metres of fabric required by its RMG factories. With quotas phasing out, and preferential treatment for exports coming under threat, continued vibrant growth of Bangladesh's apparel exports hinges on the creation of backward linkage in the textile sector. It has been estimated by the Ministry of Textiles (1993) that the country needs to set up, by the year 2000, 146 yarn units to meet 40 per cent of related demand, 109 fabrics units to meet 100 per cent of domestic demand and 199 dyeing/finishing units to fully absorb locally made fabrics. This would require an investment of more than US\$ 4 billion.

Relevant in this context are the composite textile mills that have recently been commissioned by the private sector in Bangladesh. A number of export-oriented textile mills are also being set up. Import data supply evidence of this trend: in 1995-96, Tk 5,579 million worth of L/Cs were opened for textile machinery; the corresponding figure for 1996-97 was Tk 5,776 million. Between 1994-95 and 1996-97, Tk 12,061 million-worth of (both woven and knit) textile-related machinery was imported by the private sector (Centre for Policy Dialogue, 1998). This is an indication that the private sector is indeed responding to opportunities for enhancing backward linkages in the textile sector in Bangladesh. Furthermore, negotiations under the aegis of SAPTA (the South Asian Preferential Trading Arrangements) also envisage duty-free access of Bangladeshi products (including textiles)

to the SAARC countries, which may be expected to expand markets within the region.

The Ministry of Textiles projects that, if sufficient investment is made in the spinning and weaving sub-sectors, Bangladesh can build a competitive export-oriented RMG sector with strong backward linkages to the textiles sector. Bangladesh will thus need to pursue a pro-active industrial policy if such investments are to be realized by 2005. If Bangladesh is indeed able to make such investments, opportunities for absorption of additional female workers in the textiles and apparel sector can be expected to improve. In the absence of a proactive policy favouring establishment of backward linkage industries, however, Bangladesh may be marginalized in the global apparel trade, leading to an erosion of the country's current share in the global market. And because female employment has failed to expand in other sectors, collapse of the RMG exports would have a disastrous impact on female employment in Bangladesh.

### **3. Employment opportunities post-MFA**

From the above discussion, it is clear that withdrawal of the quota system, erosion of GSP margins, and increasing competition from both "old" (previously restrained by MFA) and "new" (such as China, Vietnam, Cambodia) competitors are three major factors with serious implications for Bangladesh's apparel sector in the foreseeable future. Capacity to translate the static comparative advantage of cheap labour into dynamic competitive advantage is severely constrained by the textile and apparel sector's narrow production base with low technological capacity.

However, there is also a brighter side to the story. Projections confirm that adequate investments in backward linkages in the textile sector have the potential to enhance Bangladesh's apparel exports significantly. Bangladesh can remain competitive in the global market, and potentially increase its share in the global textile and apparel trade, provided appropriate policy initiatives are undertaken.

In the above context and with competition likely to increase once the textiles sector is fully integrated under the WTO, enhancing the competitive strength of Bangladesh's apparel sector is critically important. When local value addition is low, the scope for reducing the cost of the final product by using cheap labour is limited — since the inputs that constitute the major part of the cost are sourced at global price. On the other hand, when backward linkages are established (in spinning and weaving) and inputs are produced at

lower prices domestically, the relatively low wage level of a country can play a more important role in enhancing competitiveness of the final product in the global market. However, this approach also requires taking adequate steps to raise the level of productivity in upstream activities.

The Ministry of Commerce (1996) recently carried out a study on prospects for the country's textile sector in the post-MFA period. The study made projections from two perspectives. In the "normal scenario", production in the sub-sectors of dyeing-finishing, weaving, handloom, silk, knit-hosiery and spinning is expected to grow at 5 per cent per year during 1995-2005, while consumption/use of fabrics in the export-oriented RMG industry is assumed to increase at the rate of 10 per cent per year during 1995-2000 and 5 per cent per year during 2000-2005. Under the "self-sufficiency scenario", 40 per cent of the domestic and export-oriented requirement of yarn will be locally produced by 2000; by 2005, the level of local sourcing will reach 100 per cent.

Estimates made by the Ministry of Commerce also show that employment in the textile and apparel sectors may rise from 3.5 to 6.2 million under the "normal" scenario, and to 9.7 million under the "self-sufficiency" scenario (see Table 15). A large part of this increase is expected to be constituted by women (see annex Table 4).

**Table 15: Projection of employment in textile sector under "normal" and "self-sufficiency" conditions (1995-2005) (million person years)**

Sub-sectors	1995 (base year)	2000		2005	
		Normal conditions	Self- sufficiency conditions	Normal conditions	Self- sufficiency conditions
RMG					
Local	0.836	1.071	1.071	1.366	1.366
Export-oriented	1.200	1.935	1.935	2.469	2.469
Dyeing-finishing	0.217	0.279	0.634	0.356	1.282
Weaving (powerloom)	0.103	0.129	0.425	0.165	0.991
Handloom	0.733	0.938	0.938	1.197	1.197
Silk	0.230	0.296	0.296	0.375	0.375
Knitting and hosiery	0.051	0.065	0.065	0.083	0.083
Spinning	0.133	0.170	0.622	0.217	1.985
Total	3.503	4.883	5.986	6.228	9.748

Source: Ministry of Commerce, 1996.

According to projections, the share of female employment (90 per cent) in the export-oriented RMG sector will be protected, and the proportion of female workers would register some increase in the non-export-oriented RMG sub-sectors (see Table 16). As mentioned earlier, the proportion of women in the total workforce of the textile sector is very low in Bangladesh, even when compared to other developing countries. As most of the incremental labour force is expected to be employed in the upstream textile-related activities (part of which caters to local demand), women will not be able to fully exploit the potential employment opportunities if present patterns of female employment in the textile sector persist. By 2005, the share of female employment is projected to rise from 10 to only 20 per cent in non-export-oriented RMG, while in the dyeing/finishing sub-sectors the share is expected to rise from 2 to 10 per cent, in the knitting/hosiery sub-sectors from 4 to 30 per cent, and in the spinning sub-sector from 5 to 20 per cent. However, Ministry of Commerce projections do not say whether specific policies will be required to provide employment, or whether low relative wages are expected automatically to ensure enhanced female employment.

**Table 16: Projection of share of female labour in the textile/apparel sector (1995-2005)(percentage)**

Sub-sectors	1995 (actual)	2000 (projected)	2005 (projected)
RMG			
Local	10.0	15.0	20.0
Export-oriented	90.0	90.0	90.0
Dyeing and finishing	2.0	5.0	10.0
Weaving (powerloom)	3.0	80.0	15.0
Handloom	44.0	47.0	50.0
Silk	52.0	55.0	60.0
Knitting and hosiery	14.0	20.0	30.0
Spinning	10.0	15.0	20.0

Source: Ministry of Commerce, 1996.

Ministry of Commerce projections also foresee female employment rising from 1.6 million (in 1995 base year) to between 3.4 million (under normal conditions) and 4.0 million (under self-sufficiency conditions) (see Table 15). However, for such projections to materialize, substantial resources will have to be directed toward the textiles sector through both public and private investment, and

foreign direct investment. Moreover, the protection of quantitative restrictions (QRs) on imports and high levels of tariffs may also need to be continued until 2005. Projections show that if QRs on imports of textile products are withdrawn (as stipulated in the ATC), then about 180,000 women workers will be retrenched immediately. Table 17 suggests that if the protection enjoyed by the textile sector is withdrawn, employment creation for women will be 250,000 less in 2000 and 360,000 less in 2005 compared to the projected figures of female employment in the textiles sector under normal conditions.

**Table 17: Impact of ATC on employment of women in the textiles sector (1995-2005) (million person-years)**

Sub-sectors	1995 (Base year)	2000 normal conditions		2005 normal conditions	
		with ATC	without ATC	with ATC	without ATC
RMG					
Local	0.084	0.161	0.161	0.273	0.273
Export-oriented	1.080	1.742	1.742	2.222	2.222
Dyeing and finishing	0.005	0.007	0.014	0.018	0.036
Weaving (powerloom)	0.003	0.005	0.010	0.013	0.025
Handloom	0.324	0.221	0.441	0.300	0.599
Silk	0.120	0.147	0.163	0.203	0.225
Knitting and hosiery	0.007	0.007	0.013	0.013	0.025
Spinning	0.013	0.026	0.026	0.043	0.043
Total	1.636	2.316	2.570	3.085	3.448

Source: Ministry of Textiles, 1996.

Bangladesh's policy makers are thus faced with a dilemma. If the phenomenal growth of the RMG sector is to be sustained, and if the scope for women's employment in the manufacturing sector is to be enhanced, resources must be found and committed to the development of the textile sector. The textile sector must also be given some protection in the interim period. As a least developed country (LDC), Bangladesh is granted some leeway as regards protectionist policies which are WTO-legal; however, such protection may become untenable in the medium and long term.

The projected investments also imply substantial transfers of technology into the country's textile-related sectors. Tomorrow's competitive factories in Bangladesh will require more skilled and semi-skilled workers, with higher literacy rates and the capacity to carry out mechanical operations and quality control in the production process (CPD, 1998). If conscious policy interventions and training programmes are not undertaken by the government to educate and



train women, they cannot be expected to fully exploit the opportunities which will open up in the backward linkage industries. Women workers are currently concentrated in the low skill-intensive operations, and the projected industrial restructuring will demand an important shift from this structure of employment.

Even if tomorrow's competitive factories do become more skill-intensive, there is no guarantee that women will be trained and hired for these more demanding jobs. In developing countries such as Bangladesh, gender norms and biases regiment the definitions of skilled and unskilled labourers, the value given to work experience, the delegation of workers for on-the-job training, etc. In such a context, there is genuine apprehension that women may be marginalized as technologies transform factories and working methods. Bangladesh will thus need to combine structural, institutional and human resource development strategies to ensure that current women workers, as well as new female entrants, possess the necessary skills and training to service the changing labour requirements of the emerging textile and apparel industries.

A concerted and conscious effort by both public and private sectors will be called for. The government will need to design appropriate incentive packages to encourage the private sector to promote gender-sensitive, action-oriented activities. Translating such an approach into macroeconomic policies is a challenging task in itself, but a few policy measures in this respect do present themselves.

First, there is a need to reconsider public expenditures with a view to a gender/equity-sensitive allocation pattern. Emphasis has to be placed on social sector expenditures targeted toward female primary education, as entrepreneurs prefer to hire literate and numerate female workers. The demand for basic educational competency will increase further as new technologies spread throughout the apparel sector. Such expenditures must be protected in the face of pressures to balance budgets under stabilization and adjustment policy requirements.

Second, a mechanism has to be devised to share the costs of on-the-job training of female workers between the government and entrepreneurs. The public contribution would underwrite the potential risk of workers leaving a firm after receiving training. It is unlikely that the task of skill enhancement of female workers would meet with success if left to any one of the two actors exclusively.

Third, the government's labour market policies will have to be guided by the goal of promoting flexibility. Under no circumstances should labour market intervention make female labour costlier to the

employer (e.g., by emphasizing maternity benefits and restrictions of women working at night) than male labour. However, this is not to underplay the need to enforce the current statutory provisions relating to female industrial employment.

Fourth, in order to counteract gender discrimination based on social prejudices, the government must step up the public information campaign aimed at changing people's perception of women's role in society, particularly in the workplace. Such an awareness-building exercise aims to counteract perceptions that contribute to a "compartmentalization" of female participation in production processes and perpetuate wage biases against female workers. Involvement of trade unions and NGOs should strengthen this sensitization exercise.

## **VI. Conclusion**

Large-scale entry of women into the labour market has been one of the most striking features of recent industrialization in Bangladesh. A supply of cheap and readily available female labour has provided Bangladesh with a competitive edge on which the success of its flagship export-oriented industry, RMG, was built. The growth rate of the RMG sector in the 1990s was about 20 per cent. Creation of employment opportunities, mainly for the women constituting about 90 per cent of the sector's workforce (i.e., about 1.2 million people) has been a striking feature of the rapid expansion of the RMG sector in Bangladesh.

However, the female labour in this sector is concentrated mainly in the low-skill, low-wage segment of the production process, limiting local value addition in, and future growth of, the sector. Globalization of the textile market is likely to test the limits of such low skill-intensive export-oriented manufacturing activities in developing countries such as Bangladesh. At the same time, unshackling of global markets provides Bangladesh with a unique opportunity to capitalize on expanding market access by restructuring its domestic apparel sector through introduction of new technologies. Diffusion of such technologies is expected to further increase the growth momentum of the RMG sector and, consequently, female industrial employment in the country.

The phasing out of the Multi-Fibre Agreement is expected to bring new challenges as well as new opportunities for Bangladesh in the medium to long term. Analysis shows that in order to remain

competitive in the apparel market, Bangladesh must build backward linkages in the RMG industry. And evidence suggests that investments in upstream activities have indeed been picking up in recent years. However, if female workers remain concentrated in the low-skill, low-wage segment of the production cycle, even if the number and share of female workers in the labour force increases, this is unlikely to result in income growth for the female workers. A conscious public policy package aimed at encouraging skill development, facilitating technology transfer and raising the productivity level of female workers thus needs to be put in place to translate Bangladesh's comparative advantage into competitive advantage. This will facilitate sustainable improvement of the earning opportunities of the female labour force in the country's textile and apparel sector.

The feminized labour force in the export-oriented RMG sector of Bangladesh is perhaps at a threshold between significant reduction in market share under pressure of competition and globalization, or enhanced market opportunities induced by a move towards higher value-added products. The actual outcome hinges on the efficacy of the policies implemented to steer the outcome in the country's medium- to long-run interest. Such interventions will have to embody women-oriented social sector allocations and must be supported by a conscious effort by the private sector to train the female labour force in order to raise their productivity and stimulate backward (e.g., spinning and weaving) and forward (e.g., fashion and design) linkages in the apparel sector. The effectiveness of these measures will depend on the ability of the government to develop policies aimed at dismantling the gender segmentation of the labour market. Our analysis has shown that, irrespective of humanitarian considerations, gender-sensitive interventions are justified because of the revealed comparative advantage of female labour in textile-related activities, which can be enhanced if appropriate policy inducements are put in place.

## Endnotes

1. The authors are grateful to Carol Miller, Shahra Razavi, Swasti Mitter and David Westendorff for comments on an earlier draft. Editorial comments provided by Jenifer Freedman are also acknowledged. The usual disclaimer applies.
2. One of the two studies reported the extrapolated results of a stratified sample survey of 1,220 private manufacturing firms, including 72 RMG units. The survey, sponsored by USAID, was carried out by the World Bank in 1992-93. For details, see ISS (1993). The other study, based on a sample survey of 38 RMG units, was conducted in 1995 by one of the authors. For details, see Bhattacharya (1996a).
3. According to LFS data, in 1995-96 the share of women in total manufacturing employment was about 36.6 per cent (see Table 1). This high estimate is attributable to inclusion of women involved in small and cottage level processing activities (e.g. handloom weaving).
4. The average employment size of a manufacturing enterprise in the organized sector is 50 (1991-92).
5. On average, a state-owned enterprise has a total of 1,335 employees, whereas the corresponding figures for joint ventures and domestic private units are 290 and 40 respectively.
6. Women constitute almost 90 per cent of all workers in the tea-plucking stage, while the percentage of women in processing and blending varies between 10-25 per cent. Women also account for a significant share (46.7 per cent) of the agricultural labour force.
7. Under the "back-to-back" letters of credit extended by commercial banks, the exporters of RMG are able to import inputs (i.e., fabrics and accessories) against the export orders placed in their favour by the RMG importers. Given this provision, Bangladeshi exporters do not need to invest their own resources to finance working capital.
8. Under the bonded warehouse facilities, the imported inputs can be cleared through the customs against export orders without paying any import duty. This ensures that the export-oriented RMG units can access imported inputs at zero-tariff.
9. For example, according to the wage data provided by the BBS (1995) we find that the average monthly wages of skilled factory workers in textile and other sectors is 1.4 to 2.0 times that of similar workers in the RMG factories.
10. However, it is to be noted here that there is a limit to the extent to which low wages can be translated into low unit costs of production. Since the productivity of labour is also relatively low in Bangladesh, the cost of production per unit of output tends to be on the high side despite low wages. Bangladesh's apparel sector enjoys comparative advantage mainly because the sector is labour intensive and low productivity is somewhat offset by low wages.
11. According to the tripartite agreement signed in January 1994 (Statutory Regulatory Order No. 14 - Minimum Wages Ordinance) workers in the RMG sector are categorized into seven grades. Most of the female workers are concentrated in Grades 5 and 6 (junior sewing and knitting machine operators, and general sewing and knitting operators). Minimum wages fixed for these two types of operators are Tk 1,000 and Tk 900, respectively.
12. A technical evaluation of a joint ILO/UNDP project (BGD/85/153) computed that person-minutes required per basic product in Bangladesh's RMG sector is 25.0, while it is 14.0 in the United States, 19.7 in Hong Kong, 20.7 in the Republic of

Korea and 24.0 in Sri Lanka.

13. For details, see Bhattacharya (1996b).

14. See ISS (1993) and Bhattacharya (1996a).

15. For example, according to ISS (1993), the sample RMG enterprises invested towards gross capital formation an amount equivalent to 19.13 per cent of annual output. More than 70 per cent of this amount was attributable to investment in machinery and equipment.

16. The EC agreed to a two-stage conversion (the so-called derogation). However, the derogation will be time-bound. Moreover, there is a possibility that a quota will be imposed on exports exceeding a certain amount. For details, see Rahman (1997).

17. For example, under the current rules of SAPTA, a 40 per cent local value addition is required to benefit from a preferential import tariff.

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## Annex Tables

**Annex Table 1: Gender composition of manufacturing sector (1991-92)**

Ind. Code	Industry name	All employees				Operative			
		Male		Female		Male		Female	
		No.	%	No.	%	No.	%	No.	%
311	Food mfg.	40575	4.14	3430	1.94	29239	3.61	3370	1.93
312	Food mfg.	59892	6.12	2207	1.25	40744	5.03	1905	1.09
313	Beverage ind.	1569	0.16	146	0.08	731	0.09	142	0.08
314	Cigarettes	30232	3.09	2597	1.47	27661	3.42	2579	1.47
315	Animal feeds	63	0.01		0.00	42	0.01		0.00
321	Textiles mfg.	554762	56.65	9207	5.21	491853	60.73	8897	5.09
322	Textiles mfg.	17903	1.83	1300	0.73	15106	1.87	1284	0.73
323	Wearing apparel	66062	6.75	149776	84.68	51584	6.37	149490	85.4
324	Leather & its prod.	10786	1.10	16	0.01	8791	1.09	16	0.01
325	Footwear except rubber	5155	0.53	135	0.08	4089	0.50	135	0.08
326	Ginning pressing	3986	0.41	11	0.01	3177	0.39	11	0.01
327	Embroidery of textile goods	17	0.00	512	0.29	7	0.00	503	0.29
331	Wood and cork prod.	10004	1.02	3248	1.84	8163	1.01	3194	1.83
332	Furniture mfg.	2303	0.24	1	0.00	1930	0.24		0.00
341	Paper and its prod.	16512	1.69	231	0.13	11060	1.37	78	0.04
342	Printing and publishing	15368	1.57	79	0.04	10639	1.31	7	0.00
351	Drugs and pharma.	17079	1.74	1024	0.58	6981	0.86	866	0.50
352	Industrial chemicals	9474	0.97	292	0.17	5475	0.68	134	0.08
353	Other chem.- products	14947	1.53	359	0.20	11487	1.42	307	0.18
354	Petroleum refining	875	0.09	14	0.01	620	0.08		0.00
355	Misc. petroleum prod.	204	0.02		0.00	113	0.01		0.00
356	Rubber prod.	3635	0.37	28	0.02	3029	0.37	28	0.02
357	Plastic prod.	3185	0.33	29	0.02	2363	0.29	28	0.02
361	Pottery and chinaware	3336	0.34	51	0.03	2547	0.31	51	0.03
362	Glass and its product.	1835	0.19	216	0.12	1534	0.19	212	0.12
369	Non-metallic mineral prod.	20250	2.07	317	0.18	17858	2.21	196	0.11
371	Iron and steel basic indus.	14781	1.51	14	0.01	10689	1.32		0.00
372	Non-ferrous metal ind.	459	0.05		0.00	324	0.04		0.00
381	Structural metal prod.	13086	1.34	69	0.04	10880	1.34	69	0.04
382	Fabricated metal prod.	6113	0.62	42	0.02	5300	0.65	42	0.02
383	Non-electrical machinery	6526	0.67	68	0.04	4366	0.54		0.00
384	Electrical machinery	12671	1.29	350	0.20	9426	1.16	307	0.18
385	Transport equipment	12543	1.28	45	0.03	9530	1.18		0.00
386	Scientific precision etc.	162	0.02	10	0.01	120	0.01	10	0.01
387	Photographic optical goods	117	0.01		0.00	91	0.01		0.00
389	Mfg. of sports goods	198	0.02		0.00	170	0.02		0.00
391	Decorative handicrafts	120	0.01	15	0.01	108	0.01	12	0.01
393	Other mfg. industries	2276	0.23	1036	0.59	1834	0.23	1036	0.59
394	Other mfg. industries	286	0.03		0.00	220	0.03	174909	0.00
	Total	979347	100.0	176875	100.0	809881	100.0	174909	100.0

Source: BBS, 1996a.

**Annex Table 2: Level of wages and salaries by sex in manufacturing sector (1991-92)**

Ind Code	Industry name	Total wages and salaries paid (000 Tk)				Per employee (Tk)			
		All employees		Operative		All employees		Operative	
		Male	Female	Male	Female	Male	Female	Male	Female
311	Food mfg.	743914	30167	418845	29172	18334.29	8795.04	14324.87	8656.38
312	Food mfg.	1740736	37057	1052188	18995	29064.58	16790.67	25824.37	9971.13
313	Beverage ind.	54066	1005	19085	941	34458.89	6883.56	26108.07	6626.76
314	Cigarettes	347791	11163	285531	10990	11504.07	4298.42	10322.51	4261.34
315	Animal feeds	886		416		14063.49		9904.76	
321	Textiles mfg.	12506641	128039	9889202	112206	22544.16	13906.70	20106.01	12611.67
322	Textiles mfg.	338586	10021	270714	9665	18912.25	7708.46	17920.96	7527.26
323	Wearing apparel	1104935	1760883	675294	1753268	16725.73	11756.78	13091.15	11728.33
324	Leather and its prod.	244381	278	155745	278	22657.24	17375.00	17716.41	17375.00
325	Footwear except rubber	280916	397	157244	397	54493.89	2940.74	38455.37	2940.74
326	Ginning pressing	63886	82	38494	82	16027.60	7454.55	12116.46	7454.55
327	Embroidery of textile goods	182	3058	127	3029	10705.88	5972.66	18142.86	6021.87
331	Wood and cork prod.	188808	24780	132548	23823	18873.25	7629.31	16237.66	7458.67
332	Furniture mfg.	41784	57	30897		18143.29	57000.00	16008.81	
341	Paper and its prod.	877810	67680	515957	403	53161.94	292987.01		46650.72
342	Printing and publishing	440940	2044	262831	262	28692.09	25873.42	24704.48	37428.57
351	Drugs and pharma.	863469	49562	276255	40099	50557.35	48400.39	39572.41	46303.70
352	Industrial chemicals	532667	40290	263471	3110	56224.09	137979.45		48122.56
353	Other chem. products	675147	13555	356217	7287	45169.40	37757.66	31010.45	23736.16
354	Petroleum refining	149312	845	98366		170642.29		60357.14	158654.8
355	Misc. petroleum prod.	5019		2243		24602.94		19849.56	
356	Rubber prod.	68743	299	54167	299	18911.42	10678.57	17882.80	10678.57
357	Plastic prod.	90585	333	59468	284	28441.13	11482.76	25166.31	10142.86
361	Pottery and chinaware	56188	940	35700	340	16842.93	18431.37	14016.49	6666.67
362	Glass and its product.	70954	1710	41687	1527	38667.03	7916.67	27175.36	7202.83

**Annex Table 2 (cont'd)**

Ind Code	Industry name	Total wages and salaries paid (000 Tk)				Per employee (Tk)			
		All employees		Operative		All employees		Operative	
		Male	Female	Male	Female	Male	Female	Male	Female
369	Non-metallic mineral prod.	255789	4957	151611	1545	12631.56	15637.22	8489.81	7882.65
371	Iron and steel basic indus.	589925	461	392604		39911.03	32928.57	36729.72	
372	Non-ferrous metal ind.	15772		10410		34361.66		32129.63	
381	Structural metal prod.	218736	546	160733	546	16715.27	7913.04	14773.25	7913.04
382	Fabricated metal prod.	120519	486	88655	468	19715.20	11571.43	16727.36	11142.86
383	Non-electrical machinery	239340	2454	128283		36674.84	36088.24	29382.27	
384	Electrical machinery	349662	10119	207543	7193	27595.45	28911.43	22018.14	23429.97
385	Transport equipment	432524	1939	248502		34483.30	43088.89	26075.76	
386	Scientific precision, etc.	3238	90	2391	90	19987.65	9000.00	19925.00	9000.00
387	Photographic optical goods	1764		1204		15076.92		13230.77	
389	Mfg. of sports goods	3920		3238		19797.98		19047.06	
391	Decorative handicrafts	998	281	842	246	8316.67	18733.33	7796.30	20500.00
393	Other mfg. industries	35072	6841	25393	6841	15409.49	6603.28	13845.69	6603.28
394	Other mfg. industries	4139		2806		14472.03		12754.55	
Total		23759744	2212419	16516907	2033386	24260.80	12508.38	20394.24	11625.39

Source: BBS, 1996a.

**Annex Table 3: Growth of RMG exports (1977-1997)**

Year	RMG exports (million US\$)		Share in total exports (%)	
	All RMG*	Knit RMG	All RMG	Knit RMG
1976-77	0.07	-	0.02	-
1979-80	0.67	-	0.09	-
1982-83	10.8	-	1.58	-
1984-85	116.2	-	12.44	-
1986-87	298.7	-	27.81	-
1989-90	624.1	14.8	40.95	0.97
1992-93	1,444.9	204.5	60.64	8.58
1994-95	2,228.2	393.3	64.17	11.32
1995-96	2,547.1	598.3	65.61	15.41
1996-97**	3,001.2	763.3	67.92	17.28

\* Exports include both woven and knit-RMG.

\*\* Exports of 1996-97 are estimates based on export performance between July-April, FY 1997.

Source: Export Promotion Bureau, Annual Report (various years).

**Annex Table 4: Projected female employment in textile and apparel sectors under normal and self-sufficiency conditions (1995-2005) (million person years)**

Sub-sector of textiles/ apparel industry	1995 (Base year)	2000		2005	
		Normal	Self- sufficiency conditions	Normal conditions	Self- sufficiency conditions
RMG					
Local	0.084	0.161	0.161	0.273	0.273
Export-oriented	1.080	1.742	1.742	2.222	2.222
Dyeing and finishing	0.005	0.014	0.032	0.036	0.128
Weaving (powerloom)	0.003	0.010	0.034	0.025	0.149
Handloom	0.324	0.441	0.441	0.599	0.599
Silk	0.120	0.163	0.163	0.225	0.225
Knitting and hosiery	0.007	0.013	0.013	0.025	0.025
Spinning	0.013	0.026	0.093	0.043	0.397
Total	1.636	2.570	2.679	3.448	4.018

Source: Ministry of Commerce, 1996.