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The End of Textiles Quotas: A Case Study of the Impact on Bangladesh

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IMF Working Paper

Policy Development and Review Department

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Abstract

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This paper evaluates the effects on the Bangladeshi economy of phasing out textile and clothing (T&C) quotas currently maintained by industrial countries. The planned abolition of the quotas under the Agreement on Textiles and Clothing in 2005 will alter the competitiveness of various exporting countries. Bangladesh relies heavily on textile and clothing exports and is potentially very vulnerable to this change in competitiveness. Based on assessments of quota restrictiveness and export similarity, and an analysis of its supply constraints, the paper concludes that Bangladesh could face significant pressure on its balance of payments, output, and employment when the quotas are eliminated.

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I. INTRODUCTION

Under the WTO Agreement on Textiles and Clothing (ATC), all textile and clothing (T&C) quotas maintained by industrial countries under the now defunct Multifiber Arrangement (MFA) would be removed over the period 1995–2005. During the 10-year transition period, the remaining quotas would also be enlarged (Box 1). Because these quotas are bilateral and the extent of their restrictiveness varies from country to country, their removal will alter the competitiveness of individual exporting countries. Countries that have been facing more restrictive quotas will see their competitive position improve after the quotas are removed, while those that have been less restricted by quotas may face difficulties maintaining their current market shares.² The intensity of these shifts in competitiveness will be amplified by the effective backloading of the quota phase-out under the ATC. Most of the restrictive quotas are to be removed only at the end of the transition period, turning what could have been a gradual adjustment process into a major shock at the beginning of 2005.³

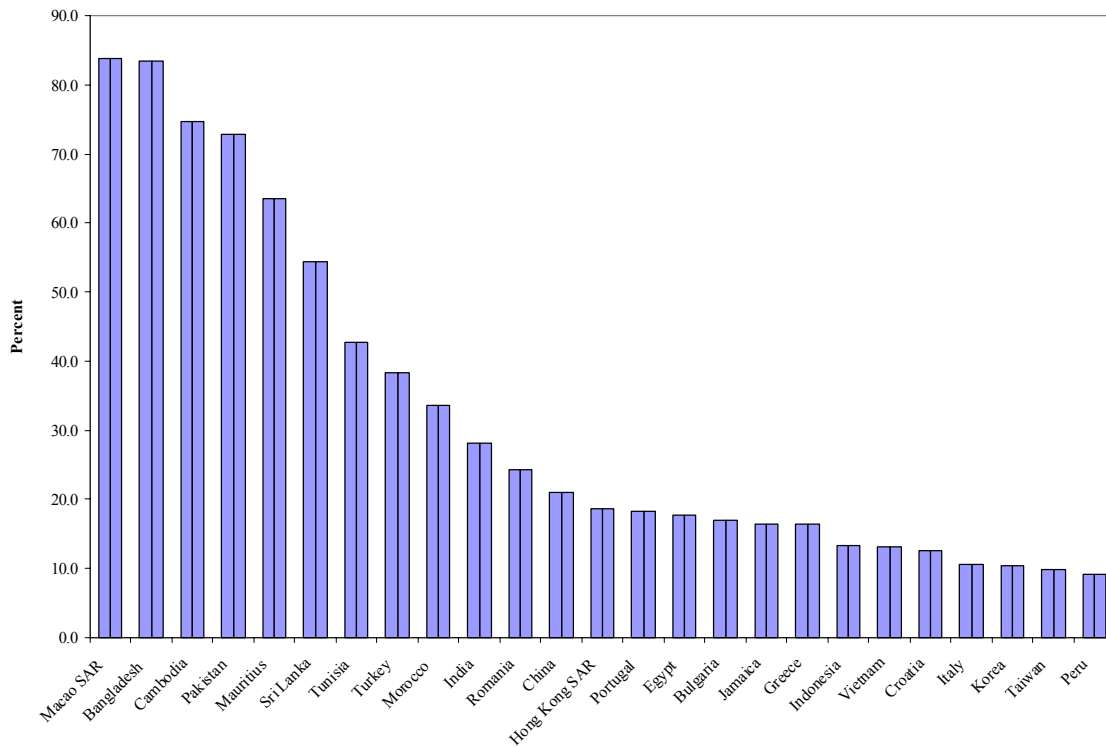
Bangladesh depends heavily on the exports of textiles and clothing, or ready-made garments (RMG),⁴ and is potentially vulnerable to the large shock of the final stage of the quota phase-out. In 2002, these exports accounted for over 77 percent of the country's total merchandise exports—one of the highest shares among major exporting countries (Figure 1). At the same time Bangladesh depends on quota-restrained markets for about 94 percent of its RMG exports, among the highest ratios in the world. Thus, the balance of payments consequence of a sharp decline in RMG exports could be severe. Despite the impressive export performance during most of the 1990s, recent export performance indicates that Bangladesh may not be sufficiently competitive to maintain its share in a quota-free world market after 2004. Although Bangladesh's wages are low compared with most of its competitors, the productivity of its labor force is also low and stagnant. Coupled with inadequate infrastructure and policy-induced weaknesses, Bangladeshi exporters will likely find it difficult to compete in the short to medium term even if appropriate policy responses can be put in place rapidly.

² See Dean (2002) for a concise summary of how MFA quotas have affected trade patterns across exporting countries.

³ See the IMF Board paper “*Market Access for Developing Country Exports—Selected Issues*,” SM/02/280, <http://www.imf.org/external/np/pdr/ma/2002/eng/092602.pdf>.

⁴ In Bangladeshi usage, the term “RMG” covers items that are not necessarily garments (clothes), such as towels, napkins, etc. In this paper, the terms “T&C” and “RMG” are used interchangeably, unless the context demands otherwise.

Figure 1. Proportion of T&C Exports in Total Exports, 2002



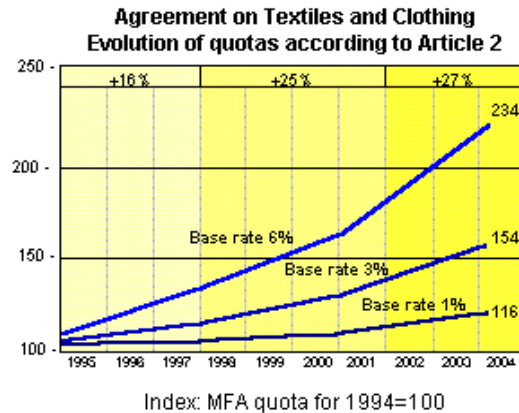
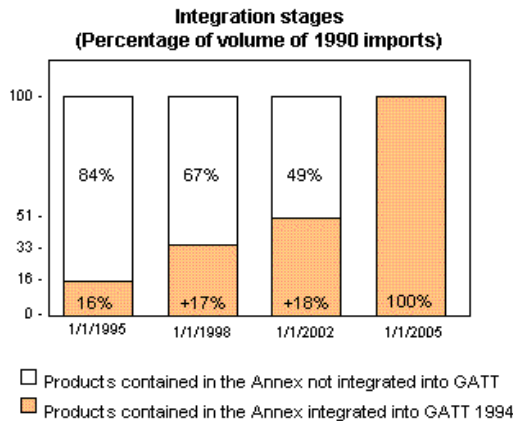
Source: WTO and IMF staff estimates.

This paper evaluates the impact on the Bangladeshi economy of the phase-out of textile and clothing quotas, with a particular focus on the medium-term effects on the balance of payments (especially the trade account), GDP, and employment. The paper is laid out as follows. The next section provides a general background on the RMG sector in Bangladesh. Section III examines Bangladesh's competitiveness vis-à-vis its main competitors. Section IV identifies major supply constraints in the Bangladeshi export sector. Quantitative assessments of the potential impact of the quota phase-out on the Bangladeshi economy are carried out in Section V. The final section contains concluding remarks.

Box 1. The Agreement on Textiles and Clothing

Under the Uruguay Round Agreement on Textiles and Clothing (ATC), MFA quotas are to be phased out progressively over a 10-year period, as shown in the graph below (left panel). The 10-year period cannot be extended. In the first stage, which began on January 1, 1995, WTO Members were required to integrate not less than 16 percent of their 1990 imports of textile and clothing products. In stage 2, starting January 1998, not less than a further 17 percent was to be integrated, and in stage 3, from January 2002, a further 18 percent. Finally, on 1 January 2005, all remaining products (amounting to a maximum 49 per cent) are to be automatically integrated. Products not yet integrated are subject to a special transitional safeguard mechanism, whereby an importing country can apply quantitative restrictions for up to three years on imports from a particular source of supply that causes or threatens to cause serious injury to the domestic industry. After integration, regular GATT safeguards apply.

In addition to this integration process, the ATC accelerated the growth rates for remaining quotas. The annual growth rates of quota volumes were increased by a factor of 16 per cent for the first stage of the agreement, by a further 25 per cent for the second stage, and another 27 per cent for the third stage. Least Developed Countries (LDCs) may enjoy one-stage advancement in the acceleration of quota growth. Three typical trajectories of quota growth under the ATC are shown in the right panel below.



Sources: Adapted from IMF (2002).

II. TEXTILE AND CLOTHING INDUSTRY IN BANGLADESH

The RMG industry has been the main source of growth in exports and formal employment in Bangladesh, although its direct contribution to GDP, at about 5 percent, is relatively small (Table 1).⁵ The industry plays a key role in employment and in the provision of income to the poor, directly employing about 1.8 million people, or about 40 percent of manufacturing sector employment, 90 percent of whom are women

⁵ For a fuller description of the Bangladeshi garment industry, see Bhattacharya (2003), Bhattacharya and Rahman (2000), and Islam (2001).

(USITC, 2004). The industry supports indirectly about 10–15 million people. Over the past 20 years, the number of manufacturing units has grown from 180 to over 3,600, 95 percent of which are locally owned. The typical firm employs 200–1,200 workers, with an average of about 550–600 workers. Some 90 percent of the factories are located in and around the capital, Dhaka, and the port of Chittagong.

Table 1. Bangladesh: Growth of the RMG Sector

Year	Export volume ('000 doz)	Export (US\$ million)	Share in total exports (percent)	Employment (millions)	Number of garment factories
1985–86	4,763	131	16.0	0.2	594
1990–91	30,567	867	50.5	0.4	834
1995–96	72,005	2,547	65.6	1.3	2,353
1999–2000	111,906	4,349	75.6	1.6	3,200
2001–2002	140,445	4,583	76.6	1.8	3,618

Source: Ahmed and Sattar (2003).

Most of Bangladesh's garments exports are made from imported textiles. In FY02, Bangladesh imported US\$1.8 billion of textiles and related inputs.⁶ The country has a small textile industry, but the volume and quality of its output are unable to fully meet the demand of the garments industry. Bangladesh also imports most of its needs in cotton and other raw materials for the textile industry. Bangladesh is, however, not unique in the lack of domestic inputs. In fact, the most successful textile and clothing exporters in history—namely, Japan, Hong Kong SAR, the Republic of Korea, and Taiwan Province of China—all relied heavily on imports of raw materials and textiles in the early stage of their export drive. China, despite its large agricultural and textile industries, also imports large volumes of raw materials and textiles. While lack of domestic inputs limits backward linkages to domestic industries, it is not necessarily a disadvantage for the garments industry as long as it can access inputs at world prices with short lead times. This points to the importance of maintaining an open import regime and improving trade facilitation.

The RMG sector has attracted limited foreign direct investment (FDI), most of which has gone to the export promotion zone (EPZ), which contributes about 10–12 percent of total exports. Bangladesh's RMG sector was originally launched by foreign investors, mostly from the Republic of Korea and Hong Kong SAR, who were taking advantage of

⁶ Despite large imports, the country ran a trade surplus of US\$2.8 billion in the combined textile and clothing sector.

Bangladesh's export quotas in restricted markets (Canada, the European Union, Norway, and the United States), as well as an abundance of cheap labor. Over time, however, the role of FDI has been significantly reduced, mainly as a result of government restrictions aimed at preserving valuable quotas for domestic producers (see Section IV). This has contributed to the slow diversification and upgrading of exports, giving low wages and quota access a greater role in maintaining competitiveness. Bangladesh mainly produces at the low end of the market (referred to as the "cut, make, and trim" segment), where value added and profit margins are low.

Other than garments, Bangladesh's main manufacturing industries are cement, fertilizer, and food processing, but these industries are far less export-oriented than the garment industry. The main exports are jute and jute products, frozen seafood, leather and light manufactures. Jute and jute products, which were the leading exports through the late 1980s, are unlikely to recover in the near future given the secular decline in world demand. The leather industry is currently constrained by limited supplies of inputs and manufacturing facilities that maintain inadequate environmental standards. The most promising export is frozen seafood, especially prawns, which have experienced rapid growth in recent years. However, further growth is constrained by poor quality control and land availability for output expansion. Light manufacturing, especially bicycle production, has grown very rapidly recently and shown great potential, although current exports are under \$100 million (2 percent of total exports). Overall, there are many opportunities for export diversification in the long run, but supply constraints make it difficult to rapidly expand non-RMG exports in the short to medium term.

III. EVALUATING COMPETITIVENESS

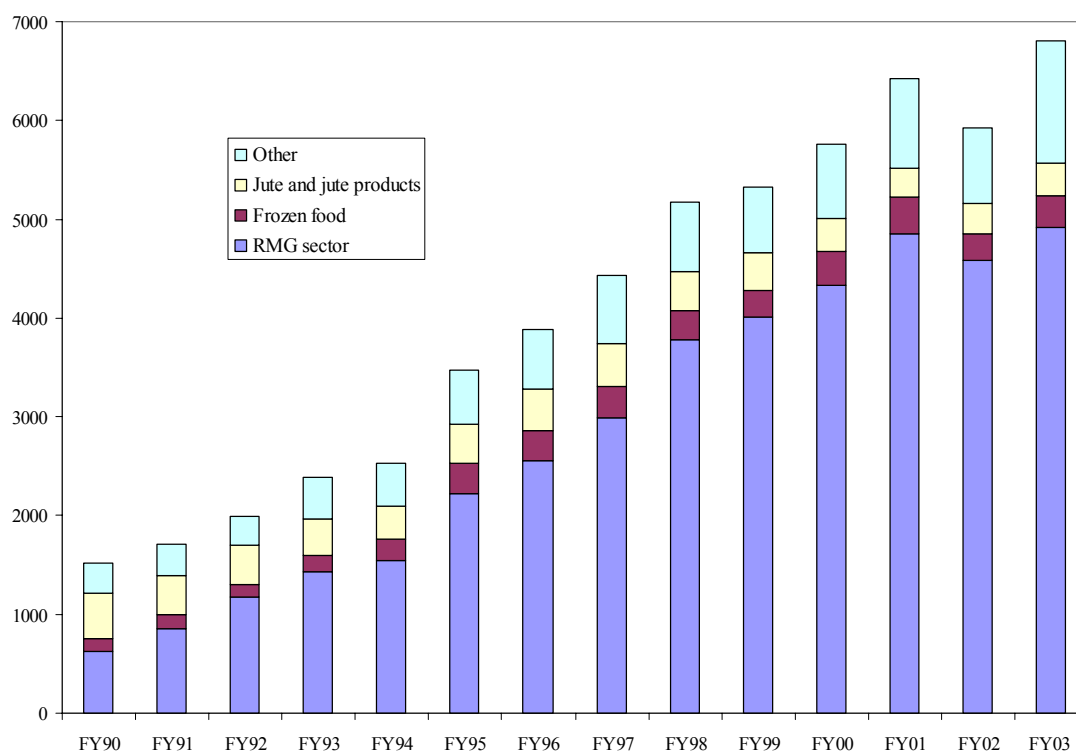
A. Growth Record and Trade Preferences

Bangladesh's RMG exports have grown rapidly over the past two decades, following extensive trade and other economic reforms in the early 1990s. The value of exports in U.S. dollars increased more than sixfold during the period 1990–2002, or about 16 percent per year, considerably faster than the growth of the country's other merchandise exports (Figure 2). The knitwear sector has performed particularly well over time. The sector's share in total RMG exports has grown from about 17 percent in 1995 to almost 40 percent in 2003. Bangladesh's knitwear sector enjoys several advantages over its woven sector:

- The technology required is inexpensive and highly flexible, conferring greater advantage to the role of low-wage, unskilled labor.
- Most of the raw materials are sourced locally or from the region, making it less difficult to meet rules of origin requirements in major export markets.
- Lead times are much shorter because of the greater availability of local inputs.
- The manufacturing units are small and face less trade union activity.

Starting in 1998, however, RMG export performance slackened, with the annual growth rate averaging less than 5 percent to 2002. For the first time in more than 20 years, export values (in U.S. dollars) actually declined in 2001/02. According to Bangladeshi exporters interviewed during IMF missions, this is partly attributed to increasing competition in the world market, especially from China and India, in a period of sluggish global demand. The exporters also blame U.S. preferential trade agreements for their export decline. In particular, they believe that the U.S. Africa Growth and Opportunity Act (AGOA) has diverted U.S. textiles imports away from Bangladesh to Africa.⁷

Figure 2. Bangladesh: Export Performance, 1990–2003
(in millions of U.S. dollars)



Sources: Bangladeshi authorities and IMF staff estimates.

RMG exports recovered in the first half of 2003. Bangladeshi exporters believe that the rebound was mainly a result of a shift in demand in their favor due to the SARS epidemic

⁷ AGOA provides exclusive quota- and duty-free market access for exports from eligible countries in Sub-Saharan Africa. According to USITC (2003), U.S. imports of textile and garments from AGOA-eligible countries have indeed increased rapidly since 2001. It is not clear, however, whether this has been at the expense of Bangladeshi exports.

that hit China and South East Asia in early 2003, duty- and quota-free access to the Canadian market beginning in January 2003, and strengthening global demand. The recovery was also boosted by increased exports to the EU, where Bangladesh seems to begin to benefit from the Everything But Arms (EBA) Initiative. Under that initiative, which entered into force in March 2001, Bangladesh, together with 49 other LDCs, benefits from duty- and quota-free access for all products except arms (with phase-in periods for rice, sugar and bananas).

Bangladesh continues to face quotas and tariffs in the U.S. market, but quotas and tariffs in other restricted markets have been removed.⁸ In contrast, most of Bangladesh's major competitors continue to face quota and tariff restrictions in all restricted markets. Quota-free access to the restricted markets (other than the United States) gives Bangladesh a distinctive advantage over its competitors, and additional duty-free access further strengthens that advantage.⁹ As Table 2 shows, tariffs on textile and clothing imports in the industrial countries remain high. The tariff preference for Bangladesh will remain even after quota restrictions on all exporting countries disappear at the beginning of 2005. It should be noted, however, that rules of origin have often limited the benefits of quota- and duty-free access. In the case of the EBA, while Bangladesh's knit garments, which have high domestic value added (up to 80 percent), can generally meet the requirement of 51 percent domestic and regional value added to be eligible for preferential access, its woven garments, which rely heavily on imported inputs, face a considerable constraint in meeting this requirement.¹⁰ Given that well over half of Bangladesh's garments exports to the EU are woven products, this constraint is significant in determining the country's overall export performance in the EU market.¹¹ It is reported that less than half of Bangladesh's exports actually receives duty-free treatment under the initiative.¹²

⁸ Norway's quotas have been removed for all exporting countries, while tariffs on exports from LDCs were eliminated in 2002.

⁹ If both a quota and tariff are imposed on a product, only one of them can be binding. If the quota is binding, the tariff simply allows the importing country to recoup some of the quota rent that would otherwise accrue to the exporting country and the entire preference margin for Bangladesh is the tariff equivalent of the quota. If the quota is not binding, the entire preference margin for Bangladesh is the level of the tariff.

¹⁰ Under the EU's so-called "SAARC cumulation" rules, Bangladeshi products made with inputs from the South Asian Association for Regional Cooperation (SAARC) region (including Bangladesh, Bhutan, India, the Maldives, Nepal, Pakistan, and Sri Lanka) are eligible for preferential treatment under the EBA, if they meet the minimum value-added requirement.

¹¹ The closure of land ports for textile imports from India in March 2002 has increased difficulties for the knitwear industry. This policy is supposed to limit smuggling, which the local textile industry claims to be a major impediment to its efficiency. The motivation for the policy is unclear.

¹² See BNA, Inc., *International Trade*, Vol. 21, No. 12, March 18, 2004, p. 496.

Table 2. Import Tariffs Applied to Textiles and Clothing 1/
(in percent of c.i.f. values)

Countries	Vegetable fibers		Man-made filaments yarn		Products made of fabric		Clothing	
	Average	Maximum	Average	Maximum	Average	Maximum	Average	Maximum
Canada	10.5	19.0	14.3	19.0	15.5	23.6	22.4	24.5
EU	6.4	14.3	8.8	10.1	8.6	21.1	12.4	13.4
Japan	5.8	16.0	7.8	10.9	7.0	17.9	11.3	14.5
Norway	8.8	18.4	11.1	21.0	9.6	21.0	16.8	22.7
U.S.	7.9	20.5	13.1	18.9	9.2	22.4	12.8	29.7

Source: European Union (2003).

1/ Applied ad valorem tariff rates in 1996.

Bangladesh is heavily dependent on the EU and United States for its RMG exports. The two markets combined account for about 94 percent of Bangladesh's total RMG exports (Table 3). Exports to unrestricted markets are negligible. In comparison, most of Bangladesh's main competitors ship a much larger proportion of their T&C exports to the unrestricted markets. China, for instance, ships over three quarters of its exports to these markets, while for India the share is 40 percent. In general, unrestricted markets have been important for the more established exporters while quotas are in place in the United States and EU. Among the world's top 25 clothing exporting countries, Bangladesh is probably the second most dependent on the restricted markets after Macao SAR. These comparisons show that Bangladesh has yet to demonstrate a capacity to penetrate unrestricted markets. They also imply that Bangladesh may benefit little from price increases in the unrestricted markets when demand in the restricted markets increases with the elimination of quotas.¹³

¹³ For an explanation of how quota removal would affect unrestricted markets, see Yang and others (1997).

Table 3. Bangladesh: Direction of Trade for T&C Exports
(in percent)

	Woven Garments				Knit Gaments				Total			
	1999/00	2000/01	2001/02	2002/03	1999/00	2000/01	2001/02	2002/03	1999/00	2000/01	2001/02	2002/03
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
European Union	41.8	41.8	44.5	47.7	69.6	70.1	69.8	73.0	49.9	50.5	52.6	56.2
United States	54.2	54.3	47.2	46.6	25.4	24.9	24.9	21.2	45.8	45.2	40.1	38.0
Canada	2.1	2.1	2.0	2.9	2.8	2.4	2.4	2.9	2.3	2.2	2.1	2.9
Norway	0.5	0.3	0.4	0.5	0.6	0.4	0.6	0.7	0.5	0.4	0.5	0.6
Switzerland	0.3	0.3	0.4	0.5	0.6	0.7	0.6	0.6	0.4	0.4	0.5	0.6
Korea	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1
Japan	0.2	0.2	0.4	0.4	0.3	0.3	0.3	0.2	0.2	0.3	0.4	0.3
Australia	0.1	0.1	0.1	0.1	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1
Other	0.8	0.9	5.0	1.3	0.8	1.2	1.3	1.1	0.8	1.0	3.8	1.2
Memorandum item												
EU and US	96.0	96.0	91.7	94.2 ##	94.9	95.0	94.7	94.2	95.7	95.7	92.7	94.2

Source: Bangladesh Bank and staff calculations.

B. The U.S. Market: Who Is More Restricted?

In the U.S. market, Bangladesh's exports are more concentrated in quota-restrained products than most of its competitors. Bangladesh faces quotas in 30 categories of products. Although this is low compared to 90 categories for China, it is similar to most other exporting countries. In value terms, however, Bangladesh does have higher quota coverage than most other exporters (Table 4). This can indicate either more comprehensive restrictions on Bangladeshi exports or more generous access to quotas. In either case, the impact on Bangladesh (positive in the former case and negative in the latter case) would tend to be larger than on other countries when quotas are removed. However, without knowing the restrictiveness of the quotas facing Bangladeshi exporters versus those facing its competitors, it is difficult to assess Bangladesh's competitiveness based on quota coverage. Bangladesh's high quota utilization rate suggests that it faces binding quotas, but this does not imply that it faces more restrictive quotas than its competitors. A useful indication of the restrictiveness of a quota is the price it commands in the market. In principle, the higher the price, the more restrictive the quota.

Table 4. United States: Textile and Clothing Quotas, 2001–02
(in millions of U.S. dollars, and percent)

	Number of quota categories	Average quota fill rate	Imports under Quotas (a)		Total Imports (b)		Percent (a)/(b)	
			2001	2002	2001	2002	2001	2002
Bangladesh	30	83	1,453	1,396	2,235	2,017	65	69
Cambodia	23	24	548	639	953	1,062	57	60
China	90	76	4,669	5,315	9,629	11,476	48	46
Egypt	19	10	154	141	515	493	30	29
Hong Kong SAR	64	55	3,848	3,809	4,461	4,081	86	93
India	30	68	1,497	1,714	2,912	3,294	51	52
Indonesia	34	33	1,109	1,045	2,586	2,363	43	44
Pakistan	36	31	1,066	1,047	1,958	2,010	54	52
Philippines	42	32	1,437	1,460	2,274	2,060	63	71
Sri Lanka	38	26	1,132	1,065	1,725	1,552	66	69
Thailand	59	56	1,468	1,470	2,534	2,299	58	64
Turkey	28	23	850	990	1,472	1,702	58	58

Source: United States Department of Commerce.

Note: Quota categories aggregated at 3-digit classification.

Quota price data indicate that Bangladesh's quotas probably fall in the middle of the restrictiveness scale. Based on 2002/3 quota price data reported by the World Bank (Table 5), Bangladesh appears to be the second most restricted Asian country after China, which is widely regarded as the most restricted exporter in the U.S. market (USITC, 2004). However, data provided by Bangladeshi industry sources indicate that quota prices in Bangladesh may have fallen since 2002. While the World Bank estimate for 2002 is 20 percent of the f.o.b. price (net of the quota price), which is substantially lower than that for China (36 percent), similar to that for India (20 percent), and considerably higher than that for Pakistan (10 percent), the latest data suggest that Bangladesh's average quota price has fallen to about 7.6 percent in late 2003 and early 2004 (Table 6). It should be noted, however, that such estimates are inherently volatile given the nature of quota restrictions. The restrictiveness of a quota as measured by its price varies with demand and supply conditions over time.

Table 5. Estimated Export Tax Equivalents of Quotas in Key Supplying Regions, 2002/3
(percent of f.o.b. prices net of quota rents)

	Textiles		Clothing	
	USA	EU	USA	EU
Bangladesh ^{1/}	0.0	0.0	20.4	0.0
India	3.0	1.0	20.0	20.0
Pakistan ^{1/}	9.8	9.4	10.3	9.2
China ^{1/}	20.0	1.0	36.0	54.0
Hong Kong SAR ^{1/}	0.0	2.1	2.3	12.3
Sri Lanka	0.0	1.0	7.0	0.0
Other East Asia ^{2/}	0.0	1.0	7.0	3.0
Newly Industrializing Economies ^{3/}	0.0	1.0	2.5	0.3

Source: World Bank (2004).

^{1/} Denotes an estimate based on quota price information. Other estimates are interpolated from quota utilization data

^{2/} Based on Indonesia, Philippines, Thailand.

^{3/} Republic of Korea and Taiwan Province of China.

Comparisons with competitors at the commodity level suggest that Bangladeshi exporters are likely to be subject to intense competition in the U.S. market once the remaining quotas are eliminated. For every Bangladeshi product restricted by quota its Chinese counterpart is also restricted (Table 6). The Finger-Kreinin similarity index indicates that the two countries' exports to the United States overlap by as much 72 percent (Table 7).¹⁴ Nine out of 10 of Bangladesh's top exports coincide with China's top 10. While quota utilization rates are similar for the two countries, quota prices are much higher in China than in Bangladesh across all quotas. China's average quota price (using China's trade weights) as a percentage of the f.o.b. price (net of quota rent) is 40 percent for products for which Bangladesh is also restricted. Using Bangladesh's trade weights, China's average quota price rises to 49 percent, over six times the average Bangladeshi price (7.6 percent). The same is true for quota utilization. China's average utilization rate for

¹⁴ The Finger-Kreinin similarity index is defined as $I^{AB} = \sum_{i=1}^n \text{Min}(S_i^A, S_i^B) \cdot 100$, where S_i^A is the share of product i in country A 's exports to an export market, S_i^B is the share of product i in country B 's exports to the same market, and n is the number of products. It should be noted that the index is sensitive to the level of product disaggregation. The more disaggregated the products are for the same level of aggregate exports, the lower the index is. In this study, the index is computed at the quota level.

Table 6. Bangladesh and China's Exports to the United States: Values, Quota Utilization Rates, and Quota Prices, 2003 1/

Cat.	Product	Bangladesh			China		
		Export value (US\$ million)	Quota fill rate (percent)	Quota price (percent) 2/	Export value (US\$ million)	Quota fill rate (percent)	Quota price (percent) 2/
237	Playsuits, etc.	10	85.6	n.a.	80	63.2	5.7
331	Gloves	1	58.3	n.a.	35	90.0	7.3
334	Coats, non-suit, M&B	20	93.3	13.6	66	89.7	26.9
335	Coats, W&G	24	86.8	1.5	79	94.1	28.0
336/636	Dresses	31	79.0	1.8	262	81.5	10.8
338/339	Knit Shirt & Blouses	115	91.8	2.8	206	94.3	157.8
340/640	Shirts, not Knit, M&B	226	94.7	0.6	155	94.2	74.2
341	Shirts & Blouses, not Knit, W&G	94	78.4	0.3	80	93.1	37.3
342/642	Skirts	38	83.9	5.0	85	95.1	42.1
347/348	Trousers, etc.	263	96.5	10.0	315	88.4	44.9
351/651	Nightwear	49	93.5	2.5	111	87.6	41.3
352/652	Underwear	118	90.2	0.3	104	85.8	35.9
363	Terry & other pile Towels	18	77.8	n.a.	69	92.4	n.a.
369-S*	Shop Towels	25	86.1	n.a.	n.a.	n.a.	n.a.
634	Coats, non-suit, M&B	80	94.4	2.5	180	81.0	15.9
635	Coats, W&G	55	96.2	2.5	171	88.0	24.2
638/639	Knit Shirts & Blouses	68	91.9	0.6	204	92.4	43.1
641	Shirts & Blouses, not Knit, W&G	28	80.0	0.6	108	89.2	24.9
645/646	Sweaters	17	84.9	1.8	78	85.9	35.4
647/648	Trousers, etc.	115	94.6	3.0	285	88.4	20.8
847	Trousers, breeches & shorts	16	76.7	n.a.	n.a.	n.a.	n.a.
Total/average 3/		1,412	86.4	7.6	2,671	88.1	40.3
Total T&C exports to the United States		1,990			8,744		

Source: U.S. Office of Textiles and Apparel, communications with Bangladeshi traders, and ChinaQuota.com at <http://www.chinaquota.com/EN/index.asp>.

1/ Quota prices pertain to late 2003 and early 2004 for Bangladesh and the whole 2003 for China.

2/ Percent of the f.o.b. price net of quota rents.

3/ Averages are weighted by trade values.

Table 7. Export Similarity Between Bangladesh and Its Major Competitors, 2002 ^{1/}
(in percent)

Competitor	USA	EU
China	71.5	22.0
India	57.1	39.1
Pakistan	34.8	67.6

Source: Authors' estimation based on data from U.S. Department of Commerce and the European Commission.

1/ See the next sub-section and footnote 22 for the shortcomings of the similarity index.

products for which Bangladesh is also restricted is 16 percentage points higher than its overall average (72 percent). Bangladesh's export similarity with India and Pakistan is lower than with China, but still significant. The lower similarity results from India and Pakistan's greater specialization in textile products, in contrast to Bangladesh's heavy concentration in garments.

Bangladesh's relatively low quota prices result partly from the generous quota allocation it receives in the U.S. market. The growth rates of quotas on Bangladeshi exports have been higher than those on exports from virtually all of its main competitors (Table 8). By 2002, Bangladesh was entitled to an average annual growth rate of 12.9 percent for its base quotas, 60 percent higher than the average for its main competitors.¹⁵ In fact, for a number of products Bangladesh has larger quotas than China. Weighted by Chinese unit values (cif prices), which on average are double Bangladeshi unit values, Bangladesh's aggregate quota for its restricted products is more than 20 percent larger than China's. In other words, if Bangladesh could achieve China's level of efficiency and product quality, its quotas in the United States would be worth US\$3.2 billion. With the current average quota utilization rate, it could double its current value of exports to the United States without any increase in quota volumes.

¹⁵ Under the MFA and ATC, exporting countries are allowed some flexibility in using some of their base quotas in terms of the so-called carry-forward, carry-over, and swings (shifting a specified proportion of a quota category to another within the same year). Actual annual growth rates of quotas therefore may differ from base rates.

Table 8. Growth Rate of U.S. Base Quotas for Bangladesh and its Main Asian Competitors
(percent per year)

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Bangladesh	8.1	8.1	8.1	10.2	10.2	10.2	10.2	12.9	12.9	12.9
China	...	...	1.7	0.1	1.7	1.7	1.7	0.4	2.4	2.0
India	6.7	6.7	6.7	8.4	8.4	8.4	8.4	10.6	10.6	10.6
Indonesia	6.2	6.2	5.5	7.7	7.7	7.7	7.7	8.3	9.8	9.8
Pakistan	7.6	11.9	7.6	9.2	9.4	9.5	9.5	14.9	12.0	12.0
Sri Lanka	6.1	6.2	6.2	7.7	7.7	7.7	7.7	6.3	9.7	9.7
Thailand	6.1	6.1	6.1	6.0	7.6	7.6	7.6	7.6	9.6	9.6
Vietnam 1/	...	...	...	...	...	...	...	...	...	6.0
<i>Memo item:</i> Simple average excl. Bangladesh	6.5	7.4	5.6	6.5	7.1	7.1	7.1	8.0	9.0	8.5

Sources: U.S. Office of Textile and Apparel, and staff calculations.

1/ Prior to May 2003, Vietnam did not have any quotas.

C. The EU Market: EBA Is Not Sufficient

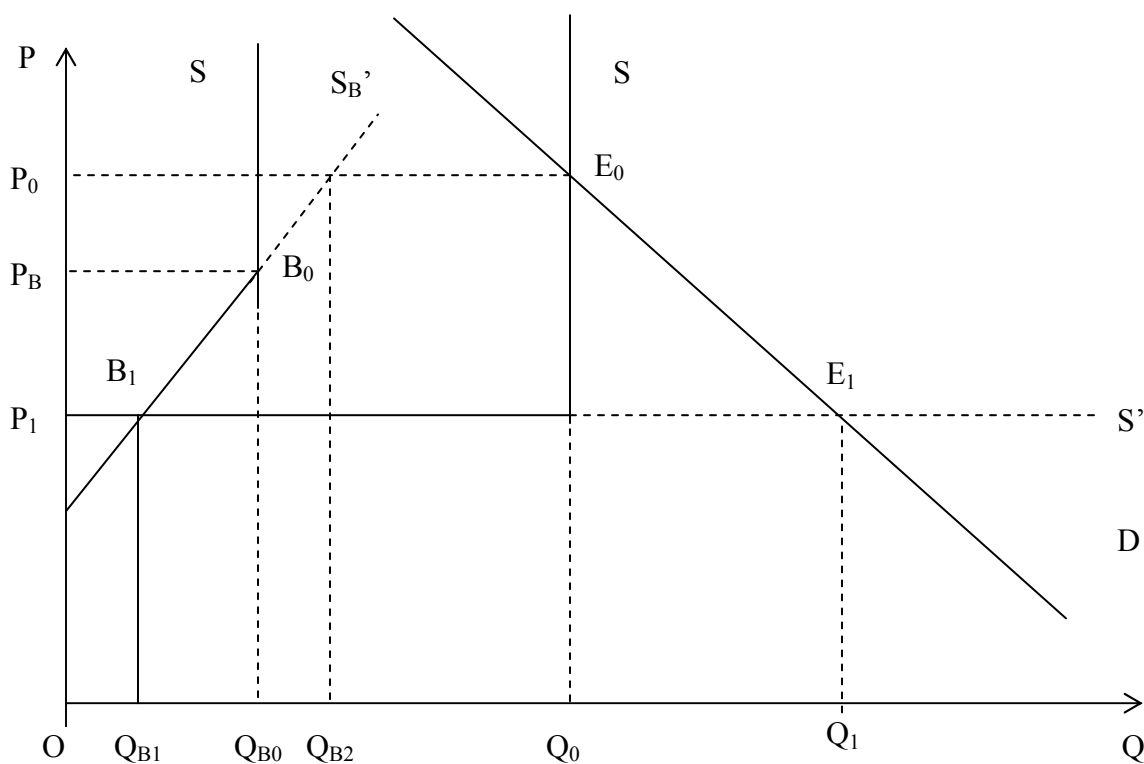
In the EU market, the fact that Bangladesh does not face any quotas there means that the shock to its exports could be even larger when quotas on other countries are removed. Unlike in the U.S. market, where Bangladesh has a 7.6 percent quota rent to cushion price declines when remaining quotas are removed, any price falls in the EU market would directly cut into profits and hence exert pressure on exports. The difference between the two markets is illustrated in Figure 3. Under the current level of global quota restrictions (Q_0), the import price in the U.S. market is at P_0 , largely determined by the production cost in Bangladesh's competitors (China in particular) and the extent of quota restriction on their exports.¹⁶ The extent of quota restriction is measured by the quota rent or the export tax equivalent (ETE) P_0P_1 . One can think of this as the 40 percent quota rent for Chinese exports. Bangladesh's production cost (at P_B) at the margin is higher than its competitors' (P_1), but the country is able to fully utilize its quotas (of Q_{B0}) at P_0 . In fact, its exports would increase to Q_{B2} without the quota restriction. This is the preferential EBA access that Bangladesh enjoys in the EU market. However, if quotas on all exporting countries were removed, Bangladesh's exports would contract from Q_{B0} to Q_{B1} in the U.S. market, while global exports to the U.S. market expand to Q_1 . In contrast, in the EU market, Bangladesh's exports would contract from Q_{B2} to Q_{B1} . Clearly, while any price fall in the EU market will lead to a decline in Bangladesh's

¹⁶ For the ease of exposition, it is assumed here that all exporting countries produce a homogeneous product. However, the story would be similar even if products are assumed to be differentiated by country of origin.

exports, its export supply to the United States is completely inelastic until the price falls below P_B .¹⁷

Estimates of ETEs suggest that the prices of exports from Bangladesh's competitors could indeed fall considerably once the quotas are removed in the EU market. In fact, Chinese clothing exporters seem to face higher average ETEs in the EU than in the United States, while Indian and Pakistani exporters face similar levels of ETEs in both markets (Table 5). If the price elasticity of demand for Bangladeshi exports is also the same in the EU as in the U.S. market, as assumed in Figure 3, the downward pressure on Bangladeshi exports in the EU market would be larger than in the U.S. market when quotas on Bangladesh's competitors are removed.¹⁸

Figure 3. Bangladesh in the World Textile Market



¹⁷ This assumes that the effects of the EBA have fully worked through before the quota removal in 2005. This conclusion also depends on the existence of barriers (e.g., rules of origin and infrastructure bottlenecks) that prevent costless re-direction of Bangladeshi exports from the U.S. to the EU market—otherwise, for a small country like Bangladesh, U.S. quotas would become redundant immediately after the introduction of the EBA. However, the prices of U.S. quotas on Bangladeshi exports should have been subject to downward pressure as long as the EBA has had the effect of easing barriers against Bangladeshi exports.

¹⁸ The demand elasticity depends importantly on the elasticity of substitution between exports from Bangladesh and its competitors.

The degree of substitution between exports from Bangladesh and its main competitors is potentially high in the EU market. At first sight, this does not appear to be the case based on estimates of export similarity in the EU market. At the quota level, the overlap between exports from Bangladesh and China is low, and that with India and Pakistan is considerably higher (Table 7).¹⁹ Export similarity between Bangladesh and China is low because China's exports to the EU are very diversified, while Bangladesh is specialized in several major clothing categories. However, just five of these categories accounted for 86 percent of Bangladesh's total RMG exports to the EU in 2002, while they made up only 13 percent of China's exports. In value terms, Bangladesh exported nearly twice as much of these products as China did. Remarkably, according to World Bank (2004) estimates, China's exports in these categories face very high ETES.²⁰ Pakistan also has higher-than-average ETES for these categories, in addition to a higher share of these products in its total exports to the EU, which contributes significantly to the higher export similarity between the two countries.²¹ Thus, despite the apparent low export similarity between Bangladesh and China, competition between the two countries is likely to be intense.²²

D. Performance During the Transition

The strong competition between Bangladesh and other exporters seems to have been borne out by the recent developments in exports for which quotas have been removed. At the beginning of 2002, a number of quotas were abolished as part of Phase III quota integration (2002–04) under the ATC. Export performance in these quota categories thus provides initial evidence of competitiveness after 2004. From 2001 to 2003, while Chinese exports surged, Bangladeshi exports of products that fall under Phase III integration declined by 46 percent (in value terms) in the EU market and 41 percent in the U.S. market (Figure 4). Among the seven categories of products for which quotas were removed in the U.S. market in 2002, Bangladesh suffered export losses in all but one category. Many other countries also suffered export declines, but Bangladesh's loss in the EU market might seem surprising given that it has quota-free and duty-free access under the EBA.

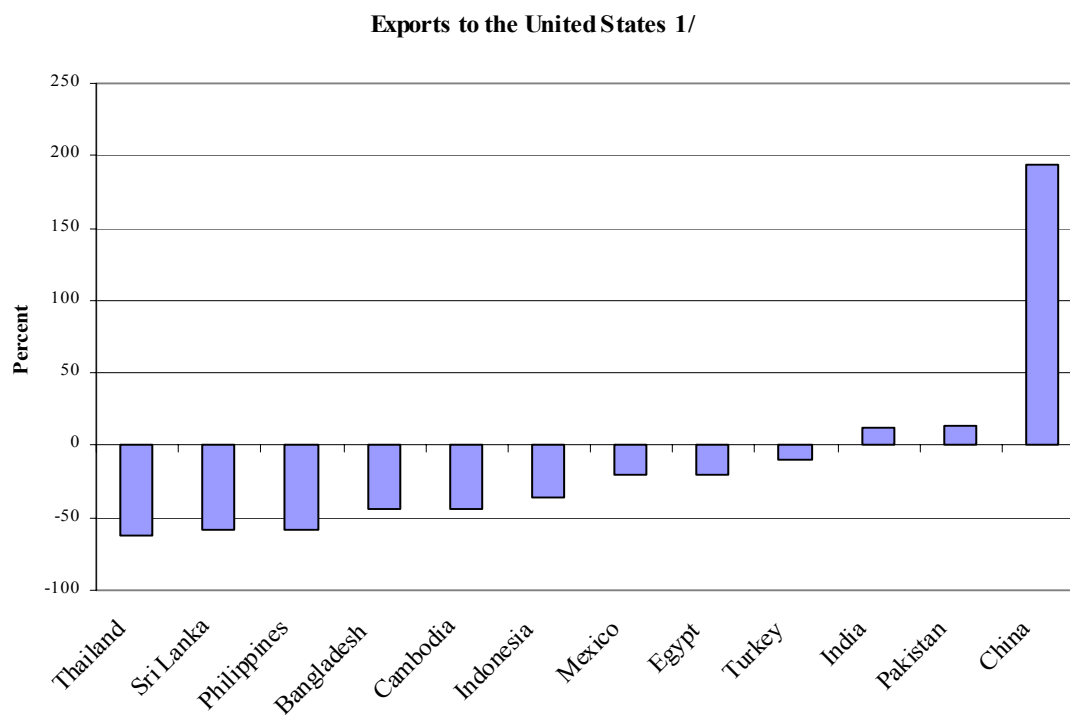
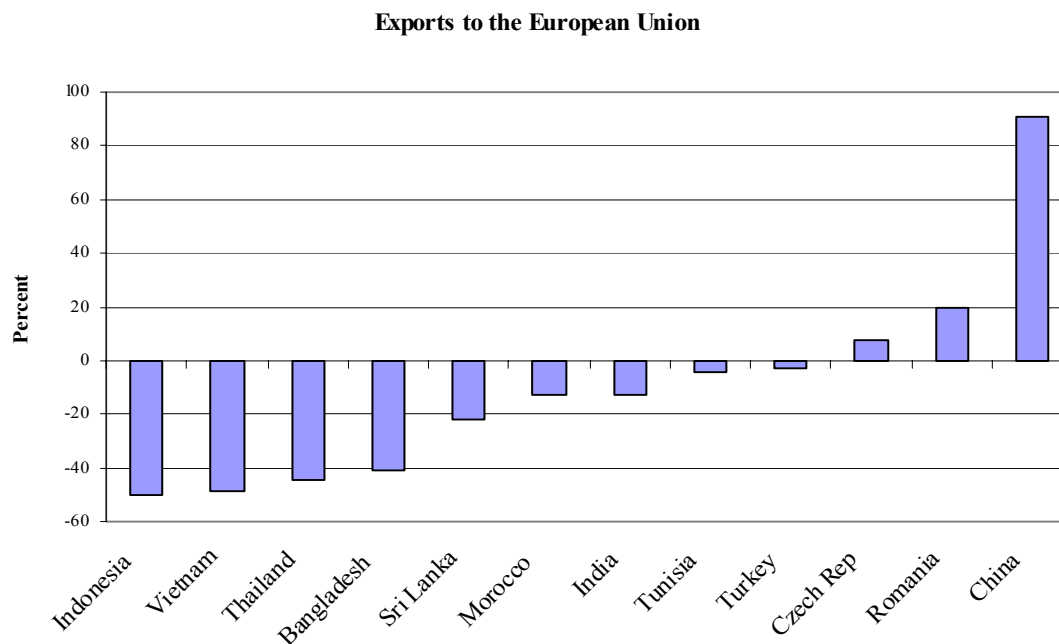
¹⁹ Note that although these numbers are also computed at the quota level they are not comparable with those for the U.S. markets as product classifications differ. All results are based on data provided by the European Commission.

²⁰ See Appendix Table A.8 in World Bank (2004). These ETES seem to be extraordinarily high, ranging from 82 percent to several hundred percent.

²¹ Data on Indian ETES at the product level in the EU market are not available.

²² The similarity index failed to capture the potential export competition because binding quotas on one country raise exports from its competitors while reducing that country's exports. The resulting low export similarity resembles the endogeneity problem of calculating trade-weighted average tariff.

Figure 4. Changes in the Value of T&C Products under the Third Phase of Quota Integration
(percentage change Jan.-Sept. 2003 vs. Jan.-Sept. 2001)



Source: EU, U.S. International Trade Commission, and IMF staff estimates.

1/ Vietnam's exports increased nearly fifty-fold, albeit from a low base.

IV. DOMESTIC SUPPLY CONSTRAINTS

In addition to generous quota access to major export markets, Bangladesh's key competitive advantage is low wages. Unit labor costs are about 20–30 percent and 30–40 percent lower than in India and China, respectively, although labor productivity, as measured by value added per worker, is also lower (Table 9). This lower productivity is a result of a number of supply constraints that need to be overcome if Bangladesh is to improve its competitiveness.

Table 9. Selected Characteristics of the Garments Sector

Country	Latest year	Value added	Wages and	Materials	Costs of	Operating
		per employee	salaries per	and utilities	labor	surplus
		(in U.S. dollars)		(in percent of output)		
Bangladesh	1997	900	400	75.4	9.7	15.0
China	2001	5,000	1,600	74.8	13.7	11.5
El Salvador	1998	5,100	2,500	30.7	33.5	35.7
Hong Kong SAR	1999	27,600	14,800	71.1	15.5	13.4
India	1998	2,600	700	77.8	6.3	15.8
Indonesia	1999	2,500	600	63.4	8.5	28.1
Morocco	1998	4,000	2,500	55.9	27.9	16.2
Sri Lanka	1998	2,500	700	53.4	13.6	33.0

Source: European Union (2003); *China Statistical Yearbook 2002*; World Bank (2004).

A. Structural Rigidities

Structural rigidities have made it difficult for Bangladesh to fully exploit its labor cost advantage. In a recent World Bank-led study (Bangladesh Enterprise Institute and World Bank 2003), the following are identified as key structural constraints to investment in Bangladesh:

- Defective and insufficient infrastructure poses some of the most severe obstacles to companies in Bangladesh.
- Corruption is pervasive and costly. It often manifests itself in excessive regulation, leading to extortion and bribery. Companies rank it as a severe obstacle to business.
- High levels of nonperforming loans reduce the capacity of banks to lend at reasonable interest rates, especially to small and medium-sized enterprises.

While weak infrastructure is an impediment to activities across all industries, it often imposes a critical constraint on export-oriented industries, such as textiles and clothing, where

competitive prices, consistent quality and reliable delivery are vital for export success. Electricity supply continues to be a bottleneck despite considerable FDI received in the power sector over the past decade. About 70 percent of companies rely on back-up generators that supply electricity at a cost typically 50 percent higher than the price of power from the public grid. Bangladesh has expensive and often inaccessible telecommunications networks (especially for overseas connections). The country has significantly lower intensity of telephone lines and higher international rates than its major export competitors. Although Bangladesh has a reasonably developed nationwide road network, there is considerable congestion on the roads. Bangladesh's main export gateway, the port of Chittagong, is very slow in handling containers due to lack of cranes. The development of a privately owned container terminal at Chittagong has been slow as a result of labor disputes. Increasingly, exporters have resorted to air freight to avoid losing orders, thereby further squeezing profit margins. In an era in which export success is increasingly dependent on rapid response and quick turnaround of orders, Bangladesh's poor infrastructure places its exporters at a distinctive disadvantage against their competitors (Cookson, 2003b, and Spinanger and Wogart, 2001).

In the post-ATC textile and clothing market, infrastructure costs will become an increasingly important determinant of FDI inflows and import sourcing. A survey of major investors conducted in Hong Kong SAR in 2000 shows that apart from quotas, political stability, policy predictability, and good transport infrastructure are the most important factors in influencing FDI in the RMG sector (Spinanger and Wogart, 2001). Interestingly, lower wages, if not associated with reasonable productivity, are not a very important factor. A follow-up survey (Spinanger and Verma, 2003) conducted in 2003 shows that transport infrastructure has become even more important while the availability of quotas has become a less critical factor for investment decisions as the final stage of quota integration draws closer. The importance of transport infrastructure in determining import sourcing is highlighted by a recent study that finds that each additional day in transit is equivalent to an extra 0.8 percentage point increase in applied tariffs (Hummel, 2001).

The perception of widespread corruption further reduces the attractiveness of Bangladesh as an FDI destination and source of imports. In 2003 Bangladesh was ranked last out of 133 countries in the Transparency International Corruption Perception Index. Furthermore, excessive and capricious bureaucratic controls with large discretion in their implementation, especially licensing requirements and complicated customs procedures, are viewed as a major impediment to FDI and trade. Finally, weak law and order, and especially widespread extortion, hinder foreign investment.

B. Policy-Induced Constraints

In addition to the above structural weaknesses, there are a number of policy-induced rigidities that have reduced the competitiveness of the textile and clothing sector. These include: (1) restrictions on FDI in the sector; (2) a requirement to have back-to-back letters of credit (LCs) before imports can be approved; (3) a requirement to reserve 40 percent of export cargo for domestic vessels; and (4) an inefficient quota allocation system.

Except in the EPZ, FDI in the RMG sector is severely restricted to protect local producers. All new FDI in the sector has to be vetted by the Board of Investment (BoI) in consultation with the RMG Manufacturers' Association, which fears competition for quota allocation. Although the latter has no formal veto power, in practice the BoI has followed the association's recommendations. In general, the manufacturers only recommend approval of FDI in subsectors where Bangladesh is deemed not competitive.²³

In restricting the role of FDI in the broader textile and garment industries, Bangladesh has foregone a number of FDI-related benefits. Foreign investors often bring superior technology and managerial skills. FDI also helps local firms join the global value chains, which are dominated by multinational companies based in industrial countries (Gereffi, 1999). Such value chains are often critical sources of product information and channels for export sales. Greater integration with the global value chains has enabled Bangladesh's competitors to move faster to higher quality merchandise, usually under brand names, where the profit margins are better. As noted early, Bangladesh's average unit prices for major product categories are considerably lower than for corresponding Chinese products. Of course, FDI restrictions only partly explain Bangladesh's low export prices. Other factors include inadequate labor training, outdated equipment, poor infrastructure, and the relatively large quotas that give Bangladeshi exporters fewer incentives for product upgrading.

Current global value chains are characterized by consolidation of sources of supply and increased involvement of retailers in product sourcing, quality control, and the setting of labor and environmental standards (Gherzi Textil, 2002). As a result, the role of pure buying houses that Bangladesh relies on is declining.²⁴ Consolidation in Bangladesh is taking place among the larger manufacturers who are pulling together factories in one location with larger and better facilities and equipment. Some large operators are planning to relocate to areas of Bangladesh away from large cities, where labor costs are lower. Smaller operators who will be unable to consolidate their operations are most likely to suffer, especially given Bangladeshi business practice whereby large operators rarely buy out struggling small factories.

The requirement of back-to-back LCs significantly increases the lead times for exporters. With a few exceptions, imports of raw materials for use in the RMG can only be approved if there are back-to-back LCs.²⁵ In other words, approval for imports is granted if an importer can prove that he already has an export order backed by an LC. The justification for this rule is to prevent non-exporters from benefiting from the duty-free access to inputs that is available to exporters. In practice, this rule benefits greatly the domestic producers of textiles

²³ Permission is usually given only for manufacturers that have at least one backward linkage. For a more detailed discussion of the FDI regime in Bangladesh, see Sattar (2000).

²⁴ A buying house is an intermediary without its own retail operations.

²⁵ Firms may be allowed to import up to four months' needs if the proposed export complies with norms under the Import Policy Order, notably minimum value addition of 25 percent. This generally favors only large firms.

used in the production of garments because of the effective lengthening of delivery time for imported inputs.

Under the Flag Protection Ordinance (1982), exporters are required to set apart 40 percent of export cargo for domestic vessels. The law has not been effectively enforced as it is difficult in practice to split individual shipments 40–60 percent. Exporters usually get around the requirement by seeking waivers from the office of the Director General of Shipping. While the law’s effectiveness is debatable, it imposes considerable costs on exporters in terms of lost time and potential corruption. The recent ban on the use of land ports for imported RMG inputs from India is also likely to further increase export costs.

The quota allocation system, which is based on past performance, is inefficient. It is backward-looking and does not encourage competition. The system has favored large and well-established firms at the expense of newer, potentially more innovative firms. A more transparent quota allocation system based on competitive auctions would have given the most efficient exporters greater access to quotas, while at the same time reducing governance problems and providing some revenue for the government. Looking forward, the abolition of quotas should therefore create a more level playing field.

Box 2. Bangladesh—Textile and Clothing Quota Administration

Quota allocation in Bangladesh is administered under the Textile Trade and Quota Administration Rules (1991). A Quota Allocation and Monitoring Committee comprising the Export Promotion Bureau (Chair), government representatives, and the textiles and clothing manufacturers’ associations administer quota allocation. About 95 percent of quotas are given to existing registered exporters on the basis of the previous year’s performance (“performance quotas”) and the rest is allocated equally to new exporters.

Quotas are allocated free of charge. There is no officially-sanctioned secondary market for quota trading. However, a grey market exists where primary quota holders can sell their quotas to other exporters. Bangladesh’s relatively high quota utilization rates suggest that trading in quotas may be quite active and has helped reduce the inefficiency resulting from the initial allocation.

C. Privileges Enjoyed by the RMG Sector

Various schemes and measures have been instituted over the years to mitigate the effects of the supply constraints on the export sector. The RMG sector, in particular, enjoys considerable policy preferences, including:

- *Duty drawback scheme.* The RMG sector benefits from a duty drawback scheme for raw materials whereby import duties paid on these materials are reimbursed to the importer upon execution of an export order. However, poor implementation of the arrangement has resulted in delays in reimbursement and payment of kickbacks to tax officials who administer it.

- *Bonded warehouse.* Raw materials for garments manufacturing may be imported without duty payments and kept in bond.
- *Reduced income tax rates.* The government during the FY04 budget reduced the corporate income tax rate for RMG industries from 30 to 10 percent for the period up to June 30, 2006. At the same time, income tax rates for textile manufacturers were reduced from 30 and 35 percent to 20 percent for the period up to June 30, 2006. Reduced income tax rates are unlikely to have much of an impact for most of the producers because their income tax bills are minimal.
- *Cash incentives.* The government operates a Cash Compensation Scheme (CCS) through which domestic suppliers to export-oriented RMG units receive a cash payment equivalent to 10 percent of the value added of exported garments. In the past three years cash payments have averaged about Tk 6 billion (or over US\$100 million).²⁶ As in the case of duty drawbacks, there have been delays in payment. While the cash incentive scheme is quite costly for the government, its effect on the garments companies is very limited as the subsidies are captured by a few textile manufacturers that meet only a small proportion of inputs required for garments exports.

The overall effect of these arrangements, especially cash subsidies, is rather difficult to establish. The various policies to ensure that imported inputs for export production are not taxed are sound in principle but are very difficult to implement in practice, leading to revenue leakages and rent-seeking activities. The CCS is also onerous to administer. The required documentation is apparently so voluminous that most manufacturers (especially small ones) choose to forego the benefit.

V. ESTIMATING THE EFFECTS OF QUOTA REMOVAL

Several studies have attempted to assess the impact of quota removal on Bangladesh's economy, especially on RMG exports (Table 10). It is difficult to draw reliable conclusions from these studies: (i) some are based on past experience; (ii) some are not quantified; and (iii) some are really based on conjecture. This notwithstanding, most studies agree that the impact is likely to be negative if the Bangladeshi government and industry do little to address key impediments to export expansion. For example, on the basis of recent experiences whereby Sweden and Canada removed quotas in 1991 and 1998, respectively, leading to a loss of market share for Bangladesh mainly to China, Spinanger and Wogart (2001) conclude that there is a high probability that a loss in market share will occur after 2004. Cookson (2003b) estimates that about 50 percent of the U.S. market and 35 percent of the EU market could be lost to competition, leading to an overall loss of 35 percent of RMG exports.²⁷

²⁶ The rate has been progressively reduced from 25 percent in FY01, and is expected to be completely phased out by June 2006.

²⁷ Estimates based on the impact of quota removal to date, performance in 10 key garment categories and discussions with industry leaders.

These results are broadly consistent with the observed effects of quota removal on Bangladeshi exports under the third phase of ATC quota integration. Abstracting from dynamic effects such as changes in productivity in Bangladesh and its competitors, as well as growth in the size of the global market, a linear extrapolation from performance in Phase III integration would suggest that the potential loss in Bangladesh's RMG export values could be of the order of 25 percent when remaining quotas are eliminated in 2005. Assuming that imports of textiles would decline by the same percentage but nothing else changes, the decline in the trade balance could amount to US\$750 million, or 1.5 percent of the 2002 GDP (Table 11).

Table 10. Bangladesh: A Summary of Findings on the Effects of MFA Quota Removal at end-2004

Study	Estimated impact	Methodology	Notes
<i>Cookson (2003a)</i>	35 percent decline in export values; 50/20 percent of U.S./EU market lost	Interviews with main exporters and author's conjecture	No rigorous analysis
<i>Gherzi Textil and others (2002)</i>	Presuming a negative impact but no estimates are available	No quantification of the impact	Focuses on policy recommendations to the authorities
<i>Spinanger and Verma (2003)</i>	GDP: -0.14 percent Overall exports: -0.1 percent Textile exports: 15.5 percent Clothing exports: -7.9 percent	Simulations of combined effects of quota elimination and China's WTO accession using the GTAP model	Numbers bench-marked to a 1997 baseline
<i>Spinanger and Wogart (2000)</i>	Bangladesh's share of Swedish market declined from 0.16 percent to 0.03 within one year after the 1990 elimination of quotas	Ex post estimation. No isolation of the effect of quota removal	Suggestive results for effects of quota removal in 2005

Source: Authors' compilation from the studies listed.

Table 11. Extrapolated Effects of Quota Removal on Bangladesh's RMG Trade (US\$ billion)

	Before quota removal	After quota removal	Change
Exports	5.00	3.75	-1.25
Imports	2.00	1.50	-0.50
Trade balance	3.00	2.25	-0.75

Source: Authors' computation as described in the text.

This simple extrapolation exercise has some important limitations. In particular, such an approach cannot account for the effects of quota phase-out through sectoral linkages, nor can it take into account the economy-wide effects through changes in income, investment and savings. Given the systemic importance of the textile and clothing sector to the Bangladeshi economy, an economy-wide approach to estimating the impact of quota removal is required. While such a framework exists (such as the various general equilibrium models), up-to-date information on key inputs into these models is limited. Data on quota premiums in exporting countries play a critical role as they indicate the relative restrictiveness of quotas across exporting countries. Most of the existing studies rely on estimates for the mid-late 1990s. As

noted earlier, Bangladesh's quota prices may have recently declined relatively to its main competitors, perhaps indicating weakening competitiveness.

The GTAP global general equilibrium model is used in this paper to estimate the impact of the quota phase-out on the Bangladeshi economy (see Appendix I for a brief description of the model and Appendix Table A1 for commodity and region aggregations). To more accurately reflect the current extent of quota restrictions, data on quota premiums are updated based on the latest estimates for Bangladesh. The simulations focus on the static, medium-term effects of quota removal. For this reason, the database of the model is updated to 2007 through a projection exercise, which involves augmenting GDP, population and factor (land, labor, capital and natural resources) endowments with productivity accounting for any slack in GDP growth. GDP and employment projections are based on IMF *World Economic Outlook* (September 2003), while population projections are based on the World Bank *World Development Indicators* (2002). Capital accumulation projections are guided by projected GDP growth and historical data provided in Hertel and others (1996). Changes in arable land are based on Anderson and others (1996). For natural resources, constant prices are assumed over time and the level of resource use is determined endogenously.

In simulating the impact of the quota phase-out, quotas on exports from *all* other developing countries are also removed together with those on Bangladeshi exports (which face restrictions only in the U.S. market, as noted earlier). No other policy changes are introduced. The removal of Canadian and EU quotas on Bangladeshi exports is incorporated in the baseline projections. The simulation does not take account of any dynamic or non-price effects of the quota phase-out, such as improvements in product quality and transport facilities. Whether an exporting country experiences an export expansion or contraction after quota removal depends primarily on whether its production cost (net of quota premiums) is lower or higher than its main competitors'.²⁸ All results are reported as deviations from the 2007 baseline.

A number of scenarios, based on different assumptions on elasticities of substitution and factor markets, are examined. It is assumed in most of the simulations that in exporting developing countries nominal wages remain constant, while employment responds to changes in demand.²⁹ Labor and capital are assumed to be perfectly mobile across industries, but completely immobile internationally. Domestic investment is determined by the expected rate of return, which is equalized (net of risk premium) across countries through international movement of savings in search for higher returns. Saving is a linear function of national income. Land is confined to the use in agriculture, while natural resource use is associated with only mining activities.

²⁸ It is assumed in the model that quota rents accrue to the exporting country. There is some evidence, however, that quota rents are shared between the exporting and importing countries (Krishna and others, 1994).

²⁹ At the margin, this is the unlimited labor supply model. Given the high unemployment rate and the vast pool of the underemployed in rural Bangladesh, this assumption is not unreasonable. Most existing studies tend to assume fixed labor supply, which may not accurately reflect the fact that layoffs are common, except in the public service sector. The numeraire of the model is the average global factor price.

Simulation results confirm the consensus that Bangladesh is likely to be adversely affected by the phase out of textile and clothing quotas (Table 12).³⁰ Under the first scenario, in which standard GTAP elasticities are applied and nominal wages are assumed to be fixed, clothing exports fall substantially, while textile exports contract only moderately.³¹ However, because of the great weight of clothing in total exports, overall exports fall considerably. The extent of the impact on clothing exports is not surprising given their heavy concentration in the restricted markets.³² Overall imports also fall, largely as a result of declines in textile imports. On balance, the trade account deteriorates by 1.2 percent of GDP. Despite the relatively weak backward linkages of the garments industry with the domestic textile industry and the rest of the economy, the effects of quota removal on GDP and employment are large—and perhaps larger than the current share of textile and clothing in GDP would suggest. GDP contracts by 2.3 percent, while employment declines by 4.5 percent.

The simulation results are very sensitive to the elasticities of substitution between products from different countries of origin. Intuitively, the greater the substitutability between Bangladeshi and its competitors' products, the larger is the impact on Bangladesh's exports when quotas are removed. As Scenarios 2 and 3 in Table 11 show, lower elasticities (half the values of the central elasticities) would significantly reduce the impact on Bangladesh, while higher elasticities (double the values of the central elasticities) would imply a dramatic impact on Bangladesh. The central elasticities represent the best judgment on available estimates in the literature, but the true values of these elasticities could be anywhere between the lower and higher bounds. It is important to note that within this wide range of elasticities, the direction of the impact remains unchanged.

Factor market assumptions are critical in determining the impact of the quota phase-out on macroeconomic aggregates. The contractions in textile and clothing exports lead to a decline in the consumer price index and the GDP deflator. This leads to increases in real wages under the assumption of constant nominal wages. As shown in Scenario 4 in Table 11, the impact of quota removal is considerably smaller when real wages are assumed to be fixed (through indexation to the CPI). The impact is even smaller if wages are perfectly flexible so that there will be no contraction in employment (Scenario 5). The balance of trade in fact improves slightly because of a considerable real exchange rate appreciation. Another important

³⁰ The results reported are based on the average (8 percent) of the estimates of quota premiums in Bangladesh. See Appendix II for results on T&C exports for other countries/regions included in the model.

³¹ In the model products are differentiated by country of origin (the Armington assumption). There are two sets of elasticities of substitution: those between domestic products and imports and those between imports by country of origin (see Appendix Table A2 for the elasticity values).

³² Even within textile and clothing exports, the product range is limited: eighty percent of exports of knitwear products are men's and boys' shirts, and T-shirts, while 75 percent of woven products are men's and boys' shirts and trousers and women's and girl's trousers. While these products are not separately modeled, this concentration could bring additional vulnerability to external competition.

Table 12. Bangladesh: Effects of Textile and Clothing Quota Removal, 2007 1/
(percentage deviation from the baseline, unless otherwise indicated)

	Scenario 1 Central elasticities 2/	Scenario 2 Lower elasticities 3/	Scenario 3 Higher elasticities 4/	Scenario 4 Constant real wages 5/	Scenario 5 Constant employment 6/	Scenario 6 Lower investment 7/	Scenario 7 China restriction 8/
GDP	-2.3	-1.3	-4.1	-1.3	-0.3	-3.7	-1.7
Employment	-4.5	-2.5	-7.7	-2.1	0.0	-7.6	-3.2
Trade balance							
In billions 1997 US\$	-1.0	-0.5	-2.0	-0.3	0.3	-0.2	-0.7
In percent of GDP	-1.2	-0.7	-2.1	-0.4	0.3	-0.3	-0.9
Total exports	-14.2	-6.8	-29.5	-8.4	-3	-10.2	-10.1
Clothing	-17.7	-8.3	-38.1	-11.8	-6.2	-13.6	-12.7
Textiles	-4.7	-2.6	-7.4	0.1	4.5	-1.8	-3.2
Total imports	-6.8	-3.0	-15.6	-6.8	-6.7	-8.5	-5.0
Clothing	-6.2	-2.3	-15.9	-9	-11.4	-8.2	-4.9
Textiles	-12.8	-5.8	-28.0	-10.6	-8.4	-11.1	-9.5
Clothing output	-17.0	-7.9	-36.5	-11.3	-5.9	-13.1	-12.2
Textile output	-8.9	-4.5	-17.8	-3.7	1.2	-5.7	-6.3

Source: Simulations with the GTAP model, as described in the text.

1/ The percentage change numbers are not changes in the growth rates of the variables. These are changes in the levels of the variables benchmarked against the baseline which assumes textile and clothing quotas would continue to exist in 2007.

2/ Constant nominal wages and medium levels of elasticities.

3/ Half of the central elasticities. Constant nominal wages.

4/ Double of the central elasticities. Constant nominal wages.

5/ Nominal wages are fully indexed to the CPI.

6/ Wages are fully flexible to maintain current employment.

7/ As a result of one percentage point rise in the risk premium for investment in Bangladesh. Constant nominal wages.

8/ China's T&C exports to the U.S. and EU increase only by half of those under scenario (1). Constant nominal wages.

assumption is how investment will be affected by quota removal. If investors believe that Bangladesh will be adversely affected by quota removal, there could be a demand for a higher expected rate of return on investment in Bangladesh. Such a possibility is illustrated in Scenario 6, where it is assumed that investors perceive a rise in the risk premium of 1 percentage point in Bangladesh. This would exacerbate GDP and employment contractions, but reduce the impact on the trade balance by further reducing investment.³³

Given the recent pressure in the U.S. and EU to reimpose quotas on Chinese textile and clothing exports after 2004, a simulation of restrained Chinese exports is also carried out (Scenario 7).³⁴ It is assumed that as a result of a newly negotiated arrangement, Chinese textile and clothing exports would increase by only half what they would if quotas were completely phased out. The results indicate that the adverse impact on Bangladesh's GDP, employment and exports would be about 30 percent less than under the first scenario. The dampened expansion of China's exports is partially offset by increases in exports from Bangladesh's other competitors, such as India and ASEAN.

An increase in productivity would help offset the adverse effects of the quota phase-out. Simulations indicate that to maintain the baseline level GDP, Bangladesh would need to increase its total input productivity in the textile and clothing sector (relative to its competitors) by 4–5 percent (cumulatively) in 2007. To ensure baseline level employment, the sector needs to achieve a 5–6 percent increase in productivity. Such productivity improvements, though not particularly large, would also substantially reduce the potential deterioration of the trade balance. This underscores the importance of overcoming supply constraints (e.g., weak infrastructure) analyzed in the previous section.

VI. CONCLUDING REMARKS

Three factors seem to have contributed to Bangladesh's impressive export performance in the textile and clothing sector in the 1990s: low wages, initial FDI inflows, and generous quotas in the restricted markets relative to its main competitors. Low wages and generous quotas initially attracted FDI and enabled rapid export growth, but Bangladesh has not been able to capitalize on this by continuously upgrading and diversifying its RMG exports. In fact, large rents generated by quotas and government assistance may have weakened incentives to improve productivity. With the continuous phase-out of quotas, Bangladeshi exporters are facing increasing competition. The export slowdown since 1998 and evidence from the third phase of quota removal

³³ The long-term adverse effect of reduced investment on the balance of payments and growth is not captured here as investment does not affect the capital stock given the static nature of the model.

³⁴ The United States has already reimposed quotas on three categories of textile imports from China in December 2003 and is reportedly trying to negotiate a more broadly based new quota system to forestall the expected rapid expansion of Chinese exports after 2004.

indicate that Bangladeshi exporters are likely to find it difficult to maintain their market shares in the United States and the EU after 2004.

This relatively weak competitiveness makes the Bangladeshi economy highly vulnerable to the final stage of the quota phase-out. Simulation results indicate that Bangladesh's exports could fall substantially in the wake of quota removal, and its balance of payments position could be weakened considerably. While the RMG sector's contribution to GDP is relatively small, the impact of quota removal could be amplified through labor market rigidities as well as indirect effects through backward and forward linkages to the rest of the economy. The resulting pressures on production and employment could also be severe.

It should be emphasized that the simulated numerical estimates are not predictions of what will happen after 2004. They are conditional on a number of important assumptions about the domestic and external environment. A critical assumption is an unchanged domestic policy environment. Obviously, the domestic policy environment is likely to change: the authorities are implementing an economic reform program, which should, over time, alleviate some of the structural impediments, notably weak infrastructure and high lending rates. At the same time, some of the larger RMG manufacturers are also actively preparing for the post-quota era by consolidating and restructuring their operations to improve labor, environmental, and quality standards.

These notwithstanding, there are factors that have important influences over the final outcome, which may be beyond the authorities' control. If, for example, investors perceive a major weakness in Bangladesh's competitiveness after 2004, investment could contract further, exacerbating the negative impact on employment and output.³⁵ There is also considerable uncertainty over the extent of labor market flexibility in Bangladesh and how easily its products can be replaced by those from its competitors. Quotas could be reintroduced on Chinese exports to the advantage of Bangladeshi exports. But Bangladesh should not count on this, as other competitors are also able to pose serious challenges to its current market position even if Chinese exports are indeed restricted after 2004. The most reliable way of maintaining Bangladesh's current market share and hence reducing its vulnerability to the quota phase-out is to remove the various supply constraints identified in this study and elsewhere.

Over the past decades, progress in addressing structural impediments to trade expansion has been slow. Bangladesh's poor infrastructure—e.g., its unreliable power supply, expensive telecommunications networks, congested roads, and inefficient seaports—have imposed substantial costs on its export industry. Together with poor governance, as reflected in widespread corruption, these have contributed to a poor investment climate that hinders foreign and domestic investment alike.

³⁵ See Centre for Policy Dialogue (2003), for a discussion of the potential social impact of the quota removal.

Many of the structural weaknesses of the RMG sector are at least in part policy induced. After playing a critical role in establishing an exported-oriented RMG industry, FDI has not been allowed outside of the EPZ sector or to produce quota-restricted products. An important channel of competition, marketing, and technology transfer has been foregone to the detriment of the long-term competitiveness of the domestic industry. The quota allocation system has benefited large and established exporters, serving as a disincentive to competition and diversification, as well as encouraging rent-seeking activities and corruption. The government has instituted a number of arrangements to help the RMG industry, but they are skewed in favor of large textile firms and the resulting bureaucracy has substantially reduced their effectiveness. Moreover, some of these arrangements are quite costly to the budget.

Bangladesh faces a serious challenge in maintaining its competitiveness in a post-ATC era. This challenge should serve as a wake-up call for policymakers. With its vast labor resources, Bangladesh has great potential to expand its exports of RMGs and other labor-intensive exports if its key structural weaknesses can be overcome. Bangladesh needs to make determined efforts to raise productivity through accelerated structural reforms.

The GTAP Model

The Global Trade Analysis Project (GTAP) model used in this paper is a comparative static, global general equilibrium model based on neoclassical theory.³⁶ Firms maximize their profits while consumers maximize their utility. All markets are assumed to be perfectly competitive, and constant returns to scale prevail in all production and trading activities.

Firms use both a composite of primary factors and a composite of intermediates to produce their output according to Leontief production technology. The primary factor composite is a constant elasticity of substitution (CES) function of labor, capital, land and natural resources, while the intermediate composite is a Leontief function of material inputs, which are in turn CES blends of domestically produced goods and imports. Imports are sourced from all regions, with their share depending on trading prices (the Armington approach).

On the demand side, each country or region is assumed to have a “super” household disposing of regional income in fixed proportions in the form of private consumption, government expenditure and savings. Household consumption is assumed to be a constant difference in elasticities (CDE) function of various consumer goods while government expenditure is based on a CES function of various commodities. Both household and government consumption are CES blends of domestically produced goods and imports, which are in turn sourced from all trading regions based on the Armington approach.

In closing the model, regional savings are assumed to be homogenous and contribute to a global pool of savings, which is then allocated among regions for investment in response to changes in regional expected rates of return. These changes are assumed to be equalized across regions, thus giving rise to capital (i.e., savings) mobility across regions. This allows for greater changes in the trade balance as a result of trade liberalization and tends to dampen the terms of trade effects. In contrast to savings, capital stocks are assumed to be immobile across regions, although they are perfectly mobile within a region, as is labor. Land and natural resources are industry-specific, and only limited transformation of their uses among industries is possible.

The simplicity of the GTAP model makes its simulation results relatively easy to interpret, but limits its capacity to deal with more complex economic issues, such as the adjustment path over time and long-term effects of trade policies associated with investment accumulation, technology and productivity change. Also absent in the model

³⁶ Full documentation of the GTAP model and its accompanying database can be found in Hertel (1997) and Dimaranan and McDougall (2002). The GTAP model is solved using the software GEMPACK (Harrison and Pearson 1996).

are adjustment costs associated with trade liberalization. These limitations must be kept in mind when interpreting the results presented in this paper.

The GTAP database provides data on key trade policies, as well as on other essential data for a large number of countries and commodities. The base year for the data is 1997. The region/country and commodity aggregations are shown in Table A1 and the elasticities used in the simulations are presented in Table A2.

Data Aggregation and Armington Elasticities

Table A1. Country/Region and Industry Aggregations Used in the Model

Country/region	Industry
Bangladesh	Agriculture and food
United States	Mining
European Union	Textiles
Other advanced countries	Clothing
Asian newly industrialized	Other manufacturing
ASEAN	Services
China	
South Asia	
Middle East and North Africa	
Latin America	
Sub-Saharan Africa	
Rest of the world	

Table A2. Central Scenario Elasticities of Substitution in Demand for Goods

Commodity	Elasticity of substitution between domestic goods and imports	Elasticity of substitution between imports by country of origin
Agriculture and food	2.4	4.7
Mining	2.8	5.6
Textiles	2.2	4.4
Clothing	4.4	8.8
Other manufactures	2.9	6.0
Services	1.9	3.9

Source: Based GTAP database version 5.

Table B1. Effects of MFA Quota Removal on T&C Trade, 2007 1/
(values in 1997 prices)

	Exports				Imports			
	Clothing		Textiles		Clothing		Textiles	
	Percent	US\$ billion	Percent	US\$ billion	Percent	US\$ billion	Percent	US\$ billion
Bangladesh	-17.7	-1.9	-4.7	-0.1	-6.2	0.0	-12.8	-0.6
Newly industrializing economies	-9.6	-0.8	2.3	0.8	-0.4	0.0	-0.7	-0.1
ASEAN	5.2	1.3	8.2	1.1	0.4	0.0	2.4	0.3
China	100.7	25.5	10.8	2.9	3.3	0.1	11.0	2.3
Rest of South Asia	94.5	16.4	13.9	1.9	58.6	0.1	33.2	1.0
Middle East and North Africa	-24.0	-2.5	-10.3	-0.9	-2.1	-0.1	-4.0	-0.5
Latin America	-50.1	-8.8	-11.4	-1.1	1.0	0.1	-4.0	-0.5
Sub-Saharan Africa	-30.8	-0.5	-7.7	-0.1	-1.1	0.0	-2.3	-0.1
Rest of the World	-22.9	-2.3	-5.4	-0.4	-1.1	-0.1	-1.9	-0.3

Source: Simulations with the GTAP model as described in the text.
1/ Results corresponding to Scenario 1 in Table 12.

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