

## **Whither the Textile & Clothing Trade after MFA/ATC?**

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### **1. Textile and clothing sector**

T&C exports, albeit mature in technology involved and relatively stable in trade volume, have been major triggers to industrial development for many developing economies. Anecdotes abound which stress that, in East Asia after the World War II, Japan, Hong Kong, South Korea, and Taiwan (first tiers) initiated their development with T&C exports in the 1950s and 1960s, followed by ASEAN and China (second tiers) in the 1970s and 1980s, and the third tier exporter group such as Bangladesh, Sri Lanka, Nepal, Vietnam, Laos, and Cambodia since the mid 1990s. The T&C trade regime changed greatly on January 1<sup>st</sup> 2005, which may impede further development of T&C in the third tier exporters.

On the other hand, this T&C trade regime change is welcomed as the integration of long-distorted T&C trade to the WTO regime: T&C imports to the two big markets of the United States and European Union have been constrained by tightly managed quota system under the Multi Fiber Arrangement (MFA) during 1974-1994 and the Agreement on Textiles and Clothing (ATC) during 1994-2004. The MFA started in 1974 in order to constrain export rush by the first tier exporters but the T&C trade have never remained fixed for those years. US and EU gave generous quota to the second tier exporters in excess of their capacities but their exports have now overfilled their given quota. Thus the third tier exporters are expanding their exports under generous quota. In addition US and EU give special favor to Caribbean and ACP (Africa, Caribbean and Pacific) economies respectively under preferential arrangements. The shares of developing exporters in the two markets have changed considerably over the past thirty years.

The Uruguay Round negotiation (1986-1994) agreed to terminate the 20 year-old managed trade regime of the MFA within ten years and the ATC replaced MFA to manage the phasing out of quota by three stages. However, the peculiar form of phasing out (e.g., substantial reduction is implemented at the very end of ten years) caused concern among economists about the actual termination of the managed trade.

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This research addresses major characteristics of textile and clothing (T&C) trade in a partial equilibrium, analytical framework and convey prescriptions for the likely outcome of the policy changes in the sector.<sup>3</sup> The next section briefly furnishes the textile sector's history of global trade regime. The third section examines the distorted pattern of T&C trade under MFA/ATC focusing on exports to the US and EU markets from East Asian exporters. Section 4 explains the unique position of Japan who did not resort to the MFA restriction and whose market shares reflect undistorted competitiveness of the East Asian exporters. Section 5 analyzes the impacts of quota removal on quota-restricted and quota unrestricted exporters, while Section 6 measures the restrictiveness of the MFA quota, both fully utilized and under-utilized, and gives a prediction exercise of the T&C trade after 2005. Section 7 adds two discussions, dynamic effects and its application to the East Asian exporters. Section 8 concludes the paper with a brief review of the aftermath of completion of ATC in 2005 and future prospect of T&C trade.

## **2. Critical Review of the MFA and the ATC**

In as early as the late 1950s Japan resumed its exporter's position of the Pre-World war Two period. Her cotton product export caused demand for protection in the US market and triggered the first managed trade regime of cotton products, Short-Term Agreement and Long-term Agreement (STA in 1961 and LTA since 1962). Japanese manufacturers upgraded to synthetic fabric production and her 'one dollar blouse' rushed in to the US market and triggered a severe trade negotiation of 'US-Japan Textile Wrangle' (1969-1971), which was resolved with Japan's voluntary export restraints. The textile and clothing production spread to the neighbor East Asian economies of Hong Kong, Taiwan, and South Korea throughout the 1960s and they all directed their exports to the US and European markets. The United State quickly applied the similar export restraints to the three economies, which led to the full-fledged managed trade regime of Multi-fiber Agreement (MFA) in 1974, followed by EC in 1978. textile and clothing production was transplanted by both local firms and Japanese FDI to some ASEAN member economies of Singapore, Thailand, Philippines, and

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<sup>3</sup> Some computable general equilibrium (CGE) model predictions have been published on the impacts of complete liberalization of T&C trades (e.g., Yang, Martin and Yanagishima, 1997), but their underlying assumptions miss the complicated distortion of the T&C trade regime and may mislead judgment on impacts of the policy change.

Indonesia in the 1970s and 1980s as well as by China only in the 1980s.

World trade in T&C was severely constrained under the managed trade scheme of Multi-fiber Agreements (MFA). This unique scheme was introduced in 1974 as a temporary measures for a four year period in order to give importing countries breathing time for adjustment while ensuring exporting countries orderly expansion of exports by at least six percent per annum. There were two types of restrictions under the MFA. Article Three provided a safeguard measure in the presence of market disruption regarding specific products. It enabled importing countries to request consultation with an exporting country or countries to limit exports to a fixed level for a twelve month period. Article Four enabled importing and exporting countries to conclude bilateral agreements in order to eliminate market disruption in importing countries and disruption to the textile trade of exporting countries.

The major importing countries, such as the United States and the European Community, mostly applied Article Four and concluded bilateral agreements with individual exporting countries on the base level and growth rates of imports of individual T&C products. They have thus established a managed trade network, instead of resorting to the Article Three safeguard to deal with actual market disruption.

Contrary to the assurance of generous implementation of Article Four, the MFA restrictions have tended to be strengthened in terms of coverage and implementation. The MFA was extended four times/ MFA2 for 1978-82, MFA3 for 1982-87, MFA4 for 1987-91 and again to the end of 1993 owing to the delayed conclusion of the Uruguay Round. Quotas was expanded by barely 1 percent, in line with the growth of domestic demand. Neither carry-forward nor transfer between products groups has been permitted. Contrary to its original intention, the MFA subjected T&C trade to tight management for 20 years.

The impact of the MFA has been given diverse evaluations. The MFA restrictions provided domestic producers with rent in the form of restricted competition with imports, higher product prices, but often greater sales values. An awkward transaction pattern emerged under the MFA restriction. Individual exporting countries allocate their country' export quota to a particular importing country among individual exporting firms who could increase exports only to the extent of their quota. When some firms failed to export to the full extent of given quotas, unused quota was redistributed among other exporting firms. Because of inevitable time lag and in

administration and redistribution, this practice tended to leave some quotas unused by the end of the year. The export quota system under Article Four tended to depress competition among exporters by restricting exports of efficient firms while benefiting less efficient firms. The export price was thus raised and the higher prices constituted a rent (additional income) to some exporters.

Textile negotiations used to be regarded as one of the most difficult items in the Uruguay Round because of the severe conflict of interest between developing country exporters and industrial country importers. However, textile negotiators finally agreed on a single way of phasing out the MFA. Under the UR Agreement on T&C (ATC), all MFA restrictions were to be removed by stages and T&C trade integrated into the WTO rules within ten years: item equivalent to 16 percent of total T&C trade in the first year (1995), another 17 per cent in the fourth year(1998), another 18 per cent in the eighth year (2002), and the remainder 49 per cent in the tenth year(2004). This peculiar form of phasing out of quota caused observers concern that the complete removal of the quota may be extended further at the end of 2004. Contrary to their concern, the ATC was completed at the end of 2004 and all MFA quota were abolished by both the United States and European Union.

Tariff reduction have been negotiated as a part of Market Access for Non-Agricultural products, MANA of the current Doha Development Agenda negotiation (DDA). Both developed (importing) and developing (exporting) countries tend to impose higher tariffs on T&C products than other manufactures. In US and EU average T&C tariffs are 8-10 percent, while 25 percent tariffs still remain on some products. 20-30 percent tariffs are common in Thailand, China, ad India. The recent failure in WTO ministerial meeting in agreeing on agricultural liberalization will prolong these high tariffs on T&C for several more years.

### **3. Distorted T&C Trade under MFA/ATC**

T&C trade was subject to complicated managed system under MFA/ATC regime. Both tariffs and quota were imposed. While quota was more restrictive than tariffs, T&C products imported within quota were additionally charged by tariffs on their imported prices and many developed countries imposed higher tariffs on T&C imports. Under Generalized Scheme of Preference for developing economies since 1970 (GSP) tariffs were exmpted on many manufactured products of developing economies,

T&C products were often exempted only by 50 percent or excluded from the GSP itself in US and EC.

Quota for individual exporting countries were decided by bilateral agreement with the US or EC. Quota was originally expected to increase by 6 percent every year, but it was modified according to the market situation of importing countries. Both the US and EC tended to set quota for the first tier exporting economies smaller than their production capacities and allowed only a small increase. On the other hand, ASEAN members and China concluded bilateral agreements only in the 1980s and were given much greater than their capacities so that they could increase exports to US and EC unrestricted under MFA. However, in the 1990s China and some ASEAN members' export caught up with their quota and began to feel restricted under MFA.

The step-wise quota liberalization under ATC started after 1994, most T&C products remained restricted under quota. Quota administration continued under bilateral agreements and became more complicated. Third tier exporter groups such as Cambodia, Vietnam, Laos, Myanmar, Bangladesh, Sri Lanka, appeared in the 1990s and they were given generous quota so that they could expand their exports to US and EU markets against the first and second tier groups. In addition, both US and EU gave quota-free status to T&C exporters under their respective regional trade agreements (RTA) such as NAFTA and US-Caribbean Trade agreements by US and expanded and associated members of European Community. They were not only quota free but also exempted from tariffs. The application of strict Rules of Origin (ROO) of Individual RTA has tended to discriminate the third tier exporters because many of them import textile input and export after sewing so that they could not clear the high local content requirement and could not meet the qualification of least developed country products.

These complicated restriction scheme were reflected in the market shares of individual exporting countries in the US and EC markets. Tables 1 and 2 show the change of market shares of major exporting economies (focusing on East Asia) in the US and EC markets over the past three decades. They substantiate the arbitrary quota allocation under MFA/ATC by the US and EC to different exporting groups and how the T&C trade pattern was distorted from their competitive edges in the quota-free market.

In the US market (Table 1), Hong Kong, Taiwan, and South Korea had greater shares in 1976 and 1982, but their share declined steadily through the 1990s and 2000s. By 1994 China and advanced ASEAN members expanded their shares. In the 2000s,

third tier exporters as well as quota free groups of Mexico and Caribbean countries increase their shares, while only China kept its increasing trend.

In the EC market (Table 2), a similar trend is observed. The first tier exporters of East Asia had greater shares, although not as big as in the US, but decreased their shares steadily thereafter. ASEAN came next by 1994 but got stagnant thereafter. China increased its share all through but only less than a half in the US. Third tier group as well as new members and associate members occupied a greater shares.

**Tables 1 and 2. Exporters' shares in the US and EU (SITC 84)**

	(percent)					
<b>The US market</b>	<b>1976</b>	<b>1982</b>	<b>1988</b>	<b>1994</b>	<b>2002</b>	<b>2005*</b>
•Japan	3.1	1.4	-	0.3	0.3	0.5
Korea	17.3	14.9	-	6.1	3.5	2.1
Hong Kong	24.1	17.1	-	12.0	6.2	4.0
China	7.8	9.6	-	17.2	15.2	25.1
Taiwan	n.a.	n.a.	n.a.	n.a.	n.a.	1.8
Thailand	1.2	1.5	-	2.7	3.4	2.4
Philippines	3.3	3.5	-	4.0	3.0	2.2
Indonesia	0.8	1.9	-	3.2	3.5	3.5
India	2.0	2.5	-	3.7	3.3	5.2
Bangladesh	0.1	1.3	-	2.5	3.0	2.8
Vietnam	0	0	-	0	1.5	3.2
Cambodia	0	0	-	0	1.7	1.9
Canada	1.0	1.4	-	2.5	3.0	3.2
Mexico	2.0	2.2	-	4.9	11.6	8.1
Latin America	5.6	8.4	-	14.6	24.4	n.a.
<b>The EU market</b>	<b>1976</b>	<b>1982</b>	<b>1988</b>	<b>1994</b>	<b>2002</b>	<b>2005*</b>
•Korea	4.1	5.1	4.5	1.3	0.8	0.7
Hong Kong	10.6	8.9	8.0	6.6	5.1	1.2
China	0.8	1.5	3.1	8.4	11.3	14.0
Thailand	1.0	0.8	1.6	1.4	1.4	0.7
Indonesia	0	0.2	0.7	2.2	2.1	1.0
India	1.3	2.2	2.3	3.6	3.5	3.5
Bangladesh	0	0	0.5	1.6	3.4	2.5
Vietnam	Na	0	0	0.5	0.9	0.5
Cambodia	Na	0	0	0.1	0.5	0.3
Middle East	0.6	1.1	3.3	6.9	9.1	n.a.
Turkey	0.6	0.8	2.7	6.1	8.7	7.3
East Europe	2.6	2.9	2.4	9.2	11.6	n.a.
EU12	46.5	44.6	42.1	36.4	29.2	51.6

Notes: Figures denote shares in terms of quantity for the US and EU, and shares in terms of value for Japan. Exporters are grouped into the first-, second- and third-tier exporters by horizontal lines.

\* Figures are for the case of "all textile products covered under the ATC" for EU25.

Sources: For US's figures, Department of Commerce (<http://otexa.ita.doc.gov/msrpoint.htm>). For EU's figures, European Union's homepage ([http://ec.europa.eu/comm/trade/issues/sectoral/industry/textile/trade\\_text\\_stats\\_en.htm](http://ec.europa.eu/comm/trade/issues/sectoral/industry/textile/trade_text_stats_en.htm)), visited on 1 July 2006.

The figures for 2005 should reflect quota-free export for all exporters in theory but the distorted market shares seem to have continued, partly reflecting new safeguard to china by US and EU since the middle of the year. It should be noted that even under the distorted policy of MFA and ATC, total import increased in both US and EU. It is mainly because their competitiveness declined over the past three decades in T&C, especially in clothing . Another contributing factor is active outsourcing activities of major retail firms in the US and Europe, such as Wall-Mart, K-Mart, Marks and Spencer, which acquired all information about quota allocation by US and EU to individual exporters and organized supply chain regime for T&C taking advantage of all policy distortion. They may be regarded as a part of market mechanism.

#### **4. Japan in a Unique Position**

Japan has been in a unique position. Japan participated in the first MFA negotiations as an exporting country and its exports were restricted in the US market by its quota set under the bilateral agreement. However, as exports stagnated and imports increased throughout the 1970s, domestic producers began to demand protection against increasing imports and Japan's policy stance changed into that of an importing country. Although the Japanese government pledged domestic producers to resort to MFA restriction in case of disruptive imports, it managed to avoid it even though it participated as an importing country in the ATC.<sup>4</sup>

Thus individual exporters tried to export to the Japanese market free from quota. Japan also included T&C in its GSP and applied it to all developing economies so that the East Asian first tier exporting economies could keep their competitive advantage there. Besides, Japan imposed lower tariffs than the US and EC, 6-7 percent on cotton fabrics and 8-10 per cent on clothing. Table 3 shows much higher shares for the first tier exporters in the Japanese market. They decreased their shares in the 1990s and 2000s due to their weakened competitive edge in T&C. The second tier exporters of the advanced ASEAN members expanded their exports in the 1990s but got stagnated thereafter. China, on the other hand, steadily increased its export upto 75 per cent so that it has almost dominated the Japanese market. Vietnam and India acquired some shares in the latter part of 1990s but not further. It should be noted that there was no change in market shares from 2003 and 2005, which reflects no policy changes in Japan unlike in US and EU.

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<sup>4</sup> Refer to one of the author's own experience in the METI's Textile Industry Advisory committee in the 1980s.



**Table 3. Exporters' shares in Japan (Clothing, % shares in terms of value)**

Exporter	1985	1996	2003	2005
Hong Kong	14.2	1.6	0.3	0.2
Korea	32.0	6.8	2.5	2.5
Taiwan	n.a.	n.a.	0.9	1.0
Thailand	0.35	2.5	1.6	1.5
Indonesia	0.09	2.0	2.0	1.8
Philippines	0.35	1.0	0.5	0.4
China	18.4	60.4	74.7	76.3
Vietnam	n.a.	2.6	2.5	2.7
India	n.a.	n.a.	1.1	1.1

Sources: Home page of the Ministry of Finance

(<http://www3.jetro.go.jp/cgi-bin/nats/cgi-bin/search.cgi>), visited on 31 July 2006.

The Japan's METI did not resort to the MFA restrictions on T&C imports. It occasionally negotiate voluntary export restraints with the Korean and Chinese governments for selected T&C products but their restrictive effects cannot be compared with the US and EC. This was the reason why import competition intensified in the Japanese market and adjustment had to be made by domestic producers.

While not resorting to the MFA restriction, METI implemented two types of policies. One was the practice of registering spinning and weaving machines (which began in 1967) and occasionally introduced programs for purchasing and scrapping 'excess capacity'. However, the effectiveness of this adjustment program was often questioned and it was finally abandoned in 1995.<sup>5</sup> Another was adjustment assistance given to small and medium firms in the middle stream in modernization of equipment, linked production units (i.e. inter-firm co-operation for joint R&D, dyeing and other facilities etc.), textile resource centers (joint facilities for collecting technology and marketing information), and institutes for fashion industries. It has also subsidized the joint development of the fully-automated sewing system (1982-89) which had been

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<sup>5</sup> This program was a problematic legacy of Japan-US textile Wrangle mentioned in the beginning of Section 2. See Yamazawa(1988) for details of the registration system of spinning and weaving machines.

applied to some clothing process.

Bigger firms in upstream and downstream searched by themselves for ways of survival, including active relocation of their capacities abroad and outsourcing activities to advanced ASEAN members and China. In 2003 METI published its new T&C policies for the 21<sup>st</sup> century which did not mention the intensified competition with imports but focuses on the encouragement of small and medium firms in the middle-stream to develop own business models of linking product planning and development with changing demand by consumers.<sup>6</sup>

US and EU resorted to MFA quota restriction while Japan did not and was exposed to competition with imports, but similar tendency of production and employment was observed in all three. Table 4 shows the overtime changes in T&C production and employment in US, EC12, and Japan. Two observations are worthwhile noting.

**Table 4. Production and Employment of T&C industry for USA, EC12, and Japan: 1965-2000**

Year	Production (US\$ billion)			Employment (million people)		
	USA	EU12	Japan	USA	EU12	Japan
1965	n.a.	n.a.	n.a.	1.06	3.00	1.21
1970	27.1	34.8	13.0	1.11	2.71	1.14
1975	37.1	60.6	23.4	1.00	2.26	0.91
1980	56.8	90.0	39.7	0.99	1.90	0.76
1985	67.3	81.7	38.8	0.84	1.63	0.67
1990	84.4	125.9	64.0	0.83	1.27	0.63
1995	103.8	134.7	73.9	0.84	1.05	0.47
2000	93.3	89.6	47.4	0.64	0.47	0.34

Source: UNIDO, Industrial Statistics 2005.

First, production increased until 1995 in all three, reflecting increasing demand for T&C products through economic growth. On the other hand, employment decreased steadily, implying that, the difference was partly offset by increase in prices of T&C products but mainly explained by increased labor productivity or changes in production technology. Second, employment decreased only by 21 percent in the US, while it decreased by 35-38 percent for 1965-95.

<sup>6</sup> METI, *Future Directions and Policies of the Japanese Textile Industry*, July 2003

Since 1995 when the liberalization of T&C quota under ATC was announced, production turned downward and employment decrease accelerated since 1995 in all three but much less extent in the US than in other two.

## 5. Impacts of import quota: A theoretical model

Research efforts have been made with a view to quantifying the impact of trade liberalization. Most successful among those efforts are computable general equilibrium (CGE) models which have focused upon the welfare increase as well as trade volume increase of each country or region under their consideration. In spite of their analytical sophistication, though, they are not free from some technical constraints: big price changes which are assumed to make the shift in equilibrium; broad country and commodity classification; their static nature without consideration of investment increase and/or productivity enhancement (Walkenhorst, 2003). The most serious limitation of those CGE type analyses would be their “tariff-equivalent” treatment of import quota: rather than directly utilizing quota data, they calculate hypothetical tariff rates that would be only statically equivalent in their trade restrictive nature to import quotas.<sup>7</sup> In the following, an effort is made therefore to redress some of these limitations, albeit at the expense of a general equilibrium treatment.

With the above as a background, this section sketches a 1 market, 2 exporters (restricted by both tariff and quota and unrestricted) model<sup>8</sup> as a benchmark for the analysis below. This is a comparative-static analysis of the removal of quota and tariff reduction thereafter. Figure 1 shows the impact of tariff and quota liberalization in such a partial equilibrium framework. In the Figure,

$P_1$  is the state where no any restriction is imposed;

$P_2 = P_1 (1+t)$  is the state where exporter faces import tariff; and

$P_3 = P_1 (1+t)(1+q)$  is the state where an exporter faces both import tariff and quantity restriction, where  $q$  is the tariff equivalent rate of quota.

In the presence of tariff the supply curve (“ES” curve in the Figure) shifts

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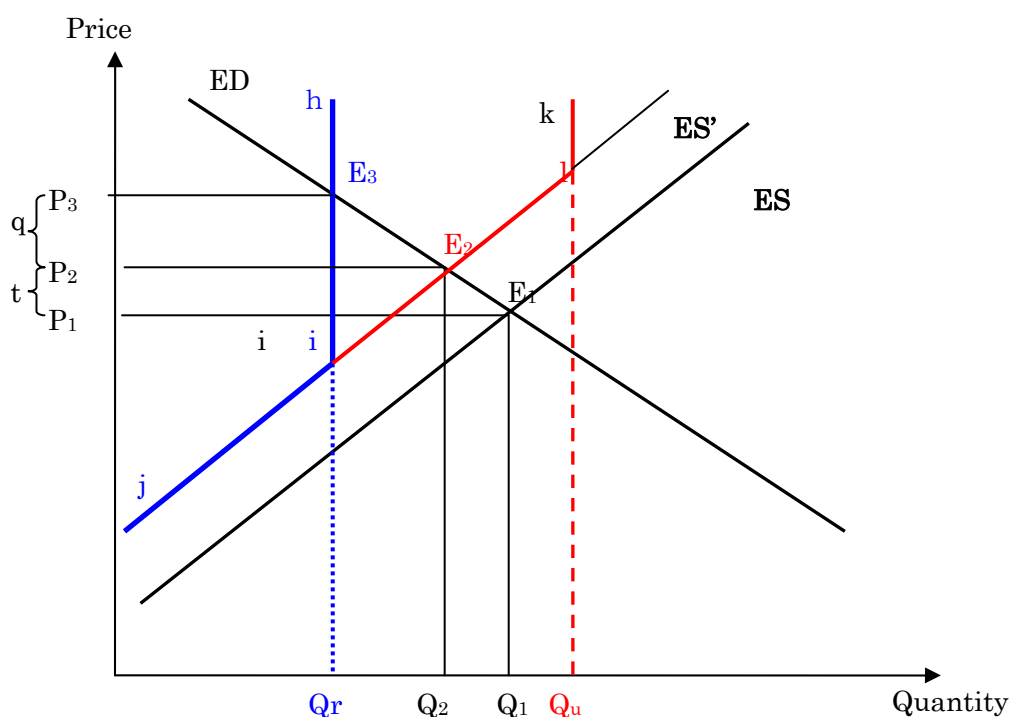
<sup>7</sup> For Instance, Global Trade Analysis Project (GTAP) as one of CGE type analyses specify  $q=0$  for all under-utilized quota. Also, GTAP modeling assumes for simplicity that all textile and clothing categories are restricted by the MFA, although not all textile and clothing categories are covered by binding MFA.

<sup>8</sup> Unlike the 1 exporter, 2 market model by Yang, Martin and Yanagishima (1997), our model distinguishes among exporters, reflecting reality. A departure is made from this model, however, in our subsequent analysis based on more realistic observations.

upward and becomes  $ES'$  which is in parallel to the former  $ES$  curve. In the presence of tariff and quota restriction, the export curve  $ES'$  becomes kinked like  $klj$  if the quota is set at  $Q_u$  and kinked curve  $hij$  when quota is set at  $Q_r$ . Note that if the quantity restricted is set at  $Q_u$  as shown in Figure 1, which exceeds the import-demand of an importing-country, there will in theory be no binding effect of quota upon the exporter. Therefore, the market will clear at the point  $E_2$  in the presence of tariff, and at  $E_1$  in the auspicious case of free trade (zero tariff).

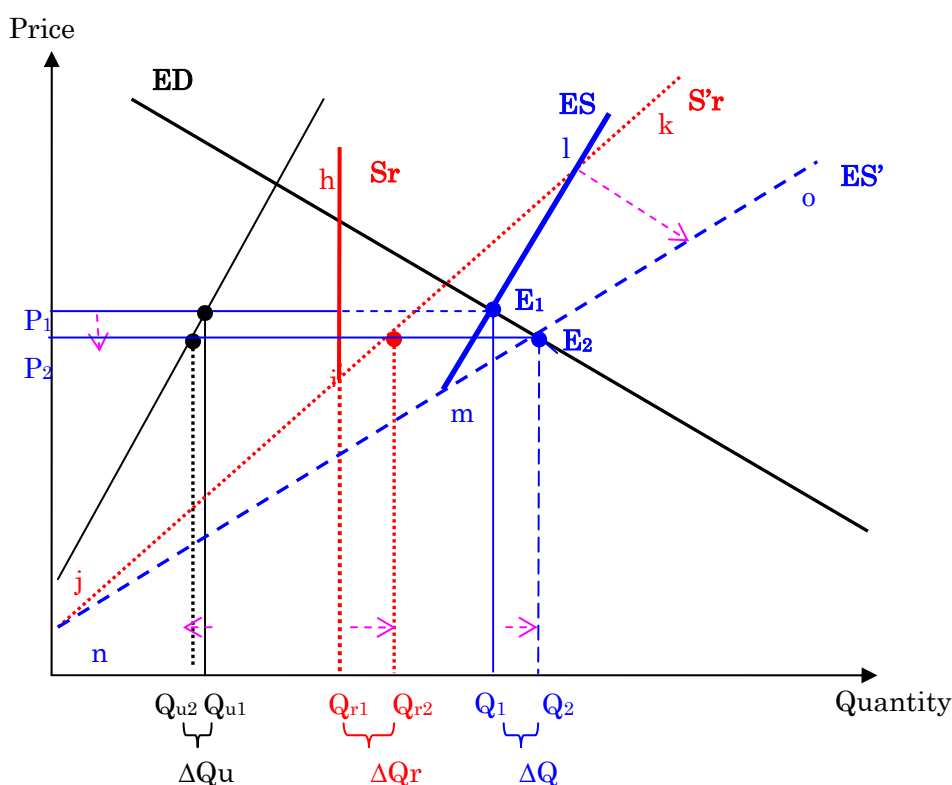
The impact of quota restriction would be different, depending on whether the quantity restriction (import quota) is set at less than the “free-market” equilibrium quantity or more than the free-market equilibrium. As revealed in Figure 1, if the quantity restricted is set at  $Q_r$ , two important impacts result. First, the restricted quantity becomes the new equilibrium quantity; and second, the price (unit price) will increase.

**Figure 1. The Impact of Quota and Tariff**



Since this study’s focus is placed on the change resulting from quota removal, and its policy implication in the immediate time frame, tariff rate is set equal to zero for the sake of analytical simplicity. In order to reflect more reality in the model, though, the exporter is broken down into two, i.e., quota-restricted and quota-unrestricted exporters, as in Figure 2.

**Figure 2. Impact of Quota Removal: the case of two exporters**



Description of the notations is as follows.

$Q_{r1} = q$  : Quantity of export of a quota-restricted exporter before the quota removal

$Q_{r2}$  : Quantity of export of a quota-restricted exporter after the quota removal

$Q_{u1}$  : Quantity of export of a quota-unrestricted exporter before the quota removal

$Q_{u2}$  : Quantity of export of a quota-unrestricted exporter after the quota removal

$Q_1$  : Total quantity of export before the quota removal

$Q_2$  : Total quantity of export after the quota removal

$P_1$  : Imported price before the quota removal

$P_2$  : Imported price after the quota removal

$E_1$  : Equilibrium point  $(P_1, Q_1)$  before the quota removal

$E_2$  : Equilibrium point  $(P_2, Q_2)$  after the quota removal

$\Delta Q_u$  : Change of export-quantity of an unrestricted exporter of an importing country  
 where  $\Delta Q_u$  is the decrease of export by the quota-unrestricted exporter after the quota removal.

$\Delta Q_r$  : Change of export-quantity of restricted exporter in an importing country  
 where  $\Delta Q_r$  is the increase of export by the quota-restricted exporter after the quota removal.

$\Delta Q$  : Total change of export-quantity in an importing country

where  $\Delta Q = \Delta Q_r + \Delta Q_u$

Before the quota removal, which has been the case until the end of 2004, the restricted exporter is assumed to be restricted by the quota amount  $q$ . This would mean that the restricted exporter hypothetically exports up to  $q$ . It is assumed that before the quota removal, the importing-country excess demand and total excess supply equilibrate at point  $E_1$ . After the quota removal, the quota-restricted exporters gain and quota-unrestricted exporters lose, while the total import increases. The magnitude of gain or loss after the quota removal depends on the slopes of restricted and unrestricted supply curve.

## 6. Empirical assessment of the impact of import quota liberalization

### 6.1 Average quota fill-rates

The “textbook” partial equilibrium framework of quota elimination in the previous section presumes that unless quota is completely filled, it is not binding. In reality, however, quota utilization rate is not equal to one (i.e., full utilization) for most product categories. This does *not* mean the *unbinding* status of those quotas: as mentioned above (page 3, paragraph 4), even a low quota utilization rate (or “quota fill rate”) still possesses trade-restricting impact on the T&C product under consideration. From this perspective, the *binding* nature of import quota (or voluntary export restraint) with a less-than-one fill rate is theoretically justified.

The hypothesis of “binding under-utilized quota” can be observed empirically, by looking at data in the final year of quota restriction and the first year of quota liberalization of a particular T&C product. Take the case of China: the country’s export to the US of category 833 (coats). Table 5 records the quota fill-rate, increase in import value and quantity for 1997-2005. The quota for this category was removed in 2001 under the ATC. What is interesting is that this category, for which the quota is under utilized, still registered trade-value increase, trade-quantity increase and unit-value decrease in 2002 with the removal of quota for this particular category, as in the Table. This points to the trade restrictive nature of the *existence* (rather than the level) of import quota.

The above observation motivates a systematic examination of quota-removal. The product-by-product, or partial quota elimination is of course not the same as the entire quota elimination which took effect on 1 January 2005, yet the impact of quota removal is expected to be similar for these two situations. The US market is chosen as the case study below.

**Table 5. China's export of "coats" (US' product category 833)**

Year	Quota fill-rate (%)	Import value (US\$)	Import quantity (square meters equivalent)	Import unit value (US\$ per square meters equivalent)
1997	16.2	2,022,464	190,951	10.6
1998	10.7	1,295,160	125,957	10.3
1999	10.5	3,084,172	242,945	12.7
2000	15.2	1,073,368	656,086	1.6
2001	7.4	840,598	140,289	6.0
2002	0	1,352,948	546,067	2.5
2003	0	7,910,783	3,086,146	2.6
2004	0	6,107,000	1,522,000	4.0
2005	0	9,566,000	2,046,000	4.7

Source: Authors' calculation on the basis of Office of Textiles and Apparel (<http://otexa.ita.doc.gov/#IMPORTQUOTAS>).

With the above as a background, the "average quota fill-rate" has been computed. This indicator measures the overall restrictiveness of quota upon T&C products *as a whole*. The procedure for the calculation is as follows: those quota-unrestricted product categories are assumed to have "infinite" quota and thus zero fill rate has been assigned to those product categories (since quota for such products as denominators are infinite). Then import value-weighted average fill-rate has been computed for major economies as exporters to the US market.

The result is shown in Table 6. As the Table shows, the restrictiveness of the import quota under the ATC was stronger for large exporters (most notable China and India) than for small exporters (e.g., Cambodia, Myanmar, Laos) in the earliest year (1997) for which the data is available, reflecting the strategic allocation of import quotas by the US government. The Table also reveals that the average quota-fill rates are on a clear declining trend for China, India, and Indonesia. As for China (the biggest exporter),

the index has dropped from 83.0 to 38.4 over the period 1997-2004. On average also, there is a declining trend observed. This overall reduction of the average quota fill rates in China and other economies arises partly from the quota liberalization under the ATC and resulting increase in the exports of quota-free T&C products. As quota is released partially under the ATC, this indicator tends to 0 (thus 0 for all countries in 2005), and this gradual decline in the restrictiveness of import quota has been the very purpose of the ATC regime.

**Table 6. Average quota fill rate for selected Asian exporters to the US market, 1997-2005**

	(percent)								
Exporter	1997	1998	1999	2000	2001	2002	2003	2004	2005
Bangladesh	73.5	71.3	67.3	69.7	66.4	69.2	69.2	61.3	0.0
Cambodia	n.a.	0.2	1.9	1.4	1.2	1.0	0.9	0.0	0.0
China	83.0	76.3	77.3	76.5	77.3	56.1	45.9	38.4	0.0
Hong Kong	76.5	79.7	77.7	75.2	72.9	81.2	77.6	34.5	0.0
India	78.6	74.5	67.1	56.6	68.4	61.9	n.a.	37.0	0.0
Indonesia	80.2	79.8	72.7	69.7	69.1	69.1	67.0	28.8	0.0
Korea	64.6	76.5	71.8	69.4	71.3	69.2	62.2	39.0	0.0
Laos	33.8	38.6	14.4	16.1	0.7	0.0	8.3	n.a.	0.0
Malaysia	59.4	65.3	60.5	57.9	52.2	54.9	55.0	2.3	0.0
Myanmar	5.2	2.7	6.1	4.7	1.9	2.0	n.a.	0.0	0.0
Pakistan	81.9	70.8	79.2	82.9	77.1	69.7	75.8	n.a.	0.0
Philippines	63.1	66.4	63.4	62.8	55.8	62.5	65.9	59.7	0.0
Singapore	44.4	50.2	51.8	45.2	43.0	43.9	46.8	1.7	0.0
Thailand	66.6	54.9	50.2	46.1	41.9	50.9	49.3	n.a.	0.0
Taiwan	72.7	72.9	75.3	71.8	64.3	52.2	56.6	50.5	0.0
Average	60.7	57.4	54.2	53.5	50.6	48.8	51.0	n.a.	0.0

Source: Authors' calculation on the basis of the United States Department of Commerce's Office of Textiles and Apparel ([http://www.cbp.gov/xp/cgov/import/textiles\\_and\\_quotas/textile\\_status\\_report/archived/2004\\_year\\_rpt/](http://www.cbp.gov/xp/cgov/import/textiles_and_quotas/textile_status_report/archived/2004_year_rpt/)).

## 6.2 Restrictiveness of the under-utilized quota

Table 7 shows the indexed import values for those selected economies in Table 6. The overall increasing trend is clear, while the first tier exporters had a declining trend. Quantity figures in Table 8 also shows similar trends. Table 9 gives information on unit price (measured as import value divided by import quantity). While the indexed average import value and quantity show increasing trends overall, unit price is ambiguous, an increase toward 2000 and then a decrease afterwards. The scopes for inflation and product-upgrading might be pertinent, yet investigation to these is beyond the purview



of this study. Product-by-product analyses below would therefore be justified.

**Table 7. Indexed import value (in the US) of textile products for selected Asian economies (1997=100.0)**

	1997	1998	1999	2000	2001	2002	2003	2004	2005
Bangladesh	100.0	112.3	115.7	146.1	145.1	130.1	127.6	135.9	161.7
Cambodia	n.a.	100.0	162.7	224.9	260.0	290.0	344.8	397.3	475.8
China	100.0	96.1	97.4	100.2	102.6	124.6	161.7	202.8	312.1
Hong Kong	100.0	112.6	108.2	114.0	107.0	98.5	94.1	97.6	88.9
India	100.0	112.6	113.2	132.5	127.4	141.1	148.5	168.0	213.5
Indonesia	100.0	103.9	105.6	128.7	138.7	127.9	135.2	149.1	175.4
Korea	100.0	124.6	138.5	149.2	143.8	135.9	119.0	119.6	88.5
Laos	100.0	157.7	90.9	70.8	27.9	18.3	29.9	n.a.	n.a.
Malaysia	100.0	110.4	113.4	120.1	117.2	110.8	105.5	109.3	103.8
Myanmar	100.0	149.6	216.3	471.9	481.2	354.9	n.a.	n.a.	n.a.
Pakistan	100.0	109.1	118.7	149.0	150.8	142.2	164.4	189.0	215.5
Philippines	100.0	109.3	112.2	118.6	118.4	113.7	116.1	110.3	109.3
Singapore	100.0	106.8	113.5	123.7	103.8	99.5	93.8	84.5	55.0
Thailand	100.0	115.5	120.1	144.8	144.6	136.7	136.2	144.5	139.7
Taiwan	100.0	102.1	95.3	99.6	87.5	76.1	77.8	74.9	58.3
Average	100.0	112.4	118.3	154.1	153.0	146.0	144.1	n.a.	n.a.

Source: Authors' calculation on the basis of the Office of Textiles and Apparel (<http://otexa.ita.doc.gov/msrpoint.htm>).

**Table 8. Indexed import quantity (in the US) of textile products for selected Asian economies (1997=100.0)**

	1997	1998	1999	2000	2001	2002	2003	2004	2005
Bangladesh	100.0	110.2	120.0	129.3	142.5	165.7	184.3	184.1	218.2
Cambodia	n.a.	100.0	358.1	367.3	368.0	431.1	464.2	556.6	612.4
China	100.0	99.6	102.0	102.5	106.4	92.1	99.9	140.6	202.1
Hong Kong	100.0	100.7	103.6	106.3	109.5	111.3	115.4	111.6	93.3
India	100.0	100.7	111.4	117.1	127.9	145.1	157.7	n.a.	n.a.
Indonesia	100.0	108.1	102.2	123.8	131.1	149.6	166.7	184.7	196.2
Korea	100.0	102.7	105.4	108.2	111.2	112.8	116.7	128.1	112.9
Laos	100.0	115.4	119.7	115.8	121.6	127.6	134.0	n.a.	n.a.
Malaysia	100.0	109.0	118.7	129.5	140.5	155.2	172.2	185.7	171.1
Myanmar	100.0	101.0	102.0	103.0	104.1	104.9	0.0	n.a.	n.a.
Pakistan	100.0	102.3	110.9	119.5	129.7	144.2	159.0	175.6	194.5
Philippines	100.0	108.7	106.9	113.5	122.1	92.5	115.5	103.4	93.6
Singapore	100.0	102.4	107.0	113.7	118.9	115.3	121.8	100.8	65.3
Thailand	100.0	98.4	104.1	111.7	120.4	129.0	149.4	151.5	143.1
Taiwan	100.0	101.3	103.8	105.4	108.5	87.0	88.9	85.3	71.0
Average	100.0	103.8	123.4	130.0	136.8	144.2	160.2	n.a.	n.a.

Source: Authors' calculation on the basis of the Office of Textiles and Apparel (<http://otexa.ita.doc.gov/msrpoint.htm>).

**Table 9. Indexed import unit price (in the US) of textile products for selected Asian economies (1997=100.0)**

	1997	1998	1999	2000	2001	2002	2003	2004	2005
Bangladesh	100.0	102.0	96.5	113.0	101.8	78.5	69.3	73.8	74.1
Cambodia	n.a.	100.0	45.4	61.2	70.7	67.3	74.3	71.4	77.7
China	100.0	96.4	95.5	97.8	96.4	135.4	161.8	144.2	154.4
Hong Kong	100.0	111.8	104.4	107.2	97.7	88.5	81.5	87.5	95.3
India	100.0	111.8	101.6	113.2	99.7	97.2	94.2	n.a.	n.a.
Indonesia	100.0	96.1	103.3	104.0	105.8	85.5	81.1	80.7	89.4
Korea	100.0	121.3	131.4	137.8	129.2	120.4	102.0	93.4	78.4
Laos	100.0	136.6	76.0	61.2	22.9	14.3	22.3	n.a.	n.a.
Malaysia	100.0	101.3	95.5	92.7	83.4	71.4	61.3	n.a.	n.a.
Myanmar	100.0	148.1	212.1	458.0	462.5	338.1	n.a.	n.a.	n.a.
Pakistan	100.0	106.6	107.0	124.7	116.3	98.6	103.4	n.a.	n.a.
Philippines	100.0	100.5	105.0	104.6	97.0	122.9	100.5	106.7	116.8
Singapore	100.0	104.3	106.1	108.8	87.3	86.3	77.0	83.9	84.3
Thailand	100.0	117.4	115.3	129.7	120.1	106.0	91.2	95.4	97.6
Taiwan	100.0	100.8	91.8	94.6	80.6	87.5	87.5	n.a.	n.a.
Average	100.0	108.4	103.6	127.9	119.6	109.6	93.1	n.a.	n.a.

Source: Authors' calculation on the basis of the Office of Textiles and Apparel (<http://otexa.ita.doc.gov/msrpoint.htm>).

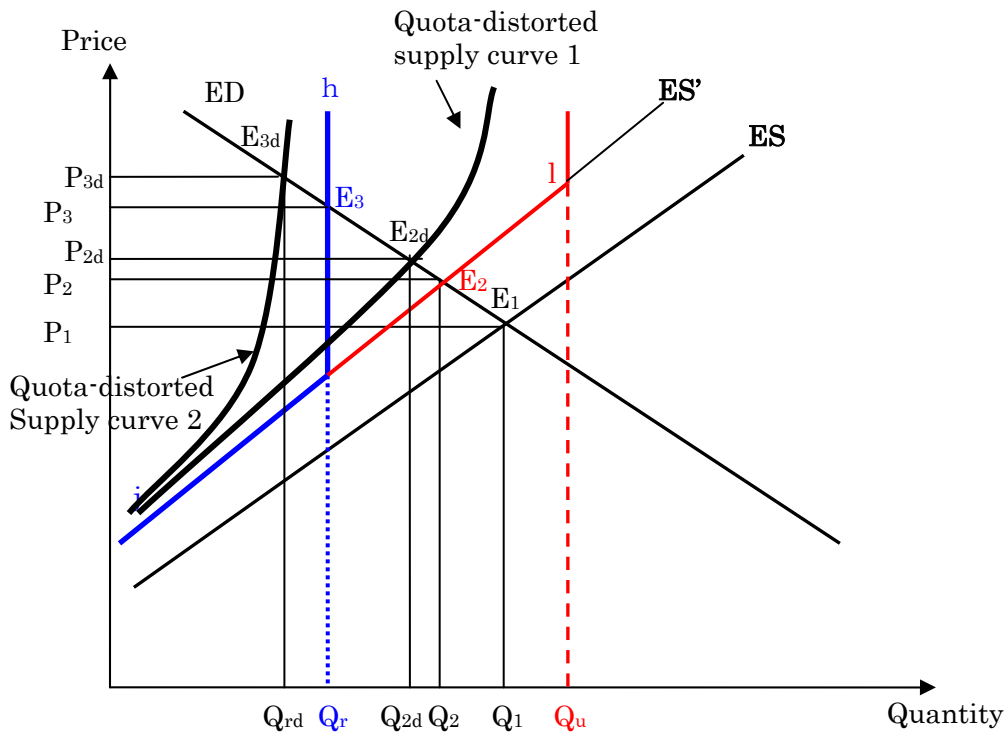
It should be emphasized that in reality, even under-utilized quota still has a trade-restrictive effect.<sup>9</sup> China's case above supports this point. This is partially due to the administrative costs involved in the maintenance of quota regime, and hence should vanish with quota elimination. Also, some sort of announcement effect might be pertinent here: given a certain level of import quota, potential production might be kept from actual materialization.

In essence, this trade-restrictive effect of under-utilized quota can be represented by the supply curves 1 and 2 (which might as well be termed "quota-distorted supply curve") in Figure 3. The main feature of Figure 3 lies in its theoretical implication that due to the above-mentioned distortions (administrative costs and announcement effect), even quota-unrestricted situation still has a restrictive impact on the import quantity:  $Q_{2d}$  would be observed as the actual import quantity. Then, quota-removal would increase the import quantity, from  $Q_{2d}$  to  $Q_2$ . And the higher the "quota fill rate" (QFR, measuring the restrictiveness of quota and defined as "actual import quantity divided by the level of import quota", e.g.,  $Q_{rd}/Q_r$  and  $Q_{2d}/Q_u$ ), the larger the impact of quota removal. This prediction is in clear contrast to the case depicted in Figure 1, where the removal of unrestricted import quota would have no impact on the import quantity (which remains at  $Q_2$ ).

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<sup>9</sup> This point was also confirmed by an interview with an anonymous officer at the then Textile Division of the WTO in October, 2004.

**Figure 3. A departure from the standard model of quota removal**



The remaining part of this section examines the impact of quota removal on an empirical basis. The analysis above leads to the following two testable hypotheses<sup>10</sup>:

- (1) Growth rate of import value and/or import quantity is an increasing function of quota fill rate observed just before the quota removal;
- (2) Growth rate of import value and/or import quantity is an increasing function of quota fill rate *and* production capacity

The quota fill rate (QFR) is measured in percentage (with 100 as its maximum value), and the growth rate in the above measures year-on-year growth rate (in percentage) of those products for which import quota had been removed under the ATC's step-wise quota removal schedule, i.e., step-wise removal of some categories of textile products at the beginning of 1998 (first stage), 2002 (second stage) and 2005 (final stage). In the estimation, cross-country<sup>11</sup> and cross-product pooled date sets are used. Out of the three-step removal, the first two steps (at the beginning of 1998 and 2002) are the removal under the ATC. The final step (at the beginning of 2005) concerns the removal of the remaining import quotas as well as the removal of the ATC

<sup>10</sup> Tariff rate is omitted (or fixed as constants) in this analysis.

<sup>11</sup> The following six Asian exporters for which data on both import quota and production capacity is available, have been included in the regression: Bangladesh, China, Indonesia, Korea, The Philippines, and Thailand.

regime itself. As such, there is a qualitative difference between the first two and the final quota-removal steps.

We have selected 25 products/countries for which the quota was removed in the US market at the first and second quota liberalization. We have done the following two regression exercises, one for trade value and the other for trade quantity as dependent variables, and quota fill-rate and production capacity as explanatory variables, utilizing the data for both the stage-one and stage-two quota liberalization in the US market.<sup>12</sup> As for the production capacity (PC), total number, at the country-level, of “shuttle looms” (textile weaving machines with shuttles) has been used as a proxy.<sup>13</sup>

(1) Growth Rate of Import Value = F(Quota Fill Rate, Production Capacity(PC))

$$\text{GRIV} = -85.1 + 0.94 \text{ QFR} + 0.00021 \log(\text{PC})$$

$$(-2.25) \quad (2.06) \quad (4.07)$$

$$\text{Adjusted } R^2 = 0.424$$

Figures in parentheses are *t* values.

(2) Growth Rate of Import Quantity = F(Quota Fill Rate, Production Capacity)

$$\text{GRIQ} = -173.8 + 2.24 \text{ QFR} + 0.00050 \log(\text{PC})$$

$$(-1.76) \quad (1.88) \quad (3.77)$$

$$\text{Adjusted } R^2 = 0.380$$

Figures in parentheses are *t* values.

This result shows that both the levels of quota fill-rate and production capacity are statistically significant at least at the 10% significance level, having positive correlations with the growth rates of import value and import quantity. This means, for instance, that a category with a larger quota fill rate in the final year of restriction has registered a larger increase in the following year<sup>14</sup> which corresponds to the quota removal year of that particular product category under the stage-one or stage-two partial phase out of import quota. It also reveals that an exporter with a bigger production capacity tends to register a higher growth rate of import (in terms of both trade value

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<sup>12</sup> Since the main focus of the analysis below is the impact of quota removal, and since the quota removal in a country’s particular product category does not coincide with the quota removal in another country’s same product category (as per the “arbitrary” nature of the ATC in terms of the selection of product categories for quota removal), the choice of product categories in the following analysis is not consistent across the countries.

<sup>13</sup> While shuttle looms are used for textiles and not for clothing, a representative statistics measuring the production capacity of both textiles and clothing has not been available, hence the choice of the number of shuttle looms.

<sup>14</sup> Whether the impact of quota removal fully materializes in the following year remains contentious.

and trade quantity), after the partial quota removal. Put differently, a “winner-take-all” prevails the trade in T&C products.

Overall, the above estimations supports the view that the ATC has been distorting the textile market not only for the product categories with high (or “binding”) quota fill rates but also for those with low (or “non-binding”) quota fill rates. In other words, the existence of the ATC regime itself has exerted a market-distortion impact. A comparison of the results (1) and (2) reveals that import quantity is more responsive to the quota elimination. This implies that on average, the quota elimination has a unit price-decreasing impact (since import value is defined as import quantity times unit value), a result consistent with the theoretical prediction given by Figure 3.

Another regression exercise for the 2005 data set for the US, i.e., the one observed upon outright removal of import quota using cross-sectional data, did not produce a statistically significant result.<sup>15</sup> Country-level regressions (e.g., for China) did not generate a statistically significant result either. It is conjectured that the growth rate of import value and import quantity would be distorted by unforeseen market-disturbing factors which are still in place after the nominal elimination of the ATC. In other words, real elimination of import quota, be it formal or informal, has not yet taken place in the US.

While a similar statistical examination is not feasible for the EU market due to lack of public information on import quota and corresponding trade figures, descriptive analyses (e.g., WTO 2006) points out the similarity of the textile market in terms of possessing “winner-take-all” property albeit in the face of overall gains for emerging developing economies.

### 6.3 A prediction exercise

A prediction exercise can be undertaken on the basis of the above estimation: Substituting the “average quota fill rates” in Table 4 into the statistically significant linear-regression result above gives a prediction presented in Table 10. A comparison of

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<sup>15</sup> The following results have been obtained: for the import value,

$$\begin{aligned} \text{GRIV} &= 22.5 - 0.67 \text{ QFR} + 54.2 \log(\text{PC}) \\ &\quad (0.39) \quad (-1.05) \quad (2.36) \\ &\quad \text{Adjusted } R^2 = 0.017 \\ \text{GRIQ} &= -137.2 + 0.70 \text{ QFR} + 124.1 \log(\text{PC}) \\ &\quad (-1.74) \quad (0.79) \quad (3.96) \\ &\quad \text{Adjusted } R^2 = 0.068 \end{aligned}$$

Figures in parentheses are *t* values, and the sample size is 228 for both specifications.

this Table and the actual performance (presented in Table 11) seems to indicate that a potentially higher growth rate for China –predicted to register the growth rate of 109.37 percent— might not have been realized in actuality—a “mere” 53.90 percent increase year on year in 2005 in the US market. With China being the biggest exporter to the US market, the country is subject to “voluntary” export restraint as “agreed upon” with the US. This implies the existence of a new form of “import quota” even beyond the phase out of the formal import quota under the ATC upon 1 January 2005.

**Table 10. Prediction of Export Performance in the US with the 2002 average quota fill rate as the baseline (using of the regression result)**

Region/Economy	Value-weighted average fill-rate of import quota (percent)	Production Capacity of in 2002 (no. of shuttle looms)	Predicted growth rate upon quota elimination	Share in total US imports in 2002 (percent)
China	56.1	633,650	109.37	12.1
Indonesia	69.1	200,000	31.96	3.2
Malaysia	54.9	n.a.	n.a.	1.1
Philippines	62.9	7,000	-15.09	2.8
Singapore	43.9	n.a.	n.a.	0.4
Thailand	50.9	77,900	-12.80	3.1
Cambodia	1	n.a.	n.a.	1.5
Laos	0	n.a.	n.a.	0.003
Myanmar	2.0	n.a.	n.a.	0.4
Vietnam	0	14,000	-79.66	1.3
Japan	0	23,050	-77.76	0.6
Korea	69.2	5,000	-8.89	4
Hong Kong	81.2	n.a.	n.a.	5.6
Taiwan	52.2	n.a.	n.a.	3.1
India	61.9	123,700	8.37	4.1
Bangladesh	69.2	4,700	-8.95	2.8
Mexico	1.0	35,000	-74.20	11.9
Canada	0	n.a.	n.a.	4.4
Total				62.403
Average of individual economies	37.5		-1.00	3.3

Source: Production capacity is the number of shuttle looms in the country.

**Table 11. Exports of textile products to the US and their growth rates for selected economies, 2003-2005**

Exporter	2003 value (US\$ million)	2004 value (US\$ million)	2005 value (US\$ million)	2003-2004 growth rate (percent)	2004-2005 growth rate (percent)
China	11,609	14,558	22,405	25.41	53.90
Indonesia	2,376	2,620	3,081	10.29	17.60
Malaysia	738	764	726	3.62	-5.06
Philippine	2,040	1,938	1,921	-5.01	-0.88
Singapore	271	244	159	-9.88	-34.90
Thailand	2,072	2,198	2,124	6.11	-3.35
Cambodia	1,251	1,442	1,727	15.23	19.76
Vietnam	2,484	2,720	2,881	9.47	5.92
Korea	2,567	2,580	1,909	0.50	-25.99
Hong Kong	3,818	3,959	3,607	3.70	-8.91
Taiwan	2,185	2,104	1,639	-3.71	-22.12
India	3,212	3,633	4,617	13.13	27.06
Bangladesh	1,939	2,066	2,457	6.51	18.95
Mexico	7,941	7,793	7,246	-1.86	-7.02
Canada	n.a.	3,086	2,844	n.a.	-7.84

Source: Authors' calculation on the basis of <http://otexa.ita.doc.gov/msrpoint.htm>.

## 7. Dynamic Effects and Their Applications to the East Asian Exporters

Incorporation of future capacity –a dynamic consideration—would further make the prediction result more diverse depending on the “expectation” of potential –not current—investors. The main point of emphasis underlying this prediction exercise can be summarized as in Table 12. As the Table shows, two sorts of impacts, i.e., static and dynamic, entail the economic policy of quota elimination and/or tariff reduction. Of these, only static impacts, namely, (1) trade diversion and (2) trade creation can be captured by a comparative-static analysis presented in section 3. Dynamic impacts, i.e., (3) capital accumulation through physical investment and (4) productivity enhancement through enhanced competition, can only be captured in a dynamic model. Thus, a dynamic viewpoint becomes essential for a longer-term assessment of the economic impact of trade liberalization in the global textile industry.



**Table 12. Economic impacts of trade liberalization**

Impact of Quota elimination and/or tariff reduction	
Static impacts	Dynamic impacts
(1) Trade diversion (2) Trade creation	(3)Capital accumulation through physical investment (4)Productivity enhancement through enhanced competition

Source: Authors.

Manufacturing firms strategically allocate their production facilities on the basis of locational advantages of their production operation (Dunning, 1992). Among such locational advantages are factors surrounding firms, e.g., host countries' economic fundamentals. What is noteworthy here, though, is that the firms' investment behavior itself influences the very economic fundamentals of the host economy. Put differently, firms' investment behavior can influence their own future investment behavior, through interaction with economic fundamentals. From this perspective, comparative-static and linear analyses as studied in the previous subsection cannot capture the actual interactions between production and trade. A dynamic and non-linear treatment of investment behavior by firms, both domestic and foreign, becomes essential.<sup>16</sup>

In the situation where cost aspect or price competition (rather than product differentiation) is the dominant issue to be considered, as exemplified by the textile industry, "scale economies" serves as a major criterion of investment. As Yamazawa (1993) suggests, the textile industry is mainly characterized by firms' "volume zone" operation seeking for large-volume and hence low cost production. The term "scale economies" has various analytical connotations, yet in its broad sense, it incorporates such notions as industrial agglomeration and increasing returns. These notions capture the self-fulfilling nature of economic behaviors including investment decisions by firms.

The quota in the textile industry "has tended to depress competition among exporters by restricting exports of efficient firms while benefiting less efficient firms" (Yamazawa, 1993:6). Upon removal of the quota, therefore, it is highly likely that those efficient firms expand their productive capacity through further capital investment. This directly translates into their undertaking FDI with enhanced innovative efforts in a location where their production efficiency can be further exploited.

An important and relevant issue here is the irreversibility of firms' physical

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<sup>16</sup> This is the perspective of so-called "complexity science". For a comprehensive and interdisciplinary treatment of this line of perspective, see, e.g., Haken (1983).

investment which serves as a source of industrial agglomeration on the basis of increasing returns to scale.<sup>17</sup> From this viewpoint, trade liberalization in the textile industry might enable either ASEAN or China to evolve into a larger production platform than the other: after all, business firms' investment capital is allocated only to one of the two, and the very capital cannot be utilized in both the economies at the same time. Thus, trade liberalization is deemed to facilitate this "share dynamics".<sup>18</sup>

Empirical evidence include the rise in trade between the US and Mexico after the formation of NAFTA: the share of Mexico in the US imports of apparel products (HS61+62) has been on an increasing trend from less than 5 percent in 1991 (before the formation of NAFTA) to around 15 percent since 1994 (when NAFTA was formed), in contrast with Asian economies' declining share in export to the US from more than 35 percent to around 15 percent during the same period (Urata, 2002: 99). This phenomenon might well be understood partly as a production increase *along* the fixed supply curve (as seen in the first subsection), yet the formation of NAFTA as an "exogenous" event favors the view that an instantaneous *shift* of the supply curve has been the norm.<sup>19</sup>

The preceding analysis has addressed the global trade and production in the textile industry. Its statistical overview suggests that ASEAN Plus Three economies have played a large role in both production and trade of textiles products. It has also made an assessment of the potential impact of the complete quota removal after 2005, concluding that China is expected to further build on their production and trade advantage. In this sense, the quota removal in the textile industry will benefit ASEAN Plus Three economies. An *intra*-regional consideration, however, puts late-comer ASEAN members (Cambodia, Laos, Myanmar, and Vietnam) in a disadvantaged position: this group having been "safeguarded" by the import quota imposed upon other economies, have to face harsher competition from quota-free production by those

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<sup>17</sup> Yoshida (2002) argues that a factory with the durability of ten years cannot be "used up" exhaustively in an instance, and hence the effect of this capital investment (in the form of a factory) persists over a certain time span. This observation points to the path-dependent and robust nature of investment behavior. Penrose's (1959) "underutilized assets" concept and Williamson's (1985) location-bound "asset specificity" are also at issue here.

<sup>18</sup> This sort of share dynamics can be modeled on the basis of a stochastic dynamic equation system addressed. It is an "alternative" model in the field of "complexity science", in which a shift in production location can be achieved by capital investment over time in a *non-linear* manner instead of a linear manner as the microeconomic model as the mainstream treatment.

<sup>19</sup> A dummy variable treatment of the exogenous event within a linear econometric framework, for example, would not capture the *gradual* increase in the export performance

economies after the ATC phase-out. This prediction is based on a static viewpoint.

From a dynamic line of reasoning, the winner economies, mostly China and advanced ASEAN members, will attract more FDI from Japan, Korea, once an FTA is to be forged among ASEAN Plus Three economies. Put differently, the late-comer ASEAN members might be left behind in the competition for attracting FDI. Which will become the industrial “hub”, China or advanced ASEAN Members? The dynamic consideration of this paper points to the existence of multiple equilibria. That is, there might be marginalization of either advanced ASEAN members or China: after all, it all depends on where and how business firms undertake their future capital investment. Theoretically, either scenario could be conceivable, since those business firms are seen to behave synergistically, or opportunistically. Given the current “China boom” across wide range of industrial sectors, this might be true of the textile industry, it might favor China’s winning the competition to become the world’s center of textile-related products.

The advanced ASEAN members have both complementariness and rivalry vis-à-vis China in their textile manufacturing. If the latter, rivalry property is to dominate, then the above “China-hub-equilibrium” might well be in place. If the former, complementariness is to prevail, that would cater more to ASEAN’s developmental needs.

As it stands, the global industrial operation has been both fragmented and differentiated. This implies the validity of the latter complementariness scenario and also the necessity of ASEAN’s and China’s highly industry-specific capital accumulations for acquiring dynamic comparative advantage. Indeed, scope for product differentiation exists even *within* the textile industry, especially at the upstream part of its production process. To conclude, the textile industry’s performance in ASEAN Plus Three rests with the extent to which the firms in this industry allocate their managerial resources locationally, irrespective of economic fluctuations. Of course its future is indeterminate, yet how producers and consumers perceive now influences its future direction.

From a dynamic line of reasoning, there is a “winner-take-all” property of investment. The “winner” economies, arguably China and ASEAN members, will attract more foreign direct investment (FDI) from technologically advanced Japan and Korea, once a free trade agreement (FTA) is to be forged within these “ASEAN Plus

Three” economies. This might directly translate into FDI concentration in the “hub” (most notably China), at the expense of the marginalization of other “non-hub” economies. Put differently, non-hub small economies, e.g., Bangladesh and African economies, might be left behind in the competition for attracting FDI. Given the current “China boom” across wide range of industrial sectors, the global textile industry might well favor China as the hub for the production of textile-related products. Pro-poor policy, e.g., international fiscal transfer, could therefore be required as an international arrangement which is *separate* from the textile sector’s trade liberalization through its integration into the WTO process.

## **8. Conclusion and Future prospects**

This paper focuses on the fact that T&C trade was seriously distorted by the quota restriction set by the US and EU under the MFA/ATC regime. Four groups of exporters, first, second, third tier exporters and quota-free exporters (members of the same regional trade groups) were treated differently so that their shares in the two markets depart greatly from their competitiveness. Several CGE prediction were attempted on the change of market shares in US and EU after all quota were removed in 2005. But none of them clarified how quota affects individual exporters. In a textbook discussion, unfilled quota means no restriction was exerted. However, the quota-fill rate for many T&C products were far less than unity but the quota had still discouraged exporters so that, once the quota was removed, exports increased substantially. Theoretically this less-than-one quota-fill rate is treated as no quota restriction and thus no increase is predicted from its removal. But no CGE model has clarified yet how less-than-one quota-fill rates were treated in their calculation. CGE model has a broad products grouping and cannot accommodate different quota-fill rates. We have analyzed theoretically the restriction effects by less than one quota –fill rate (Fig.3) and measured them empirically. The result was used to predict the effect of quota removal. Although constrained severely by limited data availability, we predicted that China and India and the second tier exporters would increase their shares in the US and EU markets, while the third tier exporters would suffer from the reduction of exports.

Contrary to our anticipation, the ATC was completed and MFA quota restrictions were all abolished on schedule in 2005. However, the T&C trade has not been back to that of free-market competition yet, due to the remaining distortions of the

MFA/ATC regime. On January 1<sup>st</sup> 2005, China announced that it would impose a specific duty on 148 T&C products. But the export duty could not prevent the rushed export of Chinese products in to the US and EU markets. In January and February imports of Chinese products increased by 62.4% in the US and by 84% in January and 260% in February in the EU. Domestic T&C producers requested safeguard actions and in April and May both EU and US governments request bilateral textile negotiations based n paragraph 242 of China's Accession Agreement to the WTO in 2001.

In June Cina revoked the export duties on T&C products and signed Memorandum of Understanding (MOU) on quota restriction with US and EU. The MOU with EU limits China's T&C exports growth for ten categories for the years 2005-2007. Annual quantity growth rates range for most categories from 10 – 12.5% from the import level of a base year, April 2004 to march 2005. The MOU with the US limits the 21 categories of Chinese products in 2006-2008. The 2006 quota allows for an increase of between 173 and 640 % between 2004 and 2006. The growth ranges from 12.5 – 16% in 2007 and between 15-17 % in 2008. (WTO, 2006)

Incidentally, negotiation for tariff reduction is yet to be concluded at DDA. But the failure of the recent WTO ministerial meeting suggests the current high tariffs on T&C ( observed in both developed and developing economies) will continue for several more years.

It will be too ambitious to expect all quota restrictions will be removed at once on January 2005. Some temporary adjustment is needed because of big distortion accumulated during the MFA/ATC regime. However, we should not allow the T&C trade to return to the permanent quota restriction as under the MFA/ATC. True adjustment can be done only under competitive pressure as was observed in Japan.

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