IDE APEC STUDY CENTER
Working Paper Series 03/04 – No. 3

The Economic Impact of Trade Liberalization on the ASEAN Plus Three: The Case of Textile Industry

Hikari Ishido

MARCH 2004

APEC STUDY CENTER
INSTITUTE OF DEVELOPING ECONOMIES, JETRO

IDE APEC STUDY CENTER
Working Paper Series 03/04 – No. 3

The Economic Impact of Trade Liberalization on the ASEAN Plus Three: The Case of Textile Industry

March 2004

Hikari Ishido[*]

Development Studies Center,
Institute of Developing Economies, JETRO

[*] The author wishes to thank Kazunori Koga and Hiroya Kagiyama of Japan Chemical Fibers Association for their help in data gathering and useful comments on the characteristics of textile-related products. Useful comments and suggestions from Ippei Yamazawa, Satoru Okuda and Ian Larkin are cordially acknowledged.

CONTENTS

I. Introduction

World trade in the textile industry is in the process of liberalization. Members of the "ASEAN Plus Three" economies (comprising all the ten ASEAN members, plus China, Japan and Korea), as major exporters of textile-related products, seem to possess mixed sentiments towards the completion of liberalization in 2005. From a general equilibrium perspective, the removal of quota and/or tariff barriers is supposed to increase trade interaction, both within and across industries. The first step towards analyzing these interactions as a whole would be to primarily focus on the initial impact of trade liberalization. This paper therefore addresses impacts of trade liberalization of textile products on ASEAN Plus Three economies. The paper primarily adopts a comparative-static framework, yet consideration is also given to dynamic aspects of manufacturing firms' investment behavior in the textile manufacturing sector.

The structure of the paper is as follows. Section 2 reviews the institutional setting of the world textile industry. Section 3 studies the importance of textile industry for ASEAN Plus Three economies through statistical analysis and a review of the trade-restrictive international arrangements surrounding the industry. The first part of section 4 studies the direct impact of trade liberalization for the case of the US market, from a partial comparative-static standpoint. To complement the limitation of comparative statics, The latter part of Section 4 conducts a dynamic, albeit inevitably partial, analysis of manufacturing textile products. Section 5 contains concluding remarks.

II. Overview of the Textile Industry[1]

Table 1 shows the world exports of textile products in comparison with total world exports. As seen, the share of textile products in total exports has more or less remained stable since 1980. In terms of the share of total manufacturing exports, the textile industry is on a slightly declining trend. This seems to reflect the "standardized" or "static" nature of the textile industry, relative to other manufacturing sectors such as

[1] This section draws on http://www.wto.org/english/tratop_e/texti_e/texti_e.htm.

electronics. Within the textile industry, the category "textile materials" registers the lowest export performance, whereas exports of textile products, and to a larger extent clothing, is increasing.[2] This *intra*-industry difference in the export performance should be borne in mind when assessing the impact of trade liberalization in this industry.

Table 1. World exports of textile products, 1980-2000

(US$ billion)

Year	Textile materials[1]	Textile products[2]	Clothing[3]	Textiles total[4]	Manufactured products	Total export	Share of textiles total in manufactured products (percent)	Share of textiles total in total export (percent)
1980	17.7	54.3	38.5	110.5	1092.0	2000.9	10.1	5.5
1985	15.6	54.3	45.5	115.5	1171.1	1933.5	9.9	6.0
1990	22.8	109.9	108.5	241.1	2390.0	3387.0	10.1	7.1
1991	21.9	115.5	121.0	258.3	2469.0	3439.0	10.5	7.5
1992	20.6	125.2	134.6	280.5	2663.0	3653.0	10.5	7.7
1993	18.4	122.2	135.2	275.8	2651.0	3636.0	10.4	7.6
1994	24.2	139.6	151.6	315.4	3042.0	4110.0	10.4	7.7
1995	27.9	158.9	162.4	349.2	3641.8	4925.0	9.6	7.1
1996	26.4	160.1	171.6	358.1	3787.1	5190.0	9.5	6.9
1997	25.4	163.1	183.1	371.6	3990.9	5374.0	9.3	6.9
1998	20.9	158.1	187.3	366.3	4055.7	5290.0	9.0	6.9
1999	17.7	152.7	187.2	357.6	4217.3	5473.0	8.5	6.5
2000	15.0	157.5	198.9	371.4	4630.0	6186.0	8.0	6.0

Notes:
[1] SITC 26
[2] SITC 65
[3] SITC 84
[4] SITC 26+65+84
Source: JCFA (2002).

It would be worthwhile to review the institutional framework of the textile industry before considering the sector's importance for the ASEAN Plus Three economies. As part of its discussion around trade issues in developing countries, the WTO has focused on the textile industry, as was the case in the former GATT system. The industry is currently going through fundamental change under a ten-year schedule agreed in the Uruguay Round. The system of import quotas that has dominated the trade since the early 1960s is being phased out. Work in the WTO on textiles is handled by

[2] Four standard groupings exist for classifying textile production process: (1) tops and yarns, (2) fabrics, (3) made-up textile products and (4) clothing. In this paper, "textile materials" refers to materials used in category (1), "textile products" denotes categories (2) and (3), and "clothing" refers to category (4).

the Goods Council and the Textiles Monitoring Body (TMB).[3]

Since 1 January 1995, when the 10-year transitional program of the WTO's Agreement on Textiles and Clothing (ATC) was agreed, trade in international textiles and clothing has been going through fundamental change. Before the Agreement took effect, a large portion of textiles and clothing exports from developing countries to the industrial countries was subject to quotas under a special regime outside normal GATT rules. Under the Agreement, WTO Members committed themselves to remove the quotas by 1 January 2005 by integrating the sector fully into GATT rules.

Starting in 1974, and until the end of the Uruguay Round in 1994, textile and clothing quotas were negotiated bilaterally and governed by the rules of the Multifibre Arrangement (MFA). This provided for the application of selective quantitative restrictions when surges in imports of particular products caused, or threatened to cause, serious damage to the industry of the importing country. The MFA was a major departure from basic GATT rules, particularly the principle of non-discrimination. As noted, on 1 January 1995 the MFA was replaced by the WTO Agreement on Textiles and Clothing (ATC) which sets out a transitional process for the ultimate removal of these quotas.

The ATC is a transitional instrument, built on the following key elements: (a) product coverage, basically encompassing yarns, fabrics, made-up textile products and clothing; (b) a program for the progressive integration of these textile and clothing products into GATT 1994 rules; (c) a liberalization process to progressively enlarge existing quotas (until they are removed) by increasing annual quota growth rates at each stage; (d) a special safeguard mechanism (or Transitional SafeGuard, TSG) to deal with

[3] The TMB was established to supervise the implementation of the ATC and to examine all measures taken under it, to ensure that they are in conformity with the rules. It is a quasi-judicial, standing body which consists of a Chairman and ten TMB members, discharging their function in their personal capacity and taking all decisions by consensus. The ten members are appointed by WTO Member governments according to an agreed grouping of WTO Members into constituencies. There can be rotation within the constituencies. These characteristics make the TMB a unique institution within the WTO framework. In January 1995, the General Council decided upon the composition for the TMB for the first stage. In December 1997, the General Council decided upon the composition for the second stage (1998-2001) with TMB members to be appointed by WTO Members designated from the following constituencies: (a) the ASEAN Member countries; (b) Canada and Norway; (c) Pakistan and China (after accession); (d) the European Communities; (e) Korea and Hong Kong, China; (f) India and Egypt/Morocco/Tunisia; (g) Japan; (h) Latin American and Caribbean Members; (i) the United States; and (j) Turkey, Switzerland and Bulgaria/Czech Republic/Hungary/ Poland/Romania, Slovak Republic/Slovenia. Provisions were made for alternates to be appointed by the members in each of the constituencies and in some cases second alternates; there are also two non-participating observers from Members not already represented in this structure, one from Africa and one from Asia.

new cases of serious damage or threat thereof to domestic producers during the transition period[4]; (e) establishment of the TMB to supervise the implementation of the Agreement and ensure that the rules are faithfully followed; and (f) other provisions, including rules on circumvention of the quotas, their administration, treatment of non-MFA restrictions, and commitments undertaken elsewhere under the WTO's agreements and procedures affecting the textile sector.

All products listed in the Annex to the ATC were subject to MFA or MFA-type quotas in at least one importing country. ATC Article 2 laid down the integration process and stipulated how members should integrate the products listed in the Annex into the rules of GATT 1994 over the 10-year period. This process was to be carried out progressively in three stages (3 years, 4 years, 3 years) with all products standing integrated at the end of the 10-year period. The first stage began on 1 January 1995, with the integration by members of products representing not less than 16 per cent of that member's total 1990 imports of all the products in the Annex. At stage 2, beginning on 1 January 1998, not less than a further 17 per cent was integrated. At stage 3, beginning on 1 January 2002, not less than a further 18 per cent was integrated. Finally at the end of stage 3, on 1 January 2005, all remaining products (amounting up to 49 per cent of 1990 imports into a member) will stand integrated and the Agreement will terminate. Each importing member decides itself which products it will integrate at each stage to reach these thresholds. The only constraint is that the integration list must encompass products from each of the four groupings: tops and yarns, fabrics, made-up textile products and clothing.

The four WTO Members which maintained import restrictions under the former MFA (Canada, EC, Norway and the US) were required to undertake this integration process and to notify to the TMB by 1 October 1994 their plans for the first phase of their programs of integration. Other WTO Members were required, first, to notify the TMB if they wished to retain the right to use the transitional safeguard

[4] With regard to China, the Accession Agreement textile and apparel safeguard allows the United States and other WTO Member countries that believe imports of Chinese origin textile and apparel products are, due to market disruption, threatening to impede the orderly development of trade in these products to request consultations with China with a view to easing or avoiding such market disruption. Upon receipt of such a request, China has agreed to hold its shipments to a level no greater than 7.5 percent (6 percent for wool product categories) above the amount entered during the first 12 months of the most recent 14 months preceding the request for consultations. The United States may implement such a limit (http://otexa.ita.doc.gov/Safeguard_procedures.pdf, 5 December 2003).

mechanism in the ATC (Article 6.1) and, if so, to provide their first stage integration lists. Fifty-five Members chose to retain this right and most of them provided lists of products for integration. Nine members – Australia, Brunei Darussalam, Chile, Cuba, Hong Kong, Iceland, Macau, New Zealand and Singapore – decided not to maintain the right to use the ATC safeguard mechanism. They are deemed to have integrated 100 per cent at the outset.

Concurrent with the integration process, the ATC contains a program for liberalizing existing restrictions. Specifically, the ATC called for the enlargement of the bilateral quotas carried over from the former MFA on 1 January 1995 (Article 2.1) until such time as the products are integrated into GATT, at which time the quotas terminate. These former MFA quotas, when carried over into the ATC on 1 January 1995, represented the starting point for an automatic liberalization process set out in Article 2, paragraphs 12-16. The former MFA growth rates applicable to each of these quotas were increased on 1 January 1995 by a factor of 16 per cent for the first stage of the Agreement, and the new growth rate was applied annually. The stage 1 growth rate was further increased by a factor of 25 per cent for the second stage on 1 January 1998; and was increased by a further 27 per cent for the last stage beginning 1 January 2002. To illustrate this process, a 6 per cent growth rate under the MFA in 1994 became 6.9 per cent under the ATC and was applied each year from 1995 to 1997; then the growth rate was increased to 8.7 per cent for each year from 1998 to 2001; and finally the rate was increased to 11.05 per cent for each year from 2002 to 2004. For small suppliers (as defined in Article 2.18) the growth factors (16 per cent, 25 per cent, 27 per cent) are to be advanced by one stage. Quotas will be eliminated either when the products concerned are integrated into GATT at one of the stages or at the end of the transition on 1 January 2005. There are additional provisions in Article 2 for early removal of quotas and integration of products.

Article 3 deals with quantitative restrictions (or measures with similar effect) other than those covered by the MFA. Members who had such restrictions in place, which could not be justified under a GATT provision, were required either to bring them into conformity with GATT rules or phase them out within the ten year transitional period, according to a plan to be submitted by the restraining member to the

TMB. There was of course no obligation to eliminate restrictions that are permitted under GATT rules.

A key aspect of the ATC is the provision in Article 6 for a special transitional safeguard mechanism, for use only during the 10-year transition period, intended to protect members against damaging surges in imports from products which have not yet been integrated into GATT and which are not already under quota. This clause was based on a two-tiered approach. First, the importing member was required to determine that total imports of a specific product were causing or threatened to cause serious damage to its domestic industry and second. Second,I the member had to then decide to which individual member(s) this serious damage can be attributed. Specific criteria and procedures were set out for each step. The importing member was required to then seek consultations with the exporting member(s). Such safeguard measures could be applied on a selective, country-by-country basis by mutual agreement or, if agreement was not reached through the consultation process within 60 days, by unilateral action. The quota could not be lower than the actual level of imports for that exporting country during a recent 12 month period, and the action taken could remain in place for up to three years only. If the measure was in place for more than one year, growth could, with one exception, be no less than 6 per cent.[5]

Article 5 of the ATC contains rules and procedures concerning circumvention of the quotas through transshipment, re-routing, false declaration of origin, or falsification of official documents. These requirde, *inter alia*, consultation and full cooperation in the investigation of such practices by members concerned. When sufficient evidence was available, possible recourse could include the denial of entry of goods. There is also a provision whereby all members had to establish, consistent with their domestic laws and procedures, the necessary legal provisions and/or administrative procedures to address and take action against circumvention. Administration of restrictions during the transition period was to remain with the exporting members, and any changes in practices, rules or procedures was subject to consultations with a view to reaching mutually acceptable solutions (Article 4).

[5] In practice, the special safeguard was invoked on 24 occasions in 1995 (all by the United States), 8 times in 1996 (Brazil 7 times, US 1 time), 2 times in 1997 (all by the United States), and 10 times in 1998 (Colombia 9 times, US 1 time).

Provisions relating to the commitments undertaken in all areas of the Uruguay Round, as they relate to textiles and clothing, required that all Members "take such actions as may be necessary" to abide by these rules and disciplines so as to achieve improved market access, to ensure the application of fair and equitable trading conditions and to avoid discrimination against textiles and clothing imports (Article 7). If an exporting Member is found not to be complying with its obligations, the Dispute Settlement Body or the Council for Trade in Goods could authorize an adjustment to the quota growth for that country which is otherwise an automatic growth.

III. Status of the ASEAN Plus Three Economies in the Textile Industry

Table 2 shows the export amount of textile products, and the share of total textile products covered under the ATC, for the ASEAN Plus Three economies in recent years. As this table reveals, China has been the largest single exporter of textile products in Asia, distantly followed by Korea, India and Japan. In terms of the share of total country exports, Bangladesh stands out, with textile products constituting over 80 percent of total country exports in 1998. Textiles account for around 20 to 25 percent share in exports in India and China. The other listed Asian economies, i.e., the ASEAN economies, Korea and Japan, have an export share of around 10 percent or less for textile products.

Table 2. Export of textile products covered under ATC, by country, 1997-2001

(US$ billion)

	1997	1998	1999	2000	2001
China	47.4 (25.9)	44.9 (24.5)	45.8 (23.5)	54.7 (22.0)	55.7 (20.9)
Japan	9.2 (2.2)	8.2 (2.2)	8.8 (2.2)	9.5 (2.1)	8.4 (2.2)
Korea	19.1 (13.8)	17.2 (13.0)	17.8 (12.3)	19.2 (10.9)	16.6 (11.0)
Indonesia	5.3 (9.4)	5.2 (10.2)	7.1 (13.8)	8.5 (12.9)	7.9 (13.8)
Malaysia	2.8 (3.6)	2.5 (3.4)	2.6 (3.0)	2.8 (2.8)	2.4 (2.7)
The Philippines	2.8 (11.3)	2.8 (9.6)	2.7 (7.9)	3.1 (8.2)	2.9 (9.2)
Singapore	2.9 (2.3)	2.4 (2.2)	2.6 (2.2)	2.9 (2.1)	2.5 (2.0)
Thailand	6.1 (10.7)	5.7 (10.8)	5.8 (10.2)	6.2 (9.1)	5.9 (9.3)
India	9.4 (26.4)	9.2 (27.1)	10.2 (27.6)	12.0 (27.9)	n.a.
Bangladesh	3.2 (65.7)	4.2 (82.7)	n.a.	n.a.	n.a.
Sri Lanka	n.a.	n.a.	2.5 (55.1)	n.a.	2.6 (54.8)
Nepal	n.a.	0.2 (49.7)	0.3 (51.7)	0.4 (48.7)	n.a.
US	19.9 (2.9)	19.9 (3.0)	19.5 (2.8)	21.2 (2.7)	19.0 (2.6)
Canada	3.8 (1.7)	4.1 (1.9)	4.4 (1.8)	4.7 (1.6)	4.5 (1.6)
Mexico	8.8 (8.0)	9.8 (8.3)	11.4 (8.3)	12.6 (7.6)	11.3 (7.2)
EU	125.7 (5.9)	121.7 (6.0)	114.5 (5.3)	107.7 (4.8)	105.2 (4.6)
World	321.7 (5.8)	317.7 (5.7)	313.4 (5.6)	324.5 (5.2)	296.7 (4.8)

Notes: "World" total of PC-TAS data for all the listed countries

n.a. not available.

Figures in parentheses denote the share in the economy's/region's total exports.

Source: PC-TAS; International Monetary Fund, *International Financial Statistics*, August 2003; World Bank, *World Development Indicators 2003*.

Tables 3, 4, 5 and 6 show the trade matrices for textile-related products on the whole, textile materials (SITC 26), textile products (SITC 65) and clothing (SITC 84), respectively. These Tables reveal the following phenomena for the whole textile products:

(1) Asia has been increasing its global export share of overall textile products, with the ratio of Asia: West Europe: North America: the other regions reaching 5:3:1:1 in 1999 (Table 3);

(2) Asia has grown to become a large import market for overall textile products along with West Europe and North America (Table 3);

(3) Intra-Asia trade accounts for the largest share of Asian textile trade, with the remaining being exported largely to North America and West Europe (Table 3);

(4) The export share of clothing (apparel) has been increasing, with the ratio of textile materials: textile products: clothing standing at 5:43:52; that is, clothing has come to account for more than half of the world textile trade (Tables 4, 5 and 6).

Tables 4 specifically shows that for textile materials,

(1) The regional share has been fairly stable, with the ratio of Asia: West Europe: North America: other regions standing roughly at 25:25:15:35;
(2) For ASEAN, intra-ASEAN trade is the largest, at roughly double the amount of trade going to West Europe or North America;
(3) China has not been outstanding in this product category;
(4) West Europe and Asia as a whole have been large exporters.

Table 5, for textile products (SITC 65), shows that:

(1) The volume of this product category has been growing in a rapid manner;
(2) The regional share has been fairly stable, with the ratio of Asia: West Europe: North America roughly at 50: 40: 10;
(3) In Asia, ASEAN has significantly increased its export volume;
(4) China has been even more outstanding in its export performance.

Table 6. showing trade in clothing (SITC 84), indicates that:

(1) This product category has registered the most rapid export growth over the past two decades of the three textile-related trade categories (i.e., SITC 26, 65 and 84);
(2) ASEAN has increased its share in total world trade;
(4) China has registered the fastest export growth.

Table 3. Trade matrix for textile materials (SITC 26, 65, 84)

(US$ billion)

To: / From:	Year	World total	Asia	ASEAN	Japan	China	Korea	West Europe	EU15	North America	US	Middle East	East Europe and Russia	Latin America	Africa	Oceania
World total	1985	115.5	20.3	2.8	5.8	3.2	1.5	52.5	48.4	21.9	18.7	6.4	6.6	2.2	3.2	2.0
	1990	241.1	53.2	8.0	14.3	7.0	3.6	118.4	110.8	35.9	29.5	8.2	10.1	4.9	6.1	3.0
	1995	349.2	100.6	14.6	23.9	18.6	6.5	138.1	130.4	52.6	43.6	13.3	15.0	12.4	9.3	4.1
	1999	357.6	86.2	13.1	19.9	17.9	4.7	138.0	130.9	74.9	60.3	11.3	16.7	13.3	9.8	4.6
Asia	1985	44.4	14.5	326.9	3.5	2.2	0.6	7.3	6.8	14.8	13.5	2.9	1.5	0.6	0.9	1.2
	1990	98.8	41.0	6.1	8.9	5.8	1.3	21.1	19.9	24.4	21.9	4.1	2.5	1.4	1.7	1.8
	1995	162.7	81.3	10.8	17.9	15.7	4.0	26.9	25.5	31.7	29.1	7.9	2.9	4.2	3.8	2.7
	1999	169.3	74.5	10.7	16.4	16.6	3.3	32.0	30.5	40.4	36.7	6.1	2.9	4.7	3.7	3.3
ASEAN	1985	3.4	0.8	0.4	0.1	0.0	0.0	0.6	0.6	1.4	1.3	0.3	0.0	0.0	0.0	0.1
	1990	11.9	2.8	1.4	0.7	0.0	0.1	3.6	3.5	3.6	3.3	0.9	0.2	0.2	0.3	0.2
	1995	25.0	7.8	3.1	2.0	0.2	0.3	5.5	5.4	6.9	6.5	2.3	0.4	0.4	0.7	0.4
	1999	25.7	6.4	2.2	1.7	0.3	0.3	6.6	6.5	9.7	9.2	1.2	0.2	0.4	0.6	0.4
Japan	1985	6.3	2.8	0.6	-	0.5	0.4	0.6	0.5	1.2	1.1	1.0	0.2	0.1	0.2	0.3
	1990	7.2	4.1	0.9	-	0.6	0.7	1.1	1.0	0.9	0.8	0.6	0.2	0.1	0.1	0.2
	1995	9.0	6.5	1.3	-	2.4	0.8	0.9	0.9	0.7	0.7	0.5	0.0	0.1	0.1	0.1
	1999	8.0	5.7	1.0	-	2.6	0.5	1.0	0.9	0.8	0.7	0.4	0.0	0.0	0.1	0.1
China	1985	6.1	3.0	0.3	1.0	-	na	1.0	0.9	0.8	0.8	0.1	0.5	0.0	0.0	0.1
	1990	18.0	11.9	0.7	2.3	-	na	2.3	2.2	1.7	1.6	0.4	1.1	0.1	0.1	0.2
	1995	38.7	25.4	1.3	9.2	-	1.9	3.8	3.6	3.6	3.9	1.1	1.5	0.9	0.6	0.8
	1999	44.1	26.8	1.6	10.4	-	1.6	4.9	4.5	4.6	5.0	1.3	1.9	1.4	1.0	1.2
Korea	1985	7.1	1.8	0.2	1.0	na	-	1.1	1.0	3.0	2.7	0.5	na	0.1	0.2	0.1
	1990	14.3	5.6	0.7	2.9	na	-	2.0	1.9	4.4	3.8	0.8	na	0.3	0.2	0.3
	1995	18.3	10.2	2.0	2.5	1.9	-	1.3	1.3	3.0	2.6	1.7	0.4	1.1	0.4	0.2
	1999	17.3	8.0	1.9	1.5	2.2	-	1.7	1.7	3.9	3.3	1.4	0.4	1.1	0.4	0.3
West Europe	1985	47.8	1.8	0.2	0.8	0.3	0.1	36.0	32.7	3.7	3.1	1.7	2.2	0.3	1.6	0.4
	1990	100.5	5.4	0.4	3.0	0.2	0.4	78.7	72.8	5.0	4.1	2.1	4.6	0.5	3.4	0.5
	1995	117.6	8.4	1.1	3.5	0.4	1.0	83.6	77.8	5.3	4.5	3.4	9.7	1.0	4.6	0.5
	1999	110.4	5.7	0.8	2.2	0.4	0.4	76.3	71.2	6.2	5.4	3.5	11.7	0.9	4.9	0.5

Table 3. (Continued)

To: / From:	Year	World total	Asia	ASEAN	Japan	China	Korea	West Europe	EU15	North America	US	Middle East	East Europe and Russia	Latin America	Africa	Oceania
EU15	1985	45.6	1.7	0.2	0.8	0.3	0.1	34.3	31.0	3.6	3.0	1.7	2.2	0.3	1.6	0.4
	1990	96.6	5.2	0.4	2.9	0.2	0.4	75.4	69.5	4.9	4.0	2.1	4.5	0.5	3.3	0.5
	1995	114.0	8.2	1.0	3.4	0.4	1.0	80.8	75.0	5.1	4.4	3.3	9.6	1.0	4.6	0.5
	1999	107.5	5.5	0.7	2.1	0.4	0.4	74.1	69.0	6.0	5.2	3.4	11.5	0.9	4.8	0.5
North America	1985	6.7	1.9	0.3	0.5	0.3	0.5	1.3	1.2	1.9	0.9	0.3	0.1	0.8	0.3	0.2
	1990	13.1	3.7	0.7	1.2	0.5	0.7	2.7	2.6	3.7	1.1	0.5	0.1	1.8	0.4	0.2
	1995	26.2	5.9	1.3	1.8	1.1	0.8	2.8	2.7	11.4	5.9	0.6	0.2	4.7	0.4	0.3
	1999	34.5	2.6	0.6	0.8	0.3	0.3	2.2	2.2	23.0	13.2	0.4	0.1	5.6	0.3	0.2
US	1985	5.6	1.8	0.3	0.5	0.3	0.5	1.2	1.1	1.1	-	0.3	0.1	0.8	0.2	0.1
	1990	11.3	3.5	0.7	1.2	0.4	0.7	2.4	2.4	2.6	-	0.4	0.1	1.7	0.4	0.2
	1995	19.0	5.7	1.2	1.7	1.1	0.7	2.4	2.4	5.4	-	0.6	0.1	4.3	0.3	0.2
	1999	20.0	2.3	0.5	0.8	0.2	0.3	2.0	1.9	9.7	-	0.4	0.1	5.2	0.2	0.2
Middle East	1985	3.6	0.0	0.0	0.0	0.0	0.0	2.2	2.1	0.2	0.2	0.6	0.3	0.0	0.1	0.0
	1990	8.1	0.1	0.0	0.0	0.0	0.0	4.8	4.7	0.7	0.6	0.6	1.0	0.0	0.1	0.0
	1995	10.3	0.1	0.1	0.0	0.0	0.0	6.5	6.4	1.4	1.3	0.5	1.3	0.0	0.2	0.0
	1999	11.7	0.1	0.0	0.0	0.0	0.0	7.3	7.2	1.9	1.9	0.6	0.8	0.1	0.6	0.0
East Europe and Soviet/Russia	1985	4.5	0.2	0.1	0.1	0.1	na	2.3	2.1	0.3	0.3	0.8	1.5	0.0	0.1	0.0
	1990	6.6	0.3	0.3	0.1	0.1	na	4.6	4.5	0.3	0.3	0.7	1.0	0.0	0.1	0.0
	1995	13.9	1.0	0.9	0.0	0.3	0.3	10.2	10.1	0.7	0.6	0.6	0.9	0.1	0.0	0.0
	1999	15.3	0.5	0.6	0.0	0.0	0.3	12.4	12.2	0.8	0.8	0.6	1.1	0.0	0.0	0.0
Latin America	1985	2.7	0.3	0.0	0.2	0.1	0.0	0.9	0.9	0.7	0.6	0.0	0.2	0.5	0.1	0.0
	1990	4.6	0.5	0.1	0.1	0.1	0.0	1.4	1.4	1.2	1.1	0.1	0.2	1.2	0.0	0.0
	1995	5.5	0.7	0.1	0.1	0.2	0.0	1.0	0.9	1.3	1.2	0.0	0.0	2.3	0.0	0.0
	1999	4.4	0.2	0.0	0.1	0.1	0.0	0.5	0.5	1.6	1.4	0.0	0.0	1.9	0.0	0.0
Africa	1985	2.6	0.3	0.1	0.2	0.0	na	1.6	1.5	0.2	0.1	0.1	0.3	0.0	0.1	0.0
	1990	5.3	0.4	0.2	0.1	0.1	0.1	3.6	3.6	0.3	0.3	0.1	0.4	0.0	0.5	0.0
	1995	8.1	0.4	0.4	0.1	0.1	0.1	5.9	5.9	0.6	0.6	0.1	0.1	0.0	0.3	0.0
	1999	8.3	0.4	0.3	0.1	0.0	0.1	6.5	6.4	0.8	0.8	0.1	0.0	0.1	0.3	0.0
Oceania	1985	3.2	1.3	0.0	0.6	0.3	0.2	1.0	1.0	0.2	0.1	0.1	0.5	0.0	0.0	0.2
	1990	4.2	1.8	0.3	0.8	0.1	0.3	1.4	1.4	0.3	0.2	0.1	0.3	0.0	0.0	0.3
	1995	4.9	2.8	0.5	0.5	0.9	0.4	1.2	1.2	0.3	0.3	0.1	0.0	0.0	0.1	0.5
	1999	3.8	2.2	0.6	0.3	0.5	0.2	0.8	0.8	0.2	0.1	0.1	0.0	0.0	0.0	0.5

Source: Japan Chemical Fibers Association.

Table 4. Trade matrix for textile materials (SITC 26)

(US$ billion)

To: / From:	Year	World total	Asia	ASEAN	Japan	China	Korea	West Europe	EU15	North America	US	Middle East	East Europe and Russia	Latin America	Africa	Oceania
World total	1985	15.6	5.5	0.7	1.9	1.0	0.8	6.2	5.9	0.6	0.4	0.3	1.8	0.3	0.6	0.1
	1990	22.8	8.5	1.7	2.4	1.4	1.5	9.0	8.7	1.0	0.7	0.6	1.6	0.6	1.0	0.1
	1995	27.9	13.5	3.1	1.5	4.3	1.6	8.0	7.8	1.7	1.1	1.0	0.9	1.4	1.0	0.2
	1999	17.7	7.3	2.0	0.8	1.9	0.9	5.5	5.4	1.5	0.7	0.8	0.8	0.8	0.8	0.1
Asia	1985	3.1	2.1	0.3	0.6	0.2	0.1	0.6	0.5	0.1	0.1	0.0	0.2	0.0	0.1	0.0
	1990	4.7	3.0	0.6	0.6	0.4	0.2	0.8	0.7	0.1	0.1	0.1	0.4	0.0	0.1	0.0
	1995	6.2	5.0	0.9	0.4	1.7	0.3	0.5	0.5	0.3	0.3	0.1	0.0	0.0	0.1	0.1
	1999	4.6	3.3	0.8	0.3	1.0	0.3	0.7	0.7	0.3	0.3	0.1	0.0	0.1	0.1	0.0
ASEAN	1985	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	1990	0.3	0.2	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	1995	0.7	0.6	0.2	0.1	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	1999	0.5	0.4	0.1	0.0	0.1	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Japan	1985	0.6	0.5	0.1	-	0.2	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	1990	0.8	0.6	0.1	-	0.2	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	1995	1.3	1.0	0.3	-	0.4	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0
	1999	0.9	0.7	0.2	-	0.3	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0
China	1985	1.1	0.6	0.1	0.3	-	na	0.3	0.2	0.0	0.0	0.0	0.1	0.0	0.0	0.0
	1990	1.1	0.7	0.1	0.3	-	na	0.3	0.3	0.0	0.0	0.0	0.1	0.0	0.0	0.0
	1995	0.8	0.5	0.0	0.2	-	0.1	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	1999	1.0	0.6	0.1	0.1	-	0.2	0.3	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Korea	1985	0.1	0.1	0.0	0.0	na	-	0.0	0.0	0.0	0.0	0.0	na	0.0	0.0	0.0
	1990	0.4	0.2	0.0	0.0	na	-	0.0	0.0	0.0	0.0	0.0	na	0.0	0.0	0.0
	1995	1.1	0.8	0.1	0.0	0.5	-	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0
	1999	0.8	0.6	0.1	0.0	0.3	-	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0
West Europe	1985	3.6	0.4	0.0	0.1	0.2	0.0	2.4	2.3	0.1	0.1	0.1	0.3	0.0	0.2	0.0
	1990	5.9	0.5	0.0	0.1	0.2	0.0	4.2	3.9	0.2	0.2	0.2	0.3	0.1	0.4	0.0
	1995	6.1	0.5	0.2	0.1	0.2	0.1	3.9	3.7	0.2	0.2	0.3	0.4	0.1	0.5	0.0
	1999	4.4	0.3	0.1	0.1	0.1	0.0	2.5	2.4	0.2	0.2	0.3	0.5	0.1	0.4	0.0

Table 4. (Continued)

To: / From:	Year	World total	Asia	ASEAN	Japan	China	Korea	West Europe	EU15	North America	US	Middle East	East Europe and Russia	Latin America	Africa	Oceania
EU15	1985	3.5	0.4	0.0	0.1	0.2	0.0	2.3	2.2	0.1	0.1	0.1	0.3	0.0	0.2	0.0
	1990	5.8	0.5	0.0	0.1	0.2	0.0	4.0	3.8	0.2	0.1	0.2	0.3	0.1	0.4	0.0
	1995	5.9	0.5	0.1	0.1	0.2	0.1	3.8	3.6	0.2	0.2	0.3	0.4	0.1	0.5	0.0
	1999	4.3	0.3	0.1	0.1	0.1	0.0	2.4	2.4	0.2	0.1	0.3	0.5	0.1	0.4	0.0
North America	1985	2.7	1.3	0.2	0.4	0.1	0.4	0.7	0.6	0.3	0.1	0.0	0.1	0.1	0.2	0.0
	1990	4.3	2.4	0.5	0.6	0.4	0.6	0.8	0.8	0.5	0.2	0.1	0.1	0.2	0.3	0.0
	1995	6.2	3.6	0.9	0.5	1.1	0.5	0.6	0.5	1.0	0.5	0.2	0.0	0.6	0.3	0.0
	1999	2.7	0.9	0.3	0.2	0.2	0.1	0.4	0.4	0.9	0.2	0.1	0.0	0.3	0.2	0.0
US	1985	2.5	1.3	0.2	0.4	0.1	0.4	0.6	0.6	0.2	-	0.0	0.1	0.1	0.2	0.0
	1990	3.9	2.3	0.4	0.6	0.4	0.5	0.8	0.8	0.3	-	0.1	0.1	0.1	0.3	0.0
	1995	5.4	3.5	0.8	0.5	1.0	0.5	0.5	0.5	0.6	-	0.1	0.0	0.5	0.2	0.0
	1999	2.2	0.8	0.3	0.2	0.1	0.1	0.3	0.3	0.7	-	0.1	0.0	0.2	0.1	0.0
Middle East	1985	0.6	0.0	0.0	0.0	0.0	0.0	0.3	0.3	0.0	0.0	0.1	0.1	0.0	0.0	0.0
	1990	0.6	0.0	0.0	0.0	0.0	0.0	0.3	0.3	0.0	0.0	0.1	0.1	0.0	0.0	0.0
	1995	0.2	0.0	0.1	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	1999	0.3	0.0	0.0	0.0	0.0	0.0	0.2	0.2	0.0	0.0	0.1	0.0	0.0	0.0	0.0
East Europe and Soviet/Russia	1985	0.7	0.1	0.0	0.0	0.0	na	0.3	0.2	0.0	0.0	0.0	0.3	0.0	0.0	0.0
	1990	0.8	0.1	0.0	0.0	0.0	na	0.4	0.4	0.0	0.0	0.1	0.2	0.0	0.0	0.0
	1995	2.8	0.8	0.2	0.0	0.3	0.2	1.2	1.2	0.0	0.0	0.3	0.4	0.1	0.0	0.0
	1999	1.2	0.4	0.0	0.0	0.0	0.2	0.5	0.5	0.0	0.0	0.1	0.2	0.0	0.0	0.0
Latin America	1985	1.0	0.2	0.0	0.1	0.0	0.0	0.5	0.4	0.0	0.0	0.0	0.1	0.1	0.0	0.0
	1990	1.6	0.4	0.1	0.1	0.1	0.0	0.6	0.6	0.0	0.0	0.0	0.1	0.4	0.0	0.0
	1995	1.6	0.5	0.1	0.0	0.2	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.6	0.0	0.0
	1999	0.7	0.2	0.0	0.0	0.1	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.0	0.0
Africa	1985	1.1	0.3	0.1	0.2	0.0	0.0	0.6	0.6	0.0	0.0	0.0	0.2	0.0	0.0	0.0
	1990	1.3	0.4	0.2	0.1	0.1	0.1	0.6	0.6	0.0	0.0	0.0	0.1	0.0	0.2	0.0
	1995	0.8	0.4	0.4	0.1	0.1	0.1	0.3	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	1999	0.8	0.3	0.3	0.0	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.0	0.1	0.0
Oceania	1985	2.9	1.2	0.0	0.5	0.3	0.2	1.0	1.0	0.1	0.1	0.0	0.5	0.0	0.0	0.0
	1990	3.7	1.7	0.2	0.8	0.1	0.3	1.4	1.4	0.2	0.2	0.1	0.3	0.0	0.0	0.0
	1995	4.1	2.6	0.4	0.5	0.8	0.3	1.1	1.1	0.2	0.2	0.1	0.0	0.0	0.0	0.1
	1999	3.0	2.0	0.5	0.3	0.5	0.2	0.8	0.8	0.1	0.1	0.1	0.0	0.0	0.0	0.0

Source: Japan Chemical Fibers Association.

Table 5. Trade matrix for textile products (SITC 65)

(US$ billion)

To: / From:	Year	World total	Asia	ASEAN	Japan	China	Korea	West Europe	EU15	North America	US	Middle East	East Europe and Russia	Latin America	Africa	Oceania
World total	1985	54.3	12.0	1.8	2.0	2.2	0.7	24.4	22.8	6.2	4.6	3.7	2.9	1.1	2.0	1.4
	1990	109.9	29.3	5.2	3.8	5.2	1.9	51.8	49.1	9.6	6.5	4.8	5.2	2.2	4.0	1.9
	1995	158.9	56.3	9.4	5.5	13.0	3.9	55.0	52.6	14.3	9.9	8.3	8.4	5.6	6.2	2.4
	1999	152.7	48.5	8.9	4.2	13.2	3.0	50.2	48.1	21.8	14.1	6.9	9.7	5.6	6.4	2.4
Asia	1985	19.7	10.1	1.5	1.4	1.8	0.4	2.2	2.1	2.7	2.3	1.9	0.8	0.3	0.6	0.8
	1990	42.4	25.3	4.5	2.2	5.0	1.0	5.9	5.6	4.1	3.3	2.6	0.9	0.8	1.1	1.1
	1995	76.5	50.7	8.1	3.8	12.8	3.0	7.1	6.8	5.5	4.7	5.3	0.8	2.4	2.5	1.5
	1999	71.8	44.1	7.9	3.2	12.9	2.4	8.1	7.8	7.8	6.5	4.1	0.8	2.7	2.5	1.5
ASEAN	1985	1.2	0.6	0.3	0.1	0.0	0.0	0.2	0.2	0.2	0.2	0.1	0.0	0.0	0.0	0.1
	1990	3.5	1.7	1.0	0.2	0.0	0.0	0.8	0.8	0.3	0.3	0.3	0.0	0.0	0.1	0.2
	1995	8.1	4.4	1.9	0.5	0.1	0.2	1.2	1.2	0.6	0.5	1.0	0.1	0.1	0.2	0.3
	1999	7.5	4.0	1.4	0.6	0.2	0.2	1.2	1.1	0.9	0.7	0.7	0.1	0.2	0.3	0.2
Japan	1985	5.0	2.2	0.4	-	0.3	0.3	0.4	0.4	0.7	0.6	0.9	0.2	0.1	0.2	0.3
	1990	5.9	3.3	0.7	-	0.4	0.6	0.8	0.8	0.7	0.6	0.6	0.1	0.1	0.1	0.2
	1995	7.2	5.1	1.0	-	1.9	0.6	0.7	0.7	0.6	0.5	0.5	0.0	0.1	0.1	0.1
	1999	6.6	4.8	0.8	-	2.3	0.4	0.7	0.7	0.6	0.6	0.3	0.0	0.0	0.0	0.1
China	1985	3.1	1.8	0.2	0.4	-	na	0.4	0.4	0.2	0.3	0.1	0.2	0.0	0.0	0.1
	1990	7.2	5.0	0.5	0.7	-	na	0.9	0.8	0.4	0.5	0.2	0.4	0.1	0.1	0.1
	1995	13.9	9.9	1.2	1.6	-	1.3	1.0	0.9	0.2	0.9	0.6	0.2	0.4	0.5	0.2
	1999	13.0	8.5	1.1	1.5	-	0.9	1.1	1.1	0.2	1.1	0.5	0.2	0.5	0.6	0.3
Korea	1985	2.5	1.1	0.2	0.3	na	-	0.2	0.2	0.5	0.4	0.4	na	0.1	0.1	0.1
	1990	6.1	2.9	0.7	0.5	na	-	0.6	0.5	0.8	0.5	0.7	na	0.3	0.2	0.2
	1995	12.3	7.3	1.8	0.6	1.4	-	0.7	0.7	0.9	0.7	1.6	0.2	1.0	0.4	0.2
	1999	11.6	6.0	1.7	0.4	1.8	-	0.9	0.9	1.4	0.9	1.4	0.3	1.1	0.4	0.2
West Europe	1985	26.6	1.0	0.1	0.5	0.1	0.1	19.6	18.3	1.9	1.5	1.1	1.4	0.2	1.2	0.3
	1990	53.8	2.7	0.3	1.3	0.1	0.3	40.9	38.7	2.5	2.0	1.4	3.1	0.3	2.5	0.4
	1995	62.5	4.0	0.7	1.3	0.2	0.6	42.0	39.8	2.7	2.3	2.0	6.8	0.6	3.3	0.4
	1999	56.1	2.8	0.6	0.6	0.2	0.3	35.4	33.7	3.1	2.7	1.9	7.9	0.5	3.4	0.4

Table 5. (Continued)

To: / From:	Year	World total	Asia	ASEAN	Japan	China	Korea	West Europe	EU15	North America	US	Middle East	East Europe and Russia	Latin America	Africa	Oceania
EU15	1985	25.0	0.9	0.1	0.4	0.0	0.1	18.3	17.0	1.8	1.4	1.0	1.4	0.2	1.1	0.3
	1990	51.0	2.5	0.3	1.2	0.1	0.3	38.6	36.4	2.4	1.9	1.3	3.1	0.3	2.4	0.4
	1995	60.0	3.8	0.7	1.2	0.2	0.5	40.0	37.9	2.6	2.2	1.9	6.7	0.6	3.3	0.4
	1999	54.2	2.7	0.6	0.6	0.2	0.2	34.0	32.3	3.0	2.6	1.8	7.7	0.5	3.4	0.3
North America	1985	2.9	0.5	0.1	0.1	0.1	0.0	0.5	0.5	1.1	0.4	0.2	0.0	0.4	0.1	0.1
	1990	5.9	0.9	0.2	0.3	0.1	0.1	1.4	1.4	2.3	0.6	0.3	0.0	0.7	0.1	0.2
	1995	9.8	1.1	0.4	0.3	0.1	0.2	1.6	1.5	4.9	1.9	0.4	0.1	1.4	0.1	0.2
	1999	13.8	1.1	0.2	0.2	0.1	0.2	1.4	1.4	9.4	3.7	0.3	0.1	1.3	0.1	0.2
US	1985	2.4	0.4	0.1	0.1	0.1	0.0	0.5	0.5	0.7	-	0.2	0.0	0.4	0.1	0.1
	1990	4.9	0.8	0.2	0.3	0.1	0.1	1.2	1.2	1.7	-	0.3	0.0	0.6	0.1	0.2
	1995	7.2	1.1	0.4	0.3	0.1	0.2	1.4	1.3	3.0	-	0.4	0.1	1.1	0.1	0.2
	1999	9.5	1.0	0.2	0.2	0.1	0.2	1.2	1.2	5.7	-	0.3	0.1	1.1	0.1	0.2
Middle East	1985	1.4	0.0	0.0	0.0	0.0	0.0	0.7	0.7	0.1	0.1	0.4	0.1	0.0	0.1	0.0
	1990	2.8	0.0	0.0	0.0	0.0	0.0	1.2	1.2	0.1	0.1	0.4	0.6	0.0	0.1	0.0
	1995	3.0	0.1	0.0	0.0	0.0	0.0	1.6	1.5	0.3	0.3	0.4	0.4	0.0	0.1	0.0
	1999	3.9	0.1	0.0	0.0	0.0	0.0	2.1	2.0	0.6	0.5	0.4	0.4	0.0	0.2	0.0
East Europe and Soviet/Russia	1985	1.5	0.1	0.1	0.0	0.1	na	0.6	0.6	0.1	0.1	0.1	0.5	0.0	0.0	0.0
	1990	1.9	0.2	0.3	0.0	0.1	na	1.1	1.0	0.1	0.1	0.1	0.3	0.0	0.0	0.0
	1995	3.1	0.2	0.7	0.0	0.0	0.1	1.8	1.8	0.2	0.2	0.2	0.4	0.0	0.0	0.0
	1999	3.7	0.1	0.6	0.0	0.0	0.1	2.6	2.5	0.2	0.2	0.1	0.6	0.0	0.0	0.0
Latin America	1985	1.2	0.1	0.0	0.1	0.1	0.0	0.4	0.4	0.3	0.3	0.0	0.1	0.2	0.0	0.0
	1990	1.6	0.1	0.0	0.1	0.0	0.0	0.6	0.6	0.4	0.3	0.0	0.1	0.4	0.0	0.0
	1995	2.2	0.1	0.0	0.1	0.0	0.0	0.4	0.3	0.4	0.4	0.0	0.0	1.2	0.0	0.0
	1999	1.9	0.1	0.0	0.0	0.0	0.0	0.2	0.2	0.4	0.3	0.0	0.0	1.1	0.0	0.0
Africa	1985	0.7	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.1	0.0	0.1	0.1	0.0	0.1	0.0
	1990	1.2	0.0	0.0	0.0	0.0	0.0	0.6	0.6	0.1	0.0	0.1	0.2	0.0	0.2	0.0
	1995	1.4	0.1	0.0	0.0	0.0	0.0	0.7	0.7	0.1	0.1	0.1	0.0	0.0	0.2	0.0
	1999	1.1	0.0	0.0	0.0	0.0	0.0	0.6	0.6	0.1	0.1	0.0	0.0	0.0	0.2	0.0
Oceania	1985	0.3	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2
	1990	0.3	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2
	1995	0.5	0.1	0.1	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.3
	1999	0.5	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.3

Source: Japan Chemical Fibers Association.

Table 6. Trade matrix for clothing (SITC 84)

(US$ billion)

To: / From:	Year	World total	Asia	ASEAN	Japan	China	Korea	West Europe	EU15	North America	US	Middle East	East Europe and Russia	Latin America	Africa	Oceania
World total	1985	45.6	2.8	0.4	1.9	0.1	0.0	21.9	19.6	15.1	13.7	2.4	1.8	0.8	0.6	0.5
	1990	108.5	15.5	1.1	8.0	0.4	0.2	57.6	53.1	25.3	22.4	2.7	3.3	2.2	1.1	0.9
	1995	162.4	30.8	2.1	16.9	1.2	1.1	75.0	70.1	36.6	32.6	4.0	5.7	5.5	2.1	1.6
	1999	187.2	30.4	2.3	14.9	2.8	0.8	82.2	77.4	51.6	45.5	3.7	6.2	6.9	2.5	2.1
Asia	1985	21.6	2.3	325.0	1.5	0.1	0.0	4.5	4.2	12.1	11.1	1.0	0.5	0.3	0.2	0.4
	1990	51.8	12.7	0.9	6.1	0.4	0.1	14.4	13.6	20.2	18.5	1.5	1.2	0.6	0.4	0.7
	1995	80.1	25.6	1.7	13.7	1.2	0.6	19.3	18.1	26.0	24.2	2.5	2.1	1.8	1.1	1.2
	1999	92.9	27.1	2.1	12.9	2.7	0.6	23.2	22.0	32.3	30.0	1.8	2.1	2.0	1.1	1.7
ASEAN	1985	2.0	0.1	0.1	0.0	0.0	0.0	0.4	0.4	1.3	1.2	0.2	0.0	0.0	0.0	0.0
	1990	8.1	0.9	0.3	0.4	0.0	0.0	2.8	2.7	3.3	3.0	0.6	0.1	0.2	0.2	0.1
	1995	16.2	2.8	0.9	1.5	0.0	0.1	4.3	4.1	6.3	6.0	1.3	0.4	0.3	0.4	0.1
	1999	17.7	2.1	0.6	1.1	0.0	0.0	5.4	5.3	8.9	8.5	0.5	0.1	0.2	0.3	0.2
Japan	1985	0.7	0.1	0.0	-	0.0	0.0	0.1	0.1	0.5	0.4	0.1	0.0	0.0	0.0	0.0
	1990	0.6	0.2	0.0	-	0.0	0.0	0.2	0.2	0.2	0.2	0.0	0.0	0.0	0.0	0.0
	1995	0.5	0.3	0.0	-	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0
	1999	0.5	0.2	0.0	-	0.1	0.0	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0
China	1985	1.9	0.6	0.0	0.4	-	na	0.3	0.3	0.6	0.5	0.1	0.2	0.0	0.0	0.0
	1990	9.7	6.3	0.1	1.4	-	na	1.1	1.1	1.3	1.1	0.2	0.6	0.1	0.0	0.1
	1995	24.1	15.0	0.1	7.4	-	0.4	2.7	2.5	3.4	3.0	0.5	1.3	0.5	0.2	0.5
	1999	30.1	17.7	0.4	8.8	-	0.5	3.5	3.1	4.4	3.9	0.7	1.7	0.9	0.4	0.9
Korea	1985	4.5	0.6	0.0	0.6	Na	-	0.8	0.8	2.5	2.3	0.2	na	0.0	0.1	0.0
	1990	7.9	2.5	0.0	2.4	Na	-	1.4	1.4	3.6	3.3	0.1	na	0.0	0.0	0.1
	1995	5.0	2.1	0.0	1.8	0.1	-	0.6	0.6	2.0	1.8	0.1	0.1	0.1	0.0	0.0
	1999	4.9	1.4	0.1	1.1	0.1	-	0.7	0.7	2.4	2.2	0.0	0.1	0.1	0.0	0.0
West Europe	1985	17.6	0.4	0.0	0.3	0.0	0.0	14.0	12.1	1.7	1.5	0.5	0.6	0.1	0.3	0.1
	1990	40.8	2.3	0.1	1.6	0.0	0.1	33.7	30.2	2.4	2.0	0.5	1.1	0.2	0.5	0.1
	1995	49.1	3.9	0.2	2.1	0.0	0.4	37.8	34.3	2.4	2.1	1.1	2.4	0.4	0.9	0.1
	1999	50.0	2.6	0.1	1.5	0.1	0.1	38.4	35.1	2.9	2.6	1.3	3.3	0.3	1.0	0.2

Table 6. (Continued)

To: / From:	Year	World total	Asia	ASEAN	Japan	China	Korea	West Europe	EU15	North America	US	Middle East	East Europe and Russia	Latin America	Africa	Oceania
EU15	1985	17.1	0.4	0.0	0.3	0.0	0.0	13.6	11.7	1.7	1.4	0.5	0.5	0.1	0.3	0.1
	1990	39.8	2.3	0.1	1.6	0.0	0.1	32.8	29.3	2.3	1.9	0.5	1.1	0.2	0.5	0.1
	1995	48.1	3.9	0.2	2.1	0.0	0.4	37.0	33.5	2.3	2.0	1.1	2.4	0.4	0.9	0.1
	1999	49.0	2.5	0.1	1.5	0.1	0.1	37.7	34.4	2.8	2.5	1.3	3.3	0.3	1.0	0.1
North America	1985	1.1	0.1	0.0	0.0	0.0	0.0	0.1	0.1	0.6	0.4	0.0	0.0	0.3	0.0	0.0
	1990	2.9	0.4	0.0	0.3	0.0	0.0	0.5	0.5	0.9	0.3	0.1	0.0	1.0	0.0	0.0
	1995	10.2	1.1	0.1	1.0	0.0	0.0	0.6	0.6	5.5	3.6	0.1	0.0	2.8	0.0	0.0
	1999	17.9	0.6	0.0	0.5	0.0	0.0	0.5	0.5	12.6	9.3	0.1	0.0	4.1	0.0	0.0
US	1985	0.7	0.1	0.0	0.0	0.0	0.0	0.1	0.1	0.2	-	0.0	0.0	0.3	0.0	0.0
	1990	2.5	0.4	0.0	0.3	0.0	0.0	0.4	0.4	0.6	-	0.1	0.0	1.0	0.0	0.0
	1995	6.5	1.1	0.1	1.0	0.0	0.0	0.6	0.5	1.9	-	0.1	0.0	2.8	0.0	0.0
	1999	8.3	0.6	0.0	0.5	0.0	0.0	0.4	0.4	3.3	-	0.1	0.0	3.9	0.0	0.0
Middle East	1985	1.6	0.0	0.0	0.0	0.0	0.0	1.2	1.2	0.2	0.1	0.2	0.1	0.0	0.0	0.0
	1990	4.7	0.0	0.0	0.0	0.0	0.0	3.3	3.2	0.5	0.5	0.1	0.4	0.0	0.0	0.0
	1995	7.0	0.0	0.0	0.0	0.0	0.0	4.8	4.7	1.0	1.0	0.1	0.9	0.0	0.1	0.0
	1999	7.5	0.0	0.0	0.0	0.0	0.0	5.1	5.0	1.4	1.3	0.2	0.4	0.0	0.4	0.0
East Europe and Soviet/Russia	1985	2.4	0.0	0.0	0.0	0.0	na	1.4	1.3	0.2	0.2	0.7	0.7	0.0	0.0	0.0
	1990	3.9	0.0	0.0	0.0	0.0	na	3.1	3.0	0.2	0.2	0.5	0.5	0.0	0.0	0.0
	1995	8.1	0.0	0.0	0.0	0.0	0.0	7.3	7.2	0.5	0.4	0.2	0.2	0.0	0.0	0.0
	1999	10.4	0.0	0.0	0.0	0.0	0.0	9.4	9.2	0.6	0.6	0.3	0.3	0.0	0.0	0.0
Latin America	1985	0.5	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.3	0.3	0.0	0.0	0.1	0.0	0.0
	1990	1.5	0.0	0.0	0.0	0.0	0.0	0.2	0.2	0.8	0.7	0.0	0.0	0.4	0.0	0.0
	1995	1.7	0.0	0.0	0.0	0.0	0.0	0.2	0.2	0.8	0.8	0.0	0.0	0.5	0.0	0.0
	1999	1.8	0.0	0.0	0.0	0.0	0.0	0.2	0.2	1.1	1.1	0.0	0.0	0.5	0.0	0.0
Africa	1985	0.8	0.0	0.0	0.0	0.0	na	0.6	0.6	0.1	0.1	0.0	0.0	0.0	0.0	0.0
	1990	2.8	0.0	0.0	0.0	0.0	0.0	2.4	2.4	0.2	0.2	0.0	0.0	0.0	0.1	0.0
	1995	5.9	0.0	0.0	0.0	0.0	0.0	5.0	4.9	0.5	0.5	0.0	0.0	0.0	0.1	0.0
	1999	6.4	0.0	0.0	0.0	0.0	0.0	5.6	5.5	0.7	0.6	0.0	0.0	0.0	0.1	0.0
Oceania	1985	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	1990	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0
	1995	0.4	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2
	1999	0.3	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2

Source: Japan Chemical Fibers Association.

Consideration should also be given to production, which takes place before trade. Tables 7 and 8 show the installed capacity of short staple spindles and shuttle-less looms (both of which are used for textile production) by region/country, respectively. These tables reveal the large and growing importance of Asia, particularly China, as a location of production. Employment statistics in Table 9 also give a picture of the allocation of productive capital in the textile industry by region/country. The “official” figures in the table reveal the large presence of a textile-related workforce in India and China. The “unofficial” figures in the table imply an even larger potential of these two economies’ textile-related production.

It should be noted that all the figures presented in these tables are market-distorted ones, with the ATC in place as the successor to the MFA. In the absence of policy distortion, therefore, the amount of trade flows should be expected to differ to a large degree. One possible channel of change would be a “static” one, i.e., the increase of exports from thus-far-restricted producers which have *already* entered the market. Another channel would be a “dynamic” one which entails *new* entry of producers. It would be highly complex, however, to assess the overall or “general” impact of the phase out of the ATC. It therefore makes sense to first attempt to capture the most direct, or “partial”, impact of the trade liberalization programs. The next section attempts to clarify the direct economic impacts of trade liberalization through the use of a partial-equilibrium analysis.

Table 7. Installed capacity of short staple spindles by region and leading countries, 2000 and 2001

Region/ Country	Rank in 2000	Rank in 2001	Installed capacity in 2000 (thousand)	Installed capacity in 2001 (thousand)	% change 2001/2000	Share in world total in 2000 (%)	Share in world total in 2001 (%)
Region							
Asia	1	1	108,826	111,905	2.8	69.9	71.3
South America	3	2	9,845	9,809	-0.4	6.3	6.3
Eastern Europe	2	3	10,023	8,778	-12.4	6.4	5.6
North America	4	4	8,600	8,225	-4.4	5.5	5.2
Africa	5	5	7,134	6,922	-3.0	4.6	4.4
Western Europe	-	-	5,788	5,721	-1.2	3.7	3.6
EU15	6	6	5,563	5,494	-1.3	3.6	3.5
World total	-	-	155,681	156,913	0.8	100.0	100.0
Country							
India	1	1	36,910	37,698	2.1	23.7	24.0
China	2	2	33,826	34,435	1.8	21.7	21.9
Pakistan	3	3	8,438	8,567	1.5	5.4	5.5
Indonesia	4	4	7,078	8,500	20.1	4.5	5.4
Turkey	6	5	5,465	5,554	1.6	3.5	3.5
Brazil	5	6	5,523	5,437	-1.6	3.5	3.5
Japan	11	7	3,384	3,761	11.1	2.2	2.4
Thailand	7	8	3,719	3,719	0.0	2.4	2.4
Mexico	9	9	3,500	3,500	0.0	2.2	2.2
US	8	10	3,706	3,331	-10.1	2.4	2.1
Taiwan	12	11	2,843	2,716	-4.5	1.8	1.7
Egypt	14	12	2,450	2,600	6.1	1.6	1.7
Bangladesh	13	13	2,469	2,469	0.0	1.6	1.6
Russia	10	14	3,390	2,381	-29.8	2.2	1.5
Iran	15	15	2,075	2,075	0.0	1.3	1.3
Korea	16	16	1,938	1,803	-7.0	1.2	1.1
Romania	17	17	1,550	1,500	-3.2	1.0	1.0
Italy	18	18	1,507	1,472	-2.3	1.0	0.9
Argentina	20	19	1,400	1,450	3.6	0.9	0.9
Uzbekistan	19	20	1,440	1,440	0.0	0.9	0.9
Spain	21	21	1,019	1,006	-1.3	0.7	0.6
Portugal	22	22	1,010	990	-2.0	0.6	0.6
Colombia	23	23	950	950	0.0	0.6	0.6
Philippines	23	23	950	950	0.0	0.6	0.6
Ukraine	25	25	900	900	0.0	0.6	0.6
Vietnam	26	26	890	890	0.0	0.6	0.6
Greece	27	27	877	877	0.0	0.6	0.6
Nigeria	28	28	810	810	0.0	0.5	0.5
Syria	29	29	710	770	8.5	0.5	0.5
Peru	30	30	700	700	0.0	0.4	0.4
Yugoslavia	30	30	700	700	0.0	0.4	0.4
Malaysia	32	32	650	650	0.0	0.4	0.4
Bulgaria	33	33	640	640	0.0	0.4	0.4
Cuba	34	34	600	600	0.0	0.4	0.4
Venezuela	35	35	550	550	0.0	0.4	0.4
World total	-	-	155,681	156,913	0.8	100.0	100.0

Source: Anson (2002), Table 3.

Table 8. Installed capacity of shuttle-less looms by region and leading countries, 2000 and 2001

Region/ Country	Rank in 2000	Rank in 2001	Installed capacity in 2000 (thousand)	Installed capacity in 2001 (thousand)	% change 2001/2000	Share in world total in 2000 (%)	Share in world total in 2001 (%)
Region							
Asia	1	1	246,605	247,560	0.4	38.0	38.9
Eastern Europe	2	2	183,415	175,050	-4.6	28.3	27.5
North America	3	3	76,792	74,650	-2.8	11.8	11.7
South America	5	4	51,960	53,760	3.5	8.0	8.5
Western Europe		-	55,150	51,770	-6.1	8.5	8.1
EU15	4	5	54,250	508,50	-6.3	8.4	8.0
Africa	6	6	18,990	16,890	-11.1	2.9	2.7
World total	-	-	648,912	635,680	-2.0	100.0	100.0
Country							
Russia	1	1	106,200	100,200	-5.6	16.4	15.8
China	2	2	58,700	60,930	3.8	9.0	9.6
US	3	3	53,702	51,560	-4.0	8.3	8.1
Brazil	4	4	37,900	38,600	1.8	5.8	6.1
Indonesia	5	5	27,000	27,000	0.0	4.2	4.2
Uzbekistan	6	6	25,800	25,800	0.0	4.0	4.1
Thailand	9	7	21,000	21,000	0.0	3.2	3.3
Taiwan	8	8	21,300	20,800	-1.9	3.3	3.3
Japan	7	9	23,670	18,850	-20.4	3.6	3.0
Romania	10	10	19,000	18,800	-1.1	2.9	3.0
Ukraine	11	11	18,000	18,000	0.0	2.8	2.8
Pakistan	13	12	15,000	16,000	6.7	2.3	2.5
Turkey	12	12	16,000	16,000	0.0	2.5	2.5
Iran	15	14	12,000	14,500	20.8	1.8	2.3
Mexico	14	14	14,500	14,500	0.0	2.2	2.3
Italy	16	16	11,890	11,600	-2.4	1.8	1.8
Portugal	17	17	9,700	9,620	-0.8	1.5	1.5
India	18	18	7,955	7,500	-5.7	1.2	1.2
Czech Republic	19	19	7,400	7,300	-1.4	1.1	1.1
Spain	20	20	7,000	6,750	-3.6	1.1	1.1
Poland	21	21	6,100	6,100	0.0	0.9	1.0
Bulgaria	23	22	6,000	6,000	0.0	0.9	0.9
France	22	23	6,070	5,500	-9.4	0.9	0.9
Belgium	24	24	5,400	5,400	0.0	0.8	0.8
Argentina	25	25	4,700	4,800	2.1	0.7	0.8
Hong Kong	26	26	4,670	4,670	0.0	0.7	0.7
Tajikistan	27	27	4,600	4,600	0.0	0.7	0.7
Germany	28	28	4,460	4,460	0.0	0.7	0.7
Colombia	29	2929	4,000	4,000	0.0	0.6	0.6
Cuba	29	29	4,000	4,000	0.0	0.6	0.6
Estonia	29	29	4,000	4,000	0.0	0.6	0.6
Kazakhstan	29	29	4,000	4,000	0.0	0.6	0.6
Malaysia	29	29	4,000	4,000	0.0	0.6	0.6
Bangladesh	34	34	3,200	3,200	0.0	0.5	0.5
Canada	35	35	3,100	3,100	0.0	0.5	0.5
World total	-	-	648,912	635,680	-2.0	100.0	100.0

Source: Anson (2002), Table 11.

Table 9. Total employment in textiles and clothing, 2001

(thousand)

Region	Employment	Percentage share according to official dataset	Share according to unofficial dataset
Official data			
EU15[1]	2,036	7.3	2.9
EFTA+CEEC[2]	1,135	4.0	1.6
Mediterranean[3]	2,912	10.4	4.1
NAFTA[4]	1,746	6.2	2.5
South America[5]	1,660	5.9	2.3
Sub-Indian continent[6]	6,886	24.6	3.5
China	7,543	26.9	-
Southeast Asia[7]	2,908	10.4	4.1
Rest of the world[8]	414	1.5	0.6
Official total	28,050	100.0	-
Unofficial estimate			
China	20,000	-	28.1
India	35,000	-	49.2
Unofficial total	71,121	-	100.0

Notes: [1] Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, Netherlands, Portugal, Spain, Sweden, United Kingdom
[2] Switzerland, Norway, Bulgaria, Romania, Estonia, Latvia, Lithuania, Poland, Hungary, Slovenia, Slovakia, Czech Republic
[3] Morocco, Tunisia, Turkey, Israel, Cyprus, Malta, Jordan, Egypt
[4] US, Canada, Mexico
[5] Brazil, Argentina, Chile, Uruguay
[6] India, Pakistan, Sri Lanka, Bangladesh
[7] Indonesia, Malaysia, Philippines, Thailand
[8] South Africa, Australia, Belarus, Mauritius

Source: Euratex (2003).

IV. Analysis of Direct Impacts of Trade Liberalization

Using the framework supplied by Vernon (1966), the textile industry is at the "standardized" stage of development. In analyzing the impact of trade liberalization on the world textile industry, this implies that cost considerations become highest in the strategic investment behavior of businesses. This section is dedicated to the analysis of the economic impacts, both static and dynamic, of trade liberalization in the world textile industry. A comparative static analysis is first made in sub section 4.1, and then a dynamic analysis is considered in sub section 4.2.

IV-1. A Comparative-Static Model of Trade Liberalization in the Textile Industry

Trade liberalization consists of two primary parts: tariff reduction and quota removal. These two policy options are mutually substitutable since both anti-trade policies have an import restriction effect. A difference between liberalization of these policies is that while tariff reduction directly lowers the price of the import products, quota removal does so in an indirect way. The use of a comparative-static, partial-equilibrium model below, drawn from Yang, Martin and Yanagishima (1997), allows forecasting the impacts of tariff reduction and quota removal.

Suppose, for simplicity, that the world economy is composed of three "countries" (or three groups composed of several countries, depending on the context): a textile-producing country, a consumer country with import restrictions, and a consumer country without import restrictions. Yang, Martin and Yanagishima (1997) point out that when both a quota and a tariff are levied on the import of a good in general, and the import quota is binding, the quota level determines the volume of imports of the good. The domestic price of the good is in turn determined solely by domestic demand and the volume of the import quota. At a given world price, the difference between the domestic price in the restricted market and the world price consists of the tariff and the quota rents. The tariff rate is an exogenous policy variable, whereas the tariff equivalent of the quota is endogenously determined by the level of the quota and the strength of domestic demand. Mathematically,

$$p_d = p_w(1+t)(1+q) \tag{4.1}$$

where

p_d : domestic price of the good;

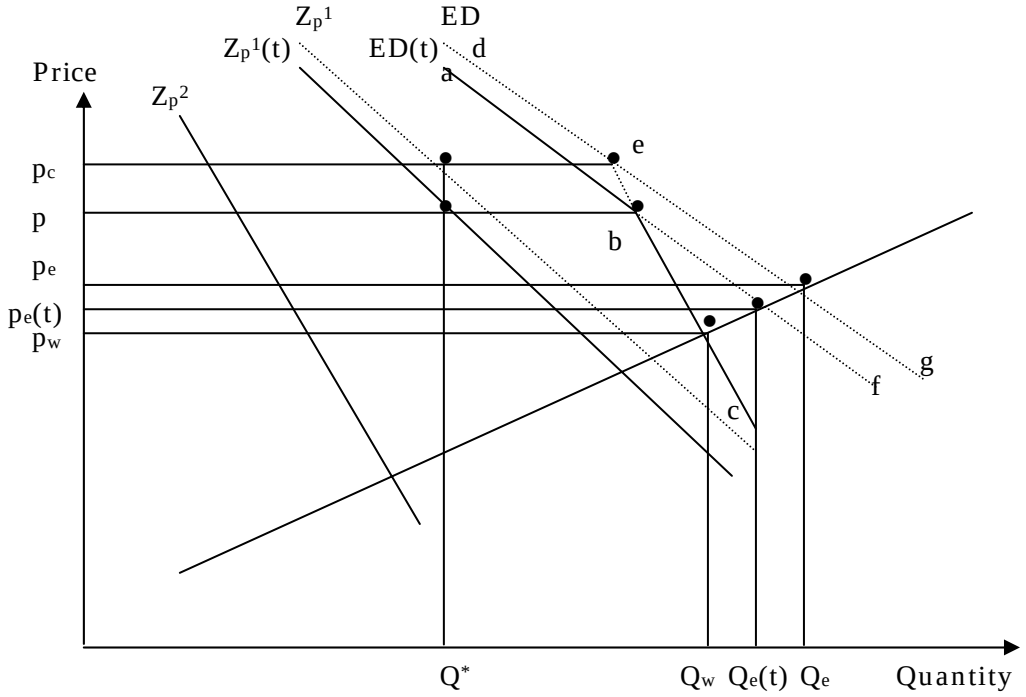
p_w : world price of the good;

t : *ad valorem* tariff rate; and

q : tariff rate that would be equivalent to the export quota in its restrictive effect.

Figure 1 gives the overall picture of the static and partial impact of the reduction of tariffs and/or the elimination of import quotas. In this figure, total import demand consists of two components: $Z_p^1(t)$ refers to the net demand for imports by the

developed regions in the presence of a tariff, t, on imports into this market; and Z_p^2 refers to the net demand for imports by the consumer country without import restrictions. The resulting total import demand is given as $ED(t)$. Also, the supply of exports from the producing country is given as $-Z_p^0$.



Source: Adapted from Yang et al. (1997), Figure 10.1.

Figure 1. Partial equilibrium impact of quota and tariff removal

Without the import quota, the world market clears at the single world price, $p_e(t)$ (in the presence of a tariff), and p_e (in the absence of a tariff). With the imposition of import quota, Q^*, total import demand becomes the artificially (politically) kinked curve abc. In the presence of both the tariff and the quota, the market without restrictions clears at a lower price, p_w, and the market with restriction, at $p_c (= p_w(1+t)(1+q))$ which includes a positive rent to exporting countries (or exporting firms) [6].

Starting from the distorted equilibrium in Figure 1, the effects of removing the

[6] This point is addressed elsewhere by, e.g., Yamazawa (1993).

tariff and import quota are considered in turn. First, removal of the tariff shifts the import demand curve for the restricted country up to Z_p^1, leading to an upward shift of the total import demand curve $ED(t)$ to ED (yet this shift occurs only to the line which lies to the left of the kinked point b). The new total demand curve is the kinked curve, dec (the given line bc remains the same). Assuming a binding (or at least "effective" in the sense argued in a footnote above) import quota, the price p_w and the volume of imports and exports in all markets are unaffected by this change. This implies the tariff functions merely as rent shifting between the exporter and the importer.

Next, the effects of abolishing the import quota can be demonstrated. With the tariff in place, the total import demand curve is abf, and without the tariff it becomes $\deg$. The total quantity of exports increases from Q_w to $Q_e(t)$, while the single market price rises to $p_e(t)$. In the absence of the tariff, total exports rise to Q_e and the single world market price becomes p_e.

Whether the exporting country will gain or lose from quota liberalization depends on the magnitude of the price changes (or price elasticity) in the restricted and unrestricted markets, and also on the share of each market for the exporting country. If the exporter faces a high elasticity of demand in the restricted market, it will gain from the import quota removal through an increase in the quantity of exports. If the exporter has a small quota relative to its supply potential, and hence currently sells a low proportion of its exports in the restricted markets, it will also gain from the quota removal, through an increased market price relative to the previous average market price.[7] In other words, the share of exports to the restricted market is pertinent when assessing the impact of liberalization on the exporting country.

As mentioned, the potential impact of an MFA removal depends on the price elasticity of both demand and supply. For simplicity, we assume a linear specification[8]:

Slope of Z_p^1: a;

[7] Even if an exporter has not been selling to the restricted market at all, the country still gains through an increased market price. Unlike tariff revenues which accrue to importing countries, quota rents are assumed to accrue entirely to exporting countries (Panagaria and Duttagupta, 2002).

[8] For a non-specified functional analysis, see Appendix A.

[9] It should be noted that while D_2, Q_w and Q^* are empirically observable, D_1 is unobservable.

Slope of Z_p^2: b;

Slope of $-Z_p^0$: c;

Then the equilibrium quantity with no import quota can be calculated as:

$$Q_e = Q_w + \frac{ab(D_1 - Q^*)}{ab - bc(1+t) - ac} \tag{4.2}$$

The tariff equivalent of quota restrictiveness *q* is endogenously determined as

$$q = \frac{a(Q^* - D_1) - tp_w}{(1+t)p_w} \tag{4.3}$$

where

$Q_w = Q^* + D_2$;

D_1: unrestricted demand (hypothetical) in the formerly restricted market at the price level $p = p_w$;

D_2: demand (empirically observable) in the rest of the world at the price level $p = p_w$.[9]

The equilibrium price applied worldwide with no import quota can be calculated as:

$$p_e(t) = c(Q_e - Q_w) + p_w = p_w + \frac{abc(D_1 - Q^*)}{ab - bc(1+t) - ac} \tag{4.4}$$

The net increase in trade volume is

$$p_e(t)Q_e - (p_w D_2 + p_d Q^*) \tag{4.5}$$

From this analysis, it is clear that the economic impact of trade liberalization in the textile industry on trading economies (including the ASEAN Plus Three) is complicated, since quantity and unit price have to be taken into consideration at the same time. From (4.2), however, an important theoretical prediction arises: a larger potential level of demand in the thus-far-restricted market (expressed by the term D_1) upon quota removal is associated with a larger resulting import quantity. Using (4.3), the price relationship as in (4.1) can be rewritten as:

$$p_d = p_w + a(Q^* - D_1) \tag{4.6}$$

From (4.1) and (4.6),

$$p_d - p_e(t) = a(Q^* - D_1)\frac{ab - bct - ac}{ab - bc(1+t) - ac} > 0 \text{ (since } a < 0, b < 0, c > 0, t > 0, Q^* < D_1).$$

This inequality shows that in the previously restricted market, the price falls when the import quota is removed. From (4.4), a larger $D_1 - Q^*$ is also associated with a higher resulting equilibrium price in the unrestricted market. In this process, the unrestricted market experiences a shrinkage in the quantity of imports.

These theoretical predictions signify that the overall impact of quota removal on the *value* (defined as quantity times price) of exports to both the previously restricted and unrestricted markets are ambiguous, depending on how large the price decrease or increase is relative to quantity increase or decrease, respectively. If the direction of import value is identified, then the proportion of the textile-producing country's export to the restricted and unrestricted countries becomes of fundamental concern when considering the overall change in exports from the producing country. For instance, if the value of exports to the trade-restricted country is to increase and the value of export to trade-unrestricted country is to decrease, then the overall change obviously depends on how much, in relative terms, the producer country has been exporting to each of the markets. These points are summarized in Table 10.

Table 10. Static impacts of quota elimination on trade

	Category	e <-1	-1<e<0
So-far restricted market	Trade quantity	+	+
	Unit price	-	-
	Trade value	+ (=A)	- (=C)
So-far unrestricted market	Trade quantity	-	-
	Unit price	+	+
	Trade value	- (=B)	+ (=D)
Impacts and condition for market total		+ if |A|>|B| - if |A|<|B|	+ if |C|<|D| - if |C|>|D|

Notes: e price elasticity of demand.
+ positive impact of quota elimination.
- negative impact of quota elimination.
Source: Author.

IV-2. Case Study of the US Market

This section makes a case study analysis of trade liberalization in the US market. Table 11 lists the top ten exporters to the US of textile products covered under MFA/ATC. As seen, NAFTA members (Mexico and Canada) and Asian economies (China, Korea, India, Indonesia, Taiwan and Thailand) are both large exporters to the US throughout the observed period. Graphical presentations of the import value, import quantity and unit price of the ATC products by major exporters to the US are given in Figures 2 to 24. These figures show the following:

(1) China has been increasing its value and quantity of exports to the US, especially with a surge in quantity and a resultant decrease in unit price in 2002, corresponding to the starting year of ATC's stage 3;

(2) ASEAN-IMPST has also been increasing its export value and quantity as a region, resulting in a decreasing unit price

(3) ASEAN-BCLMV has registered a trend similar to that of ASEAN-IMPST, yet the unit price decrease for ASEAN-BCLMV has been steeper than for ASEAN-IMPST;

(4) Japan has a trend of a declining value and quantity of exports, with a quite steep unit price decline;

(5) Korea has a relatively static export value, with increasing export quantity, and declining unit price;

(6) Taiwan's export value has been declining, while its quantity has remained relatively stable, and the unit price is declining;

(7) Hong Kong has been increasing its export value, with relatively stable export quantity and unit price;

(8) India and Bangladesh have been rapidly raising their export values and export quantities, and their unit prices have been stable;

(9) Mexico's trend has been similar to the pattern of India and Bangladesh, i.e., increasing value and quantity, with stable unit price;

(10) Canada and Honduras have been increasing their value and quantity of exports in the US, yet their unit prices have been on a declining trend;

(11) Overall, these empirical observations confirm the theoretical prediction that an increase in import quantity due to quota removal, albeit in a gradual manner, is correlated with a fall in unit price of those imported textile products.

Table 11. Top ten exporters to the US of textile products under MNF/ATC, 1989-2001

(Value in US$ million, volume in million square meters, unit price in US$ per square meter)

Economy	Rank in 2001	1989	1995	1997	1998	1999	2000	2001	Share in 2001 (%)
Mexico									
Value	1	647	3,036	5,928	7,453	8,621	9,693	8,945	12.7
Volume	1	432	1,550	3,041	3,559	4,143	4,746	4,290	13.1
Unit price		1.50	1.96	1.95	2.09	2.08	2.04	2.09	
China									
Value	2	3,127	4,800	6,024	5,900	6,129	6,527	6,536	9.3
Volume	3	1,682	1,772	2,095	1,943	2,035	2,218	2,211	6.7
Unit price		1.86	2.71	2.88	3.04	3.01	2.94	2.96	
Hong Kong									
Value	3	3,686	4,391	4,100	4,623	4,465	4,707	4,403	6.3
Volume	11	957	981	863	1,021	1,018	1,123	1,092	3.3
Unit price		3.85	4.48	4.75	4.53	4.39	4.19	4.03	
Canada									
Value	4	417	1,651	2,401	2,756	3,053	3,350	3,162	4.5
Volume	2	640	1,559	2,083	2,476	2,835	3,204	3,268	10.0
Unit price		0.65	1.06	1.15	1.11	1.08	1.05	0.97	
Korea									
Value	5	2,939	2,267	2,288	2,638	2,887	3,072	2,931	4.2
Volume	5	1,058	797	818	1,045	1,222	1,312	1,383	4.2
Unit price		2.78	2.84	2.80	2.52	2.36	2.34	2.12	
India									
Value	6	743	1,614	2,010	2,287	2,384	2,741	2,633	3.7
Volume	7	377	750	986	1,084	1,149	1,248	1,250	3.8
Unit price		1.97	2.15	2.04	2.11	2.07	2.20	2.11	
Indonesia									
Value	7	640	1,336	1,872	1,973	1,959	2,380	2,553	3.6
Volume	10	328	540	855	975	907	1,053	1,165	3.6
Unit price		1.95	2.47	2.19	2.02	2.16	2.26	2.19	
Taiwan									
Value	8	3,242	2,756	2,812	2,832	2,709	2,756	2,476	3.5
Volume	8	1,378	1,174	1,197	1,190	1,270	1,233	1,224	3.7
Unit price		2.35	2.35	2.35	2.38	2.13	2.24	2.02	
Thailand									
Value	9	529	1,420	1,661	1,964	2,074	2,447	2,441	3.5
Volume	6	363	665	769	997	1,117	1,318	1,308	4.0
Unit price		1.46	2.14	2.16	1.97	1.86	1.86	1.87	
Honduras									
Value	10	na	901	1,569	1,879	2,164	2,328	2,348	3.3
Volume	12	na	328	656	808	958	1,045	1,032	3.1
Unit price		na	2.75	2.39	2.33	2.26	2.23	2.28	
Total of above									
Value	-	na	24,172	30,665	34,305	36,445	40,001	38,428	54.7
Volume	-	na	10,116	13,363	15,098	16,654	18,500	18,223	55.5
Unit price		na	2.39	2.29	2.27	2.19	2.16	2.11	
All US imports									
Value	-	26,749	43,953	54,002	60,397	63,743	71,692	70,240	100.0
Volume	-	12,144	18,307	22,894	25,944	28,615	32,864	32,808	100.0
Unit price		2.20	2.40	2.36	2.33	2.23	2.18	2.14	

Source: Adapted from Khanna and the IBC Research Team (2002a), Table 4.

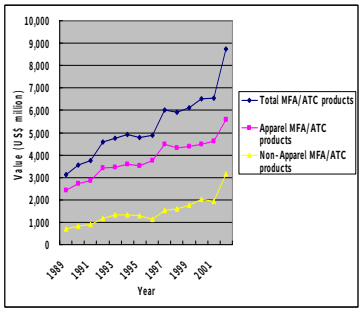


Figure 2.1 Value of US import from China of MFA/ATC products, 1989-2002

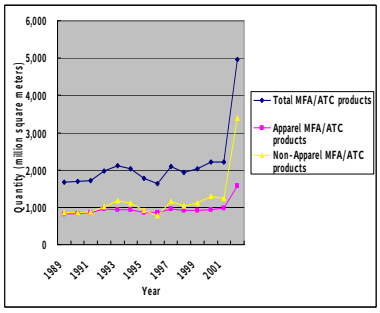


Figure 2.2 Quantity of US import from China of MFA/ATC products, 1989-2002

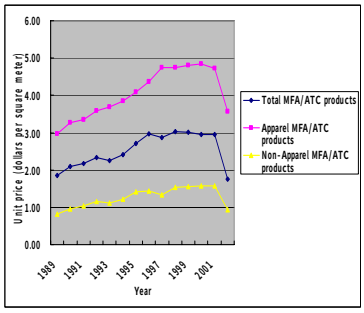


Figure 2.3 Unit price of US import from China of MFA/ATC products, 1989-2002

Source: Database of the US Office of Textiles and Apparel OTEXA (at http://otexa.ita.doc.gov/ctryname.htm).

Figure 2. US imports from China

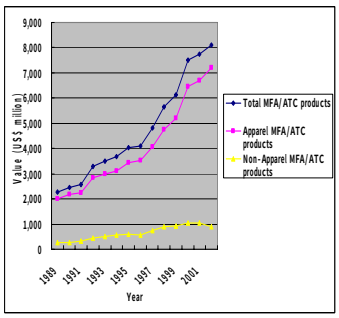


Figure 3.1 Value of US import from ASEAN10 of MFA/ATC products, 1989-2002

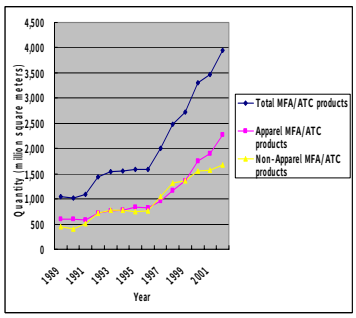


Figure 3.2 Quantity of US import from ASEAN10 of MFA/ATC products, 1989-2002

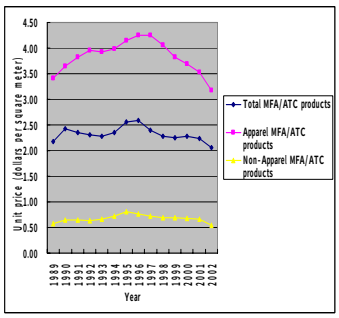


Figure 3.3 Unit price of US import from ASEAN10 of MFA/ATC products, 1989-2002

Source: As for Figure 2.

Figure 3. US imports from ASEAN10

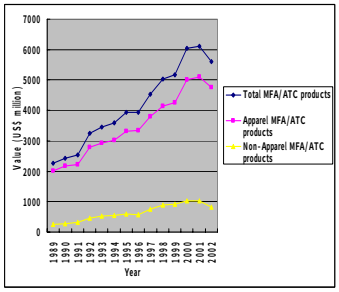


Figure 4.1 Value of US import from ASEAN-IMPST of MFA/ATC products, 1989-2002

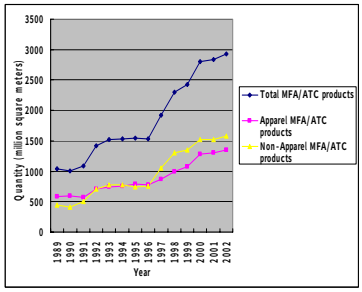


Figure 4.2 Quantity of US import from ASEAN-IMPST of MFA/ATC products, 1989-2002

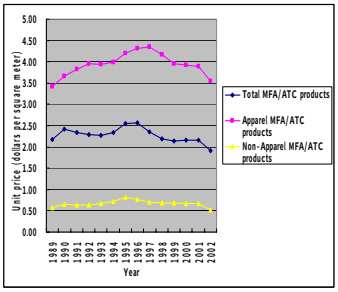


Figure 4.3 Unit price of US import from ASEAN-IMPST of MFA/ATC products, 1989-2002

Source: As for Figure 2.

Figure 4. US imports from ASEAN-IMPST

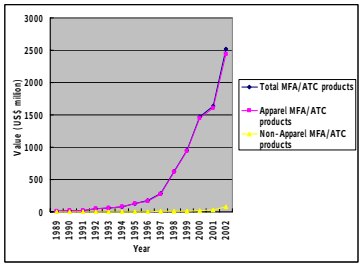


Figure 5.1 Value of US import from ASEAN-BCLMV of MFA/ATC products, 1989-2002

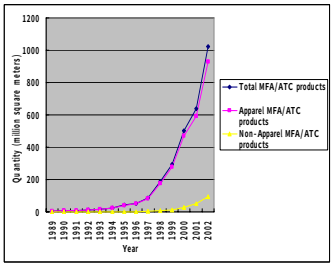


Figure 5.2 Quantity of US import from ASEAN-BCLMV of MFA/ATC products, 1989-2002

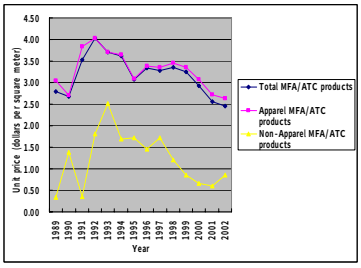


Figure 5.3 Unit price of US import from ASEAN-BCLMV of MFA/ATC products, 1989-2002

Source: As for Figure 2.

Figure 5. US imports from ASEAN-BCLMV

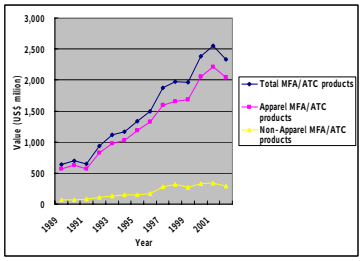


Figure 6.1 Value of US import from Indonesia of MFA/ATC products, 1989-2002

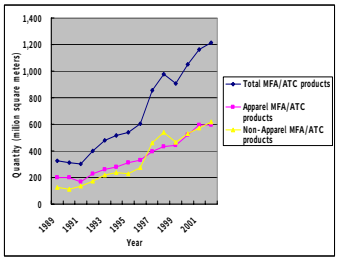


Figure 6.2 Quantity of US import from Indonesia of MFA/ATC products, 1989-2002

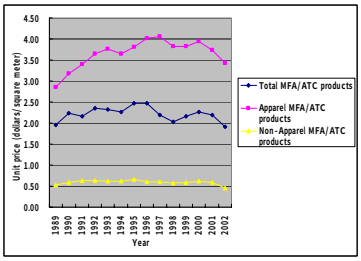


Figure 6.3 Unit price of US import from Indonesia of MFA/ATC products, 1989-2002

Source: As for Figure 2.

Figure 6. US imports from Indonesia

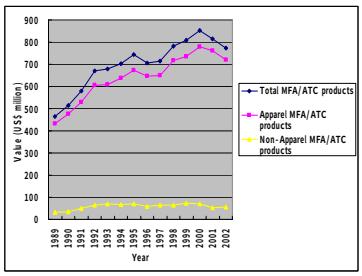


Figure 7.1 Value of US import from Malaysia of MFA/ATC products, 1989-2002

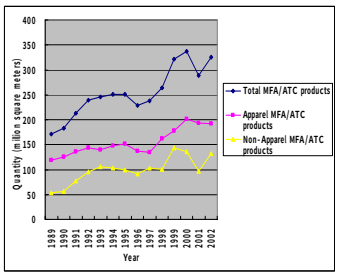


Figure 7.2 Quantity of US import from Malaysia of MFA/ATC products, 1989-2002

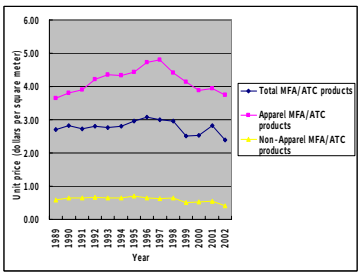


Figure 7.3 Unit price of US import from Malaysia of MFA/ATC products, 1989-2002

Source: As for Figure 2.

Figure 7. US imports from Malaysia

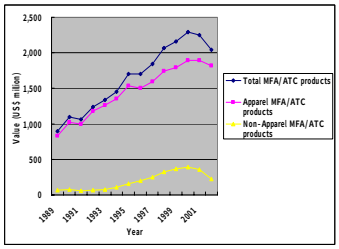


Figure 8.1 Value of US import from the Philippines of MFA/ATC products, 1989-2002

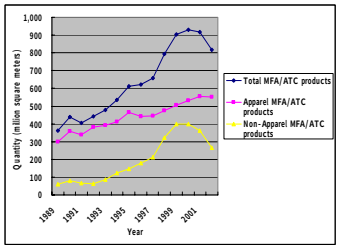


Figure 8.2 Quantity of US import from the Philippines of MFA/ATC products, 1989-2002

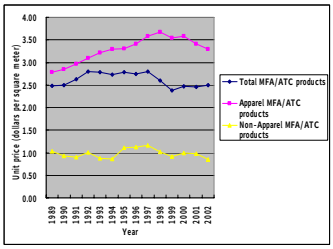


Figure 8.3 Unit price of US import from the Philippines of MFA/ATC products, 1989-2002

Source: As for Figure 2.

Figure 8. US imports from the Philippines

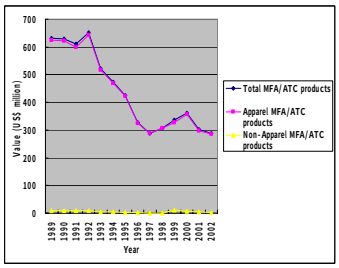


Figure 9.1 Value of US import from Singapore of MFA/ATC products, 1989-2002

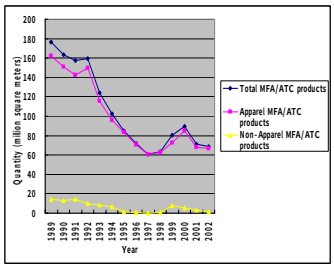


Figure 9.2 Quantity of US import from Singapore of MFA/ATC products, 1989-2002

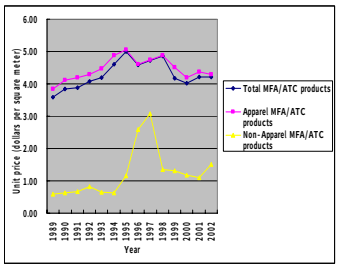


Figure 9.3 Unit price of US import from Singapore of MFA/ATC products, 1989-2002

Source: As for Figure 2.

Figure 9. US imports from Singapore

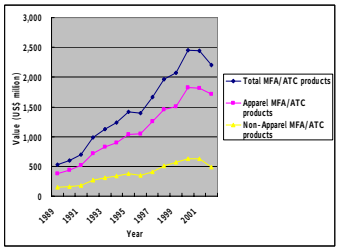


Figure 10.1 Value of US import from Thailand of MFA/ATC products, 1989-2002

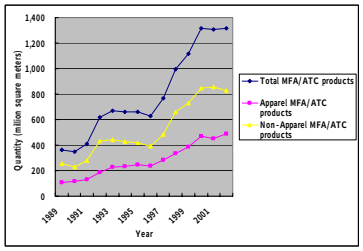


Figure 10.2 Quantity of US import from Thailand of MFA/ATC products, 1989-2002

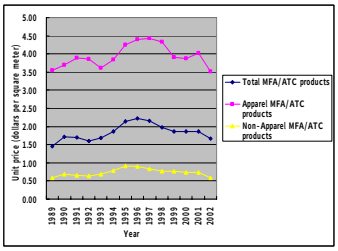


Figure 10.3 Unit price of US import from Thailand of MFA/ATC products, 1989-2002

Source: As for Figure 2.

Figure 10. US imports from Thailand

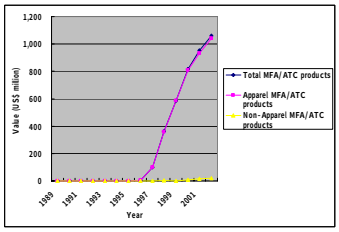


Figure 11.1 Value of US import from Cambodia of MFA/ATC products, 1989-2002

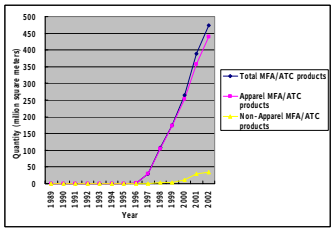


Figure 11.2 Quantity of US import from Cambodia of MFA/ATC products, 1989-2002

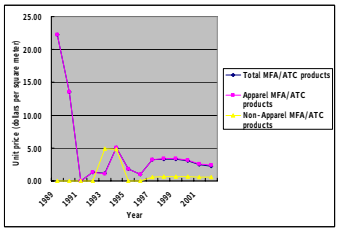


Figure 11.3 Unit price of US import from Cambodia of MFA/ATC products, 1989-2002

Source: As for Figure 2.

Figure 11. US imports from Cambodia

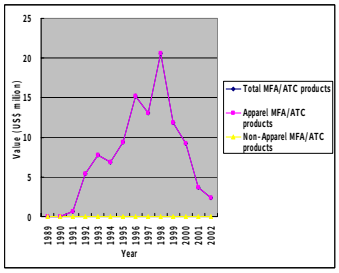


Figure 12.1 Value of US import from Laos of MFA/ATC products, 1989-2002

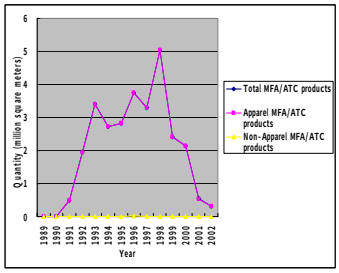


Figure 12.2 Quantity of US import from Laos of MFA/ATC products, 1989-2002

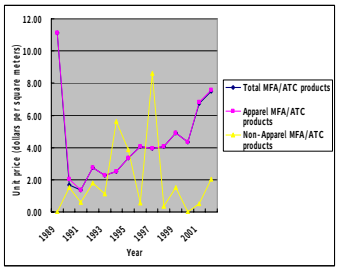


Figure 12.3 Unit price of US import from Laos of MFA/ATC products, 1989-2002

Source: As for Figure 2.

Figure 12. US imports from Laos

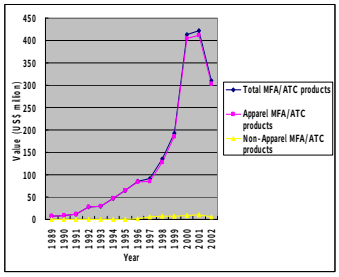


Figure 13.1 Value of US import from Myanmar of MFA/ATC products, 1989-2002

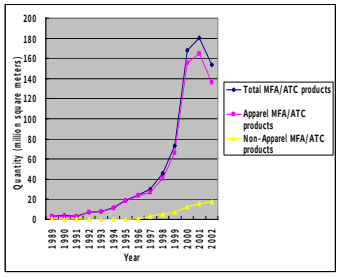


Figure 13.2 Quantity of US import from Myanmar of MFA/ATC products, 1989-2002

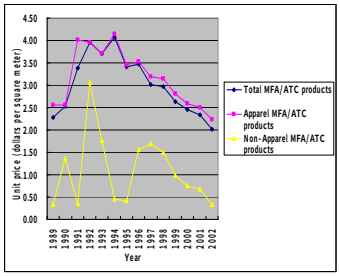


Figure 13.3 Unit price of US import from Myanmar of MFA/ATC products, 1989-2002

Source: As for Figure 2.

Figure 13. US imports from Myanmar

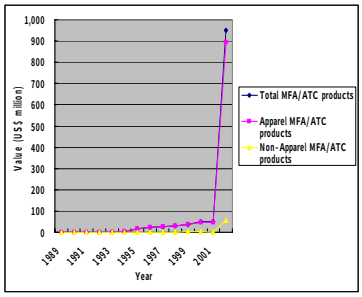


Figure 14.1 Value of US import from Vietnam of MFA/ATC products, 1989-2002

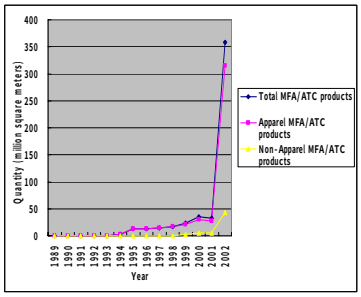


Figure 14.2 Quantity of US import from Vietnam of MFA/ATC products, 1989-2002

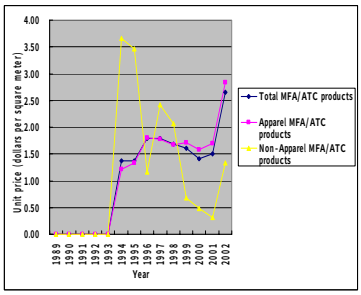


Figure 14.3 Unit price of US import from Vietnam of MFA/ATC products, 1989-2002

Source: As for Figure 2.

Figure 14. US imports from Vietnam

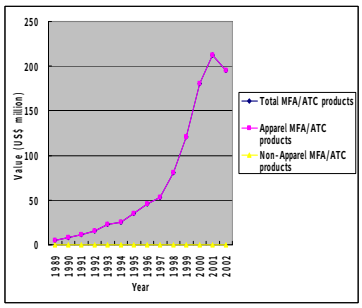


Figure 15.1 Value of US import from Brunei of MFA/ATC products, 1989-2002

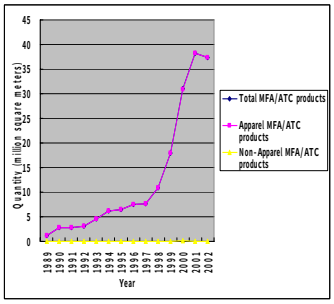


Figure 15.2 Quantity of US import from Brunei of MFA/ATC products, 1989-2002

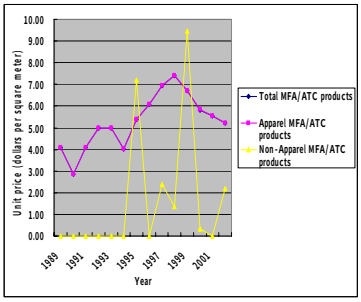


Figure 15.3 Unit price of US import from Brunei of MFA/ATC products, 1989-2002

Source: As for Figure 2.

Figure 15. US imports from Brunei

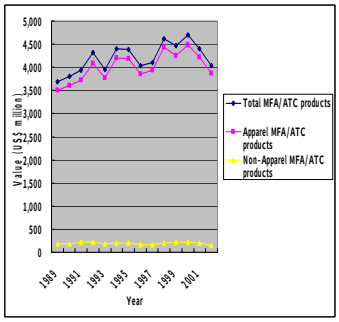


Figure 16.1 Value of US import from Hong Kong of MFA/ATC products, 1989-2002

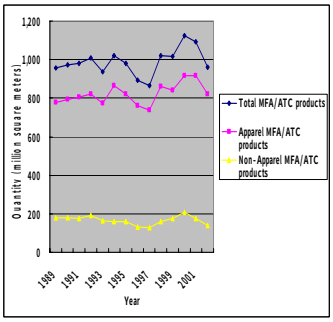


Figure 16.2 Quantity of US import from Hong Kong of MFA/ATC products, 1989-2002

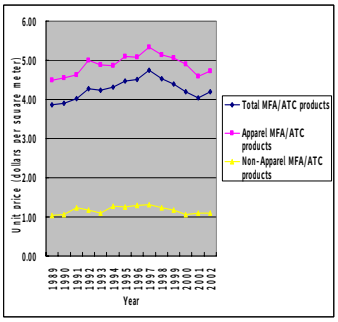


Figure 16.3 Unit price of US import from Hong Kong of MFA/ATC products, 1989-2002

Source: As for Figure 2.

Figure 16. US imports from Hong Kong

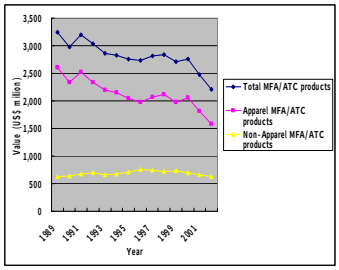


Figure 17.1 Value of US import from Taiwan of MFA/ATC products, 1989-2002

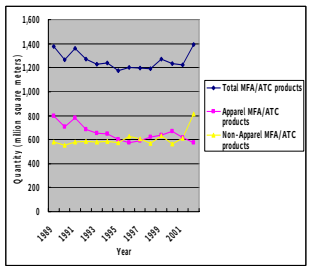


Figure 17.2 Quantity of US import from Taiwan of MFA/ATC products, 1989-2002

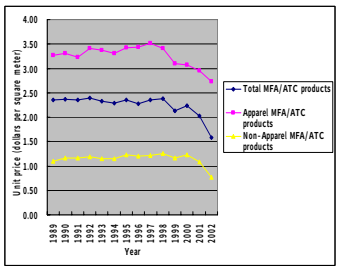


Figure 17.3 Unit price of US import from Taiwan of MFA/ATC products, 1989-2002

Source: As for Figure 2.

Figure 17. US imports from Taiwan

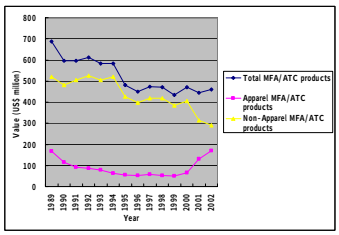


Figure 18.1 Value of US import from Japan of MFA/ATC products, 1989-2002

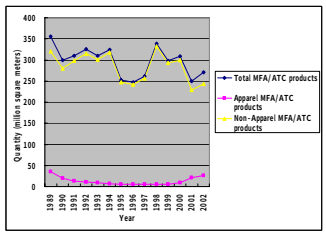


Figure 18.2 Quantity of US import from Japan of MFA/ATC products, 1989-2002

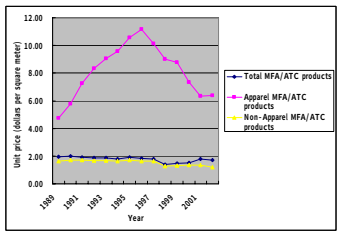


Figure 18.3 Unit price of US import from Japan of MFA/ATC products, 1989-2002

Source: As for Figure 2.

Figure 18. US imports from Japan

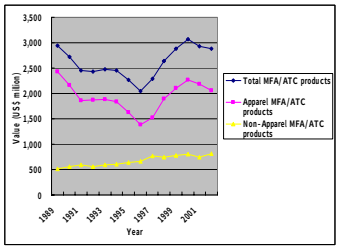


Figure 19.1 Value of US import from Korea of MFA/ATC products, 1989-2002

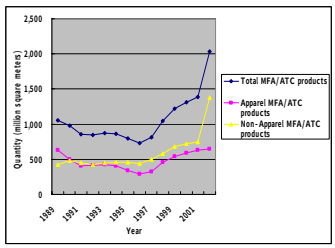


Figure 19.2 Quantity of US import from Korea of MFA/ATC products, 1989-2002

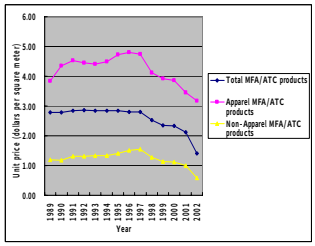


Figure 19.3 Unit price of US import from Korea of MFA/ATC products, 1989-2002

Source: As for Figure 2.

Figure 19. US imports from Korea

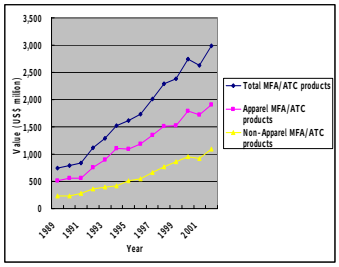


Figure 20.1 Value of US import from India of MFA/ATC products, 1989-2002

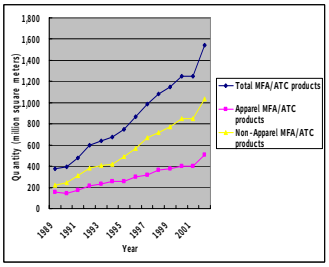


Figure 20.2 Quantity of US import from India of MFA/ATC products, 1989-2002

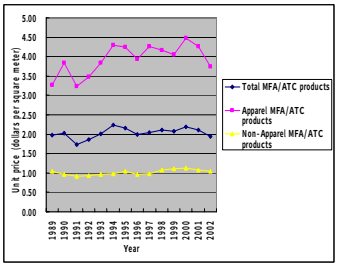


Figure 20.3 Unit price of US import from India of MFA/ATC products, 1989-2002

Source: As for Figure 2.

Figure 20. US imports from India

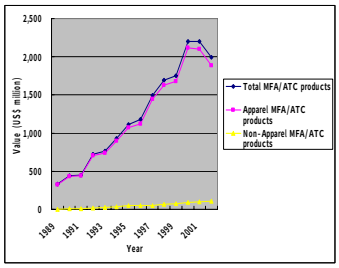


Figure 21.1 Value of US import from Bangladesh of MFA/ATC products, 1989-2002

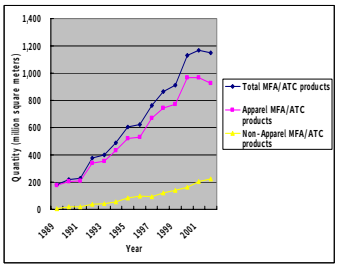


Figure 21.2 Quantity of US import from Bangladesh of MFA/ATC products, 1989-2002

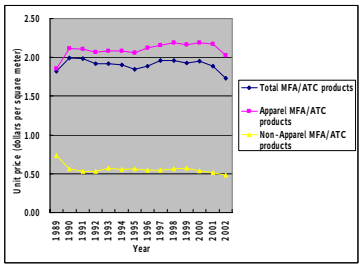


Figure 21.3 Unit price of US import from Bangladesh of MFA/ATC products, 1989-2002

Source: As for Figure 2.

Figure 21. US imports from Bangladesh

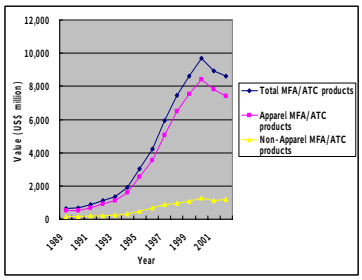


Figure 22.1 Value of US import from Mexico of MFA/ATC products, 1989-2002

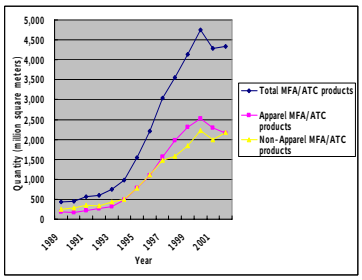


Figure 22.2 Quantity of US import from Mexico of MFA/ATC products, 1989-2002

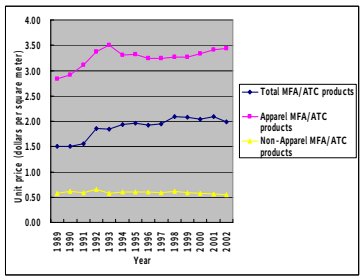


Figure 22.3 Unit price of US import from Mexico of MFA/ATC products, 1989-2002

Source: As for Figure 2.

Figure 22. US imports from Mexico

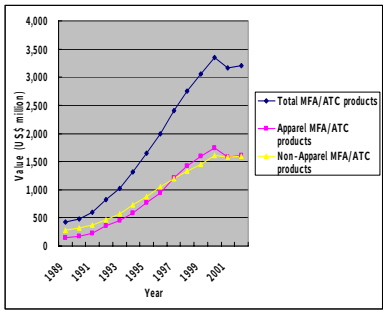


Figure 23.1 Value of US import from Canada of MFA/ATC products, 1989-2002

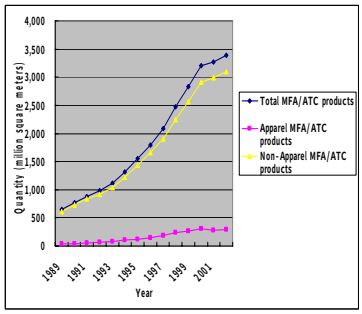


Figure 23.2 Quantity of US import from Canada of MFA/ATC products, 1989-2002

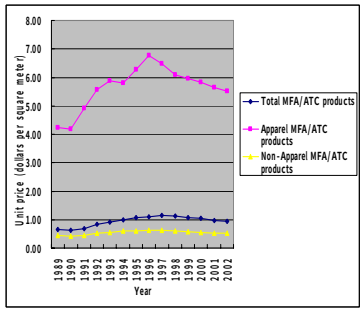


Figure 23.3 Unit price of US import from Canada of MFA/ATC products, 1989-2002

Source: As for Figure 2.

Figure 23. US imports from Canada

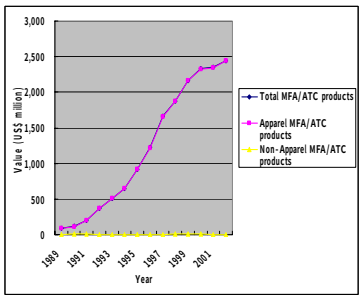


Figure 24.1 Value of US import from Honduras of MFA/ATC products, 1989-2002

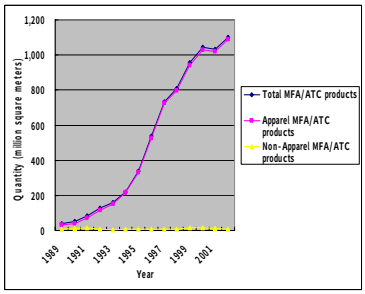


Figure 24.2 Quantity of US import from Honduras of MFA/ATC products, 1989-2002

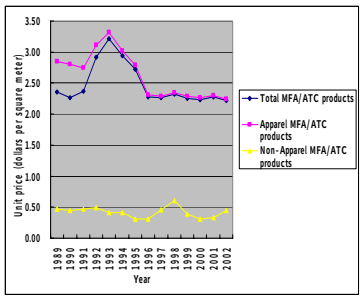


Figure 24.3 Unit price of US import from Honduras of MFA/ATC products, 1989-2002

Source: As for Figure 2.

Figure 24. US imports from Honduras

The GTAP (Global Trade Analysis Project) provides useful set of database for general equilibrium trade simulation. For instance, GTAP gives estimates of the ATC export tariff equivalent rate as the combined effect of both tariffs and import quotas, as shown in Table 12. As seen, China and India face the largest trade barriers, and the degree of restriction is larger for clothing than for textiles (textile materials and textile products). This obviously reflects, as already mentioned, the growing share of textile imports for China (and probably India), especially for the export of clothing. These are, however, based on figures in or before 1997 and are therefore outdated. Given that the ATC has been in place since 1995, more recent figures should be utilized for an assessment of quota removal in the textile industry.

Table 12. Export tariff equivalent rate of ATC as a fraction of *f.o.b.* value, 1997 (or before)

(percent)

Country/region As an exporter	Export to US / Canada		Export to European Union	
	Textiles	Clothing	Textiles	Clothing
Australia / New Zealand	0.000	0.000	0.000	0.000
Japan	0.000	0.000	0.000	0.000
Korea	0.024	0.019	0.016	0.006
Indonesia	0.081	0.078	0.063	0.060
Malaysia	0.081	0.078	0.063	0.060
Philippines	0.065	0.078	0.057	0.060
Singapore	0.000	0.006	0.002	0.002
Thailand	0.083	0.132	0.064	0.078
Vietnam	0.069	0.071	0.075	0.072
China, mainland	0.200	0.330	0.120	0.150
Hong Kong, China	0.010	0.100	0.010	0.050
Taiwan	0.022	0.075	0.069	0.059
India	0.098	0.342	0.120	0.152
Sri Lanka	0.153	0.081	0.055	0.064
South Asia	0.153	0.081	0.084	0.073
Canada	0.000	0.000	0.000	0.000
Unites States	0.000	0.000	0.000	0.000
Mexico	0.000	0.000	0.001	0.047
Latin America	0.072	0.053	0.031	0.052
Western Europe	0.000	0.000	0.000	0.000
Central European Associates	0.069	0.050	0.000	0.000
Turkey	0.070	0.049	0.015	0.000
Middle East / Africa	0.005	0.006	0.003	0.000
Rest of World	0.001	0.030	0.000	0.000

Source: Adapted from GTAP ver.5 manual
(http://www.gtap.agecon.purdue.edu/databases/v5/v5_doco.asp).

In the case of a general-equilibrium analysis including GTAP (Global Trade Analysis Project), a predetermined price elasticity and elasticity of substitution are assumed. However, price elasticity is empirically indeterminate, due to changes in the structure and behavior of current textile producers resulting inevitably from import-quota removal. Put differently, an imposition of a predetermined price elasticity would be merely ad hoc. Instead of a deterministic theoretical prediction, therefore, a likelihood analysis (in a loose sense) would be more valid. In this spirit, scatter diagrams are used for analyzing the likelihood of trade/quantity changes rather than arbitrarily assuming the value of price elasticity.

In the following, an assessment of the likely impact of import-quota elimination after 2005 is made based on the statistical figures provided above. Tariff rates are held fixed for simplicity in the analysis. The partial equilibrium framework

in the previous section presumes that unless a quota is completely filled, it is not binding. In actuality, quota utilization rates for most product categories are not equal to one (i.e., full utilization). This, however, does not mean that these quotas do not bind. It is conjectured that producers of products covered by quotas are either affected by the very existence of the quota (this might be termed the "announcement effect of quota"), or restricted not directly by the import quota but indirectly by the inefficient domestic allocation of the import quota among exporting firms, due to the exporting country's lack of coordination capability.[10] From this viewpoint, a higher fill-rate of a quota is conducive to higher upward pressure on trade volume (measured in quantity) of the country; this upward pressure on trade volume in quantity, however, is in turn conducive to lower unit price of the traded products. The overall impact of the quota removal is therefore ambiguous: import quantity will increase due to demand increase, yet unit price of the imported products will decrease as a result of the quota phase out. Put another way, the overall impact of quota removal therefore depends on the price elasticity of demand. A price elasticity of more than 1 would be associated with an increase in trade value, and that of less than 1, a decrease.

In order to compute average quota fill-rates of individual exporters to the US, quota-unrestricted products are assumed to have an "infinite" quota and thus a zero fill rate has been assigned to those product categories with no quotas. Next, a value-weighted average fill-rate has been computed for major economies/regions which are exporters to the US.[11] Table 13 provides the computed value-weighted average fill-rate of import quota for ATC products, along with unit price and share in total US import value. These figures reveal the US imposition of high-level quota restrictions on Hong Kong, Bangladesh, India, China and ASEAN-IMPST economies. In contrast, ASEAN-BCLMV and NAFTA economies (Mexico and Canada) have quite low levels of quota restriction.

[10] Yamazawa (1993: 6) reports: "Individual exporting countries allocate their country's export quotas to a particular importing country among individual exporting firms who can increase exports only to the extent of their quotas. When some firms have not exported to the full extent of their quotas, unused quotas are redistributed among other exporting firms. Because of inevitable time lags in administration and redistribution, this practice has tended to leave some quotas unused by the end of the year." From this perspective, the *binding* nature of an import quota (or voluntary export restraint) with a fill rate below one is justified.

[11] Quotas for three-digit, most disaggregated level have been considered. For those quotas overarching more than one three digit code, weighted averages have been calculated.

Table 13. World share and value-weighted average fill rate of import quotas for US imports of MFA/ATC products, 2002

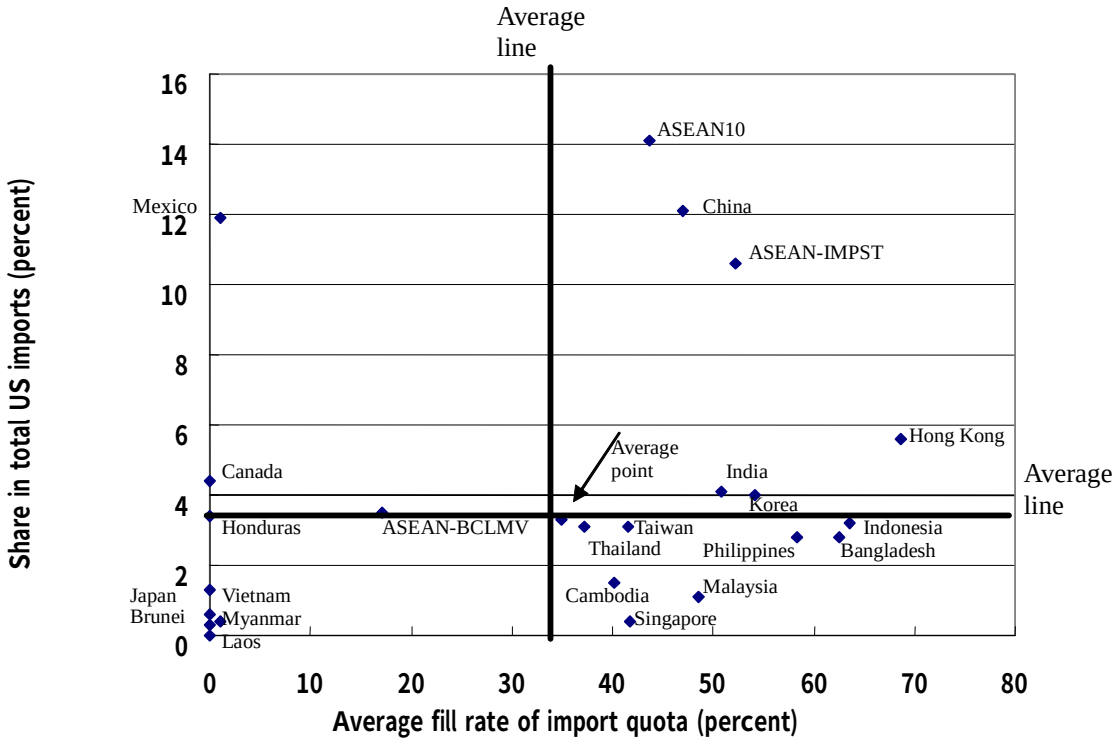
Region/Economy	Value-weighted average fill-rate of import quota (percent)	Unit price (c.i.f. base, dollar per square meter)	Share in total US imports (percent)
China	46.9	1.76	12.1
ASEAN10	43.6	2.06	14.1
ASEAN-IMPST[a]	52.3	1.91	10.6
ASEAN-BCLMV[b]	17.1	2.46	3.5
Indonesia	63.5	1.92	3.2
Malaysia	48.5	2.38	1.1
Philippines	58.3	2.50	2.8
Singapore	41.7	4.22	0.4
Thailand	37.2	1.67	3.1
Brunei	0.0	5.23	0.3
Cambodia	40.2	2.24	1.5
Laos	0.0	7.48	0.003
Myanmar	1.1	2.01	0.4
Vietnam	0.0	2.66	1.3
Japan	0.0	1.70	0.6
Korea	54.1	1.42	4.0
Hong Kong	68.6	4.19	5.6
Taiwan	41.5	1.59	3.1
India	50.9	1.94	4.1
Bangladesh	62.6	1.73	2.8
Mexico	1.0	1.99	11.9
Canada	0.0	0.94	4.4
Honduras	0.0	2.22	3.4
Average of individual economies	34.9[c]	2.06[c]	3.3[d]

Notes: [a] Indonesia, Malaysia, the Philippines, Singapore and Thailand.
[b] Brunei, Cambodia, Laos, Myanmar and Vietnam.
[c] Value-weighted average.
[d] Simple average.

Source: Author's calculation based on http://otexa.ita.doc.gov/scripts/tqsum2.exe/catpage and http://www.customs.ustreas.gov/xp/cgov/import/textiles_and_quotas/.

Figure 25 gives the scatter diagram of average import quota fill rate (as the horizontal axis) and share in total US imports (as the vertical axis) for selected Asian economies and other large exporters to the US. Average lines are also drawn in the Figure. An assessment can be made here of the likely impact of the import-quota removal in 2005. Specifically, economies/regions with a higher fill-rate will be likely to expand their export quantities to the US. These include, as mentioned above, Hong Kong, Bangladesh, India, China and most ASEAN-IMPST economies. In contrast, most ASEAN-BCLMV economies (except for Cambodia), along with Mexico, Canada and Honduras lie to the left of the average line. At least in relative terms, therefore, it is

highly likely that these economies will gradually lose their share of US imports after 2005. In the case of a price elasticity of demand of more than 1, the first set of economies/regions will also increase their export *value*. Within the "winner" economies, China will benefit most from the quota removal due to its existing high share in total US imports of textile products (measured by the vertical axis).

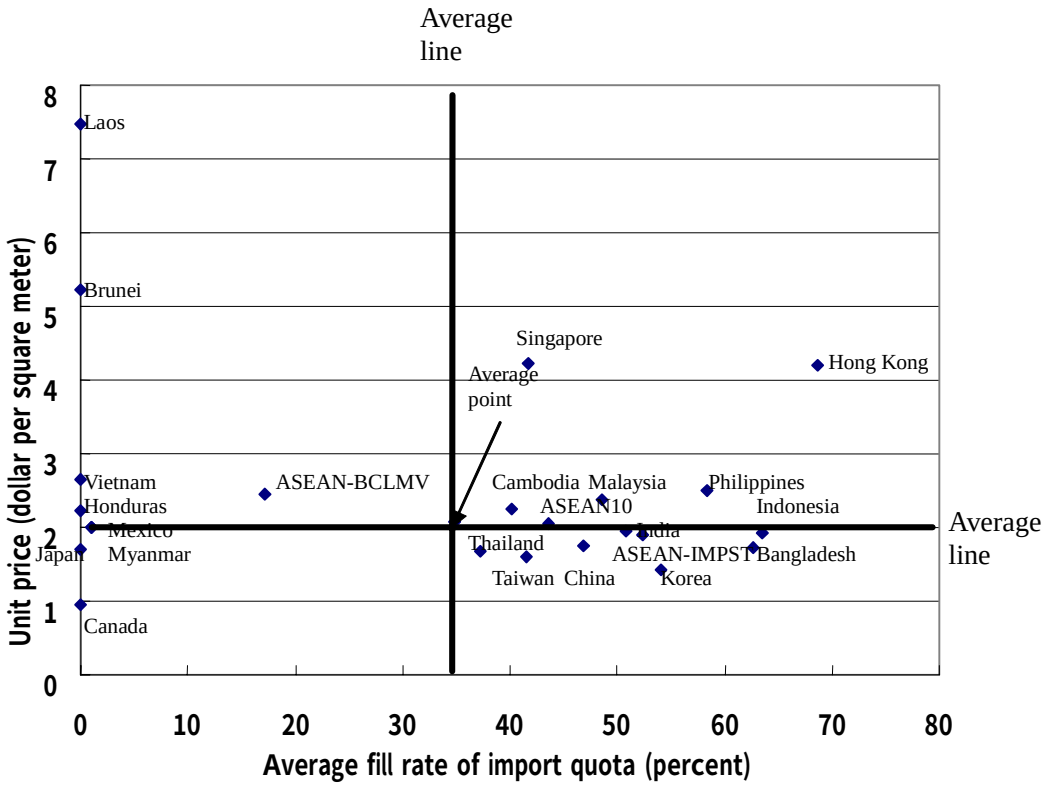


Source: Table 13.

Figure 25. Scatter diagram of average import quota fill rate and share in total US imports for selected Asian economies and large exporters to the US

Under the assumption of product-differentiation among products made by different economies, the unit price of textile-related products does not matter much in assessing the impact of quota liberalization. Once these products are seen as homogeneous to a large extent, unit price becomes of utmost concern in the assessment. Figure 26 gives the scatter diagram of average fill rate import quota and unit price for selected Asian economies and large exporters to the US. It reveals that products from Laos, Brunei, Singapore and Hong Kong have a relatively high average unit price, and hence will lose their marketability upon quota removal. Since part of these high prices are likely attributable to quota rents, Hong Kong's high unit price might be somewhat offset by future rent elimination. For Laos and Brunei, however, both with zero average quota

fill-rate, the negative impact of trade liberalization in terms of quantity is obvious. That is, smaller economies (including latecomer ASEAN economies) might lose their market after trade liberalization in 2005.[12]



Source: Table 13.

Figure 26. Scatter diagram of average import quota fill rate and unit price for selected Asian economies and large exporters to the US

Table 14 shows export to the world of textile-related products by major economies. Table 14 can be combined with Table 13 above to form a base-line setting, presented in Table 15. In the absence of 2002 figures, the year 2000 has been chosen as the base year for export share, while figures for 2002 have been used for quota fill rate. On the basis of this table, a simulation analysis can be made, as in Table 16. Although the results are unstable, on the whole a larger price elasticity is associated with a larger total increase in trade value, upon elimination of import quotas. In the cases of price elasticity of both 10 and 6, most of the ASEAN Plus Three economies, with the exceptions of Japan and Vietnam, increase in total exports from quota elimination.

[12] Yamazawa (1993), and personal communication with Toshiro Fukura (JETRO Brussels).

Table 14. Exports to the world of textile-related products by selected major economies, 1990-2001

(US$ billion)

Economy	Category	1990	1995	1997	1998	1999	2000	2001
China	Textile	7.22	13.92	13.83	12.79	13.02	15.76	16.83
	Apparel	9.67	24.05	31.80	30.05	30.08	36.07	36.65
	Total	16.89	37.97	45.63	42.84	43.10	51.83	53.48
Japan	Textile	5.86	7.18	6.75	5.97	6.59	7.02	6.19
	Apparel	0.83	na	0.47	0.41	0.46	0.53	0.47
	Total	6.69	na	7.22	6.38	7.05	7.55	6.66
Korea	Textile	6.08	4.14	13.34	11.28	11.62	12.68	10.94
	Apparel	8.02	1.08	4.19	4.65	4.87	5.03	4.31
	Total	14.10	5.22	17.53	15.93	16.49	17.71	15.25
Hong Kong	Textile	8.21	17.00	14.60	13.04	12.27	13.44	12.21
	Apparel	15.41	12.70	23.11	22.17	22.37	24.21	23.45
	Total	23.62	29.70	37.71	35.21	34.64	37.66	35.66
Taiwan	Textile	6.13	na	11.14	11.57	11.03	11.88	9.89
	Apparel	na	na	na	na	na	3.01	2.48
	Total	na	na	na	na	na	14.89	12.37
India	Textile	2.18	4.36	5.24	4.56	4.79	6.00	na
	Apparel	2.53	4.12	4.34	4.78	4.72	6.18	na
	Total	4.71	8.48	9.58	9.34	9.51	12.18	na
Bangladesh	Textile	0.31	0.43	0.44	0.46	0.43	0.37	na
	Apparel	0.58	1.97	3.38	3.88	3.93	4.86	na
	Total	0.89	2.40	3.82	4.34	4.36	5.23	na
United States	Textile	5.06	7.40	8.98	9.20	9.50	10.07	10.47
	Apparel	2.57	6.66	8.39	8.79	8.26	8.65	7.01
	Total	7.63	14.06	17.37	17.99	17.76	18.72	17.48
Canada	Textile	0.69	1.38	1.85	1.92	2.03	1.83	2.16
	Apparel	0.33	1.02	1.50	1.71	1.88	2.08	1.94
	Total	1.02	2.40	3.35	3.63	3.91	3.91	4.10
Mexico	Textile	0.34	1.29	na	na	na	2.26	2.09
	Apparel	0.09	2.73	5.64	6.63	7.77	8.64	8.01
	Total	0.43	4.02	na	na	na	10.89	10.10
Honduras	Textile	0.006	0.004	0.005	0.007	0.005	0.010	na
	Apparel	0.008	0.004	0.030	0.003	0.027	0.027	na
	Total	0.014	0.008	0.035	0.010	0.032	0.037	na
ASEAN10	Textile	3.53	8.05	7.51	6.79	7.49	8.45	na
	Apparel	8.14	16.21	16.79	16.93	17.68	21.58	na
	Total	11.67	24.27	24.30	23.72	25.17	30.03	na
ASEAN-IMPST	Textile	3.5	7.48	7.13	6.36	7.03	7.95	7.13
	Apparel	8.06	13.18	12.73	12.22	12.35	15.12	14.19
	Total	11.55	20.65	19.47	18.59	19.39	23.05	21.32
Indonesia	Textile	1.24	2.71	2.25	2.36	3.02	3.51	3.20
	Apparel	1.65	3.38	2.90	2.63	3.86	4.73	4.53
	Total	2.89	6.09	5.16	4.99	6.88	8.24	7.73
Malaysia	Textile	0.34	1.13	1.29	1.09	1.12	1.27	1.06
	Apparel	1.32	2.27	2.34	2.30	2.25	2.26	2.07
	Total	1.66	3.39	3.63	3.40	3.37	3.53	3.13
Philippines	Textile	0.09	0.21	0.34	0.29	0.22	0.30	0.25
	Apparel	0.68	1.06	2.32	2.32	1.19	2.54	2.38
	Total	0.77	1.27	2.26	2.61	1.41	2.83	2.64

Singapore	Textile	0.90	1.50	1.24	0.86	0.85	0.91	0.73
	Apparel	1.59	1.46	1.49	1.43	1.60	1.83	1.63
	Total	2.49	2.96	2.73	2.29	2.46	2.73	2.36
Thailand	Textile	0.93	1.93	2.01	1.76	1.82	1.96	1.89
	Apparel	2.82	5.01	3.68	3.54	3.45	3.76	3.58
	Total	3.74	6.94	5.69	5.30	5.27	5.72	5.46
ASEAN-BCLMV	Textile	0.02	0.58	0.37	0.43	0.45	0.24	na
	Apparel	0.09	3.03	3.96	4.62	5.34	6.48	na
	Total	0.11	3.61	4.35	5.03	5.79	6.98	na
Brunei	Textile	0.00	0.00	0.00	0.00	0.00	0.00	na
	Apparel	0.01	0.07	0.05	0.01	0.22	0.32	na
	Total	0.01	0.07	0.06	0.01	0.22	0.32	na
Cambodia	Textile	0.00	0.00	0.00	0.01	0.00	0.01	na
	Apparel	0.00	0.07	0.29	0.60	0.95	1.15	na
	Total	0.00	0.07	0.29	0.60	0.95	1.15	na
Laos	Textile	0.00	0.00	0.00	0.00	0.00	0.01	na
	Apparel	0.01	0.09	0.01	0.11	0.13	0.12	na
	Total	0.01	0.09	0.01	0.11	0.13	0.13	na
Myanmar	Textile	0.00	0.13	0.19	0.21	0.19	0.19	na
	Apparel	0.01	1.88	2.26	2.53	2.57	3.17	na
	Total	0.01	2.01	2.46	2.73	2.76	3.36	na
Vietnam	Textile	0.02	0.45	0.18	0.21	0.26	0.03	na
	Apparel	0.06	0.92	1.35	1.37	1.47	1.72	na
	Total	0.08	1.37	1.53	1.58	1.73	2.02	na

Notes: "Textile" refers to products under SITC65 only.
"Apparel" refers to products under SITC84 only.
na not available.
Source: JCFA (2003).

Table 15. Baseline of simulation analysis

Economy	Export of textile-related products to the US, 2000 (US$ billion)	Total export of textile-related products, 2000 (US$ billion)	Share of export to the US in total export, 2000 (percent)	Quota fill-rate in the US, 2002
China	6.53	51.83	12.59	46.9
Japan	0.47	7.55	6.23	0.0
Korea	3.07	17.71	17.35	54.1
Hong Kong	4.71	37.66	12.5	68.6
Taiwan	2.76	14.89	18.51	41.5
India	2.74	12.18	22.5	50.9
Bangladesh	2.2	5.23	42.07	62.6
Canada	3.35	3.91	85.68	0.0
Mexico	9.69	10.89	89.01	1.0
ASEAN10	9.80	30.03	32.63	43.6
ASEAN-IMPST	8.33	23.05	36.14	52.3
Indonesia	2.38	8.24	28.88	63.5
Malaysia	0.85	3.53	24.08	48.5

Philippines	2.29	2.83	80.92	58.3
Singapore	0.36	2.46	14.63	41.7
Thailand	2.45	5.27	42.78	37.2
ASEAN-BCLMV	1.47	6.98	21.06	17.1
Brunei	0.18	0.22	81.82	0.0
Cambodia	0.82	0.95	86.32	40.2
Laos	0.01	0.13	7.69	0.0
Myanmar	0.41	2.76	14.86	1.1
Vietnam	0.05	1.73	2.89	0.0

Sources: Tables 13 and 14.

Table 16. Calibration of the model

	Case 1: *e*=-10.0			Case 2: *e*=-6.0			Case 3: *e*=-2.0		
Economy	Export increase to the US market (percent)	Export increase to the non-US market (percent)	Export increase total (percent)	Export increase to the US market (percent)	Export increase to the non-US market (percent)	Export increase total (percent)	Export increase to the US market (percent)	Export increase to the non-US market (percent)	Export increase total (percent)
China	201.9	-23.2	28.0	54.8	-23.0	5.2	-87.3	-9.9	-70.5
Japan	7.7	-23.3	-10.3	-57.4	-14.0	-37.3	-62.6	-3.9	-23.5
Korea	168.1	-20.3	26.4	103.8	-20.4	17.2	-34.8	-11.1	-22.2
Hong Kong	202.1	-23.3	28.0	52.5	-23.0	4.6	-87.7	-9.9	-71.0
Taiwan	157.5	-19.7	25.6	104.0	-19.8	17.8	-61.4	-14.0	-44.3
India	122.8	-17.2	22.5	92.9	-17.2	17.4	-34.4	-15.0	-25.7
Bangladesh	17.0	-5.4	4.4	9.7	-2.5	2.8	-218.8	12.4	-39.3
Canada	12.0	-68.4	3.5	10.9	-64.4	2.9	5.6	-47.5	-0.1
Mexico	11.3	-99.5	3.0	12.0	-119.4	2.6	6.4	-94.4	-0.9
ASEAN10	56.6	-10.8	13.6	43.7	-8.8	10.4	12.5	-8.9	0.2
ASEAN -IMPST	36.6	-8.4	9.1	30.6	-6.7	7.9	11.8	-6.6	1.3
Indonesia	78.0	-13.4	17.0	65.3	-13.3	14.2	1.9	-13.1	-6.1
Malaysia	109.1	-16.0	20.9	85.8	-16.1	16.6	-22.4	-15.0	-18.9
Philippines	12.6	-44.1	3.9	11.3	-40.9	3.3	5.4	-24.9	0.6
Singapore	191.6	-21.9	27.9	90.5	-22.1	13.6	-67.3	-10.7	-45.4
Thailand	18.0	-6.1	4.7	9.0	-2.4	2.6	-8.7	2.9	-1.8
ASEAN -BCLMV	134.6	-17.8	23.8	97.4	-18.0	17.7	-44.7	-15.0	-32.3
Brunei	16.8	-72.3	4.8	15.2	-67.1	4.1	7.3	-42.8	0.5
Cambodia	15.4	-107.6	4.0	15.2	-115.1	3.5	7.5	-80.0	-0.5
Laos	126.7	-23.5	16.0	-58.2	-17.9	-42.0	-68.1	-5.1	-32.3
Myanmar	189.3	-21.7	27.8	91.6	-21.8	14.1	91.6	-21.8	14.1
Vietnam	-47.1	-10.5	-24.9	-50.5	-6.0	-19.1	-46.1	-1.6	-7.2

Notes: *e* price elasticity of demand in Country 1 (so-far-restricted country).
In the simulation, t is set equal to 0.0; c is set equal to 0.5. Also, the price elasticity of demand in Country 2 (so-far-unrestricted country) is set equal to 2.0.
Source: Author's calculation.

Another salient feature of the result is the possibility of decreasing values of exports to market in which trade was always unrestricted, due to an increased level of product scarcity in the face of quota elimination in the previously restricted market. Only countries with a relatively large share of exports to the US, therefore, would increase their total export value, which is consistent with the result by GTAP (Table 17).

Since there exists no justifiable specification of a function between quota fill rate and price elasticity, this result should be taken with care. Also, the simulation only captures the static impact of quota elimination; including a demand-saturation effect would change the story. Tariff reductions, as in Figure 27, could also be incorporated in the analysis. A more pressing issue here would be the fact that the numerical prediction in this section is based only on the "static" trade diversion away from latecomer ASEAN economies due to quota removal, which is also as a static phenomenon.

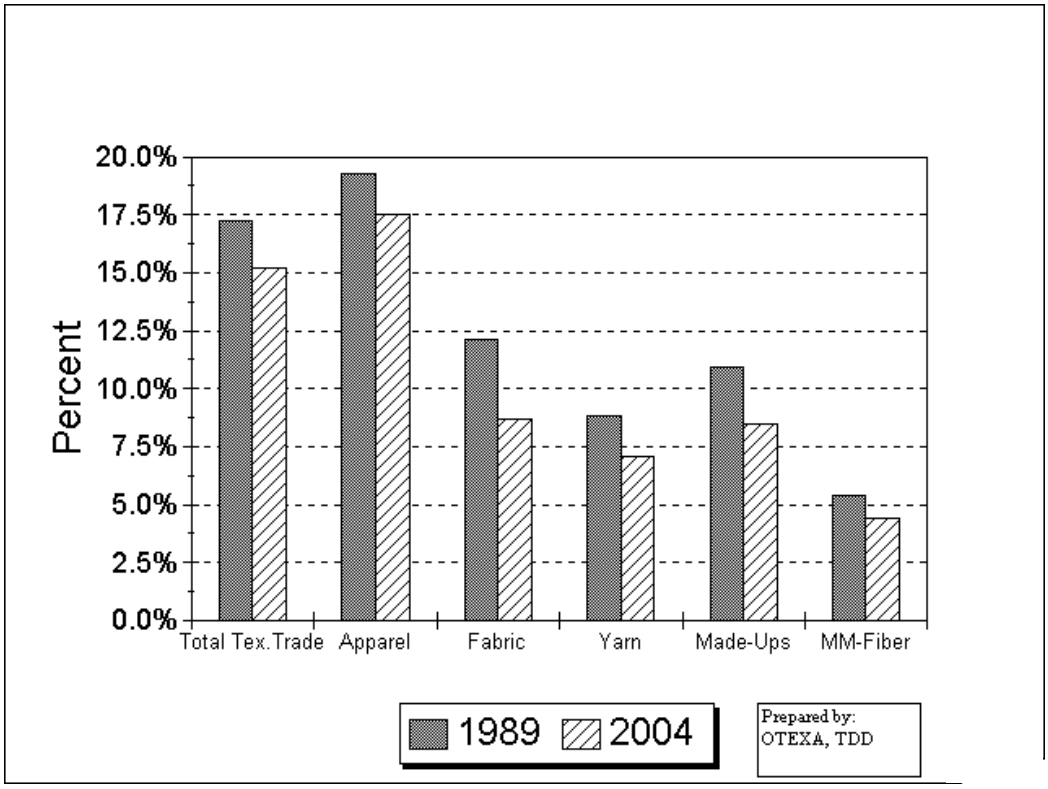
Taking into account dynamic impacts, such as investment concentrations in forerunner ASEAN economies and/or China, smaller economies like Laos and Brunei may be viewed as in an even more disadvantaged position. This is because their decrease in export share due to other Asian economies' quota removal to a larger extent leads to textile-producing firms' dynamic capital disinvestment away from those smaller economies. This point is taken up more theoretically in the next subsection.

Table 17. Simulation results of export increase by GTAP

(percent)

	Textiles		Clothing	
Country/region	Case 1[a]	Case 2[b]	Case 1[a]	Case 2[b]
Australia	4.7	1.1	-25.5	-10.6
North America	-5.8	-4.0	-13.8	-7.4
EU	3.2	7.6	6.6	15.2
Japan	6.2	15.5	-27.2	-23.4
NIEs	16.9	29.0	-27.4	-19.2
ASEAN	22.3	25.6	252.8	279.6
China	7.9	10.3	130.0	144.0
South Asia	24.6	26.0	253.7	252.5
Latin America	12.0	12.7	-23.0	-23.2
Rest of the world	-5.3	-3.4	-57.8	-56.3
World	8.5	14.0	53.6	62.9

Notes: [a] Elimination of import quotas in the presence of the pre-Uruguay Round tariffs.
[b] Elimination of import quotas and tariffs.
Source: Yang, Martin and Yanagishima (1997), Table 10.5.



Source: OTEXA's website (http://otexa.ita.doc.gov/duty.htm).

Figure 27. U.S. MFN tariff rates (trade weighted average)

IV-3. Prospects for Estimating the Dynamic Impact of Quota Removal

The main point of this paper can be summarized in Table 18. As demonstrated in the table, two sorts of impacts – static and dynamic – stem from 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. Dynamic impacts, i.e., (3) capital accumulation through investment and (4) productivity enhancement through learning by doing, 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. This section theoretically investigates the dynamic impact of quota removal, focusing on realistic firm behaviors. Manufacturing firms strategically allocate their production facilities on the basis of locational advantages of their production operation (Dunning, 1992).

Table 18. Economic impacts of trade liberalization

Economic policy	Static impacts	Dynamic impacts
Quota elimination and/or tariff reduction	(1) Trade diversion (2) Trade creation	(3) Capital accumulation through investment (4) Productivity enhancement through learning by doing

Source: Author.

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 section 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 (Yoshida, 2002).[13]

In the situation exemplified by the textile industry, where cost aspects or price competition (rather than product differentiation) are the dominant issues to be considered, "scale economies" serves as a major criterion of investment. As Yamazawa (1993) suggests, the textile industry is mainly characterized by firms' "volume zone" operations, which seek 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.

Empirical evidence on locational advantages include the rise in trade between the US and Mexico after the formation of NAFTA. Mexico's share of 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 previous section), yet the formation of NAFTA as

[13] This is the perspective of so-called "complexity science".

an “exogenous” event favors the view that an instantaneous *shift* of the supply curve has been the norm.[14]

Quotas in the textile industry “ha[ve] tended to depress competition among exporters by restricting exports of efficient firms while benefiting less efficient firms” (Yamazawa, 1993:6). Upon removal of these quotas, therefore, it is highly likely that efficient firms expand their productive capacity through further capital investment. This directly translates into a decision by these firms to undertake 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 investments (Georgescu-Roegen, 1971; Dixit and Pindyck, 1994; Mayumi, 2001; Yoshida, 2002) which serve as a source of industrial agglomeration on the basis of increasing returns to scale.[15] 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 the phenomenon of “share dynamics”. In Appendix B, a non-linear (complex) change in producers’ behavior is modeled, on the basis of a stochastic dynamic equation system addressed most notably by Yoshida (2002). It is an “alternative” model classified loosely in “complexity economics”, in which a shift in production location can be achieved by capital investment over time in a non-linear manner (in contrast with the linear manner from the microeconomic model in the previous section).

An application of this dynamic view has an implication for the ASEAN Plus Three economies in their textile production: Although a free trade agreement among the ASEAN Plus Three seems to have a favorable impact on the region’s textile industry *as a whole*, it might as well lead to the further marginalization of the investment attraction of weaker economies. For instance, China and forerunner ASEAN economies might

[14] 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

[15] Yoshida (2002) argues that a factory with the durability of ten years cannot be “used up” exhaustively in an instant, 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.

take up most of foreign direct investment (FDI) at the expense of the marginalization of latecomer ASEAN economies. Also, China's "beggar-thy-neighbor policy", or the country's pegging of its currency to the US dollar at a "lower-than-fair" rate, might well depress exports of textile products by the other ASEAN Plus Three economies. It only stands to reason that those business firms, both domestic and multinational (including Japanese and Korean), should decide on their location of operation on the basis of other rival firms. If they perceive it more strategically important to base their manufacturing factories in China, then investment flow may be exclusively be concentrated in the country. Then not only latecomer ASEAN economies but also forerunner ASEAN members would suffer from shortage of inward investment. In brief, dynamic investment behavior triggered by trade liberalization might hamper the widening of economic development in the intra-ASEAN Plus Three.

V. Concluding Remarks

This paper has addressed 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 likely impact of the complete quota removal after 2005, concluding that some of the member countries, namely China and ASEAN-IMPST are 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 ASEAN-BCLMV in a disadvantaged position. The group of latecomer ASEAN economies, having been "safeguarded" by the import quota imposed upon other economies, have to face harsher competition from quota-free production by those 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 ASEAN-IMPST, will attract more FDI from Japan, Korea, once an FTA is to be forged among ASEAN Plus Three economies. Put differently, ASEAN-BCLMV might be left behind in the competition for attracting FDI. Which will become the industrial "hub", China or ASEAN-IMPST? The dynamic consideration of this paper points to the existence of multiple equilibria. That is, there might be marginalization of either

ASEAN-IMPST economies or China, or the two could reach some sort of co-existence. In the end, it will depend on where and how business firms undertake their future capital investment. Theoretically, either scenario (or the coexistence one) 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, which might favor China's winning the competition to become the world's center of textile-related products.

The forerunner ASEAN economies have both complementariness and rivalry vis-à-vis China in their textile manufacturing. If the rivalry property dominates in the end, then the above "China-hub-equilibrium" might well come to pass. If the complementariness property prevails, that would cater more to ASEAN's developmental needs.

As it stands, global industrial operations in the textile industry have 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.

Appendix A

A formalization of the impacts of trade liberalization by Yang, Martin and Yanagishima

Yang, Martin and Yanagishima (1997) construct a partial equilibrium model with a view to estimating the impacts of quota removal for textile products. What follows is a brief recapitulation of their formulation. In the absence of trade distortions, a net expenditure function, Z^i, of the economy of each region *i* in the world can be formulated as:

$$Z^i(p_w, U, V) = e^i(p_w, U) - r^i(p_w, V)$$

where

$e^i(\cdot)$: total expenditure on the imports of a particular product (e.g., textiles and apparel)

$r^i(\cdot)$: total revenue from the product

p_w: world price of the product without distortion

U: level of utility

V: vector of fixed endowments

$$Z_p^0 + Z_p^1 + Z_p^2 = 0$$

$$Z_p^0 + Q + Z_p^2 = 0$$

$$e^0 - r^0 - (p - p_w)Q = 0$$

where

p: price of the product under quota restriction

$$B^j = e^0(p_w, U^j) - r^0 - (p - p_w)Q = Z^0(p_w, U^j) - (p - p_w)Q$$

Taylor series expansion of B^j with respect to Q up to the second-order term yields:

$$dB = Z_p^0 \frac{\partial p_w}{\partial Q} dQ - Q\left(\frac{\partial p}{\partial Q} - \frac{\partial p_w}{\partial Q}\right)dQ - (p - p_w)dQ + \frac{1}{2}\left\{Z_{pp}^0\left(\frac{\partial p_w}{\partial Q}\right)^2 - 2\left(\frac{\partial p}{\partial Q} - \frac{\partial p_w}{\partial Q}\right)\right\}(dQ)^2$$

Dividing both sides of the above equation and manipulating terms gives:

$$\frac{dB}{X} = \{(S_Q - 1)e_{wQ} - S_Q e_{1Q} - S_R\}\frac{dQ}{Q} + \left\{(S_Q - S_R)e_{wQ} - S_Q e_{1Q} + \frac{1}{2X}Z_{pp}^0(p_w e_{wQ})^2\right\}\left(\frac{dQ}{Q}\right)^2$$

where

X: total value of export of the product

$e_{wQ} \equiv \frac{\partial p_w}{\partial Q}\frac{Q}{p_w}$ (elasticity of the world price with respect to the quota),

$e_{1Q} \equiv \frac{\partial p}{\partial Q}\frac{Q}{p}$ (elasticity of the restricted market price with respect to the quota),

$S_R \equiv \frac{(p - p_w)Q}{X}$ (share of rents in total export value)

$S_Q \equiv \frac{pQ}{X}$ (share of export value to the restricted market in the total export value).

Appendix B

A model of investment share dynamics with "synergy effect"

The model below, drawing on Yoshida (2002), captures the dynamism and not the structure of firms' investment behavior. Suppose that firms have two alternative choices, i.e., investing in "country A" (referring to ASEAN) or in "country C" (China) for setting up their production facilities. The total amount of investment is fixed at $2I$ (2 times I for the sake of later convenience). Then the following equations

$$i_A + i_C = 2I \tag{B.1}$$

$$i_A - i_C = 2i \tag{B.2}$$

$$i_A = I + i \tag{B.3}$$

$$i_B = I - i \tag{B.4}$$

When i is positive, investment in country A accounts for more than half of the total amount of investment, $2I$. The most important feature of the synergy effect is that the probability of investment moving from one country to the other depends explicitly on the current level of i. Thus,

$p_{CA}(i)$: the probability of an investor's moving from country A to country C;

$p_{AC}(i)$: the probability of an investor's moving from country C to country A;

The probability distribution at time t is defined as

$$p[i_A, i_C; t] = p(i; t) \tag{B.5}$$

Then

$$\sum_{i=-N}^{N} p(i;t) = 1 \tag{B.6}$$

The time profile of the probability distribution can be expressed as:

$$\frac{dp(j;t)}{dt} = \sum_k [w(j \leftarrow k)\, p(k;t) - w(k \leftarrow j)\, p(j;t)] \tag{B.7}$$

where

$w(j \leftarrow k)$: transition probability from state k to j. For (B.6) to hold,

$$\frac{d}{dt}\sum_j p(j;t) = \sum_{jk} [w(j \leftarrow k)\, p(k;t) - w(k \leftarrow j)\, p(j;t)] = 0 \tag{B.8}$$

A one-unit increase in the number of investors in Country A corresponds to the following:

$$w(i+1 \leftarrow i) \equiv w\uparrow(i) = i_C\, p_{AC}(i) = (I-i)\, p_{AC}(i) \tag{B.9}$$

$$w(i-1 \leftarrow i) \equiv w\downarrow(i) = i_A\, p_{CA}(i) = (I+i)\, p_{CA}(i) \tag{B.10}$$

$$w(i+1 \leftarrow i-1) = 0 \tag{B.11}$$

The time profile of the probability distribution can therefore be rewritten as:

$$\frac{dp(i;t)}{dt} = [w\downarrow(i+1)\,p(i+1;t) - w\downarrow(i)\,p(i;t)] + [w\uparrow(i-1)\,p(i-1;t) - w\uparrow(i)\,p(i;t)] \tag{B.12}$$

Taylor series expansion of this equation yields:

$$\frac{\partial p(i;t)}{\partial t} = \Delta i \frac{\partial}{\partial i}[w\downarrow(i)\,p(i;t)] + \frac{(\Delta i)^2 \partial^2}{2\partial i^2}[w\downarrow(i)\,p(i;t)]$$

$$- \Delta i \frac{\partial}{\partial i}[w\uparrow(i)\,p(i;t)] + \frac{(\Delta i)^2 \partial^2}{2\partial i^2}[w\uparrow(i)\,p(i;t)] \tag{B.13}$$

Setting $\Delta i = 1$,

$$\frac{\partial p(i;t)}{\partial t} = -\frac{\partial}{\partial i}\{[w\uparrow(i) - w\downarrow(i)]p(i;t) + \frac{1}{2}\frac{\partial^2}{\partial i^2}\{[w\uparrow(i) + w\downarrow(i)]p(i;t)\} \tag{B.14}$$

Transforming variables as:

$x = \frac{i}{I}$(share of i in total investment, *I*); $\Delta x = \frac{\Delta i}{I} = \frac{1}{I} = \varepsilon$; $P(x;t) = Ip(i;t) = Ip(Ix;t)$;

and normalizing this as:

$\int P(x;t)dx \cong \sum_{x=-1}^{1} P(x;t)\Delta x = \sum_{i=-I}^{I} p(i;t) = 1$, the following "Fokker-Planck equation" can be obtained:

$$\frac{\partial P(x;t)}{\partial t} = -\frac{\partial}{\partial x}\{[W\uparrow(x) - W\downarrow(x)]P(i;t) + \frac{\varepsilon}{2}\frac{\partial^2}{\partial x^2}\{[W\uparrow(x) + W\downarrow(x)]P(x;t)\} \tag{B.15}$$

where

$w\uparrow(i) = I(1-x)\,p(Ix) = IW\uparrow(x)$

$w\downarrow(i) = I(1+x)\,p(Ix) = IW\downarrow(x)$.

The crucial assumption of a synergy effect under increasing returns is:

$W\uparrow(x) = v(1-x)\exp(\alpha+\beta x)$;

$W\downarrow(x) = v(1+x)\exp\{-(\alpha+\beta x)\}$;

that is, a larger x is associated with even larger x. In this postulate, β measures the extent to which investors are influenced by other investors.

A stationary solution (for large I) can be obtained as:

$$x = \tanh(\alpha+\beta x) \equiv \frac{\exp(\alpha+\beta x)-\exp\{-(\alpha+\beta x)\}}{\exp(\alpha+\beta x)+\exp\{-(\alpha+\beta x)\}} \tag{B.16}$$

If $0<\beta<1$, there is only one stationary state. If $\beta \geq 1$, there are multiple stationary states, that is, both ASEAN and China have the possibility to become the hub of textile production and export. Figure C.1 depicts this property of multiple stationary states: As Beta (β) becomes larger than 1, the graph $y = \tanh(\alpha+\beta x)$ become bent more, to have three intersections with the straight line $y = x$. Since the intersection(s) of $y = \tanh(\alpha+\beta x)$ and $y = x$ correspond(s) to the solution(s) of (B.16), a larger β allows for multiple solutions.

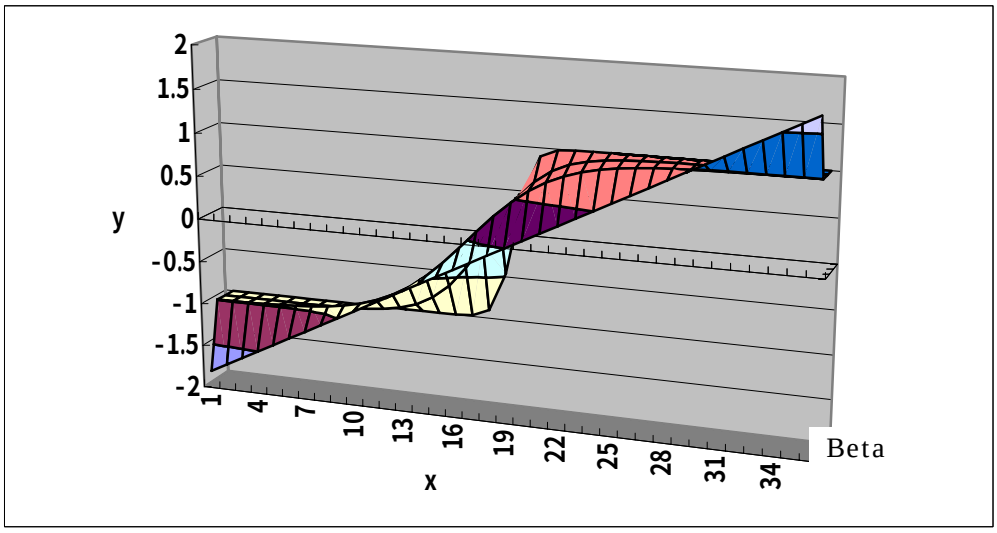


Figure B.1 Graph of $y = \tanh(\alpha+\beta x)$ with different values of Beta(β)

The above Fokker-Planck equation (B.15) is equivalent to the following stochastic process:

$$dx = b(x)dt + \varepsilon\sigma(x)dW(t) \tag{B.17}$$

where

$$b(x) = W\uparrow(x) - W\downarrow(x) = 2v(\sinh(\alpha+\beta x) - x\cosh(\alpha+\beta x)) \tag{B.18}$$

$$\sigma(x) = \sqrt{W\uparrow(x) + W\downarrow(x)} = \sqrt{2v(\cosh(\alpha + \beta x) - x\sinh(\alpha + \beta x))} \qquad \text{(B.19)}$$

$dW(t)$: Wiener (Brownian) process with zero mean;

$\sinh(x) \equiv e^{x} - e^{-x}$;

$\cosh(x) \equiv e^{x} + e^{-x}$;

$\tanh(x) \equiv \dfrac{\sinh(x)}{\cosh(x)}$.

A simulation analysis of (B.18) yields Figures B.2 and B.3: the single stochastic process (B.17) can, depending on particular realizations of $dW(t)$ and their increasing magnitude because of (B.18) and (B.19), lead to increasing x or decreasing x. Thus, either ASEAN-hub scenario or China-hub scenario is conceivable in terms of textile production, through this "self-organization through synergy effect". This theoretical prediction, in line with Haken (2000), Yoshida (1987, 2003), Nishikimi (2000) and Mori (2002), conforms to "bandwagon effects", "demonstration effects" in microeconomic theory and to "domino effects" in trade theory.

The above model highlights the important role of stochastic, or unintended fluctuations in economic variables. Witness also the two experiences of FDI surge into ASEAN economies starting in 1986 right after the Plaza Accord of 1985, and the Asian financial crisis in 1997. In both cases, firms and investors behaved proactively, or according to how others were behaving, right after the realizations of those "stochastic" economic events.

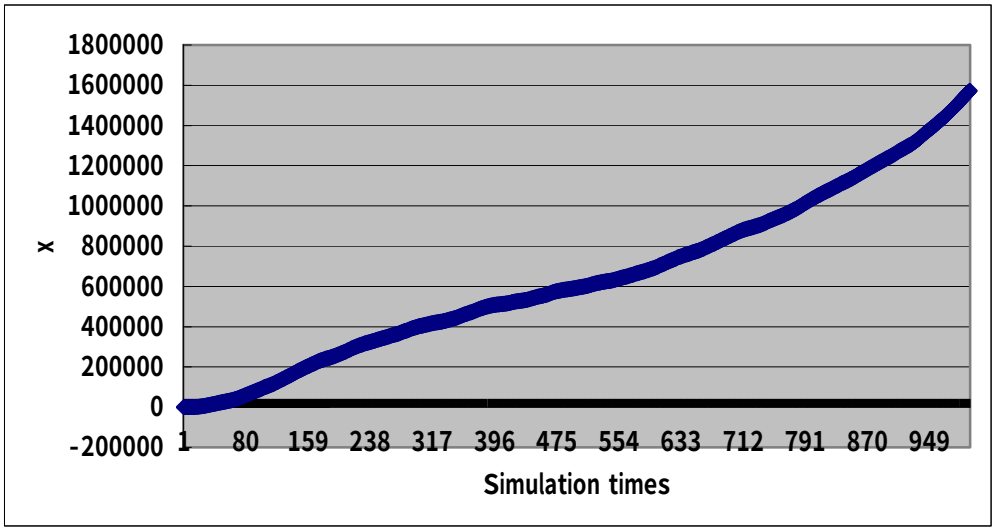


Figure B.2 Simulation of (B.17): a sample path of increasing x

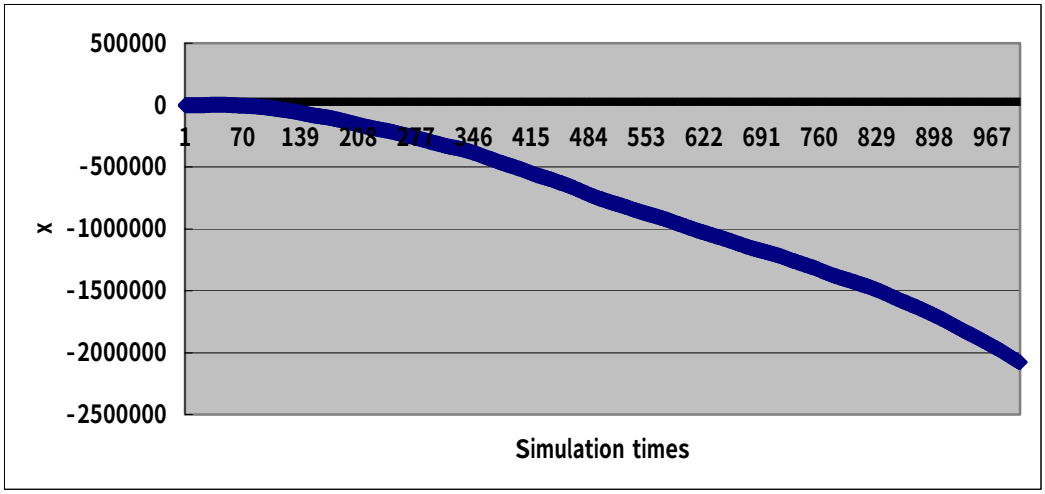


Figure B.3 Simulation of (B.17): a sample path of decreasing x

References

Anson, Robin (2002), "World Capacities and Shipments of Textile Machinery", *Textile Outlook International*, July-August, pp.120-157.

Aoki, Masahiko (2001) ,*Toward a Comparative Institutional Analysis*, Cambridge, MA: The MIT Press.

Aoki, Masanao. (1996) *New Approaches to Macroeconomic Modeling: Evolutionary Stochastic Dynamics, Multiple Equilibria, and Externalities as Field Effects*, Cambridge, U.K.: Cambridge University Press.

Aoki, Masanao (2001) ,M*odeling Aggregate Behaviour and Fluctuations in Economics: Stochastic View of Interacting Agents*, Cambridge, U.K.: Cambridge University Press.

Arthur, B. (1986) ,"Industry Location Patterns and the Importance of History", Paper No. 84, Center for Economic Policy Research, Stanford University.

Bhagwati, Jagdish, Pravin Krishna, and Arvind Panagaria (eds.) (1999) ,*Trading Blocs: Alternative Approaches to Analyzing Preferential Trade Agreements*, Cambridge, Mass: The MIT Press.

Dixit, A. K. and R. S. Pindyck (1994), *Investment under Uncertainty*, Princeton, New Jersey: Princeton University Press.

Dunning, J. H. (1992), *Multinational Enterprises and the Global Economy*, Wokingham, England: Addison-Wesley Publishing.

EURATEX (European Apparel and Textile Organisation) (2003), *General Economic Situation in 2002: Short Term Prospects*, Bulletin 2003/2.

Georgesçu-Roegen, N. (1971), *The Entropy Law and the Economic Process*, Cambridge, MA: Harvard University Press.

Haken, Hermann (2000), *Information and Self-Organization: A Macroscopic Approach to Complex Systems*, Second Enlarged Edition, Berlin: Springer.

Hertel, Thomas W. (1997), (ed.) *Global Trade Analysis: Modeling and Applications*, New York: Cambridge University Press.

Kajita, Akira (2002), "FTA no Keizai Koka" (Economic Impacts of FTA) in JETRO (2002).

Ishido, Hikari (2003), "Economic Determinants of Foreign Direct Investment by

Multinational Firms: The Case of Malaysia", PhD dissertation, School of Oriental and African Studies, University of London.

Ishido, Hikari (2003), *Economic Determinants of Foreign Direct Investment by Multinational Firms: The Case of Malaysia*, Ph.D. dissertation, University of London.

JCFA (Japan Chemical Fibers Association) (2002), *Sekai no sen-i hin boeki kozo no henka no yosoku* (Prediction of change in trade patterns for the word's textile products), JCFA.

JCFA (Japan Chemical Fibers Association) (2003), *Tekisutairu Handobukku 2004* (Textile Handbook 2004), JCFA.

JETRO (Japan External Trade Organization) (2002), *FTA Gaidobukku* (FTA Guidebook),

JETRO (Japan External Trade Organization) (2003), *Boeki Toshi Hakusho* (White Paper of Trade and Investment), Tokyo: JETRO.

Khanna, Sri Ram and the IBC Research Team (2002a), "Trends in US Textile and Clothing Imports", *Textile Outlook International*, May-June, pp.67-129.

Khanna, Sri Ram and the IBC Research Team (2002b), "Trends in EU Textile and Clothing Imports", *Textile Outlook International*, July-August, pp.62-119.

Kohsaka, Akira and Koichi Ohno (eds.) (2002), *Aratana Kaihatsu Senryaku o Motomete* (A Quest for a New Development Strategy), IDE Research Series No.526, IDE-JETRO (Institute of Developing Economies, Japan External Trade Organization).

Maruya, Toyojiro (ed.) (2001), Ajia Kokusai Bungyo Saihen to Gaikoku Chokusetu Tosih no Yakuwari (Restructuring of Asia's international division of labor and the role of foreign direct investment), Chiba: IDE-JETRO (Institute of Developing Economies, Japan External Trade Organization).

Mayumi, Kozo (2001), *The Origins of Ecological Economics: The Bioeconomics of Georgescu-Roegen*, London: Routledge.

Mori, Soya (2002) "Fukuzatukei to Keizai Seisaku: Atarashii Tojokoku no Sangyoseisaku no Arikata wo Megutte" (New Directions of Development Policy: From the Viewpoint of Complexity) in Kohsaka and Ohno (2002).

Nishikimi, Koji (2000), "Keizai Hatten niokeru Chiriyoin" (Geography in Economic

Development) in Ohno and Nishikimi (2000).

Ohno, Koichi and Koji Nishikimi (2000), *Kaihatsu Senryaku no Saikento: Kadai to Tenbo* (Reconsideration of Development Strategies: Issues and Prospects), IDE Research Series No.507, Chiba: IDE-JETRO (Institute of Developing Economies, Japan External Trade Organization).

Okamoto, Jiro (ed.) (2003), *Whither Free Trade Agreements?: Proliferation, Evaluation and Multilateralization*, Chiba: Institute of Developing Economies, Japan External Trade Organization.

Panagariya, Arvind and Rupa Duttagupta (2002), "Politics of Free Trade Areas: Tariffs Versus Quotas", *Journal of International Economics*, 58, pp.413-427.

Penrose, E. (1959), *The Theory of the Growth of the Firm*, Oxford: Basil Blackwell.

Seki, Mitsuhiro (ed.) (2001), Ajia No Sangyo Syuseki (Industrial Agglomeration in Asia), Chiba: IDE-JETRO (Institute of Developing Economies, Japan External Trade Organization).

Urata, Shujiro (ed.) (2002), *Jiyu Boeki Kyotei FTA Gaidobukku* (Free Trade Agreement Guidebook), Japan External Trade Organization (JETRO).

Vernon, R. (1966), "International Investment and International Trade in the Product Cycle", *Quarterly Journal of Economics*, 80, pp. 190-207.

Williamson, O. (1985), *The Economic Institutions of Capitalism: Firms, Markets, Relational Contracting*, New York: The Free Press.

Yamamoto, Gen (2003), "Evaluating the Logics of FTA Formations in International Economics: Economic Rational Consequence of Strategic Interactions" in Jiro Okamoto (2003).

Yamazawa, Ippei (1993), "Trade Policy Issues in the Asian-Pacific Region: The Case of the Textile and Clothing Industry", *Asian-Pacific Economic Literature* Vol.7, No.1, May, pp.1-8.

Yamazawa, Ippei (2001), *Ajia Taiheiyo Keizai Nyumon* (Japanese) (Introduction to Asia-Pacific Economy), Tokyo: Toyo Keizai Shinposha.

Yang, Yongzheng, Will Martin and Koji Yanagishima (1997), "Evaluating the Benefits of Abolishing the MFA in the Uruguay Round Package" in Hertel (1997).

Yoshida, Kazuo (ed.) (2002), *Fukuzatukei Keizaigaku Eno Apurochi* (Approach to Complexity Economics), Tokyo: Toyokeizai Shiposha.

List of Publications from the IDE APEC Study Center

FY 1995/96

IDE APEC Study Center Working Paper Series

No.1 Hiroki Kawai and Iwao Tanaka, "Measuring the Cost of Protection in Japan", *1990*.
No.2 Fumio Yoshino, "Trade Impediments of Agricultural Products and Food".
No.3 Haruko Yamashita, "Factors Affecting Domestic Price Differentials in the Japanese Fisheries and Marine Products".
No.4 Kunihiro Ohishi, "Factors Affecting Domestic Price Differentials in the Petroleum Products".
No.5 Hideki Ishikawa, "Factors Affecting Domestic Price Differentials in the Japanese Electric and Electronic Machinery Products".
No.6 Akiko Hirano, "Legal Aspects of the Institutionalization of APEC".
No.7 Tatsushi Ogita, "The APEC Policy-Making Process in Japan".
No.8 Jiro Okamoto, "An Approach towards Australia's Foreign Economic Policy Making Process".

FY 1996/97

1. Report

The View of Economic and Technology Cooperation in APEC
Edited by Keiji Omura

Chapter I	General Perspective on the Economic And Technology Cooperation of APEC (by Keiji Omura)
Chapter II	Trade Flow and Foreign Direct Investment in APEC Region (by Satoru Okuda)
Chapter III	Constant-Market Share Analysis and Open Regionalism: A Study Suggestion (by Hiroya Ichikawa)
Chapter IV	Development and Stability of the Asia-Pacific Regional Market: How to Stabilize the Development Path of the East-Asian Market by Establishing a Framework for Better Risk Management (by Toshihiko Kinoshita)
Chapter V	Human Development in the Case of Small and Medium Sized Enterprises (by Tomohiro Uchida)
Chapter VI	APEC Cooperation for Adjustment toward Emerging Problems (by Masatake Wada)
Chapter VII	Japan's ODA and APEC (by Takeshi Mori)

2. IDE APEC Study Center Working Paper Series

No.1 Shigeru Itoga, "Labor Issues and APEC Liberalization".
No.2 Jiro Okamoto, "Asian Regionalism and Japan".
No.3 Jiro Okamoto, "Foreign Economic Policy Making in Australia: Analytical Framework and the Role of the State".
No.4 Shigeki Higashi, "Economic Policy and the Growth of Local Manufactures in Thailand".
No.5 Tatsushi Ogita, "The Origins of Contrasting Views on APEC".
No.6 Daisuke Takoh, "China's APEC Policy and the Accession to the WTO".
No.7 Tatsushi Ogita and Daisuke Takoh, " The Making of the Osaka Action Agenda and Japan's Individual Action Plan".
No.8 Hiroki Tohya, "TRIPs and Policies of APEC on Intellectual Property Rights: Economic Theory and Political Reality".

No.9 Ippei Yamazawa, “APEC’s Liberalization and Impediments in Japan: Overview of Services Trade”.
No.10 Kunihiro Ohishi, “Survey of Impediments to Trade and Investment in Japan -Distribution Services”.
No.11 Hidenobu Okuda, “Impediments in Japanese Banking Industry”.
No.12 Tsutomu Chano, “Impediments to Service Trade in the Insurance Sector”.
No.13 Masanao Terashima, “Trade and Investment Barriers, and Domestic-Foreign Price Differentials in Transport Services”.
No.14 Schunichi Hiraki, “Impediments in Construction and Engineering Services”.
No.15 Haruko Yamashita, “Trade Impediments and Domestic Price Differentials in the Japanese Telecommunications Sector”.
No.16 Kazuhiko Yokota, “Impediments to International Service Transactions in the Health-related and Social Services Sector”.
No.17 Shujiro Urata and Hiroki Kawai, “The Cost of Regulation in the Japanese Service Industries”.
No.18 Marina Fe B. Durano, “Barriers to Cross-Border Provision of Services within the APEC: with a Focus on the Movement of Persons”.
No.19 Kahlil Rowter, “Training as a Vehicle for Enhanced Growth: A Study of Human Resource Development Needs for Enhanced Investment and Cooperation among APEC Members”.
No.20 Li Kun Wang , “The Effect and Strategy of Trade Liberalization for China”.
No.21 Zhao Jiang Lin, “Openness of China’s Manufacturing Sectors and Its APEC Policy”.

3. Reports of Commissioned Studies

Center for APEC Studies, Nankai University, *Economic Policy in APEC: The Case of China Policy*.
Institute of Economics and Social Research, Faculty of Economics, University of Indonesia, *Economic Policy in APEC: The Case of Indonesia*.
Philippine Institute for Development Studies, *Economic Policy in APEC: The Case of the Philippines*.
Faculty of Economics, Chulalongkorn University, *Economic Policy in APEC: The Case of Thailand*.

FY 1997/98

1. Report

Deepening Economic Interdependence in the APEC Region
Edited by Keiji Omura

Overview	(by Keiji Omura)
Chapter I	Deepening Economic Interdependence in the APEC Region: Boom and Vulnerability through Trade Linkages (by Hiroshi Osada)
Chapter II	Can a Sub-regional Group Enhance the Tie?: with Emphasis on East Asia (by Satoru Okuda)
Chapter III	The Background and Causes of the Current Financial Crisis in Indonesia (by Masaaki Komatsu)
Chapter IV	ASEAN’s Relationships with America (by Takeshi Aoki)
Chapter V	The Historical Development of Australia-ASEAN Relations: Implications for APEC into the Year 2000 (by Jiro Okamoto)
Chapter VI	Industrial Policies and Trade Liberalization: The Automotive Industry in Thailand and Malaysia (by Mai Fujita)
Appendix	China’s Policy for the Liberalization of Trade and Investment through the APEC/IAP and Negotiations for the Accession to the WTO in 1997 (by Daisuke Takoh)

2. IDE APEC Study Center Working Paper Series

No.1 Akira Kuroda, "Stakes in Common: APEC's Technological Cooperation".
No.2 Shigeru Itoga, "The Challenge to the Enhancement of Technological Level of Thai Industry".
No.3 Atsusuke Kawada, "Current Situation and Outlook for Economic and Technical Cooperation among Developing Countries in APEC: Singapore Cooperation toward Neighbouring Asian Developing Countries".
No.4 Shunji Karikomi, "The Development Strategy for SMEs in Malaysia".
No.5 Nobuhiro Horii, "APEC Cooperation and Strategies for the Introduction of Renewable Energy into Developing Countries".
No.6 Colin K.L. Chang, "Lessons in Technology Development: The Japanese Experience".

3. Reports of Commissioned Studies

Urban Ecosystem Management, Institute for Environment and Development (LESTARI), Universiti Kebangsaan Malaysia, *Urbanization and Environment in Malaysia: Managing the Impact.*
Tsai She Hsien, Taiwan Research Institute, *A Study in the technological Development of Taiwan's Enterprise and Technology Transfer with Direct Investment*. (in Japanese).

FY 1998/99

1. Reports

Trade Liberalization and Facilitation in APEC: A Re-evaluation of APEC Activities
Edited by Satoru Okuda

Chapter I	"Potential" APEC Sub-regions: Current Status and Future (by Satoru Okuda)
Chapter II	The AFTA-CER Linkage Dialogue: An Endeavour for Closer Relations between SRTAs within APEC (by Jiro Okamoto)
Chapter III	Vietnam in APEC: Changes in Trade Patterns after the Open Door Policy (by Mai Fujita)
Chapter IV	Development Policies for Small and Medium Enterprises in APEC: In the Case of the Philippines (by Mayumi Fukumoto)
Chapter V	Capital Account Liberalization in Emerging Markets: Lessons from the Asian Currency Crisis (by Shunji Karikomi)
Chapter VI	Korea's New Accounting Standards and Its Impact on APEC (by Shiro Takahashi and Satoru Okuda)

Future Prospects of Supporting Industries in Thailand and Malaysia
Edited by Ryuichiro Inoue and Shigeru Itoga

Chapter I	Overview (by Shigeru Itoga)
Chapter II	Future Prospect of Supporting Industries in Thailand and Malaysia (by Ryuichiro Inoue)
Chapter III	Fostering Supporting Industries in Thailand through the Linkage between Local and Foreign Interests, the Case of Mold and Die Sector (by Jun Tsunekawa)
Chapter IV	Development and Enhancement of Supporting Industries in Malaysia (by Kyohei Yamazaki)
Chapter V	Real State of Mold & Die Industries in Asia and Their Relationship with Japan's Mold & Die Industry (by Etsujiro Yokota)

2. IDE APEC Study Center Working Paper Series

Ratana Eiamkanitchat, "The Role of Small and Medium Supporting Industries in Japan and Thailand".

3. Reports of Commissioned Studies

Rajah Rasiah, IKMAS, UKM and Faculty of Economics and Business, UNIMAS, *State Support and Machine Tool Subcontracting Links in Malaysia : Microelectronics and Passenger Car Assemblies.*

Kitti Limskul, Faculty of Economics, Chulalongkorn University, *Future Prospects of Selected Supporting Industries in Thailand.*

FY 1999/2000

1. Report

Industrial Linkage and Direct Investment in APEC
Edited by Satoru Okuda

Chapter I	Industrial Linkage and Direct Investment in APEC (by Satoru Okuda)
Chapter II	Foreign Direct Investment, Trade, and Vietnam's Interdependence in the APEC Region (by Mai Fujita)
Chapter III	Technical Assistance to Japanese Affiliates: The Case of the Autoparts Industry in Thailand (by Yoshi Takahashi)
Chapter IV	Russia's Participation in APEC and Economic Development in the Far East (by Mayumi Fukumoto)
Chapter V	Macroeconomic Impacts in APEC Region: Measurement by APEC Link Model (by Jinichi Uemura)

2. IDE APEC Study Center Working Paper Series

No. 1 Jiro Okamoto, "The Political Process of APEC Early Voluntary Sectoral Liberalisation: Setting the Research Agenda".
No. 2 Akiko Yanai, "APEC and the WTO: Seeking Opportunities for Cooperation".
No. 3 Fumio Nagai, "The APEC EVSL Initiative and the Policy Making Process in Thailand".
No. 4 Tatsushi Ogita, "Japan's Policy Making in the APEC EVSL Consultations: Its Actors, Process and Interpretations".
No. 5 Yutaka Onishi, "Politics by Mass Media?: Changes in the Korean Policy toward APEC Early Voluntary Sectoral Liberalization".
No. 6 Satoshi Oyane, "America's Non-"Two-Level Game" at the APEC EVSL Initiative: Structural Change in Trade Politics".

3. Reports of Commissioned Studies

Michael Wesley, School of Political Science, University of New South Wales, *The Politics of Early Voluntary Sectoral Liberalisation in Australia*.

Hanafi Sofyan, A. Syafi'i, Yasmi Adriansyah and Lynda Kurnia Wardhani, Institute for International Finance and Commodities (Jakarta), *The Policy Making Consultations of APEC Early Voluntary Sectoral Liberalization: The Case of Indonesia*.

FY 2000/01

1. Report

APEC in the 21st Century ─Selected Issues for Deeper Economic Cooperation ─
Edited by Satoru Okuda

Chapter I	Impact of Economic and Technical Cooperation on Northeast Asian Countries (by Mayumi Fukumoto)
Chapter II	Linking SRTA and ECOTECH—A Consideration Based on Japan-Korea FTA (by Satoru D. Okuda)
Chapter III	Macroeconomic Impacts under FTA Configuration in the APEC Region (by Jinichi Uemura)
Chapter IV	Liberalization of Trade in Services in APEC: Assessment of IAP and the GATS Commitments (by Mikiko Yogo)
Chapter V	Regional Trade Arrangement and Strategies of Multinationals: Implications of AFTA for Economic Integration (by Mai Fujita)
Chapter VI	Expert Dispatch Program for Private Enterprises –The Case of JODC Experts in the Thai Manufacturing Sector– (by Yoshi Takahashi)

2. IDE APEC Study Center Working Paper Series

No.1 Jiro Okamoto, "The AFTA-CER Linkage Dialogue Revisited: Its Recent Development and Implications".
No.2 Akiko Yanai, "Reciprocity in Trade Liberalization".
No.3 Fumio Nagai, "Thailand's Attitude toward Trade Liberalization: In the Context of the ASEAN Free Trade Area (AFTA) ".
No.4 Tatsushi Ogita, "On Principles of APEC".
No.5 Satoshi Oyane, "'Plurilateralism' of the United States and its APEC Policies".
No.6 Hanafi Sofyan, "Promoting Financial Cooperation within the ASEAN+3".

3. Reports of Commissioned Studies

Yoo Soo Hong, Korea Institute for International Economic Policy (KIEP), *Internet Business Cooperation in Northeast Asia and APEC.*
Vladimir I. Ivanov and Hirofumi Arai, Economic Research Institute for Northeast Asia (ERINA), *Multilateral Cooperation in Northeast Asia and APEC.*

FY 2001 /02

1. Reports

A Study on Trade, Investment and International Labor Migration in the APEC Member Economies
Edited by Yasuko Hayase

Chapter I	International Migration in the Asia Pacific Region: Trend and Policies (by Yasuko Hayase)
Chapter II	Trade Structure in the APEC Region (under a separate volume on *Statistic for Trade and Foreign Direct Investment in the APEC Member Economies, 1980-2000*) (by Yosuke Noda)
Chapter III	Liberalization of Trade and Investment and Its Effects on International Migration (by Mayumi Fukumoto)
Chapter IV	Dynamic Impacts of Trade Liberalization on Multi-National Enterprises and Labor Market (by Kazuhiko Oyamada)
Chapter V	International Labor Migration from China: policy and Trends (by Yin Hao)

Chapter VI	What is the impact of FDI on Foreign Trade in China? (by Xiaoning Gong)
Chapter VII	International Migration and Foreign Workers in South Korea (by Yin Hao)
Chapter VIII	Labor Markets and Direct Investment of Hong Kong and Singapore (by Shoichi Ito)
Chapter VX	The Impact of International Labor Migration on Remittances in the Philippines (by Yoshio Yoshida)

Statistic for Trade and Foreign Direct Investment in the APEC Member Economies, 1980-2000
Edited by Yasuko Hayase

2. IDE APEC Study Center Working Paper Series

No.1 Jiro Okamoto, "Seeking Multilateralism Friendly FTAs: The Research Agenda".
No.2 Gen Yamamoto, "Theoretical Considerations of Multilateralism and Regionalism".
No.3 Akiko Yanai, "The Function of the MFN clause in the Global Trading System".
No.4 Tatsushi Ogita, "An Approach towards Japan's FTA Policy".
No.5 Atsushi Yamada, "Between Regionalism and Multilateralism: New Dilemmas in U.S. Trade Policy".
No.6 Fumio Nagai, "Thailand's Trade Policy: WTO Plus FTA?".
No.7 Mikio Kuwayama and Yusuke Kuwayama, "The Comprehensiveness of Chilean Free Trade Agreements".

3. Report of Commissioned Studies

Maria-Christina Rosas, Department of International Relations, Faculty of Social and Political Sciences, National Autonomous University of Mexico (UNAM), *Mexican Foreign trade Policy in the new Millennium.*

FY 2002/03

1. IDE Development Perspective Series

Whither Free Trade Agreements?: Proliferation, Evaluation and Multilateralization.
Edited by Jiro Okamoto

Chapter I	Introduction (by Jiro Okamoto)
Chapter II	Evaluating the Logics of FTA Formations in International Economics: Economic Rational Consequence of Strategic Interactions (by Gen Yamamoto)
Chapter III	Institutional Motives for Forming FTAs: The Contradiction between the MFN Principle and Reciprocity (by Akiko Yanai)
Chapter IV	The International Political Economy of FTA Proliferation: Testing the Analytical Scope of Neorealism, Neoliberalism and Constructivism (by Satoshi Oyane)
Chapter V	The United States' Free Trade Agreements: From NAFTA to the FTAA (by Atsushi Yamada)
Chapter VI	Mexico's Foreign Trade Policy in the NEW Millennium: Achievements and Challenges (by Maria-Cristina ROSAS)
Chapter VII	The Comprehensiveness of Chilean Free Trade Agreements (by Mikio Kuwayama)
Chapter VIII	Japan as a Late-coming FTA Holder: Trade Policy Change for the Asian Orientation? (by Tatsushi Ogita)
Chapter IX	Thailand's FTA Policy: Continuity and Change between the Chuan and Thakshin Governments (by Fumio Nagai)

2. Report

International Migration in APEC Member Economies: Its Relations with Trade, Investment and Economic Development.

Edited by Yasuko Hayase

IDE APEC Study Center publications may be downloaded from:

http://www.ide.go.jp/English/Apec/Publish/index.html

IDE APEC STUDY CENTER
Working Paper Series 03/04 – No. 3

The Economic Impact of Trade Liberalization on the ASEAN Plus Three: The Case of Textile Industry

by
Hikari Ishido

MARCH 2004

APEC STUDY CENTER
INSTITUTE OF DEVELOPING ECONOMIES, JETRO

3-2-2 Wakaba, Mihama-ku, Chiba-shi
Chiba 261-8545, JAPAN
Web Site: http://www.ide.go.jp