# STRUCTURAL CHANGE IN IMPORT DEMAND FOR TEXTILES FROM DEVELOPING COUNTRIES

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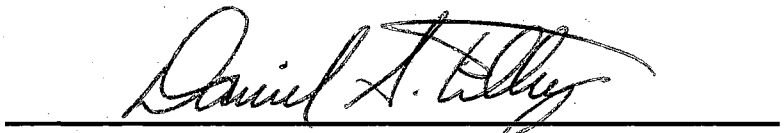

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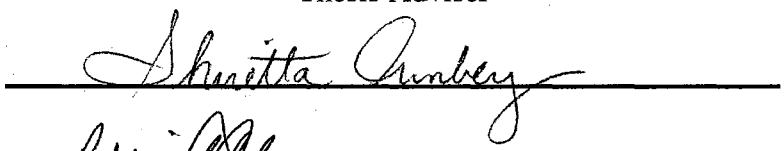

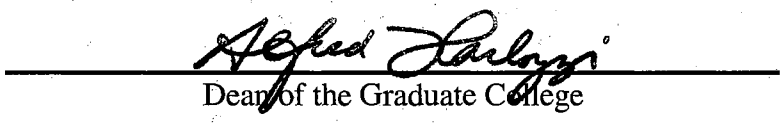

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## NOMENCLATURE

| | |
|---|---|
| AAMA | American Apparel Manufacturers Association |
| ASEAN | Association for the Southeast Asian Nations |
| AIDS | Almost ideal demand systems |
| CPI | Consumer Price Index |
| EC | European Community |
| EEA | European Economic Area |
| EEC | European Economic Community |
| EFTA | European Free Trade Association |
| GATT | General Agreement on Tariff and Trade |
| GNP | Gross National Product |
| ITCB | International Trade and Clothing Bureau |
| ITO | International Trade Organization |
| LTA | Long Term Arrangement Regarding Cotton Textile Trade |
| MFA | Mutifiber Arrangement |
| MFN | Most-favored Nation |
| MITI | Ministry of International Trade and Industry |
| MTNs | Multinational Trade Negotiations |
| OECD | Organization for Economic Cooperation and Development |

| | |
|---|---|
| OEEC | Organization for European Economic Cooperation |
| RSAIDS | Restricted Source Differentiated Almost Ideal Systems |
| ROW | Rest of the World |
| STA | Short Term Arrangement Regarding International Trade in Textile |
| SUR | Seemingly unrelated regression |
| TSB | Textile Surveillance Body |
| UNCTAD | United Nations Commission on Trade and Development |
| VER | Voluntary Export Restraint |
| WIPO | World Intellectual Property Organization |
| WTO | World Trade Organization |

# CHAPTER I

# INTRODUCTION

## Problem Statement

Textile and apparel industries have been important agents in international business. Their production and marketing chains provide and satisfy basic needs for the people of the world. These industries, and their widespread industrial and trade linkages, have been the largest source of agricultural and industrial employment in the world (Dickerson, 1995). During the Industrial Revolution, the textile industry and trade were influential to the British economy and later also to other Western European countries and the United States. Robertson (1938) suggested that trade can be an "engine of growth" that a country can rely on for economic development. Textile industry and trade shaped the early development of industrial nations, which are now known as developed countries. Some developing countries have followed a view that textile and apparel industries could significantly contribute to the development of their countries (Hamilton and Martin, 1990). It is argued that the expansion of the textile industry to either domestic or international markets or both might help the economic growth of a country (Goto, 1988). Cline (1990) has also argued that the development of textile industry and trade can serve as economic locomotives for a nation's other development efforts.

As more developing countries participate in world textile markets, concerns have increased in the international textile community, especially in developed countries. After World War II, many developing countries have supported their textile and apparel industries as a development strategy based on an export-oriented policy. The industry seems favorable for economic environment in developing countries because it requires limited capital and technology, yet it provides employment for an abundance of low-cost labor. Furthermore, the world demand for textile products from developing countries seems to be more stable than for other agricultural products.

Despite the increasing number of developing countries participating in global trade, Dickerson (1995) argues that at least four other factors may influence the development of textile world markets. First, in the last fifty years sustained economic growth has increased global consumer demand for imported products and fortunately has also boosted the willingness of exporters to serve the import demand. Second, advanced technologies have increased global communication and reduced transaction costs in trade negotiations and trading. Third, the improvements of the world transportation systems have facilitated wholesalers and retailers in seeking new products and have helped manufacturers and entrepreneurs in creating new markets overseas. Fourth, better institutional arrangements in trade transactions among countries have comfortably supported product exchanges and payments. Together all of these factors have fostered global production and distribution of textile products.

Although the size of textile markets has grown globally, textile trade has not been free compared to trade conditions for other products. In some countries imports of textiles have been restricted, or in some cases banned. Textile imports from developing countries

have been restricted in many developed countries (Dickerson, 1995). Textile imports have also been restricted in many developing countries (GATT, 1984). In both cases, the purpose has generally been to protect domestic textile markets. In developed countries, arguments for protection are mostly related to employment problems or possible industrial shutdowns. Similar protective policies in developing countries seem to pursue the strategy of import substitution industries or to correct the problems in balance of payments (GATT, 1984). Because of the protective situation of textile trade in many countries, some trade analysts argue that the textile industry has been the most comprehensively protected sector in global trade (Cline, 1990; Goto, 1988). While trade liberalization has been enhanced since the formation of GATT in 1947, textile trade seems to have taken a different track away from the basic principles of GATT. Textile trade has been arranged separately and excluded from the scheme of GATT since 1961. Importing countries have exercised quantitative and discriminatory restrictions against exporters. The restrictions have indeed conflicted with two of the most important objectives of GATT. First, all non-tariff barriers, especially quantitative restrictions, should be prohibited. Second, all nations are urged to adhere to the principle of most favored nations that treats all trading partners equally (Yoffie, 1983).

The first trade restriction occurred in 1955. In that case, Japan was asked by the U.S. government to agree on a voluntary export restraint (VER) to limit its cotton textile exports to the United States. In 1957, Japan had also to agree with the second five-year VER following the U.S. textile industry pressure. In 1958, Hong Kong encountered the similar case of VER in the British market. Even worse, in 1962, Hong Kong had to face a trade embargo by the U.S. government (Aggarwal, 1985; Yoffie, 1983; Destler et al.,

1979; Lynch, 1968; Hunsberger, 1964). If the VER was based on bilateral agreements of trading countries, trade negotiations from the early 1960s have changed to a multilateral approach. In 1961, as proposed by the Kennedy administration, a one-year multilateral agreement named Short Term Arrangement Regarding International Trade in Textile (STA) was signed in the Geneva conference. The STA allowed importing countries to take unilateral actions against foreign products if they could cause a so-called "market disruption." The term market disruption in common trade practices mostly refers to low-cost excessive textile supplies from developing countries (Yoffie, 1983). In 1962, a five-year multilateral arrangement called the Long Term Arrangement Regarding Cotton Textile Trade (LTA) was signed by 19 nations. The LTA was renewed in 1967 and again in 1970 (Dickerson, 1995).

With the increasing amount of imports in synthetic fibers, vegetable fibers, silk-blends and wool, which were not covered under the STA and the LTA, a new arrangement known as the Multifiber Arrangement (MFA) was introduced since January 1974. The new arrangements have tended to cover all items of traded textiles. The MFA has been adjusted and renewed six times. They are the MFA I (1974-77), the MFA II (1977-81), the MFA III (1981-86), the MFA IV (1986-91), the first extension of MFA IV (1991-92), the second extension of MFA IV (1992-93) and the third extension of the MFA IV (1993-94). Currently, the MFA is in a transition of phasing out as a result of seven-year trade talks known as the Uruguay Round. In December 1993, 117 member nations of GATT agreed on a plan to phase out the MFA within 10 years, starting July 1, 1995 (Dickerson, 1995; GATT, 1994).

Many studies have focused on issues of international trade. Some of them concentrate on import demand. Adam and Behrman (1976) relate their model to the world's indicator prices for the commodity in question. Thursby and Thursby (1988) use their model to link net trade to import prices, domestic prices and income. Moran (1988) applies relative prices measured by the ratio of export-world commodity prices and the demand growth of import markets. For the case of importing countries, textile and apparel studies have examined the effects of the MFA on the industry's profits, domestic jobs and employment and income distribution (Jenkins, 1980; Hufbauer et. al., 1986; Cline, 1987). For the case of exporting countries, studies have focused on these issues: (1) foregone export revenue and accrued rent; (2) the changing patterns of trade and investment; and (3) value and quality upgrading of export shipments (Kessing and Wolf, 1980; Goto, 1988; Erzan, Goto and Holmes, 1990).

Structural change in demand or import demand may be explained by studies that have focused on such changes due to the changes in relative prices (Wohlgenant, 1985; Dahlgran, 1987), income distribution and consumer awareness (Moschini and Meilke, 1989), habit formation, preferences or demographic effects (Alessie and Kapteyn, 1991; Chen and Veeman, 1991) and consumer's concern and women's participation in the labor force (McGuirk, Driscoll, Alwang and Huang, 1995). As will be discussed, in the procedure section of this chapter, structural change in import demand for textiles of developing countries may also be related to the institutional imposition of global arrangements. Structural change in textile import demand can be defined as the change in textile imports as a result of exercising trade policy or changing market forces or both (Ghadar et al., 1987). In this study, textiles or apparel (textile products), may be used to

represent the whole complex of the textile industry, which includes textile and apparel industries. Whenever possible, textile or apparel products are also used to describe either one of these industries.

## Objectives

### General Objective

The overall objective of the study is to determine if there is evidence of structural change in import demand for textile products from developing countries due to global arrangements in textile trade.

### Specific Objectives

The specific objectives are to:

1. examine and describe the global development of textile trade negotiations and its impacts on textile trade;
2. determine if there is evidence of structural change in textile import demand from developing countries;
3. estimate bias of structural change if evidence of structural change is detected in the study model; and
4. estimate coefficients and elasticities of the import demand model.

The results of this study will be useful for planners and policy makers who are involved in complex issues of international trade of textile products. Furthermore, because of its focus on institutional trade policy, this study will provide information for

those who are interested in how trade arrangements affect trade flow between developing and developed countries.

## Overview of Research Procedures

Import demand models have been widely employed. In theory, import demand may be defined as the difference between domestic demand and domestic supply when the domestic and imported goods are perfect substitutes (Curry and Henneberry, 1993). This study will use a variation of import demand models called the Dynamic Restricted Source-differentiated Almost Ideal Demand Systems (RSAIDS) to check for potential structural change in textile import markets (Andayani and Tilley, 1996; McGuirk, Driscoll, Alwang, and Huang, 1995; Yang and Koo, 1994; Moschini and Meilke, 1989). Using the RSAIDS allows an import market to respond to different sources of product origins. Two demand markets are investigated, which are the United States to portray the North American markets and the United Kingdom to represent the European markets. Both markets are used to view import markets in developed countries that are mostly the main targets for developing countries' exports. Although these two markets may be viewed as unrelated markets, the model are developed to allow the interaction of the markets using the seemingly unrelated regression procedures to capture the behavior of both markets. Data from *Commodity Trade Statistics* published by the United Nations will be used in this study. This study will analyze the development of trade negotiations in textiles and their impacts on textile trade. It will focus on the impacts of the institutional arrangements for periods from the MFA I to the MFA IV.

## Organization of the Study

This study is organized and written in five chapters. Chapter II describes the global development of textile trade. Chapter III explains the impacts of trade restrictions on developed as well as developing countries. Chapter IV contains the empirical analysis of structural change in textile import demand and chapter V includes the summary and conclusions.

# CHAPTER II

# THE GLOBAL DEVELOPMENT OF TEXTILE TRADE POLICIES

## Introduction

This chapter reviews textile and apparel trade policies and explores the phases of policy development for the sectors. The review shows how the policies were developed, adopted and implemented. A perspective on textile trade policy is described, especially in the context of trade relations between developed and developing countries. This chapter also describes the institutionalization of trade policy and how it works toward global trade arrangements, focusing on the textile and apparel sectors.

The rise and decline of trade restrictions are generally the result of a policy debate toward either end: free trade or protectionism.[1] Demand for trade policy might rise from economic conditions or social needs such as reducing high unemployment, increasing economic growth, protecting infant industries or pursuing development objectives (Yoffie, 1983). Interestingly enough, a demand for restrictive policies has been redefined as a policy of fair trade which, in practice, mostly applied to cases for trade relations between developed

[1]Irwin's book *Against the Tide: An Intellectual History of Free Trade* provides a substantial review on the concept of free trade ad how the concept has been attacked and criticized since at least the last two centuries (Irwin, 1996).

and developing countries. The term "fairness" in trade is generally defined in favor of domestic interests and against unfair foreign trading practices (Low, 1993). On the other hand, many economists believe that free trade is important. It helps strengthen a national economy as well as international development (Forrestal, 1996). Free trade is believed to benefit more people, allocate scarce resources efficiently, and in the long run, lead to optimal economic outcomes with greater competition and greater productivity of the world (Pitroda, 1996). For free trade advocates, trade treaties are unlikely to provide greater national gains or to enhance the optimal pursuit of national interests. The gains from trade lie only in the price difference of trading nations, regardless of whatever forces contribute to the formation of those prices (Krugman, 1996).

Industrial protection measures have sharpened the antagonism of nations, across sectors and between economic players and politicians. In the case of the textile industry, as the main focus of this study, trade protection applied to this sector could represent a useful analysis for trade policy area. The industry has not only been viewed as the most protected sector, but also experiencing a long time protection.[2] The textile industry has enjoyed industrial and trade protection more than other sectors could afford. The demand for protection has even entered to the early formation of a government, as represented by Kennedy's campaign statement in August 1960:

> Textile and apparel industries are of international scope and are particularly susceptible to competitive pressure from imports. Clearly the problems of the industry will not disappear by neglect nor can we wait for a large-scale unemployment and shutdown of the industry to inspire us to action. A comprehensive industry-wide remedy is necessary (Brandis, 982, p.17, cited in Dickerson, 1995,

[2] As mentioned in Chapter I, previous arguments for protecting textile industry focus on its role in economic growth and development. As the industry becomes large, employment is another important issue.

p.329).

Similar to industrialized countries during their early development, textile and apparel sectors are important for currently developing countries. Textiles account for one-third of developing countries' total manufactured exports. For some textile categories, the exports even constitute more than half of the exports (Dickerson, 1995). After World War II, many developing countries have gained competitiveness in textile trade and increased their foreign earnings. The development of the textile industry might be in favor of developing countries because of labor, capital and technology constraints. Since the 1950s, or in the case of Japan more than two decades earlier, many developing countries have increased their textile exports. As imports increase, developed countries began to worry about its effects on their industry and employment. In the 1970s and 1980s, dramatically affected by the world oil crisis and other macroeconomic imbalances, textile producers and unions in the United States and Europe increased their pressures for more restrictions. Following the Uruguay Round agreement in 1993, textile restraints have been decided by GATT country members to continue at least until the year 2005 (Dickerson, 1995; GATT, 1994).

Overtime, restrictive trade policy has come and vanished. In textile and apparel sectors, import restrictions have long been imposed multilaterally since their regulations took place in the early 1960s. The patterns of trade policy in other sectors changed. For example, import restrictions in the United States have recently been removed for sectors such as television sets, footwear and steel (Cline, 1990). British steel is another example of having policy changes. The industry was once nationalized and protected, but after privatization, British steel is now among the most efficient steel industries in Europe and in the world (Kennedy, 1996).

## Early Years of Textile Trade Arrangements

The early development of textile industry and trade is rooted in the Industrial Revolution. In this era, a factory system was found to alter the previous method of cottage or household industry and to advance textile production. Introduced by British capitalists, the system was seen as new methods to have more profits by producing and selling more products. Factories originated in this sector were considered the first modern industrial establishments in England. With the new methods of production, more textile goods were produced than domestic markets demanded. This situation induced producers and traders to find new markets abroad, which created a substantial interface of international economy. This was especially true among those nations later known as industrialized countries (Dickerson, 1995).

Beside technological innovations, early development of the textile industry also benefited from the mercantilism of the 17th and 18th centuries. Mercantilism was known by its policies of controlling industry, monopolizing trade and restricting manufacturing in the colonies. The policies became stronger in the hand of colonial powers exercised by countries such as England, France, Spain and the Netherlands.[3] Compared to the present situation, mercantilism may be called economic nationalism. They hold the same argument in protecting domestic industries or in expanding the economy of a country.[4] Prohibiting

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[3]All these countries enforced a monopoly of trade with their colonies but the British enforcement was more rigorous and successful than that of the others. Applying mercantilist rules, those countries used their colonies as a base of supplies, mostly raw materials, for their manufactures well as markets for final products (Ellsworth and Leith, 1969, p. 36).

[4]The basic argument of mercantilism was that exports should exceed imports, no

cotton imports by Britain in the late 17th century was an example of how mercantilism was applied.[5] Without foreign competition, the British textile industry grew rapidly and further helped mechanical innovations and labor specialization within the industry. As the English noticed that profit making was closely associated with expanding markets, trade policies were designed to benefit its industry as well as to force the colonies to remain dependent. Restricting industrial development and prohibiting the colonies from trading with any other nations except England had been viewed as contributing factors that led to the American Revolution (Dickerson, 1995; Ellsworth and Leith, 1969).

Immediately after its independence, the United States followed the earlier practices of British trade restrictions. In 1789, U.S. Congress started to impose high tariffs on textile imports. As foreign products were embargoed during the War of 1812, demand for textiles went beyond its supply. U.S. textile manufacturers asked the government to support textile supply. The situation induced the Congress to appoint a committee - known as the DuPont Committee - to plead a case of cotton and wool manufacturers. The Committee concluded that the government should nurse U.S. textile infant industry, protect the industry from powerful foreign competition and support programs such as "our Army and Navy clothes - should be provided - by our own industry" to ensure national security and independence.[6]

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matter how much economic prices involved - in term of opportunity costs - in doing so. Today's economic nationalism can be seen from its trade policy toward the increase of exports, even if it were too costly to produce, and the restrictions of imports, even if it causes the release of many resources for other uses (Krugman, 1996, p. 114-6)

[5]To get a picture of how severely this prohibition, enforcement of the law was known as Draconian law: the first offense would be cutting off the left hand, the second one was death penalty (Ellsworth and Leith, 1969, p.34)

[6]The language used such as "supporting the industry means securing the country's independence" clearly demonstrated the deep wishes of textile manufacturers to have

This case indicated the importance of protection through the use of a textile lobby to bolster the growth of the early textile industry in the United States.[7]

In 1816, the textile industry expanded to 170 mills. Between 1820 and 1830, the U.S. textile output increased its share in domestic markets from 30 to 80 percent. This increase might have been affected by the regulations imposed from 1824 and 1828. Poulson argues that the early growth of the U.S. textile industry was attributed more to embargoes than tariffs. This may suggest that quantitative controls provided more substantial support for U.S. substitution industries. In addition, the adoption of British technology, population growth, increased per capita income, reduced transportation costs and westward expansion were also contributing factors to the industrial growth in the United States (Poulson, 1981).

With strong protection, textile industries grew impressively in Britain and the United States despite the fact that the two countries took different avenues in their quest for development of the industry. The textile industry in England expanded to global markets, while that of the U.S. concentrated on its domestic market. By the turn of the 20$^{th}$ century, Britain captured 70 percent of the world's textile trade (Juvet, 1967). Although U.S. cotton textile industries were small in the early 1800s, they grew dominant by 1860 (Poulson, 1981). By 1900, Britain and the U.S. became the world's major textile producers. By 1913, textile outputs from all developed countries accounted for 85 percent of world textile output (Hanson, 1980).

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protection, which more or less has still been utilized until recently (Dickerson, 1995, p.28).

[7]The DuPont committee was seen as a result of pressure from textile lobby that was known as the first formal textile lobby in U.S. Congress. Since then, this lobby has played an important part in promoting U.S. protectionist policy to limit textile imports (Cortes, 1997, p. 62; Dickerson, 1995, p.28).

After the turn of this century, the structure of the world's production and trade had begun to change that seemed to be biased against developed countries (Maizels, 1963). Some factors may explain this change. First, the share of textiles in total manufacturing outputs started to decline despite the increase in global textile production in absolute terms. Second, between 1913 and 1929, there was a sharp drop in textile exports of developed countries. Third, the Great Depression in the 1930s worsened textile industries of developed countries. Fourth, there was a growing competition from non-western countries such as Japan. Fifth, import substitution policies prescribed in Asia, Latin America and Central Europe increased the loss of export markets of developed countries (Dickerson, 1995; GATT, 1984; Juvet, 1967).

TABLE 2.1.

THE DISTRIBUTION OF THE WORLD'S
MANUFACTURING PRODUCTION (IN PERCENTAGE)

| | U.S. | Germany | U.K. | France | Italy | Belgium | Sweden | Japan |
|---|---|---|---|---|---|---|---|---|
| 1870 | 23.3 | 13.2 | 31.8 | 10.3 | 2.4 | 2.9 | 0.4 | - |
| 1896-1900 | 30.1 | 16.6 | 19.5 | 7.1 | 2.7 | 2.2 | 1.1 | 0.6 |
| 1913 | 35.8 | 15.7 | 14.0 | 6.4 | 3.1 | 2.1 | 1.0 | 1.2 |
| 1926-1929 | 42.2 | 11.6 | 9.4 | 6.6 | 3.3 | 1.9 | 1.0 | 2.5 |
| 1936-1938 | 32.2 | 10.7 | 9.2 | 4.5 | 2.7 | 1.3 | 1.3 | 3.5 |

Source: Ellsworth and Leith, *The International Economy,* p.229.

By the end of the last century, the size of Japan's textile industry was still small compared to industrialized countries. After World War I, Japan progressively built its textile

industry. By the mid-1930s, Japan's manufacturing production had already exceeded those of Italy, Belgium and Sweden. Japan became a mayor player in global textile markets[8] and now turned to be a threat to developed countries (see Table 2.1). Japanese textiles began to face import restrictions in those countries.[9] In 1932, the United Kingdom used imperial preferences to restrict Japanese textiles. In 1936, the U.S. used voluntary export restraints (VER) to deal with Japan[10] even though the average U.S. tariffs for cotton and wool were already at 46 and 60 percent, respectively. Other developed countries later followed similar restrictions in their domestic markets (Cline, 1990). World War II gave benefit to U.S. and British producers as suggested by a strong increase in textile demand during the war. On the other hand, the war ruined industrial infrastructures in Japan and other European countries. By 1947, the U.S. enjoyed a large textile trade surplus, which led U.S. producers to believe that the market environment would continue to favor them for years ahead. However, postwar economic assistance from the U.S. helped the recovery of the Japanese economy that ironically raised concerns from American textile manufacturers.[11] By 1953, Japan textile

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[8]Following Britain, Japan focused on export markets for its industrial strategy. Later, many developing countries also pursue this strategy (Dickerson, 1995, p.320).

[9]In 1927, Japanese cotton textile exports were about one-third of the U.K. In 1935, the Japanese textile exports exceeded those of Britain by about 40 percent. By the end of the thirties, 40 out of 106 Japan export markets had been subject to high duties and quota restrictions (Jimenez Cortes, 1997, pp.23-4; GATT, 1984, p. 62).

[10]This bilateral agreement known for the first time was kind of quota restrictions that was extensively applied by many importing countries until the outbreak of World War II. Later, it reemerged in the mid-1950s (GATT, 1984, pp.62-3).

[11]The discussions of the U.S. economic assistance for East Asia countries after World War II and its long term impacts on the development of the region have been emphasized for examples by Little (1981) and Reidel (1988).

exports were valued at $746 million while those of the U.S. and the U.K. were only $539 and $343 million respectively (Aggarwal, 1985; Hunsberger, 1964). Just like the leader of flying geese,[12] Japan's economic success has induced many developing countries. Starting in the 1950s, many newcomers from other Asian countries such as Hong Kong, South Korea, India, Pakistan and Indonesia entered global markets. The development of textile trade which has been fueled by institutional policy has set the background for an uneasy course for the rest of the century (Dickerson, 1995).

## Trade Arrangements in Cotton Textiles (1961-1973)

The postwar atmosphere brought countries together to design a global system of more open trade. Led by the United States, GATT was created originally by 23 member countries in 1947 to provide guidelines for worldwide trade liberalization. In April 1948, 17 Western European nations formed the Organization for European Economic Cooperation (OEEC)[13] to design a postwar recovery plan as proposed by the Marshall Plan.[14] By the 1950s, the U.S.

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[12]The concept introduced by Akamatsu in 1960. Failey used the concept to describe the development pattern of East Asian countries that are similar to the one subscribed by Japan. In different perspective, OECD views that textile exports have been important for the economic and social development of developing countries. It happened in Japan, and later in Hong Kong, Korea, Singapore, Taiwan, and then was followed by ASEAN countries (Failey, 1993, cited in Dickerson, 1995, p.158-9; Trela and Whalley, 1990, p. 31; Akamatsu, 1960, cited in Islam and Chowdhury, 1997, p.22).

[13]The OEEC later split into the European Economic Community (EEC) in 1957 and the European Free Trade Association (EFTA) in 1960, both of them having committed to promote open trade within Western Europe. In October 1991, 19 member countries of EEC and EFTA agreed to reunite on a special economic relationship and free trade zone known as the European Economic Area (EEA) (Lewis, 1993, p.404-32).

[14]The Plan was named after George Marshall, the U.S. Secretary of State. It was

and Western European nations agreed to substantially reduce trade barriers of the 1930s and to move toward freer trade. The free trade spirit had proliferated among developed countries and enriched their trade relationships (Lewis, 1993; Tessitore and Woolfson, 1992).

Unfortunately, free trade was unlikely to materialize in the case of trade relations between developed and developing countries including Japan and Eastern European nations. When Japan was admitted to GATT in 1955, some other members kept restricting their domestic markets from Japan's textile products.[15] For example, up to the early 1960s, Britain and France cut Japanese textile exports by invoking GATT Article XII and XXXV.[16] In 1955, the Eisenhower administration asked Japan to "voluntarily" limit its exports of selected cotton textiles for one year. Because of its reliance on U.S. markets, Japan had no choice but to comply with the American demand. By doing so, Japan expected to save its remaining markets.[17] After the Ministry of International Trade and Industry (MITI) of Japan agreed to the VER in November 1955, U.S. producers filed a stronger petition for future restraints. To those producers, the agreement gave little control to the U.S. side. They also doubted whether Japan would really commit to the agreements, given its past trading practices of

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based on his proposal introduced in a speech at Harvard University, 5 June 1947 (Lewis, 1993, p. 401).

[15]It was argued that Japan gained U.S. support to join GATT after the country confirmed with the U.S. to bilateral restraints on its textile exports (Raghavan, 1990, p. 51).

[16]Article XII allows a member to use quantitative restrictions for balance of payment reasons. Article XXXV entitles a member not to use GATT rules in its bilateral trade with a new member. In 1955, 14 member states chose to use the articles. Three states still used it for 30 years later (Jimenez Cortez, 1997, p31-2; Zheng, 1988, p.2; Yoffie, 1983, p.48).

[17]In 1956, Japanese market penetration accounted for two percent of U.S. apparent consumption. It was 20 percent of Japan's total exports. Japan's trade with the U.S. was eight times greater than with any other country (Dickerson, 1995, p. 325; Yoffie, 1983, pp. 6 and 66).

violating trade rules.[18] Furthermore, controlling Japanese products at the border might be easier for U.S. producers than facing the progressiveness of textile importers at home.[19] Responding to an increase in industry pressures and having on hand Section 204 of the Agricultural Act of 1956, the U.S. administration renegotiated the VER with Japan. In January 1957, the second VER was agreed for the next five-years. The 1957 agreement was relatively stricter on Japanese exports in some textile categories and included overall quota restraints. As shown in Table 2.2, cotton exports of Japan declined in 1956-57, from $84 million to $66 million. It also shows that cotton exports from Hong Kong and other Asian countries increased to fill the vacuum left by the cut in Japanese exports. Observing the possibility of stiffer restraints in the future, the Japanese government encouraged its industry to improve the quality of products and to upgrade into non-cotton textile production such as synthetic and wool fabrics. Since the agreements carried no restrictions on the upgrading of products,[20] Japan might still gain from the agreement in the long run[21] if its textile industries

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[18]During the 1930s, Japan had a reputation for cheating such as violating copyrights, making false marks of origin and market dumping (Yofiie, 1983, p.59; Patterson, 1966, p. 273).

[19]In 1955, Japan doubled its exports to the U.S. In this case, American importers that related their business to textile retailers might also be responsible to these developments. Later, some producers linked to the American Apparel Manufacturers Association (AAMA) have become importers, especially those engaged in offshore assembly. These importers have been against import restrictions (Dickerson, 1995, pp. 324-5 and 353; Destler et. al., 1979).

[20]According to some U.S. manufacturers, the omission of wool and synthetics would be disastrous to the future of the American textile industry (Yoffie, 1983, p. 245).

[21]Japan gained political sympathy from U.S. leaders after this adoption, led to the creation of the U.S.-Japan Trade Council. Japan also wanted to keep a spirit of "good friend" as well as valuable markets" in its relation with the U.S. (Yoffie, 1983, p. 60-61).

could succeed with the upgrading and diversification programs.[22]

TABLE 2.2.

U.S. IMPORTS OF COTTON
MANUFACTURES 1956 - 1961 (IN MILLION DOLLARS)

| | 1956 | 1957 | 1958 | 1959 | 1960 | 1961 |
|---|---|---|---|---|---|---|
| Japan | 84.1 | 65.7 | 71.7 | 76.9 | 73.4 | 69.7 |
| Hong Kong | 0.7 | 5.8 | 17.4 | 45.8 | 73.4 | 47.0 |
| Other Asia | 15.3 | 13.0 | 14.3 | 24.0 | 34.0 | 25.0 |
| Egypt | 0.4 | 0.5 | 0.3 | 0.3 | 5.9 | 1.0 |
| Spain | 0.5 | 0.3 | 0.4 | 1.6 | 7.2 | 3.2 |
| Portugal | 0.3 | 0.1 | 0.3 | 1.0 | 5.2 | 2.3 |
| Total Imports | 154.3 | 132.2 | 150.0 | 201.3 | 248.3 | 203.3 |

Source: Hunsberger (1964), Japan and the United States in World Trade, p.325.

Negotiating with Japan had faced the U.S. government with two conflicting choices: 1) to respond to industry pressures or 2) to maintain its postwar free trade commitment. Adopting the VER seemed to "satisfy" both sides. With the VER, the responsibility of cutting exports rested in Japan's hand. VER also relieved the U.S. administration from any allegation of violating GATT rules. This was a genuine choice for the U.S. to pursue its trade policy goals. This kind of maneuver in trade negotiations was later followed by other

[22] This agreement affected the structure of the Japanese textile industry. Japan's textile fiber exports to the U.S. markets decreased from $204 million to $190 million in the 1956-57 period. Japan's cotton exports declined to $70 million in 1961. However, during 1958 and 1961, total exports increased from $201 million to $239 million. This increase was mostly from exports of wool, silk and synthetic fibers (Yoffie, 1983, pp.58-61).

countries such as Canada and West Germany (Yoffie, 983).

In the late 1950s, Hong Kong started to experience import restrictions from developed countries. In 1958, Hong Kong encountered VER from Britain.[23] In 1962, it even had to battle with a textile embargo from the United States.[24] The restrictions for Hong Kong emerged after the country had a huge increase in textile exports starting in 1957. Similar restrictions seemed unavoidable for other developing countries as their textile products enter industrialized countries' markets. In the 1960s, Korea and Taiwan began to face trade barriers for their textile exports. Later on, for almost three decades afterward, other developing countries have also been experiencing trade barriers (Dickerson, 1995; Yoffie, 1983). The restrictions against developing countries, especially to those who are member states of GATT, could undermine the GATT principle of most-favored nation (MFN). The MFN principle has guaranteed equal treatment and prohibits discrimination among GATT members called Contracting Parties (Cline, 1990; Laird and Yeats, 1988). Under the GATT rules, quantitative restrictions are forbidden except for maintaining balance of payments, supporting domestic agriculture, correcting foreign exchange problems, and serving the programs of economic development (Yoffie, 1983; Dam, 1970).

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[23]By the late 1950s, Britain had a trade deficit in cotton textiles. The government then imposed the VER on Hong Kong, India and Pakistan through the Lancashire Pact. This was a violation of GATT rules as well as the Ottawa agreements, the Imperial Preference System, that allows Commonwealth countries to have access of duty free to the British domestic markets (Jimenez Cortez, 1997, p. 36; Dickerson, 1995, pp. 325-6).

[24]Between February 1959 to mid-1961, the U.S. failed in its negotiation with Hong Kong. In October 1961, Hong Kong finally agreed to a 30 percent export cut based on the 1960 level. Within two months of this agreement, Hong Kong overshipped quotas that led to an embargo by the Kennedy administration in February 1962 (Yoffie, 1983, pp. 64-7[illegible]

The Short Term Arrangement (STA)

The settings of textile trade negotiations in the 1950s, especially in the second half, were critical to the development of further trade arrangements. During this period trade arrangements, especially between developed and developing countries, are characterized as: (1) negotiated bilaterally or between two countries; (2) established in the form of VER, or its equivalents;[25] and (3) generally taken place outside of the framework of GATT.[26] Bilateral treaties were originated from as far back as the classical gold standard era where bilateral commercial arrangements were ubiquitous until the outbreak of World War I.[27] In the early 1930s, the enactment of the Smooth-Hawley Tariff Act of 1930 deteriorated U.S. as well as international trade.[28] After the Reciprocal Trade Agreement Act became law in

[25]VER aims at twisting consumption in importing countries in favor of domestic producers. VER has three characteristics. First, it is an accord of importing and exporting countries that agree to limit exports to a level below competitive market. Second, the restraint was based on the type of good, not on its price. Third, the agreement targets a number of suppliers, mostly the principal ones (Yoffie, 1983, pp.4-5).

[26]Although bilateral VER was viewed as a departure from GATT framework, industrialized countries argued that it was an excuse for the GATT's inability to push for more market access in developing countries. Some industrialized countries even applied unilateral restraints for their trade policy goals (Baldwin, 1993, p. 394).

[27]Likewise, bilateral negotiations had been known since 1860 when Britain and France agreed to reduce tariff rates called the Cobden Chevalier Treaty. The treaty introduced a most-favored-nation (MFN) clause, later adopted by GATT/WTO, that any of the two countries could extend to the other the same tariff concession it made with a third party (IMF, May 1997, p.113; Irwin, 1993, pp. 90-119).

[28]Although more than 1,000 American economists urged President Hoover to veto and 36 countries threatened to retaliate, the President signed the bill into law. With high tariffs the Act intended to protect domestic industries, but it ended up with trade retaliation, increased the level of trade barriers everywhere and made the economic depression worse (Dickerson, 1995, p.36; Conkin, 1975, p.20-49; Salvatore, 1987).

1934, the U.S. government reactivated bilateral negotiations with other countries for reciprocal tariff reduction. As a result, the average level of U.S. tariff rates decreased from 59 percent to 45 percent between 1932 and 1945 and somewhat improved U.S. trade performance (Baldwin, 1993; Salvatore, 1987). Bilateral negotiations were the typical feature of trade arrangements from the mid-1930s until the outbreak of World War II. For example: France negotiated with Holland to determine the export levels of agricultural commodities; Japan agreed with the U.S. on the textile VER; and German restricted its coal mine shipments to Belgium (Yoffie, 1983; Heuser, 1939). After the creation of GATT in 1947, multilateral negotiations have become a new approach for trade arrangements.[29] Bilateral arrangements reemerged especially after Section 204 of the Agricultural Act was passed in 1956. The law was seen as a cornerstone for the U.S. involvement in bilateral agreements thereafter. The 1956 act served as a basis for U.S. initiatives in multilateral textile negotiations in the early 1960s.[30]

Although the bilateral trade approach was unlikely to provoke trade retaliation, bilateral trade arrangements suffer from at least four drawbacks. First, bilateral arrangements may not guarantee the implementation of a tariff or quota concession because domestic

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[29]The multilateral character of GATT negotiations, particularly prior to the Kennedy Round, could be oversimplified. In practice, the negotiations appeared as networks of bilateral negotiations, much like the function of the New York Stock Exchange (Dam, 1970, p.61).

[30]Section 204 of this Act authorizes the U.S. President to determine an import restriction for any agricultural commodity or product manufactured therefrom or textile or textile products. In its 1962 amendment, the President is permitted to use unilateral restrictions against non-member countries of LTA and MFA. In 1980, for example, China became a target of this Section because it was not an MFA member (Jimenez Cortes, 1997, p.p.49; Dickerson, 1995, pp.382-3).

protectionist forces might play their parts to neutralize the concession. Second, the arrangements are vulnerable to changes since they are only effective in a certain period and will be subject to renegotiation upon expiration. Third, most bilateral negotiations are reciprocal in nature where a country that grants a "concession" (tariff reduction or quota removal) will generally ask for a "compensation" from its counterpart.[31] This reciprocity seems to be ineffective for a country that has an average of low tariff rates or for most developing countries that need to preserve high tariffs for revenue purposes and infant industry arguments.[32] Fourth, the principal supplier rule that was mostly applied in bilateral VER violates the MFN rule and aggravate "spill-over" effects. The MFN rule may be fundamental for maintaining a stable system of international trade if countries are interdependent.[33] The "spill-over" effect shows that bilateral approach is actually ineffective.[34] In the case of asymmetrical trading relations such as between developed and

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[31]In practice, a method of measuring reciprocity sometimes called "trade coverage" becomes a battlefield during trade negotiations (Dam, 1970, p. 59).

[32]Paragraph 2(a) of GATT's Article XXVIII bis said that "the binding against increase of low duties...equivalent in value to the reduction of high duties." Article XXXVI:8 suggests that developing countries could refuse reciprocity in trade negotiations (Dam, 1970, pp. 59 and 64).

[33]Dam provides an interesting example on how this matter affects the whole system of international trade. If state A takes away its concession on product X, state B may choose to withdraw its concession on product Y as it found that its exports of product X to A were at risk. If product Y were imported by B from A and C (another state), state C may choose to retaliate as it found its exports of Y to B were at risk. The example may continue but it is easily noticed that the future system of international trade would come into a big question (Dam, 1970, p.81).

[34]Aggarwal describes this as "the little Dutch boy and the dike." As the restrictions plug "holes in the dike, new leaks sprang up." Restricting imports from a country will increase imports from unrestricted one. For example, U.S. imports from Hong Kong increased 0.5 percent of the total imports in 1956 and 23 percent in 1961, while in the sam period the import cut from Japan was 54.5 percent to 34.1 percent. India exports increase

developing nations, these effects may create the opportunities as well as dangers in global trade (Hirschman, 1978). From the late 1950s, many developing countries have found ways to take advantage of protection loopholes so they could still increase their exports (Yofie, 1983).

Recognizing that the bilateral arrangement could not solve its trade difficulties, the U.S. took new initiatives for a multilateral approach in textile trade arrangements. Multilateral arrangements were now preferred because the bilateral VER were criticized for at least two reasons. First, it was mostly based on a gentleman's agreement between the two countries that could undermine the GATT multilateral framework. Second, it also injured the non-quantitative rule of GATT principles. Consequently, VER was considered as departing from GATT (Jimenez Cortes, 1997). The U.S. multilateral approach may have been induced by its failure in negotiating with Hong Kong and the view among U.S. leaders that European countries had openly violated GATT rules by effectively restricting low-cost textile imports, which therefore deviated the burden of imports to U.S. markets (Dickerson, 1995).

At the session of the GATT Contracting Parties in October 1959, Douglas Dillon, Under Secretary of State for Economic Affairs, stated the U.S. concerns on the matter that:

> Sharp increases in imports over a brief period of time and in a narrow range of products could have serious economic, political and social repercussions in the importing countries (GATT, 1984, p.64).

The General Agreement later agreed to appoint a Working Party to study the issue. In November 1960, the Working Party reported that there was a situation in importing countries

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from 3.2 million to 52.7 million yards between 1958 and 1960. Since both effects of the export changes were offsetting to each other, the protection provided for U.S. domestic producers became fruitless (Jimenez Cortes, 1997, p. 49; Dickerson, 1995, p. 325; Aggarwal, 1985, p. 43).

of established markets called as "market disruption" which could be described as:

(i) a sharp and substantial increase or potential increase of imports of particular products from particular sources;
(ii) these products are offered at prices which are substantially below those prevailing for similar goods of comparable quality in the market of importing countries;
(iii) there is serious damage to domestic producers or threat thereof;
(iv) the price differentials referred to in paragraph (ii) above do not arise from governmental intervention in fixing or formation of prices or from dumping practices (Dam, 1970, pp. 298-9).

Although GATT has Article XIX for a safeguard mechanism, GATT accepts the concept of market disruption.[35] This indicated a fundamental change to GATT rules of most favored nation and of nondiscriminatory.[36] With this concept, which was not provided by Article XIX, import restrictions could be justified not only on existing import levels but also on what would be defined as potential import levels. The concept can also be applied against a specific exporting country. Price differentials that drove the flow of textile trade and had been important trade factors were now neglected by the agreements. It was clear that the changes in GATT rules reflected the strength of textile interest groups in the international trade community. However, although the market disruption concept was initially designed for the purpose of general trade, the concept has been applied to only textile and apparel sectors (Dickerson, 1995; GATT, 1984).

Following the election of President Kennedy, the U.S. moved forward with a broad

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[35] This concept was adopted in November 1960 as the Decision on the Avoidance of Market Disruption. Interestingly, the concept never became part of the GATT articles. Participation of textile arrangements in this context has been limited to only GATT members and non-members who accept these textile rules (Dickerson, 1995, p.328; Cline, 1970, 147).

[36] Many economists believed that these changes have damaged GATT's roles in promoting free trade and equality in trading (Dickerson, 1995; Cline, 1990; Aggarwal, 1985).

plan to assist its textile industry, ranging from research and development assistance to special multinational negotiations in textile trade. Instead of continuing the previous piecemeal and short-run approach, Kennedy's domestic assistance was intended to help the industry with a long-run adjustment. At the international level, the plan was to deal with current textile trade policies and to maintain the integrity of GATT. In June 1961, the United States asked for a special conference on textile trade during a GATT's Council meeting. Held in Geneva in July 1961, with 16 participant countries, the conference agreed on Short Term Arrangements Regarding International Trade in Cotton Textiles (the STA) for one year from October 1961 to September 1962 covering 64 categories of cotton.[37] In spite of the U.S. success with the conference, the American industry still feared future textile trade since synthetic wool textiles were unrestricted. In fact, this fear was correct when the U.S. import growth of synthetic fibers was almost ten times higher than that of cotton products between 1961 and 1970. As shown in Table 2.3, U.S. synthetic fiber and cotton imports increased 1,655 percent and 170 percent, respectively, during those periods.

The concept of market disruption had two important features in STA. First, an importing country could unilaterally restrict a particular country if there were no agreements within thirty days of bilateral negotiations. Second, a bilateral arrangement such as VER was valid measure. [38] As STA was set as a special regime in international textile trade, outside

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[37]Later defined in article 9 of the LTA, cotton textiles were products which contained cotton for more than 50 percent of the fiber weight except hand-loom fabrics of the cottage industry (Jimenez Cortes, 1997, pp. 52 and 66).

[38]These decisions gave importing countries more legal power in dealing with exporting countries individually. The MFN and nondiscriminatory rules of GATT were formally exempted from textile and apparel trade sectors (Dickerson, 1995, 330).

the GATT rules,[39] therefore two opposite sets of trade rules were incorporated in the GATT's scheme. The rules are of allowing quantitative, unilateral, and discriminatory restrictions for textile sector versus free trade and non-discrimination for all others except the agricultural sector.[40]

TABLE 2.3.

U.S. IMPORTS OF TEXTILES AND APPAREL
1961-1970 (IN MILLION DOLLARS)

| Year | Cotton | Wool | Synthetic Fibers |
|---|---|---|---|
| 1961 | 199 | 200 | 60 |
| 1962 | 307 | 272 | 78 |
| 1963 | 299 | 297 | 90 |
| 1964 | 310 | 289 | 129 |
| 1965 | 369 | 357 | 193 |
| 1966 | 463 | 354 | 258 |
| 1967 | 417 | 327 | 312 |
| 1968 | 477 | 410 | 499 |
| 1969 | 527 | 410 | 695 |
| 1970 | 537 | 359 | 1053 |

Source: U.S. Department of Commerce data, cited in Yoffie, 1983, p.119.

[39] As defined by Krasner, a regime is "sets of implicit or explicit principles, norms, rules, and decision making procedures around which actor's expectations converge in a given area of international relations." A regime is also known as a substitute of central authority that, because of its absent in international trade relations, imply obligations among parties who involved or agree with its principles or procedures (Hoekman and Kostecki, 1995, p.20; Krasner, 1983, p.2).

[40] The difference between textile and agricultural sectors lie in the locus of the negotiation process. Textile sector has a privilege for a special trade regime approved by GATT whereas trade policy in agricultural sector is negotiated within the structure of GATT.

The Long Term Arrangements (LTA)

The STA was an interim agreement that contained two essential parts. First, it established trade norms to guide textile trade for a short-term period based on the market disruption concept. Second, it created a Provisional Committee on Cotton Textiles to arrange for more long-term arrangements for the sector. During the committee's meetings in October 1961, several proposals were discussed. Japan tried to redefine the inaccurate use of terms, "importing and exporting countries" since those terms might interchangeably represent developed and developing countries. Japan also substantially asked for the future of textile trade to agree with GATT principles. India and Pakistan also raised a similar question. They tried to explain that any new agreement should satisfy the needs of developing countries, for example, for financing the textile sector or providing technical assistance. Hong Kong agreed with STA if it conformed to the GATT principles and if bilateral agreements could be applied within it. Similar to its argument for the previous STA agreement, the United States argued for the necessity of the LTA:

> Such a mechanism, too, should be a substitute for unilateral restrictions on cotton textile imports in various markets with a view of bringing about a situation in which international trade in cotton textiles will take place on the freest basis possible, but within the framework of a multilateral arrangements which avoid disruption (Aggrawal,1985, p.84).

In February 1962, the Long Term Arrangements Regarding International trade in Cotton Textiles (the LTA) were signed by 19 participating countries. It was effective from October 1962 through the next five years. Without a fundamental change, the LTA were renewed in 1967 and 1970. From 1962 to 1973, another 14 states agreed to join the LTA

framework.[41] The LTA provisions were extensively based on the U.S. proposal that was parallel to the STA.[42] Some European countries that preferred bilateral agreements eventually agreed with LTA after they were convinced that the LTA would be conducted in bilateral negotiations.[43] The difference between the STA and the LTA resided on the creation of Cotton Textile Committee with its main objective to supervise the implementation of the arrangements (Jimenez Cortes, 1997; Dam, 1970).

For its proponents, the LTA was a necessary instrument for maintaining the growth of international cotton textile trade. The logic behind this argument was that there would be no economic costs and social degradation of domestic production if imports were increased in an orderly manner.[44] An abrupt increase of imports from developing countries would easily convince importing countries to protect their domestic markets. Therefore, it would be far better for developing countries if they could export their products in a slow but steady growth. With this kind of approach, developing countries have guaranteed export markets at an increasing rate.[45] Accepting this line of argument, developed as well as developing

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[41] During the first three years of the LTA, 30 countries participated in the program that covered about 75 percent of world trade in cotton textiles (Aggarwal, 1985, p.90).

[42] As stated in *Daily News Record*, The STA and the LTA were a perfect example of how the United States liberalized international trade in textiles while provided protection for its own industry (*DNR*, 13 December 1961 as cited in Jimenez Cortes, 1997, pp. 53 and 65).

[43] American delegate insisted that "the most promising approach would appear to be the bilateral approach within a multilateral framework" (Aggarwal, 1985, p.83).

[44] An "orderly manner" was an important word related to the "market disruption" concept introduced in the agreement (Dam, 1970, p.300).

[45] In practice, a minimum growth rate of 5 percent provided in LTA was actually the maximum. However this rate could be changed with a bilateral agreement. For some analysts, this provision contradicted with the protectionist argument of market disruption.

countries would have mutual benefits from the LTA. Along this line, the LTA was also viewed as "the lesser of two evils" that helped reduce restrictions on global cotton textile trade.[46] Without the LTA, as it was argued, many importing countries would continue to use unilateral restrictions that could be much worse for any textile exporting country (Jimenez Cortes, 1977; Dickerson, 1995; Bardan, 1973, as cited in Yofie, 1983, p.107).

Although many countries knew that the LTA was proposed largely for solving U.S. domestic difficulties, they agreed with it for different reasons. Many European countries felt that it would be better to accept than face the possibility of a closed U.S. market.[47] The U.S. intended to close any access to its market for countries that refused to participate in the LTA program (Aggarwal, 1985). For many European countries, closing U.S. markets would not only endanger their export markets but also would divert developing countries' exports to their domestic markets. For Japan[48] and developing countries, the LTA would provide them with greater access as well as secured markets in Europe and other developed countries. Without the LTA, Japan and developing countries had suffered from severe restrictions in those countries. The LTA was also viewed as an important step for gradual liberalization in

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During the time, the U.S. had only about 4 percent textile and apparel trade deficit while many European countries even experienced a surplus (Dickerson, 1995, pp. 330-1; Cline, 1990; Kessing and Wolf, 1980).

[46] Developing countries saw multilateral arrangements were preferred to unilateral import restrictions (Jimenez Cortes, 1997, p.56; Aggarwal, 1985, p.88).

[47] As stated in *DNR*, the U.S. government would take a necessary action against non-participating countries (*DNR*, 10 July 1961 as cited in Aggarwal, 1985, p.85).

[48] Japan assured the United States to accept the LTA and to be included in any program to open European markets (*DNR*, 24 July 1961, as cited in Aggarwal, 1985, p. 86).

textile trade to catch the spirits of free trade as stated in the GATT.[49]

After the LTA came into effect, the United States worked fast to limit imports through bilateral agreements. Within two months, the U.S. had agreements with eight countries limiting imports on 39 out of 64 textile categories, while six other countries were still in the process of negotiations (Yoffie, 1983). By 1964, U.S. officials made bilateral agreements with 18 countries and imposed unilateral actions against five other countries (Aggarwal, 1985). With the LTA, the U.S. could now use unilateral actions if bilateral negotiations failed, which increased its bargaining leverage.[50] For example, in 1963, the U.S. gave no more special treatment to Japan. The U.S. went further in its dealt with Japan by asking detailed categories to be restricted and giving no more quota flexibility (Yoffie, 1983).

The LTA changed textile trade polices of developed countries in some different ways. With the LTA, France maintained parsimonious restrictions such as using many bureaucratic procedures.[51] Germany opened its markets in a number of textile categories, but still controlled import growth in several restricted products. Germany had targeted some textile categories from Hong Kong for restrictions. The Benelux countries and Italy liberalized their

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[49] India, for example, argued that the LTA or any other agreement of this kind should comply with the free trade principles of GATT (Jimenez Cortes, 1997, p. 54).

[50] In practice, beside granting importing countries to use unilateral restrictions after sixty days of unconcluded consultation, the LTA also put those countries as the only arbiter to decide which cases suitable for restrictions (Yoffie, 1983, p. 97; Dam, 1970, p.306-7).

[51] In 1962, Germany imported $36.2 million of textiles from developing countries and $11.5 million from Japan. Netherlands, which had a smaller market size than France, took $4.7 million of textiles from developing countries and $4.9 million from Japan. By contrast, France's imports from developing countries were only $1.6 million and another $0.3 million from Japan. France successfully protected its market (Aggarwal, 1985, p.93).

markets for textile trade during the first year of the LTA. The United Kingdom still used the Lancashire Pact to maintain trade relations with its commonwealth countries even after it agreed with the LTA. In bilateral negotiations, the U.K. also controlled new suppliers such as Israel, Taiwan and Spain. In 1966, responding to huge pressures from its industry, the U.K. left the LTA and used a system of global quota.[52] Some other developed countries followed different policies after the LTA came into force. Sweden, Denmark and Finland pursued more liberal trade policies as mandated by the spirit of the agreements. France, Austria and Norway became more restricted to developing countries. Canada followed U.S. policies in using the LTA as textile imports grew in the country. Australia dropped quota restraints, but installed high tariffs instead (Aggarwal, 1985). These various policy responses from developed countries indicated the differences of their economic and political structures. As intended by the U.S. proposal, the LTA seemed to ease some market restraints and disperse the burden of imports among developed countries.

The LTA influenced textile-exporting countries in many different ways. While some countries gained, other countries seemed unable to deal with global development of textile policy. On the one hand, countries such as India, Pakistan, the Philippines and Egypt failed to maintain their markets in developed countries due to the LTA (Aggarwal, 1985; Yoffie, 1983). On the other hand, countries such as Japan, Hong Kong, Taiwan and Korea could still gain from the LTA. Japan's loss in cotton markets was compensated by its overall gain in its

[52] Rapid growth of imports in the UK during1960-64, from $114.3 million to $194.4 million, explained why the U.K. had left the LTA. A global quota was argued to conform to the GATT's Article XIX (Jimenez Cortes, 1997, p.57; Aggarwal, 1985, p.93).

unrestricted synthetic markets.[53] Globally, Japan's cotton exports declined from $230 million in 1955 to only $188 million in 1970, while its exports of synthetic and other fibers increased from $208 million to $940 million during the same period. As shown in Table 2.4, a similar pattern occurred in Japanese exports to U.S markets. Between 1962 and 1970, U.S. cotton imports from Japan decreased by almost six percent, but its synthetic imports increased by 600 percent. Several factors might explain the Japanese success. First, the U.S. consumption of synthetic fibers increased more than double during 1963-1970. Second, the LTA had reduced market restrictions in many countries. Third, Japan's long run approach had greatly induced structural change within the industry into textiles' upgrading and higher quality products. Fourth, the LTA protected only cotton textiles while synthetic and other fibers reflecting future markets were unrestricted (Yoffie, 1983).

TABLE 2.4.

U.S. IMPORTS OF COTTON AND SYNTHETIC TEXTILES FROM ASIAN COUNTRIES, 1962-1970 (IN MILLION SYE)

| Year | Japan | | Hong Kong | | Taiwan | | Korea | |
|---|---|---|---|---|---|---|---|---|
| | Cotton | Synthetic | Cotton | Synthetic | Cotton | Synthetic | Cotton | Synthetic |
| 1962 | 351.2 | 110.6 | 269.4 | n.a. | 84.1 | n.a. | 10.8 | n.a. |
| 1964 | 324.2 | 163.8 | 264.4 | 10.9 | 46.6 | 14.3 | 33.5 | 2.5 |
| 1966 | 412.0 | 445.0 | 353.4 | 39.3 | 61.6 | 32.9 | 24.6 | 27.7 |
| 1968 | 391.6 | 434.9 | 402.8 | 99.3 | 70.8 | 122.8 | 36.6 | 136.9 |
| 1970 | 330.6 | 774.4 | 376.6 | 188.0 | 65.6 | 349.5 | 39.1 | 254.0 |

Sources: Yoffie, 1983, pp. 107 and 112-13.

[53] One may explain this as another "the little Dutch boy and the dike" phenomenon. Restricting cotton markets had moved Japan to supply the unrestricted synthetic markets.

TABLE 2.5.

MULTILATERAL NEGOTIATIONS
IN COTTON TEXTILE TRADE (1961-1973)

| No. | Year | Known As | Negotiations/Agreements |
|---|---|---|---|
| 1 | 1961-62 | STA | • One year agreement commencing October 1, 1961<br>• First time legalization of quantitative, unilateral and discriminatory measures for textile trade (therefore formally exempted from GATT rules), based on the market disruption concept<br>• Restrictions on 64 Categories of Cotton Textiles<br>• Created a Provisional Committee in charge for a conference in the context of the forthcoming LTA |
| 2 | 1962-67 | LTA | • Five years agreement commencing October 1, 1962<br>• Incorporated most of the principles from the STA<br>• Legitimized bilateral agreements and unilateral restraints if it is necessary by an importing country<br>• Restricted to 5 percent the volume growth of imports<br>• Established a Cotton Textiles Committee to carry out the LTA provisions (uniquely, still within the context of the GATT) |
| 3 | 1967-70 | LTA (Extension I) | • Three years renewal of the LTA without any fundamental changes, commencing October 1967<br>• Several developed countries offered commitment to be more liberal and relaxing on the future implementation of the LTA |
| 4 | 1970-73 | LTA (Extension II) | • Another three years renewal of the LTA, commencing October 1970<br>• A proposal by the U.S. to extend the LTA covering products such as wool, synthetic fibers and blends was failed. But, the U.S. succeeded in bilateral arrangements with Far Eastern countries covering those products, especially on wool textiles |

Hong Kong, Taiwan and Korea also gained with the LTA. They dealt differently with developed countries, especially with the U.S. Recognizing that cotton exports were

controlled everywhere, Taiwan and Korea followed Japan's long run strategy in shifting into synthetic and other fiber production. As latecomers in cotton textile trade, as shown in Table 2.4, these two countries surpassed Hong Kong in a race of synthetic exports to U.S. markets by 1968.[54] Hong Kong followed the short run approach by focusing on cotton textile products. With this approach, in 1968 Hong Kong became the largest cotton textile and apparel supplier to the U.S. market, a position that was previously held by Japan.

By 1970, Japan, Taiwan, Korea and Hong Kong, known as "the Gang of Four" from Asia, captured 90 percent of U.S. import shares of non-European countries (Yoffie, 1983). Whereas in the 1950s cotton textile imports would raise concerns among U.S. producers, in the late 1960s their problem was synthetic textile imports. During negotiations for the LTA renewal in 1970, American officials failed to include wool, synthetic and other fibers (see Table 2.5). It was not until 1973 that new arrangements would take place covering new textile items.

## The Multifiber Arrangements (1974-2005)

Attempts to restrict non-cotton textiles emerged as early as 1956 when President Eisenhower gave special protection for U.S. wool manufacturers. In 1958, as a result of U.S. pressure, Japan voluntarily restrained its wool exports to the U.S. In January 1962 the Kennedy administration tried to include wool into the LTA agenda but it failed because of

[54]In 1960, Japan and Hong Kong were leading textile exporters. Exports of Taiwan and Korea to the U.S. was only one-sixth that of Hong Kong, half of Portugal and Spain's exports, and lower than that of India and the Philippines (Yoffie, 1983, p.113).

the opposition from Britain and Italy.[55] In 1966 when the LTA was renegotiated for a renewal, the textile industry tried to pressure the Johnson administrations to broaden the LTA to also cover wool and other fibers. This attempt also floundered since the administration thought that it might interrupt the ongoing more important multinational negotiations, the Kennedy Round. However, in the middle of the 1960s, Japan agreed to bilateral VERs on some wool products after observing there was a growing resentment toward Japan's textile exports in the U.S. (Aggarwal, 1985; Yoffie, 1983).

After Nixon's inauguration, the U.S. efforts to have a new version of the LTA became more dynamic. During his campaign, Nixon pledged to the textile industry:

> As President, my policy will ... promptly take the steps necessary to extend the concept of international trade arrangements to all other textile articles involving wool, man-made fibers and blends (Brandis, 1982, p.39, as cited in Dickerson, 1995, p.332).

To carry out the new administration's promise, the U.S. negotiators led by Secretary of Commerce Maurice Stans went to Europe to negotiate new arrangements. When the U.S. was faced with the European resistance,[56] it changed its strategy to convincing the Far Eastern countries instead. After three years of negotiations with four Northeast Asian countries (Japan, Hong Kong, Taiwan and Korea), the U.S. eventually reached bilateral agreements

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[55]These countries were important wool suppliers for the U. S. It was relatively easier for the U.S. to convince developing countries such as Japan in the 1950s than other developed countries. In the late 1960s, U.S. officials started to see tough bargaining with Japan as the country became an important industrial country (Yoffie, 1983, p. 124 and 130).

[56] Two important reasons for this resistance: first, European countries were relatively successful to control wool imports through their bilateral or unilateral actions; second, the countries were also exporting wool textiles to U.S. market (Dickerson, 1995, p.322).

with each of those countries.[57] Shortly after the signing of the agreements, which would be effective for three years, American industry pushed again for a new multifiber agreement. As anticipated by Stans, controlling wool exports from Asia would divert Asian exports to Europe and incite European countries to reconsider a proposal of multifiber arrangements. Following GATT's Council discussion in June 1972, a Working Party was formed to study the problems related to world trade in all textile products. In April 1973, the Council asked the Working Party to design workable multilateral solutions for textile trade problems that led to the negotiations of the Arrangement Regarding International Trade in Textiles, also known as the Multifiber Arrangements (MFA).

The MFA I (1974-1977)

On 20 December 1973, MFA I was signed by 42 countries,[58] effective from January 1974 to December 1977. Although the original MFA (or MFA I) was intended for a four year period, it was actually renewed three times. After its third renewal in 1986, the arrangement was extended again three times.[59] The current MFA provisions are effective

[57]After long negotiations (1969-1971) consisted of eight rounds unconcluded negotiations and one failure secret deal, the U.S. became impatient. In 15 August 1971, Nixon proclaimed an economic emergency to use Trading with the Enemy Act of 1917 if there were no agreements until 15 October 1971 (Yoffie, 1983, 147-9; Destler et al., 1979, p.293).

[58]Interestingly, GATT approved MFA a month after the agreement came into effect (Jimenez Cortes, 1997, 59).

[59]"Renewal" referred to MFA II, III and IV because modifications were made to each previous system, while "extension" was used to simply validate the MFA IV provisions until the Uruguay agreements were reached in 1993 (Jimenez Cortes, 1997, pp. 59 and 67).

until 2005 as a result of the last extension in December 1993. In each of its renewals, modifications generally were added to the original provisions indicating a need for new restrictions. MFA is a continuing success of importing countries to secure restrictions through a legal framework. As in LTA, MFA is a multilateral framework that provides guidelines for bilateral negotiations on textile restrictions.[60] As market disruption in the LTA was not clearly defined,[61] interpretation of it could be freely made in bilateral negotiations. In an asymmetrical case, the stronger party would benefit the most. Based on the LTA experience, MFA created the Textile Surveillance Body (TSB), a subsidiary of the Textile Committee. To some degree, the creation of TSB might be due to developing countries' extensive struggle to have a supervised body for bilateral negotiations (Zheng, 1988).

Increasing wool and synthetic fiber imports in the late 1960s and early 1970s were the main reason for U.S. leaders to push for all multilateral textile arrangements. European countries agreed with MFA due to potential import diversion, especially after the agreements between the U.S. and Asian countries. Interestingly, many developing countries had their own reasons for supporting MFA. Those who had built petrochemical mills agreed with the MFA to support their synthetic textile industry. To them, the MFA provides new opportunity and protection from bitter competition of more established suppliers. Cotton suppliers saw that the MFA could protect their market shares through controlling the behavior of synthetic suppliers (Zheng, 1988).

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[60]Some countries used Article 4 of MFA for restraints through bilateral negotiations. Others used Article 3 allowing one-year unilateral restraints (Dickerson, 1995, p. 335).

[61]See Article 4 of LTA.

MFA I created new features that were different from the previous arrangements.[62] Some new provisions included descriptive rules for market disruption, quota allowance, quota flexibility and the creation of TSB (Dickerson, 1995). Unlike the STA/LTA, the MFA describes specific wording and logic in which a case of market disruption could be established. Under the MFA, import restrictions could only be applied after the actual market disruption or a serious damage to the domestic industry is determined and a causal relation between an import increase and industrial damage is concluded.[63] MFA agreed that quota growth rate should not less than 6 percent annually, one percent higher than in the LTA. However, in practice, an importing country could impose a lower positive growth rate if there were an actual threat of market disruption. Based on this provision the U.S. has restricted the growth rate of wool imports to only one percent (Zheng, 1988). MFA reintroduced quota flexibility as a modification of the LTA provisions. There are three important provisions of quota flexibility: "swing" that permits quota transfer from one category to another; "carry forward" that permits a quota loan from next year's allowance; "carry over" that permits adding unused quota for next year's allowance. The carry over provision might cause a surge in importing countries (Dickerson, 1995). Although the structure of MFA institutions includes the Textile Committee and the GATT Council, the provision on TSB seems to be

[62]LTA was viewed as a failure because of no supervisory body to oversee its implementation and no safeguarding mechanism to maintain the integrity of its rules (Perlow, 1981, pp. 93 and 99 as cited in Zheng, 1988, p. 51).

[63]The criteria of serious damage can be imposed in many situations of an importing country that pursues a protection such as in a case of turn over, market share, profits, employment, investment, import volume, utilized capacity and productivity. In practice, importing countries as well as TSB tend to focus on import volume, low price of imported products and the state of the domestic industry as factors to the serious damage on a domestic industry (Zheng, 1988, pp.18-22).

the essential quality of the MFA safeguard mechanism at its operational level. As suggested in articles 10 and 11 of the MFA, the textile Committee and the GATT Council will work on a basis of limited circumstances such as to have further opinions on disputes or to solve unsettled disputes. The primary function of the TSB is to supervise the implementation of the MFA rules and resolve the disputes among MFA members. However, the role of the TSB is more recommendatory than regulatory. In spite of developing countries' demand for a stronger TSB, the U.S. and European countries rejected that TSB could act as arbiter or impose legal solutions. They agreed that TSB is to provide only advisory opinions or act as an organ of conciliation (Zheng, 1988).

MFA II (1978-1981)

Following the MFA I agreement, as it did shortly after the LTA agreement, the United States signed bilateral agreements with other countries. European countries began their first bilateral agreements with Hong Kong and Korea two years later. For the United States, the MFA provided further protection for its domestic market. Given the new protection of the U.S., developing countries diverted some of their textile exports to Europe. During 1973 to 1976, total European imports increased by 49 percent (from $14.8 to $22.0 billion). Although U.S. imports also increased by 40 percent (from $3.7 billion to $5.3 billion), it came from a relatively smaller base (Cline, 1990).

Under pressure of increasing textile imports and the recession of post-oil shock, Europe took the lead for a more restrictive arrangement. The U.S. was less aggressive during the MFA II negotiations for at least three reasons. First, the recession affected the United

States less than European countries. Second, in the United States, production rose and productivity increased slowly; therefore employment declined but relatively slowly. However, the United States was better compared to European employment during 1973-1977. Third, the dollar depreciation in 1971-1973 improved the U.S. competitiveness in international trade (Dickerson, 1995; Cline, 1990). For many European countries, the main contention was the MFA I provision for 6 percent quota growth. This provision injured their domestic markets. Although importing countries could ask for less than 6 percent in their bilateral negotiations, it was hard to provide proof of market disruption as required before initiating the negotiations.[64]

Pressures from European industries and labor unions and threats of a unilateral restriction such as the one imposed by France in mid-1977 had brought the authority of the European Community to push for a proposal with a threat of leaving MFA II when it was denied. MFA II was then signed in December 1977. The European proposal called "jointly agreed reasonable departures" was adopted. This provision is a departure from the 6 percent growth provision and in some cases also from quota flexibility. European countries extensively used this provision in their bilaterals. Furthermore, they established textile import products into 114 categories and five groups, with Group I (containing 8 categories) being the most sensitive products and therefore subject to a strict control. European countries instituted a "basket extractor" mechanism to control supplies from non-MFA members. With this mechanism, imports from those countries would be controlled if they exceeded a

[64] Actually, the U.S. textile and apparel industry was also concerned about this issue, especially in a case of low domestic growth. The argument was based on an unfair growth condition between domestic production and imports. The growth rate in the domestic share was sometimes as low as only one percent (Dickerson, 1995, 338).

threshold level such as 1 percent of total imports (Cline, 1990). The reasonable departure clause changed the fundamentals of MFA provisions that led to the discrimination against particular suppliers.[65] The reasonable departure provision served European countries as a cover for their restrictive bilateral agreements. Some developing countries might still secure better agreements especially those who have been closely ties to European countries or to the United States. Some other countries lose as well as international trade discipline (Aggarwal, 1985).

The MFA III (1982-1986)

In the 1981 negotiations for the MFA second renewal, the United States and European countries pushed for further restrictive measures. Both experienced trade deficits especially in the apparel trade where imports from developing countries grew extensively. As usual, American industry contended on low-cost imports from developing countries. Price differentials between imported and domestic products were so huge that they needed further protection. In his 1980 campaign, Reagan was in line with the textile industry's argument. He assured the industry that his administration would strengthen the MFA III by matching import growth with all sources of domestic market growth. During renewal negotiations, however, U.S. representatives made a point to textile suppliers that the U.S. would not seek cutbacks of actual quota levels (Cline, 1990; Aggarwal, 1985). Since Japan now became one

[65] It was also called a "departure from a departure" because MFA itself has been viewed as a departure from GATT's principles (Keesing and Wolf, 1980, p. 70).

of important importing counties, European countries complained about the burden sharing of low-cost imports that was not fairly distributed among Europe, the U.S. and Japan.[66] A slow domestic demand had led Europe to renegotiate quota cutbacks with the "big three" (Hong Kong, Taiwan and Korea) and to limit growth below 6 percent (Dickerson, 1995).

Successive renewals of the regime gave developing countries experience in organizing their interests at the negotiation table. With the support of the United Nations Conference on Trade and Development (UNCTAD), developing countries became more united in two issues during the renewal negotiations. First, developing countries asked for the elimination of the reasonable departure clause. Second, they sought for a more disciplined behavior of developed countries in the MFA implementation. As a result, the provision of reasonable departures was removed. Furthermore, in favor of developing countries, especially those new suppliers, MFA III required evidence of a decline in per capita consumption if market disruption was used as a basis for import restraints. MFA III also created an "antisurge" mechanism. This mechanism allowed importing countries to restrain sensitive products, with previously underutilized quotas, if there were sharp and substantial increases in imports of those products. In addition, a provision of MFA III allowed importing countries to impose a discriminatory treatment against large suppliers and to depart from quota flexibility provisions (Cline, 1990; Zheng, 1988).

Although MFA III was seen as more restrictive than its previous one, U.S. textile leaders criticized that the new provisions were not protective enough for their textile

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[66] A study shows that if net trade deducting exports was included, the European Community's net imports from developing countries were approximately equaled to that of the U.S. which was about $4 billion in 1979 (Curzon, 1981, p.26, as cited in Cline, 1990, p.154).

industries.[67] To adopt this industrial pressure, in 1983 and 1984, the Reagan administration created new administrative procedures such as "consultation calls," "countervailing duties," and "rules of origin." With consultation calls, the United States would re-negotiate with an exporting country whenever its imports reached 20 percent of production or increased by 30 percent during the last 12 months. Textile imports, which were subsidized by their countries, would be subject to countervailing duties (additional duties) upon entry. The rules of origin were to prevent an exporter from taking advantage of unused quotas given to a third country, for example, through product transshipment.[68]

For many exporting countries, MFA III was a return to its original framework especially with the removal of the reasonable departure clause. These countries noticed that the MFA could be a balanced instrument for regulating international trade in textiles. Even though the MFA had mostly targeted their exporting products, those developing countries still blessed the arrangement because they would be disadvantaged without it (Cline, 1990; UNCTAD, 1983).

The MFA IV (1986-1991)

On July 31, 1986 the third renewal of the MFA (MFA IV) was signed by representatives of 54 countries and would be effective until July 31, 1991. As in previous

[67] To U.S. textile leaders, MFA III was a failure because it could not stop or slow down imports and it contributed to the declining progress of the U.S. textile industry (Anson and Simpson, 1988, as cited in Dickerson, 1995, p.341).

[68] Product transshipment is known as rerouting products, from an original producing country, to another country before entering an importing market (Dickerson, 1995, p.341).

renewals, modifications for this renewal were attached to the original text of the MFA. Some new provisions were added to MFA IV such as extended coverage, antisurge and antifraud provisions, provisions for dealing with import growth and special treatment for least developed countries. MFA IV now covered almost all fibers traded. Some new items covered textiles made of vegetable fibers, vegetable blends, silk blends, ramie, and linen. Textile items considered as unimportant prior to 1982 were exempted from restrictions such as those fibers made from jute, coir, sisal, abaca, maquey and henequen (Cline, 1990). Although the reasonable departures were not re-instituted in MFA IV, provisions for dealing with import growth allowed importing countries to set at a very low growth rate, especially large suppliers. The argument for the provisions was to give some room for import growth from other developing or less developed countries. The antisurge provision followed the notion of MFA III with the possibility of removing items from restriction if their quotas were still underutilized. The antifraud provision reflected the rules of origin concept proposed by the U.S. In the liberal side, MFA IV provided favorable provisions as much as free trade especially for exporting developing countries considered as new entrants or cotton suppliers. This clause seemed to favor countries such as Egypt and Brazil.

During the renewal negotiations, three power blocks (the United States, European countries and developing countries) pushed each other for their own interests. During the years of MFA III, the U.S. experienced huge imports both from high-cost and low-cost suppliers, declining exports because of dollar appreciation and downward domestic production. Prior to and shortly after the renewal negotiation, the U.S. administration concluded bilateral agreements with Hong Kong, Taiwan (non-MFA member) and Korea that imposed to those countries a limit of import growth rate to only 1 percent, 0.5 percent and

0.8 percent, respectively. The agreements included textile fibers made of silk, linen and ramie, which were not covered prior to MFA IV. In spite of the agreements with those big suppliers already set at a low growth rate, U.S. textile and apparel industry still complained that import growth should be reduced, rather than frozen, so it could alleviate the disruptive effects of huge imports since 1982 (Cline, 1990). With an increase in domestic pressures, U.S. negotiators became more aggressive for MFA IV. Although most of the United States' important objectives had been incorporated in MFA IV, U.S. industry leaders criticized the arrangement since they saw the possibility of loopholes and import surge in other fibers (Cline, 1990).

The position of European countries prior to the negotiations was somewhat uncertain. Some European countries indicated that they would favor a plan for an eventual phase-out of the MFA. Sweden, for example, had made a radical decision to leave the MFA and dropped all the restraints. Some other countries suggested relatively fair protective measures such as 1 percent import growth for large suppliers, 4 percent to 7 percent for other exporters of developing countries, and even a free entry for some product categories if their quotas were largely unfilled. This plan also gave a free entry or favored status for some Latin American and Near Eastern countries. However, as the U.S. dollar depreciated relative to other currencies, by the second quarter of 1986 textile and apparel industries in Europe began to feel the pressure. [69] As the European economies declined, protectionist groups in the industrial community gained again some control over trade policy. The phase-out plan

[69] During 1980-1985, appreciation of the U.S. dollar over many other currencies increased U.S. demand for textile imports including from those European countries (Cline, 1990, p.60-61).

seemed no longer a choice for Europe during negotiations for MFA IV (Dickerson, 1995; Cline, 1990).

Although developing countries became more organized in dealing with the MFA,[70] they had different preferences on an issue of the MFA continuation. India, Pakistan, Bangladesh and Brazil aggressively pressured the United States and Europe for the termination or a phase-out plan of the MFA. According to these countries, GATT would rule textile and apparel trade after the termination. However, other groups of developing countries, particularly from Far Eastern countries seemed unwilling to cease the regime. These countries have done well in dealing with the MFA and captured a share of more than 50 percent in exports. With a more liberal trade, their share might decline as a result of competition from lower cost newcomers. For Far Eastern countries, the MFA has provided favorable conditions because otherwise industrial countries might exercise uncontrollable unilateral restrictions (Cline, 1990).

The Extensions of MFA IV (1991-2005)

When the expiration date of MFA IV came closer in July 1991, the Uruguay Round was still underway after five years of negotiations.[71] Since it was only a renewal, not a change, the extension of MFA IV called "Protocol" preferred to MFA V until December

[70]In the mid-1980s, some developing countries formed the International Textile and Clothing Bureau (ITCB) to represent their interests (Dickerson, 1995, p.342 and 379-380).

[71]In September 1986, trade ministers of GATT's participating nations launched new trade talks in Punta del Este, Uruguay. The talks, known as the Uruguay Round, ended in December 1993 after seven years of negotiations (Dickerson, 1995, p.358-365).

1992. The Round was anticipated to come out with a plan for a future textile trade system. Yet, another Protocol was agreed upon that would be effective from December 1992 to December 1993. The 1991 and 1992 Protocols secured the MFA IV provisions. During the negotiations, the debate was merely on trivial issues such as the duration of the extension and the expectation of exporting countries for a more liberal approach in bilateral negotiations. Expressions in the 1991 and 1992 Protocols suggested that there would be an improved trading situation for developing countries. However, as a matter of fact, the implementation of MFA has not always been similar to its provision language (Cline, 1990).

In December 1993, the Uruguay Round was concluded and signed by 117 member countries of GATT.[72] There was also an agreement for another extension of MFA IV. The most important conclusion of the Round for textile sector was a ten-year-phase-out plan for MFA to be implemented in four stages, starting July 1995. Importing countries may choose which products that they would like to liberate during this period of transition. In Stage 1 (July 1, 1995 to December 31, 1997), importing countries should dismantle their import restraints by 16 percent based on 1990 volumes. The remaining quotas could grow at rates no less than 16 percent annually for the next three years based on 1994 import levels. In Stage 2 (January 1, 1998 to December 31, 2001), an additional 17 percent of import restraints based on 1990 volumes would be cut and the remaining quotas will be allowed to grow at 25 percent each year for the next four years. In Stage 3 (January 1, 2002 to June 30, 2005), based on 1990 volumes another 18 percent and 49 percent cut of import restrictions due and

[72] Trade ministers of GATT's member nations signed the Final Act of the Uruguay Round in 15 April 1994 in Marrakesh, Marocco. Starting 1 January 1995, the World Trade Organization (WTO) replaced GATT that would have the same legal and organizational standing as the IMF and the World Bank (Krueger, 1998, p.1).

the remaining quotas would be allowed to grow at 27 percent annually for the next three years. By Stage 4 (July 1, 2005 and afterward), all quota restrictions would be removed, the MFA would be dissolved and textile trade would be integrated into WTO. Upon the integration, only tariffs could be applied to textile trade as well as all other sectors. In the transition period, the Uruguay Round still allows the use a safeguard mechanism by importing countries against import surge if there were a damage to domestic producers (Dickerson, 1995).

In conclusion, Table 2.6 provides a summary of important agreements in MFA that has been used for a quarter of a century. Until 2005, textile trade would be still under the MFA umbrella. The MFA has been a compromise framework for its participants, exporting and importing countries. Although none of the participants have been really satisfied with the framework, the regime indeed provides general principles for textile trading countries to seek their trade policy goals. At a point in time, some countries may benefit from MFA and at other times it might be the turn for other countries.

TABLE 2.6.

MULTILATERAL NEGOTIATIONS
IN MULTIFIBER TEXTILE TRADE (1974-2005)

| No. | Year | Known As | Negotiations/Agreements |
|---|---|---|---|
| 1 | 1974-1977 | MFA I | • This agreement was signed on December 20, 1973, which was effective for four years from January 1974 to December 1977, 42 countries participated<br>• Reinstalled important provisions of LTA based on market disruption concept<br>• Covered cotton as well as wool and man-made fibers<br>• Quota was allowed to grow by 6 percent annually (compared to 5 percent in LTA)<br>• New provisions for quota flexibility were installed such as "swing", "carry forward" and "carry over"<br>• To monitor the implementation of MFA, a Textile Surveillance Body (TSB) was created |
| 2 | 1978-1981 | MFA II | • An extension protocol was signed on December 14, 1977, indicated the renewal of the MFA I for four years (to be MFA II, from January 1978 to December 1981)<br>• Participant countries remained 42, four countries resigned but four other countries became new members<br>• Instated new provision called "jointly agreed reasonable departure" to allow importing countries to depart from the original MFA provisions as they saw it suitable |
| 3 | 1982-1986 | MFA III | • The second protocol (the MFA III) was signed on December 22, 1981, to be effective for five years from January 1982 to July 1986<br>• There were 43 participant countries in this agreement, one country left and two countries became new members<br>• The "reasonable departure" was eliminated, but an "antisurge" mechanism was instituted allowing importing countries to restrict sensitive products if there were a sharp and substantial increase<br>• Allowed discriminatory treatment against large suppliers and departed from quota flexibility provisions<br>• The use of market disruption now required proof of a decline in the growth rate of per capita consumption |

TABLE 2.6. (CONTINUED)

MULTILATERAL NEGOTIATIONS
IN MULTIFIBER TEXTILE TRADE (1974-2005)

| No. | Year | Known As | Negotiations/Agreements |
|---|---|---|---|
| 4 | 1986-1991 | MFA IV | • The third protocol (the MFA IV) was signed by 54 countries on July 31, 1986 and would be effective for five years until July 31, 1991<br>• Adding to the list of the previous restrictive items, textile made of vegetable fibers, vegetable blends, silk blends, ramie, and linen were now subject to control<br>• Antisurge provisions were modified and antifraud provision for implementing rules of origin was installed<br>• Poorer developing countries will be treated more favorable<br>• Quota growth can not be negative, but particularly large suppliers would be asked to lower their rates below the maximum (6 percent) |
| 5 | 1991-2, 1992-3, and 1993/5-2005 | Extensions of MFA IV | • Three time extensions of MFA IV were officially called "protocols"<br>• The 1991 protocol was from August 1991 to December 1992, the 1992 protocol was from January 1993 to December 1993, and the third protocol would end June 30, 1995 and after that MFA phase out in four stages would be implemented<br>• The 1991 and 1992 protocols suggested to improve trading situation with developing countries<br>• The December 1993 agreements by the Uruguay Round called for a phase-out plan of MFA system over 10 years, from July 1995 to July 2005<br>• During the phase out, a safeguard mechanism could be used against import surge for maximum three years |

## GATT, WTO and Textile Trade

This section describes the relations between GATT, WTO and textile trade particularly under the MFA framework. Although MFA, as well as STA/LTA, has substantial legal and institutional affiliation with GATT, the regime is actually an independent multilateral agreement. Textile arrangements have been a major departure from the application of GATT principles. In fact, it is the only sector for which GATT has given permission for the creation of a trade regime of its own. The supports of GATT for the MFA framework could be seen in the form of administrative assistance and dispute settlement facilitation. As the GATT was replaced by WTO,[73] the MFA would then be integrated in this new reinforced institutional framework in the year 2005 and afterward (Zheng, 1988; Jimenez Cortes, 1997).

The MFA framework creates a special regime for textile trade, which under the GATT principles are prohibited. Two important principles of GATT that are exempted from the MFA are the non-discrimination rule and general prohibition of quantitative restraints. For importing developed countries, GATT has failed to provide a framework dealing with a situation of market disruption. Under GATT Article XIX, known as an escape or a safeguard clause, importing countries are free to modify or suspend its obligations under GATT if there were cases that "cause or threaten serious injury to domestic producers."

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[73] The WTO or an idea of creating a new legal structure did not appear in the Punta del Este Declaration. In April 1990, Canada proposed an institutional framework, similar to that of WIPO (World Intellectual Property Organization) from the 1967 Stockholm Convention, which was supported by the EC. In 1991, GATT Director General Arthur Dunkel, included a proposal known as Dunkel draft or the draft Final Act, that became important parts of the Uruguay Round agreements (Odell and Eichengreen, 1998, p. 188).

However, an injury test is needed for the actuality of the injury or the threat thereof before they initiate any safeguard action. It is under the MFA provision of market disruption, importing countries could have more freedom in exercising their protection measures. At least three reasons that MFA is less stringent than GATT. First, GATT Article XIX requires that the injury must have already occurred to justify the existence of injury, while under the MFA, the provision of market disruption could be used even if there was only a "potential" threat to domestic producers. Second, GATT Article XIX does not mention any price differential between imported and similar domestic products in determining an injury. With the MFA, importing countries could impose restrictions using the argument of price differentials. Third, the GATT Article XIX follows an argument that an injury must be a "result of unforeseen development," which is not of a usual economic development. The MFA defines that changes in consumer preference or income could affect domestic producers such as a decline in the rate of growth of textile per capita consumption. Overall, it is seen that GATT's safeguard mechanism is more stringent than the MFA provision of market disruption,[74] explaining why GATT Article XIX has been applied relatively seldom (Zheng, 1988; Dam, 1970).

Countries that are members of both GATT and MFA unavoidably face a difficult situation, because they seem to abide to the conflicting principles of those two institutional frameworks. The relationship of the MFA and GATT is mentioned in MFA Article 1 (paragraph 6) which states that: "Provisions of this Arrangement shall not affect the rights

[74]Under GATT Article XIX:3, exporting countries affected by this safeguard mechanism could ask for "equivalent compensations", that under the MFA market disruption concept are not allowed. In return, the MFA guarantees exporting countries for an annual increase in export growth (Zheng, 1988, p.93 and 105).

and obligations of the participating countries under the GATT." This provision should be carefully understood because, if otherwise it is literally taken, GATT participants could not at the same time be MFA member states. Under the literal meaning of Article 1, the MFA will not be compatible with GATT, because GATT rights and obligations must outweigh those of the MFA. For example, if an exporting country exercises its GATT rights against quantitative restrictions imposed by an importing country or to have equivalent compensations from its counterpart, this kind of action would certainly undermine the MFA framework. Since the provision of MFA Article 1 addresses the central issue of the MFA and GATT relationship, an appropriate understanding and interpretation should be rendered on it.[75] MFA Article 9 (paragraph 1) may explain the connection between GATT and the MFA, whereas MFA participants are obligated "as far as possible" not to enforce their GATT rights in order to achieve the MFA objectives. If an MFA participant claims its GATT rights, this action may have nullifying effects on the MFA framework. There are two interesting cases concerning this issue. The first case is between the United Kingdom and Pakistan during the LTA era. At the LTA formation, the U.K. asked for an exemption from the obligation to increase quotas during the first five years of the LTA. Pakistan opposed it because the U.K. was obligated toward Pakistan under the GATT. Interestingly, the GATT Cotton Textile Committee approved the positions of both countries, meaning that the U.K. reservation applied to only those other countries that agreed with, but not to Pakistan (Dam,

[75] According to Article 31:1 of the Vienna Convention on the Law of Treaties: " a treaty shall be interpreted in good faith in accordance with the ordinary meaning to be given to the terms of the treaty in their context and in the light of its object and purpose." Using this Vienna Law of Treaties, the terms described in MFA Article 1 that "shall not affect" should be interpreted in its context, purpose, related agreements, and practice (Zheng, 1988, p.92).

1970). In this case, it is clear that the GATT rights and obligations overcome those of the LTA, as long as there was a complaint from a participating country. The second case is between Canada and Hong Kong during the MFA era. In 1977, TSB considered a case of import restrictions taken under GATT Article XIX by Canada on textile imports from Hong Kong. The argument from Hong Kong was based on MFA Article 9, indicating that Canada should be obligated not to enforce its GATT rights in order to achieve the MFA objectives. On the other hand, Canada argued that its policy referred to MFA Article 1, provided that "MFA does not affect its GATT rights." Canada and Hong Kong had their own supporters in TSB members, leading to no conclusion on the substance of the case (Zheng, 1988). These cases indicate that the MFA/LTA and GATT relationship could lie in questions of burden adjustment as well as strictly legal matters. The question rises as an MFA/GATT party is not pleased with a measure taken by the other party that is also an MFA and GATT member. The majority of MFA participants agree that GATT rights should apply only when MFA procedures were not feasible, while some minority voices argue that GATT rights should be applied first before the MFA provisions (Zheng, 1988). Even if it is not always the case, the problem is reduced if a contracting party is only a member of either the MFA or GATT because in this case provisions from either framework will apply.

Controversy over the issues of quantitative restrictions and of nondiscrimination treatment for ruling international trade could be traced in early multinational negotiations in London in 1946. British and France were among countries emphasized the need for import controls to remedy balance of payment problems. Others such as Australia argued for industrialization and full employment, and still others such as developing countries insisted on the need for import controls for infant industry protection or supporting an import

substitution industry. By these accepting exceptional conditions, countries participating in the 1946 negotiations agreed to the two issues of guaranteed free trade. This agreement was reinforced in 1947 in Geneva. GATT was also agreed to be effective in 1 January 1948 (see Table 2.7). From 1943 to 1945, the U.S. had brought the idea of free trade. The U.S. proposed a trade organization, the International Trade Organization (ITO), along with GATT which was based on the ITO charter to carry out four foundations of free trade.[76] They were (1) generalized most-favored-nation treatment, (2) no increases in existing preferences, (3) a commitment to reduce existing trade barriers, and (4) no quantitative restrictions except under exceptional conditions (Odell and Eichengreen, 1998). These principles adopted as the GATT principles. For example, the nondiscrimination treatment was called the most favored nation (MFN) provision (GATT Article 1) which started that a concession (such as tariff reduction) applied to a member state should also apply to all other members. As a consequence, that all imported product once they enter the country of importation should be treated no less favorably than the treatment for similar domestic goods (GATT Article III, known as the national treatment clause). Further, under GATT Article XI, all trade barriers such as quotas,[77] non-tariff barriers, and other trade restrictions should be converted into tariff (GATT Article XI). Under this tariffication obligation, trade regime under GATT

[76] U.S. Congress rejected the ITO. GATT became the alternative although it had no enforcement mechanism, no codified rule, and no administrative structure (Destler, 1992; Schott, 1990, p.28; Jackson, 1969, p.50).

[77] There are still conflicting views over the prohibition of quota (under GATT Article XI). One view argues that the principle of the MFN should be seen in unlimited way, therefore the use of quota restrictions will be inconsistent with the spirit of this principle. Other view, however, argues that based on the legal principles that as long as it is agreed upon and is non-discriminatory, the use of quota is compatible with the GATT (Jimenez Cortes, 1997, p. 128).

should be as transparent as possible. GATT Article XXII provides a dispute system through consultation and negotiation to settle any trade dispute among its members (Esty, 1994; Jimenez Cortes, 1997).

TABLE 2.7.

EIGHT ROUNDS OF
MULTINATIONAL TRADE NEGOTIATIONS (MTNs)

| No. | Year | Known As | Negotiations/Agreements |
|---|---|---|---|
| 1 | 1947 | Geneva | • 23 nations agreed to establish GATT that came into force 1 January 1948. Havana Charter agreed on ITO, but failed to emerge because of U.S. Congress rejection, even U.S. government already signed it<br>• First tariff reductions covering 45000 items, 20 goods categories and $ 10 billion in trade (half the total value of world trade at the time) |
| 2 | 1949 | Annecy | • 13 nations exchanged 5,000 tariffs reductions |
| 3 | 1950-51 | Torquay | • 38 nations agreed on 38 tariff concessions<br>• 25 percent overall decrease in tariffs |
| 4 | 1956 | Geneva | • 26 countries agreed on a relatively modest package of tariff cuts totaling $2.5 billion |
| 5 | 1960-62 | Dillon | • 26 countries agreed on tariff reduction covering 4,400 items and $5 billion of trade in goods |
| 6 | 1963-67 | Kennedy | • Far more successful than its predecessors<br>• 62 countries agreed on a formula for tariff cuts of 35 percent covering $35 billion worth of trade<br>• Agreed on an antidumping code and on separate agreements on textiles and , but disagreed on a proposal for augmenting trade with developing countries and on some agricultural issues |

TABLE 2.7. (CONTINUED)

EIGHT ROUNDS OF
MULTINATIONAL TRADE NEGOTIATIONS (MTNs)

| No. | Year | Known As | Negotiations/Agreements |
|---|---|---|---|
| 7 | 1973-79 | Tokyo | • 99 countries agreed to liberalize $300 billion worth of global trade<br>• Weighted average tariffs in the most developed markets reduced from 7 percent to 4.7 percent<br>• Adopting preferential arrangements to developing countries through trade measures<br>• Revising the antidumping code, implementing new subsidies, government procurement and a number of sector-specific codes |
| 8 | 1986-93 | Uruguay | • The slowest multinational negotiations but has achieved broad gains in liberalization<br>• 117 countries agreed to replace GATT with World Trade Organization (WTO) by 1 January 1995. WTO adopts all principles of GATT<br>• Concluded 27 separate accords covering sectors such as agriculture, textiles, services, intellectual property and foreign investment<br>• Better rules for nontariff barriers, assessing technical barriers and standards, government procurement and new rules to facilitate dispute settlements |
| | | Next | Potential core issues for the next round of MTNs:<br>• Green Round: the relationship between trade and environment<br>• Competition Policy Round: antitrust laws for international competition<br>• Corporation Taxes Round: taxes on corporations internationally<br>• Trade Harmonization Round: global standards on employment, environment and competition policies<br>• Arm Trade Round: rules for the international arm trade |

Source: Esty (1994), pp.247-8; Tessitore and Woolfson (1992); Hudee (1996), pp.1-17.

During its first two decades, under the guidance of the GATT framework, there were

eight rounds of multinational negotiations that have brought freer international trade through liberalization of trade barriers (see Table 2.7). The first six rounds (1947-1967) dealt with "cross border" liberalization that mostly applied to trade in goods, the seventh (the Tokyo Round) "moved inside the border" liberalization that covers technical standards, production subsidies, and government procurement. By concluding the last multinational negotiations (the Uruguay Round), GATT, that then becomes WTO, has expanded its functions in administering global trade. There are five most important functions of WTO. First, to administer and implement the multilateral and plurilateral trade agreements. Second, to act as a permanent forum for multilateral trade negotiations. Third, to administer the system for settlement of disputes. Fourth, to review national trade policies. Fifth, to cooperate with the IMF and the World Bank for greater coherence in world economic policymaking. The first three functions have been employed by GATT, which would continue under the WTO. The fourth function was provisionally made in 1989 and would be permanent. The last function is completed as a result of the Uruguay Round. Future expansion of WTO, that has been suggested by some analysts, might cover areas such as investment policies, competition policies, trade and environment, policies toward corruption particularly in government procurement, and core labor standards (Blackhurst, 1998).

Although the MFA is viewed as a derogation of and a departure from the GATT basic principles, the textile trade regime is also considered as bringing about gradual liberalization in textile trade. With the MFA, the diversity in existing restrictions in textile trade, which have also caused serious damage to the GATT rules, would be homogenized and regrouped. Upon the creation of WTO, and during the transition period of reintegrating the MFA into the WTO system, the existing restrictions should be reordered and made them transparent.

Textile Monitoring Body (TMB), a new structure under the WTO, was established to take control of the MFA agreement during the transition period over 10 years. After the year 2005, the existing MFA agreement would be fully dissolved and textile trade would be integrated into the general system for WTO ensuring a similar treatment as applied to other sectors.

## Summary

Textile trade has been subject to unilateral, bilateral, and multilateral control through trade policy exercised by governments of the world. The most important arguments for controlling textile trade lie in either economic growth or employment. During its early development, the textile industry was highly supported for economic growth of countries, which are now known as developed countries. After World War II, many developing countries increased their ability to produce and export their textile products. Industrial markets have been the targets of developing countries' exports of textile and apparel. This chapter has focused on multilateral trade arrangements (the STA, the LTA, and the MFA) that have been proposed by importing countries to control the growth of textile imports, particularly from developing countries. Textile multilateral arrangements have been the phenomena of global textile trade for decades since July 1961. The imposition of textile multilateral arrangements as a special regime, a departure from the GAT framework, has been controversial. Although after the year 2005, as a result of the Uruguay Round, textile trade will be integrated into the general system of WTO, it would be still interesting to see whether free trade in the textile sector will really occur in practice.

# CHAPTER III

# IMPACTS OF INTERNATIONAL TRADE ARRANGEMENTS

## Introduction

This chapter describes the impacts of textile trade arrangements on developing countries as well as developed countries. The comprehensive and persistent characteristics of protection in the arrangements have strongly affected not only exporting but also importing countries. Although in this study the impacts of the arrangements focus on exporting developing nations, it is necessary to take account of the impacts on importing developed countries because changing circumstances in those countries have further influenced exporting countries. For example, the argument of market disruption as a basis for the protection of importing countries has forced developing countries to revise their export strategies. Since restrictions decreased the export revenue,[1] some exporting developing countries shifted their textile production from restricted to unrestricted product items. Others choose to upgrade the quality of their exported products in order to have a

[1]Although trade restrictions increase domestic and imported prices, discourage new entrants and transfer most of the quota rent to exporting countries, many studies have found that the declining revenue of exporting developing countries is substantial because of the imposition of textile trade restrictions (Goto, 1988, p.2; Snape, 1988, p.2).

higher per unit value of quota allowances. Still some others relocate their investment and production sites to other countries, which are less restricted or unrestricted to avoid trade protection. The analysis of these impacts will deal with the MFA framework covering multifiber trade since the early 1970s. In importing countries, protecting domestic industries and saving domestic jobs have been the primary reasons for restricting textile trade. The impacts of the restrictions on domestic consumers or on welfare loss will be addressed in this chapter for a perspective of the impacts of the arrangements on importing countries.

As described in the previous chapter, the textile industry has played an important role in early industrialization of many countries. This was experienced by developed countries during their early development and is followed by today's developing countries. As a country starts to diversify away from the primary or agriculture sector, the textile industry is frequently chosen for domestic needs and exports because its production requires relatively small amounts of capital but a large number of low-cost and low-skilled laborers (Dickerson, 1995; Goto, 1988). Textiles have also been substantial goods in international trade, which from its early development to shortly after World War II was mainly dominated by the U.S. and Western European nations. Since the second half of the last century, developing countries have recognized the textile sector as a primary means for economic development. They have increased production capacities at lower prices. They have concentrated on the production of less sophisticated textiles to compete with the products from developed countries. This pattern continued until recently for many developing countries,[2] under the

[2]Although in countries such as South Korea and Hong Kong large manufacturers tend to move toward high quality textiles, as previously occurred in Japan, their small and medium sized producers are still concentrated in the lower-quality and low price products (Singleton, 1997, p. 102; Park, 1994, p.149).

assumption that low price rather than high quality is more important to their export competitiveness. Leading in price competition, developing countries steadily increased their shares in world textile exports, which led to global trade shifts. This has induced more developing countries to engage in similar exports that further aggravate the trade effects. Considering the huge increase of imports, developed countries start promoting trade restrictions as well as various policies for industrial adjustment.

TABLE 3.1.

THE WORLD'S FIFTEEN LEADING EXPORTERS OF TEXTILES, 1993

| Country | Value (US$ billion) | Share in World Exports (%) | | Average Annual Change (%) | Share in Country's Merchandise Exports (%) | |
|---|---|---|---|---|---|---|
| | 1993 | 1980 | 1993 | 1980-93 | 1980 | 1993 |
| Germany | 11.9 | 11.4 | 10.3 | 5 | 3.3 | 3.1 |
| Hong Kong | 11.2 | - | - | 15 | 8.7 | 8.3 |
| Domestic exports | 2.1 | 1.7 | 1.8 | 7 | 6.6 | 7.3 |
| Re-exports | 9.1 | - | - | 20 | 13.0 | 8.6 |
| Italy | 10.0 | 7.6 | 8.7 | 7 | 5.3 | 5.6 |
| South Korea | 9.0 | 4.0 | 7.8 | 11 | 12.6 | 10.9 |
| China [a] | 8.7 | 4.6 | 7.5 | 10 | 14.0 | 9.5 |
| Taiwan | 8.2 | 3.2 | 7.1 | 12 | 9.0 | 9.7 |
| Japan | 6.7 | 9.3 | 5.8 | 2 | 3.9 | 1.9 |
| Belgium-Luxembourg [b] | 6.5 | 6.5 | 5.5 | 5 | 5.5 | 5.2 |
| U.S. | 6.0 | 6.8 | 5.2 | 4 | 1.7 | 1.3 |
| France | 5.4 | 6.2 | 4.7 | 4 | 3.0 | 2.6 |
| U.K. | 4.1 | 5.7 | 3.5 | 2 | 2.8 | 2.3 |
| Pakistan | 3.5 | 1.6 | 3.0 | 11 | 33.5 | 52.4 |
| India [b] | 2.9 | 2.1 | 2.5 | 8 | 13.3 | 15.0 |
| Netherlands | 2.6 | 4.1 | 2.3 | 1 | 3.1 | 1.9 |
| Indonesia | 2.6 | 0.1 | 2.3 | 37 | 0.2 | 7.2 |
| Total | 90.2 | 74.9 | 78.1 | - | - | - |

Source: Singleton, 1997,p.6; GATT, 1994, p.80.

Note : a) Include trade through processing zone
b) 1992

TABLE 3.2.

THE WORLD'S FIFTEEN LEADING EXPORTERS OF APPAREL, 1993

| Country | Value (US$ billion) | Share in World Exports (%) | | Average Annual Change (%) | Share in Country's Merchandise Exports (%) | |
|---|---|---|---|---|---|---|
| | 1993 | 1980 | 1993 | 1980-93 | 1980 | 1993 |
| Hong Kong | 21.0 | - | - | 12 | 24.5 | 15.5 |
| Domestic exports | 9.3 | 11.5 | 7.0 | 5 | 34.1 | 32.2 |
| Re-exports | 11.7 | - | - | 32 | 4.7 | 11.0 |
| China [a)] | 18.4 | 4.0 | 13.9 | 21 | 8.9 | 20.1 |
| Italy | 11.8 | 11.3 | 8.9 | 8 | 5.9 | 6.6 |
| Germany | 6.7 | 7.1 | 5.1 | 6 | 1.5 | 1.8 |
| South Korea | 6.2 | 7.3 | 4.6 | 6 | 16.8 | 7.5 |
| U.S. | 5.0 | 3.1 | 3.7 | 11 | 0.6 | 1.1 |
| France | 4.6 | 5.7 | 3.4 | 5 | 2.0 | 2.2 |
| Turkey | 4.3 | 0.3 | 3.3 | 31 | 4.5 | 28.3 |
| Thailand | 4.2 | 0.7 | 3.1 | 24 | 4.1 | 11.4 |
| Portugal [b)] | 4.0 | 1.6 | 3.1 | 17 | 13.6 | 21.9 |
| Taiwan | 3.7 | 6.0 | 2.8 | 3 | 12.3 | 4.4 |
| India | 3.6 | 1.5 | 2.7 | 15 | 6.9 | 16.5 |
| Indonesia | 3.5 | 0.2 | 2.6 | 32 | 0.4 | 9.5 |
| U.K | 3.4 | 4.6 | 2.6 | 5 | 1.7 | 1.9 |
| Netherlands | 2.5 | 2.2 | 1.9 | 8 | 1.2 | 1.8 |
| Total | 91.2 | 66.9 | 68.7 | - | - | - |

Source: Singleton, 1997, p.17; GATT, 1994, p.84.
Note : a) Include trade through processing zone
b) 1992

Tables 3.1 and 3.2 show the world's fifteen leading exporting countries of textiles and apparel in 1993. As seen in the tables, about half of textile exporters and more than half of apparel suppliers are from developing countries, mostly from Asia.[3] China, Indonesia, and India significantly increased their shares in both textile and apparel world markets, reflecting the countries' comparative advantages created by low wages and abundant labor force that

[3]Before the Industrial Revolution, Asia was a net exporter in textiles to Britain and Western Europe. There was a suggestion that the earlier pattern of trade seems to repeat as shown by the huge influx of Asian textiles to developed countries (Singleton, 1997, p. 14).

led them to be competitive in low quality textiles and clothing. During the same period (1980-1993), South Korea, Taiwan, Pakistan, Thailand and Turkey have also increased their shares in the textile or apparel sectors. Indonesia, China, Hong Kong, Turkey, Thailand, Taiwan, and South Korea have been the world's most progressive exporters. Except for Italy in textiles, and the U.S. and Portugal in apparel, other developed countries decreased their shares in both markets. Since its accession to the European Community (EC) in 1986, Portugal has strengthened its position as an exporter of inexpensive clothing to the more advanced countries of Western Europe (Corado and Gomes, 1995). Italy has gained from international trade particularly in fashion textiles. Italy's achievement is mostly owed to the extensive government supports[4] (Anson and Simpson, 1988; Arpan et. al., 1982).

The U.S shares were the lowest among those leading exporters, implying that the industry's contribution to merchandise exports was less important. As indicated in the two tables, the U.S. shares of textiles and apparel in 1993 were 1.3 percent and 1.1 percent, respectively. The shares for other developed countries such as Germany, France and the United Kingdom are larger compared to those of the U.S., but still lower compared to developing countries. This suggests that the sectors have become less important to the economic well being of developed countries. Developing countries such as Pakistan, Turkey, India, Indonesia and Portugal have a higher sector share to their merchandise exports. The sectors have been increasingly important for developing countries. Interestingly, except in textiles, Japan was no longer a leading exporter in apparel. Although the dollar value of its

[4]Some government supports are prohibited by the European Commission. For example, the Belgium program was declared illegal in 1987. Trade restraints or other measures have also been forbidden because they could provide unfair advantages of one country over another (Dickerson, 1995, p. 412).

textile exports was still higher compared to some other developed countries, the general trend for Japan's exports was declining similar to other industrialized countries. This phenomena was ironic for Japan because it was the big threat to developed countries' textile industries in the 1950s and 1960s. In spite of trade restrictions, the contributing factors for Japan's decreasing exports might also come from the country's increasing wage levels.[5] As shown in the tables, developed countries such as Germany, Japan, the U.S., the U.K., France, and the Netherlands, along with newly industrializing countries such as South Korea and Taiwan have exported more textiles than apparel. On the other hand, Hong Kong, Italy, China, Indonesia and India export more apparel than textiles. This may suggest that textile production tends to be more capital intensive, mechanized and automated, and less labor intensive. For apparel products, production is relatively less mechanized and still depends on competitive labor-intensive technology, or in the case of Italy for skilled labor in fashion design, that are available more in the second group of countries (Singleton, 1997).

The growing and abrupt textile imports were disruptive to developed countries. Although trade imbalances may increase unemployment, reduce the industry's earnings or even push some textile mills out of the markets, the growth of imports could also encourage domestic producers to find a better industrial adjustment to stay competitive. Because of its significant role especially in providing employment, textile producers and labor unions in developed countries have used their political influence to seek trade protection through

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[5]Although standard wages in developed countries are higher than that of developing countries, it is worth noting that as a percentage of wages for all manufacturing industries, average real wages in textile and apparel industries of developed countries have decreased since early 1970s. For example, from 1970 to 1985, average real wages in the apparel industry declined from 62 percent to 52 percent of the U.S. manufacturing average (U.S. Congress, Office of Technology Assessment, 1987, p.7).

industrial and trade policies. On the other hand, the protection has produced industrial and trade effects both in importing and exporting countries.

## Impacts on Importing Developed Countries

Although textile and apparel industries have been declining in many developed countries,[6] the industry's well being and contribution to the economies continue to be a major concern. In industrialized countries, textile and apparel products account for 6 to 10 percent of manufacturing output, 4 to 5 percent of GDP, and 12 percent of manufacturing employment (Cline, 1990). From 1980 to 1990, as shown in table 3.3, developed countries persisted to dominate the world's production even though producers from developing countries have increased their shares of production of textiles and apparel. During the period, industrial countries continued to be the top four producers in both textile and apparel production. However, the table also shows a trend of decreasing share of production in developed countries with the exception of the U.S. and Italy. The textile and apparel shares of the U.S. and the textile share of Italy seem to continually grow during the period. One may argue that what had happened in the U.S. and Italy might suggest the positive impacts of government policy on the textile industry. Germany is another example that has benefited from trade policy. With the MFA restrictions, this country captured European markets, which would otherwise be taken by Asian exporting countries (Singleton, 1997; Dickerson, 1995).

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[6]The sign of industrial decline in developed countries occurred in 1913-1929 as a result of competition from Japan and import substitution in Central European and Latin America. In 1933-1955, Britain had lost its export markets by 75 percent when many developing countries started to have domestic substitutes (GATT, 1984, p. 15).

The declining process of textile and apparel industries has forced many developed countries to follow either one or both strategies: trade restrictions and industrial adjustment measures. Trade restrictions rely on the formulation and implementation of government policy in protecting the domestic market and industry. Industrial adjustment occurs as part of a strategy in dealing with the changes in the competitive environment of the industry to stay as healthy sectors. Adjustment, called structural adjustment, occurs as a result of government policy or market forces or both (Ghadar et. al., 1987).

TABLE 3.3.

SHARE OF LEADING PRODUCERS
IN WORLD TEXTILE AND APPAREL PRODUCTION

| Country | Textiles (%) | | Country | Apparel (%) | |
|---|---|---|---|---|---|
| | 1980 | 1990 | | 1980 | 1990 |
| U.S. | 15.9 | 17.0 | U.S. | 24.2 | 25.8 |
| Italy | 9.0 | 9.5 | Italy | 11.2 | 10.8 |
| Japan | 11.0 | 9.3 | Japan | 6.5 | 6.3 |
| Germany | 6.4 | 5.8 | Germany | 8.3 | 6.0 |
| India | 4.9 | 5.8 | U.K. | 4.6 | 5.3 |
| France | 6.0 | 4.4 | France | 6.6 | 5.2 |
| U.K. | 4.2 | 3.7 | Hong Kong | 2.6 | 4.0 |
| Turkey | 1.7 | 3.7 | India | 2.4 | 3.9 |
| Spain | 3.3 | 3.2 | Spain | 4.2 | 3.5 |
| Brazil | 3.7 | 3.0 | South Korea | - | 2.4 |
| South Korea | 1.7 | 2.7 | Canada | 2.3 | 2.3 |
| Mexico | 2.8 | 2.5 | Yugoslavia | 1.5 | 2.0 |
| Taiwan | 1.8 | 1.9 | Mexico | 1.9 | 1.9 |
| Argentina | 1.9 | 1.6 | Brazil | 1.9 | 1.5 |
| Canada | - | 1.6 | Belgium | 1.3 | 1.4 |
| Yugoslavia | 1.6 | - | Switzerland | 1.3 | - |
| Total | 75.9 | 75.7 | Total | 80.9 | 82.3 |

Source: Singleton, 1997, p.14-5; UNIDO, 1993, p. 62-3
Note : Excluding Eastern Europe, the USSR and China, at 1980 constant prices

Structural adjustment may occur at national and international levels. At a national

level, adjustment is to reinforce industrial competitiveness within a domestic economy that would generally drive the textile industry to be more efficient. The process of adjustment can be through mergers, acquisitions, vertical integration, new technology investment or stronger marketing orientation.[7] At the international level, adjustment occurs as a result of the changes in the relationship of a national economy to its trading countries or in the relationship of a sector to the global market. Both national and international dimensions of these adjustments are inter-related. Many times governments have to turn to trade regulations to give their domestic industries an opportunity to cope with the changes in the environment of global economy (Dickerson, 1995; Ghadar et. al., 1987).

In developed countries, many textile and apparel firms have pursued strategies such as cost leadership, differentiation and focus to help them stay competitive in the market.[8] While the strategy of focus concentrates on a specific market segment, accomplished by cost minimization or product differentiation, strategies of cost leadership and differentiation[9]

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[7]In the U.S., Japan and Western Europe countries, many firms have been the leaders in promoting the use of computerized textile and clothing technology and have also involved in mass production and marketing. Computerized technology has provided better communication and business deals during production and marketing processes between manufacturing and distribution units that cover a wide domestic region and or international operation. Mass production and marketing techniques would help reduce overall costs to recover the lost competitiveness of the high labor cost countries (Dickerson, 1995, p. 410; Kell and Richtering, 1991; Hoffman and Rush, 1988).

[8] The choices of strategy reflect the intention of a firm to create or to defend a favorable competitive position in which it has the ability to pursue its objectives (Rumelt, Schendel and Teece, 1994).

[9] Although these strategies have been common with many leading firms in developed countries, they also gain popularity in textile companies of developing countries. For example, from 1988 to 1993, garment companies in a district of India has successfully installed 300 computerized embroidery machines to help focus and maintain the consistent quality supply of inexpensive garments to their Western retailers (Singleton, 1997, p.105).

would provide textile and apparel firms with a wide competitive advantage within the industries (Porter, 1985). In choosing their strategies, many firms in developed countries have been influenced by the perceptions of the homogeneity or heterogeneity of their domestic markets. During the 1960s and 1970s, under assumption of reaching economies of scale, large textile companies in Britain and the U.S. had invested extensively in capital-intensive machinery hoping that this strategy would help them reduce overall costs. It was employed because the firms believed that their home markets were homogeneous which conforms to mass production of standardized textile products. However, this strategy was ineffective to compete with comparable imported products from developing countries, which were in fact still cheaper than those produced in developed countries. Recognizing that their markets were heterogeneous, textile companies in other countries such as Germany, Italy and Japan, had proven to be more successful by pursuing strategies of differentiation and focus (Toyne et al., 1984). During the 1980s and the mid-1990s, more companies in developed countries pursued a strategy of product differentiation to serve several market needs, to strengthen their existing market bases or simply to distribute market risks to various segments.[10] Some others have increased their abilities to produce textile products for market niches such as leisurewear, protective clothing for fire service and the armed force, for oil and fishing industries, or even textiles used for surgery and flood control (Singleton, 1997; U.S. Congress, Office of Technology Assessment, 1987; Hall, 1994).

[10] It is argued that diversification may not increase a company's performance if the strategy deviates far from its main market position (Porter, 1990, p.604-6).

Cost to Consumers and Domestic Job Creation

In the absence of trade restrictions, textile and apparel trade will provide domestic consumers with potentially lower product prices and a broader range of products available for choices. Although there is an argument on the possibility of lower prices resulting from free trade,[11] consumers indeed benefit from trade. From his research, Cline (1978) reported that imported products were an average of 10.8 percent less expensive than those similar goods made domestically. Lower prices resulted from the low initial cost of imported products from developing countries and low intermediary cost of discount stores and mass merchandise chains (Dickerson, 1995).

Besides the price advantage, the presence of foreign-made products has increased product choices for domestic consumers. Since different nations produce goods and services in which they have a comparative advantage and trade with others for their mutual benefits, the gains from trade are apparent for all nations. They would have more products available in their markets if they could trade with one another rather than to be self-sufficient. For example, textiles and apparel made from natural fibers such as silk, linen, ramie or angora might not be domestically produced in many developed countries. Without trade, consumers in developed countries may have limited access to these products. Other textile products that depend extensively on individual labor will be very expensive if they are produced in industrialized countries that have high wage standards. Hand-woven fabrics, hand-knitted sweaters, hand decorated or embroidered design textiles or hand crafted rugs are examples

[11] The question was raised for a short run case because of trade practices among retailers may take higher markups on their imported products. In the long run, as the industry became competitive these practices will be naturally disappeared (Dardis, 1988, pp.329-359).

of textile products that will not be competitive if made by workers using standard wages of developed countries. Trade has made those types of products available at relatively lower prices for consumers of developed countries.

Trade restraints increase consumer costs compared to the case of free trade. Like consumers, importers and to some extent, retailers are also at a disadvantage if trade is restricted. Unlike producers or industrial leaders who are well organized to press their interests for protection, textile and apparel consumers are rarely united in any association to voice their appeal. Therefore, consumer needs and protection for consumers might be less represented in formulating trade policies. Since quota restrictions are not directly represented in retail prices, consumers might be unaware of any increase in textile and apparel prices. The increase in the prices may also be seen as a subsidy from consumers or the public to the textile and apparel industries (Cline, 1990).

There are studies that investigated the cost to consumers due to trade restrictions. Studies focusing on the U.S. markets were conducted by Cline (1987), Hufbauer et al. (1984), and Tarr and Morkre (1984), on the Canada market by Jenkins (1980), and on Germany by Spinager (1986). Goto (1988) has used these studies to expose similar questions concerning costs to consumers. These studies have used different methods in calculating the effects of trade restraints on domestic consumers. For example, Tarr and Morkre, and Spinager use only quotas while Cline, Hufbauer et al. and Jenkins apply both quotas and tariffs.

In spite of this difference, their studies of the context have the same basic framework for the analysis, as shown in Figure 3.1. The figure shows foreign supply SS, which is a horizontal line under the elasticity assumption of infinity. However, even in the case of

elastic or upward-sloping supply curve, the argument for this model is still held only with slightly different impacts. If there were a free trade regime, the equilibrium will be reached at point Z, where the product in question will be supplied as many as $Q^f$ and the price will be at $P^f$. If imports were restricted by quota at the quantity of $Q^r$, the price will raise up to $P^r$ that will compensate excess demand ($Q^f$ - $Q^r$ ) because of the previous price level ($P^f$). With quota restriction, trade equilibrium is at X and quantity $Q^r$ is supplied at price $P^r$. Quota rent is a rectangle $P^r$ $P^f$ YX and triangular XYZ is a deadweight loss (DWL), which is the loss of consumer's and producer's surplus that is not transferred to either consumers or producers.[12] When quota is administered by exporting countries, as in the case of VER, this quota rent will be transferred to exporters.[13]

Cline, Hufbauer et al., and Tarr and Morkre also investigate the creation of domestic job and consumer cost per job saved due to the MFA import restrictions. The number of jobs created is calculated from the value of change in domestic production as an effect of import restriction and then this value is divided by average production per worker, which is the average value of domestic shipments per worker (Goto, 1988). This employment effect is used as a reason for the proponents of trade protection. In the results from these studies (table 3.4), the argument of employment benefits such as preserving jobs resulted from the protection policy seem to be insignificant if it were compared to its actual economic costs

[12] Discussion on welfare loss can be found in textbooks such as *Microeconomics with Calculus* (Binger and Hoffman, 1988).

[13]This assumption might not apply in different case. If importers have some market power, some or all quota rents would be captured by importers (Goto, 1988, p.19).

of protection.[14]

FIGURE 3.1.

EFFECTS OF RESTRICTIONS

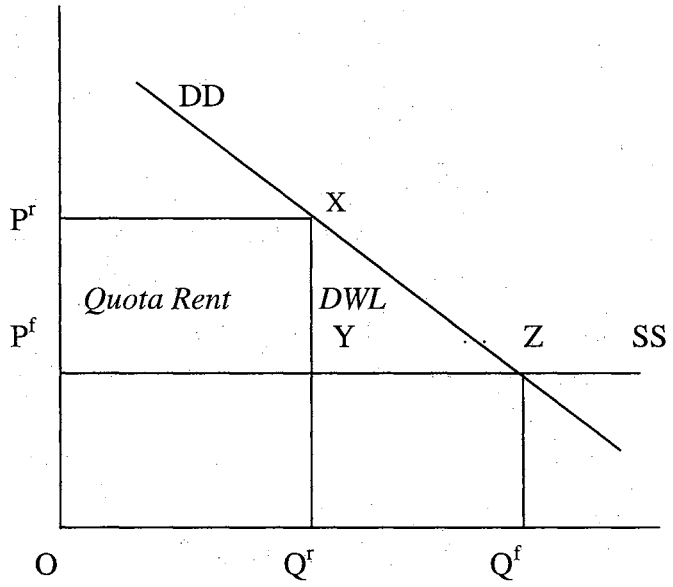


Table 3.4 shows the MFA effects on both consumer costs and job saved as investigated by Cline, Hufbauer et al., Tarr and Morkre, Jenkins, and Spinager. Based on the 1986 wholesale values, Cline estimates that total consumer costs due to protection amount to a total of $20.3 billion a year, which indicates the loss of $2.8 billion in textiles and of $17.6 billion in apparel. Estimating the cost using the wholesale values may understate the

[14] Cline (1990) argues that the net welfare loss due to protection should be calculated from the gross consumer losses against any surpluses or revenues captured by producers, retailers or government and any production inefficiency resulted from resource misallocation. From his calculation, after subtracting from producer surplus and government revenue, Cline comes to a number of the net welfare loss that amounts to $7.3 billion in apparel and $811 million in textiles, which smaller than consumer cost of $20,3 billion (p. 15 and 190).

protection effects because consumers actually pay their textile and apparel purchase at retail prices which are generally twice as much as wholesale prices. If the retail value were used for the study, the consumer cost would increase to $40 billion a year.

Estimation from Hufbauer et al., also use wholesale prices, comes at a total consumer cost of $27 billion a year, which is slightly higher than that of Cline. Although both use a model with imperfect substitution, the higher number in Hufbauer et al. came from a higher coefficient of domestic price response to the change in import price.[15] The increase in import prices from the world price is lower in Hufbauer et al. than in Cline. The application of tariffs and quotas has increased import prices above their world price level.[16] Cline estimates that quotas as of 1986 increased import prices in textiles by 28 percent and in apparel by 53 percent, which were substantial compared to only 5 percent or less for other industries' average tariffs (Finger and Harrison, 1996). Estimation of others gives similar effects of protection although the amount of consumer cost are smaller than those of Cline and Hufbauer et el. since they have small coverage in product or market size.

[15] The price response coefficients in Hufbauer et al. are 0.8 for both sectors, while in Cline they are 0.14 for textiles and 0.55 for apparel (Cline, 1990, p. 198).

[16] The percentage of change in this import price is also called a tariff-equivalent of trade protection (Cline, 1990, p. 197).

TABLE 3.4.

EFFECTS OF PROTECTION
ON TEXTILE AND APPAREL IMPORTS
IN DEVELOPED COUNTRIES

| Items | Cline | Hufbauer et al. | Tarr and Morkre | Jenkins | Spinager |
|---|---|---|---|---|---|
| Year | 1986 | 1984 | 1983 | 1979 | MFA II |
| Country | The U.S. | The U.S. | The U.S. | Canada | Germany |
| Import Coverage | Textile/ apparel | Textile/ apparel | Textile/apparel (Hong Kong) | Apparel | Textile and apparel |
| Method of Protection | Tariff and quota | Tariff and quota | Quota | Tariff and quota | Quota |
| Consumer Cost | $20.3 billion | $27 billion | $384 to $508 million | $400 million | DM600 to DM700 million |
| Import Price Increase | 28[a]<br>53[b] | 21[a]<br>39[b] | n.a.<br>23[b] | n.a.<br>n.a. | n.a.<br>n.a. |
| Job Created | 53,000[c]<br>381,200[d] | 180,000[c]<br>460,000[d] | 9,000 | n.a. | n.a. |
| Cost per Job Saved | $52,204[c]<br>$46,052[d] | $50,000[c]<br>$39,000[d] | $42,000 to $57,000 | n.a. | n.a. |

n.a. not available;
[a] For textiles in percentage; [b] For apparel in percentage; [c] For textiles; [d] For apparel
Source: Cline (1990), p.198; Goto (1988), p. 22.

Cline estimates employment effects of protection and reports that 20,700 and 214,200 jobs are created in textiles and apparel, respectively. These jobs are direct effects of restrictions. If the effects are to include indirect jobs in the industries that supply intermediate input to the sectors, which provide an additional 1.58 indirect jobs, the total direct and indirect jobs created would be 53,000 in textiles and 381,2000 in apparel. Hufbauer et al.

estimates that cost per direct job is far larger because of higher price response. According to Cline, cost per direct job amounted to $ 134,686 in textiles and $81,973 in apparel. The cost per total jobs, that are both direct and indirect jobs as shown in the table, is lower than the cost per direct jobs. In contrast, average annual wages in textiles and apparel was $12,000 which means, on an annual basis, consumers have to subsidize 18 times the amount of this wage level to preserve direct jobs in textile and apparel industries. Until the trade arrangements on textile and apparel were eliminated, this consumer cost would continue to hold as an annual burden on consumers. This cost is hidden in the form of increased domestic and import prices, which has decreased the purchasing power of consumers.[17]

Profit and Income Distribution

Import cuts by the MFA protection have allowed domestic producers to seize more profits through selling more products at higher prices. For example, domestic producers of textiles and apparel in Canada gained an additional profit of $240 million in 1979. As shown in table 3.4., this profit is more than half the cost to Canadian consumers (Jenkins, 1980, as cited in Goto, 1988, p. 22). In the United States, between 1960 and 1985, the share of capital in value added increased in both textile and apparel sectors. It rose from 18 to 20 percent in textiles and 17 to 27 percent in apparel, which may indicate that the apparel industry had

[17]According to U.S. Department of Commerce, Bureau of the Census, there were 85.4 million households in 1984. Therefore, the consumer cost of $20.3 billion would equal $238 per household. Disposable income in the U.S. was $2,801 billion in 1985. The cost would account for 0.72 percent of disposable income per household (Cline, 1990, p.193).

been more lucrative than that of textiles.[18] During those 25 years, capital owners and to lesser extent workers of the industries benefited from import protection (Finger and Harrison, 1996).

Cline compares the profit performance for textiles, apparel and U.S. manufacturing on average for three periods of trade restrictions. The 1960-73 period was known as STA/LTA, the period of 1974-79 was MFA I, and the period of 1980-82 was part of MFA II. The performance is defined by the profit-value-added ratio. Table 3.5 shows that the textile industry increases its ratio of profit-value added from the first period (14.8 percent) to second period (15.1 percent), but has only 8.7 percent in the third period. It was argued that the erosion in the third period was due to an increase in input costs and the incidence of recession. During the period, the similar ratio for the U.S. manufacturing average also declined. Interestingly, the incidence did not occur in the apparel industry. Comparing the ratio of performance of each sector to the U.S. manufacturing average as an indicator, the apparel industry has a better performance than that of textiles. In spite of high profit performance especially in apparel sector, Cline argues that this is a wrong signal for a better adjustment in resource allocation (Cline, 1990).

Proponents of textile and apparel import protection argue that the policy of protection is needed to preserve the jobs of low-income earners. Following this argument, the policy would support redistribution of income in a more equitable way because more jobs would

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[18] Between 1960 and 1982, the average of investment-profit ratio for apparel was 31 percent. The ratio for textiles was 88.7 percent, a little bit higher than of U.S. manufacturing that was only 88.1 percent. The lower of the ratio in apparel industry compared to textile industry suggests that the apparel industry has provided a high profit return on capital investment. Instead of reinvested, the industry has given most of its profit to its capital owners (Cline, 1990, p.33).

be provided for low-income groups (Goto, 1988). Although import protection has been in place since the early 1960s and saved many jobs in the industries, significant downsizing of employment in textile and apparel seems unavoidable. In Western Europe, employment declined about 33 percent from 4.5 million in 1982 to less than 3 million in 1992. In the United States, employment in the textile industry was down by 30 percent between 1958 to 1986. During the same period, employment in the apparel industry decreased only 20 percent even tough apparel faced tighter competition than of textiles. The higher percentage of employment decline in textile may be due in part to technological advances applied in the industry. Employment in the United States reached its peak in 1973 with textile workers of almost 1 million and apparel workers of about 1.4 million. By 1992, employment in textiles was only 630,000 and in apparel was about 986,000 (Finger and Harrison, 1996; Dickerson, 1995).

TABLE 3.5

PROFIT PERFORMANCE
FOR TEXTILES AND APPAREL

| | Profit-Value Added Ratio (%) | | |
|---|---|---|---|
| | Textiles | Apparel | U.S. Manufacturing |
| 1960-73 | 14.8 (0.77) | 9.0 (0.47) | 19.3 |
| 1974-79 | 15.1 (0.75) | 11.2 (0.56) | 20.0 |
| 1980-82 | 8.7 (0.57) | 11.8 (077) | 15.3 |

Note: Numbers in parentheses are the performance ratio of each sector to the U.S. manufacturing average
Source: Cline, 1990, pp.28 and 32.

Cline estimates that import protection for textiles and apparel have even worsened income distribution instead of improving it, as shown in Table 3.6. The table shows the distribution of the costs and benefits of trade protection for each quintile of income groups.[19] Income and both total and apparel expenditures are allocated for each quintile of five income groups. Then, the costs and benefits of protection are distributed in proportion to those groups. From the total cost of $20.3 billion, as consumer cost mentioned before, the cost burden is distributed proportionately according to their shares in expenditure. Cline uses the share of apparel expenditure for each group and assumes that a similar pattern of cost distribution shall also occur for the textile expenditures. Using the proportion of their income shares, government revenue from tariffs is transferred to each income group.

After calculating all costs and the benefits described above and deducting with the benefits of unemployment avoidance[20] and transfer to producers,[21] all income groups except the top 20 percent have negative net effects of protection meaning that the costs of protection exceed its benefits for those groups. Cline concludes that protection has a regressive impact on income distribution. The income of the lowest 20 percent of income owners has been reduced by 3.6 percent. The second, the third and the fourth quintiles have also experienced

---

[19] Income groups in the United States are divided into five classes of successive 20 percent ("quintile") from the total of 74.8 million household consuming units, as measured by the Bureau of Labor Statistics in 1984. The table shows that the top 40 percent of income groups has income above the U.S. average income (Cline, 1990, p. 201).

[20] Based on 1985 data that average annual wage of apparel workers was $10,581 and of textile workers was $14,038 and of manufacturing workers was $20,070, Cline estimates that this benefit would fall into the second and third quintiles (Cline, 1990, p. 203).

[21] Cline argues that since the top 1 percent of persons owned 46 percent of corporate stocks, it is reasonable to assume that all producer benefits will be transferred to the top quintile (U.S. Department of Commerce, 1985, p. 463 as cited in Cline, 1990, p.204).

a declining income by about 1 percent. The only gainers are the top 20 percent richest group, which is about $2.8 billion annually or increased by 0.32 percent from their previous income level. Trade protection has provided an advantage for few groups of people but has disadvantaged many other groups.

TABLE 3.6.

INCOME DISTRIBUTIONAL EFFECTS OF PROTECTION

| Income Group (quintile) | Lowest 20 percent | 21 to 40 percent | 41 to 60 percent | 61 to 80 percent | Top 20 percent | Total |
|---|---|---|---|---|---|---|
| Income range (dollars) | 0 to 7,582 | 7,583 to 14,232 | 14,233 to 24,179 | 24,180 to 35,623 | Above 35,623 | |
| Average income (dollars) | 3,577 | 10,828 | 19,297 | 30,370 | 58,639 | 24,578 |
| *(%) share in:* | | | | | | |
| Income | 2.9 | 8.8 | 15.7 | 24.7 | 47.8 | 100 |
| Expenditure | 10.3 | 12.5 | 17.2 | 23.1 | 37.0 | 100 |
| Apparel Expenditure | 10.1 | 11.1 | 16.3 | 21.0 | 41.4 | 100 |
| *Protection effect (million dollars):* | | | | | | |
| Consumer cost | -2,057 | -2,260 | -3,319 | -4,276 | -8,431 | -20,344 |
| Unemployment avoidance | 0 | 110 | 157 | 0 | 0 | 267 |
| Transfer to producers | 0 | 0 | 0 | 0 | 9,519 | 9,519 |
| Govt. transfer | 105 | 319 | 568 | 895 | 1,732 | 3,621 |
| Net Effects | -1,951 | -1,831 | -2,590 | -3,374 | 2,835 | -6,907 |

Source: Cline, 1990, p.202.

## Impacts on Exporting Developing Countries

Many developing countries have increased their economic welfare through the benefits of textile and apparel production and trade. Gaining in global textile and apparel markets, particularly in import markets of developed countries, developing countries tend to believe that trade advantages from these markets would further encourage their economic development. Although the size of markets in developed countries has a tendency to decrease,[22] these markets are still large to capture by textile and apparel exports from developing countries. The United States is the largest single market in the world for final consumption of textile products, which has been the main target market of developing countries' exports. Between 1980 and 1992, of the world total, the U.S. textile and apparel consumption even increased from 16 percent to 18 percent, respectively. China is the second largest single market, even though it is considered as a developing country. Of the world total, China increased its consumption of textile products from 13.2 percent to 16.3 percent, respectively, during the 1980-92 period. As the largest country with more than 1.2 million of population, China's market is expected to grow further in the future. Japan ranked third in the world as a final consumer of textile products which accounted for 6.5 percent of the world total in 1980 and increased to 7.3 percent in 1992. Interestingly, even though the size of the market of the individual Western European states was relatively small, as a group they accounted for 19.7 percent of the world total consumption in 1992 which was relatively unchanged from their 1980 level (Singleton, 1997). To stay competitive in these large

[22] Final consumption of textile products by developed countries was 63 percent of the world total in 1980. In 1986 and 1992, it decreased to approximately 61 percent and 59 percent, respectively (Coker, 1993, as cited in Singelton, 1997, p.55).

markets, some developing countries have made adjustments in their textile and apparel production by introducing advanced technology. However, it seems obvious that most exporters from developing countries still continue to depend on low wage labor for their competitive advantages in textile and apparel trade.[23]

In spite of trade restrictions, the shares of developing countries in textile and apparel world trade continue to increase. The opposite is true for developed countries. Although developed countries still dominate textiles in global production and trade, their textile export shares of world trade decreased from 62.6 percent in 1990 to 58.9 percent in 1992, as shown in Table 3.7. In contrast, textile export shares of developing countries increased from 36.1 percent to 40 percent during the same period. In apparel production and trade, developing countries as a whole have become a new leader with their export shares growing from 55.2 percent in 1990 to 57.6 percent in 1992. The apparel export shares of developed countries decreased from 40 percent to 39.4 percent during the period. Textile production and trade in the former Soviet bloc, now known as economies in transition, were hurt mainly because of political and economic disorder during the early 1990s. The growing tendency in export shares, and also in import shares, of developing countries indicates an enlarging market demand both in developed and developing countries. For example, world consumption of textile products increased at 1.61 percent between 1986 and 1992. For the U.S., European Union and Japan, the rates were 1.95 percent, 3.10 percent and 4.61 percent, respectively. Developing countries also increased their textile and apparel consumption. East and

[23] It was argued that the argument of low cost labor seems to be less significant to follow. In the near future, competitiveness of a country will depend more on productivity, quality, procurement, design, product innovation, customer service and marketing (Peter Drucker, *Boardroom Report,* 1 February 1989, as cited in Dickerson, 1995, p. 563).

Southeast Asian nations had 7.05 percent growth rate in textile consumption, which was the highest, and followed by South Asian countries with 3.97 percent during the 1986-92 period (Coker, 1993, as cited in Singleton, 1997, p. 55). It is expected that without import controls, market demand for textiles and apparel may have been larger.

TABLE 3.7

TEXTILE AND APPAREL SHARES
OF WORLD TRADE

| | Textiles [a] | | Apparel [a] | |
|---|---|---|---|---|
| | 1990 | 1992 | 1990 | 1992 |
| *Exports* | | | | |
| Developed Countries [b] | 62.6 | 58.9 | 40.0 | 39.4 |
| Developing Countries | 36.1 | 40.0 | 55.2 | 57.6 |
| Economies in transition | n.a. | n.a. | n.a. | n.a. |
| *Imports* | | | | |
| Developed Countries [b] | 62.8 | 58.0 | 87.4 | 87.1 |
| Developing Countries | 32.5 | 38.3 | 9.0 | 10.7 |
| Economies in transition | 4.0 | 3.4 | 3.3 | 2.2 |

[a] Figures may not add up to 100 due to rounding
[b] Includes intra-trade within Western European countries
n.a. not available
Source: Dickerson, 1995, p.558.

Studies of the impacts of trade restriction on textile exporters from developing countries were rare relative to similar studies conducted for importing developed countries. The discriminatory and everlasting characters of trade restrictions have not only affected the short run performance of textile and apparel exporters but have influenced the long run trend

of economic development of those exporting countries. Since the restrictions target mostly to developing countries, the impact analysis would deal with textile and apparel exporters from developing countries. This section deals with the impacts of textile trade restrictions on exporting developing countries especially in the areas of the exporters' forgone revenue, trade pattern, upgrading and dynamic impacts of the restrictions. The first three could be seen as immediate impacts of the restrictions on exporters, while the fourth is the impacts on the economic development of developing countries with the long run trend.

Foregone Export Revenue and Accrued Rent

The analysis of foregone export revenue and accrued rent is similar to that of consumer cost that occurs in an importing country. As we recall Figure 3.1, the decrease in the value of export revenue of developing countries can be calculated from the difference between the value of the export shipment before and after the trade restrictions are imposed. Before trade restrictions, that is a free trade situation, as shown in the figure, the value of export shipment is the area of $P^fOQ^fZ$. The value of shipments after the quota is indicated by area $P^rOQ^rX$. The lost value of export shipment due to quota restrictions is area $YQ^rQ^fZ$. The accrued or transferred rent is indicated by area $P^rP^fYX$, due to the price increase as an effect of quantity restriction. Since area XYZ is a deadweight loss, which cannot be captured either by exporters or importers, the foregone export revenue is the difference between area $YQ^rQ^fZ$ and area $P^rP^fYX$. In a case of unitary price elasticity of import demand, the percentage change in quantity of demand is equal to the percentage change in price,[24] which

[24] Discussion on the elasticity of demand, see Binger and Hoffman, 1988, p.146-9.

means that the values for area $YQ^rQ^fZ$ and area $P^rP^fYX$ will be equal. In most studies, textile and apparel imports are demand elastic. For example, Cline (1990) assumes that the price elasticities of - 1.3 for textile imports and - 2.5 for apparel imports, respectively, which are relatively consistent with other estimates such as by Hufbauer et.al. (p.63). In this case, when imports are demand elastic, the lost value of export shipment will be greater than that of quota rent. Therefore, it is expected that the amount of forgone export revenue will be larger as import demand is more elastic (Hufbauer and Elliot, 1994; Goto, 1988).

However, some studies argue that since quota arrangements in textiles and apparel are administered by developing countries, all quota rents would be captured by exporters. This may be some developing countries would not seek the termination of the MFA restrictions. With the restrictions in place, the exporters would seize quota rents, which could outweigh their losses in export revenues (Kessing and Wolf, 1980). Some others argue that exporters of developing countries secure only parts of quota rents to compensate for their lost earnings, while the rest would go to importers. Some others even reject the argument that the MFA restrictions provide advantages to developing countries since they have no choice unless they would like to face closed markets in developed countries instead of restricted markets (Trela and Whalley, 1990; GATT, 1984).

Assuming that all the quota rents transferred to exporters of developing countries, Tarr and Morkre (1984) estimates that the U.S. import restrictions on textiles and apparel have rendered quota rents of $218.3 million to Hong Kong's exporters. A similar study by Hamilton (1986), as cited in Goto (1988), reported that Hong Kong exporters gained quota rents of $100 to $200 million per year from their exports to the Western European countries in 1981-83 and $130 to $400 million to the United States in 1982-84. Hufbauer and Elliot

(1994) estimate that the U.S. trade restrictions on textile and apparel imports have provided foreign producers to capture all quota rents $2.3 billion in 1984. In 1990, the amount of quota rents captured by exporters increased more than double to $6.1 billion, that was $713 million in textiles and $5.4 billion in apparel.

Several studies have estimated the forgone export revenues experienced by developing countries due to the MFA restrictions. For example, UNCTAD (1986) reported that developing countries has forfeited their export revenues by $15 billion, which was about the same actual value of their textile and apparel exports because of trade restrictions. From this total value of forgone exports, about 60 percent were constituted to quota restrictions imposed by developed countries. Another study by Whalley (1988) estimates that the lost export revenues for developing countries is $11 billion. Interestingly, according to Balassa and Michalopoulus (1985), the values of forgone export revenues are larger than that of accrued rents which are about nine times in the case of the United States and seven times in the Western European countries. Even if the total of accrued rents go to exporters of developing countries, they would still be disadvantaged if the MFA restrictions were in place. Goto (1988) argue that it is questioned that developing countries could have a monopoly power, which are mostly consisted of small exporters, against big buyers of importers such as Sears, Walmart, Nike or Roebuck from developed countries. Following the above arguments of those studies, it is likely that developing countries would receive a smaller portion of quota rents if there were rent sharing between exporters and importers.

The Change Patterns on Trade and Investment

The discriminatory characteristic of the MFA has caused trade diversion from constrained suppliers to less and unconstrained exporters of developing countries (Goto, 1988). The first group of suppliers is known as more established developing countries such as Japan in the 1950-60s and Hong Kong, Korea and Taiwan in the 1970-80s. The second group is the newcomer of exporters, which were mostly from countries in South and Southeast Asia and later from Mediterranean and Latin American countries (Erzan et. al., 1990). Some countries that are less established developing countries[25] have seen that the trade restrictions as providing a "guaranteed market share" (Cable, 1987). Along with the less established exporters of developing countries and the domestic producers of importing countries, exporters of developed countries also become beneficiaries of trade diversion since their exports are not the target of restrictions in importing developed countries (Keesing and Wolf, 1980; Hamilton, 1988).

Soon after export shipments are restricted, domestic producers and other exporters whose shipments are not bound by quotas would fill the gap caused by the restrictions. Although new suppliers of developing countries generally start with no or less restricted textile products, shortly as they become more successful they will find that their export products would be restricted. This is why some authors argue that the MFA not only discriminates against the principal exporters of developing countries but also against other

[25] Some authors argue that large quota allotments for more advanced developing countries such Hong Kong, Korea and Taiwan could also be seen as a market security for their exported products since the assigned quotas are only for them (Dickerson, 1995, p.432).

foreign suppliers who can make the best use of the current market conditions in importing countries. With this market situation, the newcomers who might be the beneficiaries of trade diversion, because of the restrictions on the principal exporters, will later face similar problems that are now encountered by the principal exporters. So, "the more successful they are, the faster and the tighter they are embraced by the MFA" (Erzan et al., 1990).

With this discriminatory nature of trade restrictions, Wolf (1987) finds that from 1981 to 1985 the growth rate of the U.S. imports of textiles and apparel from the principal exporters (Hong Kong, Korea and Taiwan) increased at a rate of less than 10 percent annually. In contrast, during the same period, the growth rate of the U.S. imports from other developing countries grew at 22 percent, while those from European countries grew at an even faster rate of 33 percent annually. Quoted data on MFA from the World Bank, Erzan et al. (1990) provides that between 1981 and 1987 the growth rates of textile imports from developing countries under binding quotas in European countries and the United States were only 5.4 percent and 2.4 percent annually, respectively. Those from developing countries under non-binding quotas grew at 6.7 percent and 13.6 percent annually, respectively.[26]

The investment pattern is also changed due to trade restrictions on textile and apparel (Kumar and Mcleod, 1981). Textile and apparel exporters who see their exports restricted have found ways to adjust their production by investing in less restricted countries or directly investing in the main importing countries to follow examples set by the electronics or automobile industries. The Japanese textile industry has invested significant capital in Hong

[26] Binding quotas are for developing countries who have quota utilization rates of 90 or more percent of their assigned quotas. Non-binding quotas are for those who have no quota restrictions on their exported products or who have used less than 90 percent of their quota allotments (Erzan et al., 1990, p. 76).

Kong, Korea and Taiwan when their exports were being restricted in the 1960s and this effort continued through Southeast Asian countries and elsewhere since the 1970s. Following Japan's examples, the Asian Big Three have also invested in their nearby countries or even in the Caribbean countries that could provide them with more quotas, through those countries' quota allotments, and lower labor costs, compared to their own countries' wage standards. To avoid quota restrictions, some of those exporters have also invested in importing countries to have a direct access to their domestic markets. For example, many Hong Kong and Korean companies have built textile mills in Spain, Portugal and the U.S. Virgin Islands for exports to other OECD markets (Cable, 1990; Goto, 1988).

The Upgrading of Export Shipment

Many studies show that the MFA has an impact on production diversion or upgrading of exported products (Cline, 1990; Goto, 1988; Wolf, 1987). Although changes in unit values can represent the price mark-up through the quota rents, product upgrading or quality improvement of exported products could also increase per unit value of export shipments. In his study, Cline (1990) uses the wholesale price indices to eliminate the higher price effects resulting from the practices of price mark-up that might be included in textile retail prices. Since the MFA controls the physical volume of imports rather than their values, Cline found that many exporters of developing countries tend to increase the values of their shipments within each product category of the assigned quotas. For example, between 1961-72 before the MFA was imposed, the real value of imports was increased relatively more slowly than their physical volume. In contrast, between 1972-77 shortly after the MFA was

imposed there was a change in the opposite direction between the values of imports and those of their physical volume. Using data from the World Bank, Erzan et al. (1990) also provides a similar pattern in this product upgrading. For example, between 1981 and 1987, textile imports from developing countries under binding quotas in European countries, the United States and Canada grew at an annual impressive rate of 1.9 percent, 9.1 percent and 11.6 percent, respectively. Those imports from developing countries under non-binding quotas only increased at 0.8 percent, 3.4 percent and 2.7 percent, respectively. These figures mean that those developing countries under binding quotas, which were mostly by established exporting countries that become the principal target of the MFA restrictions, had adjusted their shipments by upgrading the values of their exports. Another study also finds that between 1981 and 1984 countries such as Hong Kong, Korea and Taiwan increased their unit value of export shipments as they found their exports become more restricted in the United States (Wolf, 1987).

However, it is worth noting that the argument of product upgrading might be questionable. Tarr and Morkre (1984) argue that the upgrading in quality products might not be necessarily caused by trade restrictions since successful exporters will always be aware of their changing market needs through the increase of quality products by using more advanced technology and skilled labors. An improvement in quality products or in product diversification as well as in market segmentation might be the results of changing strategies of developing countries' exporters to cope with the changing in demand as well as the tighter trade restrictions in importing countries.

Dynamic Impact on Economic Development

The MFA with its main character of quota restrictions has changed the behavior of exporters, especially those from developing countries. Many developing countries particularly those who face tighter trade restrictions, have to adapt to the restriction in many ways. For example, they may maximize their quota utilization, upgrade to a higher unit value of shipments within the quota allotments, widen their product and market diversification, or capture the quota rents to the maximum possibility (Cable, 1990; Yoffie, 1983). Some exporters of developing countries have been successful in adopting such strategies, while others have failed. For example, countries such as Hong Kong, Korea, Taiwan, Indonesia, Thailand and India have maximized their quota utilization, while countries such as Uruguay, Malaysia and Argentina only utilized their quota allotments only 50 percent or less (Erzan et al., 1990).

With the permanent and long-lasting characteristics of the MFA, it is argued that such global arrangements in textile and apparel tend to maintain the present configuration of textile and apparel trade patterns between developed and developing countries. Therefore, it discourages the trade patterns that might occur naturally if those countries have trade relations based on comparative advantages (Goto, 1988). In the absence of trade restrictions, resources for textile and apparel industries in developing countries as well as developed countries might follow the best opportunity cost they find in international markets (Keesing and Wolf, 1980). As example from Japan, and later from Hong Kong, Korea and Taiwan, which follow the industrialization path of early developed countries, other developing countries especially the new entrants have found themselves discouraged as they would face

similar restrictions if they become successful textile exporters to importing developed countries. As discussed in the previous section, a good performance in textile and apparel exports is not always guaranteed in the long run.

## Summary

Growing textile imports from developing countries has been viewed as disruptive to the domestic markets of developed countries. It increases unemployment and pushes many textile mills out of the markets in developed countries. Although some textile producers could find a better industrial adjustment, many textile manufacturers and labor unions in developed countries fell the need of trade protection to compete with foreign suppliers.

Trade restrictions have affected the economic structures both in developed and developing countries. Although the imposition of the restrictions has increased profits of domestic producers and saved some domestic jobs within and in related industries in developed countries, some studies have described the huge costs to domestic consumers and worsened income distribution among income groups of those developed countries. For developing countries, studies show that export earnings have declined along with the decline in quantity exports due to quota restrictions even though some have argued that quota rents are captures by exporters. Protective trade policies have also changed the patterns of trade against the principal exporters from developing countries and induced the quality upgrading of textile products. In the long run, trade restrictions are not only preserving the misallocation of resources but also prevent the dynamic shifts of global textile industry, especially between capital intensive and labor intensive industries among countries.

# CHAPTER IV

# STRUCTURAL CHANGE IN TEXTILE IMPORT DEMAND

## Introduction

This chapter describes econometric model that examines whether structural changes occur in import demand for textile and apparel products from developing countries, as they are affected by textile trade arrangements particularly the Multifiber Arrangement (MFA). As described in the previous chapters, based on the assumption of market disruption ascribed by the institutionally global trade arrangements (MFA), developed countries have imposed trade restrictions on textile imports from developing countries.

The study seeks to determine the impacts of changes in trade restrictions using the restricted, source-differentiated, almost ideal demand system (RSAIDS) to test for evidence of structural change. Using the dynamic version of the RSAIDS, the model is estimated using an iterative seemingly unrelated regression estimation procedure while imposing homogeneity and symmetry conditions. The model uses a system of equations, therefore it will provide information on structural change based on the system model. Misspecification tests are conducted to check for the statistical assumptions underlying the system of equations. Within these tests, individual and joint tests on parameter stability are also

checked to provide information on possible structural change of the model. If structural change is detected in the model, bias of structural change will be estimated by measuring its effects on consumption patterns. The last part of this chapter contains the coefficients and elasticities of the import demand model.

## Conceptual Framework

There are many econometric models that have been used in the literature for estimating import demand functions. Armington (1969) has introduced a theory of demand for assessing products by place of production or in the context of imports by country of origin. The model uses a two-stage budgeting procedure to differentiate products by their production sites. The Armington model has been well known in import demand theory because of its perceived simplicity on the estimation of substitutability relationships and because of its ability to differentiate goods by sources (Abbott and Paarlberg, 1986; Babula, 1987; Penson and Babula, 1988). This model is also based on the assumptions of homotheticity, weak separability and imperfect substitutability of export sources (Armington, 1969). However, the model has been criticized because its quantity aggregator at the second stage is misrepresented, which creates a type of approximation bias. It is also argued that many applications of the model seem to be inconsistent with the model's theoretical foundations (Davis and Kruse, 1993). To solve this problem, Davis and Kruse propose the use of the primal problem at the second stage instead of dual problem used in the "traditional" Armington model.

Alternative models to import demand studies include the Rotterdam, the almost ideal

demand system (AIDS), linear-expenditure system, translogarithmic system and hybrid models. These models are less restrictive than the Armington model. The Rotterdam and AIDS models have widely applied and discussed (i.e., Alston and Chalfant, 1993; Sparks, 1992; Green and Alston, 1990). The Rotterdam model uses a double logarithmic system of infinitesimal changes (Chung, 1994). Some studies use the differential approach within Rotterdam models to estimate import demand. These variations of the Rotterdam models allow a specific interaction between different types of consumer's expenditure but rest on almost additive preference. It is also argued that when some of the parameters are restricted, the classical properties such as Engel, and Cournot aggregation, symmetry and homogeneity conditions could still hold for the model (Seale, Sparks, and Buxton, 1992). However, Chung (1994) argues that the Rotterdam model collapses to the demand function of linear logarithmic utility function if the utility is additive.

Similar to the Rotterdam model, the AIDS is an arbitrary first order linear approximation to a demand system. AIDS is also similar to translogarithmic model because it is based on translog function and method (Chung, 1994). As proposed by Deaton and Muellbauer (1980), the AIDS model is more flexible than the Rotterdam model. Winters (1984) and also (Yang and Koo, 1993) argue to use the AIDS for import demand analysis instead of the Armington model because it is theoretically plausible and easy to apply. The AIDS model assumes either product aggregation or block separability. Product aggregation (or perfect substitutability) is the assumption that the demand system does not differentiate products by sources (Hayes, Wahl, and Williams, 1990; Yang and Koo, 1993). Block separability among goods is the assumption that permits the estimation of share equations for goods from different sources (Alston et al., 1990). The assumption of block separability

is relatively common for a study of import demand. For example, Seale, Sparks, and Buxton (1992) used this assumption for estimating apple demand with the Rotterdam model. Yang and Koo (1994) argue that source differentiation should not require block separability or vice versa.

## Models to Estimate Structural Change

This study estimates structural change in textile import demand from developing countries, using the RSAIDS model. One of the advantages of this model is that it can differentiate products by sources without imposing block separability because product aggregation or block separability is assumed in the model (Yang and Koo, 1994). The RSAIDS model is a model with restrictions on the source differentiated AIDS (or SAIDS) as special cases of the standard AIDS model suggested by Deaton and Muellbauer (1980). As in SAIDS, the RSAIDS model allows different responses on import demand of an importing country to different goods and their origins. In the case of many goods, each of which is imported from many countries, the estimated number of parameters in the SAIDS model may exceed the observation number in each import demand equation. Therefore, the model may suffer from a degrees-of-freedom problem. Yang and Koo (1994) in their study of meat import demand for Japanese market, and Andayani and Tilley (1996) in the study of fruit and beef import demand for the Indonesian market use restrictions in each of other good $j$, called block substitutability, to reduce the number of estimated parameters. They argue that there will be the same cross-price effects of good $j$ from all sources on the demand for good $i$ from country $h$. With this argument, the cross-price effects of good $i$ will be differentiated

according to their sources.

The Dynamic RSAIDS Model

A generalized import demand model using the AIDS in share equation can be written formally as:

$$(1) \quad w_{it} = f(p_{it}, p_{jt}, X_t),$$

where $w_i$, the $i$th good share, is a function of the price vector of good $i$ ( $p_i$), and of price vector of good $j$ ($p_j$), and total expenditure ($X$) on good $i$ and good $j$. Subscript $t$ denotes variable observations for period $t$. Rewriting equation (1) into the AIDS model, the new model in share form will be:

$$(2) \quad w_{it} = \alpha_i + \sum_j \gamma_{ij} \ln(p_{jt}) + \beta_i \ln(X_t),$$

where $w$ denotes shares, $p$ denotes prices, ($i$,$j$) are goods, and $\alpha$,$\beta$, and $\gamma$ are parameters to be estimated. $X = (E/P^*)$, where $E$ is total expenditures and $P^*$ is a translog price index which is nonlinear. Deaton and Muellbauer used Stone's index for $P^*$ for a linear approximation, that is ln(P), defined as:

$$(3) \quad \ln(P_t) = \sum_i \sum_h w_{i_h t} \ln(p_{i_h t}).$$

Since the expenditure share in equation (2) is the dependent variable, Stone's index in

equation (3) can cause an endogeneity problem. To correct the problem, it is argued to use the lagged share (Eales and Unnevehr, 1988) or the average share (Haden, 1990). Moschini (1995) argues that the Tornqvist index or the "corrected" Stone index, which is the log linear analogue to the Paasche index, can be used as an alternative. Since the Tornqvist index will retain some features of the Stone index and it is invariant to changes in units of measurement of prices, this index as shown in equation (4) will be used for the estimation:

$$(4) \quad \log\left(P_t^T\right) = 0.5\sum_i \sum_h \left(w_{i_h t} + w_{i_h}^o\right)\log\left(p_{i_h t} / p_{i_h}^o\right),$$

where zero superscripts are values in the base period and subscript $t$ indicates values in period $t$. However, in this study, mean values will be used instead the values of base period. In equation (2), a framework of consumer cost or expenditure function is derived, as shown by Deaton and Muellbauer (1980). They use of a budget share form for their AIDS model as a result from the derivation of a specific cost function called the Price Independent Generalized Logarithmic (PIGLOG) function (Moschini, Moro, and Green, 1994). Similar to the AIDS system, the source differentiated AIDS is also derived from an expenditure function as shown by Yang and Koo (1994) and is expressed in an expenditure share form as in equation (5):

$$(5) \quad w_{i_h t} = \alpha_{i_h} + \sum_j \sum_k \gamma_{i_h j_k} \ln(p_{j_k t}) + \beta_{i_h} \ln(X_t),$$

where $w_{i_h}$ is the import share of good $i$ from country $h$. The SAIDS model as in equation (5) allows different responses to different goods and their countries of origins. In the AIDS

model as shown in equation (2), the share of good $i$ can only be estimated in aggregation from all import sources or in other word products are not differentiated from their sources of origins. However, as mentioned earlier, the SAIDS may suffer from a degrees of freedom problem as the number of parameters in independent variables increases. For example, if there are four goods from four countries in an import demand analysis, parameters to be estimated will be 18 in the SAIDS model (there are variables of 16 different prices, one intercept and one expenditure). To reduce the number of parameters estimated, Yang and Koo (1994) following Hayes, Wahl, and Williams (1990) introduce the assumption in equation (6), which is called block substitutability:

$$(6) \quad \gamma_{i_h j_k} = \gamma_{i_h j}, \quad \forall k \in j \neq i,$$

which means that cross-price effects of good $j$ from source $k$ on import demand for good $i$ from source $h$ will be the same for all products in good $j$. Using this block substitutability assumption, equation (5) can be rewritten into equation (7):

$$(7) \quad w_{i_h t} = \alpha_{i_h} + \sum_k \gamma_{i_{hk}} \ln(p_{i_k t}) + \sum_{j \neq i} \gamma_{i_h j} \ln(p_{jt}) + \beta_{i_h} \ln(X_t),$$

Equation (7) is a restricted version of the SAIDS model or the RSAIDS model, which has only nine parameters to be estimated (using the previous example of four products from four sources of origins). Those parameters are four price variables of good $i$ ($m$ = four sources), three price variables of good $j$ ($n$ = 4-1 sources), one intercept, and one expenditure variable. In this study, $(i, j)$ are textile yarn, cotton fabrics, manmade fabrics and clothing and $(h, k)$ are country sources (from developed countries, developing countries and rest of the world). $\alpha_{i_h}$, $\beta_{i_h}$, $\gamma_{i_{hk}}$ and $\gamma_{i_h j}$ are parameters to be estimated from the model. $\alpha_{i_h}$ is intercept. $\beta_{i_h}$ is

the coefficient of the expenditure. $\gamma_{i_h k}$ is the source own-price coefficient if it is imported from the same source and is the source cross-price coefficient if good $i$ is imported from different sources. $\gamma_{i_h j}$ is the cross-product-price coefficient between good $i$ and good $j$, where $i \neq j$ indicates that the number of sources are not necessarily the same for each good imported. For example, good $i$ may be imported from $m$ different sources while good $j$ may have $n$ country of origin. In order for equation (7) to be consistent with neoclassical demand theory, the following equality must be imposed:

Adding-up:

$$(8) \quad \sum_i \sum_h \alpha_{i_h} = 1; \sum_h \gamma_{hk} = 0; \sum_i \sum_h \gamma_{i_h j} = 0; \sum_i \sum_h \beta_{i_h} = 0;$$

Homogeneity:

$$(9) \quad \sum_k \gamma_{i_{hk}} + \sum_{j \neq i} \gamma_{i_h j} = 0;$$

Symmetry:

$$(10) \quad \gamma_{i_{hk}} = \gamma_{i_{kh}}.$$

The block substitutability assumption causes the symmetry conditions to not be applicable, because it is applied only within each good (Yang and Koo, 1994).

In many studies, the estimate using a static model such as in equation (7) may produce autocorrelation in the model, which comes from typical behavior of time series data (McGuirk, Driscoll, Alwang and Huang, 1995; Hendry and Mizon, 1978). To correct this problem, Eales and Unnevehr (1993 and 1988) and Moschini and Mielke (1989) proposed

the use of a first difference form for estimation. Following Alessie and Kapteyn (1991), McGuirk, Driscoll, Alwang and Huang (1995) argue that a static model may be misspecified in the case that the dynamics of adjustment in the model should actually be represented. They argue to use interrelated partial-adjustment, called enhanced dynamics, to solve problems encountered in a static import demand model. Following this argument, it is necessary to rewrite equation (7) into a dynamic model of the RSAIDS as shown in equation (11) below:

$$(11)\quad w_{i_h t} = \alpha_{i_h} + \theta_{i_h} w_{i_h t-1} + \sum_k \gamma_{i_h k} \ln(p_{i_k t}) + \sum_{j \neq i} \gamma_{i_h j} \ln(p_{jt}) + \beta_{i_h} \ln(X_t),$$

where subscript $t$ indicates observations at period $t$ of those variables. The subscript $t$-1 for the lagged independent variable of import share indicates lagged one period from the dependent variable of import share. The lag independent variable is incorporated into the model to allow interrelated partial-adjustment within the RSAIDS model. Equation (11) therefore can be seen as a dynamic approach for the RSAIDS model shown in equation (7). To incorporate structural change for the model of this study, some dummy variables are added to this model to capture the potential effects of MFA on textile import demand. This issue is address in the following section.

Structural Change Estimation

There are many different ways to model structural change in demand analysis. Many studies have used a time trend or some function of time as a regressor(s) to shift the intercept and/or slope coefficients by using dummy variables over the sample period. For example,

McGuirk, Driscoll, Alwang and Huang (1995) have used some index numbers to indicate the concern for cholesterol and the participation of women in labor force as the shifters to allow change in the intercept coefficients of their meat demand models to capture structural change. Using this fashion of modeling structural change, this study will employ some function of time as dummy variables where the MFA were observed to capture the possible structural change by allowing the intercepts to change. For this reason, dummy variables will be incorporated into the equation (11) to check for structural change. A new model can be re-paramaterized, as shown in equation (12) to predict the evidence of structural change in the model.

$$(12)\ w_{i_h t} = \alpha_{i_h} + \theta_{i_h} w_{i_h t-1} + \sum_k \gamma_{i_h k} \ln(p_{i_k}) + \sum_{j \neq i} \gamma_{i_h j} \ln(p_{jt}) + \beta_{i_h} \ln(X_t) + \delta_{i_h} MFA_t,$$

where the parameter *MFA* is zero for MFA I and II (as a base) and one for the MFA III and IV to capture potential structural change.

Before the structural change model is estimated by equation (12), it is necessary to check its assumption on source differentiation. Following Edgerton (1993), the price vector of good $i$ ($p_i$), the price vector of good $j$ ($p_j$), and expenditure ($X$) will be estimated by using Tornqvist index, consumer price index, and per capita private consumption, respectively. Edgerton's method will yield consistent estimates and allows budget shares to be linear in logarithm of group expenditure (Yang and Koo, 1994). Following Hayes, Wahl, and Williams, tests for separability and product aggregation are conducted to check for the assumptions on source differentiation of the model by imposing restrictions:

Block separability:

$$(13) \quad \gamma_{i_h j} = w_{i_h} \gamma_{ij}, \quad \forall j \neq i,$$

Product aggregation:

$$(14) \quad \alpha_{i_h} = \alpha_i, \quad \forall h \in i,$$

$$(15) \quad \gamma_{i_h j_k} = \gamma_{ij}, \quad \forall h,k \in i,j,$$

$$(16) \quad \beta_{i_h} = \beta_i, \quad \forall h \in i,$$

where $\gamma_{ij}$ is the cross price parameter between product groups of good $i$ and product groups of good $j$, estimated by assuming that sources are not differentiated. The Wald $\chi^2$-test will be conducted to test these restrictions. Using the Tornqvist index in the RSAIDS model may cause an endogeneity problem, therefore the null hypothesis of no correlation between group expenditures and error terms will be tested. Equation (12) is estimated with the iterative seemingly unrelated regression (SUR). At the estimation stage, equation (12) is estimated with the linear approximation using lagged shares (Eales and Unnevehr, 1988) or the first different form (Moschini and Meilke, 1989) to capture the dynamic behavior of the model. The full-system misspecification tests will be conducted for the model, which the parameter stability tests are also checked. When the coefficients for the dummy variables (*MFA*) are rejected in these tests, these results will be used to infer whether the imposition of the MFA had affected textile import demand during the period observed. During the estimation process, one single product equation of the equation system is omitted because of adding-up condition to avoid singularity problem. During the structural change estimation, homogeneity and symmetry restrictions on the model will be imposed to follow the previous description

on the neoclassical theory of demand.

Bias of Structural Change

If structural change is detected in the model, a bias of structural change will also be estimated to measure the effects of structural change on consumption patterns. As suggested by Moschini and Mielke (1989), these consumption effects, known as bias of structural change, are to check the changes in expenditure shares caused by structural change observed in the model. For measuring the bias of structural change, an equation to capture the difference between before and after structural change observed is formulated as:

$$(17) \qquad B_{i_h} = w^a_{i_h} - w^b_{i_h},$$

where $w^a_{i_h}$ is the share of good $i$ from source $h$ after structural change (or when the structural change is detected) and $w^b_{i_h}$ is the same share before the incident of structural change (or assuming no structural change). If there is no structural change the values of $w^a_{i_h}$ will be the sam as $w^b_{i_h}$. If structural change is found and the value of $B_{i_h}$ is less than zero, the effects of structural change are said to be biased against good $i$ from source $h$. When the value of $B_{i_h}$ is greater than zero, structural change has favorable effects on good $i$ from source $h$. To test the validity of this measure, the null hypothesis of estimating the bias that is simultaneously different from zero will be checked using the Wald-$\chi^2$ test.

Import Demand Elasticities

Elasticities of import demand have provided important information for many trade analysts. They contribute not only to a better understanding of market behavior in import markets but also provide information on import demand pattern or trend for those whose are interested in trade policy. As defined in objective 4, it is necessary to also estimate the Marshallian price and the expenditure elasticities. If structural change is detected, import demand elasticities with the structural change model will also be estimated. Following Moschini and Meilke (1989), import demand elasticities with structural change can be written as:

$$(18) \quad \varepsilon_{i_h j_h} = -1 + \left\{(\gamma_{i_{hh}} + \gamma^*_{i_{hh}}) / w^a_{i_h}\right\} - (\beta_{i_h} + \beta^*_{i_h}),$$

$$(19) \quad \varepsilon_{i_h i_k} = \left\{(\gamma_{i_{hk}} + \gamma^*_{i_{hk}}) / w^a_{i_h}\right\} - \left\{(\beta_{i_h} + \beta^*_{i_h}) / (w^a_{i_k} / w^a_{i_h})\right\},$$

$$(20) \quad \varepsilon_{i_h j} = \left\{(\gamma_{i_h j} + \gamma^*_{i_h j}) / w^a_{i_h}\right\} - \left\{(\beta_{i_h} + \beta^*_{i_h}) / (w^a_{i_k} / w^a_{i_h})\right\},$$

$$(21) \quad \eta_{i_h} = 1 + (\beta_{i_h} + \beta^*_{i_h}).$$

Equation (18) to (21) will be applied for all demand elasticities of the model. Equation (18) is used to estimate own-price elasticity of good $i$ from source $h$ or source own-price elasticity. Equation (19) is for the estimation of cross-price elasticity of good $i$ from other

sources. Equation (20) is applied toward the estimation of cross-product- price elasticity between good $i$ and $j$. The last equation, equation (21), is the formula for expenditure elasticity. If the null hypotheses for the coefficients of dummy variables (*MFA*) shown in equation (12) are rejected, and where therefore $w^b_{i_h}$ is substituted for (or equal to) $w^a_{i_h}$ or $w^b_{i_k}$ for $w^a_{i_k}$, all elasticities obtained from equation (18) to (21) are the elasticities of import demand for the case of no structural change.

## Data and Procedures

### Data Description

For this study, annual data from 1970 to 1994 are used. Table 4.1 and 4.2 show summary statistics for expenditure shares of textile import markets in the United Kingdom and the United States, respectively. In both countries, imports of textile products are categorized into four imported goods: textile yarn, cotton fabrics, manmade fabrics and clothing/others. Each good is arranged into three aggregate sources: developed countries, developing countries and rest of the world (ROW). Imports from developed countries are mostly from country sources of North America (for the UK market) and Western Europe (for the US market), while import data on developing countries are aggregate sources from countries mostly in Asia, South America and Africa. In this study, import data Japan and most of other OECD country members are grouped into aggregate data of developed countries. Data on so-called New Industrialized Countries such as South Korea, Hong Kong

or Brazil are grouped into developing country sources. It is also worth noting that Asian developing countries have been major contributors to the UK and the US import markets. For example, of total imports from developing countries and during the period observed, developing countries of Asia contributed 93% and 87% to the UK and the US textile import markets. The rest goes to imports from developing countries of South America. Contributions from African developing countries to these two import markets can almost be ignored. The ROW denotes to countries in Eastern Europe and USSR (Russia) or which are now known as economies in transition. This country group aggregation is based on the United Nations Publication: *Commodity Trade Statistics,* various years, where data on quantity (in metric ton) and value (in US dollar) of imported goods are available for this study. Using these quantity and value data, unit values are used as a proxy for import prices for the model. Data on consumer price index (CPI) and per capita gross national products (GNP/capita) are from *National Accounts* of OECD Publications.

The two countries imported textiles more from other developed country sources except for cotton fabrics for the United States. The U.K. and the U.S. imported clothing or apparel more from developing country sources than from their developed country counterparts, as shown in table 4.1 and 4.2. Clothing imports also accounted for the largest share among textile expenditures for both markets. For the U.K., on the average, 20% of clothing imports was from other developed countries and 21% was from developing countries. For the U.S., the share of clothing imports from developing countries was even larger (59%) than those from other developed countries (12%) indicating that developing countries had dominated the U.S. markets during the sample period. For textile yarn and manmade fabrics in both markets, and also cotton fabrics in the U.K., the expenditure shares

for developing countries were relative smaller than those of from developed countries.

TABLE 4.1

SUMMARY STATISTICS FOR
EXPENDITURE SHARES OF TEXTILE IMPORTS
IN THE UNITED KINGDOM

| Variables | Mean | Std. Dev. | Minimum | Maximum |
|---|---|---|---|---|
| *Textile Yarn* | 0.2115 | 0.0257 | 0.1649 | 0.2482 |
| Developed Countries | 0.1900 | 0.0243 | 0.1537 | 0.2296 |
| Developing Countries | 0.0203 | 0.0070 | 0.0088 | 0.0351 |
| ROW | 0.0012 | 0.0008 | 0.0003 | 0.0031 |
| *Cotton Fabrics* | 0.1474 | 0.0176 | 0.1175 | 0.1884 |
| Developed Countries | 0.0897 | 0.0154 | 0.0699 | 0.1152 |
| Developing Countries | 0.0518 | 0.0121 | 0.0349 | 0.0839 |
| ROW | 0.0059 | 0.0028 | 0.0008 | 0.0100 |
| *Manmade Fabrics* | 0.2193 | 0.0115 | 0.1891 | 0.2417 |
| Developed Countries | 0.1818 | 0.0206 | 0.1278 | 0.2125 |
| Developing Countries | 0.0349 | 0.0145 | 0.0201 | 0.0745 |
| ROW | 0.0026 | 0.0009 | 0.0014 | 0.0042 |
| *Clothing and others* | 0.4218 | 0.0430 | 0.3399 | 0.4964 |
| Developed Countries | 0.1964 | 0.0227 | 0.1408 | 0.2346 |
| Developing Countries | 0.2112 | 0.0368 | 0.1612 | 0.3113 |
| ROW | 0.0142 | 0.0079 | 0.0079 | 0.0504 |

TABLE 4.2

SUMMARY STATISTICS FOR
EXPENDITURE SHARES OF TEXTILE IMPORTS
IN THE UNITED STATES

| Variables | Mean | Std. Dev. | Minimum | Maximum |
|---|---|---|---|---|
| *Textile Yarn* | 0.0564 | 0.0235 | 0.0380 | 0.1334 |
| Developed Countries | 0.0436 | 0.0251 | 0.0249 | 0.1229 |
| Developing Countries | 0.0120 | 0.0040 | 0.0056 | 0.0188 |
| ROW | 0.0008 | 0.0008 | 0.0001 | 0.0027 |
| *Cotton Fabrics* | 0.0835 | 0.0131 | 0.0663 | 0.1122 |
| Developed Countries | 0.0248 | 0.0068 | 0.0172 | 0.0430 |
| Developing Countries | 0.0517 | 0.0104 | 0.0316 | 0.0718 |
| ROW | 0.0070 | 0.0048 | 0.0005 | 0.0156 |
| *Manmade Fabrics* | 0.1073 | 0.0530 | 0.0585 | 0.2313 |
| Developed Countries | 0.0710 | 0.0354 | 0.0286 | 0.1505 |
| Developing Countries | 0.0348 | 0.0219 | 0.0070 | 0.0831 |
| ROW | 0.0015 | 0.0007 | 0.0004 | 0.0027 |
| *Clothing and others* | 0.7529 | 0.0746 | 0.57227 | 0.8189 |
| Developed Countries | 0.1149 | 0.0637 | 0.0525 | 0.2833 |
| Developing Countries | 0.5917 | 0.1232 | 0.2957 | 0.7522 |
| ROW | 0.0463 | 0.0399 | 0.0037 | 0.1047 |

## Procedures

The RSAIDS model used in this study has 25 observations and ten parameters for each equation. By using SHAZAM version 8.0 for Windows, the model is estimated with iterative seemingly unrelated regression (SUR) with homogeneity and symmetry imposed. The estimation procedures can be described as follow. First step, since the RSAIDS model uses a system of equations for the whole sample data set in each market, it is necessary to check the model with the full-system misspecification tests (Godfrey, 1988; McGuirk, Driscoll, Alwang and Huang, 1995). With the full-system misspecification tests, evidence

of structural change will also be detected in its parameter stability tests where equation (12) will be used for the U.S. and the U.K. import markets. The SUR estimation procedure is applied to both markets as a system of 12 equations. To check for parameter stability, dummy variables will be used to divide sample data into two periods where the first period indicates observation on the MFA I and II and the second period is observations for the MFA III and IV. Second, the model is tested for its assumptions on block separability and product aggregation to determine whether it is appropriate to estimate an import demand by source differentiation. Third, if a structural change is detected from the previous step, bias of structural change will then be conducted or otherwise only import demand elasticities will be estimated.

## Analysis of Results

### Model Testing

The results from the full-system misspecification tests are reported in table 4.3 and 4.4 for the United Kingdom and the United States, respectively. These tests were conducted to ensure the appropriateness of the underlying statistical assumptions in this model that utilizes a system of equations. The tests can be divided into two separate tests, which are individual and joint tests. The individual tests, as reported in the tables, check separately each assumption of the system model such as: normality, functional form, heteroskedasticity, autocorrelation and parameter stability. Joint tests, which are joint conditional mean and variance tests, check those assumptions when they were applied jointly in the model. Since

parameter stability is also checked in these tests, the evidence of structural change can easily be checked with the value reported in the parameter stability items from the tables in both individual and joint tests. Most misspecification tests of this study are similar to those suggested by McGuirk, Driscoll, Alwang and Huang (1995). To avoid singularity, and during the period of testing, each one of product equations was dropped to find a system of equations that are best fitted to the model underlying assumptions. The results from the tests are presented in their *p*-values, as shown in table 4.3 and 4.4 for the United Kingdom and the United States, respectively. Following the recommendation from McGuirk, Driscoll, Alwang and Huang (1995), the reporting *p*-values of less than 0.005 on each test may indicate the misspecification problem on a specific assumption.

From the tables, the results on all individual tests support the statistical assumptions that verify a valid statistical model for both the United Kingdom and the United States data sets. Similarly, joint conditional mean- and variance-tests for both data sets provided no problem of possible violation on the assumptions. All *p*-values in individual tests and joints tests are above the values that were recommended, which indicate that assumptions underlying the system model are held. Therefore, it is adequate to conclude that the full misspecification tests for the UK and the US sample data can be validly be used for the multivariate linear regression estimation procedure of the model in this study.

The values of parameter stability tests in individual and joint tests in both tables indicate that the system has a stable parameter during the sample period observed. This provides the evidence that there is no structural change in the system model. Or, in another phrase, it can be concluded that the MFA has successfully "smoothed" a tendency of an abrupt import demand for textile trade in both markets. However, since the evidence in this

study comes for the whole system of the model, a question of structural change may still be interesting in a single country or product equation. However, this question is beyond the scope of this study.

TABLE 4.3

THE RESULTS FROM
THE FULL-SYSTEM MISSPECIFICATION TESTS:
THE UNITED KINGDOM MODEL

| Test Item | *p*-values |
|---|---|
| *Individual Tests* | |
| Normality | 0.5445 |
| Functional Form | 0.0055 |
| Heteroskedasticity | |
| Static | 0.9981 |
| Dynamic | 0.9626 |
| Autocorrelation | 0.9914 |
| Parameter Stability | |
| Mean | 0.8816 |
| Variance | 0.0415 |
| *Joint Tests* | |
| Overall Mean | 0.4220 |
| Parameter Stability | 0.1999 |
| Functional Form | 0.0817 |
| Autocorrelation | 0.2077 |
| Overall Variance | 0.0285 |
| Parameter Stability | 0.0938 |
| Static Hetero | 0.5658 |
| Dynamic Hetero | 0.2037 |

TABLE 4.4

THE RESULTS FROM
THE FULL-SYSTEM MISSPECIFICATION TESTS:
THE UNITED STATES MODEL

| Test Item | *p*-values |
|---|---|
| *Individual Tests* | |
| Normality | 0.4977 |
| Functional Form | 0.0548 |
| Heteroskedasticity | |
| Static | 0.7568 |
| Dynamic | 0.7754 |
| Autocorrelation | 0.8914 |
| Parameter Stability | |
| Mean | 0.9588 |
| Variance | 0.1513 |
| *Joint Tests* | |
| Overall Mean | 0.0795 |
| Parameter Stability | 0.0571 |
| Functional Form | 0.0575 |
| Autocorrelation | 0.5992 |
| Overall Variance | 0.8057 |
| Parameter Stability | 0.5503 |
| Static Hetero | 0.8391 |
| Dynamic Hetero | 0.9821 |

Tests on block separability and product aggregation (products are not differentiated) are conducted to determine the suitability of the RSAIDS model. The block separability test is to test whether each item of textile products (such as textile yarn) is separable from all other textiles in the model (such as from cotton fabrics, manmade fabrics and clothing and others). The product aggregation test is to test whether products can be aggregated over their sources. In addition to these tests, the models are also checked for the possibility of endogeneity problem in expenditure share parameters. The tests on block separability and

product aggregation, along with the test on endogeneity, are reported in table 4.5 and 4.6 for the UK market and the US market, respectively.

From table 4.5 and 4.6, the Wald-$\chi^2$ statistic for the null hypothesis that textile yarn is separable from all other textile products is 20.03 and 13.72 for the UK and the US market, respectively. From the full-system misspecification tests, the best-fitted system model is to drop the equation for cotton fabrics in the UK model system and manmade fabrics in the US system. Therefore, the equations for manmade fabrics and for cotton fabrics are reported for the UK and the US model, respectively. The tests for each of these equation within its system are rejected at 1 percent of significance as indicated in the value of its Wald-$\chi^2$ statistic of 25.58 (manmade fabrics) for the UK and 19.51 (cotton fabrics) for the US models. The similar results also occurred in clothing equations for the UK and the US system models, respectively. In product aggregation tests, which indicate whether the products can be differentiated by their import sources, the null hypotheses for product aggregation were also rejected. Joint null hypotheses on both tests are rejected in both the UK and the US sample data at the 1% level of significance. The results from block separability tests indicate that each product is not separable from others. The results from these tests support the assumption that import demand of this study can be estimated by differentiating their import sources. In auxiliary regression for total expenditure, the high $R^2$ (0.96 for the UK and 0.97 for the US sample data) indicates that those independent variables are relevant for the equation (Kennedy, 1998). Since these variables are the correct set of independent variables, the result from an endogeneity test for this auxiliary regression will be statistically valid. The results for Durbin-Watson tests, 2.01 for the UK and 2.05 for the US, respectively. Since both of these test values are above the upper level of DW statistic or critical value, it can be

concluded that the null hypotheses of $H_o$:$\rho$=0 is not rejected at the 1% level of significance. These results indicate that there is no endogeneity problem in the models.

TABLE 4.5

BLOCK SEPARABILITY, SOURCE DIFFERENTIATION AND ENDOGENEITY TESTS FOR THE DYNAMIC RSAIDS MODEL FOR THE UNITED KINDOM

| Type of test | Test results |
|---|---|
| Block Separability | Ho: Textile yarn is separable from other textiles<br>Wald $\chi^2$=20.03** df=6<br>Ho: Manmade fabrics is separable from other textiles<br>Wald $\chi^2$=21.58** df=6<br>Ho: Clothing is separable from other textiles<br>Wald $\chi^2$=49.75** df=6<br>Ho: All of the above<br>Wald $\chi^2$=202.41** df=18<br>System $R^2$=0.99 |
| Source Differentiation | Ho: Textile yarn can be aggregated over sources<br>Wald $\chi^2$=40.17** df=3<br>Ho: Manmade fabrics can be aggregated over sources<br>Wald $\chi^2$=56.18** df=3<br>Ho: Clothing can be aggregated over sources<br>Wald $\chi^2$=26.01** df=3<br>Ho: All of the above<br>Wald $\chi^2$=54.52** df=15<br>System $R^2$=0.89 |

Auxiliary Regression of Total Expenditure for endogeneity test:

$Ln(E/P^T)$= 1.72* + 0.83**lpyarn –0.13*lpcton –0.31 **lpfabr-0.81**lpclth
(0.80) (0.25) (0.04) (0.12) (0.26)
+0.09*CPI+0.90** GNP
(0.04) (0.12)

$R^2$=0.96 DW=2.01**

Note : **indicates significance at 1%
*indicates significance at 5%
The values in parenthesis are standard errors

TABLE 4.6

BLOCK SEPARABILITY, SOURCE DIFFERENTIATION AND ENDOGENEITY TESTS FOR THE DYNAMIC RSAIDS MODEL FOR THE UNITED STATES

| Type of test | Test results |
|---|---|
| Block Separability | Ho: Textile yarn is separable from all other textiles<br>Wald $\chi^2$=13.72* df=6<br>Ho: Cotton fabrics is separable from all other textiles<br>Wald $\chi^2$=19.51* df=6<br>Ho: Clothing is separable from all other textiles<br>Wald $\chi^2$=13.05* df=6<br>Ho: All of the above<br>Wald $\chi^2$=36.70** df=18<br>System $R^2$=0.99 |
| Source Differentiation | Ho: Textile yarn can be aggregated over sources<br>Wald $\chi^2$=22.58** df=3<br>Ho: Cotton fabrics can be aggregated over sources<br>Wald $\chi^2$=62.90** df=3<br>Ho: Clothing can be aggregated over sources<br>Wald $\chi^2$=21.31** df=3<br>Ho: All of the above<br>Wald $\chi^2$=91.42** df=15<br>System $R^2$=0.97 |

Auxiliary Regression of Total Expenditure for endogeneity test:

$Ln(E/P^T)$= -0.09-0.69**lpyarn + 0.90**lpcton –0.65**lpfabr-0.47lpclth
(1.11) (0.18) (0.33) (0.25) (0.42)
-0.08CPI +1.22**GNP
(0.06) (0.24)

$R^2$=0.97 DW=2.05**

Note: ** indicates significance at 1%
* indicates significance at 5%
The values in parenthesis are standard errors

Bias of Structural Change in Import Demand

As shown from the results from parameter stability tests in the full-system misspecification tests, bias of structural change cannot be estimated, which indicates no evidence of structural change in the model system. From these results, at least three conclusions can be drawn related to the issue of the Multifiber Arrangements described in this study. First, since the estimation of structural change is based on the model as a system of equations, which is composed of equations for textile import shares from developed as well as developing countries, it is suggested that bias of structural change can not reliably be estimated from this model. One may argue that this evidence suggests that there is no structural change from the imposition of the MFA as a whole system in the global trade. As a trade policy instrument, the MFA seems to successfully reach its objectives of managing global trade especially in a case of abrupt import demand as shown in the cases of the UK and the US markets. Second, the sample data for this study were mainly based on periods where the MFA is imposed that has been started since the early 1970s. However, the global trade arrangements in textile trade have been in place since the early 1960s in the form of STA and LTA. This continuous imposition of global trade arrangements from earlier years may impact the results of this study. Third, as described in the previous chapters, some previous studies indicate that trade arrangements have been biased against the principal exporters from developing countries or have changed the pattern of import demand especially in specific textile items and from a certain exporting developing country. Although this proposition might still be interesting to be checked to see whether there is a structural change in those specific cases, it is beyond the purpose of this study.

Coefficient Estimates of the Dynamic RSAIDS

Parameter estimates of the RSAIDS' dynamic model are reported in table 4.7 and 4.8 for the UK and the US, respectively. The coefficients are estimated using equation (12) with homogeneity and symmetry conditions imposed. The equation for cotton fabrics and manmade fabrics are dropped in the UK and the US models, respectively, to avoid singularity problem. Along with price (except for the *ROW* price) and expenditure variables, variables for lag of import share and dummy *MFA* are also reported in the tables.

From the tables, the values of $R^2$ for import share equations for clothing in the UK and especially in the US models seem to be higher than those values from other products. This may indicate the important of the product shares in the system. The importance of these shares in the system, shows high $R^2$, can also be seen in some other products such as the import share of textile yarn from developing countries and manmade fabrics from developed countries in the UK model and textile yarn from developed countries in the US model. All coefficients for lag of import shares for developing countries' equations are significant in both models except for textile yarn products. Lag of import shares for developed countries' equations are only significant in the US model especially for textile yarn and clothing. Source own-price and cross-price coefficients, and to some extent also cross-product-price coefficients, are more significant for developed countries' equations that those for developing countries' equations. Expenditure coefficients seem to be more significant in clothing than other product equations. Interestingly, the dummy variables of *MFA* show some significant in clothing equation (weak) in the US model and textile yarn (weak) and manmade fabrics (strong) in the UK model, which this information may be useful for further study.

TABLE 4.7

COEFFICIENT ESTIMATES FROM
THE DYNAMIC RSAIDS MODEL: THE UNITED KINGDOM

| Coefficients | Dependent Variables of Import Share from | |
|---|---|---|
| | Developed Countries | Developing Countries |
| *Textile Yarn* | $R^2$=0.6742 | $R^2$=0.9113 |
| Lag of Import Shares | 0.1938 | 0.1119 |
| | (0.1177) | (0.1066) |
| P-Developed Countries | 0.0263 | 0.1368** |
| | (0.2012) | (0.0389) |
| P-Developing Countries | 0.1368** | 0.0390** |
| | (0.0389) | (0.0104) |
| P-Cotton Fabrics | 0.0068 | -0.0004 |
| | (0.0067) | (0.0014) |
| P-Manmade Fabrics | 0.0347 | -0.0032 |
| | (0.0218) | (0.0049) |
| P-Clothing | 0.0805 | 0.0039 |
| | (0.0525) | (0.0106) |
| Expenditure | -0.0522 | 0.0102 |
| | (0.0281) | (0.0057) |
| MFA | 0.0263* | 0.0044 |
| | (0.0119) | (0.0024) |
| Constant | 0.4767 | -0.0641 |
| | (0.2441) | (0.0482) |
| *Manmade Fabrics* | $R^2$=0.9236 | $R^2$=0.7873 |
| Lag of Import Shares | -0.0508 | 0.8017** |
| | (0.0877) | (0.1303) |
| P-Developed Countries | -0.2752** | -0.0832** |
| | (0.0345) | (0.0123) |
| P-Developing Countries | 0.0832** | -0.0180** |
| | (0.0123) | (0.0061) |
| P-Textile Yarn | 0.0042 | 0.0361 |
| | (0.0204) | (0.0245) |
| P-Cotton Fabrics | -0.0042 | -0.0097* |
| | (0.0031) | (0.0036) |
| P-Clothing | 0.0140 | 0.0265 |
| | (0.0229) | (0.0281) |
| Expenditure | -0.0288* | 0.0566** |
| | (0.0126) | (0.0142) |
| MFA | 0.0152** | -0.0044 |
| | (0.0053) | (0.0063) |
| Constant | 0.4350** | -0.4110** |
| | (0.1106) | (0.1223) |

TABLE 4.7 (CONTINUED)

COEFFICIENT ESTIMATES FROM
THE DYNAMIC RSAIDS MODEL: THE UNITED KINGDOM

| Coefficients | Dependent Variables of Import Share from | |
|---|---|---|
| | Developed Countries | Developing Countries |
| *Clothing* | $R^2$=0.8172 | $R^2$=0.8775 |
| Lag of Import Shares | 0.0561 | 0.2748* |
| | (0.0818) | (0.1323) |
| P-Developed Countries | 0.1010** | 0.0458** |
| | (0.0092) | (0.0124) |
| P-Developing Countries | 0.0458** | 0.3884** |
| | (0.0124) | (0.0435) |
| P-Textile Yarn | -0.1685** | 0.0110 |
| | (0.0352) | (0.0413) |
| P-Cotton Fabrics | 0.0174** | -0.0026 |
| | (0.0050) | (0.0060) |
| P-Manmade Fabrics | -0.0129 | 0.0759 |
| | (0.0178) | (0.0194) |
| Expenditure | -0.0670** | 0.1385** |
| | (0.0194) | (0.0234) |
| MFA | 0.0078 | -0.0151 |
| | (0.0101) | (0.0120) |
| Constant | 0.6409** | -0.7374** |
| | (0.1773) | (0.2113) |

Note: **) and *) indicates level of significance at 1% and 5%, respectively
The values in parentheses are standard errors of the coefficients

TABLE 4.8

COEFFICIENT ESTIMATES FROM
THE DYNAMIC RSAIDS MODEL: THE UNITED STATES

| Coefficients | Dependent Variables of Import Share from | |
|---|---|---|
| | Developed Countries | Developing Countries |
| *Textile Yarn* | $R^2$=0.8541 | $R^2$=0.7003 |
| Lag of Import Shares | 0.5128** | 0.0468 |
| | (0.0940) | (0.2347) |
| P-Developed Countries | -0.1823** | -0.0372* |
| | (0.0426) | (0.0149) |
| P-Developing Countries | -0.0372* | -0.0016 |
| | (0.0149) | (0.0078) |
| P-Cotton Fabrics | 0.0061 | -0.0138 |
| | (0.0314) | (0.0122) |
| P-Manmade Fabrics | -0.0035 | 0.0187 |
| | (0.0280) | (0.0117) |
| P-Clothing | -0.0426 | -0.0153 |
| | (0.0269) | (0.0100) |
| Expenditure | -0.0055 | 0.0084 |
| | (0.0117) | (0.0052) |
| MFA | 0.0093 | 0.0055 |
| | (0.0086) | (0.0035) |
| Constant | 0.1470 | -0.0562 |
| | (0.1196) | (0.0533) |
| *Cotton Fabric* | $R^2$=0.4951 | $R^2$=0.4978 |
| Lag of Import Shares | 0.2040 | -0.3912** |
| | (0.1159) | (0.1208) |
| P-Developed Countries | -0.0154* | -0.0111 |
| | (0.0071) | (0.0108) |
| P-Developing Countries | -0.0111 | 0.1495** |
| | (0.0108) | (0.0279) |
| P-Textile Yarn | -0.0023 | 0.0280* |
| | (0.0066) | (0.0124) |
| P-Manmade Fabrics | 0.0061 | 0.0071 |
| | (0.0134) | (0.0259) |
| P-Clothing | -0.0054 | -0.0183 |
| | (0.0132) | (0.0224) |
| Expenditure | -0.0038 | -0.0021 |
| | (0.0048) | (0.0085) |
| MFA | 0.0039 | -0.0035 |
| | (0.0046) | (0.0081) |
| Constant | 0.0636 | 0.1592 |
| | (0.0498) | (0.0910) |

TABLE 4.8 (CONTINUED)

COEFFICIENT ESTIMATES FROM
THE DYNAMIC RSAIDS MODEL: THE UNITED STATES

| *Coefficients* | Dependent Variables of Import Share from | |
|---|---|---|
| | Developed Countries | Developing Countries |
| *Clothing* | $R^2$=0.9809 | $R^2$=0.9402 |
| Lag of Import Shares | 0.5197** | -1.7543** |
| | (0.0648) | (0.2542) |
| P-Developed Countries | -0.0107 | -0.0271 |
| | (0.0067) | (0.0267) |
| P-Developing Countries | -0.0271 | 0.0793 |
| | (0.0267) | (0.2472) |
| P-Textile Yarn | -0.0429** | -0.2265** |
| | (0.0154) | (0.0524) |
| P-Cotton Fabrics | 0.1550** | 0.1296 |
| | (0.0348) | (0.1221) |
| P-Manmade Fabrics | -0.0772** | -0.0287 |
| | (0.0216) | (0.0664) |
| Expenditure | -0.0619** | 0.0340 |
| | (0.0122) | (0.0432) |
| MFA | 0.0177* | -0.0610* |
| | (0.0081) | (0.0272) |
| Constant | 0.6937** | 0.3293 |
| | (0.1310) | (0.4672) |

Note: **) and *) indicates level of significance at 1% and 5%, respectively
The values in parentheses are standard errors of the coefficients

Estimation of Import Demand Elasticities

The demand elasticities are provided in table 4.9 and 4.10. The estimation of import demand elasticities were conducted using the system of equations described previously. Homogeneity and symmetry conditions were imposed in the estimation process. To avoid singularity problem, cotton fabrics and manmade fabrics were dropped in the UK and the US system of equations, respectively. These equation systems were supported by the full-system

misspecification tests to agree with the underlying assumptions of the RSAIDS models of this study. Table 4.9 and 4.10 show the results from the elasticity estimation for the United Kingdom and the United States, respectively, with respect to their source own-prices, source cross-prices, cross-product-prices and expenditures.

The estimated elasticities of import demand shown in the tables are only for the equations of import from developed and developing countries while for the ROW equations are not presented for convenience. All values of demand elasticities were estimated from equation (18) to (21) as described in the previous section of this chapter.

Table 4.9 and 4.10 show the significance of expenditure variables in both the UK and the US models. It seems that both source-own price and source-cross price elasticities are more significant with respect to import shares from developed and developing countries. All expenditure elasticities are significant at level of 1 percent for import demand from both developed and developing countries. Textiles from developing countries (except for cotton fabrics in the US model) are income elastic since their values of expenditure elasticities for these products are above one. While those textiles from developed countries show expenditure inelastic. In general, expenditures are more elastic for import share from developing countries than those from developed countries. Source own-price and cross-price elasticities are almost all significant especially in the UK model. Some values of cross-product-price elasticities from developed countries' equations are more significant than those from developing countries' equations.

TABLE 4.9

ELASTICITIES OF IMPORT DEMAND:
THE UNITED KINGDOM

| Coefficients | Dependent Variables of Import Share from | |
|---|---|---|
| | Developed Countries | Developing Countries |
| *Textile Yarn* | | |
| P-Developed Countries | -0.8094 | 6.7359** |
| | (1.0738) | (1.9153) |
| P-Developing Countries | 1.2083** | 0.9100 |
| | (0.3820) | (0.5142) |
| P-Cotton Fabrics | 0.5237 | -0.0215 |
| | (0.2755) | (0.0686) |
| P-Manmade Fabrics | 0.6706* | -0.1588 |
| | (0.2733) | (0.2428) |
| P-Clothing | 0.9118* | 0.1917 |
| | (0.3773) | (0.5240) |
| Expenditure | 0.9478** | 1.0102** |
| | (0.0281) | (0.0057) |
| *Manmade Fabrics* | | |
| P-Developed Countries | -2.4852** | -2.3891** |
| | (0.1977) | (0.3513) |
| P-Developing Countries | -0.3079* | -1.5722** |
| | (0.1198) | (0.1777) |
| P-Textile Yarn | 0.1726 | 1.0204 |
| | (0.1354) | (0.7000) |
| P-Cotton Fabrics | 0.1266 | -0.2890** |
| | (0.0720) | (0.1045) |
| P-Clothing | 0.0729 | -0.7698 |
| | (0.1344) | (0.8028) |
| Expenditure | 0.9712** | 1.0566** |
| | (0.0126) | (0.0142) |

TABLE 4.9 (CONTINUED)

ELASTICITIES OF IMPORT DEMAND:
THE UNITED KINGDOM

| Coefficients | Dependent Variables of Import Share from | |
|---|---|---|
| | Developed Countries | Developing Countries |
| *Clothing* | | |
| P-Developed Countries | -0.4184** | 0.0678 |
| | (0.0558) | (0.0721) |
| P-Developing Countries | 0.2954** | 0.7005** |
| | (0.0666) | (0.2088) |
| P-Textile Yarn | -0.7958** | -0.0970 |
| | (0.1812) | (0.1968) |
| P-Cotton Fabrics | 0.1510** | -0.1614** |
| | (0.0350) | (0.0437) |
| P-Manmade Fabrics | -0.0034 | 0.2105* |
| | (0.0915) | (0.0944) |
| Expenditure | 0.9330** | 1.1385** |
| | (0.0194) | (0.0234) |

Note: **) and *) indicates level of significance at 1% and 5%, respectively
The values in parentheses are standard errors of the elasticities

TABLE 4.10

ELASTICITIES OF IMPORT DEMAND:
THE UNITED STATES

| Coefficients | Dependent Variables of Import Share from | |
|---|---|---|
| | Developed Countries | Developing Countries |
| *Textile Yarn* | | |
| P-Developed Countries | -5.1789** | -3.0994* |
| | (0.9817) | (1.2428) |
| P-Developing Countries | -0.8348* | -1.1428 |
| | (0.3618) | (0.6508) |
| P-Cotton Fabrics | 0.1610 | -1.1536 |
| | (0.7336) | (1.0131) |
| P-Manmade Fabrics | -0.0612 | 1.5532 |
| | (0.6133) | (0.9693) |
| P-Clothing | -0.9570 | -1.2740 |
| | (0.6319) | (0.8298) |
| Expenditure | 0.9945** | 1.0084** |
| | (0.0117) | (0.0052) |
| *Cotton Fabrics* | | |
| P-Developed Countries | -1.6172** | -0.2106 |
| | (0.2872) | (0.2146) |
| P-Developing Countries | -0.4461 | 1.8943** |
| | (0.4346) | (0.5430) |
| P-Textile Yarn | 0.0924 | 0.5449* |
| | (0.2647) | (0.2445) |
| P-Manmade Fabrics | 0.2476 | 0.1416 |
| | (0.5403) | (0.4885) |
| P-Clothing | -0.2172 | -0.3494 |
| | (0.5306) | (0.4385) |
| Expenditure | 0.9962** | 0.9979** |
| | (0.0048) | (0.0085) |

TABLE 4.10 (CONTINUED)

ELASTICITIES OF IMPORT DEMAND:
THE UNITED STATES

| Coefficients | Dependent Variables of Import Share from | |
|---|---|---|
| | Developed Countries | Developing Countries |
| *Clothing* | | |
| P-Developed Countries | -1.0314** | -0.2208 |
| | (0.0519) | (0.1946) |
| P-Developing Countries | -0.2241 | -0.9000 |
| | (0.2328) | (0.4396) |
| P-Textile Yarn | -0.3611* | -0.5577* |
| | (0.1331) | (0.2100) |
| P-Cotton Fabrics | 1.3605** | 0.0441 |
| | (0.3041) | (0.3893) |
| P-Manmade Fabrics | -0.6596** | -0.2234 |
| | (0.1870) | (0.1934) |
| Expenditure | 0.9381** | 1.0340** |
| | (0.0122) | (0.0432) |

Note: **) and *) indicates level of significance at 1% and 5%, respectively
The values in parentheses are standard errors of the elasticities.

## Summary

The dynamic version of restricted source differentiated almost ideal demand system model (the RSAIDS) is used in this study to check for the evidence of structural change in import demand using textile import data for the import markets in the United Kingdom and the United States. The RSAIDS models allow textile imports to be differentiated according to their import sources or suppliers. In this study, aggregated data of import sources from developing countries as well as developed countries are used. To satisfy the statistical assumption underlying systems of equation, the full-system misspecification tests are conducted and reported. These tests also check the model's parameter stability that can be used for inference on the evidence of structural change. Tests on block separability and product aggregation are to check whether the model can be differentiated by import sources. The model is also checked for possible endogeneity problem.

Tests on the system specification, using joint mean and variance and also individual tests, indicate that all assumptions underlying the model are held, including its parameter stability. This test result suggests that there is no structural change in the system of the model. This result also suggests that the trade arrangement in textiles may have successfully reached one of its important objectives of maintaining orderly trade practices in import markets. Given these results, bias of structural change can not be validly estimated using the model. Coefficient estimates are significant for some variables in lag of import shares, source own-prices, source cross-prices and to some extent cross-product-prices. The estimates on demand elasticities indicate that source-own price and source-cross price elasticities, along with expenditure elasticities, with respect to import shares are significant at 1 or 5 percent

of significance level. Expenditures are more elastic for developing countries' equations than that of developed countries' equations.

# CHAPTER V

# SUMMARY AND CONCLUSIONS

## Summary

This summary is a review of the discussions from the previous chapters. Subsequently, it is followed by the conclusions of the study. As described in the first chapter, the main objective of the study is to determine if there is evidence of structural change in textile import demand due to global arrangements. To satisfy this objective, Chapter II describes the global development of textile trade as a background. Chapter III describes the impacts of trade restrictions or arrangements in importing markets and exporting countries. Chapter IV depicts the empirical study to check for structural change and report coefficients and elasticities of the import demand model applied in this study.

Developed countries, especially the United States and some Western European countries, had been major players in global textile trade. From the 1950s onward, the trade supremacy of developed countries has been challenged by developing countries. Many developing countries have continuously increased their textile exports, especially to developed countries. Most developing countries have noticed that the textile industry and trade could help foster their countries' economic growth. On the other hand, viewing that

their domestic markets were disrupted by an abrupt and huge increase of textile imports, some developed countries took unilateral or bilateral measures to protect their domestic markets. Unilateral trade policies were incompatible with the spirit of free trade drawn in the 1947 GATT principles. Bilateral arrangements produce spill-over effects because it is mostly to restrict some principal suppliers. Restrictions to these exporters would open the opportunity to increase imports from unrestricted sources. The multilateral approach then became an alternative to the previous measures. In the 1960s, the multilateral approach was represented by the STA/LTA for cotton textile arrangements. With the introduction of the MFA for multifiber arrangements in the early 1970s, the multilateral arrangements become stronger because of the intention to cover all items of traded textiles. The MFA has been renewed four times plus three time extensions. The latest agreement in 1994 by GATT members agreed to continue the MFA until 2005. If the STA/LTA or the MFA is negotiated out of GATT's regular framework, all issues in textile trade will be integrated into WTO after 2005. WTO has been transformed from GATT since 1995.

Arrangements in textile trade affect not only developing countries but also developed countries. For developed countries, the restrictions have increased industrial profits and saved some domestic jobs, increased domestic consumer costs and worsened income distribution. For developing countries, trade restrictions have decreased foreign earnings because of declining values of export shipments. Another impact on developing countries includes trade and production diversion or product upgrading. Restrictions have changed the pattern of textile trade from restricted to unrestricted developing countries. Restrictions have also induced suppliers to reallocate their production sites to less restricted countries or directly to import markets. Upgrading the quality of export shipments is another effect of

textile arrangements. Controlling physical volumes of imports rather than their values has influenced suppliers to increase the value of exports. In the long run, if the restrictions continue to hold, countries that have a good export performance will soon be discouraged to stay productive because the restrictions would be tighter the more they increase their textile exports.

The dynamic model of RSAIDS is applied to the empirical model of this study. It is a source differentiated import demand model. The model is estimated with an iterative seemingly unrelated regression where homogeneity and symmetry conditions are imposed. The full-system misspecification tests are conducted for testing the model system of equations. Within these systems tests, parameter stability tests are also performed to check for structural change described in this study. Tests on block separability and product aggregation assumptions are to test for the suitability of the model's source differentiation. Along with this test, the model is also tested for a possible endogeneity problem. If structural change is detected in the previous tests, the estimate on bias of structural change will follow. Coefficients and elasticities of the model are estimated and reported.

## Conclusions

Textile yarn, cotton fabrics and manmade fabrics in the UK were dominantly imported from developed countries during the periods observed in the study. The similar pattern was shown in the US market except for import demand for cotton fabrics. In these two markets, clothing was largely supplied by developing countries. The data support the previous studies that developed countries seem to have an advantage in producing textile

items that need more capital and less labor-intensive in their process of production. Developing countries seem to benefit more in labor-intensive production such as in producing clothing and apparel. They seem to have a price advantage over clothing products.

The results from the full-system misspecification tests indicate the system of equations applied in this study is adequate. Parameter stability tests performed within the system tests provide information that there is no evidence of structural change for the model. Tests on block separability and product aggregation assumptions imply that the model's source differentiation is suitable. An endogeneity test also indicates that there is no endogeneity problem. Since there is no evidence of structural change, there is no bias of structural change affected by the imposition of the MFA. The arrangements seem to achieve its objective of maintaining orderly textile trade, especially in import markets of the UK and the US. Coefficients of the models are significant in some coefficients for lag of import shares, source own-prices, source cross-prices and to some extent cross-product-prices. Demand elasticities are significant at 1 percent and 5 percent significant levels for some source own-prices, source cross-prices and expenditures with respect to import shares from both developed and developing countries. Expenditures are more elastic for import share from developing countries than those of from developed countries. All expenditure elasticities are strongly significant at 1 percent.

Policy Implications

From reviewing the study, some policy implications can be drawn. First, textile trade arrangements have been seen as one of important variables in policy making to deal with the

problem of market disruption that was presumably caused by an irregular increase in textile imports from few foreign suppliers. To have a sound trade policy, it is important to investigate all previous information or studies related to the effects of the arrangements either on importing markets or exporting countries. Second, it is important that trade policy planners consider which parties would receive benefit or be disadvantaged when a particular policy is implemented and how much the total cost or benefit would occur to the whole economy. From developed countries' point of view, domestic textile producers will benefit from the imposition of the restrictions while its consumers would be harmed. From developing countries' point of view, trade arrangements seem to be an unavoidable choice if they otherwise face a threat of closed markets for their textile exports. For developing countries, it is more likely that the choices available are whether they will relocate their production sites, upgrade their export shipments or propose a trade coalition to increase their bargaining leverage for more free trade at the next round of trade negotiations. The last choice is reasonable for a longer period of time because the issues of free trade versus protection seem to be a dynamic issue facing all countries even after the year 2005 when textile trade is integrated into WTO. Third, the empirical model of this study could provide some hints to estimate some related variables affecting textile trade, especially in the case of import demand. Coefficients and demand elasticities estimated from the model may be utilized for further analyses related textile trade.

Limitations of the study

Some limitations should be taken into considerations. First, data used in this study

are limited to the periods of the first four MFAs (1970 to 1994). Using the similar model of the study, data can be expanded from the early 1960 to 2005 to cover all periods of global multilateral arrangements in textile trade. Second, as intended for the study, the model is constructed with the data aggregation into three import sources: developed countries, developing countries and the rest of the world. Analysis on the rest of the world is ignored in this study because of its small number. This aggregation might not reflect the behavior of any specific country within the source category since any supplier can response differently based on its own country circumstance. Third, although the RSAIDS model can differentiate imports by sources, it seems that the model would soon face a degree of freedom problem as the investigation enlarge to cover more import sources within the model system. However, a better estimation for the parameters may be obtained when all equations in the model are used with the seemingly unrelated regression, as shown in this study.

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VITA

Harry Azhar Azis

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Doctor of Philosophy

Thesis: STRUCTURAL CHANGE IN IMPORT DEMAND FOR TEXTILES FROM DEVELOPING COUNTRIES

Major Field: Agricultural Economics

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**INSTITUTIONAL REVIEW BOARD**

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Principal Investigator(s): Dan Tilley
Harry Azis

Reviewed and Processed as: Continuation

Approval Status Recommended by Reviewer(s): Approved

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Signature:

Carol Olson, Director of University Research Compliance

July 20, 1999
Date

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