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I am submitting herewith a thesis written by Suhaila T. Ghezawi entitled "A STUDY OF SELECTED EFFECTS OF THE QUOTA SYSTEM FOR UNITED STATES APPAREL IMPORTS." I have examined the final copy of this thesis for form and content and recommend that it be accepted in partial fulfillment of the requirements for the degree of Masters of Science, with a major in Textile and Apparel.

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# A STUDY OF SELECTED EFFECTS OF THE QUOTA SYSTEM FOR UNITED STATES APPAREL IMPORTS

A Thesis

Presented for the

Master of Science

Degree

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## DEDICATION

The author would like to dedicate this thesis to her parents, Talal and Shirley and to her sister, Yasmin and brother Omar; whom without their help, love, support, and encouragement, could not have completed this task.

## ABSTRACT

The purpose of this study is to attempt to estimate the effect and welfare cost an import quota system has on the U.S. consumer, worker, producer and economy in general. The major objectives of this study were; first, to estimate the import demand function for apparel from Hong Kong, Taiwan, Korea and Japan; special emphasis is placed on Hong Kong considering its position as the largest exporter of apparel to the U.S. A second objective was to estimate price, income, product substitution and cross price elasticities of import demand. Also, to estimate the market share and product share from the apparel exporting nations.

The data sources for this study utilized annual publications for the years between 1972 to 1984. All the sources were from published secondary sources.

The estimations for the selected statistical models were obtained by utilizing Ordinary Least Square (OLS) regression equations in a Statistical Analysis System (SAS). Some of the variables in the models were in natural numbers and some were transformed to logarithm before running the regressions.

The results of the study were acceptable. The coefficient signs were as expected in most of the cases and many were statistically significant. Market share resulting would serve as a good guide to the importance of the apparel exporting countries in the U.S. market. The quota price estimations in 1982 for Hong Kong were high as expected at $151 million, and a distortion effect of $70 million for a total loss to the consumer of $221 million in 1982.

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# CHAPTER I

# INTRODUCTION

## 1. STATEMENT OF THE PROBLEM

The purpose of this study was to investigate the effect an import quota system in apparel has upon the American consumer, worker, producer, industry, and economy in general. In particular, the study tries to measure the welfare cost of apparel import quotas in the United States.

## 2. INTRODUCTION TO THE PROBLEM

Since WWII and particularly since the 1950's the United States has entered into many multilateral and bilateral agreements, such as the Agricultural Act, the Short-Term Agreement on Cotton Textiles (STA), the Long-Term Agreement (LTA), and the Multi-Fiber Arrangement (MFA) that has been extended three times since its inception in 1974. Trade agreements today are usually concluded under the guidance of the General Agreements on Tariffs and Trade (GATT), which covers all trade, including textiles and apparel trade.

There have been many studies investigating their effects of such agreements on international trade. Generally neglected or missing, are studies investigating the effects that mandatory and voluntary import quotas have on both the importing and exporting nations, their citizens and their economies.

Economists usually prefer a tariff to a quota, because a tariff collects revenue and establishes a mechanism that can allocate revenue to consumers. Tariffs are taxes levied on goods imported, whereas quotas are a strict limit on the quantity imported (Magnier, 1987, p.16a).

Since quotas limit quantities, estimating their costs becomes a very difficult task since price and quantities in the absence of a quota (free market price and quantities) are not observable, and in fact did not occur. Cost estimates depend upon knowing price and quantity in a supply and demand context, but quotas block this flow of information. The scarcity of studies on the subject is a reality.

Thus, in order to attempt to estimate quota costs that occur at a certain time, one must compare the existing quota with a hypothetical situation that would pertain if this quantitive trade restriction were removed. In most instances, the information is not available to measure the effects of existing quotas. Estimating the hypothetical must be based on intelligent and educated inferences and deductions from data that does exist utilizing existing theory from the discipline of interest. Such estimations and educated guesses are necessary, however unsatisfactory they may be, in the initial stages of analysis.

Economists and other scientists in their attempts to estimate the effect of quotas on consumption, production, and imports, often utilize trends that develop when a quota is imposed or when a quota is lifted, which is prevalent in other nations. Researchers also turn to recent literature dealing with the demand and supply elasticities of imports (Mintz, 1973, p. 25) to provide valuable clues to assist in solving the cost problem.

Economists will find that collecting prices of quotas is their biggest challenge and the key to success in research of this type, but prices for goods in both the exporting country and the importing country are rarely collected, and quota prices are quite rare.

There are direct "static" costs, and indirect "dynamic" costs associated with quotas. Dynamic costs are accrued when a nation's quota causes a deterioration in their methods of production, when a nation does not advance its technology, or when a nation misses an opportunity for economies of scale. These costs require a detailed, intense study beyond the scope of this thesis.

Static costs are induced by a change in consumption, import levels, domestic price,

and levels of domestic production. The main direct cost that is generated from imposing a quota is termed "total user cost" that is defined "as the reduction in the real income of the users of the controlled good, that is, the amount by which they are worse off than they would be without the trade restriction" (Mintz, 1973, p.27).

The "total user cost" includes the following costs (Mintz, 1973, p. 28):

1. "Consumption costs" which represents the consumer welfare cost.
2. "Import cost," the extra cost attributed to the imported good that would not have been present without a quota.
3. "Production cost," is associated with the loss in production efficiency. That is a result of having to produce a good domestically with less resources instead of purchasing a more efficient, less expensive imported good.
4. "Transfer costs," is a result of redistributing to the importer, the extra income incurred by having a more expensive product under a quota. The main goal of a quota is usually to achieve this "transfer cost."

In conclusion, the full effect of a quota must be fully realized in order to have a more efficient trading system. If the total costs incurred by quotas and their effects are to be measured successfully, further research must be conducted. Granted that measuring quotas is more difficult than measuring tariffs, because of their somewhat intangible quality, but with care and dedication a study of estimating the costs of a quota, and a procedure of doing so successfully is attainable. This thesis seeks to accomplish these tasks.

## 3. OBJECTIVES AND HYPOTHESES

The purpose of the study is to estimate and evaluate the costs to the U.S. consumers and the U.S. economy of quotas on apparel imports into the U.S.

To accomplish this goal, one objective is to estimate the import demand function for apparel. This will be for apparel imports from Hong Kong, Taiwan, Korea and Japan,

particular emphasis will be given to Hong Kong given its position as the largest single exporter of apparel products to the United States.

A second objective is to estimate and obtain price elasticities of import demand, income elasticities of import demand, elasticities of product substitution, and cross price elasticities of demand; also, to estimate market share for apparel exporting countries as well as product market shares both total and by country of origin.

The third objective is to estimate the welfare costs to U.S. consumers of quotas on apparel imports into the United States. These costs will be based on quota premiums in Hong Kong.

Import demand functions and elasticities will be estimated for seven categories of apparel for each of the four countries in the study. The market shares for each of the four countries will be based on the total U.S. market for each of the seven apparel products categories considered in the study.

Specific hypothesis of the study are:

1. Import demand functions for apparel can be specified as a monotone function of apparel prices and consumer income.
2. Quantity demanded of each apparel import is inversely related to its own price.
3. Quantity demanded of each apparel import is directly related to prices of related apparel goods.
4. Quantity demanded of each apparel import is directly related to consumer income.
5. Direct price elasticities of import demand are negative for all apparel categories considered in the study.
6. Cross price elasticities of import demand are positive for all apparel categories considered in the study.

7. Income elasticities of import demand are positive for all apparel categories considered in the study.
8. Elasticities of apparel import product substitution are greater than one for all apparel categories considered in the study.
9. Market shares for all product categories are equal.
10. Import quotas on apparel into the U.S. impose price increases upon U.S. consumers.
11. Import quotas on apparel into the U.S. reduce product choices for U.S. consumers.
12. Import quotas on apparel into the U.S. impose welfare costs upon the U.S. economy.

# CHAPTER II

## UNITED STATES TEXTILE AND APPAREL TRADE POLICY

The U.S. trade policy is broad and varied, which includes a wide scope of political and economic issues. The policy covers labor, business and agricultural issues both for private sectors and for congress and executive branches. The U.S. policy must also take into account considerations for foreign policy. All of these issues combined, help shape the U.S. trade policy (Monroe, p. 93, 1975). Trade legislations are usually of a political nature because congress passes the legislation and the executive branch enforces the decision. These interests are often conflicting, which explains the ambiguity of some legislation passed. A frequent question asked in regard to policy is whether the owners of capital and of labor have similar or contradictory benefits from an agreement in international trade. According to the Stolper - Samulsen theorem, the case for the capital owners and for the labor are usually conflicting (Grennes, 1984, p. 212). Industries that are exceptions to the Stolper-Samulsen theorem are the automobile, steel and textiles industry.

The U.S. textiles and apparel industry is very politically oriented and has been so for well over a hundred years. The industry has obtained such protection over time by being able to influence the decisions of Congress as well as those of the President. The U.S. textile industry has sought political solutions to economic problems. The domestic textiles and apparel industries of most producing nations have achieved special protectionism treatment for decades that has been unprecedented relative to all other non-defense industries. The industries have been protected through unilateral actions by governments, bilateral and multilateral agreements, high rates of tariffs, and other actions including exemption from following numerous measures taken to liberalize world trade.

The initial protectionism measures were considered to be temporary relief for domestic trade problems. This temporary goal has developed, in both the United States and other nations, into "institutionalized protection" that was achieved over the decades by persistent lobbying and government relief (Samolis, 1986, p.5).

Textile and clothing trade conflicts have been around for quite a long time. They began during the 1300's if not earlier when King Edward in medieval England banned woolen articles from being imported. During the 1600's, handcrafted textiles were prevented from entering England from China and India. At the turn of the century, Britain textile and apparel goods amounted to 70 percent of the total world's trade of textiles and apparel. The status of the industrialized nations after 1929 (world depression) was challenged tremendously, with the arrival of Japan and its huge textile exports, such that by 1933, Japan was the leading cotton textile exporter in the world (Aggarwal, p. 10, 1985).

The origins of today's policies restricting imports of textiles and apparel in the United States began in the 1930's. The Smoot-Hawley ACT of 1930 imposed of tariffs on cotton and textile goods imported into the U.S. This act naturally caused other trading nations to retaliate in kind and increase trade restrictions of imported goods from the U.S. this action is often sited as the key, if not the major, clause of the Great Depression of 1929.

The general agreements on tariffs and trade (GATT) was developed in 1947 with the purpose of improving the climate and mechanism of free trade, and in doing so, avoiding the seed of depressions. The GATT required the reduction of tariffs and quotas multilaterally. In order to solve trade problems globally, the GATT urged nations to encompass free and easy world trade. The textiles and apparel industry is the only industry that is exempt from the GATT's usual policies. The GATT does not represent a court nor

does it have the power to settle disputes in trade. The GATT only provides general rules and policies for solving trade disputes (Grennes, 1984, p. 213).

After WWII came the emergence in textiles and apparel production of countries such as Hong Kong, Pakistan, South Korea and India that prospered because of their low labor costs. At this time, domestic production of the importing countries were dominant and imports were minor in the U.S. Textile and apparel imports represented a mere 2 percent in 1955 of the United States market.

Domestic problems in the textiles and clothing industries began as a result of unionization that increased in the northern segment of the U.S., forcing producers to shift to the south for cheaper labor. Also, the development of synthetics forced many traditional producers of wools and cotton goods to leave the industry. This suggests that even if imports had not existed, many domestic mills would have been forced to close shop. Imports were utilized as scape goats by the domestic U.S. textile and apparel industry for problems internally generated. Domestic manufacturers, by succeeding in establishing protection, not only preserved their place in the market, but have done so without the need for government to intervene in the process of production.

The U.S. began its initiative to restrict goods from entering the country as early as 1953, when the American cotton manufacturers institute (ACMI) moved to fight the propaganda of "free trade" that was flooding the U.S. from Japan (Aggarwal, p.11, 1985). After the Verbal threat issued by the U.S. Secretary of State in 1955, and the realization by Japan of how strong the protectionist sentiment was in the U.S., Japan "voluntarily" restrained the exports of certain categories of cotton textiles for one year.

In 1956 when it became apparent to Japan that the U.S. Tariff Commission could issue an escape clause and U.S. congress had enough votes to pass a quota bill on textiles, Japan agreed to "voluntarily" extend their restraint on cotton textiles for an additional five years.

Japan responded to this VER in several ways (Stockhausen, 1988, p. 6):

1. Japan exported more then its limit in 1957, through exploitation of ambiguities in the definitional terms.
2. Japan set aside around 20 to 25 percent of its allowed quota especially for new and special goods, in order to encourage their cotton and textile industry to diversify.
3. Japan encouraged its woolen and synthetic textile industry to grow.
4. Stiff penalties were imposed on holders of unfilled quotas, but they did allow the selling of export licenses.
5. Japan discouraged dumping and encouraged the more expensive products to be exported in order to increase revenues. This caused the exports to the U.S. to double in value in the first three years of the agreement.
6. Japan set up a trade council in the U.S. in order to lobby with the government and the American people, to see what the sentiment level was in terms of protectionism.
7. Finally, Japan began to enter the textile markets of other developed countries, specifically in western Europe.

The gap created by Japan in the U.S. textile market was soon filled by other developing nations. Hong Kong especially did not waste any time in taking advantage of this void. While Japan's market share of cotton imports decreased to 34.1 percent in 1961 from a 54.5 percent in 1956, Hong Kong's market share increased to 23 percent from a mere .05 percent between the years 1956 and 1961.

Hong Kong exports into the U.S. grew such that the U.S. textile industry demanded increased levels of protection. A meaningful threat of a quota though between the years 1959-1960 against Hong Kong was never produced (Aggarwal, p.12, 1985). Imports

from developing countries increased from $3.6 million to $108 million during this same period, thus nullifying the import restrictions of Japanese goods (Mintz, p. 52, 1973).

The United States was forced to take even further steps to protect their domestic cotton textiles industry during this period. In 1961, a conference conducted under the auspices of GATT was held, and a Short-Term Agreement (STA) of one year was negotiated. These negotiations were followed by a Long-Term Agreement (LTA) in 1962, that gave the importing nations participating in the agreement the authority, despite the GATT's rulings against imposing quotas, "to limit imports of specified cotton textile goods which it found were disrupting its markets" (Mintz, p. 52, 1973). The (LTA) ran for five years until 1967, and was extended to 1970 and extended further to 1973.

Similar actions to prevent non-cotton textiles from being imported into the U.S. had been attempted, but to no avail. Not until 1971 when the U.S. began serious threats against Japan, South Korea, Hong Kong and Taiwan; was a VER signed with all four countries.

Before this VER was signed, abundant quantities were imported to the U.S. from these four nations. After the agreement, the quality and price of their merchandise began to rise. These nations exploited the agreement and even found alternative markets. For instance, Japan became an important alternative market for Hong Kong, Taiwan and South Korea (Stockhauser, 1988, p. 8).

Despite the Long-Term Agreement and the VERs signed in 1971, imports into the U.S. continued to grow. Textile imports increased from $1.02 billion to $2.4 billion in 1982 prices from the year 1961 to 1972. Also, apparel imports increased from $648 million in 1961 to $3.5 billion in 1972. The average growth rate per year amounted to 11.5 percent for both textiles and apparel (Cline, 1987, p. 148).

The thrust of the textiles and apparel imports were goods made from man-made fibers that were not covered within the cotton textiles arrangements. In the decade be-

tween 1960 and 1970, man-made fiber goods increased to a whooping 321 million pounds from a mere 31 million pounds (Cline, 1987, p. 148). When the time arrived in 1973 to renegotiate the LTA, the United States pressured to extend the coverage of the agreement to man-made fiber textiles and woolen goods. The negotiations resulted in an arrangement known as the Multi-Fiber Arrangement (MFA), which came into effect January 1, 1974. A multilateral agreement was preferred over a bilateral agreement, because not only did they think it would cause less havoc to the GATT rules, but would also have other countries such as Europe to share the burdens of imports.

The MFA was administered under the surveillance of the GATT and gave importing countries the right to limit their textile imports only in the case when those imports were causing "market disruptions" for the domestic market (Kreinin, 1983, p. 310).

The primary reason for the development of the MFA was "to give developing countries guaranteed and growing access to markets in Western Europe and North America" (Samolis, 1986, p. 10). This growth is arranged so that market disruptions of these developed nations may be minimized.

The MFA also provides a framework that allows for bilateral negotiations with low-income countries in regard to their suppliers and importers (Grennes, 1984, p. 187).

The MFA provided the extension of import controls with legitimacy; therefore, the U.S. policymakers offered to lesson the extent of protection. The MFA allowed for a 6 percent per year quota growth instead of the previous 5 percent. Also, exporters were allowed to "carry over" quotas not utilized for the next year; they could also borrow against quotas issued in the future (Cline, 1987, p.150).

On one hand, taking these concessions into account, the MFA was considered at first to be a step towards trade liberalization. Whereas on the other hand, quotas were increased in order to include woolen products and man-made fiber textiles. Therefore, the liberalization aspect of the MFA was at best ambiguous.

The MFA was a blatant breach to the rules of the GATT in that:

1. The MFA violated the principle of the most favored nation (MFN); which prohibits discriminatory actions towards exporting countries.
2. The MFA broke a GATT rule by utilizing tariffs in their protectionist actions instead of quotas.
3. Finally, by establishing the MFA, the U.S. has paved the way for further restrictions being imposed against developing countries.

In 1977, the MFA's potential for employing stricter protection barriers could be absorbed in its renewal until 1981.

The EC during the late seventies was a major advocate for tighter restrictions due to the tremendous pressure caused by excess imports.

The U.S. at this time was not as aggressive in demanding restrictions mainly because:

1. The U.S. because of MFA-I, had already established restrictions that had been promptly implemented.
2. The U.S. dollars between the years 1971 and 1973 had depreciated tremendously; which had improved the U.S. industry's competitive status in international trade.
3. U.S. employment was fairly steady with a slight decline, while European employment had fallen around a sixth between 1973 and 1977 (Cline, 1987, p.151).

The European community (EC) had developed a more elaborate protection system under the MFA-II. The U.S. under MFA-II had also increased their protective tendency in their bilateral agreements, but to a less or extent than the EC. The U.S. tightened up their agreements with the big three; total quotas from Hong Kong, Taiwan and Korea

were frozen at the levels agreed upon in 1977. Quota rates of growth were only allowed at below the 6 percent level.

This trend of freezing quota levels for the big three countries can be observed in the subsequent extensions of the MFA.

The MFA-II was extended in 1981 to 1986, to be known as the MFA-III. The major thrust of MFA-III was a "further tightening of restrictions (Cline, 1987, p. 154), especially for the three largest textile and apparel suppliers to the U.S.; Hong Kong, Taiwan, Korea. The U.S. claimed that the 6 percent quota growth level was no longer realistic. The U.S. managed to extract import restraints on products that limited growth rates to between a 1/2 percent per year and 1 1/2 percent per year.

A new "call" mechanism that would serve as a basis for imposing import quotas was added to the MFA-III. If imports reached 20 percent of domestic production, or if imports had increased by 30 percent in the last year; a "call" would automatically be triggered. Within the five years, 400 quotas were imposed by the Reagan Administration using the "call" method. In many of the "call" cases, the question of "market disruption" was not even taken into consideration (Samolis, 1986, p.13).

Despite costs to the consumer and the economy, the MFA was renewed through July of 1991. MFA-IV managed to further restrain imports; the U.S. and Canada both urged that silk blends, ramie and linen be included within the coverage of products in the agreement.

The MFA-IV pledges the nations involved to cooperate in diminishing fraudulent actions, such as declaring a false country of origin. In Article 8 of the MFA, adjustments were made to allow for charges to be made in regard to fraud; which would be discussed among the countries involved (Williams, et al. 1987, p.3-3).

On one hand, the Reagan Administration provided extra protection for the textiles and apparel industry by tightening restrictions in the MFA-IV negotiations. On the other

hand, the Administration opposed the Textile and Apparel Trade Act of 1985 that had been passed by both houses of congress, by a presidential veto (Cline, 1987, p.17).

If the 1985 bill would have been enacted, changes in international trade policy would have been as such:

1. Total textile and apparel imports would have been called back to the MFA level; which was 6 percent in 1980 for the major suppliers.
2. The current bilateral negotiations would have been driven away by a strict comprehensive system of import licenses. This action overrides the rationale for establishing the MFA; which provides exporters with a say in the restraint action.
3. The bill for the first time, required Canada and the EC to have import licenses.
4. Imports from the big three would have been cut back by 18.5 percent for apparel and 59.1 percent for textiles (Cline, 1987, p.209).
5. The 1985 bill would have cost U.S. Consumers $44 billion dollars over a period of five years.
6. Finally, foreign retaliation to this bill was to be expected. The Council of Economic Advisers estimated that retaliation would be against $50 billion of the U.S. exports; leading to the loss of jobs for the American people (Cline, 1987, p.210).

The MFA-IV negotiations were well in place by the time that an override of the president's vote would have taken place.

The U.S. textiles and apparel industry remained unsatisfied and demanded further protection. In 1987, The Textile and Apparel Trade Bill of 1987 was mounted in the hopes of increasing import restrictions.

The bill no longer required a rollback to levels of MFA-I, but accepted import levels of 1986. The bill proposed global quota coverage and for the first time, imposing import

restrictions on European and Canadian goods. Quota growth rates would be constrained to a 1 percent growth rate per year for textiles and apparel, and are to be frozen at the levels accepted in 1986 for footwear.

If this bill were to be enacted, the EC warned that it would retaliate by increasing restraints on U.S. textile imports into the European market.

The 1987 bill is considered to be even more restrictive than the 1985 bill because of its increased global nature. The 1987 bill is expected to cause the MFA to collapse, taking with it all bilateral agreements.

The shift to new global import restraints is expected to change the protectionism regime in textiles and apparel. We would see the elimination of export restraints and a move back to import quotas directly imposed on a country. The decision has not been reached yet as how to distribute quota levels; should the U.S. utilize the previous system of historical levels or should countries compete for the quota level. An attractive method, especially to legislators, is to auction quotas to the highest bidder (Cline, 1987, p.226).

At the present, some see auctioning quotas as a compromise between free trade and protection. Advocates of the idea declare that the U.S. will retain $5 billion from trade instead of it going to foreign suppliers. But those who are skeptical of the idea claim that the consumer will have added cost, as well as restricting free trade (Magnier, 1987, p.1A).

The annual costs to the consumer, effects on creating direct jobs, net welfare cost to the whole economy, and costs to consumer for each job created directly or indirectly, can be seen for projected years in the future in table 2.1.

The table reflects a cost of $1.3 billion to consumers between the years 1987-1989 to a $20 billion increase by the year 1996, all estimated in 1986 prices, for a total annual cost throughout the decade of $7.1 billion (Cline, 1987, p. 227).

The general feelings towards the Bill of 1987 is that it will be very costly to consumers, producers, and to the economy in general.

## Table 2.1 The Costs Created by the 1987 Trade Bill

| Year | Percent Increase in Price | | Welfare Costs (Millions Dollars) | | Consumer Costs (For Each Job Created) (1986 Prices, includes Indirect Employment Effect) | Employment (Direct Only) |
|---|---|---|---|---|---|---|
| | Domestic | Imports | Consumer | Economy | | |
| 1987 | 1.71 | 3.50 | 1,637 | 995 | 48,403 | 19 |
| 1988 | 0.82 | 1.68 | 799 | 480 | 49,825 | 9 |
| 1989 | 1.59 | 3.26 | 1,564 | 944 | 48,814 | 18 |
| 1990 | 2.01 | 4.13 | 2,004 | 1,214 | 51,175 | 22 |
| 1991 | 2.59 | 5.33 | 2,615 | 1,591 | 52,468 | 28 |
| 1992 | 5.42 | 11.32 | 5,593 | 3,499 | 53,257 | 59 |
| 1993 | 8.34 | 17.66 | 8,801 | 5,661 | 55,555 | 89 |
| 1994 | 11.35 | 24.39 | 12,259 | 8,110 | 57,875 | 119 |
| 1995 | 14.45 | 31.52 | 15,996 | 10,887 | 60,312 | 149 |
| 1996 | 17.64 | 39.07 | 20,037 | 14,030 | 62,887 | 179 |

Source: Cline, 1987, p. 228.

In table 2.2, there is a summary of the trade agreements passed or presented as solutions for textiles and apparel trade problems.

**Table 2.2 Summary of Trade Agreements in the U.S.**

| |
|---|
| Hawley-Smoot ACT, 1930 |
| General Agreement on Tariffs and Trade (GATT), 1947 |
| Voluntary Agreement with Japan, 1957 |
| Short-Term Agreement on Cotton Textiles (STA), 1961 |
| Long-Term Agreement Regarding International Trade in Cotton Textiles (LTA), 1962 |
| Bilateral Agreements and Voluntary Limitations (after 1962) |
| Arrangements Regarding International Trade in Textiles (Multifiber Arrangement or MFA-I), 1974 |
| MFA-II, 1977<br>MFA-III, 1981<br>MFA-IV, 1986 |
| Textile and Apparel Trade Act of 1985 |
| Textile and Apparel Trade Act of 1987 |

Source: From Text

# CHAPTER III

# THEORETICAL CONCEPTS AND LITERATURE REVIEW

## 1. QUANTITATIVE TRADE RESTRICTIONS

"Quantitative trade restrictions" (or QRs) can be administered in many forms, including an export quota, primarily "Voluntary export restraints" (or VERs), an import quota, or a tariff quota. The import quota does not levy a tax on imported goods as does the widely used tariff, but rather it restricts the permissible quantity of imports into a specific country or region. A VER only limits the amounts of goods from the exporter who "voluntarily" sets this export restraint upon its own exports. A tariff quota is a combination of both tariff and a quota. That is, up to the quota limit a low rate tariff is usually imposed, and any amounts that exceed the quota limit are charged a very high duty. If this established high rate is effective enough in discouraging exceeding the quota, the tariff quota and import quota can have the same effect.

The import quota is considered to be the most effective form of protection for the domestic industry, thus making it the most dangerous to free trade and markets. When a government levies a tariff tax, the extent to which prices will rise for the protected good is known, whereas for a quota it is not clear how high the price of the protected product will rise.

Quotas are costly for businesses and governments to administer , primarily because of the red tape and machinery utilized to keep the quota under control, and the allocation of quotas is a very difficult task, primarily due to monopoly profits. Government agencies or a form of cartel, not a public official, should assign who gets what share of the profits from imports.

Income distribution is a major disadvantage in regards to a quota. In the case of a tariff, the government receives revenue resulting from a tariff which can in theory be redistributed to the public. However, profits generated from quotas usually are received by the industries who are given the rights to bring in these goods under a quota. In many cases, the windfall profits are received by the exporting country.

In reality, the quota and the tariff are different means to achieving the same goal. The quota only limits the volume of goods imported without directly affecting the price of the imports. Price though is dependent upon the supply of imported goods; hence quotas, would indirectly raise the price of the goods as a tariff does.

The main purpose for a quota is for the sake of protecting the domestic industry. By restricting goods from foreign markets, domestic products will have more of a chance to flourish. The quota has also been utilized as an aid in coping with a country's incurred deficit in its balance of payments, and quotas have been frequently used as a device to raise the domestic employment level.

In figure 3.1, we see the economic effect of a quota on the domestic market. In a free trade industry world, price for this good can be sold and purchased for PW. The amount produced domestically is at XO, and the amount purchased will be YO. The difference between XOYO will be imported. An import quota is imposed limiting the amount imported to EG, hence raising the price from PW to PI. This creates rents known as "windfall profits" depicted by the area ABHF. These are distributed to the exporting countries' government, producers, and exporters abroad.

Output in the domestic market increases from XO to X1 because of the quota, increasing the demand for resources including labor. The profits that are incurred in the domestic market are represented by the area PIAEPw. Before the quota, consumer surplus was the area below the demand curve and beyond the PwI line. When the quota

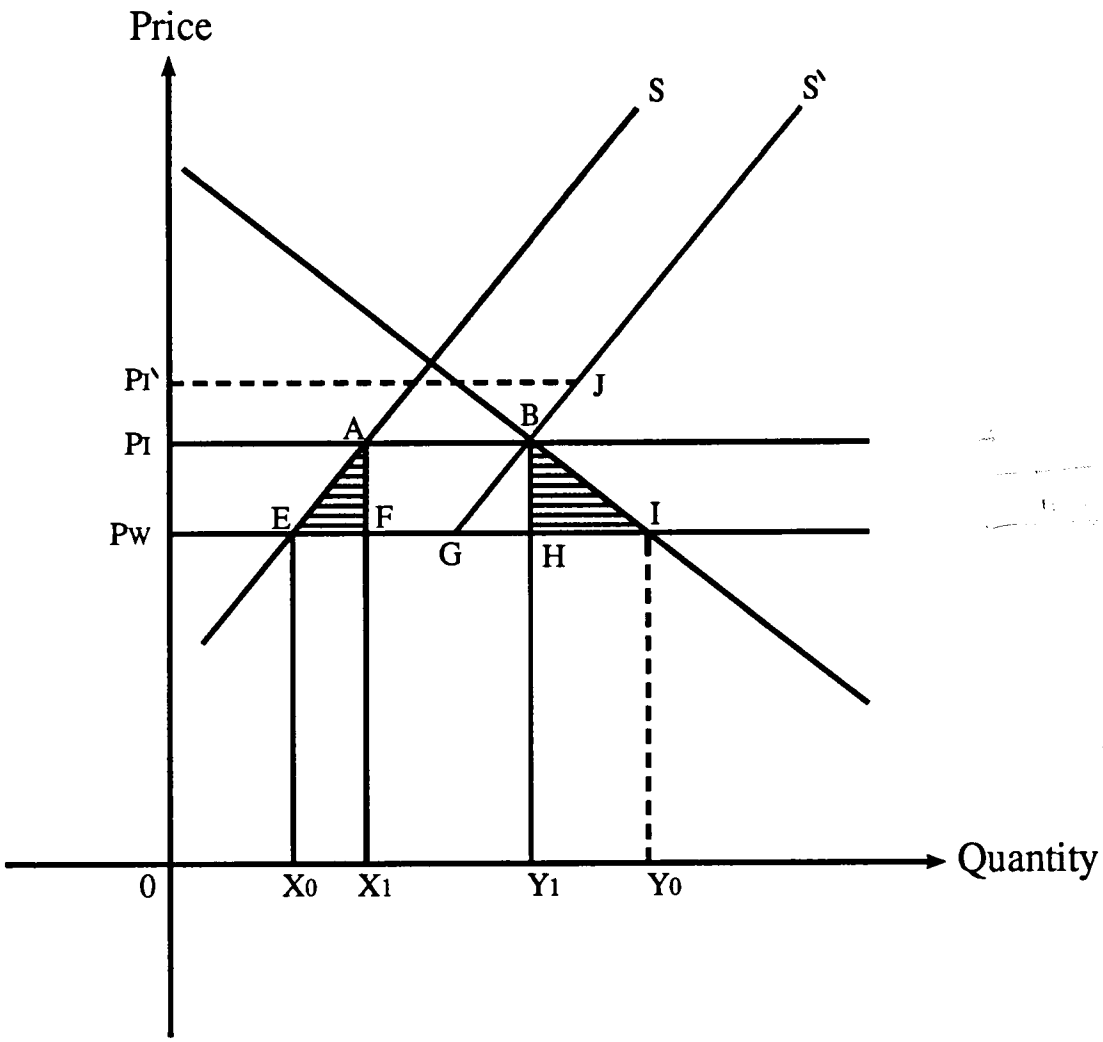



Figure 3.1 Effect of an Import Quota Domestically

Source: Bergsten, 1987. p.14.

is imposed, consumer loss is the area PIBIPw. In order for consumers to be as well off as they were before the quota, a payment of PIBIPw must be made.

The area ABHF is also a loss to consumers due to the foreign transfers of revenues. The two triangular spaces denoted by the letters AFE and BIH are also a loss to the consumer, but this is considered "dead weight loss" that is attributed to distortions in the economic system because the quota was imposed (Bergsten, 1987, p.18).

After World War II, quotas were very popular in western Europe. Today, trade restrictions in developed countries are not as prevalent especially after the General Agreement On Tariffs and Trade (GATT) which now regulates and establishes the principle conduct in international trade. The conduct in international trade under the GATT is based upon three basic principles. First, the overall forbiddance of non-tariff protection means such as export subsidies and quotas; unless a country is having difficulties with its balance-of-payments, then such forms of protection may be used. Second, all GATT members must abide by the most favored nation (MFN) principle; that is, by not discriminating when imposing tariffs from one nation to another. Third, consultation between nations is important in order to avoid damaging trade interests and relations between contracting nations (Kreinin, 1983, p.340). The GATT mainly provides a means for countries to have multilateral "rounds" of negotiations between nations who are GATT members; which comprise 80 percent of trade worldwide (Kreinin, 1983, p. 340).

The most recent multilateral talks between GATT members were negotiated in 1979 during the Tokyo Round and the Uruquay Round of 1988. The Tokyo Round resulted in an overall reduction of tariff barriers by 33 percent (Daniels, 1986, p. 183). The main thrust of the conference was about the ever increasing complicated non-tariff barriers. Even though the GATT prohibits barriers to trade, and the U.S. publicly opposes trade barriers, we observe a rapid increase in non-tariff barriers. We see the emergence of a new protectionist tool that does not fall under prohibited protectionist devices and is ac-

cepted by nations worldwide. This device is the previously mentioned "voluntary" export restraint (VER), which is also sometimes referred to as "Orderly Marketing Arrangement." This voluntary quota is "imposed by exporters or an exporting nation on its sales of certain commodities" (Mintz, 1973, p. 1). When the exporter is the one who wants to restrict the amount of exports into a certain country, this is therefore looked upon as an entirely separate form of trade restriction. This form does not fall under the GATT specification or what the United States considers an unacceptable form of protectionism. In reality, VER's often fall into a grey area regarding the legitimacy of VER's under the GATT policies. Doubts frequently come into play. VER's are not always clear on the involvement of governments and the lack of steady provisions on market-sharing, and countries participating in arranging VER's are not likely to ask to settle disputes under GATT regulations. Even so, under international policy, there is not a law which states that an exporting country can not choose to limit how much they want to sell to a certain region, and even informing the country of such restrictions is not considered to be an act in opposition to the GATT laws. VER's have advantages to both parties, and are usually opted for as a form of a trade barrier at times when trade restrictions are needed.

The advantages received from having VER's for the importing country are several. Among them, the scarcity of the good eliminates the need for the exporting country to retaliate. Also, VER's eliminate the need for lengthy expensive multilateral public debates. When expenses are saved, the need for legislative domestic struggles. Upon agreeing on a VER, countries eliminate the need for an expensive investigation in regard to whether a countervailing duty is in order or not. The domestic market VER is a "quick, politically inexpensive assistance to an industry threatened by import competition" (Boonekamp, 1987, p.3).

The exporter not only gains economic rents from VER's as compared to other forms of trade barriers (especially the tariff), but the revenue goes to the country imposing the

trade barrier and not to the exporting country. The exporter is also assured a portion of that importer's market share without the threat of a countervailing-duty being imposed. Hence, both the exporter and importer may readily agree to VER as compared to any other form of protectionism.

On one hand, when a country takes the first step to restrict exports to another country, this course of action could be induced by the desire to protect national security matters, or to give reign to exploitative monopoly powers, or for the sake of reducing inflation in their own economy (Kreinin, 1983, p. 311). On the other hand, some consider the "voluntary" quota to be a myth, in that the country which restricts its products is in reality only doing so under duress, and the fear of the threat that the importing country will utilize compulsory tactics.

Domestic industries usually urge their government to form a voluntary export restraint with an exporting country in order to lessen the competition the domestic industries face at home. However, but this does not seem to be a major concern to the trading nations today. The support for protectionism is understandable to those who are expected to prosper from such protection tactics, but we also see support from people who truly believe that too many imports are harmful to the economy of their country.

Import quotas are more effective than voluntary export restraints, because monitoring exports is a much more difficult task than trying to control imports. This is often the case because the exporting country does not want to limit its exports but has no choice. The VER has the same effect on price and quantity as does a mandatory import quota.

The main difference between a quota and the VER is the distribution of the revenue from the trade restrictions. With the imposed quota, equivalent-tariff revenues go to the importer, whereas revenues from a VER go to the exporter. Since there are no licenses with a VER, this could lead to suppliers colluding on quantities supplied so as not to exceed the quantity agreed upon. This leads to price collision as well. As shown in

Figure 3.2, suppliers tend to agree on a minimum price 02B rather than utilizing a competitive price at 02A. When suppliers utilize the minimum price 02B, this increases their profits by the area ABRN.

VERs basically alter the competition in the industries that they are imposed upon. The nature of competition is changed in that the industry that is protected becomes in a sense a "price leader", as compared to the country which furnishes the VER. When the protected industry raises its price on the substitute imported goods, the exporting country must hence follow and raise its price as well in order to guarantee their received compensation for the VER. Both the exporting country and the producer in the protected country profit from increasing the price of the merchandise. The consumer though, will always lose through higher prices.

The larger an industry is, the more firms there are, hence making the above mentioned harder to accomplish. The more firms there are, the more difficult it becomes to convince all firms in that industry to participate in this price increase. Some firms may want to maintain their prices at the competitive level in the hopes of getting more of the market share. Also some foreign countries who are not part of the VER might decide that they also want more of a market share. All in all a VER, in order to be effective in raising domestic prices and raise levels of domestic production, must be arranged at a level of import reduction. In reality though, a VER will always encourage collusion between industries no matter how large the number of firms. Therefore, VERS are encouraging legislation that anti-monopolistic actions are trying to discourage. Price increases on products can be substantial when VERs are administered.

An IMF staff paper by Charles Collyns (March 1987) studied the effect of a VER administered on Japan's exports of automobiles into the United States. Estimates for 1984 show an increase of 17 percent in the average price of automobiles from Japan to about $1,650 due to the VER. About $1,030 was due to improved quality in the

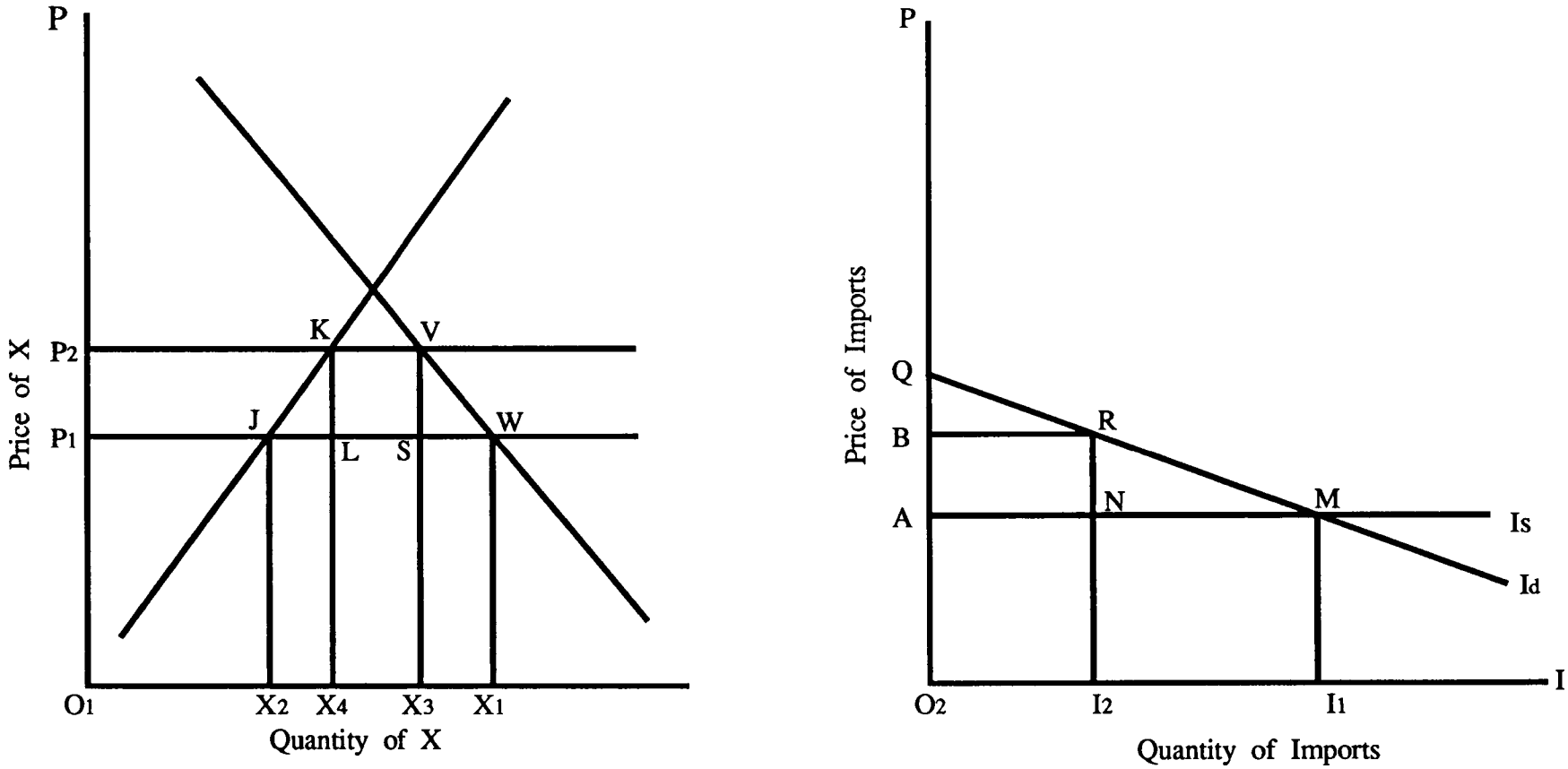



Figure 3.2 Effect of an Import Quota

Source: Grennes, 1984, p.185.

cause the exporter needs to upgrade his/her product in order to achieve the maximum profit. Domestic suppliers and foreign countries who are unrestricted with substitute products are also likely to upgrade their products as well.

According to this study, the net price impact was around $620 for each car in the year 1984; this amounted to a total cost of $6.6 billion dollars to U.S. consumers. In the period between 1981-1984, we see an overall price increase in cars, caused by the export restraint between the U.S. and Japan of $16 3/4 billion dollars. Six to twelve billion of this consumer cost was attributed to the U.S. domestic car industry. As for the $5-11 billion remaining, they are considered a transfer to the restraining exporting country. This is hence not only considered a dead weight loss to consumers, but also can be attributed to the loss in the whole domestic economy due to this automobile export restraint. The loss would have been greater if the welfare loss would have been considered, which resulted from consumers having less choice when purchasing an automobile. Although in Collyns study, we see that employment in the U.S. increased by providing 40,000 - 75,000 jobs during these years. But net cost to the domestic economy for each job that was provided because of these quotas amounted between $110,000 and $145,000 (Collyns, 1987, p. 170).

OECD exporting countries' rent gains from VERs conducted under MFA on textiles and apparel have been estimated to be a minimum of $2 billion (Boonekamp, 1987, p.5). According to Boonekamp, Kostecki estimated the total VER world rent transfers in 1984 to be around $27 billion. Policymakers are aware of these results, and usually negotiate these VERs on a short-term basis, but because VERs are such an attractive and effective protection tool they will no doubt continue to remain in effect.

The United States has employed VERs to limit the amounts of many products imported into the U.S. Among these products are textile and apparel, steel, automobiles, carbon, machine tools, and television sets. Usually these VER negotiations are conducted

with the major suppliers only, which in itself is a violation of the most favored nation principle in the GATT rules. Here, quotas are imposed in a discriminatory method. For example, in 1981 the U.S. negotiated a VER with Japan restricting automobiles. Also in 1977, color television sets were restrained from Taiwan, Japan, and South Korea. Quotas on textiles have been and still are a major issue in the United States and Western Europe.

In 1957, Japan agreed to restrict exporting textile goods to the U.S. In 1962, a long-term agreement was negotiated internationally to govern cotton textiles trade worldwide. This agreement was administered and expired in 1973 only to be expanded in 1974 to include negotiations in regard to trade in wool, cotton, and synthetic fibers. This agreement was known as the Multi-Fiber Arrangement (MFA) and now regulates around 80 percent of world trade of textiles, which amounts to around $80 billion of world textile trade. The MFA provides textiles a vehicle to avoid being subjected to the regular forces in international commerce. The MFA was extended in 1978, 1982, and in 1986. The MFA is a "negotiated, multilateral departure from GATT based on the principle that industrial countries, which are the main importers of textiles, require special protection against "market disruption" by power-cost, normally developing-country exports" (Boonekamp, 1987, p.3).

The Long-Term Arrangement on Cotton Textiles that lasted between the years 1962 and 1972, and the MFA are considered to be the model that VERs are built upon. The United States under MFA bilaterals has a minimum of 1,300 quotas that are by country and by product.

Imports into the U.S. from developed countries are not subject to quantitative restrictions, with the exception of Japan; nevertheless, all imports from all countries for textiles and apparel can be subjected to tariffs. The average tariff on textiles is 10 percent of imports, and the apparel average is 22.5 percent of imports (Bergsten, 1987, p. 35).

In Table 3.1, we see a list of the major exporters of textile and apparel for 1979. According to the GATT figures in 1980, Hong Kong, Italy, South Korea, China, and Taiwan are the major exporters. Whereas the main importers are Canada, United States, USSR and Western Europe with the exception of Italy. As can be seen in Table 2.1, Hong Kong exports apparel and imports textiles, whereas Japan and the U.S. do the reverse.

For the past decade, we see a tremendous increase in VERs. The exact number is difficult to estimate. In Table 3.2, there is a list of around 100 main VERs. This number is lacking because of the many unreported agreements that are negotiated between industries and governments. Questions often raised in relation to VERs are whether VERs work efficiently and whether they should be regulated. In order for a VER to be effective, it must sufficiently fulfill its purpose; and that is to protect domestic employment and allow for adjustment in that domestic sector as well.

Generally, VERs increase profits for the domestic market enabling them to enhance their industry. The United States and the European community (EC) have achieved increased profits for parts of their steel and textile industries. This can also be seen in the U.S. automobile industry as well. However, VERs also produce an opportunity for the exporting country to improve the quality of their goods. This increases competition for the domestic market in exactly the areas that are protected. If the quality of products were not upgraded by the exporter, the domestic producer could have had a comparative advantage.

As mentioned before, retaining employment utilizing VERs is very costly to the protected nation. For example, annual wages for textile and apparel workers average between $10,500 and $13,400. To maintain one position per year under VERs, the cost to U.S. consumers as estimated in 1984 amounted between $39,000 and $50,000 (Boonekamp, 1987, p. 5).

**Table 3.1 Dominant Importer and Exporter of Textiles and Clothing 1979 (In billions of U.S. Dollars)**

| Country | Textiles | Clothing | Total |
|---|---|---|---|
| Italy | $+1.82 | $+3.86 | $+5.68 |
| Hong Kong | -1.54 | +3.60 | +2.06 |
| Korea | +1.37 | +2.83 | +4.20 |
| Japan | +1.97 | -1.45 | +0.52 |
| Canada | -1.11 | -0.56 | -1.67 |
| India (1978) | +0.73 | +0.33 | +1.06 |
| Australia | -0.88 | -0.30 | -1.18 |
| USSR (1976) | -1.11 | -1.88 | -2.99 |
| United States | +1.07 | -4.77 | -3.70 |
| Sweden | -0.53 | -0.88 | -1.41 |
| West Germany | -0.38 | -4.73 | -5.11 |
| The Netherlands | +0.10 | -1.93 | -1.83 |
| United Kingdom | -0.78 | -0.95 | -1.73 |

Source: General Agreement on Tariffs and Trade, International trade, 1979/80 (Geneva: GATT 1980). As found in Grennes, 1984, p.187.

**Table 3.2 Major Voluntary Export Restraints Known in 1986.**

| VERs (The MFA Excluded) | | Restrained Exporters | Protected Industries |
|---|---|---|---|
| **Total VERs:** | 99 | Japan(24) : Korea(14) Brazil(4) : ODCs(21) OICs(20) : E. Europe(16) | EC(55) : USA (32) (Canada, Japan, Norway(12)) |
| Steel: | 39 | EC(4) : OICs(12)USA(25) : EC(14) DCs(12) : E. Europe(11) | |
| Agricultural Products: | 17 | DCs(6) : ICs(6) E. Eur(5) | EC(16) : Canada(1) |
| Automobile & Transport Equipment: | 13 | Japan(11) : Korea(2) | EC(9) : USA(1) OICs(3) |
| Textile & Apparel: | 11 | | Korea(2) : ODCs(9)USA(4) : EC(3) : OICs(4) |
| Electronic Products: | 7 | | Japan(6) : Korea(1)EC(6) : USA(1) |
| Footwear: | 5 | Korea(3) : Japan(1) : Taiwan(1) | EC(2) : OICs(3) |
| Machine Tools: | 3 | | Japan(3)EC(2) : USA(1) |
| Other: | 4 | Korea(3) : ICs(1) | EC(3) : Norway(1) |

Source: Boonekamp, 1987, p.4.
E. Eur. is East Europe; EC is the European Community; OICs are other industrialized countries; ODCs are other developing countries; ICs are industrialized countries; DCs are developing countries.

In figure 3.3, we can see how a VER functions. Before a VER is agreed upon, the industry's demand and supply are denoted as D and S in the graph. Also quantity and price at equilibrium are denoted as X1 and P1 respectively. At this stage, total foreign revenue transfer is in the area OP1E1X1, which the negotiation will seek to maintain. When demand temporarily declines to D*, the exporting country restrains the quantity exported to X2 in order to be able to raise their price to P2. At this point, total foreign revenue exchange is donated by the space OP2E2X2, which is in reality equivalent to OP1E1X1 (Kreinin, 1983, p. 306).

The increased diffusion of VERs throughout, with their many disadvantages, specifically has caused the trading system to fragment and become dominated by the main trading industries who share the markets through arrangements.

This on the one hand has caused many commentators to suggest that VERs should be regulated and administered under the strict surveillance of multilateral agreements like the GATT. On the other hand, some say to regulate VERs would only further weaken the vital nondiscrimination principle in international trade. In economics, nondiscrimination means "that a given level of protection for domestic producers can be achieved at minimum cost to domestic consumers and the rest of the world" (Boonekamp, 1987, p. 5).

The issue of whether to regulate VERs or not has still not been decided. This issue is a topic to be discussed in the future negotiations for multilateral trade. The decisions concluded could effect international trade, and could further effect employment growth in these countries.

## 2. "MANDATORY" VERSUS "VOLUNTARY" QUOTAS

The basic elements of a VER and a mandatory Quota are similar, in that they both restrict amounts of imports entering into a country. They also have the same welfare effects and cause the same changes in regard to exports, consumption, prices, profits and

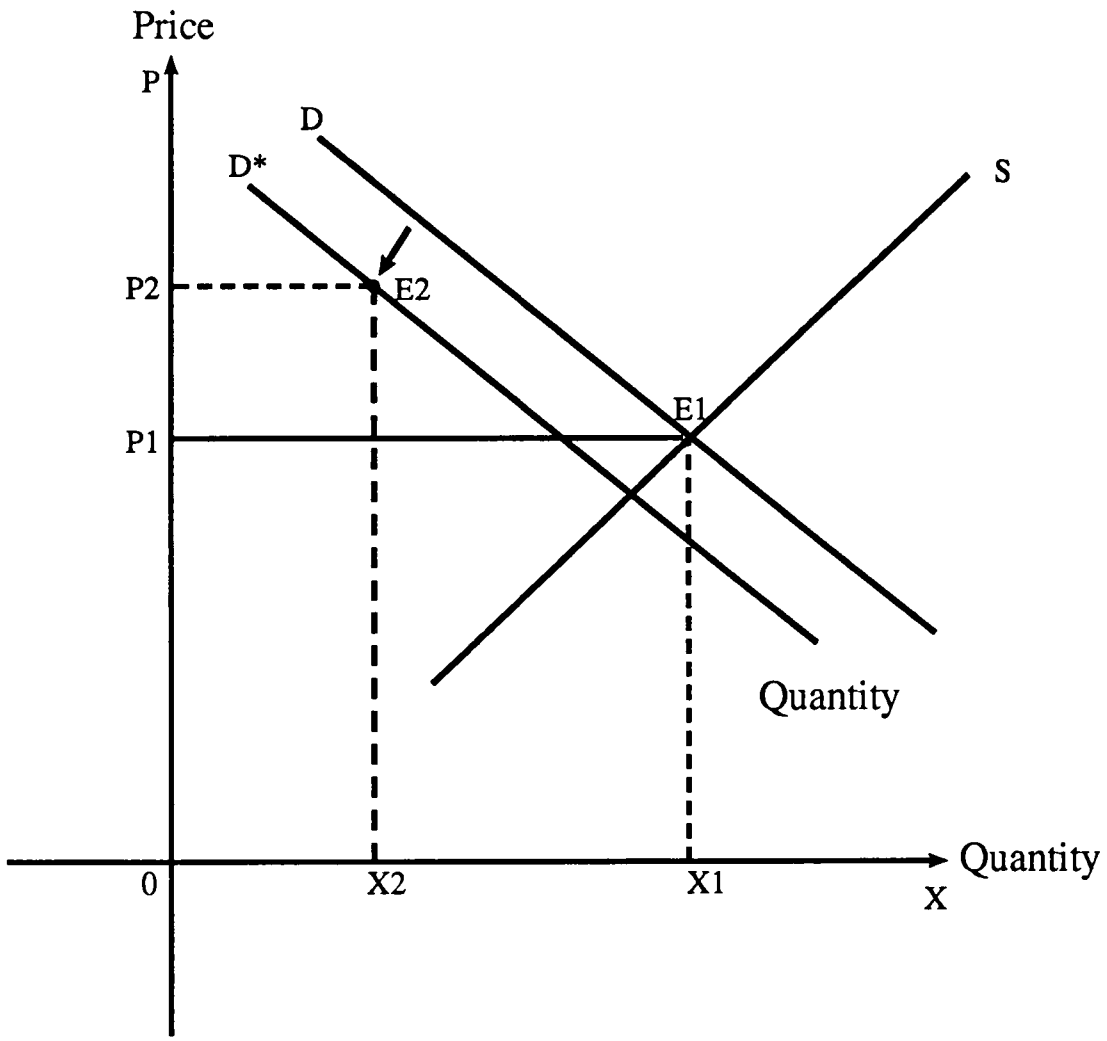



Figure 3.3. General Effect of a VER.

Source: Kreinin, (1983), p. 306

production. If a VER was spread in a way that it covered the imported product from all importing countries, then VERs would resemble mandatory import quotas exactly.

However, differences do exist between these two forms of quantity restrictions, mainly in regard to how rents are allocated. Because the exporter administers the VER, we see a tendency for the exporter to raise their price of the exported goods; and by so capturing the "tariff-equivalent revenue," usually under an import quota, rents are accrued by the importer. The United States utilizes both of the voluntary and mandatory quotas in their protective system. The voluntary quota is a fairly new device that is utilized by the exporter for fear that the importer will impose a mandatory quota.

VERs are considered to be even more dangerous in terms of economic effect than mandatory quotas. This is the case because:

1. They are able to get around international trade laws that prohibit countries from imposing restrictions on the amount of imports coming into the country.
2. The "voluntary" quota misleads the public in assuming that the exporter is solely responsible for this arrangement; which in reality is not the case.

When a mandatory quota is imposed, it is done on a global basis and not in a discriminatory manner as a VER. VERs are negotiated bilaterally with only a few exporters; whereas import quotas are also allocated to who come first, or depending on previous quota-shares allotted to a specific country. VERs do not require any licenses, encouraging suppliers to collude in order not to import goods that exceed the quota agreed upon. This also leads to price discrimination, because if collusion is to be successful, price discrimination must take place.

VERs also lead to a dead weight loss that is not present with either the tariff or the mandatory quota. Because of the discriminatory nature of the "voluntary" quota, we see imports being shifted towards sources of higher cost. With a quota of this type, a dead

weight loss results when there is an existence of a divergence between the marginal costs of the exporters. The total cost of imports is at the minimum level when all the marginal costs of all the suppliers are the same.

The advantages of these quotas are sometimes contradictory to each other. This is due to the different outlooks by those who favor trade liberalization and those who favor restriction in trade. An argument by those who are advocates of free trade in favor of VERs, is that these quotas are negotiated internationally before they are imposed. Hence, both parties in a sense, compromise instead of having to be the recipient of a unilaterally mandatory imposed quota.

Another advantage of VERs is their lack of rigidity as compared to mandatory quotas. Amounts suppliers are allowed to export into the country under a VER are not as rigid as under mandatory quotas; and the opportunity exists for the exporters to enlarge their quota over time, whereas under a mandatory quota, it takes lengthy negotiations in order to change the quota level.

However, any other considered advantages associated with a "voluntary" quota are favored upon by free-trade advocates. One of these considered advantages enables governments to overcome the obstacles that stand in the way of imposing a quota, hence increasing the use of trade restrictions. One of these obstacles is the public's resistance to imposing quotas whereas the public has no objection when the exporters decide to restrain their supplies. Also, when the exporters are willing to restrain their goods, this implies to the public that unfair competition is prevalent, hence justifying intervention by the domestic country.

By allowing VERs that are negotiated without the usual legal methods to develop, the public does not realize that it may forgo some of its rights for discussion. That is, when imposing a tariff, there is a "tariff commission investigation," and chances for public hearings and discussions.

VERs are also considered to be a temporary act in case of an emergency but such is not true in most cases. A VER will often pave the way for the mandatory quota, because once people get accustomed to the VER, a mandatory quota is not that farfetched and becomes more acceptable. For example, the VER between the U.S. and Japan in 1956 on textile imports became in only one year an official agreement between both governments.

VERs often irritate policy makers in other countries, because policy makers consider VERs to be hypocritical and resent the fact that VERs frequently do not protect the interests of the policy makers. Exporters do not mind a "voluntary" restraint on their goods because they gain all the rents resulting from the agreement, as long as they are able to export and are not stopped entirely.

One of the major drawbacks of a VER, according to free-trade advocates, is its discriminatory nature that is considered to be even more discriminatory than a mandatory quota. For example, when Japan's exports were voluntarily restrained into the U.S., and the rest of the exporting countries were not restricted, exports from Hong Kong, Pakistan and India in short order replace the Japanese suppliers (Mintz, 1973, p. 22).

The most "advantage" that VERs have according to trade-restriction advocates, and the most disadvantage to the free-trade advocates, is the VERs' ability to overcome the rules established by the GATT. The GATT rules were established to prohibit such trade restrictions and promote free trade. VERs, according to those who believe in free-trade, are a violation of the spirit of the GATT and act as a hinderance in the way of free-trade. In this regard, VERs act as a semblance of disrespect not only to the GATT but to all international trade negotiations in general.

Finally, VERs are shaping a "global managed market-sharing arrangement" (Boonekamp, 1987, p. 5). This is especially true in the case of the steel industry, the textiles industry, and the apparel industry. In addition, with the widespread use of VERs, one old trade restriction (the mandatory quota) is being replaced by a new powerful in-

strument (the VER), that has not as of yet been subject to international law in any meaningful way.

## 3. PROTECTIONISM IN THE UNITED STATES

Protectionism in the United States has been the topic of many long and still ongoing arguments. The arguments for protectionism in the U.S. are many, among which, is the rising rate of unemployment due to increased imports that reduce available jobs for workers in the United States. A second argument is the low wage argument, which asks the question of how the U.S. is expected to complete with countries that pay wages that are a mere fraction of U.S. wages. A third argument states that controlling foreign imports could reduce the U.S. deficit in its balance of payment.

The U.S. considers itself a forerunner for free trade. According to an article in the Los Angeles Times in 1988, former President Reagan stated that "After the Second World War, America led the way to dismantle trade barriers." Even though the U.S. market is considered overall to be one of the most open in the world, there are still dubious stiff restrictions. Furthermore, according to the Los Angeles Times, Gary Clyde Hufbauer, (an expert in trade), stated that in the recent years the amount of U.S. imports in trade had risen to 23 percent in 1988 as opposed to 12 percent in 1970. During this period, both Western Europe and Japan lowered their barriers in trade. Hence, according to Hufbauer, "The U.S. is the biggest new sinner" (Pine, 1988, p.14).

The Reagan Administration, despite its public stance for free trade, has imposed new quotas and tariffs, and tightened barriers already in existence for the sugar, steel, automobiles, motorcycles, machine tools, and textile industries among others.

The cost to consumers due to these trade barriers, according to Hufbauer's calculations, will amount to $81 billion in 1988 as compared to $16 billion in 1970 (Pine, 1988, p.14).

Although these barriers save jobs in certain industries, they usually disrupt other U.S. businesses, and many of these protectionism tactics end up backfiring. This is the case in regard to the restraints that were negotiated on Japanese cars in 1981. These only helped increase Japanese market-share in the U.S. automobile market. Japan was able to increase price and quality of their automobiles, and in so doing to increase their sales in the United States.

A major problem with protectionist methods is that when a trade barrier is imposed, policy makers often discover belatedly that it is more difficult to remove these restrictions than it was to impose them. This is the case because the protected domestic industries get used to being protected from foreign imports, and it is easier for such industries to convince policy-makers to extend the protection from imports, than it is for the domestic industries to fight imports in the market place.

The new trade law enacted this year by congress is expected to allow for further imposition of trade restrictions, making the protection demanded by the U.S. firms easier to achieve (Pine, 1988, p. 30). This gives U.S. trading partners further reason to protest U.S. protectionism devices.

In the GATT's annual report for 1986/87 a warning was issued to the United States, stating that protectionism is not the cure for the difficulties facing the U.S. trade policies (Porter, 1987, p. 1a). The GATT reports a need for improved trade rules and relations. leading to "The Uruguay Round of multilateral trade negotiations" which began in 1987, and are expected to be concluded during the year 1991. With the completion of these negotiations, the international trade community should have a system that will last throughout and beyond this century (Porter, 1987, p. 10a).

There has not been any precedent economic theory or experience to indicate that imposing higher trade restrictions would solve the United States current trade predicament, nor will it help reduce the budget deficit. Imposing higher restrictions will increase the

chance of retaliation from these trading partners, added to the fact that exports will decrease tremendously for all countries worldwide.

## 4. PREVIOUS STUDIES ON IMPORT RESTRICTIONS

Previous research in regard to estimating quota costs have not been many. This is due to the immense difficulty attributed in trying to "estimate" quota costs. Despite the popularity of non-tariff trade barriers (NTBs), very little is known of their effects on prices and trade patterns.

In the study by Carl Hamilton in 1986, the restrictiveness of "voluntary" export restraints were investigated in regard to apparel that was imported from Hong Kong into the United States and several countries in Europe. The import tariff equivalents (MTEs) were estimated using prices (averaged monthly) in Hong Kong dollars of different assortments of clothing. These quota rates were high and fluctuated tremendously during the period covered, but unit prices only fluctuated moderately as can be seen in figure 3.4. These fluctuations give rise to an inflationary system. The reasons for these fluctuations is not quite clear, but any fluctuation usually can be caused by either changes of the importing countries rate of aggregate demand. Changes in the exporting countries supply price can also have an effect on quota rates.

In 1988, Carl Hamilton took the above mentioned study a step further by expanding upon the estimates of the VER's restrictiveness in order to include all countries of the Big Three, Hong Kong, Taiwan and South Korea. Hamilton utilized two approaches in this study. One was a direct measurement of quota prices which consisted of collecting quota prices that were registered by the Taiwan Textile Federation (TTF), or prices gathered by the Chinese *Quota Weekly Magazine*. The second approach was through indirect measurement that is deriving one country's MTE rate by the use of another country's known MTE rate. For instance, quota prices for South Korea were not directly available; hence,

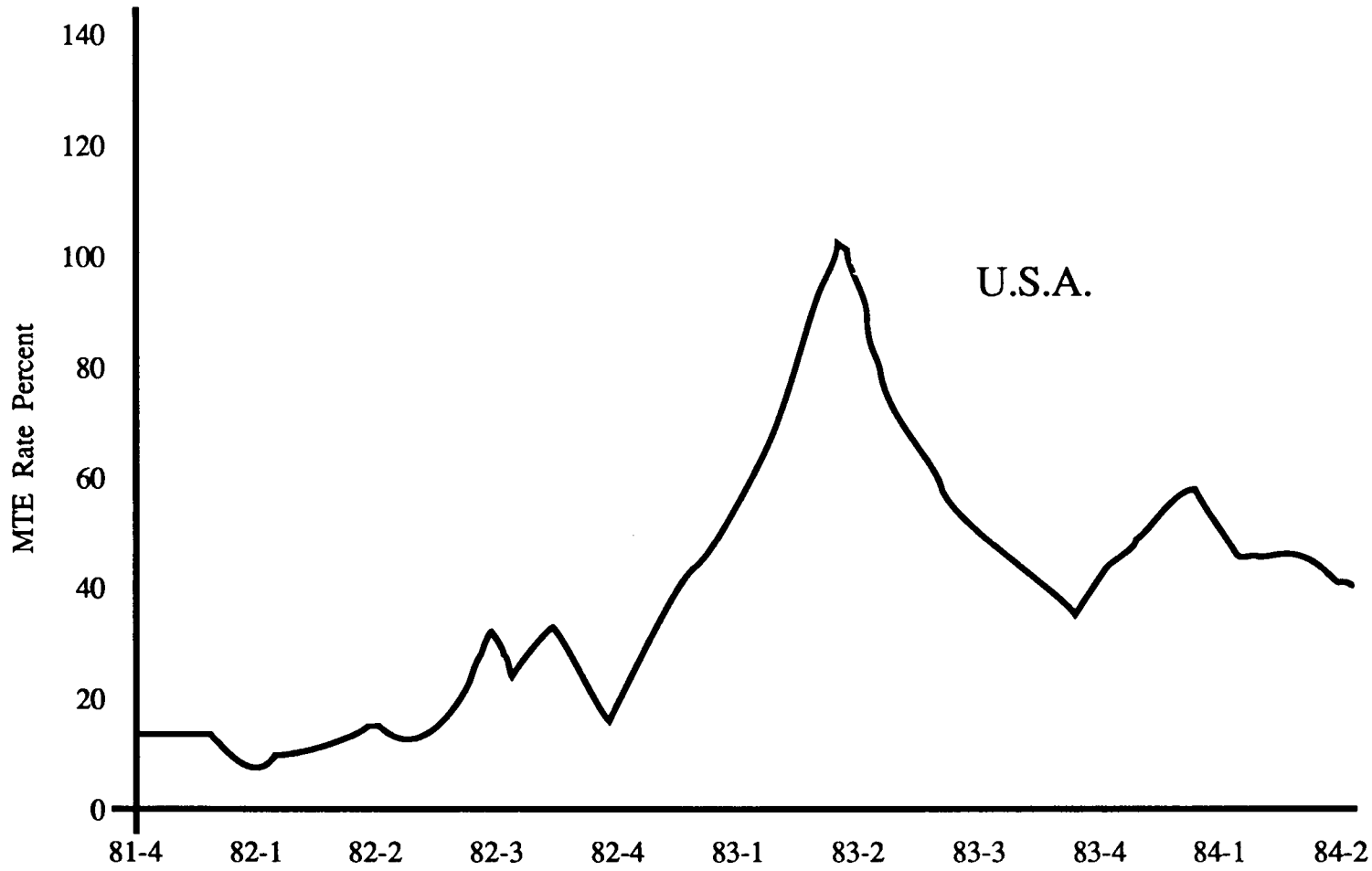



Figure 3.4 USA Aggregated MTE Rates

Source: Hamilton, 1986, p. 341

a derivation using MTE rates known for Hong Kong would be extremely useful. The equations used were:

$$P^k (1 + u^{km}) (1 + t^{km}) = P^m \tag{3.1}$$

and

$$P^h (1 + u^{hm}) (1 + t^{hm}) = P^m \tag{3.2}$$

where,

$P^k$, $P^h$, $P^m$ = Domestic prices in countries k, h, & m.

$u^{km}$, $u^{hm}$ = Ad valorem, MTE of a VER for products exported from countries k & h to country m.

$t^{km}$, $t^{hm}$ = Tariff rate on products exported from countries k & h to country m.

In assuming that an MTE rate $u^{hm}$ for country h is known, and tariff rates can be collected for both countries $t^{hm}$ and $t^{km}$, a person can derive country K's MTE rate from combining both equations (3.1) and (3.2).

$$(3.1) + (3.2) = (3.3) \quad (1 + u^{km}) = \frac{[P^h (1 + u^{hm}) (1 + t^{hm})]}{P^k (1 + t^{km})} \tag{3.3}$$

In order for this equation to be most accurate in its estimation, the prices of supplies in both the exporting countries should be known. If the supply prices for both countries are equal, then we have a straightforward estimation. But if it was known that the supply price for Korea (k) would not exceed that price for Hong Kong (h), ph pk, then the estimation of k's MTE would be lower, which is reasonable to assume in this study to be conservative.

In table 3.3, the estimated import-tariff equivalents, calculated using both the direct and indirect approaches are presented. The results met the expectations of the study. MTE rates were lower than what was reported by both the Taiwan Textile Federation

**Table 3.3. Trade Barriers Imposed by the U.S. and the U.K. Against Apparel Imported from the Big Three (Hong Kong, Taiwan, Korea)**

| Country | Tariff Rate (%) | MTE's (%) 1980 | 1981 | 1982 | 1983 | 1984 (until May) |
|---|---|---|---|---|---|---|
| United States: | | | | | | |
| Hong Kong | 22 | 37 | | | | |
| Hong Kong | 27 | | | 9 | 37 | 47 |
| Taiwan, (TTF) | 31 | 3 | 5 | 5 | 8 | |
| Taiwan, (QW) | 31 | | | | | 22 |
| *Taiwan | 23 | 25 | | | | |
| *Taiwan | 31 | | | 5 | 19 | |
| *Korea | 23 | 15 | | | | |
| *Korea | 30 | | | 4 | 19 | |
| United Kingdom: | | | | | | |
| Hong Kong | 17 | | 20 | 11 | 7 | 19 |
| Taiwan, (TTF) | 17 | 9 | 7 | 4 | 6 | |
| *Taiwan | 17 | | 14 | 5 | 4 | |
| *Korea | 17 | | 13 | 6 | 5 | |

*MTE rates derived from Hong Kong Quota prices and Hamilton (1988).

(TTF) or by the *Quota Weekly Magazine* (QW), in issues relevant to the time period of the study.

The amount of rent transferred from the U.S. and Europe to the exporting countries, in this case the big three, can be calculated by knowing the volumes that are traded and the MTE rates. These estimates can be seen in Table 3.4.

The rents incurred by Hong Kong were significantly larger than the transfers to Taiwan and Korea. One must realize that South Korea and Taiwan estimates are probably lower than reality since their prices were soon to be less than those of Hong Kong, and VERs with the U.S. were quite restrictive, due mainly to the strong internal demand from the U.S. Western European demand was less intense resulting in VERs that were not as restrictive as U.S. VERs.

Some persons within the U.S. have suggested retaining these transfers by auctioning the quotas and using the revenues collected to help adjust labor and capital according to the changed economic conditions. However, administering such a program might well prove to be more difficult than existing trade programs, and such a program could lead to increased monopoly power in the hands of a few large importers in practice, if not in theory. Moreover, determining how to implement proper and appropriate labor and capital adjustments is a very difficult and politically sensitive issue by itself.

Rent-seeking in the exporting countries has broadened tremendously, increasing the opportunity for wastefulness. Producers in these countries compete to gain these surpluses, hence turning aside resources that are needed for producing both goods and services.

According to Morkre (1979) in 1976, 70 percent of the textile and apparel industry in Hong Kong was subject to export restraints. This amounted to H.K. $17,339 million of exports of textiles and apparel, and total gross domestic production was H.K. $47,114.

**Table 3.4. Rent transfer from VERs on Apparel to the Big Three, in millions of U.S. Dollars. (1985 prices)**

| Country | 1980 | 1981 | 1982 | 1983 | Total 1982-83 |
|---|---|---|---|---|---|
| United States: | | | | | |
| Hong Kong | 218 | | 129 | 423 | 552 |
| Taiwan, (TTF) | 29 | 36 | 46 | 69 | 115 |
| *Taiwan | 54 | | 48 | 164 | 212 |
| *Korea | 37 | | 52 | 93 | 145 |
| Total U.S. Transfer: | | | | | 812-909 |
| United Kingdom: | | | | | |
| Hong Kong | | 72 | 37 | 25 | 62 |
| Taiwan, (TTF) | 6 | 5 | 2 | 3 | 5 |
| *Taiwan | | 8 | 3 | 2 | 5 |
| *Korea | | 18 | 8 | 4 | 12 |
| Total U.K. Transfer: | | | | | 79 |

*MTE rates derived from Hong Kong Quota prices and Hamilton (1988).

The price increase of the quotas have not been collected, but can be seen reflected in the price of jeans quota premiums that increased from H.K. $15 per dozen to between H.K. $80-100 per dozen in the period between January and March of 1977.

The results of these estimates by Morkre are very close to the conclusions drawn by a survey that was conducted in 1974 by Krueger by interviewing U.S. importers. The survey concluded "on average, the quota price increased the cost of textile products to U.S. importers by roughly 15 percent" (Krueger, 1974, p. 410).

Morkre and Krueger both argue that the wasteful rent-seeking would not result if quotas were auctioned to highest bidding firms. Morkre quotes Meade who describes auctioning quotas as "ensuring an equitable efficient distribution of the import licenses among the competing importers" (Morkre, 1979, p. 114).

The meaning of "equity" warrants a clarification; any surplus created from VERs is not the result of the efforts of one firm but, according to Morkre (1979):

> It is a return which reflects the comparative superiority of the combination of all domestic resources, over world levels, when devoted to producing the marginal unit of textiles, or the unit up to the restraint limit. As with any economic rent, it is neither earned nor necessary for any individual firm to induce production (p. 114).

# CHAPTER IV

# THE HONG KONG TEXTILE AND APPAREL INDUSTRY

## 1. COUNTRY PROFILE

Hong Kong, the British Crown Colony, is located approximately 91 miles southeast of Canton, China and has a land area of 403,859 miles. The colony is composed of three major areas:

1. Hong Kong Island, where Victoria, the heart of commerce and the capital, is located. (Victoria's harbor ranks with Rio de Janeiro and San Francisco as one of the three most reputable and perfect harbors in the world).
2. Kowloon, an urban center 3 1/4 miles square, in which 799,100 people work and live.
3. New Territories, a land area that stretches north of Kowloon to the Chinese border; encompassing 365 1/2 square miles.

Hong Kong's population as of 1987 was 5,658,800. The official languages are Chinese (mainly Cantonese), and English, the tongue preferred for commerce. The climate in Hong Kong is sub-tropical and is often described as an area of green islands and mountains surrounded by the sea (Duns, 1988, p. 595). From its islands and harbors Hong Kong trades with many nations. Its principle partners are the United States, Great Britain, Japan, People's Republic of China, West Germany and Taiwan. Commerce in 1986 in U.S. dollars for total imports were c.i.f. $35.366 million f.a.s. $1,221.5 million of this amount were imports from the U.S. Total exports were f.o.b. $35,439 million; based on U.S. customs value, $3,235.4 million of these total exports were to the U.S.

## A. POLITICAL ENVIRONMENT

Currently, the ruler of Hong Kong is British governor, Sir David Wilson, sworn in as the governor in April of 1987. The government is an administration that has been established on the basic concepts that govern many of the British territories, usually encompass, ultimate and total responsibility to the Crown, benevolence and despotism. The governor is advised by both the Executive Council, which resembles the Cabinet of the United Kingdom, and the Legislative Council that is Hong Kong's central law-making legislative body. In 1984 after the Sino-British Agreement, three additional transitional bodies were also established to help pave the way for the transition of Hong Kong's government in 1997 from Britain to China (IL & T, 1988, p.2).

Theoretically, Britain owned Hong Kong Island and Kowloon through the Treaty of Nanking in 1842, and by the Convention of Peking in 1860. Nonetheless, in 1898, Britain leased the New Territories for 99 years, the lease terminating in 1997 and the territories reverting to China (Riedel, 1974, p.3). Britain and China signed the Sino-British Agreement on December 19, 1984, reaffirming Hong Kong's return to China. China has declared that Hong Kong will be able to maintain its "high degree of autonomy" and its current capitalist regime for the upcoming 50 years. China will assume the obligation for national defense, and Hong Kong will be known as "Hong Kong, China" (EIU, 1989, p.5).

Meanwhile, many people remain skeptical, especially the professionals living in Hong Kong. Doctors, engineers, lawyers and managers are emmigrating. Emigration in 1987 to Canada, Australia, U.S. and Western Europe totalled 27,000 people, doubling the number of emmigrants of 1986.

Many firms are also reassessing their futures in Hong Kong, leading many to relocate their organizations to nearby Singapore, Thailand, and Manila. For example, a U.S.

company, "Union Carbide," based in Hong Kong, has relocated its headquarters to Singapore, citing the brain drainage as the main reason for relocating (ILT, 1988, p.2).

Although Hong Kong has had a remarkable history in its industrialization process, all of this could be at risk in the upcoming years. Entrepreneurs have high confidence in Hong Kong's ability, but all economic decisions must include the uncertainty of its future. Many feel that an optimistic future for Hong Kong could only be assured if it were to gain its independence from both Britain and China. Then perhaps, it could reach new heights of progress and prosperity.

## B. CURRENCY

Between 1974 and October of 1983, the Hong Kong Dollar (H.K.$) floated without restrictions, until concerns for the future of Hong Kong after 1997 placed it under increased pressure. The Hong Kong dollar then slid against the U.S. dollar to H.K.$ 9.65 = U.S.$1 (EIU, 1989, p.8). In response, the Hong Kong government on October 17th of 1983 linked the H.K.$ to the U.S.$ at a rate of H.K.$7.8 = U.S.$1, where licensed banks by certain arrangements are able to receive or pay for U.S. dollars at the pegged rate. The Peg system is considered by some a compromise between freely floating rates and rigid fixed rates, giving the stability of a permanent exchange rate with the added feature of flexibility. Others contend that the peg system encompasses the worst characteristics of both the fixed and floating exchange rate systems (Grennes, 1984, p.567). Nonetheless, the system so far has proven to be a tremendous success. Hong Kong has been able to maintain the system, despite pressures from the U.S. to revalue. See Table 4.1 for the Hong Kong dollar exchange rates with different nations between the years 1982 and 1987.

**Table 4.1. Hong Kong Dollars Exchange Rates**

| Country | 1982 | 1983 | 1984 | 1985 | 1986 | 1987 |
|---|---|---|---|---|---|---|
| U.K. | 10.6 | 11.1 | 10.5 | 10.2 | 11.5 | 12.8 |
| U.S.$ | 6.1 | 7.3 | 7.7 | 7.8 | 7.8 | 7.8 |
| YEN (H.K.$/1,000 YEN) | 24.5 | 30.7 | 33.0 | 33.0 | 46.7 | 54.1 |
| DEUTSCHMARK | 2.5 | 2.8 | 2.8 | 2.7 | 3.6 | 4.4 |

Source: Hong Kong Annual Digest of Statistics

## C. LABOR AND INDUSTRY

The main employer in Hong Kong is the private sector, with manufacturing accounting for the largest segment at 31.4 percent. The overall demand for labor is considered tight (EIU, 1989, p.12). In 1987 the growth rate in employment was 2.0 percent, due to increases in the labor force and the working age of the population. In table 4.2, employment by industry is portrayed for the year 1986.

## 2. STRUCTURE OF THE TEXTILE AND APPAREL INDUSTRY

The foundation of Hong Kong's industrialization was textiles. The industry developed in the 1920's by the weaving of cotton by local weavers. By 1947-1950, industrialists from Shanghai had brought new skills and modern machines (Riedel, 1974, p.26). Additionally, the production of clothing also played a major role in the industrialization process. It has historically been not only the largest employer, but the largest producer (Riedel, 1974, p.28).

The textile and clothing industry still remains the largest and most vital industry in Hong Kong. The industry accounts for 42 percent of domestic exports; amounting to f.o.b. to H.K. $195 billion in 1987 (EIU, 1989, p.17). Forty-four percent of the industrial work-force is employed by the textiles and clothing industry, and the clothing sector alone accounts for 34 percent of the industrial workforce. The clothing industry surpassed the textile industry in terms of relative economic importance in 1973 accounting for 80 percent of total textiles and clothing exports (Williams, et al., 1987, p.9-1).

Currently, the Hong Kong textile and apparel industry is in the mature stage, posing future difficulties for the industry. In answer to loud lobbying by protectionists at the beginning of 1988, the U.S. Republican administration removed Hong Kong from the Generalized System of Preferences (GSP). In reaction to this decision, Hong Kong has

**Table 4.2 Employment by Industry (1986)**

| Industry | Number of Persons |
|---|---|
| Agriculture, forestry, hunting and fishing | 41,400 |
| Mining | 1,000 |
| Manufacturing (textiles and clothing) | 403,200 |
| Manufacturing (other) | 538,000 |
| Electricity, gas and water | 17,900 |
| Construction | 209,700 |
| Wholesale and retail trade, restaurants and hotels | 621,300 |
| Transport, storage and communication | 223,500 |
| Financing, insurance, real estate & business services | 164,600 |
| Services | 468,400 |
| Unclassifiable | 100 |
| Unemployed without previous job | 12,400 |
| Total | 2,701,500 |

Source: *Hong Kong Annual Digest of Statistics*

diverted somewhat from the U.S. market, making some progress in the difficult, but lucrative Japanese market (EIU, 1989, p.17). Also, the industry has been facing tight import controls from its major trading partners, causing it to concentrate on finished apparel and the production of high quality textiles for exports.

The textile industry in Hong Kong is facing a major labor shortage. According to the Hong Kong Federation of Industries, the textile and apparel industry has 80,000 vacancies, the majority in "the cotton spinning and weaving industries" (Williams, et al., 1987, p.9-7). The textile and apparel industry does not reflect ideal working conditions, wages, or locations and opportunity for growth is stagnated. High turnover results from employees treating their jobs as an opportunity for experience for a year or two, and then moving on to a more preferred job. Since the work force is becoming more educated, improved labor efficiency will have to be established in order for the industry to maintain its competitive status.

Additionally, Hong Kong faces other obstacles. China's import policies have caused Hong Kong's raw material expenses to escalate, causing production costs to escalate, as well. Real estate poses problems for the textile industry, since a standard weaving mill can encompass approximately 200 apparel establishments. All of the factors mentioned previously have lead to increased production costs and increased wages; however, total average cost per hour of the increased wages amounted to 21 percent of what U.S. cost would be.

Foreign investment in Hong Kong's textile and apparel industry has increased. As of 1987, there were 56 establishments that were "wholly-foreign" owned, and 67 joint ventures for a total of 123 new establishments (Williams, et al., 1987, p.9-6). Also, in 1986, many Hong Kong establishments began investing abroad, in order to cope with increased production costs, to avoid imposed quotas, and to gain benefits from foreign governments.

The Hong Kong textile industry, since the 1970's, has developed into a smaller industry with increased efficiency specializing in heavyweight cotton fabric, mainly denim. The Hong Kong apparel industry during the same period of time has replaced Italy as the largest apparel exporter in the world. During the years 1982 through 1985, the Hong Kong apparel industry accounted for 12 percent of the world export market, whereas its textile industry only amounted to 2 percent of the world export market.

The future of the industry's competitiveness domestically and internationally will depend on how it adapts to the ever changing world market and the constraints imposed domestically (Williams, et al., 1987, p.9-23).

## 3. FOREIGN TRADE

In order for Hong Kong to maintain its industrialization status, it must engage in trade. Hong Kong has virtually no agricultural revenue and lacks important natural resources, such as petroleum or coal. It also suffers from a scarcity of raw materials, forcing it to import the majority of its food supply, the fuel needed for industrial production, and all the raw materials needed for manufacturing (Lethbridge, 1984, p.23). Due to its size, the colony cannot absorb all of its own output and consequently must direct its production mainly toward exportation.

Hong Kong is fortunate to have a deep, wide sheltered harbour which has facilitated the development of foreign trade. Without foreign trade, Hong Kong could not have reached its present stage of industrialization. Indeed, Hong Kong has no choice. Trade is its only form of salvation.

Hong Kong, South Korea and Taiwan were fortunate in that they found apparel markets for their goods in developed countries experiencing strong economic growth after WWII until the early 1970's.

The Asian countries also had the added advantage of developing during a period when internationalization was widespread in regards to production. Developed nations set up many subsidiary manufacturing facilities in these developing countries, resulting in the transfer of technology, and capital, of marketing and managerial skills (Lethbridge, 1984, p.25).

When the developed nations' economies slowed, entrance into their markets was restricted. Other developing nations had a more difficult time following in the steps of the Asian countries that were newly industrialized. These countries, themselves, experienced difficulties in maintaining their hold in the developed countries' markets (Lethbridge, 1984, p.24).

An average deficit was recorded annually between the years 1973 and 1983 of H.K.$ 5,882 million, including both the visible and the invisible accounts in trade. Since 1983, however, the trade account has been in the black. The surplus in 1986 declined to H.K.$ 12 billion from H.K.$ 15 billion in 1985 (EIU, 1989, p.26). In Table 4.3, the visible trend in foreign trade is shown for the years 1982 until 1987. The trade balance for Hong Kong's textile and apparel industry registered a 43 percent increase between the years 1982 and 1986. The rapid growth of exports in the apparel sector had a positive effect on the trade balance, but the textile sector's increased imports affected the trade balance in a negative manner (Williams, et al. 1987, p. 9-16).

The textile and apparel industry in Hong Kong has the same general features as does the economy itself, in that it is closely linked with international trade. The majority of raw materials is usually imported, but it is consumed domestically in producing apparel for exportation, making Hong Kong the third largest importer of textiles in the world. Although in the apparel industry, as mentioned previously, Hong Kong is the largest exporter, replacing Italy (Williams, et al., 1987, p. 9-15).

**Table 4.3. Visible Trends in ForeignTrade**
**(in Millions H.K.$)**

| | Domestic Exports | Re-exports | Imports | Balance |
|---|---|---|---|---|
| 1982 | 83,032 | 44,353 | 142,893 | -15,508 |
| 1983 | 104,405 | 56,294 | 175,442 | -14,743 |
| 1984 | 137,936 | 83,504 | 223,370 | -1,929 |
| 1985 | 129,882 | 105,270 | 231,420 | 3,733 |
| 1986 | 153,983 | 122,546 | 275,955 | 575 |
| *1987 | 195,254 | 182,780 | 377,948 | 87 |

Source: Hong Kong Annual Digest of Statistics.
*Source from Hong Kong Monthly Digest of Statistics.

## A. EXPORTS AND RE-EXPORTS

When analyzing the total figure for exports, re-exports must also be considered. During the 1950's, re-exports were estimated to be 89 percent of the total amount of exports. By the 1980's, however, re-exports had diminished to around 35 percent of total exports, although it was an increase compared to the 1970's (Lethbridge, 1984, p.25). Re-exports have grown in importance due to growing ties with China both economically and politically. China in 1985 was involved in over 70 percent of these re-exports, either as the source or as the recipient of the good. Textile and apparel re-exports grew during the years 1982 and 1985 by 175 percent. Re-exports of textiles to China grew from 42 percent to 56 percent from 1982 to 1986 (Williams, et al., 1987, p. 9-20). Re-exports in 1987 increased up to 49 percent from 1986, amounting to H.K.$ 182 billion. During the first half of the year 1988, re-exports had increased from 1987, up to 42 percent. The percent of re-exports is expected to even grow more in the upcoming years, because of the tremendous strength of bottlenecked Chinese trade (ILT, 1988, p.19). See in table 4.4, for re-exports of principle products by the main markets.

According to the census of production, on the average 75 percent of Hong Kong's major industries' is produced for export. Individually this percentage is higher for some of the industries, especially the clothing and consumer electronics industries (Lethbridge, 1984, p.25). In 1987, all major domestic exports had increased, with clothing exports increasing by 25 percent. The same percentage is expected for the remaining major industries. In October of 1988, Hong Kong's domestic exports were broken down as follows: 1. Clothing, 33.5 percent; 2. Textiles, 7 percent; 3. Toys, 5.6 percent; and 4. Household appliances, 2.9 percent (ILT, 1988, p.19). See Table 4.5, for textile and apparel export by the categories.

**Table 4 .4. Re-exports of Principle Products By Main Markets. (millions H.K.$)**

| Principle Product<br>Main Market | 1982 | 1983 | 1984 | 1985 | 1986 |
|---|---|---|---|---|---|
| Apparel Articles and Clothing Accessories (Total): | 3,021 | 4,495 | 6,184 | 7,652 | 13,366 |
| United States | 1,427 | 2,278 | 3,068 | 3,894 | 7,727 |
| Japan | 149 | 174 | 350 | 430 | 646 |
| West Germany | 109 | 157 | 279 | 345 | 637 |
| Textile Yarn, Fabrics made up Articles & Related Products (Totals): | 6,431 | 7,822 | 12,708 | 15,999 | 20,094 |
| China | 2,670 | 3,165 | 6,519 | 9,626 | 11,260 |
| Republic of Korea | 289 | 324 | 574 | 1,009 | 1,623 |
| Japan | 298 | 377 | 613 | 568 | 652 |

Source: Hong Kong Annual Digest of Statistics.

**Table 4.5. Hong Kong's Textile and Apparel Domestic Exports (millions U.S.$)**

| Product Category | 1982 | 1983 | 1984 | 1985 | 1986 |
|---|---|---|---|---|---|
| Textile Yarn and Thread | 750.8 | 960.7 | 1,278.0 | 1,278.9 | 1,512.7 |
| Cotton Fabric, Woven | 600.4 | 648.2 | 850.1 | 748.1 | 978.1 |
| Non-Cotton Fabric, Woven | 1,196.9 | 1,228.8 | 1,539.8 | 1,732.8 | 2,297.9 |
| Lace, Ribbons, Tulle, etc. | 62.9 | 61.6 | 80.0 | 76.4 | 97.1 |
| Special Fabrics | 123.3 | 131.8 | 173.3 | 209.1 | 246.2 |
| Textile Made-Ups | 185.4 | 178.7 | 179.9 | 158.7 | 200.8 |
| Floor Coverings | 47.9 | 47.8 | 57.5 | 63.4 | 71.9 |
| Sub-Total | 2,967.6 | 3,262.6 | 4,158.6 | 4,247.4 | 5,404.7 |
| Apparel not of fur | 1,053.6 | 1,158.5 | 1,465.3 | 1,674.0 | 2,486.0 |
| Apparel of fur | 6.1 | 7.7 | 18.9 | 22.6 | 42.3 |
| Sub-Total | 1,059.7 | 1,166.2 | 1,484.2 | 1,696.6 | 2,528.3 |
| Total | 4,027.3 | 4,428.8 | 5,642.8 | 5,944.0 | 7,933.0 |

Source: Williams, et al., 1987, p. 9-16.

The United States was the recipient of 37 percent of Hong Kong's total domestic exports in 1987. In 1988, exports decreased to the United States because the U.S., in an attempt to decrease its trade deficits, trimmed imports from newly-industrialized Asian countries. This caused a shift in Hong Kong exports to China from H.K.$ 18 billion in 1987 to H.K.$ 27.8 billion in 1988. Hong Kong's exports also increased to the UK and Japan (ILT, 1988, p.19). Table 4.6 shows domestic exports of textile and apparel by main market for the years 1982 and 1986.

Obstacles have been placed constantly in the path of Hong Kong's textile and apparel industry's export growth. The first restriction on textiles was imposed by the United Kingdom in 1959 under the Lancashire Pact. Hong Kong as a colony was then obligated to sign the GATT in 1961. Today it has been admitted as a full fledged member of the GATT, but under the title of "Hong Kong, China" (ILT, 1988, p.19). Hong Kong also agreed to the Long Term Cotton Textile Agreement (LTA), which limited the quantity of exports to both the U.S. and the EC by the utilization of a quota. The Multi-Fiber Arrangement (MFA), which replaced the LTA in 1974, includes restrictions on non-cotton textiles. In 1986, Hong Kong agreed to the extension of the MFA to 1991, but with even further restrictions on their textile and apparel exports to the U.S. Hong Kong's quota growth rate was limited to one percent for the MFA IV Term (Williams, et al., 1987, p.9-2). Quotas on textiles and apparel exports today are determined through bilateral agreements as specified in the MFA, which developed under the auspices of the GATT.

The most recent development, as of early 1988 is that the U.S. has removed Hong Kong, Korea, Taiwan and Singapore from its Generalized System of Preferences program which aided struggling nations. Since Hong Kong's industry has reached a mature level, the U.S. no longer thinks it necessary for them to remain in the program (ILT, 1988, p. 19).

**Table 4.6. Domestic Exports of Principle Products by Main Market (millions of H.K.$)**

| Principle Product<br>Main Market | 1982 | 1983 | 1984 | 1985 | 1986 |
|---|---|---|---|---|---|
| Apparel Articles and Accessories (Total): | 28,824 | 34,365 | 46,714 | 44,912 | 52,162 |
| United States | 11,594 | 16,160 | 23,632 | 24,790 | 26,921 |
| West Germany | 4,333 | 4,585 | 5,553 | 4,561 | 6,328 |
| United Kingdom | 3,381 | 3,477 | 4,449 | 3,872 | 4,869 |
| Textile Fabrics (Total): | 3,898 | 5,461 | 6,759 | 6,195 | 9,014 |
| China | 594 | 994 | 1,356 | 1,550 | 2,946 |
| United Kingdom | 466 | 574 | 568 | 505 | 618 |
| United States | 443 | 809 | 949 | 809 | 902 |

Source: Hong Kong Annual Digest of Statistics.

Hong Kong, as compared to other developing nations, has coped very well with the trade barriers imposed on it and has responded in two ways (Youngson, 1982, p. 25):

1. By constantly searching for new markets for their products, so as to be able to channel products to countries with fewer current trade barriers.
2. By switching production from inexpensive apparel to expensive high fashion garments for export to selected nations.

Any quantitative restriction on trade has an effect on both the exporter and the importer. The effects on the importer have been discussed in chapter three. The effects on exporters, such as Hong Kong, can be harmful as well as beneficial. The surplus or rents gained from these quantitative restrictions are rare. Hence producers compete to gain these surpluses. These rents are looked upon as treasures or prizes to be won. By firms competing for these rents, resources needed for services and the production of goods are wastefully diverted from other sectors in the economy. (Morkre, 1979, p.110).

When these bilateral agreements are put into affect, procedures begin for the allocation of the quotas to the existing firms. The basic principle that quota allocation functions upon, is the past performance rule i.e., if these companies have previously supplied the assigned products in a paricular market. This insures optimum use of the quota and continuity of foreign trade. If for a certain agreement restraints were more generous than previous ones, each company would receive its share based on past performance, and any balance remaining would be placed in a "free quota pool." This pool is accessible by all firms, but applications must be accompanied by evidence of the companies' involvement in the trade. The firms receiving a quota from the pool must fully utilize the quota in order to have access to the pool in the future (Morkre, 1979, p.111). In order for exporters or manufacturers to even participate in exporting textiles that are restrained, they must first register with the Hong Kong trade department and must be actively engaged in the textile and apparel production (Textiles Export Control System, 1987, p.6).

Quotas are transferrable. A quota holder is permitted to transfer a segment of the quota to another firm as long as he utilizes at least 50 percent of the quota. Transferability of quotas is allowed in order to fully utilize the quotas and to open channels for companies who have not participated before. Efficiency is also increased by transferring quotas from firms who can't use them to firms who can (Textile Export Control System, 1987, p.11). This process is desirable. The rent resulting from these quota is quite sizeable. A study estimated for between 15 and 20 percent of the total value of restricted textile exports was incurred from rent. This amounted to 3.9 to 6.4 percent of the gross annual domestic product for Hong Kong (Morkre, 1979, p.113).

There has been much controversy over the system of quota allocation generating rent-seeking activities, thereby causing inefficiency to the economy as a whole. Until a more efficient system is found, however, the quota system will still be utilized.

## B. IMPORTS

Hong Kong is considered to be the country with the strongest link in the world between its exports and imports (Lethbridge, 1984, p.30). A lack of natural resources and land for agriculture purposes forces Hong Kong to import its food supply, fuels, and raw materials. Also, the country's industrialization forces importation to fuel production.

The main suppliers of total imports to Hong Kong are: 1. China, accounting for 24.2 percent; 2. Japan suppling 17 percent; 3. Taiwan, at 10.6 percent; 4. U.S., at 9.6 percent; and 5. Korea, at 5.5 percent (ILT, 1988, p.19).

Hong Kong textile and apparel imports can be seen in table 4.7. The main imports are in the textile industry, larger imported cotton fibers. The largest supplier of cotton imports to Hong Kong is China. Cotton imports from the U.S. dropped considerably between the years 1982 and 1986. During this same period, imports of textile products and yarns grew in value by 82 percent (Williams, et al., 1987, p. 9-20).

**Table 4.7. Hong Kong's Textile and Apparel Imports (millions U.S.$)**

| Product Category | 1982 | 1983 | 1984 | 1985 | 1986 |
|---|---|---|---|---|---|
| Textile Yarn and Thread | 96.1 | 118.7 | 119.5 | 99.9 | 126.0 |
| Cotton Fabric, Woven | 413.0 | 472.6 | 556.7 | 511.0 | 687.8 |
| Non-Cotton Fabric, Woven | 179.0 | 216.3 | 234.1 | 214.9 | 365.2 |
| Lace, Ribbons, Tulle, etc. | 14.7 | 18.1 | 24.5 | 24.3 | 37.5 |
| Special Fabrics | 34.1 | 38.0 | 48.4 | 48.6 | 64.3 |
| Textile Made-Ups | 73.8 | 78.9 | 94.8 | 85.5 | 94.8 |
| Floor Coverings | 20.0 | 24.0 | 24.8 | 21.4 | 26.6 |
| Sub-Total | 830.7 | 966.6 | 1,100.8 | 997.6 | 1,402.2 |
| Apparel not of fur | 4,548.5 | 4,496.4 | 5,672.7 | 5,492.7 | 6,352.4 |
| Apparel of fur | 179.2 | 184.9 | 288.8 | 235.3 | 317.6 |
| Sub-Total | 4,727.7 | 4,681.3 | 5,961.5 | 5,728.0 | 6,670.0 |
| Total | 5,558.4 | 5,647.9 | 7,062.3 | 6,725.6 | 8,072.2 |

Source: Williams, et al., 1987, p. 9-16.

China is considered to be the largest exporter of textile products to Hong Kong, with a growth in market share from 32 to 42 percent in the years 1982 to 1986. However, Japan's market share of imports dropped during the same period from 23 to 17 percent (Williams, et al., 1987, p.9-20).

Hong Kong is considered to be a nation that believes in the concept of free trade between nations. Therefore, export and import regulations are maintained at the minimum. Import controls are only imposed in order to monitor the flow of products imported and not to restrict it. Import licenses, however, are obligatory for all textile and apparel imports in order to avoid label falsification and any malpractices that might result from not following the current textile and apparel quota system. Also, special import licenses are required for scientific instruments, medicine, radioactive materials, arms, ammunition; agricultural pesticides and vaccines (EIU, 1989, p.30).

Hong Kong is a free port and therefore, does not impose a general tariff. Only a few products are subject to taxation, such as tobacco, alcoholic beverages, cosmetics, and methyl and ethyl alcohol (ILT, 1988, p.19). Since there are no non-tariff barriers imposed in the Hong Kong trade system, the entire territory is considered to be duty-free; and, consequently plenty of warehouse establishments and excellent facilities for communication with the rest of the world are available (ILT, 1988, p.20).

## 4. GOVERNMENT POLICY

Hong Kong has several governing bodies responsible for providing a healthy business environment internally; (Williams, et al., 1987, p.9-10). They are:

1. The Hong Kong Trade Development Council (TDC) charged with the task of developing and promoting international trade. The TDC organizes at least 80 projects per year through 25 offices in the trading districts. The projects

encompass publishing magazines for the Hong Kong domestic industries and participating in international trade fares.

2. The Hong Kong Export Credit Insurance Corporation (ECIC), insuring the exporter against the risk of not receiving payments. The ECIC insures goods and services up to 90 percent of their value, and investigates the worthiness of the buyer's credit line. This service is especially useful for the small exporter who does not have the resources nor the time for such an investigation.
3. The Hong Kong Productivity Council and Center, providing technical help for domestic business. The center provides economic research, computer and consulting services and also publishes "The Directory of Hong Kong Industries" to aid in industrial growth.

The structure of international trade has changed in the last decade or so. Developed nations' investments have diminished leading to a slower growth in the world economy; and in recent years, economics and politics have become inseparable. This is not particularly healthy for a small nation like Hong Kong, which is neither strong politically, nor poor enough to warrant sympathy. "People neither depend on Hong Kong nor feel sorry for her" (Youngson, 1982, p.113).

Hong Kong's future aims toward closer relationships with China, which will increase her political security; but Hong Kong in order to survive economically must develop new competitiveness in foreign trade on a worldwide basis. Hong Kong must continue to seek methods of satisfying her trading partners with more inexpensive, more satisfactory and more prompt production. For "if she becomes less international she will also, in the foreseeable future, become less important" (Youngson, 1982, p.114).

# CHAPTER V

## METHODOLOGY, ESTIMATION MODELS AND RESULTS

### 1. THE MODEL OF THE EFFECTS OF A QUOTA ON APPAREL

After nearly twenty years of development and refinement, the United States system of textile and apparel import quotas has evolved into an elaborate mechanism to regulate textile imports. Textiles and apparel are made up of a large assortment of products, and the United States has established import limits for several product categories, in addition to setting quotas for broader groupings and for all apparel and textiles. Many, but not all, of the category-specific quotas are binding, so that actual imports are restricted to a lower level than would occur in the absence of quotas. When the import quotas are binding (or effective), they impose adverse effects on the U.S.

The welfare effects of an import quota consist of two components. First, a quota increase the price paid for the quantity that is imported. The excess of the import price with quota over the non-quota price is an economic rent which is paid by U.S. consumers to Hong Kong exporters. Second, a quota reduces the quantity that is imported compared to the level of imports that would occur without the quota. The social value of the decrease in imports is the consumption distortion effect. The sum of the first two components equals the gross social cost of a quota and represents the gross benefit to the United States of removing the quota. However, elimination of a quota will increase imports of foreign made textiles and apparel and reduce production of domestic made apparel.

The model used to estimate the gross social costs of the import quotas on Hong Kong's apparel is illustrated in Figure 5.1. Before explaining the details of the model it should be mentioned that textile and apparel imports from Hong Kong are restricted by

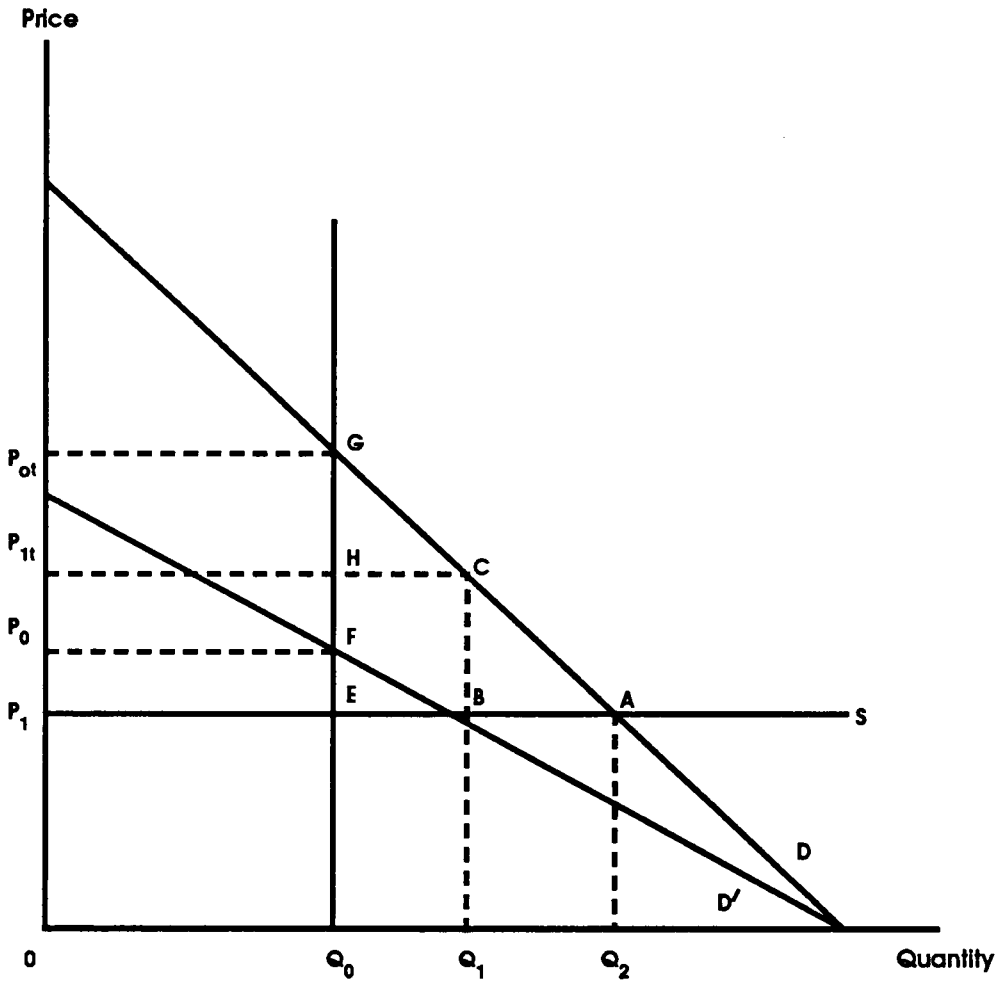



Figure 5.1. The Welfare Costs of Import Quotas

Source: Bureau of Economics, Federal Trade Commission

tariffs in addition to quotas. However, the focus in this study is on the incremental effects of quotas, and it is thus important to distinguish between the effects of tariffs and quotas. While this study is concerned with the effects of quotas it should be emphasized that tariffs on apparel are significant and have been found to impose substantial social costs. In an earlier study, it was found that the average tariff on apparel is very high, 27 percent ad valorem.

In Figure 5.1, the U.S. import demand curve (D) for a particular apparel product is assumed to have an inverse relationship between price and quantity. Even though there may be a high degree of substitutability between a Hong Kong product and similar products produced by other countries, the demand curve D is not completely elastic. Moreover, the magnitude of the social cost caused by a quota is directly related to the elasticity of import demand. The greater the elasticity the larger is the increase in imports if the quota is removed.

The supply curve S is horizontal in the relevant range assuming that firms in Hong Kong can readily expand apparel exports to the United States. Hong Kong firms can accomplish this by, for example, reducing shipments to other countries. While the U.S. is Hong Kong's largest customer for apparel, the U.S. share of Hong Kong's total textile exports is below 50 percent. More importantly, entry into textiles and apparel particularly apparel manufacturing, is relatively easy, i.e., there are few barriers to entry into the apparel manufacturing industry.

Under conditions of free trade, equilibrium occurs at point A. Price paid by importers equals Hong Kong's supply price (ignoring transportation costs) and import quantity is $Q_2$.

It is convenient next to introduce a tariff. The initial effect of an ad valorem tariff can be depicted by rotating, counter-clockwise, the import demand from D to D'. At any quantity, the vertical distance between the two demand curves divided by price shown on

demand curve $D'$ equals the percent tariff rate. Curve $D'$ is the net import demand (allowing for the tariff) facing Hong Kong. With the tariff, equilibrium on curve D shifts to point C. The tariff raises the cost to importers by amount BC and quantity of imports falls to $Q_1$. The reduction in imports and increase in price paid for imports (tariff inclusive) causes a social loss shown by triangle ABC. Finally, in addition to this deadweight loss, the tariff involves a distributional effect equal to the tariff revenue collected--rectangle $P_1tCBP_1$. Assuming the distribution effect is neutral--the decline in welfare of those who pay textile duties to the government equals the gain in welfare of the individuals who benefit from the government's additional revenue--then there is no net distributional effect.

The imposition of a quota in the amount $Q_0$ shifts equilibrium to point G. Price increases further to $P_{0t}$. The quota causes two types of additional social losses. First, there is a further deadweight loss due to the cutback in quantity from $Q_1$ to $Q_0$. This loss is area BCGE. Second, because Hong Kong administers the quota, and a large number of U.S. importers compete to purchase Hong Kong textiles, Hong Kong is expected to obtain the scarcity rent of the quota. The loss due to the U.S. equals the rent which is shown by rectangle $EFP_0P_1$. Lastly, that, per unit, the tariff rate is applied to the sum of supply price ($P_1$) and the rent obtained by Hong Kong $P_0 - P_1$. This is because from the standpoint of U.S. Customs the unit rent is treated as part of foreign cost. Also note that an effective quota affects the tariffs revenue collected by the Treasury. When the demand curve is elastic tariff revenue falls as the quantity of imports declines. The total gross social loss due to a quota thus has two elements, each of which corresponds to an area shown in Figure 5.1: (1) the loss due to the quota rent (area $EFP_0P_1$) and (2) the deadweight loss in consumption (area BCGE).

Another way of describing the cost to the economy of a textile import quota is in terms of the change in government revenue plus the cost to consumers. A quota that

causes tariff receipts to fall creates a loss in real national income since the individuals who receive the benefits of the government revenue see their real incomes decline. (This argument ignores distributional effects, i.e., it assumes a dollar of benefits is worth the same amount to everyone, and does not consider the possible change in the cost of operating the government).

Cost to consumers is measured by the reduction in consumers' surplus, which represents a loss in real income to consumers of a product whose price has increased. When price increases (e.g., caused by a quota), consumers of the product suffer a loss of real income because they must pay a higher price for the units they continue to purchase. In addition, consumers reduce their purchases and the value of the reduction in quantity is also a loss in their real income. The change in consumers' surplus caused by a price increase is the sum of both types of losses in real income.

The total cost to the economy of a quota is the sum of the reduction in government revenue plus the cost to consumers. As noted in the text, the quota causes tariff revenue to fall. Therefore, the cost to consumers is smaller than the total cost to the economy.

The magnitude of the annual economic rent caused by the import quotas cannot be obtained directly from available data; neither the official tabulations of imports, nor the underlying invoices for import transactions give the value of economic rents. To solve this problem, an estimation procedure was developed to obtain rents by multiplying the quantity of annual shipments times the annual average quota price. The procedure is based on the fact that the economic rent for every unit of imports equals the price of the quota rights for that unit.

To estimate the costs imposed upon U.S. consumer and upon the U.S. economy by quotas on apparel, it is necessary to have estimates of import demand functions, direct and total price elasticities of import demand for apparel, market shares of import products

in the U.S., and other data. Methodology, models, procedures and results follow in this chapter.

## 2. DATA SOURCES AND ESTIMATION METHOD

In order to estimate the effect that apparel import penetration has on U.S. consumers, U.S. producers, and economy in general, data on seven apparel categories, including prices and quantities, were collected for twelve regions of the world. Special emphasis was placed upon apparel imports from Hong Kong, Korea, Taiwan and Japan since these nations are the major exporters of textile and apparel products to the United States.

Additional variables that effect the demand for textiles and apparel in the United States are consumer incomes in the U.S., quantity and prices of domestic textile and apparel goods, import prices and quantities, consumer tastes, and others. The variables that were available were collected. If the variable was not available in the form dictated by theory, a similar or proxy variable was utilized. Data collected for this study were all from secondary sources provided by the governments of the U.S. Hong Kong and Japan and by researchers in the U.S. and Europe.

The quantity of U.S. apparel production was collected in millions of units for the seven apparel categories by a current industrial report of the U.S. Department of Commerce (MA23A), which is also provided in Focus: Economic Profile of the Apparel Industry by AAMA. The categories were coats, shirts, skirts, sweaters, suits, dresses, and slacks. The value of the U.S. apparel production was found in the Annual Survey of Manufacturers in millions of dollars. The price for the domestic U.S. apparel to the consumer and the wholesale production price were approximated by utilizing the consumer price index (CPI) and the production price index (PPI), collected from Textile Hi-Lights, 1967 = 100, a publication by the American Textile Manufacturers' Institute (ATMI). U.S.

population characteristics, and consumption of domestic apparel were collected from Textile Hi-Lights as well. Consumer disposable income, the portion of the Gross National Product that is left for the consumer to either save or spend, was collected from the Textile Hi-Lights, and was in billions of dollars.

All U.S. variables were collected for the years 1972 through 1987. Import penetration for the same seven categories of apparel was collected from the four main southeast Asian countries that export apparel to the U.S.: Hong Kong, Taiwan, Korea and Japan.

The standard industrial classification codes (SIC) for the major seven categories of apparel for the years 1972-1985, were obtained from the FT: 210 U.S. Import for Consumption and General Imports, that is issued by the U.S. Bureau of the Census. The quantity and value of imports are presented by regions and not by specific country origin.

Import quantities were measured in dozens and c.i.f. values were collected by specific countries (Hong Kong, Taiwan, Korea and Japan) and were obtained from FT 246: U.S. Imports for Consumption and General Imports, issued by the U.S. Bureau of the Census. FT 246: presents information about commodities in terms of the classifications utilized by the Tariff Schedules of the United States Annotated (TSUSA). The SIC's 2,500 classes are a summary of the TSUSA's 10,000 classes. This indicates that there is rarely a one to one relationship between both classifications. However, in order to compare the U.S. domestic production and consumption to the goods imported from these four countries, the relevant SIC codes of the U.S. Bureau of the Census were converted by a U.S.B.C. concordance list into TSUSA codes to match equivalent goods from each code (SIC and TSUSA) as closely as possible. The 1975 concordance list was utilized for the years 1972-1981, and a 1980 concordance list was utilized for the years 1982-1984. The unit values that were calculated for the import goods were used as proxies for the prices of import and export rent.

Ordinary Least Square (OLS) Regression equations in a Statistical Analysis System (SAS) were used to estimate the parameters in the models selected for this study. Actual estimation was done by the General Linear Model (GLM) procedure which provides parameter estimates, standard errors, t-values and defaults to a two-tailed significance test. Interpretation is a problem only if alternative hypotheses require a one-sided test, but the investigator can easily adjust probabilities if need be.

## 3. APPAREL IMPORT DEMAND MODELS

In economic theory, the relationship between the quantity demanded of imported goods and the price of domestic goods is expected to be positive or directly related, but the quantity demanded of imports is negatively or indirectly related to the import price of the good. When income increases, demand for imported goods increase if the imported goods are normal goods or luxury goods, but demand would decrease for inferior goods (consumers demand less of an inferior good when income increases).

In this study, apparel goods are considered to be normal goods. However, a rise in the price of the import good will result as a decline in the quantity demanded for the imported good. This is so because the domestic product and import product are considered to be substitutes but not perfect substitutes. When the price of the import good increases, quantity demanded for this good decreases, and the demand function for the domestic good increases leading to an increase in the price of the domestic (substitute) good. Therefore, theoretical equations for import demand are expected to have a positive coefficient for domestic price, a negative coefficient for import price, and a positive coefficient for income.

Four models were hypothesized in structuring and estimating the effects of income and prices of domestic and import goods on the quantity of apparel import demand for imports from Hong Kong, Korea, Taiwan and Japan of seven selected categories of ap-

parel. Income and the price ratio of imported and domestic goods were also utilized in some models.

The apparel import demand estimation model for coats and slacks from Hong Kong, was specified as:

$$Qm = \beta_0 + \beta_1 \text{ Log } Pm/Pus + \beta_2 \text{ Log } Y + \Sigma \qquad (5.1)$$

The $\beta$s are parameters, and the $\Sigma$ is a term for random error. The remaining variables are:

Qm = quantity of imported good (coats) in units.

Log Pm/Pus = Log of the ratio of apparel (coats) import price, Pm expressed in dollars/units, to domestic apparel (coats) price, and Pus, expressed through the apparel producer price index (PPI).

Log Y = Log of the consumer disposable income.

As discussed previously, $\beta_1$ is expected to be $< 0$ and $\beta_2 > 0$.

Using Ordinary Least Squares (OLS) analysis in SAS yielded an estimation equation of:

For Coats:

$$Qm = -5586322 - \underset{(0.9374)}{18781.3} \text{ Log } Pm/Pus + \underset{(0.0102)}{831559.8} \text{ Log } Y \qquad (5.2)$$

$$R^2 = 0.831$$

The signs of the coefficient parameters were consistent with expectations. The significance level (shown beneath the parameter estimate in parentheses) of the parameter estimates was acceptable for the income variable at .0102 and was insignificant for the price ratio variable. The estimated price ratio was in the inelastic range with an elasticity

of -0.043. The estimated income variable at around 1.91 indicated a strong reaction of imports to any changes in income.

For slacks:

$$\begin{aligned} Qm &= -37551002.0 + \underset{(0.4008)}{1942655.05}\ \text{Log Pm/Pus} \\ &\quad + \underset{(0.1978)}{4138773.6}\ \text{Log Y.} \\ R^2 &= 0.160 \end{aligned} \tag{5.3}$$

The coefficients of the parameters are not as expected for the estimated price ratio; the price ratio was positive, where a one percent increase in price would lead to a .961356 of one percent increase in demand for the imported slack. The estimated elasticity for the price ratio was 0.961356. The elasticity estimate was less than unity which yields an inelastic import demand, the parameter estimate was not significant. The estimated mean income elasticity of import demand was 2.048, which indicates a very strong quantity response to income changes within the United States. The probability of rejection here is also quite high.

The model utilized for estimating quantity demanded of dresses, shirts, and skirts from Hong Kong was in Logarithmic form and was specified as:

$$\text{Log Qm} = \beta_0 + \beta_1\ \text{Log Pm/Pus} + \beta_2\ \text{Log Y} + \Sigma \tag{5.4}$$

where:

Log Qm = Log quantity of imported good (Dresses, shirts, skirts).

Log Pm/Pus = Log of the ratio of the apparel import price to the domestic apparel price of the apparel good.

Log Y = Log of consumer disposable income in the U.S.

The following estimation equations were obtained for dresses, shirts, and skirts:

For Dresses:

$$\begin{aligned} \text{Log Qm} &= 0.939 - \underset{(0.0073)}{0.9798}\ \text{Log Pm/Pus} \\ &\quad + \underset{(0.0001)}{3.5400}\ \text{Log Y} \\ R^2 &= 0.827 \end{aligned} \tag{5.5}$$

For Shirts:

$$\begin{aligned} \text{Log Qm} &= 3.940 - \underset{(0.003)}{0.9404}\ \text{Log Pm/Pus} \\ &\quad + \underset{(0.0001)}{3.5626}\ \text{Log Y} \\ R^2 &= 0.921 \end{aligned} \tag{5.6}$$

For Skirts:

$$\begin{aligned} \text{Log Qm} &= 7.8279 - \underset{(0.5180)}{0.4343}\ \text{Log Pm\Pus} \\ &\quad + \underset{(0.0180)}{1.4623}\ \text{Log Y} \\ R^2 &= 0.461 \end{aligned} \tag{5.7}$$

All the coefficients of the parameters for the three categories of apparel were as expected. The parameter estimates were statistically significant for all the variable except for the price ratio estimate for skirts, where the level of significance was 0.518 and which was too high. The income elasticity of demands for all three products was quite high at around 3.54 for dresses, 3.56 for shirts and 1.46 for skirts, which indicates a very strong response in import quantity demanded to changes in income.

The model utilized for estimating import quantity demanded for sweaters was specified as:

$$Qm = \beta_0 + \beta_1 \ Pm/Pus + \beta_2 \ Y + \Sigma \tag{5.8}$$

where:

Qm = quantity of imported sweaters into the U.S. from Hong Kong.

Pm/Pus = ratio of the import sweater price from Hong Kong to that of the domestic sweater price in the U.S.

Y = consumer disposable income in the U.S.

The Ordinary Least Square (OLS) results from SAS procedures provided the following estimation equation for U.S. import demand for sweaters from Hong Kong:

$$\begin{aligned} Qm &= -1418613 \ - \underset{(0.0207)}{0.3357} \ Pm/Pus \\ &\quad + \underset{(0.0001)}{2140.0} \ Y \\ R^2 &= 0.839 \end{aligned} \tag{5.9}$$

The signs for the estimated variables are all as expected, and all parameter estimates were statistically significant at the 0.03 level or greater indicating a fairly strong model with believable parameter estimates. The price ratio parameter estimation was inelastic at -0.23; a one percent increase in the relative price of the apparel good would yield a decrease of 0.23 of one percent in the quantity of the imported good. The estimated income elasticity of demand for sweaters was lower than expected at 1.28, indicating a weaker than expected response of sweater imports to income changes in the United States.

The model used for estimating import quantity demanded for suits from Hong Kong was specified as:

$$\text{Log Qm} = \beta_0 + \beta_1 \text{ Log Pus} + \beta_2 \text{ Log Pm} + \beta_3 \text{ Log Y} + \Sigma \qquad (5.10)$$

where:

Log Qm = Log of the quantity demanded for imported suits.

Log Pus = Log of the domestic price of the U.S. substitute suit(s).

Log Pm = Log of the import price for suits.

Log Y = Log of consumer disposable income in the U.S..

The resulting estimation equation:

$$\begin{aligned} \text{LQm} = {} & -59.688 - \underset{(0.3498)}{3.5957} \text{ Log Pus} \\ & \underset{(0.4932)}{-0.5747} \text{ Log Pm} + \underset{(.4737)}{3.5983} \text{ Log Y} \\ R^2 = {} & 0.203 \end{aligned} \qquad (5.11)$$

The coefficient signs were all as expected except for price of the U.S. good which had a negative sign. This means when the price of U.S. suits increases by one percent, U.S. imports of suits decreases by 3.59 percent, suggesting suits are not a normal good. The probabilities were all too high and did not meet the required standards. The estimated elasticity of demand for price of imports was in the inelastic range at -.5747. The income elasticity of 3.598 was high, suggesting a strong response to changes in the demand due to changes in income.

There were three types of models utilized in the attempt to estimate U.S. import demand for apparel from Taiwan for the same seven categories of apparel. The apparel import estimation model specified for the quantity demanded in the U.S. of coats, dres-

ses, shirts, skirts, sweaters imported from Taiwan was in logarithmic form and specified as:

$$\text{Log Qm} = \beta_0 + \beta_1 \text{ Log Pm/Pus} + \beta_2 \text{ Log Y} + \Sigma \qquad (5.12)$$

where:

Log Qm = Log of the quantity imported into the U.S.

Log Pm/Pus = Log of the ratio of the import apparel price to the domestic appare l price in the U.S.

Log Y = Log of the consumer disposable income in the U.S.

Using Ordinary Least Square (OLS) within the GLM procedure in SAS yielded the following estimation equations for the five apparel categories:

For coats:

$$\begin{aligned} \text{Log Qm} &= -10.964 \underset{(0.0933)}{- 1.3829} \text{ Log Pm/Pus} \\ &\quad \underset{(0.0002)}{+ 6.0499} \text{ Log Y} \qquad (5.13) \\ R^2 &= 0.873 \end{aligned}$$

For dresses:

$$\begin{aligned} \text{Log Qm} &= -16.058 \underset{(0.5875)}{- 0.1688} \text{ Log Pm/Pus} \\ &\quad \underset{(0.0001)}{+ 3.9465} \text{ Log Y} \qquad (5.14) \\ R^2 &= 0.892 \end{aligned}$$

For shirts:

$$\text{Log Qm} = 3.3859254 - \underset{(0.0878)}{1.11719}\ \text{Log Pm/Pus} + \underset{(0.0005)}{3.9349896}\ \text{Log Y} \qquad (5.15)$$

$$R^2 = 0.780$$

For skirts:

$$\text{Log Qm} = 13.5723833 - \underset{(0.0121)}{2.1442}\ \text{Log Pm/Pus} + \underset{(0.0001)}{3.8724}\ \text{Log Y} \qquad (5.16)$$

$$R^2 = 0.879$$

For sweaters:

$$\text{Log Qm} = 9.240 - \underset{(0.0504)}{0.9827}\ \text{Log Pm/Pus} + \underset{(0.1027)}{4.9653}\ \text{Log Y} \qquad (5.17)$$

$$R^2 = 0.5751$$

All the coefficients of the estimated parameters for the five categories of apparel were as expected. All the parameter estimates were significant at the 0.1 level or greater except for dresses. The income elasticities of demand were all exceptionally high ranging from 3.87 to 6.04, indicating an extremely strong response of quantity of imports demanded for these apparel products to changes in consumer income. The estimated coefficients for the price ratio were in the inelastic range for dresses and sweaters, indicating a competitive market. The price elasticities for coats, skirts, and shirts were in the elastic range of greater than one in absolute value.

The second model utilized for estimating import quantity demanded of slacks and suits from Taiwan was specified as:

$$Qm = \beta_0 + \beta_1 \text{ Log } Pm/Pus + \beta_2 \text{ Log } Y + \Sigma \qquad (5.18)$$

where:

Qm = Quantity of the imported good.

Log Pm/Pus = Log of the ratio of the import apparel price to the domestic apparel price.

Log Y = Log of the consumer disposable income in the U.S.

The Ordinary Least Square estimation equations for slacks and for suits form Taiwan are:

For Slacks:

$$Qm = 123738631 \underset{(0.0003)}{- 15467558 \text{ Log } Pm/Pus}$$

$$\underset{(0.1762)}{-7377507 \text{ Log } Y} \qquad (5.19)$$

$$R^2 = 0.7963$$

For Suits:

$$Qm = -45347 + 12126 \underset{(0.3965)}{.78263 \text{ Log } Pm/Pus}$$

$$\underset{(0.8654)}{+5262 .75103 \text{ Log } Y} \qquad (5.20)$$

$$R^2 = 0.1034$$

The coefficients of the income variable for import demand for slacks and for suits were not statistically significant, and the price variable for suit imports was not sig-

nificant either. The $R^2$ for the suit import equation was very low, but the value for the slacks import equation was 0.796, which is respectable. The estimated elasticity of import demand for the price ratio variable was -3.675, indicating a highly elastic demand for U.S. imports of slacks from Taiwan.

For Korea there were two models utilized to estimate the U.S. import demand functions, for the six categories of apparel considered in this study. The first apparel import estimation model utilized was in logarithmic form for coats, shirts, skirts, suits and sweaters and was specified as:

$$\text{Log Qm} = \beta_0 + \beta_1 \text{ Log Pm/Pus} + \beta_2 \text{ Log Y} + \Sigma \qquad (5.21)$$

where:

Log Qm = Log of quantity of imported goods into the U.S.

Log Pm/Pus = Log of the ratio of the import apparel price to the U.S. domestic apparel price.

Log Y = Log of the consumer disposable income in the U.S.

Ordinary Least Squares (OLS) estimation equations for import demand:

For Coats:

$$\text{Log Qm} = -356885 - \underset{(0.0742)}{0.1647} \text{ Log Pm/Pus} + \underset{(0.0001)}{918.376} \text{ Log Y} \qquad (5.22)$$

$$R^2 = 0.837$$

For Shirts:

$$\begin{aligned} \text{Log Qm} &= -5.9858 - \underset{(0.1301)}{0.3882}\ \text{Log Pm/Pus} \\ &\quad + \underset{(0.0001)}{3.6053239}\ \text{Log Y} \\ R^2 &= 0.872 \end{aligned} \tag{5.23}$$

For Skirts:

$$\begin{aligned} \text{Log Qm} &= -4.5509 - \underset{(0.0124)}{0.6834}\ \text{Log Pm/Pus} \\ &\quad + \underset{(0.0001)}{3.4132}\ \text{Log Y} \\ R^2 &= 0.923 \end{aligned} \tag{5.24}$$

For suits:

$$\begin{aligned} \text{Log Qm} &= 0.7433 + \underset{(0.2592)}{0.44208}\ \text{Log Pm/Pus} \\ &\quad + \underset{(0.9705)}{0.0714}\ \text{Log Y} \\ R^2 &= 0.224 \end{aligned} \tag{5.25}$$

For Sweaters:

$$\begin{aligned} \text{Log Qm} &= -153.915 + \underset{(0.0006)}{7.6591}\ \text{Log Pm/Pus} \\ &\quad + \underset{(0.0001)}{8.8740}\ \text{Log Y} \\ R^2 &= 0.937 \end{aligned} \tag{5.26}$$

The coefficient signs for the estimated parameters were as expected for coats, shirts and skirts. However, the coefficients were not as expected for the price ratio of suits and sweaters. This indicates that even if the quantity of the imported good increased its price would increase as well, relative to U.S. price of the good. The shirts, skirts, and suits es-

timated price ratio elasticity ranged within the inelastic range. The estimated income elasticities of demand were all extremely high, except for suits which had a very low income elasticity of 0.07. The model is a very strong one, especially for coats, skirts and sweaters.

The second model used for estimating import quantity demanded of dresses and slacks from Korea was specified as:

$$Qm = \beta_0 + \beta_1 Pus + \beta_2 \ Pm + \beta_3 Y + \Sigma \tag{5.27}$$

where:

Qm = Quantity demanded of the import product in the U.S.

Pus = Price of the domestic good in the U.S.

Pm = Price of the import good in the U.S.

Y = disposable consumer income in the U.S.

The resulting estimation equations utilizing Ordinary Least Square (OLS) in SAS were:

For Dresses:

$$\begin{aligned} Qm = {} & 3149.7099 - \underset{(0.0026)}{6148724387}\ Pus \\ & + \underset{(0.1725)}{752.6345}\ Pm + \underset{(0.0001)}{65.8323}\ Y \end{aligned} \tag{5.28}$$

$$R^2 = 0.973$$

For Slacks:

$$Qm = 849942.676 + \underset{(0.0132)}{504801267688}\ Pus - \underset{(0.5399)}{30047.8}\ Pm - \underset{(0.0313)}{706.558}\ Y \qquad (5.29)$$

$$R^2 = 0.643$$

The coefficients were not as expected for all the variables in the model. The cross price elasticity of quantity of dress imports to price of U.S. yielded a negative sign indicating a complimentary relationship between imported dresses from Korea and dresses produced in the U.S., which was not expected. Also, the price coefficient for imported dresses variable was not significant. The estimated income elasticities were high for both imported dresses and slacks, but the coefficient was significant for dresses only.

There was one model utilized in the attempt to estimate the import demand for apparel from Japan for the seven apparel categories covered in this study.

The apparel estimation equation was in logarithmic form and was specified as:

$$\text{Log } Qm = \beta_0 + \beta_1 \text{ Log } Pm/Pus + \beta_2 \text{ Log } Y + \Sigma \qquad (5.30)$$

where:

Log Qm = Log of the quantity of the imported good into the U.S.

Log Pm/Pus = Log of the ratio of the apparel import price to the domestic apparel price in the U.S.

Log Y = Log of the consumer disposable income in the U.S.

Using Ordinary Least Square (OLS) in SAS yielded the following estimation equations:

For Coats:

$$\text{Log Qm} = 5.248 - \underset{(0.3139)}{0.3629}\ \text{Log Pm/Pus} + \underset{(0.0075)}{1.7118}\ \text{Log Y} \qquad (5.31)$$

$$R^2 = 0.5283$$

For Dresses:

$$\text{Log Qm} = 30.307 - \underset{(0.0033)}{1.9542}\ \text{Log Pm/Pus} + \underset{(0.0511)}{1.3556}\ \text{Log Y} \qquad (5.32)$$

$$R^2 = 0.595$$

For Shirts:

$$\text{Log Qm} = 29.994 - \underset{(0.0329)}{1.3571}\ \text{Log Pm/Pus} + \underset{(0.1176)}{0.7472}\ \text{Log Y} \qquad (5.33)$$

$$R^2 = 0.415$$

For Skirts:

$$\text{Log Qm} = 8.89 - \underset{(0.6474)}{0.3865}\ \text{Log Pm/Pus} + \underset{(0.0911)}{1.1062}\ \text{Log Y} \qquad (5.34)$$

$$R^2 = 0.273$$

For Slacks:

$$\text{Log Qm} = -4.501 - 0.9810 \text{ Log Pm/Pus} \quad (0.0686)$$
$$+ 4.4501 \text{ Log Y} \quad (0.0050) \qquad (5.35)$$
$$R^2 = 0.573$$

For Suits:

$$\text{Log Qm} = 22.961 - 1.7187 \text{ Log Pm/Pus} \quad (0.0001)$$
$$+ 1.6104 \text{ Log Y} \quad (0.0237) \qquad (5.36)$$
$$R^2 = 0.890$$

For Sweaters:

$$\text{Log Qm} = 32.0134 - 5.5251 \text{ Log Pm/Pus} \quad (0.5711)$$
$$- 1.7175 \text{ Log Y} \quad (0.0030) \qquad (5.37)$$
$$R^2 = 0.763$$

The estimated coefficients in the models are as anticipated except for the income coefficient for sweaters indicating that imported sweaters from Japan do not respond directly to changes in consumer income in the United States. The price ratio coefficients for coats, skirts and slacks were in the inelastic range. However, the estimated price ratio coefficients for dresses, skirts, suits and sweaters was greater than one, suggesting an elastic demand for those goods. The majority of the estimated coefficients were significant at the 0.05 or greater except for the price ratio coefficients for coats, skirts, and sweaters. The income elasticities of demand for coats, dresses, skirts, slacks, suits and sweaters were generally greater than unity and were statistically significant. This model for Japan is quite strong in comparison to most other models attempted.

**Table 5.1. Apparel Import Demand Elasticities for Hong Kong**

| | INDEPENDENT VARIABLES | | | |
|---|---|---|---|---|
| **Quantities of Categories** | **Pus** | **Pm** | **Pm/Pus** | **Y** |
| Coats | | | -.0431<br>(0.9374) | 1.9086<br>(0.0102) |
| Dresses | | | -0.9798<br>(0.0073) | 3.5400<br>(0.0001) |
| Shirts | | | -0.9494<br>(0.0003) | 3.5636<br>(0.0001) |
| Skirts | | | -0.4343<br>(0.5180) | 1.4643<br>(0.1080) |
| Slacks | | | 0.9614<br>(0.4008) | 2.04814<br>(0.1978) |
| Suits | -3.5957<br>(0.3498) | -0.5747<br>(0.4932) | | 3.5983<br>(0.4737) |
| Sweaters | | | -0.0000203<br>(0.0207) | 0.1284<br>(0.0001) |

The significance probalilties are in parentheses beneath the parameter estimates.

**Table 5.2. Apparel Import Demand Elasticities for Taiwan**

| | INDEPENDENT VARIABLES | | | |
|---|---|---|---|---|
| **Quantities of Categories** | **Pus** | **Pm** | **Pm/Pus** | **Y** |
| Coats | | | -1.3829<br>(0.0933) | 6.0499<br>(0.0002) |
| Dresses | | | -0.16883<br>(0.5875) | 3.9465<br>(0.0001) |
| Shirts | | | -1.1172<br>(0.0878) | 3.9349<br>(0.0005) |
| Skirts | | | -2.1442<br>(0.0121) | 3.8724<br>(0.0001) |
| Slacks | | | -3.6757<br>(0.0003) | -1.7532<br>(0.1762) |
| Suits | | | 0.4406<br>(0.3965) | 0.1913<br>(0.8654) |
| Sweaters | | | -0.9827<br>(0.0504) | 4.9653<br>(0.1027) |

The significance probalilties are in parentheses beneath the parameter estimates.

**Table 5.3. Apparel Import Demand Elasticities for Korea**

| | INDEPENDENT VARIABLES | | | |
|---|---|---|---|---|
| **Quantities of Categories** | **Pus** | **Pm** | **Pm/Pus** | **Y** |
| Coats | | | -1.64176<br>(0.0538) | 4.1504<br>(0.0001) |
| Dresses | -2.34<br>(0.0026) | 3.1445<br>(0.1725) | | 3.1333<br>(0.0001) |
| Shirts | | | -0.388231<br>(0.1301) | 3.6053<br>(0.0001) |
| Skirts | | | -0.683413<br>(0.0124) | 3.4132<br>(0.0001) |
| Slacks | 0.067<br>(0.0132) | -5.0149<br>(0.5399) | | -3.8344<br>(0.0313) |
| Suits | | | 0.4421<br>(0.2592) | 0.0714<br>(0.9705) |
| Sweaters | | | 7.6591<br>(0.0006) | 8.8739<br>(0.001) |

The significance probalilties are in parentheses beneath the parameter estimates.

**Table 5.4. Apparel Import Demand Elasticities for Japan**

| | INDEPENDENT VARIABLES | | | |
|---|---|---|---|---|
| **Quantities of Categories** | **Pus** | **Pm** | **Pm/Pus** | **Y** |
| Coats | | | -0.3628<br>(0.3139) | 1.7118<br>(0.0075) |
| Dresses | | | -1.95422<br>(0.0033) | 1.3556<br>(0.0511) |
| Shirts | | | -1.35705<br>(0.0329) | 0.7472<br>(0.1176) |
| Skirts | | | -0.3864<br>(0.6474) | 1.10621703<br>(0.0911) |
| Slacks | | | -0.9809<br>(0.0686) | 4.4501<br>(0.0050) |
| Suits | | | -1.71869<br>(0.0001) | 1.6104<br>(0.0237) |
| Sweaters | | | -5.5251<br>(0.5711) | -1.7175<br>(0.0030) |

The significance probalilties are in parentheses beneath the parameter estimates.

# 4. ARMINGTON'S THEORY OF IMPORT DEMAND

Armington provided an important insight into international trade theory. His theory provided a way to account for the fact that commodities in international trade are differentiated by place of origin as well as by kind. U.S. and Hong Kong apparel or U.S. and Hong Kong shirts are, therefore, imperfect rather than perfect substitutes.

Armington's theory (1969) differentiates a commodity supply by kind and origin. Following Armington (pp. 159-60), we see that a "good" or "market" is a commodity differentiated by kind, as shirt is from sweater, for example. A "product" is differentiated by both kind and origin. U.S. and Hong Kong shirts represent two imperfectly substituted products within an importing region's (U.S.'s) shirt market. Importers are often observed as treating a good's supplies from different exporters as imperfect substitutes (Armington, p. 159). Thus, an importer would perform a two stage optimization. In stage 1, the importer would decide the total amount of apparel to import from all sources. The importer would then determine the optimal levels of product imports.

Armington made three assumptions (p. 161) in order to develop his theory. First, importer preferences are homogeneously separable. Armington realized two advantages of homogeneous separability. Phlips (1983, pp. 72-76) demonstrated that weak separability, a condition implied by homogeneously separable preferences, is required to incorporate two-stage optimization. Green (1980, pp. 150-54) has shown that homogenous separability, a stronger condition than weak separability, is necessary both to endogenize two-stage optimization and to do so in a way that will generate the same demand product quantities of the more conventional single-stage process.

Second, Armington (p. 161) assumed that an importer's substitution elasticities defined over product pairs are constant. Third, Armington (p. 161) assumed a common substitution elasticity for each product pair within a particular market (for example,

shirts). According to Armington, these assumptions suggest an importer utility function that is homogeneously separable, and has a constant elasticity of substitution (CES). Applying Armington's ideas to apparel would group apparel imports into a market quantity (or utility) index that is linearly homogenous and that would serve as a CES utility function argument (Armington, p. 167).

The U.S. importer would first maximize real national income-constrained utility to determine a Marshallian total apparel demand or, if the market for a disaggregated good, e.g. shirts, was of interest, the relevant demand would be total shirt demand in the U.S. (equation 5.38 specifies this relationship).

Following Armington, the importer would then minimize expenditures on all apparel products subject to the first-stage demand or utility level. From there, Armington derived the importer's second-stage demand for a product, in our study U.S. apparel (or apparel products) (See equation 5.39). Finally, Armington derived the own-price elasticities (or direct-price elasticities) based upon the demand functions of the first two stages. These elasticities are utilized in this study and are estimated by equation (5.40)

$$Q_i = f_i(RI, P_1, \ldots, P_i, \ldots, P_n) \tag{5.38}$$

$$Q_{ij} = Q_{ij}(Q_i, P_{il}, \ldots, P_{ij}, \ldots, P_{im}) \tag{5.39}$$

$$E_{iii} = -[((1.0 - S_{ij}) \propto i + S_{ij}\ E_{ii})] \tag{5.40}$$

For the U.S., an importer, i = 1,...,n represents the goods or markets (for example, shirts); j = 1,...,m is the number of exporters (for example, Hong Kong); $Q_i$ is the demand for the ith good from all sources; RI is the importer's (U.S.) real national income; $Q_{ij}$ is the ith good imported from the jth exporter (for example, shirts from Hong Kong); $P_{ij}$ is the real $Q_{ij}$ price in importer currency; $P_i$ is the index of the market's $P_{ij}$; $\propto i$ is the

importer's ith market apparel market substitution elasticity; $E_{iii}$ is the importer's elasticity of $Q_{ij}$ demand with respect to $P_{ij}$; $E_{ii}$ is the importer's elasticity of market demand with respect to Pi; and Sij is the market expenditure's share spent on $Q_{ij}$.

Armington's theory has a significant advantage over other trade theories. It permits the import price elasticities to be estimated indirectly with nothing more than some share information, the $E_{ii}$, and the price ration coefficient, i.e. the substitution elasticity estimate, $\propto_i$. Moreover, Armington's framework is a theory of demand. Armington states that his theory of "ex ante demand . . . requires no particular assumptions about supply" (p. 163). This theory will concentrate on the demand side of the U.S. apparel import market.

Market shares in the U.S. were calculated for apparel exporting countries for each product category by country of origin, in order to show the importance of a certain imported product from a specific country in the U.S. market. In Table 5.5, the market shares can be seen as a percent of total imports of a good into the U.S. from 1982. For instance, Hong Kong imported coats has a 7.29 percent market share of all coats consumed in the United States. Also, in Table 5.6, the market shares are shown as percentages of total imports of that good. That is, Hong Kong has an 18.78 percent share of the total 38.8 percent imported coats into the United States.

Hong Kong, as can be seen, is the most dominant exporter for all categories considered except for slacks where Japan seems to be the leading exporter of the four countries studied.

## 5. ESTIMATED QUOTA RENTS

The textile product categories that had effective quota limits in 1982 are provided by data giving prices of quota rights in Hong Kong. An effective quota causes price paid by importers to exceed supply price or unit cost in Hong Kong. In Hong Kong, the price

**Table 5.5. Market Shares in the U.S. For Apparel Exporting Countries by Categories for 1982 (as a percent)**

| Apparel Categories | *Rest of World | Hong Kong | Tawian | Korea | Japan |
|---|---|---|---|---|---|
| Coats & Suits | 38.80 | 7.29 | 1.45 | 1.57 | 1.80 |
| Dresses | 4.09 | 0.57 | 0.26 | 0.12 | 0.04 |
| Shirts | 39.92 | 9.32 | 8.59 | 6.53 | 8.63 |
| Skirts | 4.59 | 0.46 | 0.43 | — | 0.36 |
| Slacks | 35.05 | 0.05 | 0.016 | 0.01 | 1.93 |
| Sweaters | 21.15 | 6.65 | 4.11 | 2.84 | 0.08 |

*yields the total percent estimate share from total imports of a certain product in the U.S. market.

**Table 5.6. Market Shares in the U.S. For 1982 for Apparel Exporting Countries by Categories (as a percent of total imports)**

| Apparel Categories | Hong Kong | Tawian | Korea | Japan | Total of Four countries |
|---|---|---|---|---|---|
| Coats & Suits | 18.78 | 3.74 | 4.05 | 4.64 | 31.21 |
| Dresses | 13.87 | 6.38 | 2.84 | 0.95 | 24.04 |
| Shirts | 23.34 | 21.52 | 16.36 | 21.62 | 82.84 |
| Skirts | 9.93 | 9.43 | — | 7.93 | 27.29 |
| Slacks | 0.013 | .0462 | .0305 | 5.52 | 5.61 |
| Sweaters | 31.44 | 19.45 | 13.43 | 0.39 | 64.70 |

minus unit cost at the quota limit is measured by the price of quota rights. The administrative system adopted by the Hong Kong Government to control textile shipments to the U.S. allows firms to buy and sell export rights. Profit making efforts by firms in Hong Kong push the price of quota rights to a level that equals the difference between the price paid for the textile product by U.S. importers and the unit cost to supply the product.

The estimates for the quota rents created in 1982 by the apparel import quotas on Hong Kong (area $EFP_0P_1$ in Figure 5.1) are reported in Table 5.8. The total rent for each product category is obtained by multiplying quantity of imports times the average quota price. Weighted average quota prices are presented in Table 5.7 for dozens and for units of apparel imported into the U.S. from Hong Kong. The quota prices are for six aggregate apparel categories consisting of thirteen three-digit U.S. trade classifications and nine less aggregated apparel product classifications. The resulting weighted average quota prices shown in Table 5.7 ranged from $21.88 to $132.53 per dozen apparel items imported into the U.S. from Hong Kong. These prices represent the amount paid by Hong Kong exporters to the Hong Kong government to have the right to export those items to the United States. These also represent the rent (per dozen or per unit) extracted by Hong Kong exporters from the United States.

The economic rent created by the quota constitutes a payment by U.S. importers (and ultimately U.S. consumers) to firms in Hong Kong. While the import limits are set by the United States, the Hong Kong government has the responsibility for controlling its textile shipments to the U.S. This in effect, grants the Hong government a monopoly over the use of the quota. The monopoly position together with a large number of U.S. importers enables Hong Kong to capture the economic rent created by the quota.

The total quota rent for all six product categories is $151 million. If the quota had been cancelled, quota rents would not have been paid by U.S. importers to Hong Kong

**Table 5.7. Quota Prices in Hong Kong, Annual Averages, 1982**

| Apparel Category | Quota Prices $/Dozen | Quota Prices $/Unit |
|---|---|---|
| Coats, Jackets, Suits | 132.53 | 11.04 |
| Slacks, Pants | 34.17 | 2.85 |
| Shirts | 21.88 | 1.82 |
| Sweaters | 129.08 | 10.76 |
| Skirts | 39.60 | 3.30 |
| Dresses, Blouses | 27.64 | 2.30 |

Source: Derived from data provided by the Hong Kong Government

**Table 5.8. Quota Rents Due to U.S. Import Quotas on Hong Kong Apparel Products, 1982**

| Apparel Category | Quantity of Imports (Dozens) | Weighted Average Quota Price ($/Dozen) | Quota Rent ($ Millions) |
|---|---|---|---|
| Coats, Jackets, Suits | 7,783 | 132.53 | 1.03 |
| Slacks, Pants | 6,050 | 34.17 | 0.21 |
| Shirts | 5,353,880 | 21.88 | 117.13 |
| Sweaters | 249,247 | 129.08 | 32.18 |
| Skirts | 10,004 | 39.60 | 0.39 |
| Dresses, Blouses | 16,753 | 27.64 | 0.46 |
| | | **Total Quota Rent** | **151.40** |

Source: U.S. Department of Commerce for quanity and the Hong Kong Government for data to derive quota price.

firms and 1982 real national income in the U.S. would have increased by $151 million. The quota rents are neither small in absolute terms nor in relation to the value of imports. Total 1982 imports (customs value) of the six products was about $900 million. The quota rent therefore equals almost 17 percent of the expenditure by U.S. firms to acquire title to these products.

The six products do not contribute equally to the total quota rent. Product groups the quota rents range from $0.21 million for slacks to over $117 million for shirts. Moreover, over 90 percent is accounted for by just two product categories, shirts, and sweaters. The quota rent for shirts alone is more than 77 percent of total quota rent in 1982.

## 6. ESTIMATED CONSUMPTION DISTORTION EFFECT

The consumption distortion effect (area BCGE in Figure 5.1) is estimated in two stages for each product. First, the tariff rate and the quota price for the product are needed to calculate the marginsvertical segments GE and CB respectively, in Figure 5.1. Second, it is necessary to determine the amount by which the quantity of imports would increase if the quota were eliminated (quantity $Q_0Q_1$ in Figure 5.1). Information required for the first stage is readily available--average quota prices from Section 5 above and tariff rates from Customs Bureau data. However, the estimation of the change in import quantity is more complex, but two methods, those presented in Sections 3 and 4 above, provided information and estimates of the elasticity of import demand for a particular apparel product made in Hong Kong and imported by the United States. It is very difficult to estimate price elasticities of import demand at this level of detail for a number of reasons, among them data and estimation (statistical) problems. Two different methods were used in the study to overcome the problem of some coefficients not being significant by the first method utilized.

Both the Armington model and regression models were used to generate estimates of the percent change in imports if quotas on Hong Kong are dropped. An important feature of this model is that it is possible to adjust for the effects of the binding textile import quotas the U.S. has imposed on other countries. In particular, the quotas on South Korea, Taiwan and Japan were probably effective in 1982. The procedure employed here considers the case where all textile quotas are scrapped, not just those on Hong Kong's exports. Therefore, the predicted increase in imports from Hong Kong is moderated by the elimination of the quantitative restraints on South Korea, Taiwan, and Japan. However, the consumption distortion effect is estimated only for Hong Kong. We lack sufficient information about South Korea and Taiwan to provide comparable estimates for those countries. The percent change in quantity of Hong Kong imports following removal of all textile import quotas and the consumption distortion effect of the quotas on Hong Kong are given in Table 5.9.

For all six product categories, the total consumption effect of the import quotas on Hong Kong's clothing products was $70 million in 1982. As with the rent losses, the total consumption distortion is dominated by two product categories: shirts and sweaters. These two products account for $69 million, almost all of the total consumption distortion.

The consumption distortion effect measures the social value of the additional imports that would be consumed in the U.S. if the quotas were eliminated. As shown in Table 5.9, the lower prices that would result when quotas are dropped would lead to an import increase of 16 percent or more for five of the six product categories. For sweaters, the percent increases would exceed 40 percent. The increase in U.S. consumption would be a substantial improvement in the well being of American consumers.

The consumption distortion of the quotas has a different impact on different groups of U.S. consumers. While we are not able to estimate the distributional effects of the tex-

**Table 5.9. Consumption Distortion Effect of Quotas on Hong Hong Apparel If Quotas Were Removed, 1982**

| Apparel Category | Decrease Percent in Import Price | Percent Increases in Import Quanity | Consumption Distortion Effect ($/Millions) |
|---|---|---|---|
| Coats, Jackets, Suits | 12.5 | 14.8 | 0.47 |
| Slacks, Pants | 32.3 | 36.4 | 0.15 |
| Shirts | 16.8 | 21.7 | 49.25 |
| Sweaters | 44.6 | 40.0 | 19.82 |
| Skirts | 19.9 | 17.6 | 0.19 |
| Dresses, Blouses | 16.2 | 21.5 | 0.22 |
| **Consumption Distortion Effect** | | | **70.10** |

tile quotas, there are two ways in which groups of consumers can be affected by the quotas.

Since the quotas limit physical quantities but do not restrict quality, Hong Kong firms upgraded their textile exports. There are several reports that the quotas have caused upgrading. As a consequence, quotas are expected to be more severe for low-income consumers who discover that basic, low quality imports appear after the quota is imposed.

Another effect arises because a quota is expected to alter the mix of imports against low-priced articles and in favor of high-priced items. This result follows when each quota category encompasses a variety of substitute products that vary in price. For example, the quota category, shirts, includes expensive products as well as inexpensive shirts and the two types of products are expected to be close substitutes in consumption. The application of a quota introduces a quota price that is the same for all items in the quota category. This raises the price of all items by the same absolute amount and means that the relative price of inexpensive items increases. As a result, consumers respond to the change in relative prices and substitute away for inexpensive items so that the mix of imports changes in favor of the more expensive items. Assuming that low-income consumers are the principal buyers of inexpensive products, the quota therefore imposes a relatively greater adverse effect on these consumers.

# CHAPTER VI

## SUMMARY AND CONCLUSION

The ever increasing non-tariff barriers in the U.S. textile and apparel industry, mainly "Voluntary" export restraints and import quota, have been the basis of many international debates. The main problem with these protectionism tools is their intangible quality; which prohibits the precise measurement of the costs to consumers, producers, and the general economy.

The costs of these quotas are the most difficult to measure, because of the nature of the quotas; which limits quantities and, hence, estimating their total cost is quite difficult. This explains the scarcity of the studies conducted toward estimating quota costs to the economy and most importantly, to the consumer.

The welfare cost to the U.S. consumer as the result of a quota is generated by the excess price paid by U.S. consumers for the quantity of apparel that is restricted; and by the loss of choice of goods due to decreased quantities.

In order to estimate the costs of a quota, price and quantity of the quota must be known in a supply and demand context; which is most often blocked by quotas.

Carl Hamilton in (1986) and (1988) investigated the restrictions of "Voluntary" export restraints for apparel imported into the U.S. from Hong Kong, Taiwan and Korea. Hong Kong incurred the largest amounts of rent transfers from these quotas; which is the cost to the U.S. and U.K. consumers. Morkre (1979) and Krueger (1974) both arrived at similiar conclusions in regard to increased costs to U.S. consumers due to quotas.

In this study in order to estimate the effect of import penetration of textiles and apparel on the U.S. consumer, producer and economy; data for seven apparel categories were collected, including quantities and prices for twelve regions of the world, emphasiz-

ing Hong Kong, Taiwan, Korea and Japan. Import demand elasticities were estimated utilizing the models developed in this study.

The study, by utilizing Ordinary Least Square regression equations, found that in most cases the price elasticities of import demand were inelastic ranging from -0.043 to -3.675. The coefficient signs were generally as expected in most cases, and many were statistically significant. Income elasticities of demand in almost all cases indicated a strong quantity response of apparel imports to changes in consumer disposable income, ranging between 0.1284 and 8.874.

Market shares were as expected with Hong Kong leading the exports of apparel into the U.S. of all the apparel categories studied except for slacks where Japan had the largest market share in the U.S.

Quota rents for each product category from Hong Kong for 1982 were obtained. The amounts paid by Hong Kong exporters for the right to export (rent) resulted in a weighted average that ranged between $21.88 and $132.53 per dozen. The total quota rent for the six apparel categories amounted to $151 million. Over 90 percent of this amount was accounted for by shirts and sweaters alone. Quota rents for shirts alone accounted for more than 77 percent of the total quota rent for the year 1982.

In order to estimate the percent change of imports if quotas were dropped on Hong Kong prodcuts (distortion effect) both the regression models and the Armington's models were utilized.

The total consumption distortion effect in 1982 amounted to $70 million, with sweaters and shirts accounting for $69 million. The lower prices resulting from dropping these quotas leads to a 16 percent import increase for five of the six categories. For sweaters, import increase would exceed 40 percent. There is a total loss of $221 million to the U.S. consumer for 1982 from Hong Kong alone.

It was not possible to calculate the rents from quotas, nor the consumption distortion effect for Korea, Taiwan, and Japan because of lack of sufficient information. These limitations may serve as basis for future studies that would provide comparable estimates for these countries.

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