Rachel Dardis and Katherine Cooke The Impact of Trade Restrictions on U.S. Apparel Consumers

ABSTRACT. The loss incurred by U.S. apparel consumers in 1980 due to higher prices from tariffs and quotas was estimated. The price impact of tariffs was based on the ad valorem tariff rate while the price impact of quotas was based on estimated price differences between domestic and imported apparel at the same U.S. distribution level.

Consumer losses in 1980 ranged from \$10 billion to \$12 billion depending on the price elasticity of demand for apparel and whether consumers or distributors received the scarcity rent generated by quotas. The increase in consumer expenditures due to higher prices accounted for the greatest proportion of consumer losses and ranged from 23% to 25% of total consumer expenditures for apparel depending on the allocation of the scarcity rent.

While a reduction in trade restrictions would benefit consumers, such a reduction would also impose losses on firms and workers in the domestic apparel industry. However, there are other strategies for meeting competition from imports that would benefit producers as well as consumers.

The U.S. apparel industry has faced serious competition from imports in the post World War II era (Priestland, 1980). This reflects the labor intensive nature of apparel production which gives countries with low wages a comparative advantage. In addition, technological constraints have prevented the use of capital intensive production methods and limited the substitution of capital for labor. As a result, quantitative restrictions or quotas have been used to protect the U.S. apparel industry for the past 25 years. The first quantitative restriction was a voluntary agreement with Japan on cotton products in 1956. The growth of man-made fiber products in the 1960s led eventually to the multi-fiber arrangements commencing with the Multi-Fiber Arrangement (MFA) of 1974. Under the MFA, quotas have been negotiated between the U.S. and major textile/apparel producing countries. The MFA was extended in 1977-78 and again in 1981-82 (GATT, 1981; U.S. International Trade Commission, 1981).

In addition to the protection provided by quotas the U.S. apparel industry is also protected by tariffs. In contrast to quotas, tariffs are scheduled to decline in the future as part of a general reduction in trade barriers (U.S. International Trade Commission, 1981, p. 43). Thus, quotas are likely to become more important reflecting the

growth of the "new protectionism" which has characterized many developed economies including the U.S. (Morkre & Tarr, 1980). The "new protectionism" emphasizes quantitative restrictions such as quotas and is counter to the post World War II philosophy which is that "quantitative restrictions should not be employed as a means of regulating international trade" (Morkre & Tarr, 1980, p. 169).

The purpose of this paper was to estimate the loss incurred by consumers in 1980 due to higher prices from tariffs and quotas. Consideration is given to the allocation of the scarcity rent in the estimation of consumer loss. The paper differs from other studies (Morkre & Tarr, 1980; Pelzman & Bradberry, 1980) in that the price impact of quotas as well as tariffs is investigated. The consumer loss from quotas is based on estimated price differences between domestic and imported apparel at the same U.S. distribution level.

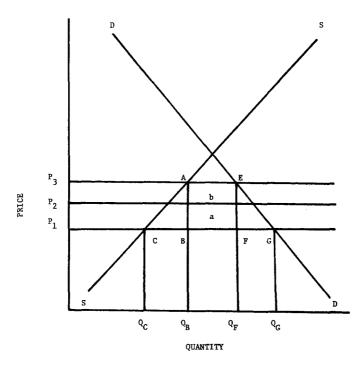
THEORETICAL MODEL

The analysis is based on the assumption that part of the scarcity rent from quotas is retained within the U.S. Justification for this assumption is based on studies of price differences between comparable quality domestic and imported apparel (Apparel's last stand, 1979; Kurt Salmon Associates, 1981; Teper, 1980; U.S. House of Representatives, 1977; U.S. International Trade Commission, 1982). The rent from a quota is based on the scarcity of low price imported apparel due to quantity restrictions. As a result prices of imported apparel will rise yielding a scarcity rent to the seller in the short-run. The degree to which this rent is retained over time will depend on competitive conditions in the retailing of apparel.

Partial equilibrium analysis was used to estimate the loss to consumers from tariffs and quotas. It was assumed that the world supply was perfectly elastic which meant that the quantity imported had no effect on the world price. Justification for this assumption is based on several factors including the number of exporting countries, their production capacity, and the availability of raw materials and labor. These conditions are met in the case of apparel (U.S. International Trade Commission, 1981).

The combined system of protection (tariffs and quotas) is shown in Figure 1. Price and quantity are measured on the vertical and horizontal axis respectively while the domestic demand and supply curves are given by DD and SS. In the initial free trade situation the domestic price (and the world price) is given by P_1 . Imposition of a tariff increases the price from P_1 to P_2 while imposition of a quota,

which limits the quantity that may be imported to Q_F - Q_B , results in a further price increase from P_2 to P_3 . As a result of both price increases domestic production expands from Q_C to Q_B while domestic consumption declines from Q_G to Q_F . Imports are equal to Q_F - Q_B . The area a represents the tariff revenue received by the U.S. government while the area b represents that part of the scarcity rent which is retained in the U.S. due to quantity restrictions on imports.



P₁ = Price of imports in the U.S. under free trade

P2 = Price of imports in the U.S. under a tariff

P₃ = Price of imports in the U.S. under a tariff and quota

Fig. 1. Impact of Trade Restrictions on U.S. Apparel Consumers.

The loss to U.S. consumers from existing trade restrictions consists of two parts. The first loss component is the increase in consumer expenditure due to higher prices. It is equal to the area $P_1\,P_3\,EF$. The second loss component is the loss incurred by consumers from the reduction in quantity due to higher prices $(Q_G\,-Q_F)$. Consumer willingness to pay for the quantity $Q_G\,-Q_F$ is measured by the area under the demand curve $Q_F\,EGQ_G$. However, when the price of imports is P_1 , actual consumer expenditures are $Q_F\,FGQ_G$. The difference between willingness to pay and actual expenditures (area

EFG) represents the consumer surplus from the ability to purchase Q_{G} - Q_{F} units for price P_{1} (Currie, Murphy, & Schmitz, 1971). The reduction in quantity purchased due to higher prices thus results in a loss of consumer surplus which is given by the area EFG. The total loss to consumers is equal to the area P_{1} P_{3} EG.

Allocation of Scarcity Rent

The previous discussion was based on the assumption that the scarcity rent would be retained by U.S. distributors. This has been the major argument used by the domestic apparel industry and labor unions to obtain increased protection (U.S. House of Representatives, 1977). They claim that U.S. retailers prefer imports because they are cheaper to purchase than domestic apparel and may be sold for the same price at retail. This practice means higher mark-ups on imported apparel and higher profits for retailers. As a result the consumer obtains none of the benefits from low cost apparel imports.

The argument concerning retention of the scarcity rent by retailers may be true in the short run where profits are possible and are a reward for risk-taking on the part of the firm. However, retailing has a highly competitive market structure (monopolistic competition) and there are low barriers to entry. Thus the maintenance of excess profits in the long run from the retention of the scarcity rent is unlikely (Ferguson, 1972, pp. 317-333). The scarcity rent may be returned to the consumer eventually in two ways. First the retail price of imported apparel may be less than the retail price of domestic apparel. This situation is a disequilibrium situation since the demand for low cost imports will be greater than supply due to quota restrictions. Non-price rationing will then occur with the customer being served on a first come, first served basis (Cline, 1978). Support for this hypothesis comes from a major study by Cline in 1978 in which prices of comparable quality imported and domestic apparel were compared. Cline found that imported apparel was 8.7% cheaper than domestic apparel. A 10% price difference between imported and domestic apparel was obtained in a more recent price quality study of men's dress shirts (Shih, 1981).

A second possibility is that retailers may use higher mark-ups on imports to cover operating costs for all merchandise. Retailers claim that if low-cost imports were unavailable higher mark-ups would be required on domestic merchandise (Trade restrictions, 1978). Consumers, in this instance, receive the scarcity rent through lower prices for domestic apparel rather than lower prices for imported apparel. In both instances consumer losses are reduced by the amount of the scarcity rent (area b in Figure 1).

Finally it should be noted that the argument that the consumer receives no benefit from trade when the retailer captures the scarcity rent is somewhat misleading. The price paid by consumers under trade restrictions is given by P_3 in Figure 1. This price is lower than the price that consumers would pay in a closed economy, i.e., the price realized by the intersection of DD and SS.

Retention of the Scarcity Rent by the Exporter

The above analysis does not take into consideration the possibility that exporters may have increased the world price P_1 once the quota was in effect in order to capture part of the scarcity rent. The loss from this price response by exporters could not be measured due to the length of time quotas have been in effect (Morkre & Tarr, 1980). However, it should be pointed out that competitive conditions in the apparel export market are likely to limit the degree to which individual exporting countries can increase prices under a quota since U.S. buyers can always switch to other sources of supply. According to a study by the U.S. International Trade Commission (1982) many exporting countries do not fill their apparel quotas each year.

The inability of exporting countries to capture the scarcity rent thus depends on competitive conditions in the world export market. If the quota is controlled by a single country or group of countries and alternative sources of supply are limited then the exporting countrie(s) may be able to capture the entire scarcity rent from the quota.

ESTIMATION OF CONSUMER LOSS

The loss due to the increase in consumer expenditures was based on the percentage increase in price due to tariffs and quotas and the value of domestic consumption. The loss due to the reduction in quantity was based on these variables and the price elasticity of demand. Thus the area EFG in Figure 1 may be measured by the following formula:

Area EFG =
$$1/2 \triangle Q \triangle P$$

= $1/2 \left(\frac{\triangle Q}{\triangle P} \frac{P}{Q}\right) \left(\frac{\triangle P}{P}\right)^2$ PQ
= $1/2 n \left(\frac{\triangle P}{P}\right)^2 V$

where n = price elasticity of demand

 $\frac{\Delta P}{P}$ = percentage increase in price due to tariffs and quotas, and

V = value of domestic consumption.

The following data were used to estimate the loss to consumers from existing trade restrictions in 1980. They were

- (1) transportation, distribution and tariff costs of imports,
- (2) the price impact of quotas,
- (3) the wholesale value of domestic production and imports, and
- (4) the price elasticity of demand for apparel in the U.S.

Transportation, Distribution, and Tariff Costs

According to the American Apparel Manufacturer's Association, transportation costs to the U.S. and distribution costs within the U.S. increase the customs price of imported apparel by approximately 30% (Apparel's last stand, 1979; Sines, 1981). The trade weighted ad valorem rate for apparel in 1980 was obtained from the U.S. Department of Commerce, Bureau of the Census (1981). The ad valorem rate was 27%.

Price Impact of Quotas

The price impact of quotas was estimated by comparing the price of domestic apparel to the price of comparable quality imported apparel. Several studies have reported price differences ranging from 20% to 40% (Apparel's last stand, 1979; Teper, 1980; U.S. House of Representatives, 1977). A more recent study by Kurt Salmon Associates (1981) noted that there are production cost differences of 10% between domestic and imported apparel even for the most efficient domestic manufacturers. Thus retailers can purchase imported apparel for a lower price than domestic apparel. Based on these studies and the retail price study reported by Cline (1978), a 10% price difference between domestic and imported apparel was used to represent the price impact of quotas. This is a conservative estimate of the price impact of the quota.

Value of Domestic Production and Imports

The value of domestic production was obtained from the U.S. Department of Commerce, Bureau of the Census (1980). The value of imports was obtained from the U.S. Department of Commerce, Bureau of the Census (1981). The value of imports was the customs

value of imports, i.e., excluding transportation, distribution, and tariff charges.

Price Elasticity of Demand for Apparel

This value was based on the price elasticity of demand for imports (Pelzman & Bradberry, 1980; Stone, 1979) and the relationship between this elasticity and the elasticity of demand for the product as a whole, i.e., including both imported and domestic apparel. Kindleberger (1963) points out that the elasticity of demand for the product as a whole will, in general, be less than the elasticity of demand for imports. Thus the values obtained by Pelzman and Bradberry and Stone were used as upper limits for the price elasticity of demand for the product as a whole. Values of 0.25, 0.5 and 1.0 were used in the analysis. This range of values is appropriate when one considers that substitution is limited for apparel as a whole.

RESULTS

The price impact of tariffs and quotas is given in Table I. An item entering the U.S. for a price of \$1.00 would incur transportation and distribution costs of 30 cents and tariff costs of 27 cents. The price of a comparable quality U.S. item at the same U.S. distribution level is \$1.73 based on the 10% price difference between domestic and imported apparel. The price impact of tariffs is 27 cents while the price impact of quotas is 16 cents. The total price increase due to tariffs and quotas is 43 cents.

TABLE I
Estimation of the Price Impact of Tariffs and Quotas

Description	\$
Customs Value Price	1.00
P_0 (1 + d) where d is the transportation/distribution rate	1.30
P_0 (1 + d + t) where t is the ad valorem tariff rate	1.57
Price of comparable U.S. item at the same U.S. distribution level ^a	1.73
	Customs Value Price P_0 (1 + d) where d is the transportation/distribution rate P_0 (1 + d + t) where t is the ad valorem tariff rate

^aBased on the assumption that the price of domestic apparel is 10% higher than the price of imported apparel.

The wholesale value of domestic production, imports, and domestic consumption is given in Table II. The customs value of imports was multiplied by 1.73 to obtain the value of imports based on U.S.

prices. The value of domestic consumption is equal to the value of domestic production and the value of imports based on U.S. prices.

TABLE II
Data Used in the Analysis

Value (\$ Billion)
5.746
9.940
33.954
43.894

The consumer loss from tariffs and quotas is given in Table III. The first set of loss estimates is based on the assumption that the scarcity rent from quotas will be retained by distributors. As noted earlier this could occur in the short run. The total loss ranges from \$11 billion to \$12 billion depending on the price elasticity of demand. The loss due to the increase in consumer expenditures accounts for the major portion of the total loss (89% to 97%). Thus errors involving the second loss component, in particular the price elasticity of demand, are unlikely to have a significant impact on the total loss.

TABLE III

Consumer Losses from Trade Restrictions on Apparel in 1980
(\$ Billion)

Allocation of scarcity rent	Loss component	Price elasticity of demand 0.25 0.50 1.00		
Retained by distributor (short run)	Increase in consumer expenditures	10.910	10.910	10.910
	Reduction in quantity consumed	0.329	0.658	1.317
	Total	11.239	11.568	12.227
Retained by consumer (long run)	Increase in consumer expenditures	9.991	9.991	9.991
	Reduction in quantity consumed	0.329	0.658	1.317
	Total	10.320	10.649	11.308

The second set of loss estimates is based on the assumption that the scarcity rent is retained by consumers and may be considered the long run loss estimates. When the scarcity rent is retained by consumers the total loss declines by \$919 million. Again, the loss due to the increase in consumer expenditure still accounts for the greatest portion of the welfare loss (85%–96%).

It is also of interest to compare the increase in consumer expenditures for apparel due to tariffs and quotas to total consumer expenditures for apparel (\$43.894 billion). The increase in consumer expenditures accounts for from 23% to 25% of total consumer expenditures for apparel depending on whether the scarcity rent is retained by consumers or distributors.

It should be recognized that the loss incurred by consumers is greater than the loss incurred by society as a whole. This is due to the fact that higher prices from trade restrictions benefit domestic apparel producers and recipients of the tariff revenue and short run scarcity rent. The apparel consumer is, in effect, being taxed to transfer income to certain groups. However, such income transfers are not based on the ability to pay but on consumer purchases. Trade restrictions are thus similar to a sales tax and are regressive in nature, i.e., low-income consumers bear a greater tax burden than high-income consumers since the tax does not vary by income level.

DISCUSSION

Consumer losses in 1980 due to tariffs and quotas ranged from \$10 billion to \$12 billion depending on the price elasticity of demand for apparel and whether consumers or distributors retained the scarcity rent generated by quotas. The increase in consumer expenditures due to higher prices accounted for the greatest proportion of consumer losses and ranged from 23% to 25% of total consumer expenditures for apparel.

The 1980 loss analysis was confined to consumer loss from higher prices. Thus the impact of trade restrictions on consumer choice was not estimated. For example, quotas may affect the import product mix and result in the substitution of higher quality, higher priced items for lower quality items (Bergsten, 1972; Mintz, 1972). Neglect of this impact means that the consumer loss from trade restrictions may have been underestimated.

While a reduction in trade restrictions would benefit consumers it must also be recognized that such a reduction would impose losses on the domestic apparel industry and result in firm closings and unemployment. A gradual reduction in trade barriers over a period of time would serve to minimize this impact and provide time for adjustment by firms and workers in the domestic apparel industry. During this time consideration should be given to improvements in plant operations including the use of more capital intensive equipment and the incorporation of computers in every phase of apparel production. Such improvement would also require training of plant

managers and operators in the adoption and use of new apparel production technologies.

In addition there are several strategies for meeting import competition including greater reliance on brand names and merchandising, product design, product quality, and reliable delivery (Kurt Salmon Associates, 1981). For some product lines, production abroad under Section 807 of the Tariffs Classification Act of 1962 may be the best strategy. Under 807, the manufacturer cuts fabrics in the U.S. and ships the garment pieces abroad for assembly in low-wage countries. When the garment is imported duty is only paid on the value added abroad. Thus the domestic manufacturer has an advantage over foreign manufacturers who must pay duty on the full value of the product including fabric cost. The use of Tariff Item 807 means that domestic firms are able to produce apparel for a lower price than apparel manufactured entirely within the U.S. Again the degree to which such cost savings are passed on to consumers is a function of competitive conditions in the apparel industry and retailing. It might be argued that the cost savings would accrue to consumers in the long-run in view of competitive conditions in both these sectors. An alternative strategy is for firms in the U.S. apparel industry to emphasize those areas where they have a comparative advantage, e.g., sportswear, and to expand exports to compensate for shrinking domestic markets in other areas. Emphasis on product design and product quality would enable domestic firms to avoid price competition from low cost imports and provide consumers with additional choice in the marketplace.

While all these strategies would benefit both the U.S. apparel industry and U.S. consumers, their adoption is likely to be limited as long as trade restrictions provide protection. In this context it is important to recognize the dichotomy between producer and consumer interest in the case of free trade. This dichotomy places a burden on educators to alert consumers to the gains from trade and the losses imposed by trade regulations. Unfortunately as Friedman and Friedman note consumer organizations have not been as active in this area as they might have been (1979, p. 32). As a result trade restrictions which are detrimental to consumer welfare continue to be imposed. The situation is unlikely to change unless consumers become aware of the gains from trade and lobby as effectively as producers or workers to protect their interests. It is heartening to note that there is a new organization in the U.S. called Consumers for World Trade which has emerged in response to the indifference of older established consumer groups to the growth of trade barriers.

The methodology used in this study is applicable to a wide variety of commodities which have international trade restrictions. In the

case of the U.S., such commodities range from agricultural products (sugar, dairy products) to textile products and automobiles. In most instances the commodities are protected by voluntary quotas which are likely to impose higher costs on the importing country than tariffs.

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ZUSAMMENFASSUNG

Einfuhrbeschränkungen aus Konsumentensicht – das Beispiel des US-amerikanischen Kleidungsmarktes. Die hohen amerikanischen Bekleidungseinfuhren der letzten 25 Jahre sind eine Folge der hohen Arbeitsintensität der Bekleidungsproduktion, die Ländern mit niedrigem Lohnniveau einen komparativen Vorteil bietet. Schon seit längerem sollen Zölle und Einfuhrmengen-Beschränkungen die amerikanische Bekleidungsindustrie schützen.

Der vorliegende Beitrag versucht, die Verluste zu schätzen, die bei amerikanischen Käufern von Bekleidung im Jahre 1980 durch diejenigen Preiserhöhungen entstanden sind, die auf Zölle und Mengenbeschränkungen zurückzuführen sind. Die Schätzung der Preiswirkungen der Zölle knüpft unmittelbar an deren Beträge an, während die Schätzung der Preiswirkung der Mengenbeschränkungen an Preisunterschiede zwischen vergleichbaren heimischen Bekleidungsgütern und importierten Bekleidungsgütern anknüpft.

Die auf diese Weise geschätzten Verbraucherverluste für das Jahr 1980 liegen zwischen 10 und 12 Milliarden Dollar (je nach der Höhe der Preiselastizität der Bekleidungsgüter-Nachfrage). Preisbedingte Ausgabenerhöhungen machen den größten Teil der Verbraucherverluste aus (ca. 23 bis 25% der gesamten Verbrauchsausgaben für Bekleidung).

Die Analyse ist auf preisbedingte Verbraucherverluste beschränkt. Mögliche Einschränkungen der Wahlmöglichkeit durch Einfuhrbeschränkungen werden nicht erfaßt. Beispielsweise können Einfuhrmengen-Beschränkungen das Qualitätsspektrum der importierten Güter beeinflussen und zu einer Substitution besserer und teurerer Güter durch schlechtere Güter führen. Die Vernachlässigung solcher Wirkungen bedeutet, daß die im vorliegenden Beitrag quantifizierten Verbraucherverluste durch Einfuhrbeschränkungen unterschätzt sein dürften.

Einerseits würde die Aufhebung von Einfuhrbeschränkungen den Verbrauchern nützen, andererseits würde sie jedoch der amerikanischen Bekleidungsindustrie Schaden bringen und zu Unternehmensschließungen und zu Arbeitslosigkeit führen. Strategien, um dem ausländischen Wettbewerb wirkungsvoll zu begegnen, liegen im Bereich neuer Produktionstechnologien, verbessertem Einsatz des Marketinginstrumentariums und vor allem im Bereich der Produktqualität. Solche Strategien würden sowohl der Industrie als auch den Konsumenten nützen, sie werden jedoch so lange unterdrückt, wie Handelsbeschränkungen auf anderem Wege einen Schutz gegen die Importkonkurrenz bieten.

Das Beispiel zeigt die Divergenz von Produzenten- und Konsumenteninteressen bei Fragen des internationalen Handels. Diese Divergenz sollte für die Verbraucheraufklärung Anstoß sein, Konsumenten und ihre Organisationen auf die Vorteile des freien Handels aufmerksam zu machen, so daß sie ihren politischen Willen ebenso wirkungsvoll vorbringen wie Produzenten oder Arbeitnehmer.

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