Price And Quality Differences For Imported And Domestic Men's Dress Shirts

Price and quality differences for eight brands of men's dress shirts were investigated during a four-month period. Three-way analysis of variance was used to determine the significance of brand and store type, origin, and time of purchase or number of launderings. The results indicated that imported shirts were of the same, if not higher, quality than domestic shirts but were lower in price. These findings support the results of an earlier study conducted in 1978.

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INTRODUCTION

Imported apparel has increased its share of U.S. apparel sales in recent years. In some instances, the number of imported apparel items has exceeded the number of apparel items produced in the United States. However, consumer gains from apparel imports have been challenged by the domestic apparel industry. Two major questions have been raised with respect to apparel imports. The first question regards the degree to which lower costs for imported apparel are passed on to consumers in the form of lower prices. The second question concerns the existence of quality differences between domestic and imported apparel, i.e. lower priced imports may reflect lower quality.

The purpose of this study was to investigate price and quality differences for domestic and imported apparel. Men's dress shirts were selected for this analysis for several reasons. First, this apparel category has exhibited considerable import penetration, with imports accounting for 50 percent of total U.S. consumption (U.S. Department of Commerce, 1980). Second, products in this category are fairly similar in style and appearance, in contrast to women's apparel where fashion plays a more dominant role. Finally, durability and appearance over the product life cycle are major quality attributes which can be measured objectively using laboratory analysis. The results of such a study should indicate whether cost differences are passed on to consumers in the form of lower prices and whether quality differences exist between domestic and imported apparel. The results of such analyses should be useful to consumer educators in the field of textiles and clothing. In addition, information concerning the gains from trade is important in view of the growth of trade protectionism for many consumer goods, including apparel, in recent years (General Agreement on Tariffs and Trade, 1981; Morkre and Tarr, 1980).

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Background

Production cost differences between domestic and imported apparel are due to the

labor-intensive nature of apparel production and lower wages in the developing countries which are major exporters of apparel to the United States (American Apparel Manufacturers Association, 1980; Georgia World Congress Institute, 1979; Kurt Salmon Associates, 1981). As a result of such production cost differences, imported apparel may sell for approximately 20 percent less than domestic apparel at the wholesale level (Apparel's Last Stand, 1979). According to a report by Kurt Salmon Associates (1981), such production cost differences could be narrowed to 10 percent if domestic apparel firms used the best available technology. This report was presented at the 1980 Outlook Seminar of the American Apparel Manufacturers Association and was not disputed. The fact that imports are available at lower prices than domestic apparel was also cited by retailers as the major reason for purchasing imports (Import Survey: The Greener Side of the Street, 1974).

The existence of price differences between domestic and imported apparel at the wholesale level does not necessarily mean that such price differences will continue at the retail level. This is due to the fact that the domestic apparel industry is protected by a system of quotas which limits the quantity of apparel that may be exported to the United States. Retailers may take advantage of this imposed scarcity and capture the scarcity rent from quotas by charging the same price for domestic and imported apparel. This practice would mean higher profits for retailers who sell imported merchandise at higher mark-ups.

According to apparel manufacturers and labor union representatives, this practice by retailers means that cost differences at wholesale are not passed on to consumers in the form of lower prices (U.S. House of Representatives, 1977).

While the above situation may exist in the short run, it has been pointed out that competitive conditions in retailing in the United States are unlikely to permit the retention of windfall profits for retailers in the long run. In particular, retailers will compete with respect to prices of imported apparel, and such competition is likely to increase as access to foreign markets increases. Thus prices of imports will eventually fall below prices of domestic apparel. According to Cline (1978) this type of situation is characterized by nonprice rationing since potential consumers cannot receive "all the low priced imports they want" due to quotas (Cline, 1978, p. 11). Cline investigated price differences for many types of consumer goods, including apparel. He found that imported apparel was 8.7 percent cheaper than domestic apparel, while apparel from Asia and Latin America was 11.6 percent cheaper.[1] Cline's price comparisons were based on products of comparable quality, with quality established by detailed product specifications. However, no attempt was made to evaluate the quality of the products over the product life cycle.

It has also been claimed by retailers that higher mark-ups on imported goods are needed to cover operating costs, and that higher mark-ups on domestic goods would be required if low cost imports were unavailable ("Trade Restrictions: The Hidden Sales Tax," 1978). Consumer gains from trade in this instance are provided in the form of lower prices for domestic goods rather than lower prices from imports and are again dependent on competitive conditions in retailing and the inability of retailers to maintain excess profits in the long run.

The debate concerning quality is based on differences in production processes and quality control procedures in the United States and foreign countries. Rothbaum claims that "standards of efficiency (in the United States) are the highest in the world" and that "product quality is a result of these standards" (Bader, 1982, p. 17). The belief in higher quality American apparel was also expressed by consumers (Dickerson, 1982). Approximately 47 percent of consumers surveyed said that apparel imports were not as good as apparel produced in the United States, while only 24 percent believed that they were of comparable quality. In contrast, retailers claim that apparel imports provide

[1] The Far East is the dominant supplier of woven shirts to the U.S., accounting for approximately 83 percent of all U.S. imports in 1980 (U.S. Department of Commerce, 1980).

them with the same quality product at a lower price or with a better quality product for the same price (Import Survey: Greener Side of the Street, 1974; Imports: An Antidote to Sameness, 1976).

Methodology

Major retail outlets in the metropolitan Washington, D.C. area were shopped to determine the style, brand, construction, and fiber content of domestic and imported shirts. Only items which were similar in appearance and had the same fiber content were considered. In this manner, factors such as appearance or style, which might influence purchase price, were held constant. The item finally chosen for analysis was a white, durable press, short-sleeved dress shirt with a 65/35 polyester/cotton fiber content.

Four retail outlets were identified as carrying the selection of merchandise needed for the analysis. The first outlet was a traditional department store with one of the largest men's furnishings departments in the region. This outlet carried a large selection of domestic and imported national brands. The other three retail outlets were national chain department stores which carried domestic and imported private brands. A total of eight brands was selected and their distribution by retail outlet is given below:

Store A	*Stores B, C, and D*
2 national domestic	2 private domestic
2 national imported	2 private imported

This selection procedure permitted an examination of price variations between domestic and imported brands holding brand type and store type constant. However, price comparisons of national and private brands will reflect the joint influence of brand and store type.

All imported shirts were labeled with respect to country of origin as required by law.[2] These imports included shirts shipped under Tariff Item 807 where fabric is cut in the United States and the garment pieces are assembled abroad. In this case the last port of substantial transformation, i.e. garment assembly, is the country of origin. No distinction was made in this study between shirts manufactured entirely abroad and those assembled abroad from U.S. fabric. This was due to the fact that price and quality differences will, in general, reflect differences in foreign and U.S. labor costs since all manufacturers have access to similar fabric and equipment and garment assembly is highly labor-intensive in nature. The use of Tariff Item 807 by U.S. manufacturers is designed to make them as cost competitive as foreign manufacturers. (American Apparel Manufacturers Association, 1980; Georgia World Congress Institute, 1979; Kurt Salmon Associates, 1981).

Pricing Study

The pricing study was designed to last approximately four months in order to investigate price variations over time and the impact of sales on price variations. The pricing study started the last week of April and continued through August. Prices were obtained on the same day each week. In addition, prices in different branch stores of the various retail outlets were checked to determine that the same price was charged in each branch store.

Prices, with one exception, were stable for the first 10 weeks of the survey. The exception was a national imported brand which had a price decline the second week of the survey and no further price change thereafter. After July 4th, however, price declines occurred for three of the four national brands. In addition, some brands were discontinued as stores replaced their summer stock with fall merchandise.

Quality Study

Three shirts of each brand were purchased for purposes of quality evaluation. This evaluation consisted of two parts: (1) appearance before use, and (2) appearance after repeated laundering. Appearance before use was based on garment construction features such as shirt length, number of stitches per inch, yoke type, pocket and collar construction,

[2] There are no similar requirements for shirts manufactured domestically. However, the fact that all imported shirts must be labeled with respect to country of origin means that all unlabeled shirts are manufactured domestically. The origin of domestic shirts used in this study was confirmed by discussions with store buyers and domestic shirt manufacturers.

TABLE 1
Mean price by brand and origin during pre-sale and sale period (in dollars)

Period/Brand	Origin		
	Domestic	Import	Brand mean
Pre-sale			
National	14.00	12.14	13.07
Private	9.50	8.75	9.12
Origin mean	11.75	10.44	—
Sale			
National	9.99	9.99	9.99
Private	9.50	8.75	9.12
Origin mean	9.74	9.37	—

and number and type of buttons. A binary code (0,1) was used to assign a numerical value to each construction feature with "0" indicating the absence of a particular feature (eg., double yoke, a measurement less than the average for all shirts, shirt length less than 31 inches). The total score obtained for all construction features was used in an analysis of variance to determine the significance of quality differences by brand and origin.

Launderings were used to predict the durability of men's shirts and appearance after use based on work by Handy (1968) and Gale and Dardis (1970). The shirts were laundered 50 times following the procedure specified in *AATCC 143-1975: Appearance of Apparel and Other Textile End Products after Repeated Home Launderings* (1977). The Whirlpool model 600 automatic washer and tumble dryer were used for all launderings. The dryer was set at the permanent press fabric setting with a medium temperature of 140 to 160 degrees Fahrenheit and a 30-minute drying cycle. The shirts were removed immediately after the dryer shut off and were placed on hangers. The shirts were inspected for edge abrasion and seam failure after the first, fifth, tenth, twenty-fifth, and fiftieth launderings. In addition, durable press appearance and seam puckering were rated by a panel of three judges using the *AATCC Test Method 124-1975: Appearance of Durable Press Fabrics after Repeated Home Launderings* (1977) and the *AATCC Test Method 88B-1978: Appearance of Seams in Wash-and-Wear Items after Home Laundering* (1977). Ratings in both instances were on a scale from one to five. Mean ratings for the three shirts were used in the statistical analysis.

Statistical Analysis

Analysis of variance was used to determine whether significant price and quality differences existed between national and private brands or domestic and imported brands (Neter and Wasserman, 1974). The 0.05 level of significance was used. Two analyses were conducted for price. The first analysis was confined to the first 10 weeks of the study when no sales occurred. The second analysis was confined to a sale period when prices were reduced. In this manner the impact of sales on price variations could be investigated.

Results

Price Variations

Mean prices in the pre-sale period by brand type and origin are given in Table 1. Data pertain to the first 10 weeks of the survey when there were no sales. The mean prices of domestic and imported shirts were $11.75 and $10.44 respectively, which means that imported shirts were approximately 11 percent cheaper than domestic shirts.

The mean prices of national and private brands were $13.07 and $9.12, respectively. This price difference was expected since it re-

TABLE 2
Pre-sale price: Three-way analysis of variance (brand, origin and time)

Source	Sum of squares	Degrees of freedom	Mean square	*F* ratio
Brand	311.69	1	311.69	157.61*
Origin	33.92	1	33.92	17.15*
Time	1.02	9	0.11	0.51
Two-way interaction				
Brand–Origin	6.10	1	6.10	3.08
Brand–Time	1.02	9	0.11	0.06
Origin–Time	1.02	9	0.11	0.06
Three-way interaction				
Brand–Origin–Time	1.02	9	0.11	0.06
Residual	79.11	40	1.97	—
Total	434.90	79	5.51	—

* Significant at 0.05 level.

flects the influence of brand type (national brands are generally more expensive than private brands) and store type (traditional department stores have higher mark-ups in general than national chain department stores).

A statistical analysis indicating the effects of brand and origin on the pre-sale price is given in Table 2. There are no significant interaction effects while the two main effects for brand and origin are significant. Time is insignificant reflecting the price stability mentioned earlier.

Impact of Sales on Price Variations

The impact of sales on price differences was investigated for a four-week period when most brands were still stocked by the stores.[3] Mean prices by brand and origin are given in Table 1. There was a decline in the price of national brands during the sale period ($13.07 to $9.99) while the price of private brands remained unchanged at $9.12. As a result of the sale price, private brands were nine percent cheaper than national brands compared to 30 percent in the pre-sale period. Similarly, imported shirts were four percent cheaper than domestic shirts, compared to 11 percent in the pre-sale period.

A three-way analysis of variance of sale price indicated that brand and origin again had a significant influence on price. However, there was also a significant interaction between brand and origin. Since prices of national brands were higher than prices of private brands for both domestic and imported shirts, it might be concluded that brand was significant. In contrast, the impact of origin varied by brand. Prices of national brands were unaffected by origin while prices of imported private brands were less than prices of domestic private brands.

Quality Variations

Quality was based on garment appearance before and after repeated launderings. An examination of shirts before laundering revealed little difference in appearance or garment construction. Shirts were identical with respect to yoke type, pocket and collar construction, and number and type of buttons. They differed with respect to shirt length (30.5″–32.0″) and number of stitches per inch (9.5–13.0). However, the latter variable did not affect seam durability which was tested by repeated launderings. Two-way analysis of

[3] One imported national brand was out of stock during the sale period. This was not surprising since retailers are unlikely to re-order imports late in the season. The out-of-stock brand had sold for the same price as a domestic national brand during the pre-sale period. A discussion with store management indicated that it would have sold for the same price as the domestic national brand during the sale period.

TABLE 3
Mean quality by brand and origin

Quality component/ Brand	Origin		
	Domestic	Import	Brand mean
Seam pucker			
National	2.0	2.4	2.2
Private	2.0	2.6	2.3
Origin mean	2.0	2.5	—
Durable press			
National	3.6	3.3	3.4
Private	3.6	3.7	3.6
Origin mean	3.6	3.5	—

variance based on scores obtained for all construction features indicate that brand and origin were insignificant for appearance before laundering.

Appearance after laundering was judged on edge abrasion, seam failure, durable press ratings, and seam pucker ratings. There was neither edge abrasion nor seam failure throughout the 50 laundering cycles for any of the eight brands. In contrast, durable press ratings and seam pucker ratings declined as the number of launderings increased, with the greatest decline occurring in the first five launderings.

Mean ratings by brand type and origin are given in Table 3. Imported shirts received higher ratings than domestic shirts in the case of seam pucker, and slightly lower ratings in the case of durable press. Private brands received slightly higher ratings than national brands in both instances.

The significance of brand, origin, and laundering on quality, as measured by durable press and seam pucker ratings, was investigated using three-way analysis of variance. The results are given in Tables 4 and 5. Origin and number of launderings are significant factors in the case of seam pucker ratings while brand is insignificant. The results for durable press ratings require care in interpretation due to the significance of the interaction effect between origin and brand. This interaction effect reflects the fact that imported shirts receive higher ratings than domestic shirts in the case of private brands and lower ratings in the case of national brands (Table 3), reflecting the joint effect of origin and brand type.

Care must be used, however, in interpreting these results in view of the relatively small differences shown in Table 3. In the case of durable press ratings, the differences range from one-tenth to two-tenths on a five-point scale. It is questionable whether the consumer can distinguish such small differences, and a difference which is significant in a statistical sense may not be significant to consumers. A similar situation occurs in the case of seam pucker ratings for national and private brands. The only instance where a difference in ratings might be discernible by consumers is in the case of domestic and imported shirts where there is a half-point quality difference. It might be concluded, therefore, that there are some quality differences between domestic and imported shirts in the case of seam pucker ratings and negligible quality differences in all other instances.

Discussion

Price and quality differences for eight brands of men's dress shirts were investigated during a four-month period. Data were obtained by brand and origin (domestic and imported). National brands were selected from a traditional department store and private brands were selected from national chain department stores. Thus, the data for national and private brands reflect the influence of both brand and store type.

A major finding of the study was the existence of significant price differences between domestic and imported brands in the pre-sale period. Imported shirts were approximately 11 percent cheaper than domestic shirts. This finding is in agreement with the study by Cline (1978) which found that imported apparel from Latin America and Asia was 11.6 percent less expensive than domestic apparel. It is also in agreement with the production cost differences mentioned by Kurt Salmon Associates (1981).

There were no major quality differences be-

TABLE 4
Seam pucker: Three-way analysis of variance (brand, origin, and laundering)

Source	Sum of squares	Degrees of freedom	Mean square	*F* ratio
Brand	0.04	1	0.04	0.19
Origin	3.47	1	3.47	18.19*
Laundering	75.75	5	15.15	79.48*
Two-way interaction				
Brand–Origin	0.26	1	0.26	**1.34**
Brand–Laundering	1.53	5	0.31	**1.60**
Origin–Laundering	0.79	5	0.16	**0.83**
Three-way interaction				
Brand–Origin–Laundering	0.13	5	0.03	**0.14**
Residual	4.58	24	0.19	—
Total	86.53	47	1.84	—

* Significant at 0.05 level.

tween domestic and imported shirts, with the possible exception of seam pucker ratings where imported shirts received 10 percent higher ratings than domestic shirts. This is not surprising since national brand manufacturers and private brand distributors are likely to use the same set of product specifications for shirts manufactured in the United States or abroad. Variations in product quality due to manufacturing location would reflect poor quality control which could affect the sales of all shirts sold under a particular brand name. In addition, the use of the same set of product specifications is feasible in view of the availability of apparel technology to foreign producers. According to a study by the Georgia World Congress Institute (1979), U.S. and foreign producers use similar fabric and equipment and differ only with respect to labor, where foreign countries have a comparative advantage in costs, productivity, and reliability.

The results of this study also indicate that brand and store type had a significant influence on price during the presale period. Private brands from national chain department stores were approximately 30 percent cheaper than national brands purchased in a tradi-

TABLE 5
Durable press: Three-way analysis of variance (brand, origin, and laundering)

Source	Sum of squares	Degrees of freedom	Mean square	*F* ratio
Brand	0.61	1	0.61	33.96*
Origin	0.14	1	0.14	7.87*
Laundering	19.97	5	3.99	223.17*
Two-way interaction				
Brand–Origin	0.33	1	0.33	18.63*
Brand–Laundering	0.16	5	0.03	1.79
Origin–Laundering	0.11	5	0.33	1.19
Three-way interaction				
Brand–Origin–Laundering	0.09	5	0.02	1.05
Residual	0.43	24	0.02	
Total	21.84	47	0.47	

* Significant at 0.05 level.

tional department store. However, there were no major quality differences between national and private brands. These results are in agreement with studies reported in the literature and reflect differences in pricing policies and markups for manufacturer and distributor brands (Gale and Dardis, 1970; Watson and Dardis, 1971).

It was also interesting to note that sales narrowed the price difference between domestic and imported shirts and between national and private brands. Imported shirts were only four percent cheaper than domestic shirts during the sale period, while private brands were nine percent cheaper than national brands.

These findings indicate that brand and store type, origin, and time of purchase influence prices paid by consumers. Imported private brands have the lowest prices while domestic national brands have the highest prices. However, the 38 percent price differences in the presale period was reduced to a 13 percent price difference during the sale period.

The existence of price differences for products of similar quality also raises questions concerning consumer purchasing decisions and the need for consumer education programs in the area of textiles. Shirts are a semidurable good so that consumers may sample a variety of products over time. In addition, the price of shirts means that such sampling is relatively inexpensive. One might expect, therefore, smaller price differences than those found in this study. Such differences reflect information failures which should be of concern to consumer educators in the field of textiles and clothing.

Some limitations of the study must also be acknowledged. The analysis was confined to a single apparel category and to a single region of the country. While it could be argued that national chain department stores are likely to offer similar merchandise for similar prices throughout the United States, pricing policies of other department stores may vary. Further analysis would provide additional insight concerning price and quality differences for domestic and imported apparel. However, it is interesting to note that the findings of this study are similar to those obtained in a national survey by Cline (1978).

Finally the results of this study should alert home economists to the economic and political issues involved in any discussion of the gains from trade. These issues apply to all consumer goods, not just apparel. Thus, the economic theory of comparative advantage favors the production of labor intensive goods in low-wage countries and their import by advanced industrial countries such as the United States. As a result, imported goods may be cheaper than domestic goods even after allowances for tariff and transportation costs. The degree to which cost differences are passed on to consumers in the form of lower retail prices is a function of competitive conditions in retailing and should result in lower prices for imports and possibly domestic goods. Thus, the claim by domestic manufacturers that consumers do not benefit from lower cost imports must be examined critically since such claims ignore retail competition and may be designed to provide justification for a continuance or increase in protection. It is important in such an examination to recognize the divergence between producer and consumer interests; a divergence which was recognized many years ago by Adam Smith (1952; pp. 287–289).

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