

CHAPTER 6

CONCLUSIONS AND IMPLICATIONS

The main objective of this study was to evaluate the effects of the changes in total nondurables expenditures, prices, and demographics on the U.S. aggregate demand for clothing categories and shoes. In particular, this study focused on identifying and parameterizing the effects of such changes. To this purpose, a second-stage budgeting model was developed and estimated; a demand system for two clothing categories, shoes, and other nondurable commodities was estimated using aggregate time-series data sets (1929-1994) for the U.S. The basis for the demand model was the Almost Ideal Demand System model, which was modified to account for the demographic effects. Demographic variables included in the final model were age distribution of the U.S. population (median age and variance), proportion of the non-White population in the total U.S. population, and the labor force participation rate of U.S. women. The main data sources were documents published by the Bureau of the Census, Bureau of Labor Statistics, and Bureau of Economic Analysis in the U.S. Department of Commerce.

Major Findings

This study has provided the parameter estimates for the budget shares for clothing categories and shoes. The results indicate that total expenditures for nondurables significantly affect consumers' budget allocations for the clothing categories and shoes. The expenditure elasticities evaluated for the clothing categories and shoes indicate that U.S. consumers are sensitive to changes in total nondurables expenditures and that women's and children's clothing (WC), men's and boys' clothing (MB), and shoes (SH) are elastic with respect to total nondurables expenditures. The demands for the clothing categories and shoes change proportionately more than do the total nondurables expenditures.

Most own and cross prices are significant variables in determining the consumer budget allocations for the clothing categories and shoes. The price of other nondurable

goods has a significant impact on the clothing categories and shoes budget shares, except in the case of shoes in Model 48A. All the own-price elasticities estimated for clothing categories and shoes are less than one (i.e., $|elasticities| < 1$), which implies that consumer demand for those categories changes by a smaller proportion than do prices. If the clothing categories and shoes had been more disaggregated for the study, the own-price effects might have been higher than those estimated because, if a good has many substitutes, it tends to have higher price elasticity of demand. The estimated price elasticities show that with an increase in the price of shoes, the demand for women's and children's clothing decreases in Model 48A and the demand for men's and boys' clothing decreases in Model 29A, implying complementary relationships between the clothing categories and shoes. All the estimated cross-price elasticities between other nondurable goods and the clothing categories indicate complementary relationships between the goods analyzed. The price effect of other nondurables on shoes demand is also significant and indicates a complementary relationship between shoes and the other nondurables. Shoes demand is the most sensitive to change in the price of other nondurable goods among the clothing categories and shoes in Model 48A (i.e., -1.1845, see ON column in Table 5.4), but women's and children's clothing demand is the most sensitive to change in the price for other nondurable goods among the clothing categories and shoes in Model 29A. The results of the cross-price elasticities between women's and children's clothing and men's and boys' clothing in both Models 48A and 29A show substitution relationships; that is, demand for women's and children's clothing increases with an increase in the price for men's and boys' clothing and vice versa.

The median age of the U.S. population is a significant variable that affects the U.S. aggregate nondurables expenditures allocation on men's and boys' clothing and shoes. The findings on the parameter estimates suggest that the U.S. aggregate nondurables budget (ANB) shares for men's and boys' clothing and for shoes increase with the median age. The effects of the median age on the demands for clothing categories and shoes are not significant in the relatively long run analyzed with Model 29A. The effects are significant in the shorter span of years analyzed with Model 48A;

that is, the demands for men's and boys' clothing, women's and children's clothing, and shoes increase as the median age increases. The median age elasticity is very high for shoes (i.e., 1.5092) in Model 48A. The variance of the U.S. population distribution was not an important variable in determining the change in the U.S. aggregate nondurables budget shares for clothing categories and shoes. This may be because of lack of variation in the variable or misspecification in capturing changes with age distribution. Thus, different measurement methods, such as population proportion measures for the age group 25-34 or for the elderly population, should be explored in future studies. The findings on the variance variable imply that the relative numbers of people in the median age group or in the elderly age group do not significantly affect the U.S. aggregate nondurables budget shares for clothing categories and shoes. The elasticities of the variance in both Models 48A and 29A imply that the quantities demanded for the men's and boys' clothing and shoes decrease as the relative number of people in the median age group increases; the effect are significantly different from zero.

The non-White population proportion is a significant variable in determining the change in the U.S. aggregate nondurables budget shares for men's and boys' clothing and for shoes. With an increase in the non-White population, the U.S. aggregate nondurables budget shares for clothing categories and shoes increase. The results of estimated non-White proportion elasticities in Model 29A imply that the non-White proportion significantly affects the aggregate demand for shoes but does not significantly affect the aggregate demands for women's and children's clothing and men's and boys' clothing. The demand for shoes decreases with increasing non-White population proportion. The labor force participation rate of women is a significant variable in determining the U.S. nondurables expenditure allocation patterns for women's and children's clothing. The estimated elasticities in Model 48A suggest that the effect of the women's labor force participation rate is not significant for the women's and children's clothing, but that the effects are significant for men's and boys' clothing and for shoes. Shoes demand decreases by the relatively large percentage of 1.18% per 1% increase in women's labor force participation rate. The demand for men's and boys' clothing, however, increases

relatively little as the labor force participation rate increases.

Implications

The research results show that, in general, population age and non-White population proportion were significant demographic variables in influencing changes, during the decades since 1929 in the U.S., in the aggregate nondurables budget shares for the clothing categories that were analyzed and for shoes. The median age of the U.S. population is expected to reach 37.4 years by 2010 (Day, 1992). Thus, the findings of the study suggest that the U.S. population aggregate nondurables budget shares and demand for clothing and shoes (median age elasticities were significantly different from zero only in Model 48A) can be expected to keep increasing into the next century, *ceteris paribus*. Whites who are not of Hispanic origin were 75.7% of the population in 1990, but this proportion is predicted to steadily decrease to 67.6% by 2010, and the non-White proportion is predicted to be 20.4 % in 2010 (Day, 1992). Thus, the findings of this study suggest that, *ceteris paribus*, the U.S. aggregate nondurables budget shares for men's and boys' clothing and for shoes should increase, but shoes demand should decrease with the increased proportion of non-Whites. Women's labor force participation was positively related to the U.S. aggregate nondurables budget share for women's and children's clothing during the postwar period, 1948-1994. Since World War II, the labor force participation rate of women has grown rapidly; if this pace were to continue, the U.S. aggregate nondurables budget share for women's and children's clothing would increase, demand for men's and boys' clothing would increase, but shoes demand would decrease, *ceteris paribus*.

Table 6.1 shows forecasted changes in U.S. consumers' nondurables budget allocation to each category of clothing and shoes resulting from changes in future median ages and non-White proportions variables of the U.S. population, as projected by the Bureau of the Census. These forecasted values are obtained by inserting the estimated coefficients of the median age and non-White proportion variables and values of these variables for selected years into the budget equations set in Model 29A, assuming the real

Table 6.1.

1994 and Forecasted Nondurables Budget Shares for the Clothing Categories and Shoes

Year	Women's and Children's Clothing	Men's and Boys' Clothing	Shoes	Median Age (year)	Non-White Proportion (%)
1994	0.1004	0.05193	0.0244	34.0	16.9
2000	0.1081* (0.0019)	0.0512* (0.0012)	0.0236* (0.0009)	35.7	18.3
2005	0.1115* (0.0027)	0.0518* (0.0015)	0.0231* (0.0012)	36.7	19.3
2010	0.1146* (0.0035)	0.0525* (0.0019)	0.0225* (0.0015)	37.4	20.4

Note. Standard errors are in parentheses. Median age and non-White proportion in 2000, 2005, and 2010 are those projected in the middle series by the Bureau of the Census (Day, 1992).

* $p < 0.05$.

per capita nondurables expenditures, real prices, variance of the population age distribution, and women's labor force participation rate held constant in 1994 values. The aggregate budget allocation patterns move at slow rates; the budget allocations for women's and children's clothing and for men's and boys' clothing will increase, but the shoes budget share will decrease as the median age and the non-White proportion increase, *ceteris paribus*. The results of the forecast show that, in the year 2010, the budget shares of women's and children's clothing, men's and boys' clothing, and shoes are expected to be 0.1146, 0.0525, and 0.0225, respectively. These figures reflect changes of 14.14%, 1.09%, and -7.78% from the budget shares of women's and children's clothing, men's and boys' clothing, and shoes, respectively, in 1994.

Understanding the consumer budget allocation and demand patterns for clothing categories, shoes, and other nondurable commodities is important to apparel and retail businesses and also to public policy makers regarding social programs and international textile and apparel trade. The results of this study may be useful for producers and marketers in the clothing and retail industries. In the present study, several economic and demographic variables related to clothing and shoes consumption were explored. Such variables are generally identified as macroenvironmental factors in establishing marketing strategy and planning. By understanding the effects of these variables, producers and marketers can better develop marketing strategies for their product lines. For example, when planning to market clothing merchandise in an area where the proportion of non-White population is rising relatively rapidly, such as in some metropolitan areas, the information about the non-White population obtained from this study can be valuable in developing the long-run marketing plan. Firms may wish to adjust their marketing mix variables, such as product design, price, promotion, and distribution, in order to benefit from this market. The coefficients estimated in the study shows that consumers' budget allocations to men's and boys' clothing and to shoes increase as the non-White population increases and as the prices of these items increase, which may be a good sign of a profitable non-White market in a metropolitan area. The estimated elasticity of shoes also indicates that consumers' demand for shoes decreases

with the increase in non-White population. Consumers will spend more money on shoes, but purchase less quantity of shoes in the market increasing non-White population. Thus, if shoes manufacturers consider quality as well as price and adjustment of the other marketing mix variables, the market would be profitable enough.

When adjustments in international textile trade policies are debated, the results of this study may be useful to policy makers to make better decisions. More than half of the clothing consumed in the U.S. is imported through various sourcing channels (AAMA, 1995); thus, the consumer perspective in international textile trade is an important factor in trade policy making (Dickerson, 1995). Consumers are affected more than any other group by international trade. When imports for clothing categories are restricted, U.S. consumers experience more limited choice and potentially higher domestic prices (Dickerson, 1995). Cline (1990) estimated that tariff and quota protection had increased import prices by 53% for apparel and 28% for textiles and that total U.S. consumer costs of protection amounted to 17.6 billion dollars annually in apparel and 2.8 billion dollars in textiles in 1986. U.S. consumers pay the costs of trade restrictions directly or indirectly. U.S. consumers have benefited from the lowered prices for imported clothing products from low wage countries (Dickerson, 1995). The present study provides information about the responsiveness of consumers' budget allocations and demands for women's and children's clothing, men's and boys' clothing, and shoes to price changes. This information may be applied in assessing consumers' gains and losses due to predicted price changes. For example, based on the price coefficient and elasticity estimated in this research, if the average price of women's and children's clothing were to increase by 10% due to increased prices of imported items, consumers may respond by increasing their nondurables budget allocation for women's and children's clothing by about 0.3% to purchase the same amount as before the price rise, or by decreasing their demand of this item by 7.4%. Thus, the information obtained from the study about the changes of consumers' budget allocation and demand pattern when prices rise for clothing categories and shoes may be applied to assessing policy adjustments regarding protection. Consumer educators can also use the findings of the study to educate

consumers and to help them plan better personal financing.

Recommendations for Future Research

The major contributions of this study are an extensive review of the literature on the issues pertinent to empirical research on consumption and the evaluation of U.S. consumers' nondurables budget allocation and demand patterns for clothing categories and shoes when taking account of identified demographic variables. The methods employed in the study for estimating the parameters and elasticities provide theoretically plausible tools for future studies.

Each of the goods categories analyzed in the study is highly aggregated. Future research on more disaggregated commodity groups is recommended if a proper data source can be found. Caution should be made against overgeneralization of the findings in comparison with the results of other complete demand system analyses because the budget-share LAIDS model estimated in this study was confined to nondurable goods (the total expenditures variable was total expenditures for nondurable goods). In the study, racial/ethnic groups were separated into only two groups (White and non-White), which may lead to the assumption that only these two broad groups differ in preferences from each other. This assumption, however, may not be realistic. More disaggregated racial/ethnic groups, such as Hispanic, Black, Asian, and White, are suggested for future time-series studies of consumption associated with race/ethnicity because different racial/ethnic groups may have different preference structures. Also worthy of mention is the need to consider alternative ways of measuring age distribution. In the present study, three different central moments (median, variance, and skewness) were used. The second and third moments (variance and skewness) were not significant variables, and they may not have captured changes in the variation of the age distribution. Thus, such other measuring units as rate or percentage should be explored.