



ESTIMATION OF CONSUMER DEMANDS: AN APPLICATION TO U.S. APPAREL EXPENDITURES

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ABSTRACT

A set of new statistical methods will be presented to model the U.S. men's wear markets along with the general consumption trends among U.S. male and female populations. The Almost Ideal Demand (AID) system of Deaton and Muellbauer (1980) was extended to include general, nonlinear and nonadditive habit effects. By employing a "Habit Stock" model into a first-order differential demand system, the pattern of shifts as well as the dynamic changes in the market shares were estimated. The results of analysis on four categories of men's bottom during 1990-96 suggest that the dynamic habit stock formation is a highly promising new concept for explaining the current and emerging fashion trends and market shares. The paper will also discuss the potential of using social science data obtained from consumers' general social behaviors during 1990-1998 for the projection of future apparel consumption trends.

1. INTRODUCTION

Under a highly dynamic economic and social environments created by economic globalization, it is vital for U.S. textile and apparel firms to develop and estimate a system of interrelated demands based on consumer responses. In econometrics, development of theories on consumer demand system has had a long history. Stone (1954) developed linear expenditure demand system as early as 1950's. Since then, numerous studies have been made for developing practical demand theories as well as in applying the system of equation. For example, studies by Barten (1977) and Deaton and Muellbauer (1980) used an ordinary demand system to model consumer expenditures and test the underlying theoretical hypotheses.

Compared to the long history in econometrics, research on consumer demand in clothing and apparel areas, has not been formalized until recent years. Apparel items, along with food and

M housing, are considered to be basic and important consumer goods. According to recent estimates, Americans spent over \$165 billion on apparel in 1999. In spite of the large expenditures, analysis of market demand has been considered difficult and hence little formal research has been conducted in modeling and forecasting of apparel demands perhaps due to the complexed dynamic consumer behaviors coupled with extremely short fashion life cycles.

In recent years, there has been growing interest in the role of habit formation in the consumer's allocation decisions. Several researchers have attempted to formulate a consumer behavior model based on habit formation. The main idea is that goods may be purchased and consumed based on "formed habits" in such a way that an individual's current preferences on his past consumption patterns. Therefore, a change in price or income would cause a change in consumption which would induce a change in tastes, and subsequently promote a further