PANEL 9: NEW APPROACHES TO DEMAND ANALYSIS: QUALITY, INVISIBLES, DYNAMICS IN TASTES AND PREFERENCES

ORGANIZER AND CHAIRPERSON

Ben Senauer (University of Minnesota, USA)

PANEL DISCUSSANTS

Structural Change in Demand *Kyree Rickertsen (Agricultural University of Norway)*

Non-parametric and Semi-parametric Analysis *Jim Chalfant (University of California-Davis, USA)*

Tastes and Quality Characteristics in Demand *Roland Herrmann, Claudia Roeder (University of Giessen, Germany)*

Recent Changes in Food Consumption in Japan: Laying Stress on 'Dining Out' *Michio Kanai (National Research Institute of Agricultural Economics, Japan)*

RAPPORTEUR

Vasant Gandhi (Indian Institute of Management, India)*

The presentations and discussion in this session focused on a wide variety of issues on the analysis of food demand. This covered structural changes in demand, issues related to health information and product quality in demand, recent changes in food consumption patterns and non-parametric and semi-parametric analysis of food demand.

Structural changes in demand

Rickertsen discussed the issue of what constitutes structural change in demand and how to measure it. Structural change, according to him, is used broadly to imply that factors related to either preferences or aggregation across consumers have changed. If preferences are assumed to be identical across individuals, changes in income distribution may cause a structural change in demand. This

usually matters for aggregate demand but frequently behaves like a trend variable and can be captured by it. If preferences vary by demographic group then demographic changes can cause structural change in demand. This involves the proportion of older to younger people, education, size of household (notably the growth of single-person households) and female participation in the labour force. These features are often too numerous to handle and might well be excluded, but this would result in a structural change being observed. There are also exogenous variables which influence demand. These include introduction of new food products, seasonality, advertising and information about health and nutrition. Advertising includes branded and generic advertising. Branded advertising is often found to increase demand, but there is no clear conclusion on generic advertising.

Tests for structural change involve parametric and non-parametric approaches. The approach through the parametric method requires assumptions about functional form, about endogeneity of prices, quantities and total expenditure, and further separability-related assumptions. The model needs to be tested for misspecification. Structural change can then be detected either by testing for violation of theoretical restrictions of demand theory, testing for parameter instability or through explicitly modelling structural change through inclusion of the responsible or indicator variables.

Tastes and quality characteristics in demand

The presentation by Herrmann and Roeder addressed some neglected issues in food demand analysis which are important in understanding recent trends in industrialized countries. On the issue of price elasticity, they report that, even though there is ample evidence that food demand in industrialized countries is price-inelastic, it is possible that retail-level elasticities may be much higher. On examining whether marketing policies influence the price elasticity of demand, they find that price discounts accompanied by marketing and promotion have a strong impact for wines. Without promotion, the elasticity may turn out to be of the order of 0.20, but with all promotion that rises to 8.29. Thus any simple hypothesis about demand for food cannot be generalized.

Another issue discussed was whether health concerns and nutritional information are important determinants of food demand. Empirical results from a German household survey suggest that food demand was influenced by income, sociodemographic variables and attitude and knowledge variables. Health and diet information, nutrition-specific knowledge and general education play an important role in explaining food consumption and food quality.

Herrmann and Roeder also considered whether demand for non-homogenous commodities is driven by objective or subjective quality. They find that, for wine, objective sensorial evaluation by wine experts cannot explain price differences across wines but subjectively assessed bottle design does. Subjective quality indicators such as familiarity and product classes influenced by image and promotion are more important than quality, as evaluated by experts in tasting and in explaining wine demand.

Recent changes in food consumption in Japan

Michio Kanai argued that significant diversification was taking place in food consumption in Japan. The two major new directions were increasing incidence of dining out and of eating prepared foods. Some important reasons for this were the rise in single-person households, due to an increase in the marriage age and the number of divorces. The consumption of organic products was also increasing.

Non-parametric and semi-parametric analysis

Chalfant dealt with non-parametric and semi-parametric methods in food demand analysis. He argued that problems arise in using parametric analysis for demand because a second-order local approximation to an unknown set of preferences does not exist and point approximations do not exist, while specification errors are hard to detect and resemble structural change. Non-parametric regression analysis is computer-intensive and attempts to avoid prediction errors by not assuming that a linear regression is appropriate throughout the data. Alternatives are non-parametric, semi-parametric and semi-non-parametric analyses of demand. Non-parametric demand analysis makes data mining more systematic. Other solutions to the specification problem are fitting several models, and nesting models. One risk of the latter is 'overparameterization' of the model. Demand systems may be overrated because choice of equations is driven by price and quantity data available, and that can make untenable separability and aggregation assumptions necessary for all other goods. Getting demand analysis right is frequently very hard because often things that are assumed not to matter actually matter substantially.

In the discussion it was asked whether there were any approaches for predicting demand for brand new food products. One possibility was to work through the demand for characteristics. Often the formulation of the problem itself led to structural change being incorrectly detected. It was also indicated that demand analysis could benefit from time-series analysis approaches: cointegration had quite a good theoretical base.

Floor discussion

In regard to the presentation of Rickertsen, it was suggested that one of the major difficulties in capturing structural change was the location of switching points. Another problem was the separation of the cause between population-related changes and utility function changes. Problems were also created because of the gap between the individual consumers and the representative consumer used in the modelling.

On the presentation of Herrmann and Roeder, it was pointed out that it was difficult to measure 'image'. It was also indicated that, given variation in storage/stock-up from store to store, price elasticity at the store level is important. The situation for wine is also complicated. Export scores for French red

wines did have a positive and significant impact. The directions of causality in the three-way relationship between price, image and demand were not clear and needed to be examined.

In Japan, the fat content of the diet is gradually rising. It is possible that the food consumption pattern of older and younger Japanese is different, though there may be a trend for younger people to revert to traditional diets.

It was suggested that 'point of sale' scanner data presented a good opportunity for demand analysis. Earlier it was less useful because it was not linked to the consumers, but recently it has begun to be linked through the use of consumers cards, often for a sample of households. These also often incorporate useful demographic data. This could provide a means of more rigorous analysis, though scanner data is often not publicly available and is provided only to contracted market research firms.