

Discussion at the 1998 AAEA Annual Meetings

Selected Paper Session: Econometric Methods in Demand Analysis

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In this session, we have four papers dealing with some advanced econometric issues in demand analysis. The first paper deals with the issue of zero expenditure by using the survey data. Unlike the well-known Heckman's procedure for defining a "Mills ratio" as a variable to link different stages of estimation, this paper appears to be lack of strong linkage between its two-stage estimation. Also, each food price is an important variable in applying an AIDS model, but the treatment of prices in this paper is not clear. In general, the price for a food at a given short period in the cross-section survey should be quite fixed. The variations of prices paid by different households could reflect a different quality of food in addition to a regional difference such as living in an urban or rural area. Therefore, it is important to consider using the adjusted prices for the differences as the price movement in their model application.

In the second paper, the author applies Lewbel's generalized composite commodity theorem to test the aggregation of 21 meat cuts from six animal types. I have reservations about the usefulness of applying Lewbel's theorem in grouping meat cuts. For food demand research, whatever method is used to aggregate food commodities, groups must be chosen that are meaningful in an economic sense. For example, no matter whether the theorem is satisfied or not, it is natural to aggregate pork chops, spare ribs, and ham as an aggregate pork category, and certainly not to put chicken breast together with pork chops as a group. This is the way that aggregates of consumer price indexes are compiled.

The third and fourth papers are focused on developing new demand models: one is the "Nested PIGLOG (NEP) Demand System" and the other is the "Globally Regular Almost Ideal Demand System (GRAIDS)." The authors of these papers modify the Almost Ideal Demand System (AIDS) by specifying an alternative form of cost function and obtaining a set of budget share equations to represent a demand system. My major concern with these new demand models is the potential problem of application.

First, the AIDS model is simple in functional form and capable of using the Stone price index as a linear approximation for empirical estimation. Both the functional forms of NEP and GRAIDS models, however, are complicated and nonlinear in parameters, and their estimation could be difficult when the number of commodities included in the demand system is large. Also, the application of NEP and GRAIDS models requires estimation of a large number of parameters. Since lengthy time series data for food demand research are usually difficult to obtain, the problem of insufficient degrees of freedom in estimation could occur in applying NEP and GRAIDS models.

Second, unlike the AIDS model where we can interpret the estimated parameters as the effects of changes in price and income upon the change of expenditure shares, the estimates in NEP and GRAIDS models can hardly provide any meaningful interpretation of demand relationships

directly. Furthermore, while applied economists are interested in obtaining the implied price and income elasticities, the derivation of the demand elasticities in NEP and GRAIDS models is rather complicated and likely to cause more errors in the derived elasticities.

Finally, the NEP model is further applied to analyze the effects of a meat advertisement. It appears to me that more effort is needed to specify the effects of an advertisement. Advertising should be viewed as a capital investment in goodwill, which has a cumulative effect on sales and which depreciates over time. The time response pattern of sales to advertising is critical in the analysis of price and quantity effects of advertising programs. It is quite likely that the effects of advertising in meat products linger for more than one quarter. Therefore, in addition to the lagged effects, some cumulative effects of advertising should also be considered in model specification and simulation.