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Volume Title: Annals of Economic and Social Measurement, Volume 4, number 1

Volume Author/Editor: Sanford V. Berg, editor

Volume Publisher: NBER

Volume URL: <http://www.nber.org/books/aesm75-1>

Publication Date: 1975

Chapter Title: Introduction to "Annals of Economic and Social Measurement, Volume 4, number 1"

Chapter Author: Lester D. Taylor

Chapter URL: <http://www.nber.org/chapters/c10215>

Chapter pages in book: (p. 1 - 4)

INTRODUCTION

BY LESTER D. TAYLOR

The past 10-15 years have seen considerable progress in the integration of the theory of consumer's choice with empirical demand analysis. Theory has been extended so as to encompass dynamic adjustment and the effects of past expenditure decisions,¹ a "characteristics" approach to consumer behavior has been developed,² the theoretical foundations of cost-of-living indices have been broadened and clarified,³ and there now exist a number of econometric studies whose demand functions respect to a lesser the restrictions imposed by classical theory.⁴ The progress is continuing on all of these fronts and the papers contained in this special issue of the *Annals*, all but one of which were presented at the NBER-CESR Conference on the Analysis of Consumer Expenditure Data held in Palo Alto on May 2-3 1974, both reflect and contribute to its momentum.

Of the nine papers that follow, three deal with the estimation of complete systems of theoretically plausible demand functions, four with cost-of-living indices, one with the foundations of a theory of household behavior, and one with the internal structure of utility functions. However, despite the diversity of focus, the papers share a common feature, namely, a concern with measurement and an insistence that theory be empirically relevant.

In "The Theory of Household Behavior: Some Foundations," Kelvin J. Lancaster discusses some foundations for the development of a theory of household behavior as opposed to a theory of individual consumer behavior. Lancaster notes that two features that distinguish the household from most other team or group decision units are that it is small and closely knit. Lancaster's primary concern is with the extent to which the properties traditionally ascribed to the single consumer can be carried over to a household consisting of more than one individual, and to this end his focus is mostly on two questions: To what extent do the symmetry and negative semidefiniteness of the Slutsky matrix of compensated price derivatives carry through to the household's demand functions? and is the household efficient in its consumption?

In "Budgeting, Decentralization, and Aggregation," Charles Blackorby, Daniel Primont, and R. Robert Russell present an integrated survey of the literature on functional structure, consumer budgeting, and aggregation. Some new results on "weakly recursive" preference structures are also presented. The authors' command of this difficult and often confused subject terrain is extraordinary, and shows up repeatedly in their exhaustive drawing together and masterful exposition of results dating from Leontief (1947) and Strotz (1957).

¹ See Houthakker and Taylor (1966, 1970), Philips (1972, 1974), Pollak (1970), and Tsujimura and Sato (1964).

² See Lancaster (1966, 1971) and Muth (1966).

³ See Fisher and Shell (1968) and Pollak (1971).

⁴ Among others, see Barten (1964, 1967, 1968), Houthakker and Taylor (1970), Parks (1969), Philips (1971, 1972), Pollak and Wales (1969), Russell (1964), and Stone, Brown, and Rowe (1965).

The next three papers, "Further Applications of the Translog Utility Function" by Dale W. Jorgenson and Lawrence J. Lau, "Estimation of Dynamic Gorman Polar Form Utility Functions" by Richard Boyce, and "Mixed Estimation of A Complete System of Consumer Demand Equations" by John D. Paulus,⁵ all deal with the estimation of complete systems of theoretically plausible demand functions. Jorgenson and Lau employ a system of demand functions derived from the translog utility function⁶ and estimate equations for expenditures for durables' services, nondurables, and other services from the National Income Accounts. Jorgenson and Lau are especially concerned with whether the Slutsky symmetry conditions are satisfied and with the possible existence of "group-wise" homotheticity. Their results tend to disconfirm the former and confirm the latter.

Boyce, on the other hand, is concerned with the dynamization of the Gorman polar form class of utility functions⁷ so as to allow for the presence of habit formation. Boyce confines his analysis to four types of meat, fish, poultry, pork, and beef, and concludes that dynamic effects are definitely present, but that, on balance, the results favor the habit-formation formulation of Pollak (1970) over the state-variable approach of Houthakker and Taylor (1970).

Finally, Paulus is concerned with incorporating stochastic prior estimation on income elasticities into the estimation of complete systems of demand functions. His instrument for doing this is the "mixed estimator" developed by Theil and Goldberger. The framework for the analysis is provided by the "Rotterdam" model of demand, which in turn is applied to 14 items of consumption in the Netherlands over the period 1922 to 1963.

The remaining four papers all deal in some form or another with cost-of-living indices. In "Measurement of the Cost of Living Including the Public Sector," Martin David is concerned with how one can go about incorporating the cost of government services into the Consumer Price Index. Among other things, David suggests that the best way to obtain the requisite data for incorporating the Federal sector into a cost-of-living index would be from regular surveys of consumer satisfaction with the public sector.

In "Place-to-Place Rent Comparisons," Robert Gillingham uses hedonic quality adjustment techniques to make inter area comparisons of rent levels. Gillingham estimates a hedonic rent equation for each of ten major cities in the U.S. using neighborhood quality characteristics, as well as data on individual rental units, the basic source of data being the 1960-61 Comprehensive Housing Unit Survey conducted by the Bureau of Labor Statistics. Although the estimated equations show considerable variability from city to city, they nevertheless are in agreement, for a fixed set of housing characteristics, as to which cities are high rent and which are low rent.

In "The Intertemporal Cost-of-Living Index," Robert A. Pollak extends the theory of the cost-of-living index from the traditional one period framework to a multiperiod setting. *Inter alia*, Pollak shows that if preferences are such that the period for which we wish to construct a cost-of-living index is separable from the rest, the resulting partial cost-of-living index can be constructed in a natural way

⁵ The paper by Paulus is the only paper that was not presented at the Palo Alto Conference.

⁶ See Christensen, Jorgenson, and Lau (1973).

⁷ See Blackorby, Boyce, Nissen, and Russell (1973).

on the basis of that period's preference ordering. However, without separability, the desired partial cost-of-living index can only be constructed as a "conditional" index, which is based on the conditional preference ordering over the goods in the period involved, the levels of consumption of all goods in all other periods being taken as fixed at predetermined levels.

The final paper, "Measurement of the Purchasing Power of Incomes with Linear Expansion Data" by Sidney N. Afriat, is concerned with measuring the relationship between equivalent incomes. Afriat notes that the usual procedure for doing this is through the use of a "price" index that is homogeneous in income, usually linearly homogeneous. He argues that this procedure makes no allowance for variation in the pattern of consumption at different levels of income, and proposes the use of a general linear relation between equivalent incomes, the slope of which defines a marginal price index. Since Afriat's paper has already been published in the *Journal of Econometrics* (1974, No. 2), only its abstract is published here.

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