Book review

*Structural Economics: Measuring Change in Technology, Lifestyles and the Environment*

Faye Duchin worked for many years with Wassily Leontief at the Institute for Economic Analysis at NYU, first as a research associate and later as the director of the institute. She has made a number of important contributions to Input–Output analysis (which she now generalizes as Structural Analysis), of which this book is the latest and potentially the most fundamental. The fundamental contribution of the book is its focus on end-users (households) and the potential importance of new taxonomies.

It is important to recall that I–O analyses, in practice, invariably utilize some version of the standard industrial classification (SIC) system, which classifies industries by product. The I–O tables needed for such analysis are prepared by government agencies, using customized classifications that differ slightly from country to country, using raw data obtained from the national Census of Manufactures, every few years. The Census data is virtually never available in raw form to researchers, and is eventually published in aggregated and ‘purified’ form after a lapse of time ranging from 1 year (e.g. in Canada) to 5 years or more (in the US). All inputs and outputs are presented in monetary terms, so underlying material flows and price data — which underlie the system, are not accessible to users. As originally formulated by Leontief, end-users were aggregated into consumers, government and exports.

Richard Stone extended the Leontief system (under UN sponsorship) by introducing the social accounting matrix (SAM), which subdivided the household sector ‘top down’ by income level, educational level, age group and a few other classifiers, such as urban–rural and land ownership. Only a few countries have prepared SAMs, however, (only one in Europe), partly because of the large number of categories involved and partly because of the limitations imposed by the structure on the value of the possible analyses. It is probably fair to say that the value of the extra detail is not balanced by the cost of preparing the required tables.

The first half of Duchin’s book is essentially a review of these matters. It is well-written and readable, even by a non-specialist. In Chapter 3 she introduces the new idea, which is a ‘bottom up’ classification system for households, borrowed
from market research. The general idea is that a wide range of behavioral characteristics related to ‘lifestyle’ can be explained by a relatively small number of variables, of which the most important is (micro) location, because of ‘clustering’. The first large data base for the US, based on this approach was prepared and commercialized by Jonathan Robbin in the early 1980s. A number of such systems now exist. Duchin describes, in general terms, some useful applications of this data and how it could be applied in a general framework for structural analysis.

The latter half of the book (pp. 108 et seq.) is devoted to an illustration of the new approach as applied in Indonesia, mainly in the period 1985–1990. This will interest anybody who is professionally involved in development economics, or Indonesia per se. However, it is of marginal interest to those interested in possible applications in the industrialized world.

The book is a mite frustrating, in that it raises hopes, without suggesting any practical means of satisfaction. The problem, of course, is that the market research data are proprietary and expensive. Even if a researcher could raise the significant funds to purchase the commercial data base, his or her use of it would be seriously constrained by contractual limitations.

I do have one other small complaint, which is that Leontief throughout his career failed to recognize important work by others. Duchin, in her otherwise competent review, fails to correct for this bias. In particular, she fails to acknowledge the priority of Clopper Almon at the University of Maryland (a Leontief student, by the way) in developing and implementing a dynamic I–O model (with a separate capital investment matrix) for forecasting purposes. Almon’s model was already in widespread use in the late 1960s. She also fails to acknowledge the important early work on alternative technological development scenarios by Ronald Ridker and Bill Watson at Resources for the Future Inc. in the mid 1970s.

Nevertheless, the book is a valuable contribution to the literature and belongs in the library of any economist professionally interested in lifestyle issues, Input–Output analysis, or both.

Robert U. Ayres

INSEAD, Fontainebleau, France