CES data can be used effectively with time series aggregate expenditure data, Census business and demographic statistics, and a wide range of social statistics for such studies and for developing forecasting models.

In commenting on a paper on the changing pattern of consumer expenditures between 1950 and 1960, as revealed by the BLS surveys,[8] a market analyst said it was "as useful as a map is to a navigator." He observed that in nine instances, in addition to wars and taxes, the changes in spending were linked to influences which result "from deliberate decisions of either government or business management," (i.e. homeownership; retirement; Social Security and private insurance; school- and employer-provided lunches; public and private transportation; urban renewal; education; household equipment furnished by builders; and medical care). He stressed the importance of such analyses because they point up the "larger forces" which those "who study the consumer in a sales context are prone to overlook" but which "generally take precedence over influences of the marketplace."

A study by F. G. Adams and D. S. Brady of the University of Pennsylvania utilized the published BLS expenditure survey reports back to 1918 to trace the diffusion of new durable goods among various groups in the population and their impact on consumer spending.[9]

The 1950 and earlier BLS survey data were used, in conjunction with time series and similar data, for several popular studies which described in depth the past, present, and probable future consumer markets within a broad social and economic framework. "The Changing American Market" and "Markets of the Sixties" by the Editors of Fortune magazine are examples of such studies.

The 1950 BLS survey data were published in greater detail than any previous study, and the Ford Foundation grant to the Wharton School provided for a series of monographic studies, many of which were directed toward identifying demand relationships for major components of total consumption expenditures.[10] This work and related analyses in private research agencies, other universities, and Federal agencies have resulted in socioeconomic models designed to forecast aggregate consumer spending and its composition in the 1970's.

One such model is the Program Analysis for Resource Management (PARM) model of the National Planning Association which made extensive use of the tabulation of the 1950 detailed expenditure data by income and family size.[11] Similar 1960–61 data, as published in Supplements 3A to the BLS Report Series 237 at the national and regional levels, are being used to check the forecasting equations based on the 1950 data.

In the September 1966 issue of the Battelle Technical Review, Joseph W. Duncan describes the Socio-Economic Model of Battelle Memorial Institute.[12] In this model, projections of consumer spending patterns were developed by projecting the structure of consumer spending as found in the 1950 and 1960–61 BLS consumer expenditure studies. Mr. Duncan announced that "a recently completed study for long-range planning in several major U.S. corporations included a detailed projection of 252 socioeconomic classes," i.e. defined in terms of the income of the household, and the occupation and educational attainment of the household head.

Similar projects, designed to wed the cross-section and time-series data and to develop forecasting models, are going on in the business schools of many of our universities. A recent publication of the Institute of Business and Economic Research of the Graduate School of Business Administration of University of California at Berkeley reports on a series of "Studies in the Demand for Consumer Household Equipment" [13] which relies, primarily, on data from the Michigan University Surveys of Consumer Finances but stresses the value of combinations of subject matter, type of analysis, and sources of data, described as the "utility of

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[8] Chase, Arnold E., "Changing Patterns of Consumer Expenditures, 1950–1960"; and discussion by Sidney Hollander. Jr., in *1963 Proceedings of the Business and Economic Statistics Section,* American Statistical Association, pp. 65–75, 90.

[9] Adams. F. G., and Brady, D. S., "The Diffusion of New Durable Goods and Their Impact on Consumer Expenditures," American Statistical Association, op. cit., pp. 76–88.

[10] "Consumption and Savings" Volumes I and II, University of Pennsylvania, 1960.

[11] Snyder, Eleanor M. and Edmonston, J. Harvey, "Personal Consumption Model," NREC Technical Report No. 15, National Planning Association, Washington, D.C., October 1963. See also, "Informational Requirements for Planning and Projections—A Syllabus of Background Materials," National/Regional Economic Projections Series, Report No. 66–J–3, National Planning Association, Washington, D.C., 1966.

[12] Duncan, Joseph W., "A Framework for Forecasting Socio-Economic Change," in *Battelle Technical Review,* Volume 15, September 1966, pp. 9–13.

[13] Carman, James A., "Studies in the Demand for Consumer Household Equipment," IBER Special Publications, *Research Program in Marketing,* Graduate School of Business Administration, University of California, Berkeley, 1965.