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Book Reviews

Social Characteristics of Urban and Rural Communities, 1950. By Otis Dudley Duncan and Albert J. Reiss, Jr. John Wiley and Sons, Inc., New York. 421 pages. 1956. \$6.50.

THIS is a volume in the Census Monograph Series, co-sponsored by the Social Science Research Council and the Bureau of the Census. The objective is a descriptive analysis of census data classified by types of American communities. With exceptions, the data are from the 1950 Census of Population, particularly the report *Characteristics by Size of Place*. The authors treat five factors as independent variables: Size of community, location with respect to metropolitan centers, pattern of population growth or decline, type of economic specialty, and region of location. Their hypothesis is that "differentiation among communities in one or another of these basic characteristics is associated with variation in other characteristics." The other characteristics are the range of items available from the population census such as age, sex, race, education, mobility, and occupation. Interpretive comments are deliberately limited.

The special usefulness of this study to workers in agricultural economics lies in the detail it presents on characteristics of rural population. Instead of the usual farm-nonfarm dichotomy of the rural population, special tabulations permit a fourfold classification showing data for villages of 1,000 to 2,500 population, villages of less than 1,000 population, open-country rural nonfarm, and open-country rural farm. The four-way breakdown demonstrates clearly the substantial difference in characteristics between the village population and the open-country nonfarm population. It also confirms the fact that major differentials exist between the farm and nonfarm open-country population, aside from occupation structure. In addition, some special statistics for the village farm population are given.

There is a good discussion of urban influences on the rural population, derived by classifying all counties in the country by metropolitan status and size of largest city. The one strong gradient observed here is that the larger the largest city in a farm resident's home county, the more likely are he and his wife to have their principal employ-

ment in nonfarm work. A detailed exposition is given of socio-economic differences between central cities, suburbs, and fringe areas, utilizing the new concepts of urbanism used in the 1950 Census. Because of the lack of earlier comparable data, there are no time series.

The second half of the book deals with metropolitan areas and urban places classified by type of economic specialty. It begins with a 37-page methodological statement on the functional classification used. In the opinion of the reviewer, this statement is an obstacle to the reader and should have been placed in an appendix, if included at all. This is not to quarrel with the resulting classification, which types every city of more than 10,000 population by its economic specialties and income level.

The literary style of the book is distinctly academic. Partly because of the nature of the material and the purpose of the work, it is difficult to read a large slice at one sitting without strong motivation. This is especially true of the second half, which, by the way, deals much more with purely economic analysis than one might anticipate from the title of the book.

Duncan and Reiss are careful investigators, with high research and reporting standards. But their apparent desire not to take anything for granted sometimes leads to elaboration of the obvious; for example, a paragraph on the fact that residents of college towns have more education than those living in noncollege towns. Conditions in their method of identifying economic specialization almost make it impossible for a manufacturing town to have more than one specialty. Thus their conclusion that "places highly specialized in trade are not very likely to specialize also in manufacturing" becomes a truism.

However, these objections aside, *Social Characteristics of Urban and Rural Communities, 1950* easily passes the ultimate test for this reviewer, namely that he is glad to have his copy and to be able to add it to his reference shelf.

Calvin L. Beale

TENNESSEE VALLEY AUTHORITY in 1955 sponsored a symposium of economists, agronomists, and statisticians to discuss the economic considerations of fertilizer use. This book is based on the papers presented at that time. The 14 papers are grouped under the 5 headings of methodology; design of experiments and models; agronomic considerations; application of data; and use and manufacture of fertilizer.

The first section, which consists of two chapters prepared by Earl O. Heady and Glenn L. Johnson, points out that establishing production functions for crop-response inputs is a complicated scientific job. We do not know a great deal about how fertilizer nutrients substitute, or even whether they are complementary or supplementary. The response surface is further complicated by the varieties of seed use, differences in seedbed preparation, varying dates of planting, and a set of exogenous variables such as climate and disease, which are beyond the farmer's control. This indicates a need for more intricately designed controlled experiments on response to fertilizer.

The next section is a well-organized contribution from North Carolina State College. Each of these three chapters is precise and detailed in its treatment of the development of models and statistical analyses. Chapter 5, by David D. Mason, is particularly interesting to the more casual reader, as it discusses several of the more common functional models that relate to fertilizer response.

The section concerned with agronomic considerations and the fitting of functions to existing data is not a particularly precise unit. The contributions by the two agronomists are varied. John T. Pesek incorporates economics into his chapter while W. L. Parks writes purely in the physical science area. However, this chapter gives a good indication of the complex variations which the research man encounters in dealing with soil-moisture and fertilizer-response problems. Two chapters on assorted methods of analysis follow, one by E. W. Kehrberg, which discusses the possibilities of developing production functions from the wealth of data recorded by soil-

testing laboratories, and one by D. B. Ibach on a graphic method of estimating yield response by using standard yield curves based on the exponential function.

The rewards of research are expounded in the fourth section of the book where practical applications of fertilizer production functions are made. Using a two-variable production function, William B. Brown applies prices to inputs and outputs to determine the most economic level and combination of fertilizers. These results are presented in a form to be used by farmers or extension workers. Woodworth, Swanson, and Heady work over essentially the same theme—adjusting fertilizer use to maximize income. Varying degrees of emphasis are placed on linear programming and other forms of marginal analysis, yet the three chapters are remarkably similar in philosophy and methodology.

The book ends with a straightforward discussion of changes in the fertilizer industry; this is interesting background but it contributes only indirectly to the original objective.

The stated objective of the book is "to present the most recent information and techniques bearing upon some of the important questions involved in studies of the economics of fertilizer use, thus facilitating the development of needed research." The editors point out that many lean research years elapsed between the pioneer work by Mitscherlich and Spillman on fertilizer-response curves and recent developments in the methodology of handling this type of data. They reason that causes for this lag were overspecialization in agricultural research, thereby stifling interfield research, and the dearth of agricultural economists trained in mathematics and statistics.

To comprehend the implications of this volume thoroughly, considerable training in mathematics and statistics is desirable. This need for background presents a problem concerned with the use of the book and its ability to reach a large number of economists and physical scientists. Its principal use will probably be by advanced students in production economics. As its content is pointed largely toward economic problems, its

acceptance by agronomists may be slower. One can only speculate as to the possible number of relatively untrained converts this book may entice

to institute modern methods of statistical analysis in the field of fertilizer economics.

George E. Frick

The Economics of Consumption: Economics of Decision Making in the Household. By Willard W. Cochrane and Carolyn Shaw Bell. McGraw-Hill Book Company, Inc., New York. 1956. 481 pages. \$6.50.

THIS BOOK IS PROPOSED as a text for a course in consumption economics to follow a conventional course in principles of economics, comparable in level to a first course in labor economics, for example. As a starting point, the authors adopt the following definition of consumption economics: "The study of decision making by households with respect to the choice of goods and services used in living, together with the relationships growing out of, and the activities surrounding that decision making."

They propose to broaden the subject from the theory of consumer choice—to which they have found consumption economics mostly limited—by adding the measurement of satisfaction associated with choice patterns, next the formulation and measurement of economic relations that emerge from particular choice patterns. This leads on to a study of the implications of these relations for the rest of the economy. Next comes a study of the structure of wants, then consideration of problems surrounding consumption adjustments, a study of markets and the marketing system, and, finally, the information problem of consumers.

To remind new students of consumption economics of the connection between this area and the principles of economics, the authors review basic concepts of modern economics and of the economic system, as well as the related field of national income accounting.

After developing the "received theory of consumer behavior" from the central problem of choice making to the utility solution and to the indifference solution, the authors stop to appraise its strong and weak points. Then they neatly and succinctly present some of the more recent developments in the theory by such economists as Norris, Katona, and Bilkey. Agricultural economists who are familiar with Cochrane's early study, "High-Level Food Consumption in the United States"¹

written while he was in the former Bureau of Agricultural Economics, will be interested in the authors' argument that minimum standards of consumption can be developed to minimize consumer disutility.

In the section on the expenditure approach to consumer behavior, Cochrane and Bell briefly summarize some of the survey and aggregative data on household and commodity expenditures, consumption, and savings. Some agricultural economists may be surprised at this finding: "The outstanding fact in food consumption is the limitations of the human stomach, which preclude much change in the volume of food consumed by a people." Others, who have more than a passing acquaintance with food and nutrition data, may wonder at the authors' direct comparison of supplies of nutrients in foods as purchased with National Research Council's Recommended Dietary Allowances for ingested nutrients. The comparison is found in table 13-2.

The experience and specialized knowledge of the authors are shown to best advantage in their development of the concept of demand. To round out their presentation of the consumer in the market, Cochrane and Bell supply chapters on business practices and on the influence of Government on consumer incomes and expenditures.

In the last section, which deals with the consumer outside the market, there is an intriguing statement of collective or group consumption. This reviewer wonders why Cochrane and Bell did not view the household as the smallest collective unit of consumers, thus avoiding their apparent difficulty with their basic unit. Despite their definition of consumption economics in terms of the household, they continuously shift back and forth to the terms "consumer" and "consuming unit," contrary to the customary practice of consumption economists. The household would appear to be at one end of the range of collective units, and society at the other.

¹ U. S. Department of Agriculture. Misc. Pub. No. 581. 48 pp. Washington, D. C. December 1945.

This reviewer begrudges the space allocated to some of the topics usually covered in the principles course, such as free competition, oligopoly, monopoly, multiplier theory, and national income accounting, at the expense of such topics as consumer savings, patterns of consumption, quality of goods as well as quantity, marketing services, and factors bringing about changes in tastes and preferences for goods and for services. Just as the ordinary text on labor economics discusses labor

unions, the consumer movement deserves more than bare mention in a book on consumption economics.

As I am not a teacher, I cannot adequately judge the success of the book as a text. But I can recommend it to agricultural economists unfamiliar with consumption economics as a reference work on a subject of growing importance to the analysis of agricultural problems.

Marguerite C. Burk

Economic Analysis. By Edmund Whittaker. John Wiley and Sons, Inc., New York. 1956. 460 pages. \$6.50.

WRITTEN PRINCIPALLY for the undergraduate who has completed a basic course in general economics, this text is a strong entry in a well-entrenched field. The book is designed to introduce students to modern economic theory and economic analysis. It is well organized, and a pleasure to read.

Like a child assured by its mother that a medicine doesn't taste bad, the reader is assured by author and publishers that the book is essentially nonmathematical; *mirabile dictu*, it isn't. Professor Whittaker has avoided the temptation of including rigorous proofs and derivations that add little to the subject matter at the level for which the book is designed, and that, too often, merely become a professional show of muscle. However, with a judicious use of elementary algebra and geometry, the writer leads one gently to peaks that heretofore have been guarded at least by integral signs.

The book is divided into two major sections. An excellent review of principles, and their extension into modern analysis, occupies about the first quarter of the text. The remainder is devoted to integrating micro- and macro-economics and describing current applications of procedures and methods. The experience of Professor Whittaker as an economic historian is a great asset in relating classical ideas to those of the present day. The book is admittedly slanted toward the business and management students, but with some supplemental reading it would be more than adequate for the major or pregraduate school student in general economics. Chapter bibliographies are annotated and references are within the grasp of the student.

In part I, the author places man in relation to the economic world and carefully defines his position, not forgetting noneconomic forces that are constantly interacting upon him. The author reviews basic laws and gives some idea of methodology and source of data. With great skill, he introduces the subject of analysis and briefly discusses some of the major tools of economic research, including 3-variable analysis and production surfaces. Completing the first section is a chapter on planning; this is elementary, but it gives the reader at least some idea of modern decision making.

Part II, a discussion of the entire economy, begins with an interesting exposition of Walras' equilibrium system. The reader is then given some review of the time-honored subjects of wages, consumption, capital, production, price, and income. In the discussion of each, the author assiduously connects the basic laws and principles with current problems and methods of analysis. This was of particular interest to this reviewer who, when using the standard texts of this type, often wondered how empirical research related to theory.

Criticisms of the book are few and minor. The concept of elasticity is relegated to rather a minor role in the chapters on consumption and income distribution. Flow diagrams relating to income add little to the text and graphs. Perhaps some attention could have been given to some facets of sector analysis. All of these could be moot points and should not deter anyone from reading this well-conceived book with its definitely original approach.

William W. Addison

Resource Productivity, Returns to Scale, and Farm Size. Edited by Earl O. Heady, Glenn L. Johnson, and Lowell S. Hardin. The Iowa State College Press, Ames, Iowa. 208 pages. 1956. \$3.50.

ONE MAY SAY OF THE CONTENTS of this book what my favorite weather forecaster said of a cheering day in midwinter, "variable cloudiness with intervals of sunshine." Because it comes at a time when more light is especially welcome, the cloudiness can be overlooked.

Most of the materials were first presented at a 1954 conference sponsored by the North Central Farm Management Research Committee and aided by the Farm Foundation. The stated purpose of the book is "to stimulate and aid productive thinking and research" in farm productivity and returns to scale.

Broadly interpreted, this purpose has been well achieved within the limitations imposed by the conference approach and by the editorial problems of combining the varied experience and views of 25 authors. These men would probably be the last to claim that they represent a random sample of agricultural economists. In fact, about three-fourths of the book was written by two of the editors, and their close associates and former students. The cohesion of thought therefore derives not from any clustering about the mode of a normal frequency distribution, but from the thrust of a common origin.

Despite some tempering from a few contributions by those with other background, the real differences that do exist with respect to framework assumptions and the use of various types of production functions are hardly perceptible. The only place in which a sharp cleavage develops is in the final section in which Hendrix's searching

discussion of institutional tenure research arouses a vigorous reaction from H. R. Jensen, who closes on an unhappy note of impatience with economists who do not stay close to their technical last.

Among the 22 papers and 7 discussion statements, the reader will find Heady's detailed presentation of the technical mechanism for handling production functions and Glenn Johnson's careful examination of problems related to managerial processes well worth reading. The Cobb-Douglas type of function is pursued through many alternative procedures by several of the contributors and compared with other functions.

Russell Olson's review and appraisal of methods used in studying farm size stands out in the section on historical accomplishments. Gerhard Tintner's terse remarks on significance tests in production function research suggest much that is useful. But one wishes that space had permitted expansion of the theme that "tests of significance are not entirely satisfactory from a logical and philosophical point of view."

The technical phases of measurement are emphasized by the approach that prevails in this book. Less is said about underlying assumptions. Here, in fact, is one of the real issues that confront practicing agricultural economists. In solving actual problems, what proportion of research time should be devoted to sharpening tools, and what proportion to locating and developing valid points of departure? Perhaps here is a task for a future conference to continue the work so well begun in this one.

Ronald L. Mighell

Introduction to Statistics. By Frederick C. Mills. Henry Holt and Company, New York. 637 pages. 1956. \$6.00.

COLLEGE UNDERGRADUATES who are now being indoctrinated in statistics are indeed fortunate, and authors of statistical texts are to be congratulated, for the trend today is toward material presented clearly, simply, and interestingly. Professor Mills' text is an example.

As an introductory course in statistics normally is taken at an early stage in academic study, a mathematical background of any consequence cannot be presumed. Always there are some students, too, who shy away from anything resembling a mathematical presentation—logical relationships

in the form of mathematical equations are not for them.

Professor Mills evidently recognizes these problems. In his statement of objectives he sets forth the twofold purpose of his book as, first, "to make the exposition intelligible to the nonmathematical reader—that is, to the reader whose formal mathematical training does not go beyond the elements of algebra and analytic geometry"—and, second, "to give a coherent discussion of statistical methods."

Professor Mills has succeeded in meeting these objectives. His treatment and the manner of presentation of the topics covered have indeed made this "an integrated introduction to the methods of modern statistics."

The reader, whether he is a beginning student or a busy administrator eager to learn some fundamentals of statistics and the role it plays in the everyday world, will find the book enjoyable to read and easy to comprehend. Up-to-date examples from business and agriculture frequently illustrate the discussion. Emphasis is on fundamental ideas—their basic assumptions and their limitations. For some topics technical detail is unavoidable. Wherever possible, the text refers to statistical formulas directly, without proof. But when proofs are relevant, or are thought to be of interest, the author puts them in footnotes, thus maintaining continuity in the textual discussion. A more detailed account of the derivation of the standard error of the mean is outlined in the ap-

pendix. A glossary of symbols prefaces most of the chapters, and generally most of them close with a summary of salient points.

This work is an abridgment of the third edition of the author's book, *Statistical Methods*, published in 1955, and the presentation of subject matter in the two volumes is similar—in fact, almost identical. But this shorter version with its general introduction to the subject is more suitable for a beginning course. Starting with simple concepts such as rectangular coordinates, functional relationships, and logarithms, the discussion continues with a description of procedures in organizing and describing quantitative data. The usual statistical measures of central tendency and dispersion follow. Ideas of induction and deduction, elements of probability, and distributions are developed in a discussion of statistical inference—"the essence of modern statistics," according to Professor Mills. Chapters relating to the problems of estimation and tests of hypothesis follow.

The last half of the book is devoted to correlation and regression, analysis of time series, index numbers, the "t" distribution, and sampling. As part of his discussion of time series, the author compares timeworn conventional methods of determining a measure of cyclical change with those developed by the National Bureau of Economic Research. Whether the detailed explanation of the latter method is warranted in an introductory text is a matter for conjecture.

Hyman Weingarten

An Introduction to British Economic Statistics. By Ely Devons. Cambridge University Press. 1956. 247 pages. \$4.00

SINCE WORLD WAR II, a regular and increasingly comprehensive flow of official British statistics has become available. Professor Devons' guide to these statistics is concise and readable. It covers the fields of population, employment, production, foreign trade, prices, incomes, and national income. We are told what information is available, how and by whom the data are compiled, where they can be found, and how far they can be trusted. Although primarily designed to meet the needs of university students of economics, this book has great value to all who use economic statistics regularly in their work, or who make policy decisions on the basis of statistics appraised for them by others.

This usefulness is not limited to students of the British economy. The discussion of general problems relating to the interpretation of British statistics has universal applicability: Careless use of published data, whether deliberate or through ignorance, is not limited to the other side of the Atlantic.

Confusion arises both from semantics and technique. Many of the terms used in statistics, for instance those relating to income, have a quite different meaning than they do in economic theory. The use of statistics may mislead rather than inform unless one knows what the figures cover, whether definitions have been changed from time to time, and how this affects their use;

whether and to what extent two sets of data are comparable, and what the margin of error is in them. The very efforts of statisticians to make improvements in scope and definition are usually at the cost of comparability with the past, for it is rarely possible to revise earlier figures on the improved basis. These problems are compounded when secondary estimates are based on incomplete or inaccurate material.

Specialists have full knowledge of these things, and United States Government agencies that publish basic statistics are careful to set forth the content and limitations of their data. But, as Professor Devons points out, "statistics and the notes which explain and qualify them are easily parted." Most economists, owing to limitations of time,

funds, and filing space, rely largely on secondary sources.

This book serves as a reminder that, as a minimum, frequent rereading of the explanatory notes to the *Statistical Abstract of the United States* is a necessary exercise for economists. Even more valuable in a limited field is the 70-page 1955 *Historical and Descriptive Supplement to Economic Indicators* prepared for the 84th Congress by the staff of the Joint Committee on the Economic Report and the Office of Statistical Standards, Bureau of the Budget. But we have nothing to match the critical simplicity of Devons' pocket-size work. With the flow of British statistics becoming a near torrent, it is hoped that frequent revisions or supplements will be published.

Doris Detre Rafler

Selected Recent Research Publications in Agricultural Economics Issued by the United States Department of Agriculture and Cooperatively by the State Colleges¹

BADGER, H. T. THE USE OF FROZEN FOODS BY RESTAURANTS. U. S. Dept. Agr. Mktg. Res. Rept. 144, 32 pp., illus. November 1956.

Restaurants bought a larger share of fruits and vegetables in frozen form than the national average for the same commodities. Report gives the proportion of selected commodities bought in fresh, frozen, and canned forms, by size of establishment, price of meal, and regional location for August and November 1954.

BOTTS, RALPH R., RUSH, JOHN D., and ELLICKSON, JOHN C. FARMERS' MUTUAL FIRE AND WINDSTORM INSURANCE IN THE UNITED STATES. U. S. Dept. Agr. Agr. Inform. Bul. 165, 87 pp., illus. October 1956.

This bulletin summarizes the results of the 1954 "benchmark" survey of the farmers' mutual fire and windstorm insurance companies. Not because of higher insurance rates, but because they carry larger amounts of insurance on buildings and equipment, insurance costs of individual farmers have increased greatly in recent years. This bulletin is the result of an effort to learn more about the operating methods of farm mutuals, and the extent to which they are associated with loss and expense rates, assessment income, and size of safety funds.

¹ Processed reports are indicated as such. All others are printed. Such publications may be obtained from the issuing agencies of the respective States.

BOUMA, J. C., and LUNDQUIST, A. L. METHODS OF INCREASING LABOR PRODUCTIVITY IN MULTISTORY AND SMALL ONE-FLOOR GROCERY WAREHOUSES. U. S. Dept. Agr. Mktg. Res. Rept. 142, 42 pp., illus. November 1956.

Warehouse operators reduced labor costs 19 percent in five small one-floor and four multistory warehouses through improved work methods, use of better materials-handling equipment, improved physical layouts, and more nearly balanced work crews. This report evaluates present methods and develops new labor-saving methods.

BREWSTER, J. M., and MITCHELL, J. A. SIZE OF SOYBEAN OIL MILLS AND RETURNS TO GROWERS. U. S. Dept. Agr. Mktg. Res. Rept. 121, 99 pp., illus. November 1956.

A saving of 7 cents a bushel can be made by crushing soybeans in a mill operating at its capacity of 400 tons a day compared with the cost of crushing in a mill that can process only 50 tons a day. Change in the size of solvent soybean-oil mills under typical operating conditions is related to corresponding change in total cost and total revenue per bushel of beans processed. Report compares the efficiencies of different-size mills.

BRINE, C. L. INSTITUTIONAL MARKET POTENTIAL FOR OILSEED PROTEINS. U. S. Dept. Agr. Mktg. Res. Rept. 151, 21 pp. December 1956.