

far back as 1834 (9) and, by indirect method, even as far as 1800 (10). Kuznets also saw that well-founded studies of long-term growth would need to be based on the broadest possible comparisons among countries, as well as on long periods of time within countries. He therefore helped to found the International Association for Research in Income and Wealth. He organized and stimulated work on long-term estimates of national products throughout western Europe and in Japan. He served as adviser to some of the newly established statistical bureaus of countries founded after World War II, and the statistical services of many countries, therefore, owe something to Kuznets' help and incitement.

Besides being one of the foundation stones of modern scientific economics, Kuznets' work on national products was also the basis for the long period of study of economic growth, for which he was especially cited by the Swedish academy. As with his work on national product itself, Kuznets began with historical studies of U.S. growth and went on to bring together evidences of growth in every country for which reliable data were available. The key publications are the ten famous papers, really small monographs, which were published serially from 1956 to 1965 under the collected title, "Quantitative Aspects of Economic Growth of Nations" (11), and the summary volume, *Modern Economic Growth: Rate, Structure and Spread* (12).

Kuznets' work has been directed chiefly toward providing a solid empirical basis for analytical studies of growth and toward revealing its major observable features. The organizing theme of his investigations is the view that growth in the aggregate output of a nation is necessarily connected with a thoroughgoing transformation of its economic structure. This transformation takes the form of change in many aspects of economic life—in the composition of output, in the distribution of workers among industries and occupations, in the relative importance of household and commercial activities, in the income shares of the factors of production, in the size, the age-composition, and the spatial distribution of the population, in the importance of international movements of goods, capital, people, and knowledge, in the organization of industry, and in the role of government. Such transformations, he hypothesizes, are necessary

conditions of aggregate growth and, once in train, serve to fashion, constrain, or stimulate subsequent growth.

Kuznets' investigations serve chiefly to establish the nature of the changes and to show which of them, and in what magnitude, have been common to the experience of many countries and periods. The descriptive intention is dominant. We have here the work of a great naturalist, observing and classifying the forms and parts of an order of life in its many species and varieties. Though, in Kuznets' view, this effort of description and classification is essential at this stage in the development of the subject, his own mind turns irrepressibly toward an attempt to understand the causes of events. No table of figures, however aridly descriptive, is left without some suggestion of how the numbers came to be or what significance they may have. No one can read his pages about the connections between output growth and the changes in the size and age-composition of populations, or about the connections between levels and rates of output growth and the uses to which output and income are applied, without feeling that he had been vouchsafed at least a glimpse of a key to the riddle within the enigma of economic growth.

Important and far-reaching as it is, Kuznets' work on economic growth is only one of the many major subjects to which he turned successively during a long career. Business cycles, secular movements in production and prices, seasonal variations in industry and trade, professional incomes, income distribution, the economic status of minority groups—each field, in turn, has been the object of Kuznets' attention, and each has been shaken and advanced by some fresh and penetrating study. To few men is it given to make a truly significant difference in the state of a science, but Kuznets did it more than once.

Does this sound valedictory? No need. Kuznets is alive and well and working in Cambridge, Massachusetts.

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References and Notes

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2. W. I. King, *The National Income and Its Purchasing Power* (National Bureau of Economic Research, New York, 1930).
3. *National Income, 1929-32* (Senate Doc. 124

72nd Cong., 2nd session, 1932), p. 11. It is a happy fact that the two unusual women who worked with Kuznets in one investigation after another for many years also make their first appearance in this report: "Particularly valuable assistance was rendered by Miss Lillian Epstein aided by Miss Elizabeth Jenks . . ." How many times this or some similar phrase was to recur in Kuznets' publications! Few scientific teams can have worked together so long and to such good effect.

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APPOINTMENTS

Ronald S. Tikofsky, professor of psychology, University of Michigan, to chairman, psychology department, Florida International University. . . .

Charles W. Merriam III, professor of electrical engineering, Cornell University, to chairman, department of electrical engineering, University of Rochester. . . .

David B. Wake, associate professor of zoology, University of California, Berkeley, to director, Museum of Vertebrate Zoology, at the university. . . .

Gerard A. Kaiser, associate professor of surgery, College of Physicians and Surgeons, Columbia University, to chief, thoracic and cardiovascular surgery division, University of Miami School of Medicine. . . .

Martin R. Baron, professor of psychology, Kent State University, to chairman, psychology department, University of Louisville. . . . **Michael F. Brewer**, vice president, Resources for the Future, Inc., to president, Population Reference Bureau, Inc.