

OBITUARY

JOHN W. KENDRICK

John W. Kendrick, who died in November 2009 at the age of 92, was one of the major contributors to the understanding and measurement of productivity and spent a large part of his long working life on expanding and refining productivity concepts, at the U.S. Department of Commerce, at the National Bureau of Economic Research (NBER), and as an academic. He was also very active in wider groups that promoted discussion of and experimentation with concepts of output and input measurement and the national accounts in general, such as the NBER's Conference on Research in Income and Wealth and the international counterpart that eventually became the International Association for Research in Income and Wealth (IARIW).

John was born in Brooklyn, but was raised in North Carolina, where his father took a teaching position at the Woman's College of the University of North Carolina, now the University of North Carolina at Greensboro. He received a B.A. from the University of North Carolina at Chapel Hill in 1937 with a major in history, and was elected to Phi Beta Kappa; he followed with an M.A. in economics at the same university in 1939. His first academic job was at the University of Georgia in 1939 but he began his government career at the National Resources Planning Board in 1941. That career was interrupted by World War II, and he spent several years in the U.S. Army Air Forces and then a year with the U.S. Strategic



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Bombing Survey in Europe, before joining the Office of Business Economic, the predecessor of the Bureau of Economic Analysis, of the Commerce Department in 1946 (*Washington Post*, December 10, 2009; Lovell and Sickles, 2010).

The first publication from John's years at the Office of Business Economics (OBE, the predecessor of the Bureau of Economic Analysis (BEA)) was a joint paper with George Jaszi (Jaszi and Kendrick, 1951), presenting the first OBE estimates of GNP in constant dollars based on price deflation of current dollar estimates. The second was a paper with Carl E. Jones (Kendrick and Jones, 1951) on constant dollar estimates of Gross Farm Product and farm productivity. The article was notable for including a multifactor productivity measure, labeled "composite productivity," in which the growth of output was related not only to the growth of labor input, but to the growth of a combination of labor input with reproducible farm capital assets and land. This article was mentioned by Solomon Fabricant in the 1953 Annual Report of the NBER, where Kendrick's appointment as a member of the small senior research staff (23 members at that time) of the NBER was announced, with the statement that he would combine measures of output per unit of capital developed by Kuznets and associates with information on output per unit of labor and "... thereby provide us with fairer measures of efficiency change in individual industries" (Fabricant, 1954, p. 11).

While he was at the OBE, John was working on a doctoral dissertation at George Washington University, under Gerhard Colm, developing "an operational concept of 'total factor productivity'." That study led to the presentation of a paper at the 1951 Conference on Research in Income and Wealth, later published as Kendrick (1954).

In 1953, John began a long association with the NBER by being appointed to the research staff (later the senior research staff), where he joined Milton Friedman, Raymond Goldsmith, Simon Kuznets, George Stigler, and others engaged in empirical economic research under Solomon Fabricant and Geoffrey Moore, the Director and the Associate Director of Research. That association continued as long as the senior research staff existed, until 1977.

From 1976 to 1977, John returned to the U.S. Department of Commerce as Chief Economist. He had also, after receiving his Ph.D. from George Washington University in 1955, eventually become a professor at the university, where he taught for many years. Among other things, he taught a course on national income accounting and productivity, attended by many BEA staff (Katz and Grimm, 2010).

When Kendrick joined the NBER in 1953, it was an NBER that devoted a substantial part of its efforts to large projects in pioneering and expanding economic measurement. These included such projects as those for national income and product, conducted by Simon Kuznets, for labor productivity by Solomon Fabricant, for financial flows and balance sheets by Raymond Goldsmith, and for the flow of funds by Morris Copeland. It was also an organization that subjected manuscripts to intensive review before publication, and the monumental result of Kendrick's first project was not published until 1961, although a brief preliminary Occasional Paper appeared in 1956. The volume, *Productivity Trends in the United States* (Kendrick, 1961), appeared with an introduction by Solomon Fabricant, who described it as "the most comprehensive survey of productivity trends in the

United States ever made” (p. iii); almost 30 years later it was described by Dale Jorgenson as “an epoch-making monograph” (Jorgenson, 1990, p. 20).

Since the calculations in that volume ended in the 1950s, John was asked in 1965 to update them, and he did so in *Postwar Productivity Trends in the United States, 1948–1969* (Kendrick, 1973). For both of these studies, John had the help of a now-extinct species, an experienced professional research assistant, Maude Pech, whom John acknowledged on the title pages of both volumes.

For many years, as he noted in the first volume, John had been concerned with the incompleteness of the measures of capital inputs embedded in productivity estimates, including his own, as he explained in the preface to his next NBER volume, *The Formation and Stocks of Total Capital* (again with the listing of assistants on the title page) (Kendrick, 1976). Among the alterations to the accounts he calculated were the addition to investment of tangible investment by the non-business sectors, households and governments, the cost of rearing children to working age, and intangible investment in the form of “outlays for education and training, health and safety, labor mobility, and research and development” (p. 24). The study was begun at George Washington University under grants from the National Science Foundation and completed and published under the auspices of the NBER.

An extension of John’s interest in the economics of the household sector, which never resulted in a publication, was an effort to collect historical data on time use in households. Under John’s direction, one of his assistants assembled a surprisingly large collection of studies of labor input at home by those not counted in the labor force.

Aside from these monographs, much of John’s association with the NBER involved the Conference on Research in Income and Wealth. His first appearance there, mentioned earlier, was at a 1951 meeting, while he was, according to the note to his paper, the acting chief of the National Economics Division of the Department of Commerce. In 1963–64 he was the chairman of the Executive Committee of the conference, and in 1964 he was also the organizer of the Wealth Inventory Planning Study at George Washington University, which was published as Vol. 29 of the NBER Studies in Income and Wealth (NBER, 1964). John then chaired the planning committee for and edited the volume for Studies in Income and Wealth, Vol. 32 on *The Industrial Composition of Income and Product* (Kendrick, 1968), including a paper by himself on “Industry Changes in Nonlabor Costs,” for which his discussant was Dale Jorgenson. Together with Beatrice Vaccara, John chaired the planning committee for the conference in 1975 and edited Vol. 44 of Studies in Income and Wealth on *New Developments in Productivity Measurement and Analysis* (Kendrick and Vaccara, 1980).

When the IARIW started publication of the *Review of Income and Wealth* in 1966, a paper by John on “Problems of a Census of Income and Wealth” appeared in the first issue (Kendrick, 1966). John was an active member and supporter of the association, and in 1990 the association established the Kendrick prize for the best article published in the *Review of Income and Wealth* in the preceding year, a prize that John financed for the first couple of years.

Another of John’s interests that I am less familiar with, but is mentioned by Lovell and Sickles (2010), was the measurement of productivity at the firm level. It

started with a National Industrial Conference Board collaboration with Daniel Creamer in 1961 and continued at least into the 1980s.

I knew John personally mainly through his research at the NBER, especially in the period of residence in New York and later, in an administrative role, in the review and publication process for his volumes on postwar productivity trends and the measurement of total capital. I have nothing but pleasant memories of the association. In addition to his outstanding scholarly contribution to the measurement and study of productivity, John was a model colleague, courteous, whether in agreement or in disagreement, kind to assistants and collaborators, and friendly to associates. He set an example for all his colleagues and acquaintances.

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