Volume Title: Political Arithmetic: Simon Kuznets and the Empirical Tradition in Economics

Volume Author/Editor: Robert William Fogel, Enid M. Fogel, Mark Guglielmo, and Nathaniel Grotte

Volume Publisher: University of Chicago Press

Volume ISBN: 0-226-25661-8, 978-0-226-25661-0 (cloth)

Volume URL: http://www.nber.org/books/foge12-1

Conference Date: n/a

Publication Date: March 2013

Chapter Title: Further Aspects of the Legacy of Simon Kuznets

Chapter Author(s): Robert William Fogel, Enid M. Fogel, Mark Guglielmo, Nathaniel Grotte

Chapter URL: http://www.nber.org/chapters/c12918

Chapter pages in book: (p. 106 - 114)

6 : : Further Aspects of the Legacy of Simon Kuznets

Frequent encounters with former students were a regular occurrence in Kuznets's later years. Always the teacher, he began his customary greeting with an inquiry after an individual's family, followed closely by an inquisitive, "What have you been working on lately?" Even as they became established family members and pioneers in economic history, econometrics, and cliometrics themselves, some former students never felt comfortable addressing their teacher as anything other than "Professor."

With others, Kuznets had a more jocular relationship, as with the widely heralded labor economist and demographer Richard Easterlin, of the University of Southern California. When the announcement was made that Kuznets had won the 1971 Nobel Prize in economics, Easterlin admonished his former teacher to not let the award go to his head but conceded that Kuznets "probably didn't have to worry about 'publish or perish' any longer." Then seventy years old, Kuznets considered this for a moment and then mused: "In a way—I do." He would heed his own advice, publishing over forty additional articles before his death in 1985.

In 1981, a weekend-long celebration of Kuznets's eightieth birthday was held at Harvard University. Over 150 guests, including Arthur F. Burns, John Kenneth Galbraith, Paul Samuelson, Henry Rosovsky, and Martin Feldstein, constituted a veritable who's who of economics. Easterlin, Nathan Rosenberg (Stanford), and Dwight Perkins (Harvard) presented papers considering modern economic growth.

In addition to the scheduled speakers, friends and associates spontaneously leaped to their feet to toast their friend and mentor and share anecdotes.

Kuznets passed away on a Monday in early July 1985. The *New York Times* ran his obituary the following Thursday, July 11, with the headline: "Simon Kuznets Is Dead at 84; Nobel Laureate in Economics." The obituary quoted Paul A. Samuelson, the recipient of the 1970 Nobel Prize in economics: "Simon Kuznets was a giant in twentieth century economics. He was the founder of national income measurement, and he created quantitative economic history." Indeed, it is these two particular areas of achievement that have become synonymous with his life's work.

Kuznets's legacy includes not only his many books and articles but also the students he trained, many of whom became influential economists in their own right. There is also an institutional legacy. In 1978, when Martin Feldstein became the new CEO of the NBER, he suggested to some of Kuznets's students that they establish a new program at the bureau that would continue Kuznets's work on long-term factors promoting economic growth. That program was established under the title "The Development of the American Economy," or DAE.

There were three initial projects of the DAE: "The Economics of Mortality in North America, 1650–1910" aimed to collect and analyze newly available data from archival sources to illuminate changing North American mortality rates for this three-hundred-year period. "The Economic and Demographic Significance of Secular Changes in Human Stature" aimed to trace improvements in nutrition in the United States as reflected in height data from the period 1750–1910. "The Changing Role of Women in the Labor Force" sought to examine the role of women in the labor force from the beginning of the nineteenth century, drawing from all available data, especially federal and state censuses. At the time, these research projects were among the most ambitious ever proposed in the field.

Over the next ten years, a number of additional projects were added to the DAE, all of which focused on long-term factors contributing to economic growth in the United States. The DAE marked a departure from the NBER's approach of looking at growth on a macroeconomic

level (such as national income accounts). With the creation of over fifty new data sets in their first ten years, DAE researchers were able to examine the economy on a microeconomic level. These data sets followed individuals, families, and firms.

DAE research was substantial and produced several significant achievements in the program's first decade. The "Labor and Population" project used census data to revise the existing estimates of the distribution of the labor force between farm and nonfarm industries. The data collected showed that the existing estimates had been overstated for a time and then understated. Thomas Weiss published several working papers summarizing his findings and concluding that, between 1820 and 1860, the farm labor force grew more rapidly than had been thought previously but that farm productivity and per capita actually grew more slowly (see Weiss 1986, 1987, 1989). Later research revealed that exports were not as important a stimulus to economic growth in the American South as had previously been thought. The project "Female Labor Force and Gender Distinctions in the Labor Process," led by Claudia Goldin, found that the ratio of female-to-male earnings rose between 1815 and 1930 and then stabilized until 1980. The expansion of occupations held by married women after World War II was linked to expansions in education and clerical work in the 1920s and 1930s. These and other findings by Goldin were collected in *Understanding the Gender Gap* (1990), which illustrated women's role in the modern workforce as the culmination of trends that began two centuries earlier rather than as abrupt social shifts.

The project "Secular Trends in Nutrition, Labor Welfare, and Labor Productivity," which brought together several researchers in the construction of anthropometric measures of standards of living, was facilitated by innovative new statistical procedures (see Trussell and Wachter 1984). The nutrition branch of the project discovered that the standard of living with regard to nutrition in the colonial period was high, even by modern standards. Findings showed that adult slaves were well nourished as adults, less so as children. The average heights of the British during the eighteenth and nineteenth centuries generally exceeded those of populations in other countries (except for the United States).

One of the DAE's major accomplishments was bringing a Kuznetsian tradition of long-term, data-driven quantitative research into the computer age. Collection and calculation that previously took months could potentially be completed in a matter of hours. To realize that potential, the DAE had to develop new procedures for the retrieval, management, and analysis of data as well as ferret out the data sets that would be examined.

When the DAE project "The Economics of Mortality in North America" began in 1976, it initially examined the potential usefulness of genealogies covering 1 million individuals in about 200,000 families, linked intergenerationally for up to ten generations. The initial effort of measurement, however, involved the collection of a sample of 13,000 white men mustered into the Union army between 1861 and 1865. Their records contained data on height and twelve other variables, yielding altogether about fifty characters of information per individuals. This information was copied by hand onto sheets that were then entered into computers. At around ten minutes per individual, it took about two thousand person-hours to complete the project.

By 1981, investigators collecting a new sample of 40,000 Union army soldiers were using portable terminals with rewritable "bubble memory" that had a capacity of 100,000 characters, about what an experienced typist would produce in a day. With the built-in modems, investigators were able to transfer the contents of the memory to the mainframe computers overnight. Even with the required cleaning of the data, the new technology had reduced the cost of data collection by about 80 percent.

This reduction in costs had implications that went beyond the amount of funding necessary to collect the original body of data: advances in technology made possible projects that had previously been prohibitively expensive. The comprehensive project that grew from this earlier project, "The Aging of Union Army Men: A Longitudinal Study, 1830–1940," set out to create a public-use data set from a sample of men mustered into the Union army. With these data, investigators intended to examine the effect of nutritional and socioeconomic status at early ages on work levels, morbidity, and mortality rates at later ages. The complete life-cycle information for a single recruit con-

tained fifteen thousand variables—an unthinkable amount of data for the portable computers of the mid-1980s.[1] This project merged into a large study, "Early Indicators of Later Work Levels, Disease, and Death," first funded by the National Institute of Aging in 1991 and recently renewed through 2015. This far-reaching study, which has made many surprising discoveries over the past twenty years, has produced, to date, over 250 books, dissertations, articles, and working papers.

Research under the auspices of the DAE continues under the direction of Claudia Goldin. The membership of the DAE has increased from only seven at the beginning to over sixty today. Recent research has examined topics as broad as the contribution of the potato to population and urbanization, issues of land policy, and fluctuations in overseas travel by Americans between 1820 and 2000. DAE researchers continue to examine some of the classic topics of economic history, including railroads and industrialization, the banking situation during the Great Depression, and even the economic impact of the U.S. Constitution (Nunn and Quian 2009; Grubb 2011; Dupont, Gandhi, and Weiss 2009; Atack, Haines, and Margo 2008; Richardson and Van Horn 2008).

The Conference on Research in Income and Wealth

The NBER's Conference on Research in Income and Wealth (CRIW) was founded in 1935, "a brainchild of Simon Kuznets," in the words of Milton Friedman. Born as a collaboration between the NBER and the economics departments of six universities (Columbia and Harvard Universities and the Universities of Chicago, Minnesota, Pennsylvania, and Wisconsin), the CRIW aimed to serve as a liaison between the NBER, academics, businesses, and government to facilitate research. Income and wealth were agreed to be subjects of particular relevance that the bureau excelled at examining (Carson 1990).

In 1937, the CRIW published the first volume of the series *Studies*

1. With the introduction of laptops, graduate students could independently undertake projects that would have required extensive funding just a few years earlier. Furthermore, as computers allowed more variables to be incorporated in models, the distance between theorists and empiricists was narrowing.

in Income and Wealth, which outlined the research plan for the conference. In a preface that set the tone for the scope of the work that was to be undertaken, Wesley Mitchell wrote: "Those who have not wrestled long with the highly technical problems that crop up in such work can scarcely appreciate their intricacy, or how considerable are the differences in results that are produced by the use of slightly different definitions" (Mitchell 1937, viii).

Fittingly, one of the early accomplishments of the conference was the standardization of terminology. A committee, headed by Kuznets, was formed "to promote a greater uniformity of usage" (quoted in Carson 1990, 5). Among the accomplishments of this committee was the clarification of the distinction between *national income produced* and *national income paid out*, two terms that differentiate between, respectively, figures that include saving by businesses and figures that do not. This distinction underlaid questions among economists as to what should and should not be included in calculations of national income.

Another important area of research that fell within the purview of the CRIW was the foundational research for the preparation of distributions of income by the different deciles of population size. The lack of such figures was considered to be a chief deficit in income research. A committee consisting of Milton Friedman, Dorothy Brady, Clark Warburton, and C. Lowell Harris was charged with investigating this issue; it produced the fifth in the series of CRIW publications, *Income Size Distributions in the United States* (CRIW 1943). This volume, with an introductory chapter by Kuznets, provided a summary of the most important studies of U.S. income distribution to date and recommended future research directions (see Carson 1990).

The conference has continued to hold annual meetings and has produced seventy books examining issues in economic measurement and measurements of output and productivity. Unlike other programs at the bureau, the CRIW has its own federal funding to conduct its research on measurement. In a 2005 article in the *NBER Reporter*, Charles R. Hulton commemorated the fiftieth anniversary of the conference by highlighting some of the most significant contributions of the research, which addressed deficits in measurement techniques.

The CRIW was among the first to call for revision of the methods of measurements to include the impact of the information technology revolution, which had previously been elusive—Robert Solow observed, "You can see the computer revolution everywhere but in the productivity statistics" (1987, 36), a concern that was later echoed by Alan Greenspan. Later research by the Boskin Commission, a group chosen to examine the consumer price index, determined that the reported rise in prices was one-third too high because of the failure to take account of the impact of technological change on prices.

The Committee on Economic Growth

Another significant research program that was organized by Kuznets was the Committee on Economic Growth at the Social Science Research Council (SSRC). This program was born from President John F. Kennedy's concern over the amount of gold that the United States was sending overseas to countries that were experiencing tremendous growth over the 1950s, a practice that wreaked havoc with the exchange rate. In an effort to come to grips with this, the Kennedy administration commissioned two studies: one on growth accounts, to be headed by Edward Denison, and a set of long-term historical studies that would examine growth in an international sample of rich nations, to be headed by Simon Kuznets.

When Kuznets approached Wesley Mitchell about the possibility of examining the economic development of nations around the world at the NBER, he encountered a less-than-enthusiastic response. This led to Kuznets's affiliation with the SSRC, begun in 1949, when he headed up a research program, funded by the Rockefeller Foundation, to examine the process of international economic growth. To facilitate the enterprise, the SSRC established the Committee on Economic Growth, which consisted of a distinguished set of economists who set out to explore "possible directions of empirical research on long-term changes in magnitude and structure of larger social units, such as nations, and regions of the United States" (*Items* [SSRC] 3, no. 1 [1949]: 7). In 1951, the decision was made to host a conference, arranged jointly with the Committee on Social Implications of Atomic

Energy and Technological Change, to discuss quantifiable measurement of technological change and "to consider the problems relating to the industrialization of three countries: India, Japan, and Brazil" (*Items* 5, no. 1 [1951]: 8). The conference was held in April 1952 to "weigh the possibilities of adding to knowledge through the comparative study of economic growth, 'possibilities' being judged with respect to the establishment of verifiable explanations of why growth has or has not taken place, and only incidentally with respect to current national or international policy issues" (*Items* 6, no. 2 [1952]: 22).

Three major works came out of this project: *French Economic Growth* (Carre, Dubois, and Malinvaud 1975); *British Economic Growth* (Matthews, Feinstein, and Odling-Smee 1982); and *Japanese Economic Growth* (Okawa and Rosovsky 1973). Many of the smaller projects, including an investigation of U.S. growth trends that was headed by Moses Abramovitz, were not completed, although they did produce a few papers. Although the committee failed to realize its initial lofty aims, it is important to realize that these three volumes in particular provided background on economic growth that had been neglected by the literature—chapters on the sweeping cultural changes that sustained the rapid advances in material growth that these countries experienced.

Kuznets's Lasting Contributions to Economics

Kuznets's work on national income accounting and the creation of measures of GDP are among his most lasting and influential contributions.[2] GDP continues to be the benchmark measure of the health of a nation's economy, relied on by policymakers at the national level. In 1999, Commerce secretary William Daley, joined by Federal Reserve chief Alan Greenspan and Martin Baily, chairman of the Council of Economic Advisers, paid tribute to this statistic and the economists who helped develop it at an awards ceremony. "Without the big picture the GDP gives us," Daley said, "[Greenspan and Baily] would not have the information they need to figure out what's going on in our

2. GDP is a slight variant of GNP.

economy and take appropriate action" (Berry 1999, E3). Organizations such as the International Monetary Fund and the World Bank rely on GDP measures to make funding decisions.

Now that the existence of measures of national income are taken for granted, GDP is more likely to be maligned for its deficits than celebrated for closing a gaping void in the policymaking process. It therefore bears repeating that the trailblazing Kuznets never oversold the application of GDP. Testifying to Congress in 1937, he emphasized: "The welfare of a nation can scarcely be inferred from a measurement of national income" (Kuznets 1934, 7). The prescriptions for these problems proposed in recent years, such as the human development index (HDI), owe a debt to Kuznets. The HDI has been computed by the UN Development Programme annually since 1990. In an effort to quantify the "process of enlarging people's choices" ("Human Development Initiative Programme," n.d.), the HDI is the average of combined measures of education, health, and the standard of living, which is based on a measure of GDP.

Kuznets is responsible for establishing a tradition of rigorous, disciplined research in economics in its early years as a quantitative science even with the data that was available to him, a shockingly small amount when compared to the vast stores of data that are now only as far away as the nearest laptop. He worked with and influenced some of the greatest economic minds of his generation, both colleagues and students. It may be that his greatest legacy is that of a teacher who nurtured the curiosity and tradition of rigorous research that took economics from the relatively small, insular discipline that it had been to the hugely influential science that it has become. His influence is felt in the best of policy-oriented research being conducted today.