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978-0-521-83238-0 - Wassily Leontief and Input-Output Economics

Erik Dietzenbacher and Michael L. Lahr

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Wassily Leontief and Input-Output Economics

Wassily Leontief (1905–1999) was the founding father of input-output economics, for which he received the Nobel Prize in 1973. This book offers a collection of papers in memory of Leontief by his students and close colleagues. The first part, “Reflections on input-output economics,” focuses upon Leontief as a person and scholar as well as on his personal contributions to economics. It includes contributions by Nobel laureate Paul A. Samuelson, who shares his memories of a young Professor Leontief at Harvard, and ends with the last joint interview with Wassily and his wife, to date previously unpublished. The second part, “Perspectives of input-output economics,” includes new theoretical and empirical research inspired by Leontief’s work and offers a wide-ranging sample of the current state of interindustry economics, a field Leontief founded. This is a strong collection likely to appeal to a wide range of professionals in universities, government, industry and international organizations.

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Preface

Wassily Leontief (1905–1999) was the founding father of input-output economics, for which he received the Alfred Nobel Memorial Prize in 1973. Comparisons have been made between Leontief’s framework and those developed by other great economists who came before him (e.g. François Quesnay, Karl Marx, Léon Walras and Ladislaus von Bortkiewicz). By making input-output an inherently large-scale empirical work, however, Leontief clearly distinguished his contribution from those of his “predecessors.” While most economists of the time respected the mathematical rigor of his new system, Leontief took greatest pride in input-output’s empirical grounding. Indeed, throughout his career Professor Leontief periodically admonished his colleagues (including John Maynard Keynes) for overemphasizing mathematical and theoretical elegance at the expense of empirical verification.

Since his path-breaking contribution in 1936, input-output analysis has become a major tool in quantitative economics. In addition to creating its own set of followers, input-output analysis helped to revive classical Ricardian and Marxian theories and inspired the analysis of the linear production systems used in neo-Walrasian theory. Input-output tables and techniques continue to be used widely to analyze all sorts of economic and policy issues. They are important in many subdisciplines of economics, such as economics of growth, economics of trade, development economics, energy and environmental economics, labor economics, regional science, structural economics, and national accounting. Input-output studies are important not just for academic economists but also for business analysts, policy-makers and consultants. Over sixty nations have current input-output accounts of their economies.

Today, the field of input-output analysis embraces any study that uses data in the format of (or somehow related to) input-output tables, employs an input-output technique as an analytical tool, or develops techniques for producing input-output accounts. The input-output literature covers material across a wide range of: theoretical backgrounds (e.g. classical, neoclassical, Walrasian, Keynesian, Ricardian, Marxian,

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and Sraffian economics); topics (e.g. growth, welfare, interdependence, (dis)equilibrium, and prices); policy issues (e.g. income distribution, employment, investments, migration, energy consumption, and environment); analytical frameworks (e.g. static, comparative static, dynamic, structural, spatial, and open versus closed); units and levels of analysis (e.g. enterprises, industries, metropolitan areas, regions, multiple regions, single nations, groups of countries, and the world); objects of analysis (e.g. goods and services, materials in physical quantities, prices, innovations, patented inventions, citations, information, and people); and technical focuses (e.g. data collection and compilation of input-output tables, economic theory, and applied mathematics).

Needless to say, developments in input-output analysis have been crucial for the evolution of economics as a science. As a simple example, the construction of large-scale computable general equilibrium (CGE) models, which are often used today in policy analysis, would not have been possible without Leontief's seminal contributions. Leontief also championed the evolving connections between economics and the world of physical relations, including science and technology. His last work, for example, focused on the interdependence of scientific disciplines, as measured by citations. Three of his students – Paul Samuelson, Robert Solow and James Tobin – have themselves received Nobel Prizes. Thus, it is clear that Wassily Leontief's impact on economics runs both broad and deep.

When questioned about his approach to economics, Wassily Leontief chaffed that he was simply a collector of facts. Further, the balletomane and connoisseur of fine wines confessed that another true passion was landing a nice Vermont brook trout. It was such charm and love of life that attracted people to him.

Not long after Leontief's death on February 5, 1999, we organized – with the help of Anne P. Carter – a set of plenary sessions in his memory at the Thirteenth International Conference on Input-Output Techniques (Macerata, Italy, August 2000). Such conferences are held every two to three years – a tradition that harkens to 1950, when the founder of our science organized the first one. For the memorial sessions we invited a group of renowned scholars in the field; all have made major contributions themselves and many were Leontief's students. Few declined the invitation to present a paper at the conference simply because they were detained elsewhere. The papers in this book were selected from the memorial sessions and the submissions of invitees who could not attend.

The contributions in this volume fall roughly into two categories. The papers in the first part, "Reflections on input-output economics," focus upon Leontief as a person and scholar or on Leontief's contributions to economics. The pieces that develop a personal view offer the reader

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a deeper understanding of the composition of Wassily Leontief. In this part, each paper reviews certain aspects of input-output economics as developed by the 1973 Nobel laureate. It starts with a contribution by Paul A. Samuelson, who shares with us his memories of a young Professor Leontief at Harvard, and it ends with the last joint interview of Wassily Leontief and his wife Estelle. The second part, “Perspectives of input-output economics,” includes new scientific research following the lines of Leontief’s own work. This latter set of papers is a sample of the state of the art of the field, covering a wide range of topics.

We heartily thank Anne P. Carter for her dedication and input in organizing the memorial sessions and in making the early preparations for this volume. She truly owns part of the credit, and we regret that we were not able to persuade her to sign on as a co-editor.

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