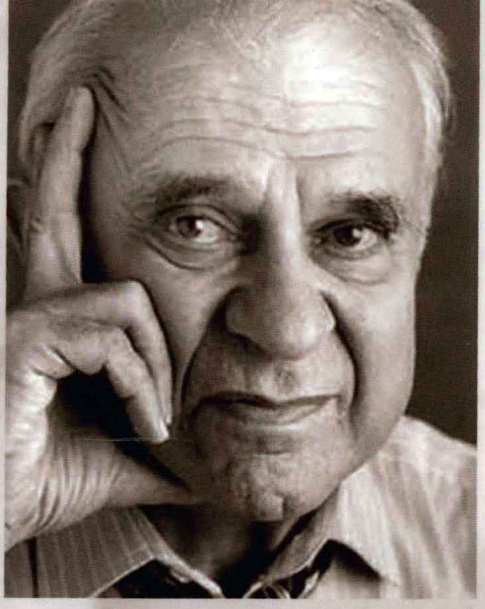

Edited by
Erik Dietzenbacher
and Michael L. Lahr

Wassily Leontief

and Input-Output Economics

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Wassily Leontief and Input-Output Economics

Erik Dietzenbacher
University of Groningen, the Netherlands

Michael L. Lahr
Rutgers University, New Jersey

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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Professor Leontief at Harvard, and ends with the last joint interview with Wassily and his wife, to date previously unpublished.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.

ERIK DIETZENBACHER is Associate Professor of International Economics and Business at the University of Groningen, the Netherlands. He is co-editor of *Input-Output Analysis: Frontiers and Extensions* (with Michael L. Lahr, 2001) and *Input-Output Analysis* (three volumes, with Heinz D. Kurz and Christian Lager, 1998), and is currently editor of *Economic Systems Research*, the official journal of the International Input-Output Association.

MICHAEL L. LAHR is Associate Research Professor at the Center for Urban Policy Research, Rutgers University, New Jersey. He is co-editor of *Input-Output Analysis: Frontiers and Extensions* (with Erik Dietzenbacher, 2001) and *Regional Science Perspectives in Economics: A Festschrift in Memory of Benjamin H. Stevens* (with Ronald E. Miller, 2001).

Contributors

CLOPPER ALMON is Professor of Economics at the Department of Economics, University of Maryland, College Park.

HENRI AUJAC was formerly head of the Bureau d'Informations et de Prévisions Economiques (BIPE) and formerly Professor of Economics at the Ecole des Hautes Etudes en Sciences Sociales, Paris.

ANDREW BRODY is Professor at the Institute of Economics, Hungarian Academy of Sciences, Budapest.

ANNE P. CARTER is the Fred C. Hecht Professor of Economics at the Department of Economics, Brandeis University, Waltham, Massachusetts.

CHRISTIAN DEBRESSON is Professor at the Département de Management et Technologie, Ecole des Sciences de la Gestion, Université du Québec à Montréal, and (since 1997/98) Visiting Professor at the School of Economics and Management of Tsinghua University, Beijing.

ERIK DIETZENBACHER is Associate Professor of International Economics and Business at the University of Groningen, the Netherlands.

FAYE DUCHIN is Professor of Economics at the Department of Economics, Rensselaer Polytechnic Institute, Troy, New York.

VIJAYA G. DUGGAL is Professor of Economics at the MIS and Decision Sciences Department, School of Business Administration, Widener University, Chester, Pennsylvania.

EMILIO FONTELA is Professor at the Universidad Autónoma de Madrid.

MAURIZIO GRASSINI is Professor at the Dipartimento di Studi sullo Stato, Università degli Studi di Firenze, Italy.

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LAWRENCE R. KLEIN is Benjamin Franklin Professor Emeritus of Economics at the University of Pennsylvania, Philadelphia, and the 1980 winner of the Nobel Memorial Prize in Economic Sciences.

ROBERT E. KUENNE is Emeritus Professor of Economics at Princeton University and Director, General Economics Systems Project.

MASAHIRO KURODA is a professor and former director at the Faculty of Business and Commerce, Keio University, Tokyo.

MICHAEL L. LAHR is Associate Research Professor at the Center for Urban Policy Research, Rutgers University, New Brunswick, New Jersey.

BART LOS is Assistant Professor at the Department of International Economics and Business, University of Groningen, the Netherlands.

WILLIAM H. MIERNYK is Benedum Emeritus Professor of Economics and Director Emeritus at the Regional Research Institute, West Virginia University, Morgantown.

KOJI NOMURA is Associate Professor at the Institute for Economic and Industry Studies, Keio University, Tokyo.

IWAO OZAKI is Professor at the Keio Economic Observatory (Sangyo Kenkyujo), Keio University, Tokyo.

JEAN H. P. PAELINCK is Emeritus Professor at Erasmus University, Rotterdam.

KAREN R. POLENSKE is Professor of Regional Political Economy and Planning in the Department of Urban Studies and Planning at the Massachusetts Institute of Technology, Cambridge, Massachusetts.

THIJS TEN RAA is Senior Lecturer in Econometrics at the Centre for Economic Research, Faculty of Economics and Business Administration, Tilburg University, the Netherlands.

CYNTHIA SALTZMAN is Associate Professor and head of the Department of Economics, Business School, Widener University, Chester, Pennsylvania.

PAUL A. SAMUELSON is Professor Emeritus at the Department of Economics, Massachusetts Institute of Technology, Cambridge, Massachusetts, and the 1970 winner of the Nobel Memorial Prize in Economic Sciences.

SHUNTARO SHISHIDO is Professor Emeritus, International University of Japan and University of Tsukuba.

ALBERT E. STEENGE is Professor at the Department of Economics in the Faculty of Public Administration and Public Policy, University of Twente, Enschede, the Netherlands.

EDWARD N. WOLFF is Professor in the Department of Economics, New York University.

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,

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

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.

Erik Dietzenbacher, Groningen
Michael L. Lahr, New Brunswick, NJ

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