

II

New Studies,
Published Reports,
and Conferences
on Research

NEW STUDIES

During 1967 a number of new studies were begun. Some were extensions of earlier research; others represented wholly new investigations.

The Economics of Health. A program of research in this area, under the direction of Victor R. Fuchs, is being conducted with the support of the Commonwealth Fund and the U.S. Public Health Service (Department of Health, Education, and Welfare). Michael Grossman, Morris Silver, and Kong Kyun Ro are currently examining separate aspects of this subject. In his study of the consumer demand for health, Grossman has developed a theoretical model to predict the effects of age, income, and education on the demand for both health and health services. Silver's study of Negro-white differentials in mortality examines mortality patterns by sex, age, and geographic area, and investigates their relation to economic and social factors. Ro is studying the socioeconomic determinants of hospital use.

Labor Markets. Phillip Cagan has begun an investigation of long-run trends and short cycles in wages, prices, and output. The results thus far support the view that current wage rates are significantly affected by both past and current price changes. Past price changes are found to have a delayed effect, i.e., anticipated increases cause wages to rise even after business conditions are depressed.

William D. Nordhaus, Cowles Foundation at Yale University, is formulating and testing a model designed to analyze price and wage behavior in a number of industrial sectors as well as in the economy as a whole.

Sherwin Rosen, a Research Fellow from the University of Rochester, is undertaking a study of short-run variation in employment and hours in manufacturing industries. By constructing a model of the labor market, Rosen intends to explain the observed variation in hours of work per man.

Mohammed I. Nadiri, a Research Fellow from Northwestern University, has undertaken an analysis of the factors determining the level

of employment in manufacturing industries. The study focuses on the effect of real wages and user costs, capital stock and its rate of utilization. Ultimately, the scope of the project may be extended to develop a model that incorporates both the employment and the investment decisions of the firm.

Urban Economic Problems. John R. Meyer and John F. Kain, Harvard University, are formulating plans for a research program in this field, with the aid of an Advisory Committee. The following have agreed to serve on the Committee: Wallace J. Campbell, Foundation for Cooperative Housing (chairman); William G. Colman, Advisory Commission on Intergovernmental Relations; Anthony Downs, Real Estate Research Corporation; Nathan Glazer, University of California, Berkeley; Charles M. Haar, Department of Housing and Urban Development; Vivian W. Henderson, Clark College; Saul B. Klamman, National Association of Mutual Savings Banks; Sherman J. Maisel, Board of Governors of the Federal Reserve System; Boris Shishkin, American Federation of Labor and Congress of Industrial Organizations; Norman Strunk, United States Savings and Loan League; James Q. Wilson, Harvard University; and Kenneth M. Wright, Life Insurance Association of America.

Exploratory work on two topics is being conducted. The first pertains to industry location within metropolitan areas, one of the major forces for change in metropolitan structure which is intimately associated with transport planning. The other is concerned with the changing patterns of adaptation of the housing stock to new uses and applications in urban areas.

Social Security. An Advisory Committee, under the chairmanship of C. Lowell Harriss, Columbia University, was appointed last year to aid in the consideration of new research on problems of social security and income maintenance. Other members of the Committee are: Gary S. Becker, Columbia University and National Bureau of Economic Research; George F. Break, University of California; J. Douglas Brown, Princeton University; Benjamin Chinitz, Brown University; David L. Grove, In-

ternational Business Machines Corporation; W. Lee Hansen, University of Wisconsin; Ida C. Merriam, Social Security Administration; John R. Meyer, Harvard University and National Bureau of Economic Research; Daniel P. Moynihan, Joint Center for Urban Studies of the Massachusetts Institute of Technology and Harvard University; Roger F. Murray, Teachers Insurance and Annuity Association; James J. O'Leary, Lionel D. Edie & Co., Inc.; Ray M. Peterson, F.S.A. (formerly with Equitable Life Assurance Society); Harvey H. Segal, The Washington Post; Bert Seidman, American Federation of Labor-Congress of Industrial Organizations; Eli Shapiro, Harvard University; Vera Shlakman, Columbia University School of Social Work; Robert M. Solow, Massachusetts Institute of Technology; Richard E. Stewart, New York State Department of Insurance; Stanley S. Surrey, U.S. Treasury Department; and Norman B. Ture, National Bureau of Economic Research.

During the summer Colin Campbell, Lester Thurow, Michael Piore, and Rosanne Cole conducted some exploratory investigations, which were reported to the Committee. Present plans are to postpone further work in this area until such time as funds and staff are adequate to fulfill either specific projects of interest in this field or the large undertaking that the importance of the subject warrants.

U.S. Investment Abroad and U.S. Exports. The relation between U.S. direct investment in manufacturing abroad and U.S. exports has been the subject of considerable controversy. In principle, one can distinguish both positive and negative effects of direct investment on exports, but there is not at present any very good basis for judging the relative size of these effects. A project undertaken in collaboration with the Office of Business Economics of the Department of Commerce is aimed both at improving the quality and range of the data and at throwing more light on the causal relations in question. The Department of Commerce plans to issue a report corresponding to the first objective and the National Bureau expects to publish the more analytical study corresponding to the second. Robert E. Lipsey

and Merle Yahr are responsible for the planning of the latter study at the National Bureau and for coordination with the Department of Commerce. The National Science Foundation is supporting their work.

Diffusion of Industrial Technology. At the invitation of economic research institutes in six European countries (Austria, France, Germany, Italy, Sweden, and the United Kingdom), the National Bureau is exploring the possibility of a joint investigation into the diffusion of technology. It is contemplated that the investigation would consider major technological innovations in a number of industries and would seek to explain why the new processes have disseminated faster in some countries than in others. The search for explanations would presumably entail, for each industry or process, a distinction between (1) technological characteristics of the industry determining the optimal rate of diffusion according to conditions in each country with respect to such factors as the nature and supply of inputs, age of existing equipment, capital intensity of the new process, etc., and (2) economic or market characteristics of the country, including managerial structure and motivation, that may help to explain the difference between the optimal and the realized rate of diffusion.

Alfred H. Conrad and Donald S. Shoup are conducting the preliminary investigations for the National Bureau and have represented the Bureau at meetings with the cooperating research institutes. So far, the work is exploratory, aimed at judging the feasibility of developing common research designs and objectives and of obtaining the necessary data inputs.

Business Cycle Model. Gregory C. Chow, Arthur F. Burns, and Geoffrey H. Moore are collaborating in the construction of an econometric model of business cycles. They intend, as a first step, to formulate and test a highly aggregative model that encompasses certain essential elements in economic fluctuations as described by Burns in a recent paper prepared for the new *International Encyclopaedia of the Social Sciences*. The model is divided into five major sectors and emphasizes the price-wage-profit mechanism in business fluctuations.

Burns' paper is one of several to appear in a proposed volume of his essays entitled *The Business Cycle in a Changing World*.

Econometric Forecasts. Yoel Haitovsky, a Research Fellow from Technion-Israel Institute of Technology, in collaboration with Michael Evans, University of Pennsylvania, has begun to investigate the short-term prediction record of several quarterly econometric models of the United States. The project includes a comparison of conditional with unconditional *ex ante* estimates. One of the issues the study should help illuminate is whether predictions from an econometric system are superior to single equation forecasts.

Measurement of Capital. Robert J. Gordon, Harvard University, is carrying forward his earlier work on the estimation of capital stocks and flows, including the development of new construction price indexes from 1919 to date.

Interest Rates. Thomas Sargent, Carnegie-Mellon University, is undertaking studies pertaining to the term structure of interest rates and the relations between prices and interest rates. His work extends some of the research that has been conducted in the Bureau's interest rate project, described in Section 5 of Part III.

Agricultural Productivity. Franklin M. Fisher and Peter Temin, Massachusetts Institute of Technology, have begun a study of the changing supply functions for wheat over the history of the country. Regional differences at a given time and changes in efficiency in the production of wheat over time will be examined.

Executives as Owners and as Managers. Wilbur Lewellen, Purdue University, is extending his study of executive compensation to cover the holdings by executives of stock in their own companies. His results are expected to throw light on whether top executives are likely to pursue the interests of shareholders as vigorously today as in a simpler industrial environment.

Industrial Diversification and Integration. Michael Gort, Northwestern University, plans to extend the analysis in his *Diversification and Integration in American Industry* (NBER, 1962) by the use of newly available data. The

new work is expected to cover trends in diversification since 1954, diversification at the plant as well as at the firm level, the contribution of mergers to conglomerate growth, and the role of vertical integration in diversification.

Computer Utility. New computer capabilities, accompanied by new developments in economic and statistical theory, promise to alter radically over the next few years the methods of conducting economic research and the kinds of problems that can be tackled. We have begun to explore the possibility of establishing an economic research utility built around the new technology of time-sharing computers. Such a tool might offer to economists both at the National Bureau and elsewhere the facility of a large data bank, programs for the manipulation of these data by standard statistical techniques, and programs for applying specialized methods to the analysis of economic data, including model estimation and simulation.

PUBLICATIONS

Since January, 1967, fifteen reports on research conducted by the staff and five conference volumes have been published. Six research reports are currently in preparation for press.

A new periodical, the *National Bureau Report*, issued to NBER subscribers and others interested in the field of economic research, serves essentially as a newsletter on research in progress and other staff activities. This publication will be accompanied by occasional supplements containing more substantial research reports.

In 1967, the publications department of the Bureau was augmented by the appointment of Mark S. Reinsberg to the newly created position of Director of Publications.

Joan R. Tron assumed the duties of Editor-in-Chief upon the resignation of James F. McRee, Jr. New members added to the publications staff in 1967 include: Linda Kyriakou, information editor; Gnomi Schrift, assistant editor; Virginia Meltzer, editorial assistant; and Margaret Matteson, proofreader.

REPORTS PUBLISHED SINCE JANUARY 1967

Accelerated Depreciation in the United States, 1954-60, by Norman B. Ture (Fiscal Studies 9, 1967, xix + 238 pp., \$7.50)

This study is the first comprehensive investigation of taxpayer response to postwar liberalization in tax rules governing depreciable assets and of the role it plays in promoting fixed capital accumulation and economic growth. It measures the extent to which the new provisions have been used by businesses and estimates the effect of the new depreciation methods on the amount of corporate depreciation, income tax liabilities, and capital outlays.

An Appraisal of Short-Term Economic Forecasts, by Victor Zarnowitz (Occasional Paper 104, 1967, xii + 144 pp., \$5.00)

This study evaluates an extensive record of forecasts of general economic activity in the United States. It compares annual and quarterly forecasts of gross national product and industrial production with actual values and with mechanical extrapolations. It also analyzes the accuracy of predictions of GNP components and suggests ways of improving both these forecasts and the use of data.

Balance-of-Payments Adjustment Policies: Japan, Germany, and the Netherlands, by Michael Michaely (Occasional Paper 106, 1968, x + 112 pp., \$2.75)

Closely tied in with current studies of international liquidity, this study examines how and to what extent balance-of-payments disturbances affect the economic policies of some of the major trading nations. Michaely provides information on three countries—Japan, Germany, and the Netherlands—and the different ways they have responded to disturbances in their international payments.

Cyclical Fluctuations in the Exports of the United States Since 1879, by Ilse Mintz (Studies in Business Cycles 15, 1967, xx + 332 pp., \$10.00)

This study surveys the fluctuations of domestic exports in relation to American business cycles for the period 1879-1961 and examines the traditional view that business contractions

lead to increased exports. It finds the theory valid for some classes of exports but points out that, while these exports do actually increase in times of recession, the lower prices prevalent during these periods more than offset the gain in quantity. The study also seeks to define the relation between price cycles and cycles in quantities shipped, and to measure the differences among cyclical patterns of the various types of exports. It also takes account of the movements in world demand for U.S. products.

Determinants of Investment Behavior, Robert Ferber, editor (Universities-National Bureau Conference Series 18, 1967, xi + 611 pp., \$15.00)

This conference volume, consisting of a number of papers and discussions by leading economists, is divided into five parts: (1) an empirical study of consumer investment and a summary of current theory on business investment behavior; (2) a study of business investment financing—estimating the cost of capital applicable to investment decisions under uncertainty and considering the role of financial behavior in investment policy; (3) studies of consumer investment—the location of potential investment for housing, the role of financial intermediaries in residential housing, the determinants of consumer investment in durable goods, and the dynamics of consumer choice of financial assets; (4) papers on fixed business investment and the interrelations of the firm's investment, dividend payments, and use of external finance; (5) new evidence on the relation of anticipations to investment behavior.

Differentials in Hourly Earnings by Region and City Size, 1959, by Victor R. Fuchs (Occasional Paper 101, 1967, x + 50 pp., \$1.00)

This study, based on comprehensive estimates taken from the Bureau of the Census sampling of the 1960 Census, finds that workers in metropolitan areas of a million and over earn 13 per cent more than similar workers in metropolitan areas of less than a million and 25 to 35 per cent more than those outside metropolitan areas. It also finds a 25 per cent differential between the South and the rest of the country. There is a detailed treatment of sources and the extent of wage differentials associated with a worker's age, sex, color, and years of schooling.

Employee Compensation Under the Income Tax, by C. Harry Kahn (Fiscal Studies 10, 1968, xii + 142 pp., \$5.00)

This study, covering the period 1929–64, shows how wages and salaries differ from other income sources in their coverage on tax returns, in their distribution by income size groups, and in the provisions affecting their inclusion in the statutory concept of income. Among other things, the study deals with special problems in the taxation of wages and salaries, such as taxes on the income of working wives, earned versus unearned income, excludable sick pay, and deferred compensation.

Executive Compensation in Large Industrial Corporations, by Wilbur G. Lewellen (Fiscal Studies 11, 1968, xxv + 371 pp., \$13.50)

In this period of high and progressive income taxation, there has been a major transformation of the pay structure for corporate executives away from highly taxed salaries and bonuses and toward pension benefits, profit sharing plans, deferred compensation contracts, stock options, and other arrangements subject to lower tax rates. This study provides a method for determining the current income equivalent of all the most commonly used forms of non-salary compensation and shows that these forms of compensation constituted more than half the total after-tax remuneration of top executives in recent years. However, the study also shows that the real value of total after-tax compensation of top executives was no higher in 1963 than before World War II.

Forecasting and Recognizing Business Cycle Turning Points, by Rendigs Fels and C. Elton Hinshaw (Studies in Business Cycles 17, 1968, xvii + 131 pp., \$4.50)

As part of the Bureau's research into the quality of economic forecasts, this study investigates the degree of accuracy achieved in predicting business cycle turning points. Fels bases his analysis on the published opinions of the country's ten major business cycle forecasters; Hinshaw studies the forecasting record of the Federal Open Market Committee.

Imports of Manufactures from Less Developed Countries, by Hal B. Lary (Studies in International Economic Relations 4, 1968, xvii + 286 pp., \$8.50)

This study is based on the premise that in-

creased trade with the developed world is a necessary concomitant of economic growth in the less developed nations, and that any advantages that these countries may gain in the markets of the developed world will be concentrated in "labor-intensive" manufactures—i.e., products that require large amounts of relatively unskilled labor compared with both human capital (skills) and physical capital. The report discloses that, although the trade of labor-intensive manufactures is still small (amounting in 1965 to less than one-tenth of total imports by developed from less developed countries), it has grown rapidly in recent years. The author expects continued growth of this trade and notes that one of its preconditions is freer access to the markets of the developed world.

Indicators of Business Expansions and Contractions, by Geoffrey H. Moore and Julius Shiskin (Occasional Paper 103, 1967, xiii + 127 pp., \$6.00)

As part of the comprehensive research being conducted by the National Bureau to evaluate and improve short-term forecasts of aggregate economic activity, this study provides improved methods for early warning of business recessions and recoveries and brings up to date the National Bureau list of business cycle indicators. It presents a new method of scoring the relative usefulness of different statistical series for analyzing short-term business conditions and prospects. Among the new indicators included are job openings at U.S. Employment Service offices, delinquency rates on installment loans, export orders for durable goods, and man-hours of nonagricultural employment. New composite indexes of the leading and other indicators are also provided.

The Industrial Composition of Income and Product, John W. Kendrick, editor (Studies in Income and Wealth 32, 1968, viii + 494 pp., \$14.00)

The studies collected in this volume were prompted by recent major advances in national accounts reporting. They consider the implications of the new estimates, and their construction and use. These studies take the first steps toward building a comprehensive model to explain the interrelated sets of output and input prices and quantities which underlie industrial structure.

Information, Expectations, and Inventory Fluctuations: A Study of Materials Stock on Hand and on Order, by Ruth P. Mack (Studies in Business Cycles 16, 1967, xiv + 306 pp., \$10.00)

As a detailed analysis of inventory fluctuations and purchasing, this study examines statistics of stocks on hand and on order for merchandise bought by department stores and materials purchased by manufacturers of machinery, autos, and other durable goods. One of the findings is that variations in the volume of merchandise on order serve as a gauge in predicting inventory fluctuations. Part I of the report deals with questions and sources of evidence and presents a brief review of empirical work with inventory models, identifying and analyzing the six major functions of stocks on hand and on order; part II describes how stocks and purchasing behave, while part III explains this behavior and examines relationships to the entire economy. The report concludes with a series of suggested directions for further study.

Issues in Defense Economics, Roland N. McKean, editor (Universities-National Bureau Conference Series 20, 1967, xi + 286 pp., \$7.50)

The issues treated in this Universities-National Bureau Conference volume include matter currently under debate by defense analysts, notably the economics of the missile race, nuclear deterrence and arms control, management of the cold war, the organization of the Department of Defense, and the efficient administration of defense contracting. Several contributions seek to determine the useful application of economic concepts and analysis to problems of defense; one advocates reliance upon the principle of comparative advantage as a means of distributing the defense burden throughout the Western alliance. Included is a discussion of the strategy of inflicting costs, translating war to an essentially economic arena in which the opponents impose ever greater financial burdens on each other's defense establishments.

National Economic Planning, Max F. Millikan, editor (Universities-National Bureau Conference Series 19, 1967, x + 413 pp., \$10.00)

This book of papers and discussion by prominent economists is in two parts. The first con-

tains five papers dealing with functional issues in planning: the methodology of planning models, locational choices in planning, techniques of project appraisal, implications of planning for trade and capital movements, and the planning of public expenditures. The second part describes the nature of planning and evaluates the planning experience in four countries: the USSR, France, India, and Yugoslavia.

Productivity Differences Within the Service Sector, by Victor R. Fuchs and Jean Alexander Wilburn (Occasional Paper 102, 1967, xiii + 109 pp., \$3.00)

This third of the National Bureau reports on productivity in the service industries attempts to study productivity at a much finer level of industry detail than the preceding reports. It consists of two studies: the first, by Victor Fuchs, examines differential trends in productivity across seventeen service industries; the second, by Jean Wilburn, analyzes the different and contradictory trends in productivity between two related service industries, barber and beauty shops.

The Quality of Consumer Instalment Credit, by Geoffrey H. Moore and Philip A. Klein (Studies in Consumer Instalment Financing 13, 1967, xxii + 260 pp., \$8.50).

This study seeks to measure and analyze variations in credit quality—i.e., the degree of risk attached to any given credit transaction. It explores the growth in consumer instalment credit that has taken place since the 1920's and particularly since the end of World War II. A principal finding is that the degree of credit risk is affected by both the terms of the loan and the characteristics of the borrower. The authors also treat the effect of business cycle fluctuations on the quality of consumer credit, concluding that stable business conditions have been largely responsible for the maintenance of good over-all repayment experience.

The Theory and Empirical Analysis of Production, Murray Brown, editor (Studies in Income and Wealth 31, 1967, x + 515 pp., \$12.50).

The eight papers that comprise this volume are divided into three sections. The first reviews recent theoretical and empirical developments in production; the second presents new approaches to analysis of the production func-

tion; and the third examines production analysis in relation to economic growth policy. Also included is a brief comment by former U.S. Senator Paul H. Douglas on the Cobb-Douglas production function.

Trends in Corporate Bond Quality, by Thomas R. Atkinson (Studies in Corporate Bond Financing 4, 1967, xvi + 106 pp., \$5.00).

This study investigates corporate bond defaults in the postwar period, the quality of new bond issues as measured by agency and market ratings, and such factors as direct placements versus public offerings, convertible versus non-convertible bonds, earning coverage, and lien position. It finds a discernible improvement in bond quality; however, most of the measures used show that corporate bonds were of sounder quality in the earlier postwar years than more recently.

Yields on Corporate Debt Directly Placed, by Avery B. Cohan (General Series 84, 1967, xxii + 180 pp., \$7.50).

This report provides, and analyzes, new quarterly series on interest rates paid by corporations on bonds directly placed with lenders. It discloses that, contrary to the belief of many borrowers, lenders, and investment bankers, yields on directly placed securities are not consistently higher than those on public offerings. They tend to be higher solely on issues of large well-known companies. For all others, yields on direct placements are found to be about the same as, or lower than, those on public issues. The interest rates of industrial, public utility, and finance company direct placements are dealt with separately in this report, and separate yield series are provided for each.

FORTHCOMING PUBLICATIONS

Economic Aspects of Pensions: A Summary Report, by Roger F. Murray (General Series 85).

Pension Funds of Multiemployer Industrial Groups, Unions, and Nonprofit Organizations, by H. Robert Bartell, Jr., and Elizabeth T. Simpson (Occasional Paper 105).

The Personal Exemptions in the Federal Income Tax, by Lawrence H. Seltzer (Fiscal Studies 12).

Population, Labor Force, and Long Swings in Economic Growth: The American Experience, by Richard A. Easterlin (General Series 86).

Some Measures of the Quality of Agricultural Credit, by George K. Brinegar and Lyle P. Fettig (Technical Paper 19).

Tax Changes and Modernization in the Textile Industry, by Thomas M. Stanback, Jr. (Fiscal Studies 13).

CONFERENCES

Besides the research conducted by its own staff, the National Bureau sponsors two continuing groups that plan and organize research conferences: the Conference on Research in Income and Wealth and the Universities-National Bureau Committee for Economic Research. Economists from universities, government agencies, and other institutions participate in these conferences. They are invited to prepare papers growing out of their own research and to discuss those prepared by others. Volumes of conference proceedings recently published or in press are listed in the preceding section.

The activities of the two conference-organizing groups, described below, are supported by a grant from the National Science Foundation as well as by other funds of the National Bureau. In addition, a Conference on Technology and Competition in International Trade is being financed under a grant from the Ford Foundation. A Conference on Forecasting and Recognizing Turns in the Business Cycle was jointly sponsored by the National Association of Business Economists and the National Bureau (see p. 77).

CONFERENCE ON RESEARCH IN INCOME AND WEALTH

The report of a special conference held June 1966 on "Proposals for Revision of the United Nations System of National Accounts" was prepared by Helen Stone Tice and appeared in the March 1967 issue of *The Review of Income and Wealth*.

During 1967 two meetings were held: A Conference on the Size Distribution of Income and Wealth, on March 24-25 at the University of Pennsylvania, and a Conference on Produc-

tion and Productivity in the Service Industries, on October 20-21 at the Dominion Bureau of Statistics in Ottawa. The proceedings of both meetings are being prepared for press.

Under the chairmanship of W. Lee Hansen, a program committee consisting of Gary S. Becker, Samuel Bowles, Albert Fishlow, Alice M. Rivlin, and Theodore W. Schultz has arranged a Conference on Education and Income, which will be held on November 15-16, 1968, at the University of Wisconsin in Madison. The papers to be presented are:

Educational Production Functions

Samuel Bowles, Harvard University

Educated Labor as an Input in Production Processes

Zvi Griliches, University of Chicago

Education and the Personal Distribution of Income

Barry R. Chiswick, University of California
Schooling and Earnings: Differential Impact for Whites and Nonwhites

David M. O'Neill, University of Pennsylvania
Growth in Demand for Secondary Education in the United States in the Early 20th Century
Albert Fishlow, University of California at Berkeley

Human Capital and International Specialization
Peter Kenen, Columbia University

Human Capital: Its International Movement
Anthony Scott, University of British Columbia

A program committee consisting of Bert G. Hickman (chairman), Zvi Griliches, Lawrence R. Klein, and Geoffrey H. Moore has been authorized to arrange a Conference on Econometric Models and Cyclical Behavior. The meeting is planned for the Fall of 1969 and will be jointly sponsored by the Social Science Research Council's Committee on Economic Stability and by the Conference on Research in Income and Wealth.

Members of the executive committee are: Robert Eisner (chairman), Evsey D. Domar, Graeme S. Dorrance, Morris R. Goldman, Zvi Griliches, F. Thomas Juster, Irving B. Kravis, Milton Moss, Malcolm C. Urquhart, Harold W. Watts, and Mildred E. Courtney (secretary).

UNIVERSITIES-NATIONAL BUREAU COMMITTEE FOR ECONOMIC RESEARCH

The Conference on the Role of Agriculture in Economic Development was held on December 1 and 2, 1967, with Erik Thorbecke as chairman. Other members of the planning committee were Karl A. Fox, Bruce F. Johnston, Max Millikan, William H. Nicholls, and Gustav Ranis.

A Conference on the Economics of Public Output was held at the Woodrow Wilson School of Public and International Affairs, Princeton University, on April 26-27, 1968. Julius Margolis is chairman of the program committee, and other members are David F. Bradford, William Capron, Robert Dorfman, Victor R. Fuchs, Werner Z. Hirsch, and Burton A. Weisbrod. The following papers were presented:

Political and Economic Evaluation of Social Effects and Externalities

Kenneth Arrow, Stanford University

Recent Developments in the Measurement of Public Outputs

Henry Rowen, Rand Corporation

The Value of Output of an Appropriable Commodity—the Post Office Department

John Haldi, Bureau of the Budget

Redistributional Effects of Urban Renewal

Anthony Downs, Real Estate Research Corporation

Externalities and Repayment Policies

William Vickrey, Columbia University

Administrative Decision-Making and Pricing:

Externality Analysis and Regulatory Design

Oliver Williamson, University of Pennsylvania

Decentralization, Externalities, Equity, and Inter-Government Relations

J. Rothenberg, Massachusetts Institute of Technology

Changing Roles of Different Levels of Government

George Break, University of California, Berkeley

An Efficiency Basis for Federal Fiscal Equalization

James M. Buchanan, University of Virginia, and Richard E. Wagner, University of California, Irvine

“Systematic Errors” in Cost Estimation in Public Investment

Maynard Hufschmidt, University of North Carolina

Cost Functions and Budgets

Gene Fisher, Rand Corporation

A second conference this year will be held on October 11-12 at the Carnegie International Center, New York City, on Technology and Competition in International Trade. The planning committee consists of Raymond Vernon, chairman, Alfred H. Conrad, Harry G. Johnson, Hal B. Lary, and Edwin Mansfield. The following papers are being prepared:

Technological and Other Influences on the Commodity Composition of Trade

Gary C. Hufbauer, University of New Mexico

Technology and International Trade in Agricultural Products

Vernon W. Ruttan, J. P. Houck, and R. E. Evanson, University of Minnesota

Technological Factors in a World Trade Matrix

W. H. Gruber, Northeastern University, and

Raymond Vernon, Harvard University

A Model Including the Technological Factor in Trade and Development

Michael Bruno, Hebrew University

An Analysis of Technology, Trade and Development

R. R. Nelson, Yale University

Technology and Exports in Israel's Industry

Seev Hirsch, Tel Aviv University

Transfer of Aircraft Technology from United States to Japan

G. R. Hall and R. E. Johnson, Rand Corporation

The Technological Factor and Foreign Direct Investment

J. H. Dunning, University of Reading

R & D and U.K. Trade Patterns

Christopher Freeman, University of Sussex

Some Aspects of the Technological Factor and International Trade Theory

J. S. Chipman, University of Minnesota

Some Aspects of the Technological Factor and International Trade Theory

R. W. Jones, University of Rochester

The State of Theory in Relation to Empirical Analysis

Harry G. Johnson, London School of Economics and University of Chicago

The next annual meeting of the Universities-National Bureau Committee for Economic Research will be held in conjunction with this conference.

The annual meeting of the Universities-National Bureau Committee was held on December 1, 1967 in conjunction with the Conference on the Role of Agriculture in Economic Development. The Committee approved the admission of Michigan State University to membership.

Carl F. Christ of Johns Hopkins University was elected Chairman of the Universities-National Bureau Committee for Economic Research, succeeding Rendigs Fels, who had held that post since April 13, 1962. Members of the Committee voted an expression of their gratitude to Mr. Fels "for his outstanding stewardship as Chairman."

Thirty-six universities offering graduate work in economics and emphasizing research, together with the National Bureau, are represented on the committee. The participating universities and their present representatives are:

Buffalo	Daniel Hamberg
California, Berkeley	Albert Fishlow
California, Los Angeles	William R. Allen
Carnegie Institute of Technology	Michael Lovell
Chicago	H. Gregg Lewis
Columbia	Phillip Cagan
Cornell	Richard T. Selden
Duke	John Blackburn
Harvard	John R. Meyer
Illinois	Marvin Frankel
Indiana	Robert W. Campbell
Iowa State University	Dudley G. Luckett
Johns Hopkins	Carl F. Christ

Massachusetts Institute of Technology	Paul H. Cootner
McGill	Earl F. Beach
Michigan	Warren L. Smith
Michigan State University	Robert F. Lanzillotti
Minnesota	James M. Henderson
New School for Social Research	Philip Nelson
New York	Bruno Stein
North Carolina	Henry A. Latané
Northwestern	Richard B. Heflebower
Ohio State University	Paul G. Craig
Pennsylvania	Almarin Phillips
Pittsburgh	Jacob Cohen
Princeton	Ansley J. Coale
Queen's	T. M. Brown
Stanford	Moses Abramovitz
Texas	Walter C. Neale
Toronto	D. C. MacGregor
Vanderbilt	Rendigs Fels
Virginia	G. Warren Nutter
Washington (Seattle)	Yoram Barzel
Washington (St. Louis)	Hyman P. Minsky
Wisconsin	Leonard W. Weiss
Yale	Richard Ruggles

Other members of the committee elected as members at large are Raymond T. Bowman, G. A. Elliott, Martin R. Gainsbrugh, Burton H. Klein, Walter S. Salant, Herbert Stein, and George J. Stigler; and Geoffrey H. Moore representing the National Bureau of Economic Research.

The members of the executive committee are Carl F. Christ (chairman), Walter S. Salant (vice chairman), Moses Abramovitz, Rendigs Fels, James M. Henderson, Michael Lovell, and Geoffrey H. Moore. Robert P. Shay is secretary.