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NEW STUDIES

Since 1946 the level of long-term bond yields has been higher at each successive peak in business activity than at the preceding peak. Despite this upward drift, the declines in yields during the last three periods of business contraction (1953-54, 1957-58, and 1960-61) have been more prompt and larger than in most previous periods of slackening business activity. What has prompted the upward drift and the sharper drops? What have been the consequences of this altered behavior?

These are questions that students of monetary policy, business cycles, and economic growth speculate upon. They have many ramifications, for many kinds of obligations bear a return called an interest rate. A wealth of data on interest rates and security prices exists, although there are still some important gaps. The volume of data relating to the supply of and demand for the various types of obligations has been growing rapidly, too. The time seems ripe, therefore, to attempt to coordinate these materials and establish what generalizations we can about the behavior of interest rates and the factors that act and interact with them.

A three-year study of interest rates under the direction of Joseph Conard and William Brown has been started, with the assistance of a grant from the Life Insurance Association of America. The study will focus on the interpretation and analysis of movements in the level and structure of rates. Plans for the study are described in Part III.

In recent months considerable public attention has been directed to interest rate differentials between the United States and other countries, and particularly to the influence these disparities seem to have upon our balance of payments and the flow of gold out of our reserves. The emergence of this problem, curiously enough, demonstrated the timeliness both of a basic study that was brought to completion in 1959 and of one that was begun in 1960. The completed study, issued as the massive International Financial Transactions and Business Cycles, by Oskar Morgenstern, deals in part with intercountry differentials in

PART II

Activities During 1960 interest rates and their relation to economic developments, especially international gold flows, in the period before World War II. Since this country has had no experience since the 1930's comparable to the international financial situation that has recently arisen, Morgenstern's analysis of the historical record and the impact of central bank policy upon it could scarcely be more timely.

The new study, which is being directed by Hal Lary, will deal directly with the emerging position of the United States on the international economic scene. The investigation is being supported by a grant from the Rockefeller Foundation. Lary reports in Part III on plans for the study and on certain tentative views derived from an examination of the adjustments in this country's international payments since 1953. Perhaps the most interesting of his results so far is the suggestion that, if account is taken of the collective impact of the various disturbances which have been concentrated in this relatively brief period, the capacity of the United States to adjust appears much greater than the movements in the overall deficit in our balance of payments alone would suggest.

As Lary observes, the strains recently experienced in our balance of payments present issues which seriously complicate economic policy formation. If not satisfactorily resolved, they may handicap the development and implementation of policies for stimulating longrun growth. This situation should not, of course, deter us from giving the most careful consideration to such policies. To this end, we have recently completed plans for a study of tax policies from the standpoint of their influence upon economic growth. The project will be under the direction of Norman Ture, now on the staff of the Joint Economic Committee of the U.S. Congress. Financial support for the study has been assured by a grant from the Rockefeller Brothers Fund.

Although this project will not neglect considerations of equity and stability, it will focus mainly on the problem of growth. It will consider and, to the extent possible, measure the effects of high graduated personal income taxes on incentives to earn, to save, and to invest. The influence of corporate income taxes, depreciation provisions, and other tax policies on the ability of small and large businesses to prosper and grow will be treated. Excise taxes and estate and gift taxes will come under review as well. The new study will benefit from the investigation of different facets of the individual income tax that has been carried out under Lawrence Seltzer's direction and is nearing completion (see Part III).

New research on business cycles, with special reference to the use of electronic computers in studying cyclical phenomena, was launched during 1960, with the assistance of grants from the National Science Foundation and from the International Business Machines Corporation. Much of this work, especially the actual machine programming operations, is of a highly technical nature, as the report by Gerhard Bry and Charlotte Boschan in Part III reveals.

An example of an important, practical result is the work by Julius Shiskin of the Bureau of the Census on reporting current business cycle developments for the Council of Economic Advisers. The National Bureau has cooperated in the planning and execution of this experiment in the use of large-scale electronic computers for analyzing business indicators and other current economic data. Shiskin has prepared a manuscript describing the results-which took the form, since 1957, of a monthly economic report-and it will shortly be ready for submission to the Board. It is to be hoped that the ultimate result will be a substantial gain in the timeliness, scope, and effectiveness of U.S. economic intelligence, available to the public at large as well as to those whose responsibility it is to formulate governmental policy.

RESEARCH UNDER WAY

Reports by members of the staff on their research activities during 1960 are presented in Part III. The findings briefly mentioned there have not yet undergone the full critical review accorded the National Bureau's studies and are therefore tentative and provisional.

STUDIES COMPLETED

Twenty reports on research conducted by the staff have been published since January 1, 1960, and five are in press.¹ The titles and authors of these reports are listed below, together with those of reports that will shortly go to press or will soon be ready for review by the Board. For a list of conference reports, see the next section.

REPORTS PUBLISHED

SINCE JANUARY 1, 1960

BUSINESS CYCLES

- Business Cycle Indicators, Geoffrey H. Moore, ed. (Studies in Business Cycles 10, 1961, Vol. I, xxxv + 744 pp., \$12.50; Vol. II, xvii + 178 pp., \$4.50; both vols., \$15.00). Presents a newly developed list of leading, coinciding, and lagging indicators based on studies of the postwar and prewar business cycles and the latest available statistics. The factors accounting for the characteristic behavior of many leading indicators are treated, and an extensive historical record of their behavior during recessions and recoveries is provided.
- Changes in Labor Cost During Cycles in Production and Business, by Thor Hultgren (Occasional Paper 74, 1960, xvii + 85 pp., \$1.50). The analysis indicates that a more rapid increase in labor productivity than in hourly wages, and a corresponding decline in labor cost per unit of output, have usually accompanied and often preceded a general business recovery.
- Housing Issues in Economic Stabilization Policy, by Leo Grebler (Occasional Paper 72, 1960, xi + 129 pp., \$1.50). The issues illustrate some of the difficulties that can result from the federal government's dual commitment to help maintain economic stability and to advance social programs exemplified by housing.
- Federal Receipts and Expenditures During Business Cycles, 1879-1958, by John M. Firestone (Studies in Business Cycles 9, 1960, xvi + 176 pp., \$4.00). A factual account of how revenues and expenditures have moved during past periods of business upswing and downswing, this report adds to our knowledge of the contemporary environment and conditions under which business cycle policies operate.
- Regional Cycles of Manufacturing Employment in the United States, 1914-1953, by George H.

Borts (Occasional Paper 73, 1960, 60 pp., \$0.75). Discusses the impact of state-to-state business change over four decades, indicating how economic change affects specific localities and how growth rates affect the severity of business cycles.

American Exports During Business Cycles, 1879-1958, by Ilse Mintz (Occasional Paper 76, 1961, xii + 92 pp., \$1.00). Provides a historical background for better understanding of recent changes in U.S. exports, and shows that both domestic business conditions and fluctuations in world trade influence the volume of American sales abroad.

WAGES

- New Measures of Wage-Earner Compensation in Manufacturing, 1914-57, by Albert Rees (Occasional Paper 75, 1960, xi + 26 pp., \$0.75). Current measures of total hourly compensation for manufacturing wage earners have two drawbacks for some analytical purposes: they take no account of compensation by wage supplement, nor do they allow for changes in the amount of time paid for but not worked. This paper remedies these drawbacks.
- Real Wages in Manufacturing, 1890-1914, by Albert Rees (General Series 70, 1961, xvi + 144 pp., \$3.75). On the basis of new estimates of money wages, and a new cost-of-living index for the period before World War I, this volume shows that real wages rose substantially in the period 1890-1914, correcting previous conclusions to the contrary.
- Wages and Earnings in the United States, 1860-1890, by Clarence D. Long (General Series 67, 1960, xvii + 169 pp., \$4.00). Presents new measures of real wages and money earnings during a period that includes the Civil War, years of rapid industrialization, and years of a sharp decline in prices.
- Wages in Germany, by Gerhard Bry (General Series 68, 1960, xxvii + 486 pp., \$10.00). Against a background of dramatic changes in political and economic conditions during nearly three-quarters of a century, the author analyzes trends and cycles in wage rates and earnings, in money and real wages, in wage levels and wage differentials.

WEALTH, CAPITAL FORMATION, AND FINANCE

Changes in the Share of Wealth Held by Top Wealth-Holders, 1922-1956, by Robert J. Lampman (Occasional Paper 71, 1960, 32 pp., \$0.75). Presents estimates, derived from federal estate-tax data, of the number of top wealth-

¹A complete list of publications begins on page 75.

holders and their aggregate amounts of wealth for several years between 1922 and 1956.

- Capital in Transportation, Communications, and Public Utilities: Its Formation and Financing, by Melville J. Ulmer (Studies in Capital Formation and Financing 4, 1960, xxix + 548 pp., \$12.00). Focuses on U.S. regulated industries during 1870-1950. The background, general secular pattern, variations in such patterns, trends in capital coefficients, factors underlying long-term trends in output and in capitalproduct ratios and capital formation, long cycles, and evolution of financial structures are analyzed.
- Capital in Manufacturing and Mining: Its Formation and Financing, by Daniel Creamer, Sergei Dobrovolsky, and Israel Borenstein (Studies in Capital Formation and Financing 6, 1960, iv + 344 pp., \$7.50). Compares trends in stock of capital and in output, and measures the changing contributions of various sources of financing-internal and external, equity and debt-in providing funds for capital formation in mining and manufacturing.
- Trends in Government Financing, by Morris A. Copeland (Studies in Capital Formation and Financing 7, 1961, xxiv + 212, pp., \$6.00). Reasons for the long-term rise in government indebtedness at the federal, state, and local levels are analyzed. The trend suggests that more and more of the functions now performed by state and local governments will be financed by federal grants-in-aid.
- Postwar Market for State and Local Government Securities, by Roland I. Robinson (Studies in Capital Formation and Financing 5, 1960, xxiv + 227 pp., \$5.00). Deals with the marketing of new issues of state and local government securities, the structure and operations of the secondary market for the securities, techniques of underwriting and distributing them, and the importance of tax exemption to borrowers and lenders in the marketing of state and local government securities.
- Statistical Measures of Corporate Bond Financing since 1900, by W. Braddock Hickman (Studies in Corporate Bond Financing 3, 1960, xiii + 582 pp., \$9.00). Provides basic statistical series on corporate bond financing in a form useful to investors, to government agencies, and to students generally.
- Industrial Demands Upon the Money Market, 1919-57: A Study in Fund-Flow Analysis, by Wilson F. Payne (Technical Paper 14, 1961, xix + 139 pp., \$1.50). Suggests ways of revealing, through analysis of corporate balance

sheets and income accounts, the forces that affect the level of corporate cash balances and thus a concern's need for outside funds.

OTHER

- Soviet Statistics of Physical Output of Industrial Commodities: Their Compilation and Quality, by Gregory Grossman (General Series 69, 1960, 151 pp., \$4.50). Inquires into the reliability and general usability of Soviet statistics of the physical output of industrial commodities, with particular reference to the Five-Year Plan period, and provides an additional basis for the interpretation of Soviet industrial production indexes and similar aggregative measures.
- Personal Deductions in the Federal Income Tax, by C. Harry Kahn (Fiscal Studies 6, 1960, xxiv + 242 pp., \$5.00). Presents a comprehensive picture of the personal expense allowances in the individual income tax; measures the qualitative importance of personal deductions; and explores the reasons for the enactment, and the basis for the continued existence, of the personal expense deductions.
- Methods for Improving World Transportation Accounts Applied to 1950-53, by Herman F. Karreman (Technical Paper 15, 1961, xvii + 121 pp., \$1.50). Sets forth the problems involved in recording transportation transactions between world areas, provides new estimates, and points out ways in which the major remaining deficiencies in estimation of gross freights might be eliminated.

REPORTS IN PRESS

- Capital in the American Economy: Its Formation and Financing, by Simon Kuznets (Studies in Capital Formation and Financing 9).
- The Postwar Residential Mortgage Market, by Saul B. Klaman (Studies in Capital Formation and Financing 8).
- Productivity Trends in the United States, by John W. Kendrick (General Series 71).
- The Price Statistics of the Federal Government, Report of Price Statistics Review Committee (General Series 73).
- The Growth of Government Expenditures in the United Kingdom, 1890-1955, by Alan T. Peacock and Jack Wiseman (General Series 72).

REPORTS SOON TO GO TO PRESS

- "Growth of Industrial Production in the Soviet Union," by G. Warren Nutter (General Series 74).
- "The National Wealth of the United States in the Postwar Period," by Raymond W. Goldsmith (Studies in Capital Formation and Financing 11).
- "The Share of Top Wealth-Holders in National Wealth, 1922-56," by Robert J. Lampman (General Series 75).
- "Dividends Under the Income Tax," by Daniel M. Holland (Fiscal Studies 7).

Reports Soon to Be Submitted for Approval

- "Reporting Current Business Cycle Developments," by Julius Shiskin (Occasional Paper).
- "Postwar Cycles in Manufacturers' Inventories," by Thomas M. Stanback, Jr. (Studies in Business Cycles).
- "The Money Stock of the United States, 1867-1960," by Milton Friedman and Anna J. Schwartz (Studies in Business Cycles).
- "Diversification and Integration in American Industry," by Michael Gort (General Series).
- "The United States Savings Bond Program," by George Hanc (Occasional Paper).
- "Transportation in the Soviet Union," by Ernest W. Williams, Jr. (General Series).

CONFERENCES ON RESEARCH

Besides the research conducted by its own staff, the National Bureau from time to time arranges special conferences and also sponsors two continuing groups that plan and organize conferences on research. University, government, and other specialists in particular fields participate in these conferences. They are invited to prepare papers growing out of their own research, and to discuss those prepared by others. The revised papers are, in most instances, submitted to the National Bureau for publication in conference proceedings volumes. A list of the volumes published last year or in press, together with future scheduled conferences, follows. The current activities of the two conference-organizing groups are described below.

CONFERENCE PROCEEDINGS PUBLISHED SINCE JANUARY 1, 1960

- The Quality and Economic Significance of Anticipations Data (Special Conference Series 10, 1960, xi + 466 pp., \$9.00). Deals with the value of anticipations data both as an aid to forecasting and as a clue to how the economic process generates expectations. Among the data considered are the spending intentions of consumers; the expected changes in shipments, prices, and inventories of business concerns; the capital appropriations of corporations; and the investment commitments of life insurance companies.
- Demographic and Economic Change in Developed Countries (Special Conference Series 11, 1960, xi + 535 pp., \$12.00). Analyzes population change and its effect on the economy, including articles on fertility trends in the United States and Europe; fertility related to mortality, the age distribution, and the growth rate; and demand, prices, and the level of employment.
- Public Finances: Needs, Sources and Utilization (Special Conference Series 12, 1961, xiv + 512 pp., \$10.00). Contains papers on financial needs, problems, and resources at all levels of government; fiscal theory; taxation and expenditure decisions; defense planning; and user prices vs. taxes.
- Trends in the American Economy in the Nineteenth Century (Studies in Income and Wealth 24, 1960, xi + 780 pp., \$15.00). Studies trends in output prices, factor payments, investment, and international payments in the economy of the United States and Canada in the past century.

CONFERENCE PROCEEDINGS IN PRESS

- The Rate and Direction of Inventive Activity: Economic and Social Factors (Special Conference Series 13).
- Output, Input, and Productivity Measurement (Studies in Income and Wealth 25).
- The Flow-of-Funds Approach to Social Accounting (Studies in Income and Wealth 26).

CONFERENCE PROCEEDINGS IN PREPARATION FOR PRESS

"Labor Economics" (Special Conference Series 14).

CONFERENCES BEING ARRANGED

- Distributive Shares of National Income, Conference on Research in Income and Wealth, April 28-29, 1961.
- Philanthrophy Conference, June 26-30, 1961 (see Part III, 2).
- Capital Investment in Human Beings, Conference of the Universities-National Bureau Committee for Economic Research, autumn 1961.
- Models of Income Determination, Conference on Research in Income and Wealth, February 1962.
- Monetary Economics, Conference of the Universities-National Bureau Committee for Economic Research, spring 1962.
- Components and Sources of Income Growth, Conference on Research in Income and Wealth, September 1962.
- Transportation Economics, Conference of the Universities-National Bureau Committee for Economic Research, autumn 1962.

CONFERENCE ON RESEARCH IN INCOME AND WEALTH

The proceedings of the September 1957 meetings were published in December 1960 as Volume 24 in Studies in Income and Wealth; those for the November 1959 meeting are in press (see list above). Volume 25 (to be published in May) will contain author and title indexes for Volumes 1-25 of the series. Reprints of these indexes may be obtained at a nominal charge from the National Bureau.

The next meeting of the conference, to be held at the Carnegie Endowment International Center in New York City on April 28-29, 1961, will be devoted to Distributive Shares of National Income. The papers to be presented are:

"A Survey of the Theories of Income Distribution," Tibor Scitovsky, University of California at Berkeley.

- "Long-Run Shifts in the Distribution of Income by Type in the United States," Stanley Lebergott, Bureau of the Budget.
- "Income Related to Labor and Capital Inputs," Robert M. Solow, Massachusetts Institute of Technology.
- "Short-Run Movements of Income Shares," Charles L. Schultze, Indiana University.
- "Changes in the Distribution of Income by Type in Canada," S. A. Goldberg, Dominion Bureau of Statistics.
- "The Problem of Comparing Income Shares by Industry," Michael Gort, University of Chicago.
- "Problems on the Share Distribution of National Income by Regions," George H. Borts, Brown University.

Future conferences now being planned are Models of Income Determination, for February 1962, and Components and Sources of Income Growth, 1840-1920, for September 1962.

Members of the Executive Committee of the conference are Richard Ruggles (Chairman), Edward F. Denison, Irwin Friend, Raymond W. Goldsmith, George Jaszi, John B. Lansing, Frank Leacy, Stanley Lebergott, Charles F. Schwartz, Louis Weiner, and Mildred E. Courtney (Secretary).

UNIVERSITIES-NATIONAL BUREAU COMMITTEE FOR ECONOMIC RESEARCH

Three special-conference proceedings volumes have been published since January 1, 1960, and one is in press (see list above). It is expected that the proceedings of the conference on Labor Economics of April 22-23, 1960, will be ready for press in the near future.

A conference on Capital Investment in Human Beings is to be held in the autumn of this year. Theodore W. Schultz, University of Chicago, is Chairman of the Planning Committee.

Plans for a future conference on Transportation Economics have been formulated by a Planning Committee with John R. Meyer, Harvard University, as Chairman. A conference on Monetary Economics is also at the planning stage. G. L. Bach, Carnegie Institute of Technology, is Chairman of the Planning Committee.

Thirty-two universities offering graduate work in economics and emphasizing research, together with the National Bureau, are represented on the Committee. The participating universities are:

Buffalo Arthur Butler California, Berkeley California, Los Angeles Carnegie Institute of Technology G. L. Bach Chicago Columbia Albert G. Hart Cornell Duke Harvard Illinois V Lewis Bassie Indiana Iowa State College Karl A. Fox Johns Hopkins Massachusetts Institute of Technology M. A. Adelman McGill Earl F. Beach Michigan Minnesota New School for Social Adolph Lowe Research New York North Carolina Northwestern Pennsylvania Princeton Queen's F. A. Knox Stanford Texas Toronto Vanderbilt **Rendigs Fels** Virginia Washington Wisconsin Yale

Robert A. Gordon Armen Alchian

H. Gregg Lewis M. Slade Kendrick Joseph J. Spengler Arthur Smithies Charles L. Schultze Clarence D. Long

Paul W. McCracken Francis M. Boddy

Jules Backman William N. Parker Richard B. Heflebower Irving B. Kravis **Oskar Morgenstern** Moses Abramovitz Carey C. Thompson D. C. MacGregor **Rutledge Vining** Douglass C. North James S. Earley **Richard Ruggles**

Other members of the Committee include Raymond T. Bowman, Martin R. Gainsbrugh, Charles J. Hitch, Edgar M. Hoover, Walter S. Salant, Herbert Stein, and George J. Stigler, Members at Large; and Solomon Fabricant, representing the National Bureau of Economic Research.

The members of the Executive Committee are George J. Stigler, Chairman; H. Gregg Lewis, Vice-Chairman; Solomon Fabricant; Rendigs Fels; Charles J. Hitch; D. C. Mac-Gregor; and Richard Ruggles. Robert P. Shay is Secretary.

VISITORS TO THE NATIONAL BUREAU

A number of economists, businessmen, government officials, and students visited the National Bureau during 1960. Groups that came to learn about the Bureau's research findings and procedures included:

A group of government economists from African nations: Ghana, Guinea, Liberia, Libya, Morocco, Nigeria, Somalia, Sudan, Togo, Egypt, and Syria.

Thirty-three students from the Department of Economics of the University of Uruguay.

Three members of a Japanese Survey Team on monetary and fiscal policy.

Individuals from universities, research organizations, government agencies, banks, and business concerns visited the National Bureau from such countries as France, Yugoslavia, Tunisia, India, Pakistan, Australia, Japan, Great Britain, Greece, Brazil, Iran, the Netherlands, Canada, Germany, the Argentine, Sweden, Poland, and the Philippines.

DIRECTORS, OFFICERS,

AND RESEARCH STAFF

At the 1961 Annual Meeting of the National Bureau, Marion B. Folsom and A. J. Hayes were elected Members at Large of the Board of Directors. Shepherd Morgan was elected Director Emeritus.

Officers elected were Harold M. Groves, Chairman; Arthur F. Burns, President; Albert J. Hettinger, Jr., Vice-President; Murray Shields, Treasurer; Solomon Fabricant, Director of Research; Geoffrey H. Moore and Hal B. Lary, Associate Directors of Research; and William J. Carson, Executive Director and Secretary.

Lester V. Chandler was elected Director by University Appointment in December 1960 to succeed Jacob Viner, who resigned upon his retirement from Princeton University.

Beardsley Ruml, a Director at Large since 1936, died on April 18, 1960. A resolution of the Board passed on June 7 stated, in part: "His long and active interest in the social sciences had made him widely acquainted with

the objectives and work of the National Bureau on economic problems. His election as a member of the Board of the National Bureau thus brought into the Bureau's work one who contributed much to the development of its program of research to develop basic knowledge of the structure and operations of the national economy."

The following were elected members of the research staff in 1960: William H. Brown, Jr., Joseph W. Conard, Hal B. Lary, Robert E. Lipsey, Jacob Mincer, and Norman B. Ture.

The National Bureau's research program benefits from the voluntary services of many individuals and groups. The Board of Directors governs its policies, selects its officers, and diligently reviews each report before publication. Several advisory committees aid in the planning of specific research projects and review the progress of the investigations. The Universities-National Bureau Committee for Economic Research and the Conference on Research in Income and Wealth plan and organize conferences, securing the cooperation of many specialists on the subjects selected. Finally, at any given time many individuals who are no longer on the research staff are nevertheless undertaking to revise or otherwise complete reports that will in due course be published by the National Bureau. All these collaborators, who in the aggregate far outnumber the National Bureau's own personnel, play a vital part in each year's achievement.

In addition to the regular meetings of the research staff, it has long been a custom for members of the staff to address seminars held for the research assistants, many of whom are graduate students in economics and related subjects. In the past year these seminars, arranged by Ralph L. Nelson, have covered such diverse subjects as American export cycles, U.S. balance of payments, the Japanese economy, the meaning of productivity, measuring agricultural productivity, pension plans, automobile financing, and monetary policy.

FINANCES AND SOURCES OF SUPPORT

During 1960 the National Bureau spent \$1,024,000 on its researches. Approximately

\$641,000 came from current grants and contributions, \$266,300 from interest and dividends, and \$117,000 from capital funds. In June 1960 the Rockefeller Brothers Fund made a grant of \$300,000 in support of a three-year study of tax policies for economic growth. In August the Rockefeller Foundation contributed \$300,000 to aid the National Bureau during the next ten years in financing its studies of the international economic position of the United States. In January 1961 the Alfred P. Sloan Foundation contributed a grant of \$200,000 toward general support of the research program.

Grants and contributions in support of the work of the National Bureau come from a variety of sources. In addition to philanthropic foundations, they include business associations, public agencies, companies, labor organizations, and individuals. Royalties and receipts from the sale of publications provide some income. Also, many thousands of dollars of services that do not enter its books of account are contributed to the National Bureau's work.

Foundations whose grants supported studies planned, carried on, or completed in 1960 include the Carnegie Corporation of New York, the Maurice and Laura Falk Foundation, the Ford Foundation, the Merrill Foundation for Advancement of Financial Knowledge, the Relm Foundation, the Rockefeller Foundation, the Russell Sage Foundation, the Scherman Foundation, and the Alfred P. Sloan Foundation. Business associations providing funds for specific studies included the Life Insurance Association of America and the Research and Educational Trust Fund of the Mortgage Bankers Association. Federal agencies that provided support for certain projects were the Board of Governors of the Federal Reserve System, the Bureau of the Budget, and the National Science Foundation.

Cash contributions for general support of the National Bureau's research program, from companies, labor organizations, and individuals, totaled \$254,000 in 1960, about a fourth of the total budget.

Particularly important among contributions of services in 1960 was the donation of

electronic computing machine time by the International Business Machines Corporation. Information on how to contribute to the support of the National Bureau and how to obtain its publications is given on page 85. A full list of publications is on pages 75-84. GEOFFREY H. MOORE Associate Director of Research

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