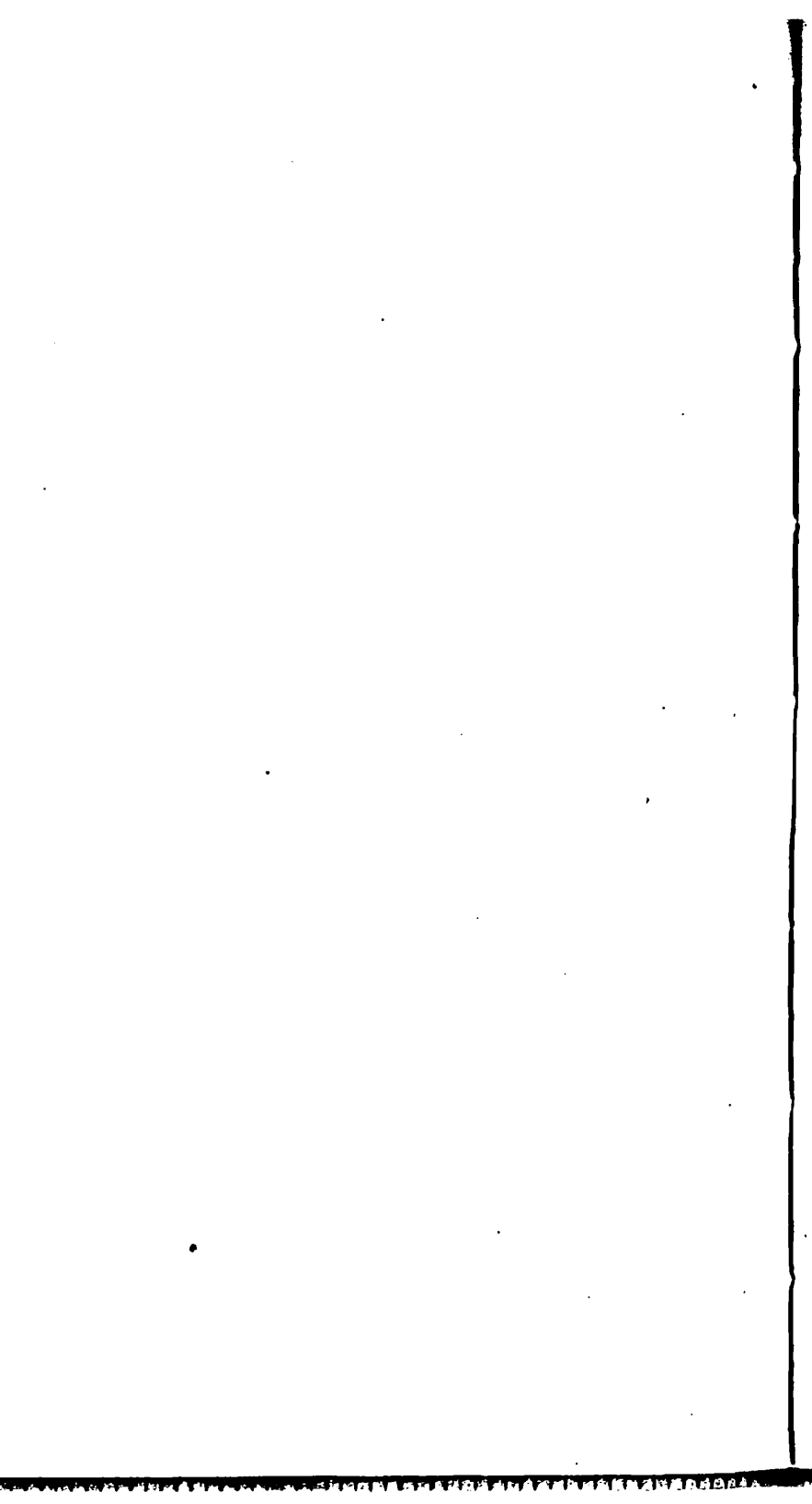


*Report*

OF THE EXECUTIVE DIRECTOR

NATIONAL BUREAU OF  
ECONOMIC RESEARCH

*March 1, 1937*



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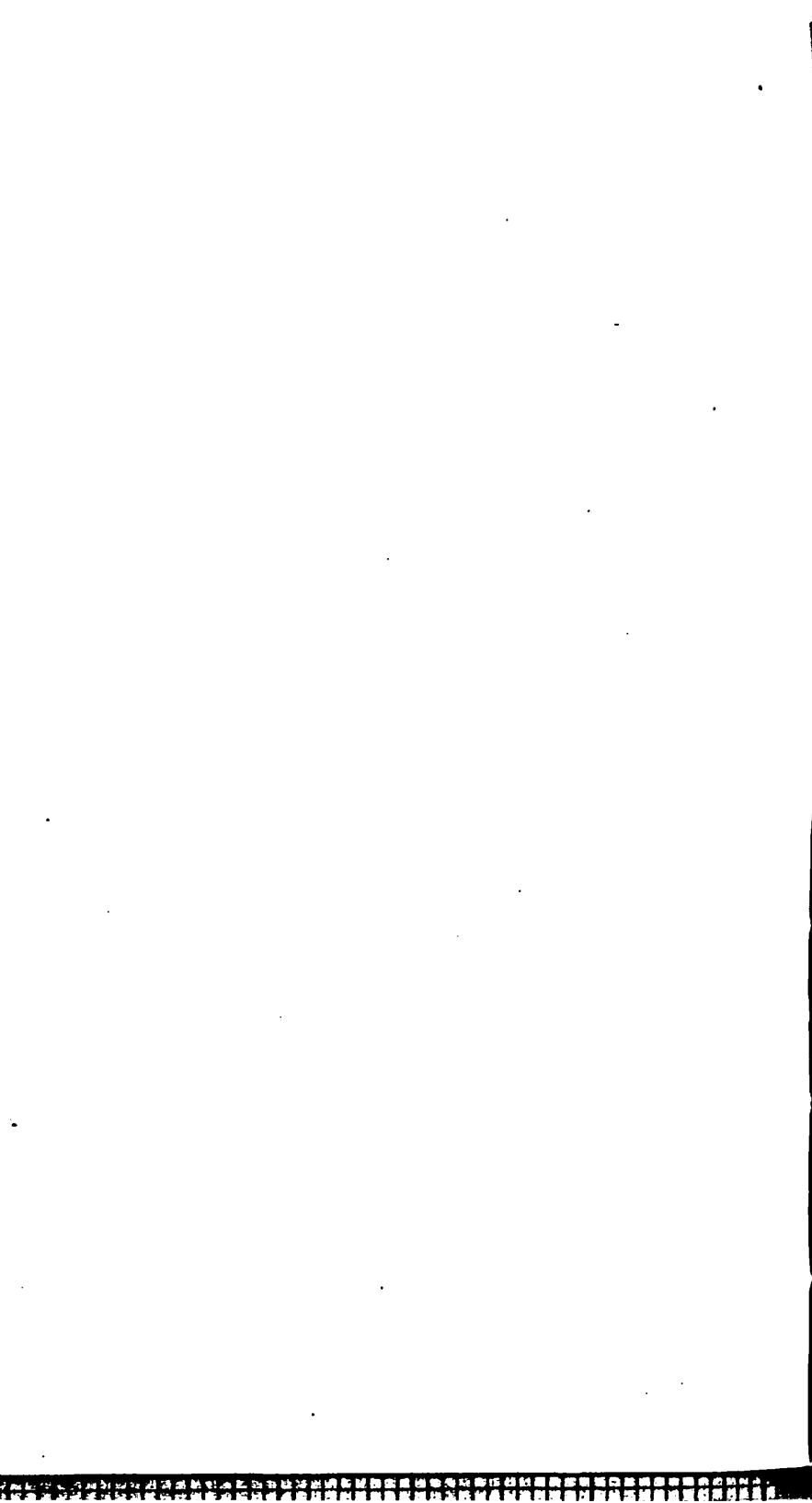
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## PART ONE

### *The Cooperative Program*

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COOPERATIVE enterprise in economic research has from the first been advocated and, as opportunity occurred, actively forwarded by the National Bureau, which recognizes that in many areas the successful prosecution of research requires the enlistment of various agencies, public and private. As the years have passed its role in the development of cooperative research has assumed greater importance and it has now reached a stage where a review and appraisal of its experience fittingly takes precedence in the annual report.

*Retrospect and Prospect, 1920-1936* set out the facts of our endeavors in this direction to date. Among enterprises of this nature now in progress are the study of real estate financing undertaken for the Committee on Banking and Credit of the Social Science Research Council; the gold standard study which the National Bureau was requested to sponsor after it had been started; the arrangement with the National Research Project of the Works Progress Administration by which materials dealing with man-hour output of labor collected for the National Bureau in 1927-29 under the direction of Harry Jerome are being supplemented and brought to date; and the agreement entered into on January 1, 1937 with the United States Bureau of Agricultural Economics to collate and analyze pertinent data on agricultural and industrial changes. These activities are described in Part Two, together with the staff work. Here we shall treat some broader considerations raised by our present participation in this mode of research as well as by its prospective expansion.

## I HISTORY

The genesis of the broader cooperative program was sketched in last year's report but some repetition is desirable to give a complete picture. On June 1, 1935 the Executive Committee, meeting with members of the economics departments of six universities,<sup>1</sup> resolved:

"That at the initiative of the National Bureau of Economic Research a committee be appointed by the departments of economics of selected universities, or by the appropriate equivalent economic research organizations of these universities. These representatives should be not more than two from each university so invited.

That this committee, in conjunction with the National Bureau through its two representatives on the committee, should examine the major research problems of common interest, should undertake, if possible, one or more cooperative projects of economic research, and not later than the end of 1937 should recommend that form of continuing organization which study and experience have suggested."

The University-National Bureau Committee,<sup>2</sup> which was appointed as a result of this resolution, has had two meetings—the first a two-day conference at Shawnee-on-Delaware on September 7, 1935, and the second in New York on January 15, 1937. From the first meeting came the resolutions<sup>3</sup> recommending that the National Bureau call two conferences—one of specialists in the field of prices and

<sup>1</sup> Chicago, Columbia, Harvard, Minnesota, Pennsylvania and Wisconsin.

<sup>2</sup> The membership of which is as follows: *University of Chicago*: Jacob Viner, S. E. Leland; *Columbia University*: J. C. Bonbright, Carter Goodrich; *Harvard University*: J. D. Black, W. L. Crum; *University of Minnesota*: R. A. Stevenson, A. H. Hansen; *University of Pennsylvania*: Anne Bezanson, Simon Kuznets; *University of Wisconsin*: M. G. Glaeser, G. S. Wehrwein; *National Bureau of Economic Research*: W. C. Mitchell, F. C. Mills.

<sup>3</sup> The first of these resolutions, providing for the 'Conference on Price Research,' was on motion by W. L. Crum of Harvard University, and the second, providing for the 'Conference on National Income and Wealth,' on motion by Carter Goodrich of Columbia.



the other of specialists in the field of wealth and income—each to examine the objectives of studies in its field, to explore the possibilities of cooperative action, and to consider the formulation of a research program.

The organization and specific aims of these two Conferences were also described in last year's report. Before telling of their progress during 1936, we shall mention two additional areas of collaboration that are now opening.

Early last summer the Association of Reserve City Bankers, through the Chairman of its Committee on Nationwide Banking Research, asked the National Bureau whether it would be willing to undertake independent responsibility for a broad program of research into basic problems of banking and credit, problems that underlie questions of function and structure in the financial institutions of the country as well as major questions of public and private policy. The National Bureau answered in the affirmative and an Exploratory Committee was appointed. This Committee has reported;<sup>4</sup> its proposals will be discussed in Section IV.

The second meeting of the University-National Bureau Committee took action that may result in comprehensive cooperation in a fourth field. On motion by W. L. Crum of Harvard University, the Chairman was instructed to appoint a committee to explore the possibility and desirability of a cooperative research program in fiscal policy.

## II THE CONFERENCE ON NATIONAL INCOME AND WEALTH

The measurement of national income and wealth is one of the first major areas in which the National Bureau initiated studies. The public interest in it and the importance of accurate knowledge needs no elaboration. Again at the risk of some repetition of material contained in last year's report, the work of the Income Conference is reviewed.

<sup>4</sup> *A Program of Financial Research*, Volume I, Report of the Exploratory Committee on Financial Research (published by the National Bureau, April 1937).

The 'Conference on National Income and Wealth' was called to its first meeting in January 1936, and became a permanent body by its own decision, to pursue the following aims:

[1] To exchange information among the various organizations and individuals carrying on or planning studies in the field, to prevent overlapping, to establish conditions for more intelligent division of work, and to facilitate the planning of cooperative activity;

[2] To agree upon the most appropriate concepts, terminology and methods of exposition;

[3] To work out plans of research, calling attention to particular segments of the field that demand more primary data or more analytical study;

[4] To stimulate cooperative research in the field by initiating projects, by lending the facilities of the Conference to the assistance of new undertakings; by helping to procure the financial means for new investigations; by giving advice when new studies are being planned or throughout their progress; finally, by sponsoring cooperative studies in which several students or organizations would collaborate.

At the time the Conference was called, it included representatives from the departments of economics of the following universities: Chicago, Columbia, Harvard, Minnesota, Pennsylvania and Wisconsin; from the Research Divisions of the Bureau of Foreign and Domestic Commerce, and of Agricultural Economics; Division of Research and Statistics of the United States Treasury; United States Bureau of Labor Statistics; Industry Research Unit of the National Planning Board; Central Statistical Board; Division of Research and Statistics, Board of Governors of the Federal Reserve System; National Industrial Conference Board; Dun and Bradstreet; and the National Bureau of Economic Research. After the first meeting of the Conference, it was joined by the United States Bureau of the Census, the Brookings Institution, the Research Division of the Federal

Deposit Insurance Corporation, and the Department of Economics of the University of Cincinnati.

Guided by the Conference's recommendations, the Executive Committee had prepared and presented at the meetings of the American Economic and American Statistical Associations in December 1936 four reports:

[1] Public Revenue and Public Expenditure in the National Income, by Professor Colm of the Graduate Faculty, New School for Social Research;

[2] Gross and Net in Income Taxation, by Carl Shoup of Columbia University;

[3] Income Parity for Agriculture, by O. C. Stine of the Bureau of Agricultural Economics;

[4] The Concepts of Gainful Occupation and Industrial Attachment with Reference to Their Use in Deriving Per Capita Income, by Solomon Kuznets of the United States Bureau of Labor Statistics.

The papers were mimeographed in advance of the meeting and distributed among the members of the Conference. At the meeting they were discussed by Murray Benedict, J. D. Black, Roy Blough, J. M. Clark, Murray Latimer, George O. May and Mabel Newcomer.

In pursuance of an urgent recommendation by the Conference to consider promptly definition and terminology, the Executive Committee set up a small subcommittee: Morris Copeland, Chairman; Winfield Riefler and Simon Kuznets. Mr. Copeland prepared a report on the controversial questions involved under the title, 'Concepts of National Income'. This together with reports by Clark Warburton on 'Accounting Methodology in the Measurement of National Income', Solomon Fabricant on the 'Treatment of Corporate Savings in the Measurement of National Income', and Simon Kuznets on the 'Adjustment for Revaluations of Inventories' were presented at the second annual meeting of the Conference in January 1937. These and the other four papers will probably be submitted to the directors of the National Bureau for publication.

Preliminary exploration indicated that the State tax re-

turns by individuals in Wisconsin would show the distribution of income in brackets considerably below those reported on the Federal income tax returns. A special committee: H. M. Groves, Chairman; Harry Jerome; Leonard Krueger of the Wisconsin State Tax Commission; S. E. Leland of the University of Chicago; Aaron Director and Simon Kuznets, was appointed to discuss plans for an extensive tabulation of these returns. The Wisconsin members of this Committee worked out the plan, and funds were obtained for it as a State WPA project. A complete tabulation is projected for 1929, 1934 and 1935, and a tabulation for the intervening years for all individuals who reported annually through the entire period. The Chairman of the Executive Committee has been in close touch with the project, now being supervised by F. A. Hanna of the Wisconsin State Planning Board. It is expected that this project, in conjunction with complete tabulation of the Federal income tax returns for 1934, now being carried on by the United States Treasury, will provide exceedingly valuable materials on the distribution of income by size. Contact has also been established with the Delaware State Tax authorities and there is a promising prospect of having the income returns in Delaware tabulated in detail.

At the January 1937 meeting it was agreed that the experiment of initiating reports by individual students on specific problems had been successful and should be made again; that the subcommittee on concepts and terminology should be continued, with the aim of eventually establishing agreement and defining clearly the points still at issue; that the reports presented before the scientific associations and at its own meeting should, upon review by an editorial board, be published, the National Bureau being requested to act as publisher; that the activity looking towards increase of primary data on the distribution of income should be continued, and that efforts be made to obtain the services of a person who could devote his entire time to this promising activity. The Executive Committee elected for 1937 comprises: Simon Kuznets, Chairman; M. A. Copeland,

W. L. Crum, H. M. Groves, G. C. Means, R. R. Nathan and O. C. Stine.

### III THE CONFERENCE ON PRICE RESEARCH

Prices are of central importance in any economy. Changing prices help to determine the direction of economic life by influencing profitability of enterprise, the compensation and opportunity of labor, and therefore, the distribution of national income. Such considerations led the National Bureau early in its history to stress studies of prices. The depression, with the social forces set loose by it and the economic questions thereby provoked, made the nation price conscious as never before; the behavior of prices became an active concern of both public and private policy. The chief danger lay in the extremely limited knowledge and the naively superficial character of most of our thinking on this very complex subject. It is the responsibility of economic research greatly to expand the area of "definitely ascertained fact" so that intelligent consideration of policy may have an adequate foundation.

To fulfill this responsibility the University-National Bureau Committee made its recommendation that specialists on prices be called together. As a result, the 'Conference on Price Research' was formally organized on November 30, 1935, as a continuing body composed of representatives from leading institutions actively engaged in price research in this country.<sup>5</sup> Prior to the formation of this Conference, no continuing organization of leading students of prices in this country had existed; no general meeting of research workers in prices had even taken place. An Executive Committee was appointed to manage the affairs of the Conference; for 1937 its members are: F. C. Mills, Chairman;

<sup>5</sup> Universities of Chicago, Columbia, Harvard, Minnesota and Pennsylvania; Food Research Institute of Stanford University, United States Bureau of Labor Statistics and of Agricultural Economics, Central Statistical Board, Brookings Institution, and the National Bureau of Economic Research.

Anne Bezanson, R. W. Burgess, E. S. Mason, Henry Schultz, O. C. Stine and S. W. Wilcox.

To make price research effective, the Conference directed its Executive Committee to:

[1] Facilitate exchange of information among workers in the field;

[2] Keep itself informed concerning current research, and to advise or arrange for conferences or advisory committees with reference to research projects;

[3] Arrange through technical committees for the review and appraisal, from time to time, of the data used, and to take steps to improve them;

[4] Suggest to the proper institutions or individuals plans for new work, and to call attention to topics inviting research;

[5] Arrange for cooperative research on specific projects when institutional and other conditions seem ripe, and when fruitful results are promised;

[6] Call meetings and arrange programs of the Conference;

[7] Solicit funds for the use of the Conference and its committees;

[8] Make arrangements with the National Bureau of Economic Research to receive and handle funds as the agent of the Conference on Price Research.

The specific recommendation that studies of prices and price policies in particular industries be made in cooperation with engineers and accountants has been carried out. On February 21, 1936 possibilities and objectives of studies on price problems of industry and trade were discussed by J. D. Black, Harvard University; R. W. Burgess; A. T. Court; J. L. Dohr, Columbia University; F. L. Hayford, General Motors Corporation; A. W. Henshaw, General Electric Company; F. C. Mills; W. C. Mitchell; Willard Thorp, Dun and Bradstreet; and Q. F. Walker, R. H. Macy and Company. This group agreed upon the following objectives:

[1] More accurate determination of the price changes among manufactured goods, account being taken of changes in quality and design;

[2] The measurement of production costs, both average and differential;

[3] The measurement of changes in industrial productivity, and the determination of cost and price changes accompanying them;

[4] The measurement of price-quantity relations (i.e., the determination of changes in demand associated with given changes in price).

The Executive Committee authorized the appointment of committees in five industries:

#### TEXTILE COMMITTEE

S. J. Kennedy, *Pacific Mills*; CHAIRMAN

H. S. Davis, *Industrial Research Department, Wharton School, University of Pennsylvania*; VICE CHAIRMAN

Arthur R. Burns, *Columbia University*

Alfred L. Cahen, *International Association of Garment Manufacturers*

Ralph E. Loper, *Ralph E. Loper and Company*

James G. Torrens, *Assistant Statistician, Cotton Textile Institute*

#### *Advisory Members*

F. S. Blanchard, *Pacific Mills, Chairman of the Committee for Economic Research, United States Institute for Textile Research*

Jesse M. Cutts, *Chief, Wholesale Price Division, United States Bureau of Labor Statistics*

Clay H. Hollister, *Marshall Field and Company*

Stanley B. Hunt, *Textile Economics Bureau, Chairman of the Textile Statisticians Group*

Claudius T. Murchison, *President, Cotton Textile Institute*

Sidney W. Wilcox, *Chief Statistician, United States Bureau of Labor Statistics*

### OIL COMMITTEE

Myron W. Watkins, *New York University*; CHAIRMAN  
George W. Stocking, *University of Texas*; VICE CHAIRMAN  
J. D. Gill, *Economist, Atlantic Refining Company*  
S. A. Swensrud, *Standard Oil Company of Ohio*

### STEEL COMMITTEE

S. S. Stratton, *Harvard Graduate School of Business Administration*; CHAIRMAN  
M. G. de Chazeau, *University of Virginia*; VICE CHAIRMAN  
Frederic Dewhurst, *Twentieth Century Fund*  
Frank A. Fetter, *Princeton University*  
G. E. McLaughlin, *University of Pittsburgh*

### AUTOMOBILE COMMITTEE

Ralph C. Epstein, *Dean, School of Business Administration, University of Buffalo*; CHAIRMAN  
Shaw Livermore, *University of Buffalo*; VICE CHAIRMAN  
H. B. Arthur, *Swift and Company*  
Leslie Hayford, *General Motors Corporation*  
L. H. Seltzer, *United States Treasury Department*  
*Advisory Member*  
J. M. Cutts, *United States Bureau of Labor Statistics*

### COAL COMMITTEE

Waldo Fisher, *University of Pennsylvania*; CHAIRMAN  
Robert Gray, *University of Pennsylvania*; SECRETARY  
H. N. Eavenson, *Eavenson and Alford, Mining Engineers*  
P. A. Hollar  
W. Jett Lauck, *W. J. Lauck and Associates, Economists*  
F. G. Tryon, *Chief Economist, United States Bureau of Mines*  
Ralph J. Watkins, *University of Pittsburgh*  
Allan H. Willett, *Director, Bureau of Coal Economics, National Coal Association*  
W. H. Young, *United States Bureau of Mines*



The committees are not intended to be research agencies. It is felt that at this stage funds can be used to best advantage in coordinating work, interchanging knowledge, advising and in stimulating research by others. Specifically they were charged to:

- [1] Define the economic and industrial problems centering in prices and pricing policies;
- [2] Summarize our present knowledge;
- [3] Appraise existing data, in terms of those essential for the study of industrial and economic problems;
- [4] Outline a program of research.

The Executive Committee met on February 26, 1937 to hear the progress reports of the industries committees. Obviously the tasks of these five committees doing exploratory work on price and related data in the automobile, coal, oil, iron and steel, and textile industries differ widely. Some deal with industries in which data are available, others must consider the questions likely to be answerable if means can be found for enlisting the interest of the industries concerned, and others have the active cooperation of their industries. The preliminary reports of the textile and iron and steel committees have been widely circulated for comment and criticism, and at the Chicago meetings of the American Economic and Statistical Associations, December 29 and 30, 1936, round tables were held to discuss them. Papers prepared by A. R. Burns, 'Industry Studies and the Nature of Competition'; Abraham Berglund, 'Industrial Price Policies and Attributes of Industrial Prices'; F. C. Mills, 'Industrial Productivity and Prices' had also been circulated in advance of the meetings and discussion was fruitful.

The Executive Committee was of the opinion that publication would contribute to a more general understanding of the features characterizing the various industries and to the conduct of effective research, and requested the National Bureau to publish the reports, after they have been carefully edited.

The Price Conference, meeting the next day, decided to

emphasize, in its exploratory work next year, problems cutting across several industries instead of those limited to a particular industry and also to undertake some work on phases of pricing policy in distribution. So little research has been done on the subject that it seems best to start exploratory work in merchandising at several focal points. Specific recommendations will be considered by the Executive Committee of the Price Conference, it being understood that the entire program is contingent upon availability of funds.

#### IV THE EXPLORATORY COMMITTEE ON FINANCIAL RESEARCH

The third area of cooperative effort, banking and credit, contains possibilities of unusual scientific and practical significance. Following the original inquiry from the Association of Research City Bankers (referred to in Section I), a preliminary conference on July 21, 1936 was attended by officials of the Association, representatives of the National Bureau and other specialists. The decision was unanimous that comprehensive studies are called for, if the bases for a wiser management of credit are to be discovered. For a critical examination of the situation the National Bureau appointed an Exploratory Committee on Financial Research consisting of:

Winfield W. Riefler, *Institute for Advanced Study, Princeton*; CHAIRMAN

David Friday, *Chairman, Committee on Banking and Credit of the Social Science Research Council*

Walter Lichtenstein, *Vice President, First National Bank of Chicago, and Chairman, Committee on Nationwide Banking Research of the Association of Reserve City Bankers*

J. H. Riddle, *Economist, Bankers Trust Company, New York*

The Committee engaged Ralph A. Young of the University of Pennsylvania to be its Secretary and to compile

an inventory of current financial research. While this survey of studies now in progress in this country <sup>6</sup> shows the great advance made in financial research since the National Monetary Commission published its report over twenty-five years ago, it also reveals gaps in current research that need to be filled. On the basis of this survey, of conferences with specialists, and the experience of members of the Exploratory Committee, a Report <sup>7</sup> was prepared outlining a method of attack and a program of suggested research.

It proposes that a coordinated program of financial research be launched at the earliest possible date under the auspices of the National Bureau, in active collaboration with organized banking groups, individual financial institutions, public agencies, foundations, and university authorities. The united efforts of these groups working together should yield most quickly fruitful results clarifying current financial problems, many of which are unprecedented and difficult to understand in terms of available knowledge. The thorough canvass of financial research now in progress, and the favor with which the proposals of the Report have been received by bankers, university specialists and government officials confirm our belief that the program is sound, feasible and useful.

The program would be carried out by a small central staff on financial research organized by the National Bureau and composed of those most competent in finance. The members of this central staff would undertake: [1] to keep in contact and to cooperate with all financial research wherever initiated; [2] to plan and inaugurate specific research projects independently; [3] to collaborate with public and private agencies in specific research projects; [4] to make research findings available as quickly, as usefully and as widely as feasible; [5] to organize commissions of inquiry on important questions of national financial policy. In short, the central staff would serve as the hub of the entire pro-

<sup>6</sup>Published by the National Bureau of Economic Research, as Volume II of *A Program of Financial Research*.

<sup>7</sup>See footnote 4.

gram, guiding, coordinating and initiating work. Special advisory committees would be created to assist and counsel it.

Any comprehensive program of financial research undertaken at this time must be flexible. To meet the needs of the situation, research must keep abreast of problems as they change with shifts in the focal points of tension within the financial system. Consequently the Committee recommends that the central staff on financial research be set up for at least five years, and given complete freedom and independence in planning and launching needed financial research in collaboration with associated groups and agencies.

The specific projects for immediate research proposed in the Report were based upon a careful survey of existing needs for information and upon consultation with financial leaders. These projects by no means cover all current needs for financial research, but they constitute a beginning upon the present program and illustrate the studies that may be undertaken later. The projects suggested in the report are grouped in accordance with their relevance to the program proposed by the Committee.

*Projects Related to the Committee's Research Recommendations*

Changes in the Capital Requirements of Business Enterprise and the Decline of the Commercial Loan

Major Factors in Fluctuations in Bank Deposits, 1929-1936

Effects of Brokers' Loan Liquidation in the Last Quarter of 1929 on Consumers' Balances or Income Deposits

Origin, Location and Movement of Corporate Cash Balances, 1929-1936

*Projects Amplifying Specific Research Recommendations of the Committee*

Financing the Consumer and Its Relation to Commercial Banking<sup>8</sup>

<sup>8</sup> This project is also integrally related to the Comprehensive Survey of the Financial Structure recommended by the Committee.

The Investment Experience of Banks in Selected Cities,  
1929-1936

The Mortgage Loan Experience of Banks in Selected  
Cities, 1926-1936

*Other Illustrative Projects Drafted for the Committee*

Projected Studies of Bank Earnings and Expenses

Trends and Current Tendencies of Bank Earnings and  
Expenses, 1920-1936

Significant Earning and Expense Relationships for Se-  
lected Years, 1926-1936 (a statistical study)

Characteristics of Banking Units and the Availability of  
Banking Facilities

The Executive Committee of the National Bureau approved the program on February 11, 1937, and directed its officers to take the steps necessary to give effect to the recommendations. The foundations are being requested to contribute half the funds needed for the initial five-year period; bankers and other business groups interested in banking and credit research, the other half. If and when funds are raised, work will begin on this attempt through research to make a major attack on the financial problems the nation is facing.

## V FISCAL POLICY

At the meeting of the University-National Bureau Committee on January 15, 1937 the possibilities of cooperative activity in other fields were discussed thoroughly. Fiscal policy was agreed upon as an extraordinarily important field for collaboration, and a group, similar to the Exploratory Committee on Financial Research, has been requested to make recommendations to the Committee at a meeting planned to be held at 'Hillside' in May.

## VI OBJECTIVES OF COOPERATIVE RESEARCH

Two years' experience makes possible a somewhat more definite statement of the objectives, and costs, of a cooperative program.

It may be assumed that economic research, if it is to be effective, will usually be devoted to one of two ends: first, to increase understanding of fundamental economic issues and relationships; or, second, to study specific issues in policy faced by government, business or other practical groups. Of course, no clear line separates these objectives; they are intimately related. In general, it may be said, however, that research in universities will tend to emphasize the first; whereas government, business and other groups having to make immediate decisions will stress the second.

Since these two objectives are closely interdependent, and since the first is more integrally and more freely pursued by universities than by any other organizations, they must always be vital centers for research and interpretation and their function in this respect should be not only preserved but also developed. On the other hand no agency has the range and resources for practical research possessed by the government in its various branches. A further assumption, therefore, of any adequate cooperative program of research in the social sciences should be the primary importance of enlisting the aid of the great universities, together with that of the government.

In view of the momentous character of the economic and social problems confronting the nation and the consequent need that the contribution to their understanding should be as adequate as human resources make possible, we may outline two sets of considerations pertinent to the development of a cooperative program. The first has reference to the form of organization; the second to the manner in which cooperative endeavor contributes to the ends of research.

[1] The university workers in any given branch of economic research are necessarily scattered among many institutions. Their physical separation and the limitations of resources in any single institution to be devoted to any one subject suggest that more systematic consultation and collaboration on a voluntary basis would be useful. Professional associations bring their members into contact in various ways, but their inclusive character and their mode of or-

ganization generally render their contributions, important as in other respects they are, more extensive than intensive from the point of view of research. It is true that the creative part of research must always remain in large measure individual. The task is to organize fruitful collaboration where conditions do not admit a high degree of centralization. Equally effective results may be attained without it. What is needed is greater opportunity to know what research is going on and where, for exchange of materials and comment among workers in the same field, for consultation with respect to the many problems that face the isolated worker, and in short for an easier and more systematized means of all-round collaboration.

[2] Systematically bringing together research workers in any given area for conference and collaboration will contribute to a better result in several ways. Exchange of information and ideas is a necessary step towards coordination of effort among agencies and individuals. Duplication will be avoided and economies made in time and expense. The state of knowledge and the adequacy of data can be examined, gaps detected, the needs for improvement of primary data recognized, and in general new research stimulated.

The catholicity of viewpoint attained from discussion among serious students from universities, government, business, labor, and various other social groups opens constructive possibilities. The vigorous criticism of one another's methods is most effective in improving standards and discovering and developing properly qualified personnel. Shoddy work and shoddy standards are rapidly revealed by the searching comments of one's respected peers assembled for face-to-face criticism. Unofficial and voluntary auspices offer a detachment that is of the essence of scientific work.

Finally, the National Bureau itself gains enormously from collaboration. Its own program is enriched and its methods improved by the ideas derived from the more intimate contact with scientists and men active in affairs throughout the country. Furthermore, its organization retains flexibility

since it is not compelled to build a permanent central staff sufficiently large to cover all important fields.

With the advantages of collaboration come certain questions of policy for the National Bureau, if the staff and cooperative programs are to be effectively combined. The additional executive burden is considerable. Dr. Kuznets and Dr. Mills have had to devote a substantial portion of their time to the tasks incident to their respective Conferences. While it is believed that the results justify the expenditure of time, it must be recognized that time devoted to administration is time subtracted from research. Assistants should be provided if the work of the Conferences is to be successfully prosecuted without detracting from the National Bureau's performance. Also for effective development each field of cooperative action will require more money than can be allotted to it in the National Bureau's budget. It will be the task of the National Bureau to assist in financing cooperative projects. It might also help to arrange, upon request, for assistance of a technical character.

Policies in each cooperative area must preserve the integrity of individual and institutional credit. The National Bureau takes initiative and offers its sponsorship and facilities; it does not seek to control or direct. Although the wisdom of not expanding the cooperative program too rapidly is recognized, it is probable that as funds and personnel become available similar collaboration may be extended to other fundamental subjects in economics. The prospects are propitious since the initiative of the National Bureau has been warmly welcomed. The furthering of systematic collaborative effort would seem to constitute one of its major functions. But this entails decision on two major problems—publication and a locus. First, requests have come and will continue to come from these cooperative undertakings that the National Bureau publish the results of their investigations. A policy with respect to such requests—one that will be fair to all concerned—must be formulated. Second, where shall the headquarters for it and a suitable meeting place for conferences be?



## VII 'HILLSIDE'—A RESIDENCE CENTER

The answer to the second question seems to be at 'Hillside', an eight-acre estate to which the National Bureau acquired title during 1936 for use as a research center. Overlooking the Hudson River at Riverdale just within the city limits of New York, this attractive property includes a well-built house of twenty rooms, one garage over which are two apartments, a second two-car garage, an outdoor swimming pool, a tennis court, and a greenhouse. Funds have not yet been obtained with which to furnish and equip 'Hillside', nevertheless, the Income Conference met there on January 29 and 30, and the Price Conference on February 27, 1937. Staff meetings have also been held there and other meetings are planned.

No one can anticipate the ultimate forms of use that the cooperative program may reveal, and until the University-National Bureau Committee has decided how cooperative relations shall be organized no final plans can be made. Meanwhile the guiding policy in the use of the property will be its gradual development as a center for the social sciences analogous in a modest way to 'Woods Hole' in the field of biology. The service that this unique institution has performed during fifty years for the advance of research and teaching in marine biology suggests the possible forms of use of 'Hillside' and perhaps also something of the goals of the entire cooperative program. To illustrate, the property might be used as a:

[1] Headquarters for such part of the research incident to the cooperative program as may be undertaken centrally. It is specifically suggested that the banking and credit study should establish headquarters at 'Hillside'.

[2] Conference center for the National Bureau, cooperating organizations, and for the cooperative program. Its use need not be limited to conferences in those areas in which ambitious programs of cooperative activity have been undertaken but can include conferences in any field where it may seem that the bringing together of leading

workers for formal or informal consultation and collaboration would serve the cause of more effective scientific work and contribute to the development of scientific personnel.

[3] Residence center which economists from cooperating institutions, foreign economists, and fellows might be invited to use at cost when in New York City. A few scholars whose interests make National Bureau material of especial value to them might be encouraged to spend sabbaticals at 'Hillside'.

## PART TWO

### *The Staff Program*

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THE WORK of the staff is important not only in itself but also as a vital part of the cooperative program. Each contributes to the other. In widening our program we shall not neglect spade-work of the type to which the National Bureau was committed seventeen years ago. Facts about our national wealth and income and their distribution, about savings, about the sources, volume and apportionment of our national fund of capital, facts about competition and the limitations upon it that come with the development of industrial combinations, mergers and trade associations and with the raising of tariff barriers, facts about the fruits of our productive energies—all these are essential to intelligent appraisal and, if the need for control arises, to intelligent control. But of this wide area of research we have so far been able to cultivate only a small part.

#### I NATIONAL INCOME AND CAPITAL FORMATION

##### *National Income by Industrial Sources and Types of Payment*

In 1934 the National Bureau began to revise Dr. King's estimates of national income for 1919-27, and to continue them through 1929, adjusting them to the estimates for years subsequent to 1929, prepared by it in cooperation with the Department of Commerce and since revised and brought to date. The result will be a continuous series of comparable annual estimates of national income by industrial sources and types of payment, since 1919. The reason for carrying these series, for the time being, back only to

1919 is that the wealth of data available beginning with that year gives a much more detailed set of estimates for the post-War period than would be possible for the pre-War and the War years. The basic work will be finished soon and the estimates released in a *Bulletin* and presented in detail in a separate report.

When the National Bureau publishes these new estimates there will be pressure upon it to bring Dr. King's measures for 1909-19 into conformity with them. Also there is considerable interest in pre-War measurements as a base with which to compare post-War developments. If the National Bureau is able to undertake the supplementary study it would be desirable to go back not only to 1909, but also, if possible, to earlier years. Perhaps estimates for 1899, 1904, and 1909 could be provided in some detail; and annual estimates for the intervening years on the basis of some reasonable method of interpolation. In preparing these estimates for the years before 1919, the data available will force the use of industrial categories much wider than those in the estimates for the post-War years.

#### *Distribution of Income in Selected Professions*

The first draft of the report on professional incomes was completed last spring. It was circulated among the staff and advisory committee and needs considerable revision. It must be condensed and some of the statistical analysis that does not contribute significant positive conclusions eliminated. This work is in abeyance since Dr. Kuznets has been devoting all the time at his disposal to completing the first volume of the report on capital formation, and to supervising work on national income; but he hopes to revise the manuscript by the end of the summer.

#### *Commodity Flow and Capital Formation in the United States since 1919*

The plan of presenting the results of the capital formation study in two volumes was originally adopted because it was deemed advisable to give in one volume a detailed

and technical account of the methods and sources used in deriving the estimates, and in a second volume a brief summary of the estimates and a discussion of their meaning. In accordance with this plan the manuscript of the first volume, which will soon be sent to the Directors for their criticism, is confined to a detailed presentation of the basic data and contains a minimum of analysis of the results.

Dr. Kuznets is now estimating the important items in capital formation for the years since 1933 (the basic tables in the first volume carry only through 1933, this being the last year for which the detailed data of the Census of Manufactures are available). If no substantial revisions of technique are suggested, the manuscript should be ready for printing in early summer.

The second volume is envisaged as primarily a summary of the results whose derivation is shown in the first volume. Their analytical significance will be discussed, and the estimates may be compared with both the national income estimates for this country and with the measures of capital formation and national income for some other countries (Great Britain, Germany). In addition, two statistical studies might be undertaken. [1] The Census of Business for 1935, the release of which will probably be completed by July 1937, makes it possible to carry through 1935 an analysis of the Census of Manufactures in conjunction with that of Wholesale and Retail Trade, similar to that presented for 1929 in Volume I. This analysis is fundamental in our inquiry, and applied to the data for 1935 would serve as a check upon the results for 1929 and also give a sounder basis to the estimates for the years since 1929, and especially since 1933 (in Volume I the estimates for the years since 1933 will be rough and preliminary in character). [2] From the Census of Manufactures for the years before 1919 the apportionment of durable, semidurable and perishable commodities in the pre-War period will be calculated. This would provide a basis for comparison with post-War years, and lend greater value to the results obtained so far.

Both statistical studies will provide estimates supple-

mentary to those contained in Volume I; accordingly, Volume II might, in addition to the brief summary of results and the analysis of their implications, contain a purely statistical part, supplementary to the statistical analysis in Volume I.

## II CAPITAL CONSUMPTION

The investigation of the various forms of capital consumption—revealed by charges for depreciation, depletion, obsolescence and repairs—has made further progress. Detailed attention is being devoted to the nature of the available records, as well as to the amounts and changes they reveal. During 1936 two reports presenting preliminary results of the investigation were published: *Bulletin 60*, Measures of Capital Consumption, 1919-1933, and *Bulletin 62*, Revaluations of Fixed Assets, 1925-1934. This year the study will be extended along the lines laid down in the *Bulletins*, and consideration given to certain additional aspects. Specifically, this year's work will cover:

[1] An analysis of depreciation and depletion policies with special reference to changes in policies during the latest depression. Variations in policy among different industries will also be studied.

[2] An estimate of depreciation and depletion charges, by industries, in terms of constant (1929) and current replacement prices, as well as in the original cost prices found in accounting records; and on a per unit of output basis as well as the widely prevalent straight-line basis.

[3] An analysis of maintenance charges, by industries, in relation to depreciation charges and volume of business.

[4] A more detailed study of revaluations of fixed assets, based on a larger sample of corporations, and classified by industries.

[5] An analysis of the changes in intangible capital occasioned by the mortality rate of business concerns.

[6] A consideration of the available data on the consumption of public capital. It may appear, however, that this aspect of capital consumption is out of place in a dis-

cussion devoted primarily to business capital, and falls more naturally into one devoted entirely to the subject of governmental income, expenditures and capital.

Solomon Fabricant hopes to have a first draft of the manuscript ready for criticism by the research staff before the end of the year.

The studies of capital, and earlier studies of the National Bureau dealing with profits and business assets, have raised questions related to the financial side of capital changes that can best be considered by further reference to the reports of business concerns. Required is a detailed analysis of business balance sheets as they have changed during prosperity and depression, and of the sources of new capital—chiefly new issues and business savings. The new data that are being collected by the Securities and Exchange Commission and the Treasury Department make possible such an investigation. The previous studies have all been useful in accumulating experience and provoking questions; indeed, that of capital consumption may be considered a part of this broader investigation. During the coming year some attention will be paid to its possibilities.

### III REAL ESTATE FINANCING AND ECONOMIC STABILITY

The study of real estate financing and economic stability is being carried on by the National Bureau at the request of a committee of the Social Science Research Council over which David Friday presides. David L. Wickens has immediate charge, working in Washington where he has ready access to the huge collections of data made by several Federal agencies. He has devoted the past year primarily to filling gaps in the basic data and to organizing the materials for final analysis.

Concerning farm real estate fairly satisfactory data have been available in agricultural censuses and special studies of the Department of Agriculture. On this subject, the contribution made by our investigators consists mainly in systematic presentation, analysis and interpretation. Urban

real estate has received little attention, though it represents values far greater than those put upon all agricultural property. The data that are in Mr. Wickens' hands possess keen interest to the financial institutions of numerous sorts that make real estate loans, to tax authorities, to owners of buildings, to the construction trades, and to the public at large.

As the first fruits of this investigation we plan to submit to the Directors a manuscript on the *Economic Position of Urban Residential Real Estate: A Handbook of Statistical Data*. This volume will show: [1] the value, classification and distribution of urban real estate, supplemented by comparisons with farm real estate; [2] rents of urban residential property; [3] the relations of rents to property values; [4] the volume of residential construction in 1919-36; [5] the relations of residential rents to family incomes; [6] financial data concerning mortgages, sources of mortgage credit, modes of repayment, risks in mortgage lending, and rates of interest.

A part of this investigation will be incorporated in the banking and credit study as that develops.

#### IV PRICES AND PRODUCTION

With the publication of *Prices in Recession and Recovery* the cooperative undertakings of the National Bureau with the Committee on Recent Economic Changes conclude. The series of current reports on economic changes during the period of profound shifts and readjustments that followed the World War have represented something of an experiment in economic analysis. It is difficult to appraise economic events without the aid of the perspective that time affords. Yet the attempt at current appraisal is undoubtedly worth while. Materials that might otherwise be lost are made available to later students. The effort to measure and appraise the operations of contemporary forces reveals defects in our analytical instruments and necessitates a questioning of accepted procedures. In so doing, it helps to generate a more realistic science. Moreover, the findings of such studies, provisional though they



be, contribute to more informed business judgments and to a sounder basis for political action.

The conclusion of this series of studies does not by any means mark the end of the National Bureau's interest in the contemporary economic scene. On the contrary, the several studies of prices and their interrelations have carried us inevitably into the field of production. Measurements of production changes, in the aggregate and by important categories of goods, are required for a just interpretation of price movements. Moreover, the construction of index numbers of fabricational costs entailed as a necessary first step the accurate measurement of changes in manufacturing output. Accordingly, current work includes the construction of a series of index numbers measuring changes in the total physical volume of production and in its important elements. In the main we have restricted production studies to annual and biennial data. Measurements of physical output in manufacturing have been supplemented by measurements of productivity, per man and per man hour.

Our various activities in these fields over the last ten years have covered a wide range. The results, bearing on the attributes of the prices of individual commodities and of major commodity groups, on the system of prices and its internal structure, on changes in the volume and character of the stream of production, on changes in industrial productivity and on the relations of such changes to costs, prices and the purchasing power of various producing and consuming groups, have been published in several books and *Bulletins*.

Plans for future work include activities of several types. As a necessary foundation for our investigations, we shall continue the construction of price index numbers, by months, annual index numbers of production, and biennial measurements of changes in production, productivity and costs in manufacturing industries. The materials relating to the operations of manufacturing industries should, indeed, be made generally available, as soon as possible. Within a

few months, when data compiled by the Census of Manufactures for 1935 are released, we shall have complete sets of index numbers bearing on changes in production, output per man or per man hour, material costs, labor costs, overhead costs (including profits) and selling prices per unit of product for more than one hundred manufacturing industries, for several important classes of industries, and for manufacturing industries in the aggregate, from 1914 to 1935. These will be used in various studies now in progress, but there is no good reason why they should not be made available meanwhile to other economists. Dr. Mills hopes to be able to prepare them for publication in 1937 as a *Handbook* of tables, with an introduction that will serve to summarize some of the general movements but that will not attempt an exhaustive analysis.

Our continuing work on production and prices has drawn attention to one of the areas in which the relation between productive and pricing processes is of exceptional importance, namely, the relation between changes in industrial productivity on the one hand and changes in unit costs and selling prices on the other. Here we may trace the incidence of industrial progress, its effects upon the fortunes of different producing groups, upon the well-being of consumers and upon the operations of the economic system as a whole. The subject was treated in a general way in *Prices in Recession and Recovery*, and in *Bulletin 56*, but a more detailed study of the incidence of advances in productivity has attractive possibilities. The most serious limitations to such a study arise from the inadequacies of our existing price measurements, particularly those on living costs for different classes of consumers. Further investigations in this field are contemplated.

The internal structure of the system of prices and its functioning in a modern industrial economy must also be studied further. Various reports of the National Bureau, completed and in process, bear upon this general topic and will contribute to a treatise on this subject.

Another phase of the work on production is a study of

the structure of manufacturing production. We learn much about the manufacturing process by measuring its annual product; we can also learn by examining, for any one year, the character and the interrelations of the several parts. The first gives us index numbers of change, the second gives measures of the levels from which these changes have been made—levels expressed in dollars, in physical units, in man hours, horse power. This second approach reveals the 'structure' of manufacturing, the directions in which our productive energies are expended, and the characteristics of the manufacturing process. The analysis is for 1929 and utilizes the rich materials available for that year; a few comparisons have been made with a more recent period. The 326 manufacturing industries reported in the Census of Manufactures, 1929, have been examined carefully to determine to what ends our economic energies are directed. This entailed the analysis of the uses of manufactured products, whether by ultimate consumers or industrial plants. As a result we have been able to allocate the various factors of production according to type of product, and to estimate the resources utilized in the manufacture of particular types of goods.

The search for the characteristics of the manufacturing structure has led to estimates of the number of wage earners and salaried workers and of the aggregate man hours worked in 1929 in different processes, to estimates of capital investment, estimates of horse power and the cost of materials, allocated according to type of product: finished or unfinished, durable, transient or semidurable goods, goods destined for human consumption or goods intended for capital equipment.

Also examined is the use made of labor in manufacturing, the type of work required, the stability of employment, the relation of the labor factor to other factors in production. The financial and the organizational aspects of the structure of manufacturing industries have not been covered, important though they are.

Charles A. Bliss will complete a manuscript this year under

the tentative title, *The Structure of Manufacturing Production, a Cross-Section View*.

## V BUSINESS CYCLES

Statistical work on *Business Cycles, Volume II, Analysis of Cyclical Behavior* has been affected by the gradual reduction in our staff from eleven to seven computers. An increase in average output per man hour has partly offset this reduction in staff, which is also a reduction in cost. At the beginning of the year two hundred and twenty-nine series awaited analysis by the technique developed for this investigation. During the year we actually analyzed two hundred and forty-one series. By February 1, 1937 the grand total of series analyzed was eight hundred and thirty-five. Some new materials were uncovered in the course of the work last year and deficiencies found in the data concerning some of the topics being treated. Hence new series have been added to the collection and now more than one hundred are still to be analyzed. In addition to their standard analyses, the computing staff has made many special tabulations, some of them rather laborious, for the third chapter, for *Bulletin 61*, for testing the foreign reference dates, and for various incidental purposes.

During the spring Doctors Mitchell and Burns completed their rather elaborate statistical tests of the National Bureau's technique for ascertaining what cyclical behavior is characteristic of different economic processes. The results confirm our confidence in the representative character of our measures, and give us clearer insight into their meaning. We have mimeographed for confidential circulation among specialists from whom we may expect helpful criticisms the text of the first three chapters<sup>1</sup> of Volume II, namely,

- I Working Plans (10 typed pages)
- II How Cyclical Behavior is Measured (127 typed pages)
- III Interpretations and Tests of our Average Measures of Cyclical Behavior (142 typed pages)

<sup>1</sup> Available on request at \$1.00.

Dr. Mitchell has nearly finished the long fourth chapter on the cyclical behavior of 'Production and Consumption'. The leading subdivisions are Index Numbers of Physical Production; Agricultural Production; Foods, Beverages and Tobacco; Textiles; Boots and Shoes; Paper and Books; Coal, Petroleum and Electricity; Metals; Motor Vehicles; Industrial Equipment. Dr. Burns is drafting a new version of the fifth chapter, which deals with 'Construction Work'. The sixth chapter on 'Transportation' should be ready in revised form by the end of the summer.

It is our plan to submit the manuscript of these six chapters, which will make a book of substantial size, to the Directors. If approved, they can be published as Volume II, Part i. Meanwhile, Doctors Mitchell and Burns will be revising the chapters of Part ii, which will cover Sales of Commodities; Stocks of Commodities; Foreign Trade; Disbursement of Incomes to Individuals; Business Profits and Losses; Savings, Investments and Debts; Dealings in Securities; Volume of Business Transactions; Interest Rates; Money and Banking.

#### *Shifts in Demand and Supply*

Wassily Leontief is carrying out certain analyses of theoretical equations reflecting price-quantity relations for comparison with the empirical results obtained when he was a Research Associate at the National Bureau. It is thought that his manuscript on shifts in demand and supply during business cycles will greatly benefit from his extended work on the subject.

#### *The Agricultural Depression*

Dr. Altschul's chief problem was to determine the specific nature of agricultural depressions. They consist in long disturbances, largely independent in their origin and different in their course from business cycles. A brief summary of the results will be given in a *Bulletin*. A detailed analysis of these problems constitutes the main part of the forthcoming

book. However, the realistic colors are lacking in the picture until the short run fluctuations in agriculture, represented by crop fluctuations, are taken into consideration. To fill this gap will be the next step. Two problems must be faced. First, the influence of these short run fluctuations in agriculture on redistribution of purchasing power and their possible repercussions on business cycles must be described. Second, the influences of these disturbances on international capital movements must be shown. The preliminary work is done; Dr. Altschul is now engaged in formulating his findings.

### *Changing Balance between Agriculture and Industry*

Various relationships between agriculture and industry have undergone great changes during the last century and a half. Relationships among agricultural and industrial production, prices, income, population, wage levels, productivity per person, values, are not now what they were before the World War or what they were a hundred years ago. They could be better understood in relation to current agricultural policies and the changes that are likely to occur could be more clearly envisaged if long time persistent tendencies could be discovered and if rational explanations could be developed for the short time shifts in agricultural and industrial relationships.

Consequently the United States Bureau of Agricultural Economics suggested to the National Bureau that together they should collate pertinent data available in their respective organizations and in other governmental and private agencies, dealing with agricultural and industrial changes; analyze long and short time changes in agricultural production, prices, income and other data, and relate these changes to comparable data for non-agricultural industries.

The relationships of the above factors in the declining or rising phases of business cycles, and the bearing of agricultural and industrial conditions abroad upon the changing agricultural-industrial relations in the United States will also be examined in this cooperative enterprise.

## VI LABOR

Dr. Wolman is at work on a book on American wages from immediately before the War through the recovery beginning in 1933. It is planned as a history of American wages during the period and as an analysis of the factors affecting wages, so far as they are susceptible to statistical treatment. As a history of wages the study aims to present as complete a record of wage changes as is possible and it will, accordingly, bring to date and amplify the earlier treatises on the subject by Douglas and Brissenden.

In its analytical sections much consideration will be given to measuring and interpreting wages as the price of labor; to comparing them with other prices; and investigating the relation between the price of labor and earnings and estimated total labor income. The diversity of American wages—their variations by industry, skill and sex of labor, and location of plant—will be set forth in considerable detail and there will be a series of chapters dealing with the relation of wages to the productivity of labor, prices, labor cost, and the extent of unionism. The book will close with a brief review of changes in the hours of labor and some discussion of international wage comparisons, with particular reference to wages in England and in the United States.

Meredith B. Givens, whose work on the measurement of unemployment was suspended when he was called to Washington in 1933, is now ready to undertake the revision of the earlier estimates of unemployment and their reconstruction for the decade 1920-30. This would include a critical study of the more recent unemployment estimates and the projection of the earlier estimates up to the present. He wishes to extend the project to include the relative degree of irregularity in different lines of employment and expects to complete the manuscript this year.

### *Reemployment Opportunities and Recent Changes in Industrial Techniques*

The National Research Project of the Works Progress

Administration is conducting a study of reemployment opportunities and recent changes in industrial techniques and is attempting to utilize all pertinent materials already collected or analyzed by governmental or private research agencies. As a result of the cooperative arrangement between it and the National Bureau a staff of some sixty persons was organized in the spring of 1936 and data were collected from approximately four hundred industrial plants. The industries surveyed are clay products, lumber, cement, flour, beet sugar, and selected portions of the machinery-building industry.

Principal categories of information secured in the field study are: production, man hours, additions to plant and equipment and the changing components of cost. In the machinery division of the study an effort is being made to estimate embodied labor represented by equipment used in the other five industries mentioned.

In addition to materials secured from the field the National Bureau has had the advantage of the research activities of the various divisions of the National Research Project and other governmental departments, principally the Department of Agriculture, Forest Service Division of Research and the Tariff Commission.

The editing of schedules and the analytical work are well advanced. It is expected that the final report will be submitted to the National Bureau in April.

## VII THE GOLD STANDARD

William Adams Brown, Jr. and Carel J. Smit have been devoting all the time at their command to the study of *The International Gold Standard under Pre-war and Post-war Conditions*. Both investigators report that they expect to submit their manuscripts to the National Bureau in 1937. The chief reason why last year's expectations of finishing were not realized is that the work has developed on their hands. Professor Brown and Mr. Smit are eager to complete this long and laborious undertaking and both appreciate the importance of publishing their results with a mini-



mum of delay; but each has a scholar's conscience and desires to make sure that his conclusions are established as firmly as may be before they are released.

A. G. Silverman is planning to complete the statistical analysis that he had undertaken in connection with the gold study.



## PART THREE

### *National Bureau Membership*

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THE RESPONSE to our appeal for members has been heartening. Members, who pay \$25 or more a year, receive all our publications before release to the public. For those not in a position to avail themselves of our full services we have established a new class, Associates, at \$5.00. Associates receive the *Bulletin* and Annual Report, and are entitled to buy copies of our books at a third off.



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MAURICE LEVEN
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