

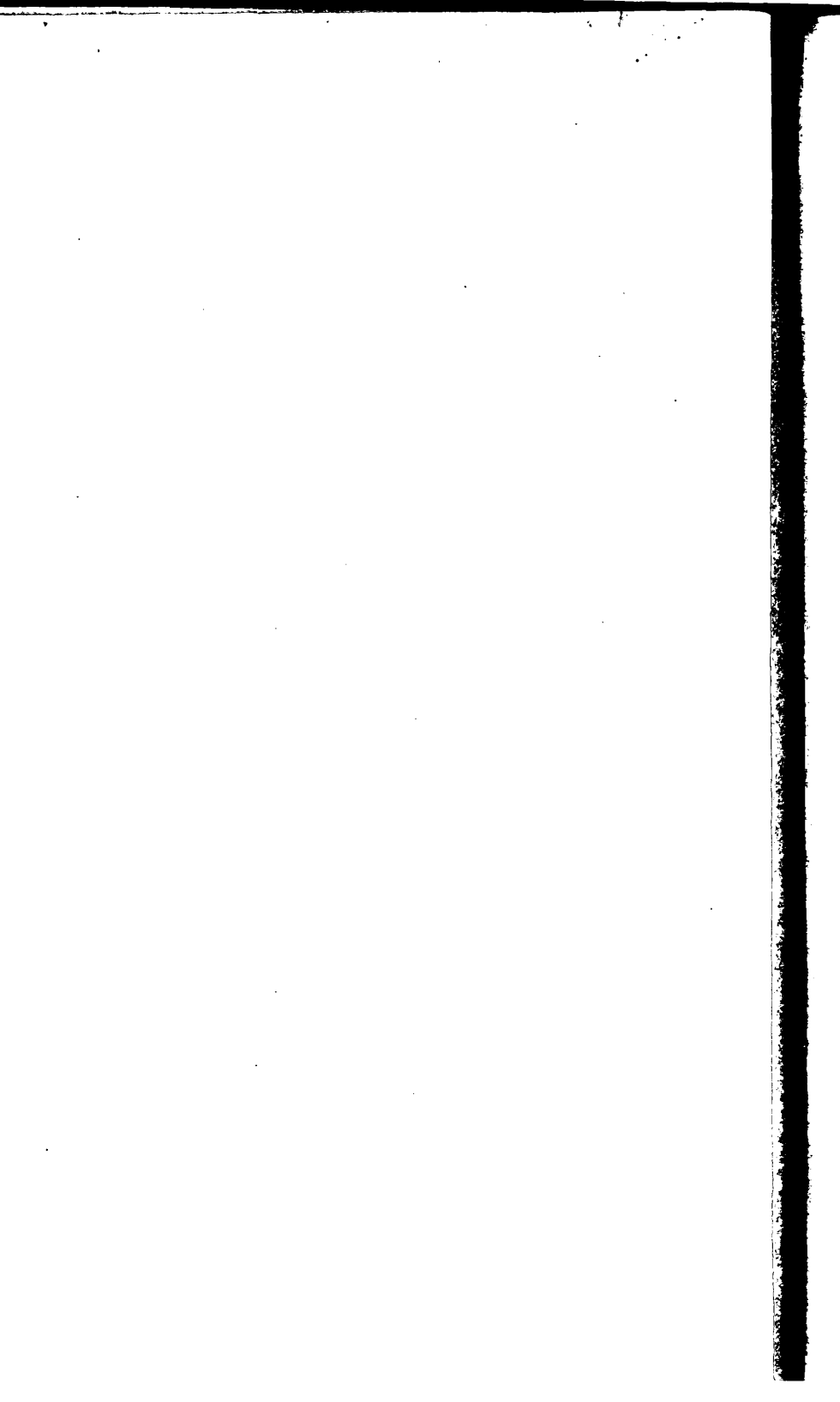
NATIONAL BUREAU  
OF ECONOMIC RESEARCH, *Inc.*

REPORT  
OF THE PRESIDENT  
AND REPORT  
OF THE DIRECTORS OF RESEARCH

*FOR THE YEAR 1930*

NEW YORK

1931



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## NATIONAL BUREAU OF ECONOMIC RESEARCH, INC.

**T**HE National Bureau of Economic Research, Incorporated, was organized in 1920 in response to a growing demand for exact and impartial determination of the facts bearing upon economic, social, and industrial problems.

The Bureau seeks not merely to determine facts, but to determine them under such auspices as shall make its findings carry conviction to Liberals and Conservatives alike. It deals only with topics of national importance which are susceptible of quantitative treatment.

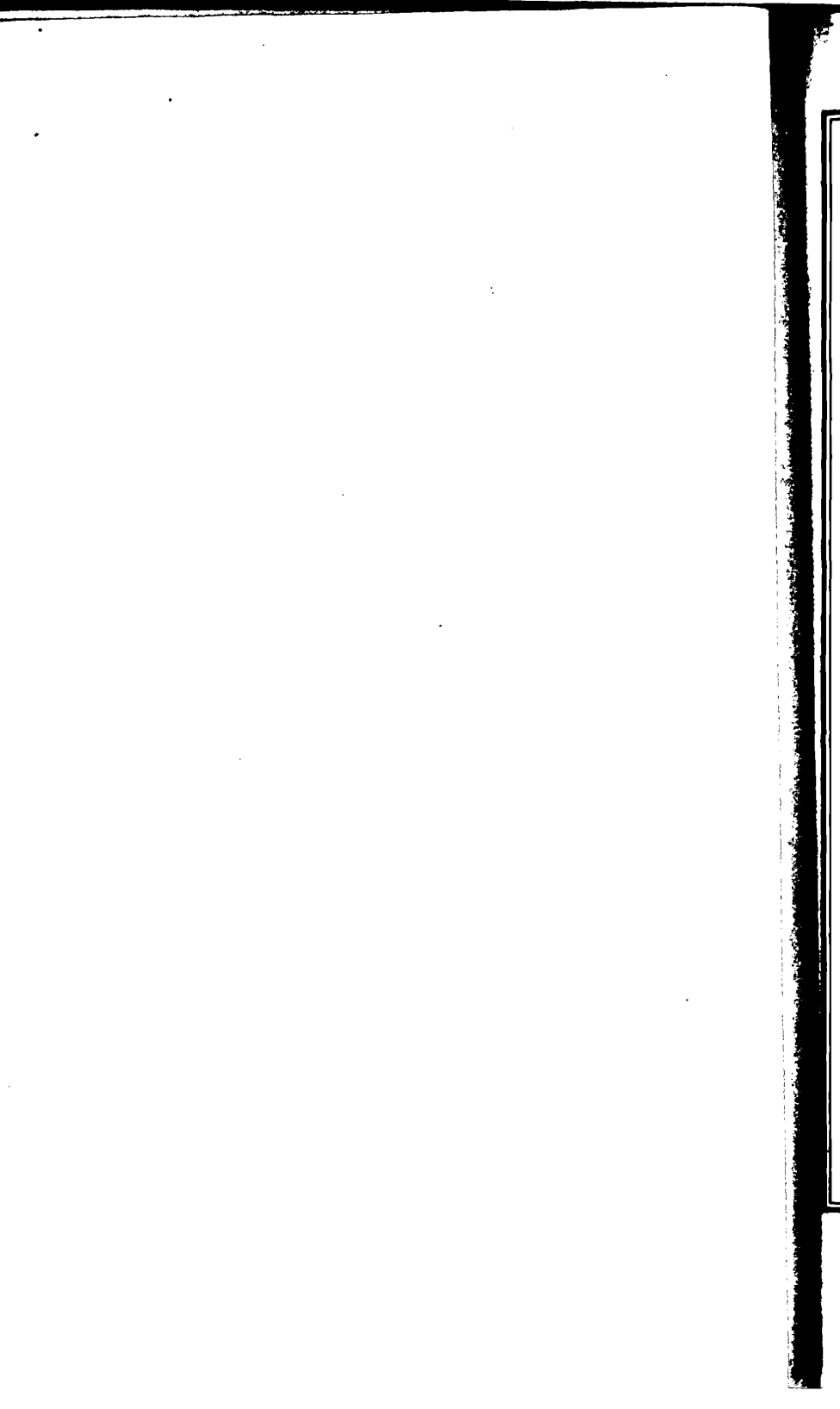
By issuing its findings in the form of fact reports, entirely divorced from propaganda, the Bureau hopes to aid all thoughtful men, however divergent their views of public policy, to base their discussions upon objective knowledge as distinguished from subjective opinion.

No report of the Research Staff may be published without the approval of the Board of Directors. Rigid provisions guard the Bureau from becoming a source of profit to its members, directors or officers, and from becoming an agency for propaganda.

The Bureau assumes no obligation to present or future contributors, except to determine and publish facts.

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REPORT OF THE PRESIDENT  
FOR THE YEAR 1930

**T**HE past year has witnessed the conclusion of the first decade of the work of the National Bureau of Economic Research. During this first decade of its activity the Bureau has gained for itself a foremost place among the economic research institutions not only of this country, but of the world. It has earned a reputation for exact and painstaking scholarship, and for the fair and unbiased presentation of important economic facts, of which it may be justly proud. It has hewn closely to its ideal of impartial fact finding. It has demonstrated that men of widely different social viewpoints may be found who are not only willing but eager to cooperate in the establishment of controverted economic and social facts. It has shown the value of such fact-finding as a basis for constructive social action. The work of the Bureau, furthermore, is making its impress on the statistical methods of many educational and governmental institutions.

In keeping the Bureau close to its original purpose during this ten year period, great credit is due to its founders, to its past presidents, Messrs. Gay, Rorty, Frey, May and Adams, and particularly to its Directors of Research, Wesley C. Mitchell and Edwin F. Gay.

Physically and financially the Bureau has expanded steadily through these years. Its publication and sales policy has been far more productive of results than that of the majority of research institutions, while its list of friends and contributors is a notable one.

During the past year the Bureau has continued its advance. It has met its budget requirements. It has published three important works on Incomes, on the Planning of Public Works and on Corporation Contributions. Its Public Works study has been particularly timely and will doubtless provide a basis for constructive legislation on the subject. Its former studies on Business Cycles, on Recent Economic Changes, etc., continued to be widely sold and discussed during the year and to be translated into other languages. I was impressed during my visit to Europe last summer by the many references to the book by students and active men of affairs in London, Geneva, Moscow and other centers.

The refusal of the Bureau to lend itself to Pollyanna prophecies in this study has been fully vindicated by subsequent events of the last 15 months. The studies on the Business Cycle, on Wages, Employment, Incomes, Bond Yields, Interest Rates, Profits, Price Trends, Health Insurance, Mechanization, Migrations, etc., which have been continued during the year, promise, when published, to fill many gaps in our economic knowledge, and to increase still further the prestige of the Bureau.

The survey of economic trends during the present depression, which has been begun along somewhat more satisfactory lines than in the past, gives likewise much promise of useful results. The enlargement of the administrative staff to keep pace with the growing functions of the Bureau should prove a distinct gain.

I feel, as Professor Adams stated so forcefully last year, that the Bureau should continue to penetrate zone after zone of important economic activity in which there is a crying need for investigators whose findings will be generally accepted as untouched by bias. Might it not be desirable sometime to

devote a full session to the discussion of the studies to which the Bureau should give its attention during the next five or ten year period, if it is to perform the maximum possible service in the field of economic fact finding?

At a recent meeting of the Executive Committee Mr. Soule suggested the possibility of the Bureau at least unofficially encouraging leading economists to study the facts presented in such studies as Recent Economic Changes and to publish their interpretations of the facts, with recommendations for future action. Such findings might be a valuable supplement to the conclusions reached by governmental committees.

Now that the Bureau has demonstrated its ability to survive the first decade, might it not be worth while to prepare during the year for an endowment drive?

*Respectfully submitted,*

HARRY W. LAIDLER

NEW YORK CITY

FEBRUARY 2, 1931

REPORT OF THE  
DIRECTORS OF RESEARCH  
FOR THE YEAR 1930

**I**N COMMON with most of the world, the National Bureau of Economic Research has suffered from the business depression of 1930, and must continue for a time to feel it. The effect upon our fortunes is a double one: The resources of the National Bureau have somewhat decreased, and the work has increased. The income from subscriptions has fallen off. At the same time, our services, both scientific and personal, have been in greater demand. While the National Bureau is glad to help in this material emergency to the extent of its power, even to provide from its limited resources the salaries of staff members giving their time without pay to public services, at the request of representatives of the National Government, it will be recognized by the Directors that the regular, continuing work of the National Bureau inevitably suffers heavily some impairment in quantity.

The extreme example of such necessary deferring of the Bureau's work to the public call is perhaps the case of Dr. Leo Wolman. For the first third of the year, his time was absorbed in completing the study on the Planning and Control of Public Works, an emergency study undertaken in response to the Administration's request for information at a time of increasing unemployment. As a member of the American committee to the Geneva conference on international comparisons of wages, he prepared and took to Geneva in June, two reports, one on the course of wages in the United States since 1920,

setting up an index of wages, and the other on costs and standards of living in the United States. In the fall, he was appointed to represent the National Bureau on President Hoover's Advisory Committee on Employment Statistics. To this Committee, as well as to President Hoover's Emergency Committee for Employment he has given much time, traveling, attending committees and conferences, and preparing reports. Under the circumstances, it is not surprising that his book on the labor market, long in preparation, which the National Bureau expected to publish in 1930, should be delayed. Dr. Wolman, in reporting on his regular work for the National Bureau, laconically remarks that he will continue to give this fundamental study such "spare time" as he can find.

Another member of the staff, Mr. Pierce Williams, was summoned in December to do field work for the President's Emergency Committee for Employment. This has taken him away from the Bureau almost continuously during months when his duties as Executive Director are most pressing and, when he has also to complete the report to the Committee on the Costs of Medical Care, due in the spring of 1931.

These two instances do not exhaust the list of special demands made upon the time and energy normally devoted by our staff to their chartered program. But they suffice to indicate that the National Bureau has not been unaffected by the vicissitudes of the past year.

### *Recent Economic Changes*

The most important of the year's new responsibilities and opportunities has come with the decision of the President's Committee on Recent Economic Changes to place under the National Bureau's direction the preparation of a further

study and report on *Recent Economic Changes*. It will be recalled that the first report which bore this title appeared in May, 1929, and that it offered in two volumes a survey of the remarkable period from 1922 to 1928. Both to the Committee and to the National Bureau it has seemed eminently desirable that the study of this long period of business activity, broken only by the minor recessions of 1924 and 1927, should be followed as promptly as possible by an examination and analysis of the major recession which set in about midsummer of 1929 and became grave by the close of the year. It was agreed that this continuation of *Recent Economic Changes* should not be confined to a careful description of the events of this trying period, but should be linked to those immediately preceding years of high prosperity, when, although an inevitable decline was foreseen, the imminence, extent and character of the subsequent depression had not been clearly discerned in the analysis of factors then operating. The need of a re-survey of these antecedent factors, cumulatively interacting since the War, as an integral part of the problem presented by the recent major recession, was clearly indicated.

It was also agreed that instead of the division of the subject into rather conventional topics—successive chapters dealing with the chief economic activities—which was the treatment, convenient and perhaps appropriate, adopted for the survey of the period from 1922 to 1928, this more compact and more intensive study should center upon the major factors influencing strongly but variously the whole range of economic activities, their timing and interrelations. The shifting and precarious balance of economic and social forces, so long, and so amazingly maintained in a fairly successful working relationship, had been suddenly and progressively dislocated. The customary and apparently almost automatic functioning

of the elements in the economic organism had not ceased; but it was no longer smooth. An examination of the whole organism and of the interaction of its vital parts, now under pressure and strain, on the basis of the existing facts critically retested, might, it was believed, yield new insights, and would certainly tend to greater coherence in form of presentation.

It was deemed advisable that this study, if undertaken, should be promptly organized and pushed to such a stage that by October 1, 1931, the first draft could be presented for discussion and criticism to the Committee and to the Directors of the National Bureau. On the basis of this general understanding, reached by preliminary conferences together with a tentative working-plan and budget, the Committee on Recent Economic Changes made a proposal, accompanied by an offer of funds, which on December 15 was accepted by our Executive Committee. It was understood that (as before), a group of specialists were to be invited to cooperate under the direction of the National Bureau. Though the smaller funds available necessitated some reduction in the number of collaborators and the amount of field investigation, it was hoped that this handicap would be measurably offset by the coordination provided by the new plan of attack, and by the greater degree of cooperation made possible by the experience gained from the study of two years ago. The members of the Executive Committee recognized the great difficulties of the task, inherent in the problem and aggravated by the limitations of the budget and by the time-schedule proposed, difficulties which they feared would again strain the working force of the National Bureau. But they felt strongly that the outstanding importance of the problem, together with the National Bureau's own interest in supplementing its previous work, warranted the hearty approval and acceptance of the proposal.

Since work on this project was due to begin on January 1, 1931, the immediate organization of the cooperating group was necessary. Before the close of the year, all the invitations of the National Bureau to the collaborators were accepted, and the group met for its first general planning conference on January 10. The initial members invited to join the National Bureau's staff for this enterprise are Messrs. M. T. Copeland, W. J. Cunningham, H. S. Dennison, R. C. Epstein, E. G. Nourse, and W. W. Stewart. Publication of the report may be expected early in 1932, and before the annual meeting, a year hence, the Directors will have received the manuscript for their critical review.

#### *The Active Factors in Business Cycles*

The work on Business Cycles already far advanced by Dr. Mitchell and the large amount of statistical material collected and analyzed by him and his assistants, together with the studies and data on price movements now available at the National Bureau as a result of Dr. Mills' investigations, invite under present conditions, a prompt scrutiny to discover whether a comparison of the timing of the elements in the complex of movements during the successive phases of cyclical fluctuations may assist in identifying the group of more active factors. The Committee on Recent Economic Changes, anxious to focus its attention upon the strategic points for further investigation, has requested the National Bureau to expedite this particular analysis of the apparatus it has prepared. Additional assistants therefore are to be employed, with the aid of a grant from the Committee, and Professor J. Maurice Clarke has agreed, in conjunction with Dr. Mitchell and Dr. Mills, to examine critically the statistical data bearing upon this problem of classifying the factors which play a leading role in business cycles.

*Trend of Profits*

The comprehensive study of business profits, entered upon in 1929 and announced in last year's report of the Directors of Research, has excited the active interest and elicited the special support of the Committee on Recent Economic Changes. One phase of this investigation, already initiated in 1929 by an anonymous grant, consists of the analysis of a series of income statements and balance sheets for concerns in several different lines of business. These materials are to be made available, for the various industrial groups, in the form of figures which reveal the total results by lines of business, but make no disclosure of any fact relating to the individual concerns. This procedure, safeguarding the inviolability of confidential papers, is made possible by the invaluable cooperation of the American Institute of Accountants. The figures will relate to the years 1928, 1929, and 1930. While their collection is a slow process, it is expected that the number of reports, made upon a special form devised by Professor Paton, the National Bureau's representative, in collaboration with officials of the Institute, will be sufficient to make possible the preparation of a report upon financial and operating ratios. The special value of this branch of the profits study lies in the inclusion of relatively small as well as large concerns. Previous studies which have attempted to compare different industries and trades have been based solely upon the published figures of the great, publicly listed corporations.

The second branch of the work upon profits has been sponsored by the Committee on Recent Economic Changes. This study aims to analyze the results from the study of a much larger body of material, covering at least a ten-year period. It will examine the trends of corporate net earnings in a wide range of industries, the trends in corporate financing, the ratio

of dividends paid in cash to earnings reinvested, and the rates of capital turnover. It is expected that the outline results of this investigation will be ready in the fall of 1931 and that a complete report will be forthcoming by the spring or summer of 1932.

### *Statistical Study of Economic Tendencies*

In the 1929 publication of *Recent Economic Changes*, Dr. Mills indicated a summary method for the statistical comparison of contiguous short-time periods and proposed that his method be more fully utilized. This proposal, as described in the last annual report of the Directors of Research, was supported by the Committee on Recent Economic Changes and approved by the Executive Committee of the National Bureau. Dr. Mills had planned to expand his work to include Great Britain, Germany and France as well as the United States, and had hoped to complete his report by the middle of 1930. But the study has grown and changed somewhat in character. It has seemed advisable to postpone the statistical survey of the several foreign countries until more adequate resources and more specialized knowledge can be secured. For the United States, the period from 1899 to 1914 and the post-war period from 1922 to 1929 have been more thoroughly treated. For the study of production, prices and costs, a background has been provided in the movements of credit, capital formation, foreign trade, wages and profits. Such a broad statistical treatment furnishes basic material relating to the events preceding the current business depression, and will therefore render most timely and useful aid to the National Bureau's new survey of *Recent Economic Changes*.

Dr. Mills has been able to derive a number of new and valuable index numbers from the statistics of the successive

Censuses of Manufactures. Two groups of these indexes are herewith presented by way of example.

TABLE I

CHANGES IN PRODUCTIVITY OF MANUFACTURING

PRODUCTION 1899-1914, 1914-1927

*All Commodities less Motor Vehicles*

YEAR	PHYSICAL VOLUME OF PRODUCTION	NUMBER OF WAGE EARNERS	NUMBER OF ESTABLISHMENTS	OUTPUT PER WAGE EARNER	OUTPUT PER ESTABLISHMENT	WAGE EARNERS PER ESTABLISHMENT
1899=100						
1899	100.0	100.0	100.0	100.0	100.0	100.0
1904	113.8	107.2	95.1	106.2	119.7	112.7
1909	143.4	130.4	126.6	109.9	113.3	103.0
1914	156.9	132.2	114.7	118.7	136.8	115.2
1914=100						
1914	100.0	100.0	100.0	100.0	100.0	100.0
1919	123.9	122.0	115.6	101.5	107.2	105.6
1921	104.0	99.5	92.6	104.5	112.2	107.4
1923	149.6	127.1	96.0	117.6	155.8	132.4
1925	153.5	119.8	90.3	128.1	169.9	132.6
1927	158.9	117.1	85.2	135.7	186.5	137.4

TABLE 2

CHANGES IN SELLING PRICE AND ELEMENTS OF COST,  
PER UNIT, OF MANUFACTURED GOODS

1899-1914, 1914-1927

*All Commodities less Motor Vehicles*

YEAR	SELLING PRICE PER UNIT	COST OF MATERIALS PER UNIT	COST OF FABRICATION PLUS PROFITS PER UNIT	LABOR COST PER UNIT	OVERHEAD COST PLUS PROFITS PER UNIT OF PRODUCT
1899=100					
1899	100.0	100.0	100.0	100.0	100.0
1904	108.3	109.6	105.5	106.0	105.1
1909	121.4	124.7	115.0	110.5	118.2
1914	123.4	129.1	112.2	115.2	109.9
1914=100					
1914	100.0	100.0	100.0	100.0	100.0
1919	214.6	212.4	219.4	207.6	228.6
1921	170.7	166.9	179.1	190.3	170.3
1923	167.0	159.1	184.7	185.4	184.1
1925	165.8	161.1	176.3	170.7	180.8
1927	153.1	146.9	167.1	163.3	170.0

Active preparation of Dr. Mills' price monographs has been held up by his absorption in the study of Economic Tendencies, but the new sources of information opened up by this exploitation of Census data will be of great assistance in the further prosecution of the price studies. That the regular work on prices, while delayed, has not been seriously interrupted, is indicated by the use made by Dr. Mills of this price material in a recent News-Bulletin.

*Unemployment*

Last year's report mentioned still another outgrowth of Recent Economic Changes—a critique of the material and methodology for estimates of unemployment. Mr. Givens

was employed on a part-time basis by the National Bureau to continue the work on this subject which he had begun under Dr. Wolman's direction. He is testing all the available methods and results of estimate and measurement of unemployment, except the method of continuous direct registration which is practiced in certain foreign countries. It is essentially a laboratory task to examine critically and to compare the present imperfect instruments, to ascertain what improvements and extensions of existing data must be made if American unemployment figures are to be removed from the hazy twilight which now surrounds them. It is to be hoped that the experience of 1930 may lead to some greater public consideration of the statistician's laboratory investigations.

### *Business Cycles*

The second volume of Dr. Mitchell's work on Business Cycles, which tentatively has been entitled "The Cyclical Behavior of Business Factors," is nearing completion, despite other demands on the time of Drs. Mitchell and Kuznets and despite the considerable enlargement of the number of statistical series which are found to require analysis. This number, estimated a year ago to be almost 300, has now grown to nearly 500 of which approximately 400 have been analyzed according to the method already described in the report for 1929 of the Directors of Research. Already available for study are nine of the twelve large groups of time series listed in the table of contents of this second volume, namely: production, transportation, prices, sales, stocks, foreign commerce, banking and currency, investments and speculation, and volume of payments. Every effort will be made to expedite the remaining three groups: personal incomes, business profits and losses, and social concomitants. The work now in hand

and soon to be concluded carries the analytical treatment up to the end of the last completed cycle in the United States, England, France and Germany. It is of immediate consequence that the analysis be extended through the cycle which includes the present depression. Materials for this are already being collected, but the analysis cannot be undertaken until the date of the depression trough for the four countries can be confidently established. The work on this volume, including the supplementary computations and revisions, will be pushed forward with all possible speed. This material is basic for the study by Professor J. Maurice Clarke, already referred to. It is needed, also, by the group collaborating on the continuation of *Recent Economic Changes*. Indeed, the pressure of public interest at the present time demands an exceptional expenditure of energy in order to make the results soon and generally available.

#### *Seasonal Variations*

As reported last year, Dr. Kuznets' work in preparing time-series for Dr. Mitchell's study led him to an investigation of seasonal variations which proved so promising that he was authorized to continue it during 1930. Four of the six large groups of industries, which show marked seasonal variations and for which data can be found, have furnished about 250 series. The four completed groups—textiles, leather and shoes, automobiles and rubber, and construction—have been written up in tentative form. The other two, food products and miscellaneous, will soon be completed. For each of these groups, the seasonal pattern is traced in output, shipments, stocks, and new orders, following the process from the raw material to the purchase of the finished product by final consumers. Since these figures indicate where the financial burden of holding stocks is carried in the course of production

from manufacturer through the distributing agencies, and since they also show shifts in the distribution of this burden—facts of significance for the study of the current depression—it seems highly desirable that this work be finished at an early date.

### *Cartel Stabilization*

Dr. Kuznets, at Dr. Mitchell's suggestion, has also spent some time in examining the stabilization activity of the German cartels. The analysis of the time-series for various countries indicated a comparative stability of economic development in pre-war Germany which seemed to be related to the policy pursued by the cartels. The preliminary report on this subject opens up a distinctly fertile field which deserves further cultivation. As Dr. Kuznets plans to visit Germany, he has been requested to collect business reports of cartels and other material which is not available here.

### *The Encyclopedia of Statistical Series*

In rounding up the material for the first volume on production series in the encyclopedia which Dr. Thorp has been preparing—an undertaking which, it will be recalled, grew out of the original collection of series on which Dr. Mitchell's study of business cycles is based—Dr. Thorp found that the number of estimates of national income had become so much augmented that it was decided to divide production into two volumes, the first to contain estimates of national income and general index numbers of production, and the second to include the statistical series of production for individual commodities. The manuscript for the first of these volumes, which will contain not only the numerous estimates of national income but also a description of the various controversial aspects

as to concept and method, is almost ready for circulation to the Board of Directors.

### *Study of Sickness Insurance*

Upon the completion and publication of Mr. Pierce Williams' report on "Corporation Contributions to Organized Community Welfare Services," he turned his attention to the study of sickness insurance which the National Bureau had undertaken at the request of, and with funds furnished by, the Committee on the Costs of Medical Care. The preliminary examination disclosed that a disappointing answer must be expected to the question "To what extent does health and accident insurance provide medical care to the people of the United States?" Medical care falls outside the field of health and accident insurance as technically defined by State Insurance Commissioners. It is therefore desirable to seek examples of medical care made available through other applications of the principle of insurance. By means of field investigations, a limited number of such agencies have been found operating in this country. Hospital Benefit Associations, Community Hospital Associations, medical care supplied to the employees of some individual industrial establishment or corporation, or available to members of a particular trade union, provide by some form of regular payment, analogous to insurance, medical care to a very limited portion of our people. Since the situation here resembles, although on a lower scale of development, that prevailing in Great Britain prior to the enactment of National Health Insurance in 1911, and since compulsory (or State) sickness insurance has replaced sporadic voluntary agencies in several European countries, the Committee on the Costs of Medical Care felt that some account of the European experience should be included in this report. Mr. Williams has a competent assistant in Mrs. Chamberlain, who has car-

ried out a series of field visits and has collected much of the material on sickness insurance. With her help, Mr. Williams counts on having his report ready on the scheduled date, despite the heavy outside drain on his time already referred to at the beginning of this report.

### *The Research Associates*

An interesting development of the year under review is the first appointment of research associates under the plan described in last year's report, and the promising start of this enlargement of the staff and services of the National Bureau. From a number of applications, the Committee, composed of the National Bureau's Directors by University Appointment and a representative of the Social Science Research Council, nominated three research associates who, after approval by the Executive Committee, have been enabled to work for a year as members of the National Bureau's staff upon their own projects of research. On October 1, the research associates, Miss Dorothy Bacon, Mr. Arthur F. Burns, and Mr. Arthur D. Gayer, entered upon their work. Each associate was assigned to one of the older staff members and each is being given the requisite computing and clerical assistance.

Miss Bacon is studying the relations between the prices of the common stocks of individual industrial corporations and their earnings per share, over a considerable time period, comparing the pre-war situation with the changes during the War, the war-readjustment, and the years subsequent to 1922. The figures are to be examined with a view to ascertaining the influence of earning power upon stock prices in general, and in particular to disclosing any cyclical variations in the ratios.

Mr. Burns is inquiring into Production Trends in the United States with the view especially of testing the evidence

and theories as to the existence and character of long economic waves. His study may also throw light upon the relation between the divergence in trend movements of production on the one hand, and on the other, the severity of business depressions.

Mr. Gayer, who was engaged with Dr. Wolman in the National Bureau's recent study of "Planning and Control of Public Works," is continuing and supplementing that report, laying emphasis upon the analysis of experiences in the operation of the plan during the past year of depression.

#### *Statistical Library and Laboratory*

Substantial progress has been made during the past year in the development of the library and laboratory. The librarian, Miss Studley, has catalogued all the books and periodicals now in the possession of the National Bureau and has prepared a comprehensive index of the statistical series available in the library files. Mr. Brunsman has been entrusted with the organization of the laboratory unit. For the present, the chief work of this group is the assistance of the research associates, although a number of tasks have been performed for other members of the research staff. It is expected that in time much of the computing work of the National Bureau may be thus centralized.

#### *Publications in Prospect*

Two books are now in press. Dr. Willcox's second volume of *International Migrations*, the content of whose 700 pages was outlined two years ago in the report of the Directors of Research, will soon be published. Its full interpretative studies by authorities from many countries, illuminating and criticizing the collection of statistical data in Volume I, bring to a conclusion a great enterprise for which scholars and ad-

ministrators will long be grateful to Dr. Willcox and his collaborators. The National Bureau takes this occasion to express its appreciation and thanks to all those who have made possible the execution of this work.

In the course of the preparation of Dr. Macaulay's manuscript on Bond Yields and Interest Rates, which is still progressing, it was found that an excursus of technical value, on the Smoothing of Time Series, might advantageously be published separately. This procedure was approved by the Executive Committee, and the monograph was thereupon circulated, in galley proof, among the Board of Directors, where it received some useful critical suggestions. After revision by Dr. Macaulay it was returned to the press and is now in page proof on the point of publication.<sup>1</sup>

Dr. Thorp's volume, containing the collection of estimates of national income and of general production index numbers, referred to above, will shortly be ready for circulation in mimeographed form. Dr. Mills' study of Economic Tendencies has been in large part mimeographed and is expected to follow immediately after Dr. Thorp's book. Mr. Williams' report on the provision of medical care through insurance will be ready by summer at the latest. Dr. Jerome expects to complete the manuscript of his monograph on Mechanization in Industry before the end of 1931. Mr. Givens holds out the same expectation for his study of Unemployment Estimates. In view of the demands which the study of the 1930 depression will make upon Dr. Mitchell's time, his second volume on Business Cycles can scarcely be completed before 1932.

<sup>1</sup>"The Smoothing of Time Series"; published March, 1931, as Volume 19 in the National Bureau Series.

*Publications During 1930*

During the past year, three books have been published by the National Bureau. Dr. King's *National Income and Its Purchasing Power* appeared early in the year, and with it Dr. King closed his long and fruitful connection with the National Bureau. Mr. Pierce Williams' *Corporation Contributions to Organized Community Welfare Services* was followed closely by the publication of Dr. Wolman's monograph on *Planning and Control of Public Works*. The first volume of Dr. Mitchell's work on Business Cycles was reprinted and by the end of the year over half of the edition of 2,000 copies was sold.

During the years 1922-1930, inclusive, the National Bureau has published 17 books, calling for the printing of a total of 47,000 copies, of which 23,830 copies have been sold to the public and 14,212 copies have been delivered to subscribers.

*News-Bulletins Published*

Six issues of the News-Bulletin appeared during the past twelve months. Their chief contents are listed below.

*Number 36.* January 15. Population of United States Nears 120 Million Mark.

Advance information regarding Census data used in Dr. King's report "The National Income and Its Purchasing Power."

*Number 37.* April 22. Seasonal Movements in Production and Trade.

Data regarding short-time fluctuations in production and trade assembled by Dr. Kuznets.

*Number 38.* June 3. Corporation Contributions to Organized Community Welfare Services.

Summary of book by Messrs. Williams and Croxton.

*Number 39.* July 3. America Spends \$3,500,000,000 Yearly on Public Works.

Summary of data in the National Bureau's book, "Planning and Control of Public Works" by Dr. Wolman.

*Number 40.* November 22. Some Aspects of the Price Recession of 1929-1930.

Presentation of material gathered by Dr. Mills in connection with his work on prices.

*Number 41.* January 5, 1931. Bond Yields and Business Recovery.

Preliminary figures from Dr. Macaulay's study on interest rates.

#### THE STAFF

IN REVIEWING the activities of another year of the National Bureau's progress, it is both a duty and a pleasure to repeat the thanks of the Directors of Research to all the members of the staff. There have been duties and changes of duties ungrudgingly accepted; there has been good work performed day by day with good-will and a real concern for the welfare and standards of the National Bureau.

EDWIN F. GAY

WESLEY C. MITCHELL

NEW YORK,  
FEBRUARY 2, 1931

SCIENTIFIC PUBLICATIONS,  
1921-1931

Each of the books mentioned below is the result of a thoroughgoing, painstaking, expert investigation of the subject by one or more members of the research staff of the National Bureau of Economic Research, Inc. Each report, before being published, was submitted to the members of the board of directors of the National Bureau for their criticism and approval. No report is permitted to be published without such review by the directors of the National Bureau.

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REPORTS DEALING WITH BUSINESS CYCLES, PRICES,  
ECONOMIC TENDENCIES IN THE UNITED STATES  
AND FOREIGN COUNTRIES, AND RELATED SUBJECTS

VOLUME  
NUMBER

4 BUSINESS CYCLES AND UNEMPLOYMENT

By the staff of the Bureau with 16 collaborators.

405 pages, \$4.10

Results of an investigation made for President Harding's Conference on Unemployment. Twenty-one topics covered. This report summarizes the known facts of unemployment and describes the various methods suggested to control the business cycle and alleviate cyclical unemployment.

5 EMPLOYMENT, HOURS, AND EARNINGS IN  
PROSPERITY AND DEPRESSION

By WILLFORD I. KING. . . . . 147 pages, \$3.10

Results of an inquiry conducted by the National Bureau of Economic Research, with the help of the U. S. Bureau of Markets and Crop Estimates and the Bureau of Census, for President Harding's Conference on Unemployment. Gives full details of investigation summarized in *Business Cycles and Unemployment* to which it is a companion volume.<sup>1</sup>

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<sup>1</sup>Out of print.

VOLUME  
NUMBER

8 BUSINESS ANNALS

By WILLARD L. THORP and WESLEY C. MITCHELL

384 pages, \$4.00

A descriptive summary of business conditions in United States, England, France, Germany, Austria, Russia, Sweden, Netherlands, Italy, Argentina, Brazil, Canada, South Africa, Australia, India, Japan and China, for periods from 36 to 136 years, with an introduction, *Business Cycles as Revealed by Business Annals*.<sup>1</sup>

9 MIGRATION AND BUSINESS CYCLES

By HARRY JEROME . . . . . 256 pages, \$3.50

A statistical study of cycles in the supply of labor covering a century of American experience. Important subjects covered: nature of modern migration; how flow of population is affected by economic factors; changes in character of immigration over a century; variation with industrial demand by seasons and business cycles.

10 BUSINESS CYCLES: THE PROBLEM AND ITS SETTING

By WESLEY C. MITCHELL . . . . . 512 pages, \$6.50

This book supersedes the author's 1913 publication on Business Cycles, which was the standard work of its time. The present volume brings up to date all the theories of business cycles; shows how our modern business economy was evolved and operates; elucidates the uses of statistics and business annals, and combines the results into a single working concept to guide practical policies as well as scientific investigations.

11 THE BEHAVIOR OF PRICES

By FREDERICK C. MILLS . . . . . 598 pages, \$7.00

A pioneer study of the inter-relations of commodity prices, individually and by groups. Contains many novel measures of special interest to teachers of statistics, to marketing and purchasing executives, students of business cycles, and all who face problems in price analysis.

12 RECENT ECONOMIC CHANGES

(2 Volumes) . . . . . 900 pages, per set \$7.50

This report gives the full details of a nation-wide investigation made by the National Bureau of Economic Research, Inc., for a committee headed by Herbert Hoover. Includes the recommendations of this committee based upon the factual material. Topics covered: changes in consumption and the standard of living; new and old industries;

<sup>1</sup>Out of print.

VOLUME  
NUMBER

technical changes in manufacturing industries; specific changes in certain technical production factors; the changing structure of industry; construction; transportation; marketing; labor; management; agriculture; price movements and related industrial changes; money and credit and their effect on business; foreign markets and foreign credits; the national income and its distribution; how matters stood in the spring of 1929.

17 **PLANNING AND CONTROL OF PUBLIC WORKS**  
By LEO WOLMAN . . . . . 294 pages, \$3.00

Carrying forward and supplementing the investigations made for the Committee on Recent Economic Changes, the National Bureau of Economic Research and the Department of Commerce completed (July, 1930) an investigation of the relation between expenditures for public works and prevailing economic conditions in the United States. Presents chapters on the expenditures of cities; on public work in New York City; public works of the government of New York State; Federal construction; road building; the financing of public construction; planning and procedure; the problem of control.

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**REPORTS DEALING WITH INCOME IN THE  
UNITED STATES**

- 1 **INCOME IN THE UNITED STATES—Vol. I**  
By WESLEY C. MITCHELL, WILLFORD I. KING, FREDERICK R. MACAULAY and OSWALD W. KNAUTH . 152 pages, \$1.50  
A summary of the amount and distribution of income in the United States, 1909-1919, for readers who are primarily interested in the results.<sup>1</sup>
- 2 **INCOME IN THE UNITED STATES—Vol. II**  
By WESLEY C. MITCHELL, WILLFORD I. KING, FREDERICK R. MACAULAY and OSWALD W. KNAUTH . 440 pages, \$5.15  
A report giving in full the methods and estimates on which the results shown in Vol. I are based.
- 3 **DISTRIBUTION OF INCOME BY STATES IN 1919**  
By OSWALD W. KNAUTH . . . . . 32 pages, \$1.30  
A study of the share of each state in the national income with a special analysis of the amount and relative importance of farmers' income.<sup>1</sup>

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<sup>1</sup>Out of print.

VOLUME  
NUMBER

7 INCOME IN THE VARIOUS STATES

By MAURICE LEVEN and WILLFORD I. KING . 306 pages, \$5.00

This volume gives the total and per capita income carefully adjusted for every state. Shows the incomes of farmers, wage-earners and persons of large means.

15 THE NATIONAL INCOME AND ITS PURCHASING POWER

By WILLFORD I. KING . . . . . 394 pages, \$5.00

The third of the National Bureau's studies of national income. Gives in detail the annual changes in national income and its purchasing power from 1909 to 1928. Classifies total estimated income of \$89,419,000,000 by salaries, wages, money and commodity income of entrepreneurs, and imputed income. Presents figures as to per capita incomes of salaried employees and wage earners, 1909-1927; and figures as to incomes drawn from agriculture, manufacturing and mercantile occupations.

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REPORTS DEALING WITH MISCELLANEOUS  
SUBJECTS

6 THE GROWTH OF AMERICAN TRADE UNIONS

By LEO WOLMAN . . . . . 170 pages, \$3.00

Results of a comprehensive investigation of trade union membership, year by year, for 44 years; fluctuations with the business cycle; effects of World War conditions; women in trade unions. Contains also a detailed analysis of the total working population.

2 TRENDS IN PHILANTHROPY

By WILLFORD I. KING . . . . . 78 pages, \$1.75

Gives figures of contributions in a typical American city (New Haven, Conn.) for religious work, secular education, hospitals, poor relief, care of delinquents, recreational activities, and "character building" organizations. Compares volume of giving with community's wealth.

6 CORPORATION CONTRIBUTIONS TO ORGANIZED COMMUNITY WELFARE SERVICES

By PIERCE WILLIAMS and FREDERICK E. CROXTON

347 pages, \$3.00

(Sponsored and endorsed by a national committee of industrialists.)  
With the aid of tables and graphic charts, data for nearly 150 Ameri-

VOLUME  
NUMBER

can cities are analyzed to ascertain the proportion of total contributions received from business corporations by community chests; Red Cross disaster appeals; building fund "drives"; national social work organizations; Y. M. C. A.'s, etc. Compares various leading industries in respect of contributions to community chests; discusses basis of contributions by "national" corporations to charitable agencies in cities in which corporation has interests; presents data as to corporation contributions to war service appeals, 1917 and 1918.

## 14 INTERNATIONAL MIGRATIONS

## VOL. I—STATISTICS

1,112 pages, \$10.00

Compiled by Imre Ferenczi, of the International Labour Office, Geneva, and edited by Walter F. Willcox for the National Bureau of Economic Research. Fifty-one countries represented. Gives figures for the nineteenth and twentieth centuries of intercontinental emigration according to national statistics; migrations according to international statistics; intercontinental movements; volume and direction; sex and age; occupations; continental migrations.

## 18 INTERNATIONAL MIGRATIONS

## VOL. II—INTERPRETATIONS

700 pages, \$7.00

The detailed statistics of immigration into and emigration from various countries receive expert interpretation in this second volume. Dr. Willcox, as editor, has received chapters from twenty writers in as many different countries, each analyzing the migration statistics of his country. The second volume, like the first, will contain an impressive collection of figures which will illuminate a most fascinating subject.

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