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NATIONAL BUREAU  
OF  
ECONOMIC RESEARCH  
INC.

REPORT OF THE PRESIDENT

AND

REPORT OF THE DIRECTORS OF RESEARCH

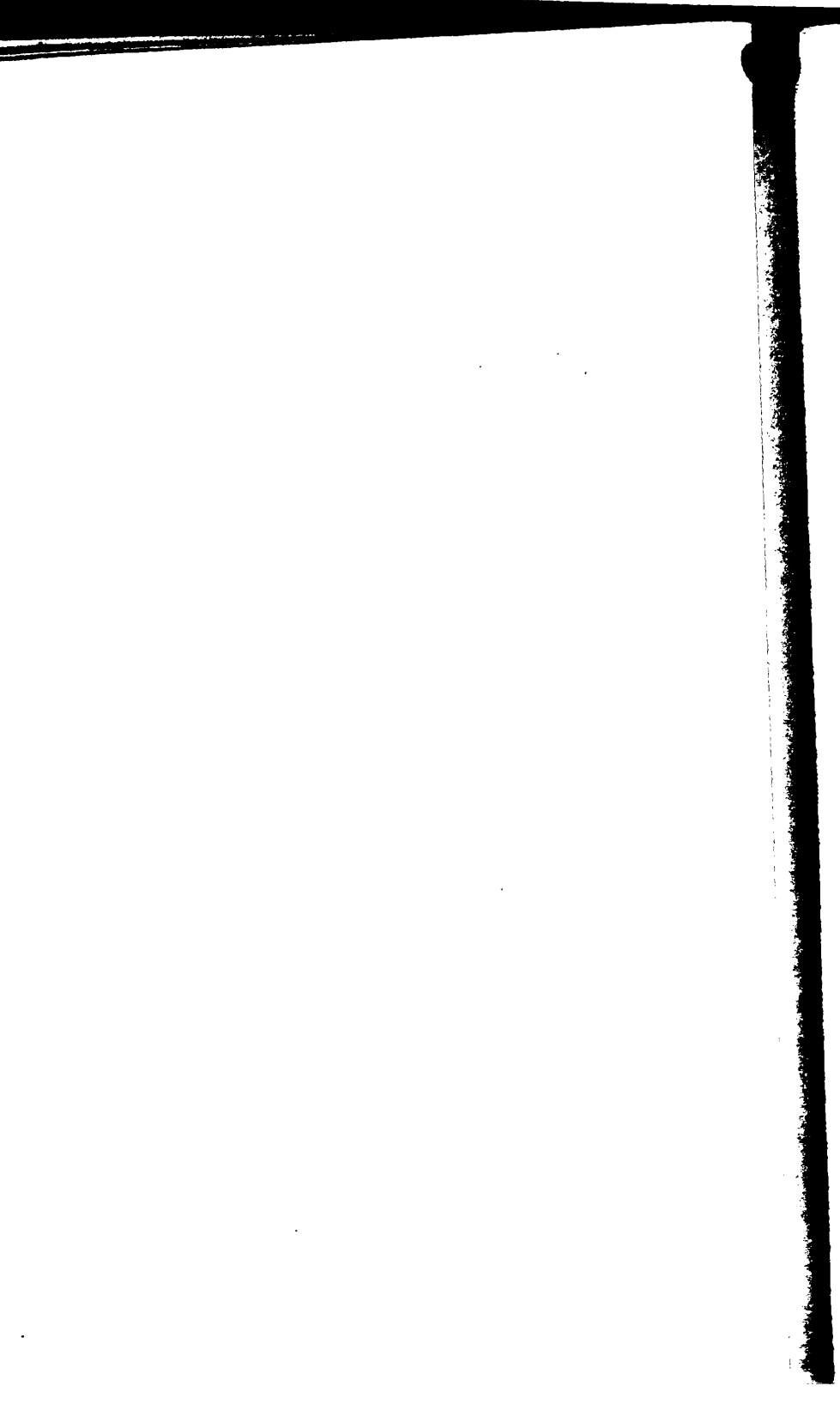
FOR THE YEAR

1931

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NEW YORK

1932



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 to 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 1931

**D**URING the last year, a question uppermost in the minds of thinking men and women throughout the world has been how best to avoid recurring economic depressions, with their resulting suffering to millions of people. The problem of how these depressions come about and how they may be cured constitutes one of the most challenging economic issues before the world today.

In 1921, years before the present crisis, when the National Bureau of Economic Research was organized as an impartial fact-finding bureau in the field of economics, it decided to give major consideration to the workings of the business cycle, with its alternating period of prosperity and of depression, and to the allied problem of income distribution.

One of the prime movers in the formation of the Bureau was Wesley C. Mitchell, author of the epoch-making book *Business Cycles*, published in 1913. Dr. Mitchell became one of the two Directors of Research of the Bureau, and for the last decade has made the problem of the business cycle his chief research task.

In 1927, he completed the first volume of a book on business cycles for the Bureau, containing an historical setting of the problem. This is to be followed by the most exhaustive and realistic study of the actual workings of the system that has thus far been attempted. So vast a work, involving the sifting out of a wealth of statistical material,



here and abroad, would have been difficult, if not impossible, without the cooperative effort of a well-equipped research bureau.

Further publications of the Bureau—its reports on *Business Cycles and Unemployment*, on *Recent Economic Changes*, on *Planning and Control of Public Works*, on *The Behavior of Prices*, and on the distribution of incomes—have thrown additional light on this problem.

A number of Bureau studies in process of completion, including those on seasonal fluctuations in production and consumption, on corporation profits, interest and bond rates, on wages, employment, labor costs, on the mechanization of industry, on the measurement of unemployment and on various economic changes during the period of the present business recession, will still further add to an understanding of the phenomenon of the business cycle.

Finally there are the future projects which the Bureau hopes to get under way in the near future. Many students of business depressions maintain that these depressions are due in part at least to the great differences now existing in the distribution of income in the United States. Too large a return, they claim, goes to property owners; too little, to wage and salary earners. Just what is the distribution of income in the United States at the present time? The subject of income distribution, as is known, was the subject of the Bureau's first publication. The appearance of this volume gave the Bureau its initial reputation for thoroughness and impartiality in the field of economic fact-finding. This study and succeeding studies are to be revised and elaborated. The new investigation will have significance both in itself and in its relation to the phenomenon of business cycles.

Closely related to the problem of income distribution are

to that of industrial depressions is the question of the amount of the national income spent directly for bread, shoes and other consumption goods and the amount that finds its way into production. Many students claim that we are investing too much of our income in factories and mechanical equipment and spending too little of it for consumption goods.

What are the facts? A number of facts are known. But there are many important gaps. Thus far no organized effort has been made to fill these gaps. The Bureau hopes to assay this task as well as the task of discovering what changes have occurred in the physical volume of goods produced in the United States during the past years and the relation of these changes to business fluctuations and to human well-being.

Finally, the Bureau is desirous of tackling the increasingly important question of the limitations placed upon free competitive practices in this country. Here again certain facts are known. Many facts, however, are shrouded in obscurity. Can a careful, scientific investigation disclose a large enough number of facts to be of social significance? This the Bureau hopes to find out.

Never in our history was the work in which the Bureau engaged of greater importance than during the present period of depression, of confusion and of drift. The Bureau was never better equipped than at present to carry out its important task. Its proposed program of future work prepared by the research staff and Dr. Gay and endorsed by the Board of Directors of the National Bureau is an important document which ought to be read by every student of the problem.

The Bureau has in the past been fortunate in securing the support of hundreds of men and women who believed

that its fundamental and scientific spade-work in fact-finding was forming a basis for much intelligent and constructive future action.

May we take this opportunity to express our appreciation for this aid and to urge continued cooperation in making the Bureau an agency of ever greater social value in the coming years.

HARRY W. LAIDLER

NEW YORK, MARCH 28, 1932.

REPORT OF THE  
DIRECTORS OF RESEARCH  
FOR THE YEAR 1931

AT THE last annual meeting of the Board of Directors of the National Bureau of Economic Research, the Executive Committee was requested to consider and report upon the problems which, as new projects of research, it would be expedient for the National Bureau to study. At two meetings of the Executive Committee a number of suggestions, made by members of the Board and the Committee and also by the research staff of the National Bureau, were discussed. It was decided to recommend the prompt resumption, on a carefully formulated basis, of the National Bureau's estimates of national incomes. In addition, it was recommended that, if adequate funds could be secured, three new investigations be made of the following subjects:

1. The amount, source and direction of the flow of national savings.
2. The efficiency of the working of competition in view of the apparently increasing rigidities of American economic organization.
3. The physical volume of production in the United States and the flow of goods from producer to consumer.

These problems appeared to be of fundamental significance and at the same time to be both appropriate to the

aim and methods of the National Bureau and consistent with the continuity and interdependence of its previous and current studies. Since the first of the recommendations was in consonance with a resolution of the Board of Directors adopted at its meeting in February 1931, Dr. Kuznets was entrusted with the task of making a preliminary survey looking toward the re-establishment of the estimates of national income.

Meanwhile, in preparation for the 1932 meeting of the Board, efforts were made to discover new sources of funds to finance the three new projects, and the full resumption of the studies of national income. Fear was entertained lest the prolonged business depression might impede the securing of financial aid even from sources especially interested in such inquiries, but since the very intensity of the depression made evident the pressing need of these scientific studies it was judged advisable to proceed. The search for funds appeared promising, but has recently proved unsuccessful, and therefore, for the time being, the National Bureau must limit itself to such reconnaissances in these fields as its present staff may be able to make.

The protraction of the depression has not only hampered the National Bureau in expanding its program, but has also made impossible the completion of the study engaged upon last year at the request of the President's Committee on Recent Economic Changes. It was pointed out in the 1931 report of the Directors of Research that the Executive Committee, in authorizing the study of the world-wide economic depression, clearly 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." As the work on this study progressed during the year 1931, it became obvious, after several conferences

the collaborators and frequent sessions of the editing committee, that the presentation of results would be necessarily defective both on account of the inadequacy of the descriptive and statistical data and because of the incompleteness of the analysis. This became apparent also to the sponsoring committee after the cumulative catastrophic economic events of the mid-year which entailed constantly new shifts in the analytical emphasis. A large part of the study, in first draft, was prepared before the end of the year. The completion and revision must for a time wait upon events, but some of the chapters may soon be circulated for the comments and criticism of both the sponsoring committee and the Directors of the National Bureau.

In connection with the consideration of new projects, and on the basis of the Executive Committee's recommendations, a detailed memorandum on the continuing and prospective research program of the National Bureau was prepared by Dr. Mills in cooperation with other members of the staff; this has been largely utilized in the following report.

While the National Bureau has been commonly described as a fact-finding agency, it has been the aim of both the Board of Directors and the research staff that the method of 'fact-finding' should be directed to problems of fundamental economic significance and also of immediate practical interest. Throughout its twelve years' existence the National Bureau has centered its research work about two lines of inquiry: (1) analyses of the processes, nature, sequence and causes of fluctuations in business; and (2) surveys either of specific economic problems or of the broad complex of economic factors which may be described as the state of the nation.

## I. INVESTIGATIONS OF FLUCTUATIONS IN BUSINESS

A foremost problem of economic theory and policy is that of prosperity and depression. About its manifold phases a vast literature has grown. These writings, largely theoretical in character, have suffered because the inadequacy of the data available made it impossible to support conclusions by satisfactory evidence. During the last twenty years, the growth of statistical agencies has made available to economists a wealth of materials undreamt of by their predecessors, and this accumulation of economic statistics has necessitated cooperative research and the development of more refined statistical methods. Just as in the growth of the exact sciences of physics and biology the pressure for knowledge meant the building of laboratories with elaborate and expensive equipment and the discovery of more refined instruments of observation and measurement, so in economics the use of new materials involved larger staffs of workers, more equipment and the discovery of more precise instruments of observation and inference.

This is particularly true of the study of business cycles of which the essence lies in the discovery of uniformities, in the attempt to learn whether all or many economic factors follow one or several sequences during successive cycles of business, and whether any intelligible patterns of behavior among economic factors in the business situation are observable from one period of prosperity to another, and from one depression to another. Since the scope of cycle analysis is necessarily so broad, investigations in this field ramify in many directions. Detailed and accurate knowledge of production, prices, wages, producers' and consumers' credit is called for if the study of business cycles is to proceed from an adequate base. Most of the projects,

in progress and contemplated, which are described in the following pages bear directly upon this pressing central problem of industrial depressions and may be expected to contribute to its solution.

## II. ECONOMIC SURVEYS

The leading economic surveys conducted by the National Bureau have been the series on the national income of the people of the United States and *Recent Economic Changes*. The income studies, described in detail on pages 11 ff., have served a two-fold purpose: (1) that of providing the most useful measure of the prevailing state of economic welfare in the country at different periods and in comparison with other countries; (2) that of furnishing the key to a wide range of practical economic problems, such as the magnitude of different kinds of taxable income, and the relation of income from property to income from service. *Recent Economic Changes*, a report in two volumes by the National Bureau staff and fifteen collaborators, covered an area much more varied than that cultivated in the income studies. It described economic developments of the post-War period during which radical and possibly enduring transformations in economic structure and functions were taking place. No simple summary of the findings in *Recent Economic Changes* is possible, but among the important problems discussed were the advancing productivity of American industry, the increase in post-War wages, the innovations in the consuming habits of the American people, and the decline in the rate of growth of the population of the United States. In the future, the major contributions of *Recent Economic Changes* will probably be considered two: first, the bold relief into which it throws the problem of standard of living, and second, the gathering of much new material on



the state of business. The latter alone made possible the Bureau's most recent research, that into the character of the depression of 1929.

The National Bureau has from time to time, usually at the request of public agencies, made rapid studies of specific economic situations and problems. Thus, in consequence of the unemployment wave of 1921 and the deliberations of President Harding's Unemployment Conference, the National Bureau published *Business Cycles and Unemployment*. Dealing with such topics as employment offices, the regularization of business and unemployment insurance, this study was concerned less with the advancement of economic theory than with considerations of policy and administration. A more recent inquiry of the same nature was the Bureau's *Planning and Control of Public Works*, the first publication available in this country to show the amount of public construction, to discuss the prevailing methods of financing public works, and to define the administrative problems involved in the creation of reserves and in the acceleration of expenditures in times of depression.

From these and the other projects of the Bureau have come by-products in the shape of new facts and improvements in technique, and a range of new problems, or old problems in new forms. This is the essence of the new scientific procedure in economics. The task before the Bureau is not only that of collecting facts to test prevailing theories, but also the more difficult undertaking of revising traditional hypotheses and theories in the light of accumulated data.

A—STUDIES IN PROGRESS AND TO BE CONTINUED DURING  
1932-1933I. *The Amount and Distribution of the National Income*

A knowledge of the absolute amount of national income as a stated figure in billions of dollars is of value, but interest in the subject is not limited to its statistical aspects. In the last analysis modifications in general economic well-being may be most effectively measured through changes in aggregate national income. The year-to-year fluctuations in economic conditions, the recurrence of prosperity and depression, the subsidence of old industries and the emergence of new ones, the shifting play of consumer demand and the varying fortunes of different economic classes, the succession and interplay of the multitudinous incidents of economic activity—all these make difficult any contemporary judgment as to the character and rate of economic progress. Yet these are matters on which light must be thrown if any intelligent assessment is to be made, or if economic activities are to be coordinated. In measuring aggregate national income and in tracing its variations from year to year the National Bureau's estimates are basic for charting the course of the main stream of economic development, and for placing in proper perspective the shifts and fluctuations which bulk large in a close-up view.

The measurement of the national income of the United States was the first task the National Bureau engaged upon and was participated in by all the members of its staff. The technique employed and the results secured, which appeared in *Income in the United States*, Vol. I (1921), Vol. II (1922), *Distribution of Income by States in 1919* (1922), furnished the foundations of subsequent studies: *Income in the Various States, Its Amount and Distribution* (1925),

and *The National Income and Its Purchasing Power* (1930). But since the initial investigations new data have accumulated and new criteria of judgment have emerged. It is now time for reappraisal and a fresh attack. Without a reconsideration of the basic estimates attempts to build further upon the foundation already laid will be subject to a constantly greater margin of error.

In the proposed revision and extension of the study on national income, full use will be made of the earlier work done by the National Bureau. The continuing series which have been maintained by Dr. King will be utilized, and Dr. Thorp's collection of the estimates of national income and of the volume of production in various countries will provide a valuable background.

It is proposed to continue the current estimates of total national income, together with its distribution by source and functional divisions, but with substantial revisions of concept and method. To convert these estimates from current dollars into dollars of 'real' income will call for a renewed and careful examination of all material available on cost of living and family budgets by regions and income-groups. The new census of distribution may permit a basis for an attempt to discover how the income received has been spent. The estimate of personal distribution of income, made by Dr. Macaulay in the initial publication of the National Bureau, *Income in the United States*, should be brought up to date. And, perhaps later, continuing Maurice Leven's study for the National Bureau, *Income in the Various States*, the territorial distribution of income by states should be estimated.

## 2. *Business Cycles*

Why does the mechanism through which men provide themselves with food, clothing and shelter periodically

break down? Why from time to time does productive equipment fall into disuse, why do stocks of goods remain unsold and why cannot willing workers find work? Are these periodical failures of the economic system due to faulty leadership, to defective organization, or to the sweep of blind human hopes and fears against which any form of economic organization would be helpless? These are questions which rise with compelling force at such times as the present, though they are old in terms of industrial experience. The record of economic fluctuations, of alternating periods of expansion and of contraction, goes back many generations, even centuries. For many years each business 'panic' and each industrial 'crisis' was looked upon as a unique event for which particular explanations were sought. The failure of a prominent banking house, a corner on some important commodity or stock, a striking political development or any outstanding occurrence which may have immediately preceded the economic break was likely to be charged with responsibility for it. A great step forward was taken when these panics and crises were viewed, not in isolation, but as phases of a sequence of events which tended to repeat itself over varying periods of time. The hypothesis of recurring 'cycles' definitely replaced the concept of unique 'crises' resulting from sporadic and accidental occurrences.

A further great advance was made in the study of industrial fluctuations when the numerous theories concerning the causes of these tides in human affairs were subjected to a practical test, when they were checked against the statistical records of business. This test was first applied on a comprehensive scale in *Business Cycles*, published in 1913 by Dr. Mitchell. This volume contained the first realistic account of the sequence of events through which prosperity breeds depression, and through which depression engenders the

conditions of revival. Limited though it was by deficiencies of the technique of analysis and of the available data, this study nevertheless constitutes a landmark in the history of attempts to explain recurring periods of prosperity and depression.

During the succeeding decade substantial progress was made toward the perfection of statistical technique and in the accumulation of records relating to the production, distribution and consumption of goods and to all the financial operations which facilitate their production and exchange. These advances prompted the National Bureau and Dr. Mitchell, as a member of its research staff, to begin a new and more elaborate attack upon the subject; this became one of its major undertakings. The first volume, *Business Cycles: The Problem and Its Setting*, published in 1927, cleared the ground for the statistical task, which has consisted, essentially, of an exhaustive study of the sequence of movements and of the amplitude of fluctuations occurring during periods of expansion and contraction in business. The data utilized have related to a wide variety of economic processes in the chief industrial countries of the world. Through this detailed and searching investigation of the actual behavior of the business system the National Bureau hopes to lay the foundation for a realistic explanation of these movements which in their depression phases have left such a black record of human distress.

### 3. *Seasonal Fluctuations in Industry*

In the course of the study of these obvious and dramatic business recessions and depressions the significance of seasonal variations in production, in consumption and in the volume of industrial employment came into view. Less striking, less painful as they are, seasonal variations are never-

theless of very considerable absolute magnitude. Something has been accomplished to mitigate the effects of this instability and to level out employment through judicious dovetailing of various types of activities, through production for stock in slack seasons, through the accumulation of reserves against seasonal let-downs, yet much more may be done. The investigation of seasonal movements may contribute not only to the lightening of the heavy economic burden of seasonal irregularities but also to the knowledge of how the elements of a modern industrial system behave in relation to one another. It deals on a somewhat smaller scale with semi-rhythmical movements of the same type as those on which the study of business cycles is centered. How these rhythms are projected throughout the economic system, how the seasonal waves are spread from one industry or one economic field to others, how they are flattened through their interaction, how emphasized and accentuated—all these are matters of keen economic interest.

#### 4. *Prices and the Price Structure*

In a competitive economy the price system is the coordinating agency through which the productive energies of the community are allocated, capital is apportioned, and goods are distributed in time and space so that supply and demand may be balanced in each of the consumption centers of the world. But coordination through prices never has been perfect; barriers to the free working of prices have always existed. There is reason to believe that of late years these barriers have increased, and that as a result, the efficiency of the price system as a coordinating mechanism has been reduced. Valorization schemes, trade agreements, the growing magnitude of industrial combinations, the widening area of publicly regulated rates, all have tended to increase the

rigidity and to reduce the flexibility of the price system. Indeed, these various checks to price freedom probably played some part in the development of an unstable world economic situation in 1929, and in the prolongation of the ensuing period of depression. It is an open question whether, under existing conditions, the price mechanism may be trusted to secure effective cooperation among economic elements, to maintain a smooth flow of goods, steady employment, a proper balance between saving and spending.

The investigations in the field of the price system are directed toward a fuller understanding of the role of prices in economic processes today. Immediate objectives have to do with fluctuating production costs and with changing relations among the prices of commodities of different kinds. The shifting balance of economic power, modifications in the status of different groups of producers, in the purchasing power of different consuming groups are more directly measurable through price fluctuations than in any other way. When the general level of prices is advancing or declining the prices of different kinds of commodities and services are affected in varying degree. These variations, which reflect differing degrees of sensitivity to changes in the value of money, may involve wide shifts in the terms of exchange between economic groups. The drop in prices in 1920-21 caused numerous alterations of this type, alterations which persisted and left their impress upon economic developments of the succeeding years. Again between 1929 and 1931 widely divergent movements occurred. As in the earlier depression, raw materials fell far more in price than did manufactured goods; goods intended for sale to producers fell more than did goods intended for final consumers. The price discrepancies thus developed have undoubtedly served as barriers to recovery.

This does not mean that the ultimate explanation of economic changes is to be found in price relations. Back of the price movements are alterations in conditions of demand and of supply, variations in the ability of different groups of producers to adapt themselves readily to changing economic conditions, and a host of other factors which influence economic processes. All these forces, however, play upon prices; upon the screen of prices are thrown the pictures of changing relations due to innumerable first causes. The significance of prices as a point of attack upon economic problems arises out of the fact that prices constitute, during the liquidation stage of the business cycle, one of the focal points of trouble. In their price aspect, these difficulties are subject to measurement and definition.

The first report, *The Behavior of Prices*, by Dr. Mills, published by the National Bureau in 1927, was devoted primarily to the development of an appropriate technique, to an analysis of the price behavior of individual commodities and to a general survey of certain characteristics of the price system as a whole. Studies now in progress are concerned with price behavior among important commodity groups—agricultural and non-agricultural products, raw and processed materials, producers' goods and consumers' goods—and with changes in the elements of production cost in manufacturing. It is expected that the findings will be published in a series of monographs. A final volume summarizing and interpreting the results of the various detailed studies will then be in prospect.

##### 5. *Economic Tendencies, Aspects of Pre-War and Post-War Changes*

Another research project of the National Bureau now approaching completion is the study of economic tenden-



cies, in which aspects of pre-War and post-War changes are compared. The investigation conducted for the President's Committee on Recent Economic Changes made it clear that to secure a full understanding of economic processes it was desirable to deal with longer spans of time than are included in a study of seasonal or of cyclical movements. Thus in the recent economic history of the United States there are certain distinctive periods, such as the interval between the recessions of 1920 and of 1929, and that from the beginning of the twentieth century to the outbreak of the World War, which admit of comparative statistical analysis. Such a comparison has been made the subject of this report by Dr. Mills which continues and supplements *Recent Economic Changes*.

In concentrating attention upon such periods, ultimate interest lies in the conditions of stable industrial growth. As a matter of historical record, and in order to understand the present situation and that which prevailed in the summer of 1929, such questions as the following must be answered. During each period how rapid was the economic development, as measured, for example, in terms of aggregate income, aggregate physical production, and aggregate volume of foreign trade? What industries were shouldering forward most rapidly and which were lagging behind? Were the real wages of labor advancing? If so, how rapidly? Was the position of the farmer improving? What changes were occurring in the volume of profits, and in the rate of return upon investment? What was the rate of change in the total volume of capital? In the total volume of credit?

More significant than the movements of the separate series, however, are the relations among the changes occurring in them. As the volume of capital gains, what are

the related changes in all the economic processes connected with the capital fund? How do the growth rates of real wages and of profits compare? May we, from a study of the changes occurring in these various economic elements, learn something about the conditions essential to stable growth? What types of change conduce to instability and to ultimate breakdown? This is again the dominating question of industrial recessions and depressions, but approached from another angle. Long-term movements of industry and their possible bearing upon economic stability and instability are examined. The nature of the results emerging from this study is indicated by the following brief table, which defines certain of the outstanding characteristics of the period 1922-29.

#### 6. *Social and Economic Aspects of the American Labor Market*

In its analysis of the operation of economic forces in the United States, the National Bureau began, under the direction of Dr. Wolman, almost at the outset of its activities, a series of inquiries into the social and economic position of labor. The first was written up in the chapter on unemployment insurance in *Business Cycles and Unemployment*. This was followed by a book, *The Growth of American Trade Unions*, on the changes since 1880 in the membership of American trade unions and in the constitution of the labor force in American industry. In *Recent Economic Changes*, Dr. Wolman was responsible for two chapters: that on standards of living covered such matters as the consumption of commodities, the size and growth of free services, the agricultural standard of living. The second chapter, on the status of labor during the post-War decade, considered factors bearing on the supply of labor, wages, productivity,

SUMMARY OF AVERAGE ANNUAL RATES OF CHANGE IN  
VARIOUS ECONOMIC ELEMENTS DURING THE PERIOD  
1922-1929, WITH CERTAIN COMPARATIVE FIGURES  
FOR THE PERIOD 1901-1913

	AVERAGE ANNUAL RATE OF CHANGE	
	1901-13 Per Cent	1922-29 Per Cent
Population .....	+ 2.0	+ 1.4
Production (excluding construction).....	+ 3.1	+ 3.8
Production per capita of the population.....	+ 1.1	+ 2.4
Primary production (raw materials).....	+ 2.2	+ 2.5
Production of manufactured goods.....	+ 3.9	+ 4.5
Total production, including construction .....		+ 4.1
<b>Prices</b>		
Wholesale prices .....	+ 1.8	- 0.3
Cost of living .....	+ 1.8	+ 0.2
<b>Income</b>		
Total income, people of the United States.....		+ 4.8
<b>Wage-earners</b>		
Average real earnings, employed workers, all groups .....	+ 0.4	+ 2.2
Average real earnings, manufacturing industries Common stockholders .....	- 0.1	+ 1.4
Aggregate dividend disbursements, corporations reporting to Bureau of Internal Revenue.....		+ 10.8
<b>Business profits</b>		
Corporate net income (deficits deducted) as re- ported to Bureau of Internal Revenue.....		+ 7.3
Corporate net profits.....		+ 8.9
Aggregate profits, 2,046 manufacturing corpora- tions .....		+ 7.4
Change in return on investment.....		+ 2.2
<b>Growth of capital funds</b>		
Total corporate capital funds (estimated).....		+ 3.7
Assets of industrial corporations .....		+ 4.4
Net long-term investments abroad.....		+ 7.3
<b>Volume of credit</b>		
Total credit, all banks.....	+ 6.3	+ 5.6
Commercial credit ('all other' loans of reporting member banks) .....		+ 3.2
Credit related directly to the market for securities (reporting member banks).....		+ 8.2
Urban real estate mortgages.....		+ 12.5

the investments held by workers, the growth of group and industrial life insurance, and the size and policies of labor organizations. In response to a request from the Committee on Recent Economic Changes, Dr. Wolman began, in the summer of 1929, a study of government expenditures on public works in the United States. The results of this investigation were published, in June 1930, under the title of *Planning and Control of Public Works*.

For several years, Dr. Wolman and his assistants have been concerned with wages, employment and labor costs. Their purpose is not only to discover what measurable changes have taken place in the standards of living of American labor but also to explore, on the one hand, the relationship between wages and labor cost, and on the other, that between labor cost and other costs of production. Although interrupted on several occasions by the requirements of special projects undertaken for the National Bureau, the collection and analysis of the data have proceeded to a point where publication of preliminary results may be expected by the close of 1932.

#### 7. *The Measurement of Unemployment*

Closely related to the labor market investigation is the study of unemployment measurement conducted for the National Bureau by Dr. Givens of the staff of the Social Science Research Council. This work, an extension of an exploratory investigation made by Dr. Givens for *Recent Economic Changes*, will present a critique of method, a handbook or guide to materials and an analysis of the data available for estimation of current unemployment, together with graphic evidence of the margin of error it involves. Strict accuracy in measuring unemployment is not possible in the absence of direct registration of the unemployed. The

quest for authoritative figures on the volume of unemployment has repeatedly occasioned episodes of quasi-statistical controversy in this country. To eliminate this confusion a careful analysis of methods and materials and an authoritative plan for the current estimate of unemployment are being made. Within the limits of accuracy imposed by the inadequacy of the data, this study plans to measure the extent of unemployment over a period of years and to determine its distribution among the major industrial and occupational groups. The feasibility of developing a current index of unemployment to connect periodic censuses is being explored and the usefulness of indirect indicators is under examination. Particular attention is being given to the measurement of technological and other specific factors in unemployment. Statistics of production, of machine-time and of labor-time are being combined for selected representative industries to test methods of measuring productivity changes and changes in technological and other factors affecting the displacement of labor. The study should furnish a comprehensive guide to the statistical aspects of unemployment.

#### 8. *The Trend of Corporation Profits 1921-1929*

In view of the key position occupied by profit in a competitive economic system, there is a surprising lack of precise knowledge concerning its aggregate amount, its magnitude relative to capital investment, variations from year to year in its total volume, its distribution among various industries, the proportions paid as dividends, that retained in the form of liquid corporate surpluses, and that ploughed back into business. Scattered statistics of profits are published by various agencies and detailed figures for a considerable number of separate companies are available. The

bases of computation often differ, however, so that systematic comparison is difficult.

In 1929 the National Bureau took the initiative in two independent studies of corporation profits. One, an investigation made possible through the cooperation of the American Institute of Accountants, involved the analysis of a series of income statements and balance sheets of concerns in various lines of business. The results are to be published in such a way that no information relating to individual concerns will be revealed. In addition to this, at the request of the National Bureau, the Department of Commerce, in cooperation with the Treasury Department, undertook to secure a far larger sample. In the analysis of this material, which will cover at least a decade, information will be assembled on the trends of corporate net earnings in a wide range of industries, on trends in corporate financing, on the ratio of dividends paid in cash to earnings reinvested and on other important aspects of corporation finance.

#### B. NEW STUDIES

The National Bureau has been called upon from time to time to conduct general surveys of economic conditions. The difficulties inherent in such attempts to describe and to interpret contemporary events over a wide front have been clearly realized by the research staff and the Directors, but the urgent character of the issues involved and public obligations which the National Bureau recognizes have impelled it to make these studies. The third of these surveys, an examination of economic changes from 1928 to 1931, is now in progress.

The prosecution of the National Bureau's research program has been in some degree impeded during these surveys, but certain salutary results have accrued. The pooling

of resources and the focusing of energies upon a single immediate task have served to unify the work of the various staff members. And while experience has shown the need for such periodic chartings of the course of business, the work on the surveys has revealed the gaps in present knowledge which must be filled before intelligent appraisal of current economic conditions is possible. The projects to be added to the National Bureau's present program of research have been selected with chief regard to the filling of the most serious of these gaps. Until this can be done many problems must remain unsolved, or only partially solved.

The estimates of national income, the longest continuing study of the National Bureau, provide a unifying framework for all its other investigations which deal with specific economic processes. Business cycles are important in the last analysis because they alter the aggregate volume of national income and the proportions going to different groups of income recipients. The studies of unemployment and of the general course of wages deal with aspects of income distribution. The investigation of prices is essentially a study of the monetary mechanism through which goods are exchanged and through which real income is ultimately apportioned among different groups. Two of the new projects outlined below, studies of the formation of capital and of the volume and character of production in the United States, are also closely related to the problem of national income and its distribution.

#### 1. *National Savings and the Investment of Capital*

Every year a certain proportion of the total productive resources of the country is devoted to the building of industrial plants, the construction of new mechanical equip-

ment, the making of roads and railroads, power plants, bridges, and of other permanent utilities. Another part is expended in the making of goods for direct consumption or use—bread, shoes, clothes, passenger automobiles, residential buildings, steam yachts. The apportionment of total energies as between these two major uses is a process of profound importance. If the level of economic well-being is to be progressively raised, the total supply of productive equipment must be maintained and enhanced; at the same time, the flow of goods for current consumption must be sufficient to maintain, if not raise, existing standards of living.

The proportions of total resources devoted to the extension of fixed plant and to the output of currently consumable goods vary from time to time. In a competitive economic system there is no supreme dictator who apportions labor. Distribution is determined by the actions of millions of persons—by private individuals, who decide what proportion of their annual incomes shall be placed in savings banks or used for the purchase of stocks, bonds or insurance; by corporations, which lay aside a certain portion of profits for dividends and another sum for surplus; by banks in the extension of credit for short-term and long-term purposes; by governments, in increasing or retiring a part of the national debt each year. As these numerous decisions vary in response to fluctuations in interest rates, alterations of governmental policy, modifications in the plans which men everywhere are making against the chances and changes of the future, so does the disposition of total productive resources vary.

What appears on the financial side as a process of saving and investment appears on the productive side as a diversion of labor from the making of consumable goods to the



making of instruments of production, of goods which satisfy wants only indirectly through facilitating the production of other goods. To divert too much or too little to this purpose is possible; certainly it is true that abrupt changes in the proportion thus diverted may seriously affect the working of the economic mechanism.

Some attribute current ills to faulty division of energies and to faulty distribution of current income as between these two uses during the years prior to 1929. Here, again, knowledge is meagre. One of the greatest disabilities under which economists labor today, in seeking to interpret economic conditions, arises from the lack of accurate statistics of the total volume of savings in the United States. How much is saved annually, and by what agencies? How important is saving by individuals, as compared with capital accumulation in the form of corporate surpluses? What proportion of the total national income is expended on current consumption, and what proportion is saved? How does the total volume of savings vary from time to time?

Equally serious is the lack of information as to the distribution of current savings—their use in building up capital equipment in different industries, in swelling the fund of liquid capital employed in the current processes of business, and in augmenting American investments abroad. More knowledge concerning the forces that determine the allocation of capital for various industrial uses, concerning the degree of promptness with which changing needs stimulate alterations in the apportionment of capital, concerning possible economic ills resulting from faulty distribution of capital is sorely needed. These are matters of central importance in the working of a modern industrial system, yet no comprehensive, organized attempt has yet been made to fill the gaps in current information.

Interest in this direction is not confined to the statistics of savings alone. In this country an elaborate mechanism has been built up for the purpose of collecting the millions of small and large contributions to the national fund of savings, and for the distribution of these savings to the various individuals, corporations, municipalities and governments which have need for capital. This complicated, far-flung system for the collection and allocation of capital funds—the structure of insurance companies, security exchanges, trust companies, savings and commercial banks and investment banks—does not work perfectly, but no one can say how serious are the faults, and to what extent deficiencies in this system contribute to such depressions as that which at present prevails.

It is proposed that the National Bureau make a study or series of studies, directed toward the problems described above, relating them closely to the studies of national income, and to the investigation of changes in volume of production which is also in prospect.

## 2. *The State of Competition in the United States*

As was stated in the discussion of prices, through the price system are coordinated thousands of diverse activities. The number of men engaging in each important occupation is restricted by the tendency toward equalization of rewards which results from the play of competitive forces. The quantities of various kinds of goods produced and transported to consuming centers are limited by the force of price competition and the reaction of fluctuating prices on profits. The same cardinal principle is assumed to determine the amount of annual savings and the allocation among different industrial and governmental borrowers of the capital sums thus accumulated. A part of our interest in price

studies lies in seeing to what degree the price structure is effective in keeping in adjustment the numerous working parts of a modern industrial system. A study of the state of competition in the United States would include the larger aspects of the conditions under which the price structure acts as a balance wheel.

Within the lifetime of the present generation of business men far-reaching changes have occurred in the operation and character of competition. The announcement in June 1931 that the Department of Justice would not appeal the St. Louis Circuit Court of Appeals' decision to permit the merger of the Standard Oil Company of New York and the Vacuum Oil Company is significant as to the gradual change of attitude of the United States Government toward the restraint of trade which the Sherman Anti-Trust Law sought to prevent. The precise character of the limitations on the traditional features of an economic system founded on individual initiative and freedom of enterprise—full competition, free prices, unrestricted mobility of labor and of other agents of production—is not yet understood, nor is its significance appreciated. But much of the current discussion of economic planning proceeds from the assumption that effective coordination of economic processes through competition is no longer possible and that coordination through deliberate control must replace it. To provide bases for judging the adequacy of competition to effect and maintain efficient, coordinated operation of the instruments of production and distribution, the National Bureau should weigh the large body of facts, as yet inadequately exploited, concerning the movement away from the free play of competition, a movement which has brought mergers, combinations, monopolies and semi-monopolies, trade associations, export combines, trade unions, cooperative marketing enter-

prises, tariff walls, barriers to migration, widening areas of regulated prices. Again, as in the price studies, we are interested to discover whether the present world-wide economic difficulties are attributable to a breakdown of the machinery of economic coordination through free competition, and if so, to what degree. The National Bureau proposes to make a preliminary survey of the possibilities of factual investigation of this problem.

### 3. *The Physical Volume of Production in the United States, and of the Flow of Goods from Producer to Consumer*

The effects of interruptions to economic activity are brought home most concretely through variations in the actual volume of physical goods produced and of services rendered. The decline in the volume of industrial production in the United States from the peak of activity in June 1929 to January 1932 is estimated to be approximately 47 per cent. Here in a single figure is an epitome of the depression, the net effect of the existence of idle capital and men. But this figure, vitally significant as it is, is merely a rough estimate, for a comprehensive, accurate measurement of the total volume of goods produced and of services rendered in the United States is lacking. The seriousness of this defect, which impedes economic research into various aspects of the depression and of the expansion period which preceded the break, has been impressed upon the National Bureau staff in investigating the current depression. We propose, therefore, that the National Bureau assume responsibility for its correction.

The measurement of changes in the aggregate volume of goods produced and of services rendered is, of course, a central object in any such study, having an obvious bearing

upon the shifts in economic well-being which occur during prosperity and depression, and over longer intervals. But there are numerous other issues in this field. In what way are we, as a nation, investing our productive energies, and what changes have taken place in the efforts expended in various directions? The importance of a knowledge of the total volume of savings in relation to total income, which was stressed in discussing the problem of savings and of capital accumulation, has its counterpart on the physical side. What proportions of total physical energies are devoted to the production of capital equipment and to the production of consumable goods directly? What modifications have recently been made in these proportions? What is the absolute volume of output of goods of these two types? The study of savings and their disposition will be strengthened if these questions can be attacked from the production as well as from the financial aspect.

Again, it is desirable to know whether in recent years a larger proportion of total resources has been diverted from the production of physical goods to the rendering of services. What have been the economic consequences of this change which is indicated by the relatively rapid growth of service industries of all types? Have faulty adjustments, reflected perhaps in some measure of technological unemployment, developed during the transition stage?

Studies in this field bear directly upon the hypothesis that overproduction is a factor in the current depression. How rapidly did the production of goods increase during the decade of the 'twenties? Was the rate of advance materially greater than that prior to the World War? If so, what was the effect? Was the economic system adjusted to the rapid advance or did defects develop through the failure of other economic elements and processes—of prices.

perhaps, and of the flow of purchasing power to ultimate consumers—to adapt themselves to the new order of things in the field of production?

Furthermore, problems of productivity are involved. Abundant evidence indicates that during the decade 1919-29 the increase in the productivity of manufacturing industries and, probably, in the productivity of many agricultural and extractive industries, was unprecedented. To what is this increased productivity attributable? Was the jam which developed in 1929 a result of the failure to lower prices by an amount commensurate with the decline in production costs? What have been the social and economic consequences of increasing productivity, the effects upon the rewards of labor and upon the volume of employment?

Little is known concerning the complex economic and social effects of increasing productivity. There is reason to believe that the full social advantage of the enhanced production which results from better equipment, more efficient business organization and more skillful and more intelligent labor is not reaped. As the pace of economic progress becomes quicker, general well-being loses step because the new power is not effectively utilized. How this power is to be used so that the stability of economic operations may not be disturbed, so that all men may harvest a fair share of its fruits—here is one of the problems of the machine-age as yet unsolved and to the solution of which a first requisite is greater knowledge of the actual course of production and of changes in the productivity of industry.

In conducting an investigation in this field, the National Bureau should seek not only to improve, augment and interpret current statistics of production, but also to clarify basic concepts, to improve the historical record of physical

output, and to exploit the statistical results with reference to the major social problems on which they bear.

In marking out these problems for attack by the methods appropriate to its established practice, the National Bureau recognizes that here, as in all its previous studies, are intermingled important factors, psychological and social, which are not easily susceptible to precise quantitative determination. It recognizes also that, superficially viewed, its investigations do not seem to bear directly on some current problems, such as those of control and planning, and measures of more immediate relief from the prevailing world depression. Yet the experience of deep economic depressions demonstrates only more clearly that further spade-work of the type to which the National Bureau was committed twelve years ago is vitally necessary. Facts concerning national wealth and income and their distribution, facts about savings, about the sources and apportionment of the national fund of capital, facts about competition and the limitations to competition which come with the development of industrial combinations, mergers and trade associations and with the raising of tariff barriers, facts about the fruits of productive energies—all these are essential to intelligent appraisal, to sounder business management, and, if the machinery for control is available, to intelligent control. So the emphasis, in widening the National Bureau's program, is upon the filling of gaps disclosed in its research into the fundamental economic processes.

Meanwhile, the continuing work of the National Bureau, temporarily interrupted by the recession study, will soon bear fruit in the form of publications. The vast amount of statistical work required for Dr. Mitchell's second volume on business cycles has been practically completed, and Dr. Mitchell will bring back from England a substantial portion

of the first draft of his text. Publication may be anticipated in 1933.

Now ready for submission to the Directors of the National Bureau are the manuscripts of several studies. Dr. Mills has completed his *Economic Tendencies, Aspects of Pre-War and Post-War Changes*; Dr. Kuznets has finished the first draft of *Seasonal Fluctuations in Industry*; Mr. Pierce Williams' report on *Medical Care Through Fixed Periodic Payment*, prepared for the Committee on the Costs of Medical Care, is ready in its revised form; and Prof. Paton of the University of Michigan has submitted the first draft of his report on *Corporation Profits*, based on returns obtained through the cooperation of the American Institute of Accountants. Dr. Thorp's *Estimates of National Incomes* will be finished this year, and also Dr. Harry Jerome's long-awaited study of mechanization. The tabular material and the graphs of Dr. Macaulay's *Interest Rates and Bond Yields* have been brought up to date and printed; these, with a concise accompanying text, will be published in 1932. The publication, in several volumes, previously authorized by the Executive Committee, of the extraordinarily large collection of statistical series collected and critically edited by Dr. Thorp, would involve so much time and expense that it has seemed wise to reconsider the proposal. Valuable though such an encyclopaedia would be as a great unit of reference, we feel, particularly when the necessary funds for so expensive an undertaking are not readily available, that it is inexpedient to proceed further with this enterprise. One section of the work, that dealing with the history of estimates of national income, since it was nearing completion and is closely linked with the National Bureau's special interest in that subject, is recommended for publication as an inde-



pendent study. Some selections from the other material, especially statistical series which are now very inaccessible, may be later published in the *News-Bulletin* of the National Bureau or in statistical journals. It may be advisable to print a catalogue or list of the entire collection which is deposited in the Library of the National Bureau, so that, at a nominal cost, copies of series might be supplied to those applying for them.

#### PUBLICATIONS

Two books were published during the year—Volume II of *International Migrations, Interpretations*, and *The Smoothing of Times Series*, by Frederick R. Macaulay. In the former, under Dr. Walter F. Willcox's editorship, the currents of migration for about twenty countries are described by scholars who have made a special study of the movement of peoples in the areas of their respective competence. Dr. Macaulay's volume explains some of the methods used in the preparation of his forthcoming work, *Interest Rates and Bond Yields*.

As compared with 4,096 National Bureau volumes sold during 1930, 2,726 were sold in 1931. Since *Business Cycles* continues to be the best seller, a new printing of this work by Dr. Mitchell is now being made.

The number of *News-Bulletins* published was also two—No. 41, *Bond Yields and Business Recovery*, listed in the annual report for 1930 although it appeared on January 5, 1931, and No. 42, *Aspects of the Price Recession, 1929-31*, published on December 23, 1931, which constitutes a revision and continuation of *News-Bulletin* No. 40, *Some Aspects of the Price Recession of 1929-30*.

## THE RESEARCH ASSOCIATES

The appointments of the first group of research associates terminated on September 30, 1931. Miss Dorothy Bacon's work on *The Price of Shares of Common Stocks in Relation to Earnings per Share* was finished in the summer. The study, in concise form, will be published, we hope, in some statistical journal. In October Miss Bacon returned to teaching in the Department of Economics and Sociology at Smith College.

Mr. Arthur F. Burns has completed the first draft of his project, *Production Trends in the United States, 1870-1929*. While continuing his teaching at Rutgers University he is putting the manuscript into final form. Covering over a hundred production series, the study attempts to formulate on the basis of these data the general characteristics of the structure of production trends since the Civil War. Among other things, it throws light upon stages of industrial development, establishes a major cycle in the economic system and investigates the causal relation between production trends and economic cycles.

The manuscript of Mr. Arthur D. Gayer on *The Public Works Plan and Unemployment* is complete, ready to be read by staff members of the National Bureau. It is an analysis of the plan for preventing and relieving unemployment through the control of public works, with special reference to its practical operation during the current depression. Mr. Gayer accepted a position in the Economics Department of Barnard College, Columbia University, and began to teach there in the autumn of 1931.

The three research associates appointed for the year 1931-32 were chosen from a large number of well-qualified applicants. Mr. Wassily Leontief, who is studying the con-

ditions of demand and supply in selected American commodity markets, was a research fellow at the Institut für Weltwirtschaft und Seeverkehr, in Kiel, Germany. His project is an attempt toward an analysis of the mechanism of economic, especially cyclical, changes. The method of statistical derivation of supply and demand curves used is described in two articles published in the *Weltwirtschaftliches Archiv* in 1929 and 1932.

Mr. Carl T. Schmidt has studied at Heidelberg and Frankfurt a. M. and was a graduate student in economics at the University of California. His project, Cyclical Fluctuations in German Economy, 1924-31, is an attempt at analytic description, based upon statistical and historical sources. It will seek to describe the course of cyclical changes in major aspects of German economy. To procure additional data at first-hand Mr. Schmidt spent a month in Germany in the late autumn.

Mr. A. G. Silverman was an instructor in Economics and Statistics at the Massachusetts Institute of Technology. His project, The International Trade of Great Britain, 1880-1913, a Study in Economic Dynamics, developed from a doctoral thesis. He seeks to contribute towards the development of a suitable technique for the solution of certain important problems in the theory of international trade and prices. From the cyclical variations which have been calculated for a number of elements important in international trade it is hoped to determine the cyclical pattern by the methods developed by Professor Mitchell, and to study the interrelation of seasonal changes in the various international trade factors.

## THE STAFF

It is to be regretted that this report bears the signature of but one of the Directors of Research. Although continuing his work on business cycles for the National Bureau, Dr. Mitchell went to Oxford in September 1931 to enter upon his duties as George Eastman Visiting Professor for the academic year. The stimulus of his presence has been keenly missed by the entire staff. Their zeal and interest, which contribute effectively to maintain the standards of the National Bureau, is all the more appreciated.

EDWIN F. GAY

NEW YORK,  
MARCH 28, 1932.

# PUBLICATIONS OF THE NATIONAL BUREAU OF ECONOMIC RESEARCH, INC.

1921-1932

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. In accordance with the rule of the National Bureau, each report is submitted, before publication, to the members of the Board of Directors for their criticism and approval.

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## REPORTS DEALING WITH BUSINESS CYCLES, PRICES, ECONOMIC TENDENCIES AND RELATED SUBJECTS

PUBLICATION  
NUMBER

### 4 BUSINESS CYCLES AND UNEMPLOYMENT

by the staff of the National Bureau and 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<sup>1</sup>

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 the 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.

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

PUBLICATION  
NUMBER**8 BUSINESS ANNALS**

by WILLARD L. THORP and WESLEY C. MITCHELL

384 pages, \$2.50

A descriptive summary of business conditions in the United States, England, France, Germany, Austria, Russia, Sweden, The 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*), by Wesley C. Mitchell.

**9 MIGRATION AND BUSINESS CYCLES**

by HARRY JEROME . . . . . 256 pages, \$2.50

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, \$5.00

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<sup>1</sup>**

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

A pioneer study of the interrelations 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.

**13 RECENT ECONOMIC CHANGES**

by the staff of the National Bureau and 15 collaborators.

(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; technical changes in manufacturing industries; specific changes in

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

PUBLICATION  
NUMBER

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, \$2.50  
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.

21 ECONOMIC TENDENCIES, ASPECTS OF PRE-WAR  
AND POST-WAR CHANGES

by Frederick C. Mills . . . . . *in press*  
The investigation conducted for the President's Committee on Recent Economic Changes made it clear that to secure a fuller understanding of economic processes it was desirable to deal with longer spans of time than are included in a study of seasonal or of cyclical movements. The decade of the 'twenties, which includes the period of expansion intervening between the two great post-War recessions, and the period from the beginning of the present century to the outbreak of the World War, constitute two distinctive economic eras. This volume presents a comparative statistical analysis of the dominant economic tendencies of these two periods. Chief emphasis is placed upon the course and character of production and upon the movements of prices, but related economic changes are brought into the picture. The events leading up to the recession of 1929 are reviewed against the background of pre-War tendencies in the United States.

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 REPORTS DEALING WITH INCOME IN THE  
UNITED STATES
I INCOME IN THE UNITED STATES—VOL. I<sup>1</sup>

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

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

PUBLICATION  
NUMBER

States, 1909-1919, for readers who are primarily interested in the results.<sup>1</sup>

- 2 **INCOME IN THE UNITED STATES—VOL. II**<sup>1</sup>  
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.
- 7 **INCOME IN THE VARIOUS STATES**  
by MAURICE LEVEN and WILLFORD I. KING . 306 pages, \$3.50  
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**<sup>1</sup>  
by WILLFORD I. KING . . . . . 394 pages, \$5.00  
The fourth of the National Bureau's publications on 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, \$2.50  
Results of a comprehensive investigation of trade union membership, year by year, since 1880; fluctuations with the business cycle; effects of World War conditions; women in trade unions. Contains also a detailed analysis of the total working population.
- 12 **TRENDS IN PHILANTHROPY**  
by WILLFORD I. KING . . . . . 78 pages, \$1.00  
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.

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



PUBLICATION  
NUMBER

## 16 CORPORATION CONTRIBUTIONS TO ORGANIZED COMMUNITY WELFARE SERVICES

by PIERCE WILLIAMS and FREDERICK E. CROXTON

347 pages, \$2.00

(Sponsored and endorsed by a national committee of industrialists.) With the aid of tables and graphic charts, data for nearly 150 American 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, \$7.00

Compiled by Imre Ferenczi, of the International Labour Office, Geneva, and edited by Walter F. Willcox for the National Bureau of Economic Research. For fifty-one countries during the nineteenth and twentieth centuries it gives figures 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, \$5.00

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, contains an impressive collection of figures which illuminates a most fascinating subject.

## 19 THE SMOOTHING OF TIME SERIES

by FREDERICK R. MACAULAY . . . . . 172 pages, \$2.00

Explains time-saving yet scientific methods of graduating economic series.

## 20 MEDICAL CARE THROUGH FIXED PERIODIC PAYMENT

by PIERCE WILLIAMS . . . . . 320 pages, \$3.00

(A study made at the request of the Committee on the Costs of Medical Care.) Gives an account of the movement for compulsory sickness insurance (1915-20); describes the 'company' doctor and hospital contract system in operation in mining and lumber regions of 21 states; presents facts about recent experiments aiming at providing medical care and hospital service on the basis of a fixed, periodic payment. Gives the present status of voluntary medical and hospital insurance in the United States.