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Annual Report of the Directors of Research, February 2, 1925.

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The year 1924, despite the paucity of publications to which the Treasurer's report has referred, has been one of active work and progress by the National Bureau of Economic Research.

The result of the concentration of most of the available resources of the Bureau upon the unemployment studies requested by Secretary Hoover, valuable and timely as was the effort, was a setback to other current work. This work, however, was promptly and energetically resumed, and its fruits will be seen by the Directors and published during the first six months of 1925.

It will be convenient to survey the projects on which the Bureau is engaged in the order in which they have appeared on the Bureau's program. The first research undertaken, with the authorization of the Directors, was the study of national income. The second was the investigation of the business cycle, of which the report on employment formed a preliminary section. Other studies originating in the study of business cycles have been acquiring a more or less independent status of their own. The third project was that part of the economic aspect of migration which was initiated by the National Research Council and continued with the financial support of the Social Science Research Council. The fourth on our list is a proposal for the analysis of the price structure recommended by the Executive Committee to the Board of Directors as the next major field of research which the Bureau should enter.

I Income in the United States.

Steady progress has been made on the careful revision and bringing down to date of the estimates contained in the previous publications of the Bureau. This revision has been made under the direction of Dr. Willford I. King, and its chief features and results will be presented by him in the introduction to the forthcoming volume on Distribution of Income by States. This continuation of the

study made for the Bureau by Dr. Oswald W. Knauth has been prepared by Mr. Maurice Leven, utilizing the Bureau's basic and revised estimates of national income. Mr. Leven has made an estimate of the total and per-capita income carefully adjusted for every State, with special tables showing the incomes of farmers, wage-earners, persons of large means, and other matter relevant to the purchasing power and economic condition of the different parts of the country. The demand from a wide variety of business interests to make practical application of this scientific research will be met by publication in the first half of 1925, provided approval is given by the Directors.

Dr. King has also prepared a study of Transportation Trends, which may be regarded as an interesting by-product of his investigation of national income. In this volume, which will be accompanied by a number of valuable tables and charts, Dr. King surveys in graphic fashion the development of American railroads, trolleys, shipping, automobiles, telegraphs, and telephones, not omitting horse transportation. He deals with the comparative efficiency of the services rendered and with the financial returns obtained. This study will be submitted to the Directors early in 1925.

The study of the national income will clearly be one of the chief continuing responsibilities of the Bureau. The first reputation of the Bureau gained in this field practically necessitates the periodical extension and revision of our estimates. Dr. King is now engaged in completing the study of the distribution of individual incomes of gainfully-occupied persons in the year 1921, which includes not only the analysis of the distribution of the earnings of employees, but also the distribution of property income. It is also necessary that the income data should be revised on the basis of new methods of computation to cover the years 1909 to 1918, inclusive. The principal gaps are in the fields

of mining, manufacturing, mercantile, and unclassified industries. To fill these gaps will take the greater part of Dr. King's time for the first six months of 1925, and the recent publication of the 1922 income returns calls for the extension of the Bureau's tabulations to include this additional material.

II. Work on Business Cycles.

As reported to the Annual Meeting a year ago, Mr. Mitchell is preparing a treatise upon Business Cycles. He reports that his progress has been much facilitated by the new arrangement for the administrative work of the Bureau. So far three rather long chapters have been written - the manuscript covers some 300 typed pages - and much material for later chapters has been collected and digested.

The scope of the report which may be expected is indicated by the following condensed table of contents. Of course this scheme is subject to modification as the work progresses.

Part I The Problem and Its Setting (Chapters 1-4)

- i The Problem of Business Cycles and Its Many Solutions
- ii The Money Economy
- iii Business Cycles as Revealed by Business Annals
- iv Business Cycles as Revealed by Statistics

Part II The Rhythm of Business Activity (Chapters 5-9)

- v Prosperity
- vi Recessions
- vii Depressions
- viii Revivals
- ix Summary and Supplements

Part III Business Cycles as a Social Problem (Chapters 10-12)

- x The Problem of Business Forecasting
- xi Economic Costs and the Problem of Control
- xii Business Cycles in Economic History and Economic Theory

By the first of June Mr. Mitchell hopes to revise somewhat the first three chapters, and to write the fourth chapter on the statistical study of cycles. After that date he plans to give all his time to the work until the

middle of next February. To make this possible he has applied for a leave or absence from Columbia University during the first half of the next academic year. Provided this leave is granted, he believes that the book can be nearly finished by the time we hold our annual meeting in 1926.

This theoretical treatise is based mainly upon the collection of statistical data relating to business conditions which is being made by Mr. Willard L. Thorp, assisted by Mr. Henry Villard and Mrs. Thorp. Our aim in this work is to bring together all the reliable time-series which throw light upon any aspect of business cycles in the United States and in other countries of commercial importance. A considerable part of this work has already been accomplished, enough to warrant the belief that we shall have a statistical source book of the greatest value not only to statistical students of business cycles, but also to public officials, business men, journalists, publicists, historians and economists. Some of the series included are quite new, having been constructed by Mr. Thorp and his co-workers; many others have been pieced together from scattered sources not easily available; still others have been recast into forms which are more significant than the original data, and even the most familiar materials gain new value from being presented in one place by months for the full period which they cover. In every case the sources from which the data are obtained, the methods by which they are compiled, and the special cautions which should be observed in using them are recorded with care.

Because of the usefulness of this unique body of data, we think that the whole collection should be published, in extenso. But to print a large volume, or perhaps two volumes, of tabular matter is very expensive. While a considerable sale is anticipated, the National Bureau might be some time in covering the publication cost. Perhaps some one or more of our friends, who appreciate the

value of such materials, may care to finance this publication for us.

Our expectation is that the work of collecting these data and putting them in form for the printer will be completed in the course of this year. To accomplish this result, together with the preparation of the numerous charts which Mr. Mitchell will need for his theoretical work, Mr. Thorp will require more clerical aid than he has had so far.

We may raise in this connection a question about the desirability of modifying one of our standard practices in handling this bulky collection of data. To prepare twenty-odd copies of the whole mass of materials for circulation among the Directors would cost the National Bureau a considerable sum; and to ask any Director to read over a thousand pages of figures would be unreasonable. We therefore submit to your judgment the question whether you would prefer in this case to have circulated, not the whole manuscript, but a complete statement regarding the subject, source, form and period covered by every statistical series included in the collection. Such a summary would show with precision what the Staff has done, and would enable you as Directors to make your customary criticisms and suggestions for the improvement of the report more easily than you could if you had to turn over hundreds of mimeographed sheets.

One of the investigations which was originally suggested by the Business Cycle study was an analysis of the fluctuations of trade union membership. Dr. Wolman's work on this subject has resulted in the most complete and accurate investigation which has hitherto been made. His volume on the Growth and Extent of Trade Unionism in the United States since 1880 was completed before the close of 1924 and published the last week of that year. Dr. Wolman's book has already been recognized as authoritative by all unbiassed students in this field.

While this investigation was progressing, Dr. Wolman and his assistants were also collecting statistics on wages, hours, employment and unemployment in

the building trades for the period from 1890 to 1923. These figures permit a detailed study of wages for the country as a whole, and for important sections of the country; for all people working in the industry and for specified occupations within the industry. A beginning has also been made in the collection of wage statistics for the iron and steel industry. The interpretation of the data in hand and the extension into other industries of similar studies is waiting final decision as to the scope of the study as a whole.

In the past year, two new studies of wages in the United States have been made by Paul Brissenden and by Paul Douglas. The former is based upon the reports of the Census of Manufactures; the latter rests mainly upon the reports of the U. S. Bureau of Labor Statistics. Dr. Wolman has been in close touch with these writers and has examined their manuscripts. What is needed and what Dr. Wolman will seek to supply is

1. A critical evaluation of past work, covering the method and statistical materials to get light upon the leading characteristics of the wage series now in use.
2. Emphasis upon the movement of wages in specific industries, rather than upon studies of the wage movement as a whole.

By segregation of the problems of the particular industry, it should be possible to suggest improvements in the measures of employment and unemployment. It is especially desirable, by procuring figures more frequent than annual data, to measure the sensitiveness of the wage market. The careful measurement of variations from established and published scales in particular industries will be most valuable for such results.

If this procedure is approved, this critical and detailed analysis will be the work on which Dr. Wolman will be engaged during 1925.

A second outcome of the business cycle work, which will result in one of the most notable reports of the Bureau, and which will be ready for publication presumably by June, 1925, is the investigation of Bond Yields and Interest Rates in the United States upon which Dr. Frederick R. Macaulay has been working during the past year. Dr. Macaulay has compiled the most complete record of bond yields ever made for the United States. His figures for bond yields are quite new and run back by months to 1859. His report when completed will show:

- (1) the history of the fluctuations of interest rates and bond yields in the United States monthly back to January, 1859.
- (2) the relations between different types of interest rates and bond yields, and
- (3) the relation of interest rates and bond yields to other fundamental economic series, such as those measuring the general level of commodity prices, the volume of trade, the amount of new securities being issued, and a number of different aspects of the banking situation both in New York and in the rest of the United States.

III. Human Migration.

As a part of the wide program of the investigation of the problems of human migration now under the auspices of the Social Science Research Council, the Bureau has made a study of migration in its relation to business activities in the United States and foreign countries. This work has been in charge of Dr. Harry Jerome and, like the preceding two investigations, while having an independent character of its own, links also with the Bureau study of the Business Cycle.

The primary object of the first report, which will be ready for submission to the Directors within a few weeks, is the furnishing of facts upon which to base conclusions concerning the extent to which migration ameliorates or aggravates cyclical and seasonal fluctuations in production and employment. It

examines the extent to which these fluctuations correspond in timing and degree, particularly as measured by employment or unemployment, with the fluctuations in migration into the United States. It analyzes the variations in fluctuations which appear when migrants are classified by sex, occupation, race and country of origin, and it gives some materials for answering the question as to whether fluctuations in migration are primarily determined by changes in the country of emigration or in the country of immigration.

During the latter part of 1924, Dr. Jerome has been making the preliminary studies for a further report upon the probable influence of restricted immigration upon the use of labor-saving machinery. To this end, he is endeavoring by experimental attack, including interviews and factory visits, to discover:

- (1) The extent to which restriction lessens the additions to the various elements in the labor supply, particularly common labor.
- (2) The numbers of skilled, semi-skilled, and unskilled workers in the several industries, particularly those which employ large numbers of immigrants, and the processes in which these various classes of workers are engaged.
- (3) The relative extent to which the several industries are now mechanized, and significant features of the history of the development of equipment to its present status.
- (4) The available information concerning the performance records and the operating expense of labor-saving machinery.
- (5) Such other information as will throw light on the factors which further or retard mechanization.

A campaign of investigation which will emphasize particular industries will be carried on actively during the summer of 1925, with a Staff increased by the addition of trained men from the colleges who are free for the summer months. It is needless to point out that this first attempt on any considerable scale to investigate a highly important but complicated problem is attended by numerous difficulties. The Bureau is confident, however, that the procedure utilized is sound, and the investigation is being admirably handled by Dr. Jerome.

IV. Studies in the Structure and Workings of the System of Prices.

After this survey of work already in progress, we come to the proposal for entry into a new field of investigation, - that of prices. Since 1863, when W. Stanley Jevons published the first of his index-number studies, the aim of most price investigations has been to measure the fluctuations in what is ambitiously called "the general level of prices." Relatively little work has been done on the internal structure of the price system. We realize that this system is not a loose aggregation of the prices of unrelated commodities, but a highly integrated organization containing groups of prices bound to each other in definite, though diverse, ways. We realize, also, that the production of goods, the payment of money incomes, and the conversion of money into "real" incomes, all depend upon the maintenance of orderly margins between the prices of different goods. Yet no adequate study has yet been made of the structure, variations and functioning of these crucially important relationships among the different parts of the price system. In cultivating this neglected field, the National Bureau would be doing work of fundamental importance, work logically developing from its income and business-cycle studies, and work that promises definite results.

Dr. Mills, of Columbia, who is deeply interested in this field and especially competent, will be available for the second half of the year, and we are making arrangements for having him devote all his time, with the exception of one graduate course to be given in Columbia, to this investigation for the National Bureau of Economic Research. He has submitted a fairly detailed outline memorandum indicating that the first topics to be studied will be price dispersion and price differentials, and that, in all probability, a report upon the first of these topics may be expected at the end of the first year's work. Since it will be necessary, in making this investigation, to

construct some new monthly index numbers both for price dispersion and price differentials, the question will be raised as to whether it may not be advisable for the Bureau to continue and make public regularly these indices of prices. This matter, however, can be discussed more advantageously after the work has proceeded, and the whole question of policy involved will be brought later before the Directors.

The addition of Dr. Mills to the Staff, with this important attack upon a new field of activity for the Bureau, is an outcome of the need felt for the Bureau's services, since, in part, it results from a public demand for this particular type of investigation. While the addition to our budget is not relatively large, it of necessity calls for certain increases in expenditures. Your Directors of Research believe that the National Bureau can render no more valuable service than that of making a constructive analysis of the Structure and Workings of the System of Prices.

(Signed) Edwin P. Gay
Wesley C. Mitchell

Directors of Research