

SAMPLE BULLETIN

Dr. Jerome Directs Field Work For New Mechanization Study

With headquarters at the University of Wisconsin, where he has recently been promoted from Associate to Professor of Statistics, Dr. Harry Jerome is directing the field work for a new study of Mechanization of Industry as the second part of his Migration studies now being carried on by the National Bureau of Economic Research.

The first of Dr. Jerome's Migration studies will be published soon by the National Bureau of Economic Research under the title *Migration and Business Cycles*. Aided by a small corps of assistants and the advice of other members of the National Bureau's staff, Dr. Jerome analyzed the voluminous, yet incomplete records of migration to and from the United States, and compared these records with various indices of business activity here and abroad.

Migration and Business Cycles will present in concise form the conclusions concerning short-period fluctuations in the demand for and supply of labor in the United States, and the role played by migration in these fluctuations.

The National Bureau hopes that this carefully documented study of a problem too often treated in a controversial spirit will prove useful to all who are interested in migrations and to all who are interested in business cycles.

Before Dr. Jerome had finished the manuscript of *Migration and Business Cycles*, the Social Science Research Council asked the National Bureau of Economic Research to investigate the problem of "Migration and the Mechanization of Industry"—that is the relation between the conditions on which relatively unskilled labor can be hired and the adoption of automatic machinery for the performance of work which may be done by hand. This latter is the project upon which Dr. Jerome is engaged at present for the National Bureau of Economic Research.

Directors Abroad

Among the members of the Board of Directors of the National Bureau of Economic Research who are now in Europe or who have just returned from abroad are George O. May, President; George E. Roberts, Treasurer; Colonel Malcolm C. Rorty, Chairman of the Finance Committee; Oswald W. Knauth, Recording Secretary; David Friday, Director by Appointment of the American Economic Association; and A. W. Shaw, Director by Appointment of the National Publishers' Association.

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Publications of the National Bureau of Economic Research

Ready Now

INCOME IN THE VARIOUS STATES ITS SOURCES AND DISTRIBUTION, 1919, 1920 and 1921

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THE GROWTH OF AMERICAN TRADE UNIONS, 1880-1923

Results of a comprehensive investigation of trade union membership year by year; its fluctuations with the business cycle; effects of World War conditions; women in trade unions. Contains also a detailed analysis of the total working population. Size 9x6 inches, 170 pages, illustrated with 27 tables, 16 charts, and indexed. Bound in cloth. \$3 postpaid.

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Results of an investigation made for the President's Conference on Unemployment. By the staff of the Bureau with 16 collaborators. 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. Size 9x6 inches, 405 pages, with 56 tables, 56 charts, and indexed. Bound in cloth. \$4.10 postpaid.

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Volume I. A Summary of an investigation of the Amount and Distribution of Income in the United States, 1909-1919, intended for readers who are primarily interested in the results. Size 7½x5¼ inches, 152 pages, with preface, 29 tables, 31 charts, and indexed. Bound in cloth. (Fifth printing.) \$1.58 postpaid.
Volume II. A report giving in full the methods and estimates on which the results shown in Volume I are based. Size 9¼x6¼ inches, 440 pages, 222 tables, 35 charts, and indexed. Bound in cloth. (Second printing.) \$5.15 postpaid.

DISTRIBUTION OF INCOME BY STATES IN 1919

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. Size 9¼x6¼ inches, 32 pages, with preface and 9 tables. Bound in cloth. (Third printing.) \$1.30 postpaid.

About to Appear

BUSINESS ANNALS

A descriptive summary of business conditions, year by year, in the United States, England, France, Germany, Austria, Russia, Sweden, Netherlands, Italy, Argentina, Brazil, Canada, South Africa, Australia, India, Japan, China, for periods of 36 to 136 years, with an introduction *Business Cycles as Revealed by Business Annals*. Approximately 380 pages.

MIGRATION AND BUSINESS CYCLES

First report of a new series of studies dealing with the effects of immigration and emigration upon the economic life of the United States. Approximately 300 pages.

Copies of available reports may be obtained upon application accompanied by remittance to

NATIONAL BUREAU OF ECONOMIC RESEARCH, INC.
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United States has Shortest Business Cycles

How National Averages Compare

Taking periods which comprise whole cycles, the average duration of business cycles in seventeen countries is as follows:

| Country | Period | Total Number of Cycles | Average Duration of Cycles in Years |
|---------------|-----------|------------------------|-------------------------------------|
| United States | 1796-1923 | 32 | 4.0 |
| Japan | 1890-1920 | 7 | 4.3 |
| Russia | 1891-1925 | 7 | 4.9 |
| South Africa | 1890-1920 | 6 | 5.0 |
| Argentina | 1890-1920 | 6 | 5.0 |
| Brazil | 1889-1924 | 7 | 5.0 |
| Canada | 1888-1924 | 7 | 5.1 |
| Germany | 1848-1925 | 15 | 5.1 |
| India | 1889-1920 | 6 | 5.2 |
| France | 1838-1920 | 15 | 5.5 |
| Austria | 1866-1922 | 10 | 5.6 |
| Sweden | 1892-1920 | 5 | 5.6 |
| Australia | 1890-1924 | 6 | 5.7 |
| England | 1793-1920 | 22 | 5.8 |
| Netherlands | 1891-1920 | 5 | 5.8 |
| Italy | 1888-1920 | 5 | 6.4 |
| China | 1888-1920 | 5 | 6.4 |

Average Duration is 4 Years While Commonest Length is 3 Years, Bureau's New Report Will Show

Average in Foreign Countries is 5.4 Years

"Universe" of Business Cycles Consists of Less Than 1,000

"In the sense in which the term is used here—recurrences of prosperity, recession, depression and revival in the business activities of countries taken as units—the total number of past business cycles may well be less than a thousand," Dr. Wesley C. Mitchell, Director of Research of the National Bureau of Economic Research will say in his introduction to Dr. Willard L. Thorp's *Business Annals* which will be published soon by the National Bureau.

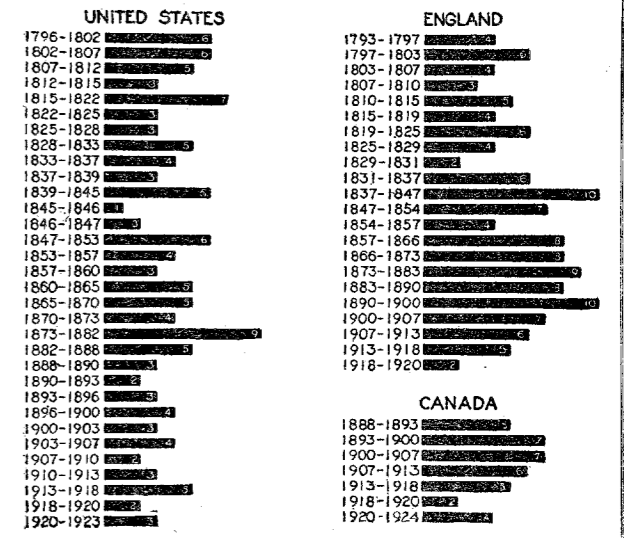
"For business cycles are phenomena peculiar to a certain form of economic organization which has been dominant even in Western Europe for less than two centuries, and for briefer periods in other regions. Of the whole number of cases to date, the 166 cycles we have measured form a significant fraction."

AMERICAN business cycles have a shorter average duration than those of any other country studied, according to an analysis made by Dr. Wesley C. Mitchell, Director of Research of the National Bureau of Economic Research, of the annals of 17 countries for periods of 36 to 136 years, compiled by Dr. Willard L. Thorp, and soon to be published by the National Bureau of Economic Research under the title *Business Annals*. This report will form the first volume of a new series of business cycle studies being carried on by the National Bureau of Economic Research under the immediate supervision of Dr. Mitchell.

The business cycle duration averages of 32 American and of 134 foreign measurements are 4.0 and 5.4 years respectively. The shortest average duration found in any country other than the United States is 4.3 years in Japan.

Approximate Duration of Business Cycles, in United States, England, and Canada, Arranged in Chronological Sequence.

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

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

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American Cycles Discussed

"The peculiarity of the American cycles," Dr. Mitchell asserts, "cannot be due to the newness of the country; for Canadian, Australian and South African cycles conform more closely to the European type.

"Nor have we reason to believe," Dr. Mitchell continues, "that in our American sources the standard of business reports concerning recessions is peculiar. Certainly the differences between the duration of American and English cycles shown by our annals since the 1870's are matched by corresponding differences between the American and English indexes of business activity, shown for these years in an earlier section. Our confidence in the American measurements is further confirmed by the fact that several statisticians, dealing with various time series, have called attention to the prominence of a 40-month cycle in American business fluctuations.

Starts New Problem

"While the annals support this statistical finding on the basis of descriptive materials, they start a new problem by indicating that the predominance of 3-year cycles in recent years has been confined to the United States."

There were 16 cycles in the first sixty-four years covered in the American Annals, 1796-1860, and 16 cycles in the following sixty-three years of the American annals 1860-1923. Of three year cycles there were five in the first period and five in the second.

Counting business cycles as the intervals between recessions of economic activity, noting the quarters in which the turns came, and reckoning to the nearest whole year, Dr. Mitchell finds in the American annals the following:

| | | |
|-----------|-------------------|-------------|
| 1 cycle | about 1 year long | (1845-1846) |
| 4 cycles | " 2 years long | |
| 10 cycles | " 3 years long | |
| 5 cycles | " 4 years long | |
| 6 cycles | " 5 years long | |
| 4 cycles | " 6 years long | |
| 1 cycle | " 7 years long | (1815-1822) |
| 0 cycles | " 8 years long | |
| 1 cycle | " 9 years long | (1873-1882) |

English Averages Changed

In the first half of the period covered by the English annals, 1793-1857, the average length of English cycles was nearly five years, and in the second half 1857-1920, exactly seven years.

But these averages are even less a guide to business forecasting in England than in America, according to Dr. Mitchell. When he tabulated the frequency of English cycles according to duration, he found less concentration about a central tendency than in the corresponding American table. His figures show that from 1793 to 1920 there were:

| | | |
|----------|--------------------|------------------------------|
| 2 cycles | about 2 years long | (1829-1831), and (1918-1920) |
| 1 cycle | " 3 years long | (1807-1810) |
| 5 cycles | " 4 years long | |
| 2 cycles | " 5 years long | |
| 4 cycles | " 6 years long | |
| 2 cycles | " 7 years long | |
| 3 cycles | " 8 years long | |
| 1 cycle | " 9 years long | (1873-1882) |
| 2 cycles | " 10 years long | (1837-1847), and (1890-1900) |

Intermediate Averages Found

On applying the same methods of analysis to the three other countries for which Dr. Mitchell had annals running back to the 1860's, and 1840's, he found that in average duration their cycles are intermediate between the English and the American patterns. The average length works out as follows:

1838-1920—82 years

France, 15 cycles, average length $5\frac{1}{2}$ years.
 England, (1837-1920), 12 cycles, average length nearly 7 years.
 United States, (1837-1920), 22 cycles, average length $3\frac{3}{4}$ years.

1848-1925—77 years

Germany, 15 cycles, average length 5 years.
 England, (1847-1920), 11 cycles, average length $6\text{-}2\frac{2}{3}$ years.
 United States, (1847-1923), 19 cycles, average length 4 years.

1866-1922—56 years

Austria, 10 cycles, average length 5.6 years.
 England, (1866-1920), 8 cycles average length $6\frac{3}{4}$ years.
 United States, (1865-1923), 15 cycles, average length not quite 4 years.

"If we split the periods covered by our annals for these three countries as nearly in the middle as possible," Dr. Mitchell concludes, "we find that the average length of business cycles has increased in France, as in England, decreased in Germany, and remained constant in Austria as in the United States.

Future Business Cycles

"If we wish to find out what we can about the probable duration of future business cycles, we should discard observations upon cycles whose duration has been determined by factors of a kind not likely to be influential in the future. If the data for any country show unequivocal evidence of a change in the length of cycles, the later data are likely to be a safer guide to expectations than the earlier data or the full array.

"But we have no warrant for discarding cases in which cycles seem so have been cut short or prolonged by wars, civil disorders, exceptional harvest conditions, or any other factor, unless we believe that such 'disturbing circumstances' will not recur in the future as in the past.

"We need not reject any of the observations on the ground that the duration of certain cycles has been affected by 'disturbing circumstances,' for we are interested in actual cycles in the actual world where 'disturbing circumstances' are always present.

"We might expect a more regular distribution if all our observations were strictly independent of each other. But once again, as the world is constituted, inter-dependence in duration is characteristic of business cycles in different countries. A complete array of measurements for all past cycles would resemble our sample in this respect, and future cycles seem likely to show increasing inter-dependence in duration."

"Normal State of Trade"

A Figment, the Annals Show

That the "normal state of trade," a phrase common both in treatises upon economic theory and in the talk of business men, is a mere figment of the imagination, is the broadest conclusion established by the long and wide experience covered in *Business Annals*, soon to be made public by the National Bureau of Economic Research, says Dr. Wesley C. Mitchell, Director of Research.

"If 'normal' is interpreted to mean usual, prevailing, that which exists in the absence of grave 'disturbing causes,'" explains Dr. Mitchell, "the annals show that the only normal condition is a state of change—which is not what the phrase means to those who use it. From England in 1790 to China in 1925, from Sweden to Australia, the tables reveal incessant fluctuations.

"If 'normal' means, not that which usually does prevail, but that which we think should prevail, it is equally a figment—though one of a useful kind. There are good reasons for trying to decide what phase of business cycles is most conducive to social welfare; for seeking to make that phase last longer and to mitigate departures from it. But when such is the meaning in mind, a less ambiguous word than 'normal' should be used.

"An additional source of confusion and therefore an additional reason for avoiding the word is supplied by the slipshod practice of business-cycles statisticians, who sometimes write 'normal' when they mean 'average,' and sometimes 'normal' when they mean the course marked by the ordinates of a secular trend."

Professor Willcox Goes to Geneva

Dr. Walter F. Willcox sailed for Europe in June to spend the summer directing the gathering of statistics which is being carried on by Dr. J. Ferenczi with the cooperation of the International Labour Office at Geneva, for Dr. Willcox's study of "The Great International Migrations and the Growth of the World's Population since 1800." Dr. Willcox has obtained a leave of absence from Cornell University for the purpose of making this investigation under the auspices of the National Bureau of Economic Research.

The results of this project are expected to appear in the form of two volumes. The first will present the international statistics in full, and the second will contain the summaries and the interpretation of the official statistics, studies by experts of various countries, and a survey of the efforts which have been made to determine the population of the earth at various dates and the evidence thus furnished of the influence of migration upon the increase and redistribution of population.

To assist Professor Willcox in this second portion of his work, the International Statistical Institute, at its biennial session at Rome last year, appointed an advisory committee, consisting of Messrs. Benini (Italy) March (France), Verrign-Stuart (Holland) and Zahn (Germany).