

Reports of the National Bureau of Economic Research

THE NATIONAL INCOME AND ITS PURCHASING POWER By Willford I. King. (In Press).

INTERNATIONAL MIGRATIONS, VOL. I, STATISTICS

Compiled by Imre Ferencki of the International Labour Office, Geneva, and edited by Walter F. Willcox for the National Bureau of Economic Research. Fifty-one countries represented. 1,112 pages, \$10.

RECENT ECONOMIC CHANGES

This is a report in two volumes giving the full details of a nation-wide investigation made by the National Bureau of Economic Research, Inc., for a Committee headed by President Hoover, and including the Recommendations of this Committee, based upon the factual material. Per Set, \$7.50.

TRENDS IN PHILANTHROPY

By Willford I. King

Gives figures for religious work, secular education, hospitals, poor relief, care of delinquents, recreational activities, and "character building" organizations. Compares volume of giving with community wealth. 78 pages, 25 tables, 4 charts, 6x9 inches. Cloth \$1.75.

BUSINESS CYCLES: THE PROBLEM AND ITS SETTING

By Wesley C. Mitchell

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. 512 pages, \$6.50.

BUSINESS ANNALS

By Willard L. Thorp and Wesley C. Mitchell

A descriptive summary, year by year, of business conditions in United States, England and in fifteen other leading countries as far back as reliable data go. 384 pages, \$4.00.

MIGRATION AND BUSINESS CYCLES

By Harry Jerome

A statistical study of cycles in the supply of labor covering a century of American experience. 256 pages, \$3.50.

THE BEHAVIOR OF PRICES

By Frederick C. Mills

A pioneer study of the interrelations of commodity prices, individually and by groups. Contains many novel measures of special interest to teachers of statistics, marketing and purchasing executives, students of business cycles, and all who face problems in price analysis. 598 pages, \$7.00.

THE GROWTH OF AMERICAN TRADE UNIONS

By Leo Wolman

Results of a comprehensive investigation of trade union membership year by year for forty-four years; fluctuations with business cycles; effects of World War conditions; women in trade unions; and a detailed analysis of the total working population. 170 pages, \$3.00.

INCOME IN THE UNITED STATES, VOL. I

By Wesley C. Mitchell, Willford I. King, Frederick R. Macaulay and Oswald W. Knauth

A summary of an investigation of the Amount and Distribution of Income in the United States, 1909-1919, for readers who are primarily interested in the results. 152 pages, \$1.58.

INCOME IN THE UNITED STATES, VOL. II

By Wesley C. Mitchell, Willford I. King, Frederick R. Macaulay and Oswald W. Knauth

A report giving in full the methods and estimates on which the results shown in Volume I are based. 440 pages, \$5.15.

INCOME IN THE VARIOUS STATES

By Maurice Leven and Willford I. King

This volume gives the total and per capita income carefully adjusted for every state. Special tables show the incomes of farmers, wage earners and persons of large means. 306 pages, \$5.00.

For prompt delivery, orders accompanied by remittance should be sent directly to the

NATIONAL BUREAU OF ECONOMIC RESEARCH, INC.
51 Madison Avenue
New York

These expenses, estimated in current dollars, have more than doubled in the two decades covered by the report. In the year 1925, the last in which the complete figures are shown, the farmer spent \$403,000,000 for tools and farm implements. Automobiles for use in his business cost him \$383,000,000; fertilizer for his land cost \$257,000,000. Binder twine, so necessary to agriculture, cost \$30,000,000. He paid \$35,000,000 for harness and saddles, which incidentally, is \$23,000,000 less than he paid in 1909. For business buildings and insurance the farmer paid \$120,000,000, and feed for his stock cost him \$461,000,000. Another item of expense was the interest the farmer paid to banks and merchants, namely \$327,000,000. Then, his taxes amounted to \$172,000,000.

Other items of expense to the farmer during 1925 were cotton ginning, \$85,000,000, spraying his crops \$30,000,000 and for horseshoeing \$48,000,000.

The complete figures of the farmer's total net receipts during the twenty years from 1909 are shown in the following table:

1909	\$ 6,049,000,000	1919	\$14,889,000,000
1910	6,341,000,000	1920	14,042,000,000
1911	5,946,000,000	1921	9,098,000,000
1912	6,479,000,000	1922	9,264,000,000
1913	6,388,000,000	1923	10,350,000,000
1914	6,393,000,000	1924	10,527,000,000
1915	6,804,000,000	1925	11,280,000,000
1916	8,046,000,000	1926	10,498,000,000
1917	11,026,000,000	1927	10,642,000,000
1918	13,473,000,000	1928	10,519,000,000

Explanatory of the variations of the total acreage harvested during the twenty years between 1909 and 1928 the National Bureau's report says that acreage rose steadily from 1909 to 1919, the increase during this decade being about 16 per cent, or practically the same as the growth in population during the same ten years. Acreage continued to increase in 1918 despite the fact that a large number of men from the farms were sent into the army. Evidently, then, more work per farm worker was expended on the farms of the United States, during the war time than in the years immediately preceding.

Tractor Maintains Acreage

In 1920 there was a sharp decline in acres harvested due, the report says, to two causes, one, the demand in the cities for workers at high wages, the other the collapse of prices in 1920, when a considerable portion of the low yield acreage was not worth harvesting. In 1922 and 1923 acreage again rose despite the decrease in the number of farmers. From 1922 to 1927 acreage remained practically stationary while farm population fell off materially.

According to the report, one of the factors which has enabled a diminished number of farm workers to maintain acreage undiminished has been the increasing use of the tractor on the larger farms in the Mississippi Valley and especially in the Great Plain region. The fact that most farmers now have automobiles which help them to economize on time in getting from place to place is assumed to be another cause for the maintenance of the acreage worked despite the smaller number of farm laborers. In 1928 there was a sharp increase in acreage which finally pulled the figure up to that of 1919. In 1928 the number of acres of crop harvested was 367,469,000, an increase since 1909 of 51,441,000 acres.

Contributors Receive First Copies of All Publications

CONTRIBUTING subscribers to the research work of the National Bureau of Economic Research who pay the minimum of \$25.00 receive advance copies of all the Bureau's publications, including bound volumes, monographs, news bulletins, during the period of their subscription.

Contributing subscribers enrolling for the calendar year 1930 beginning Jan. 1, 1930 will receive a complimentary copy of *The National Income and Its Purchasing Power* and all the other publications to be issued during the period of subscription.

An Organization
for Impartial
Investigation

NEWS-BULLETIN

National Bureau of Economic Research, Inc.

No. 36

51 MADISON AVENUE (MADISON SQUARE) NEW YORK CITY

January 15, 1930

Population of United States Nears 120,000,000 Mark

119,306,000 is Estimate For Continental United States as of July 1, 1928

Research Shows 72,726,000 of Country's Inhabitants Supported by Other 46,580,000—Population Grew 14,299,000 in 10 Years.

(Copyright 1930 National Bureau of Economic Research, Inc.)

THE population of the continental United States, as of July 1, 1928, according to the estimate of the National Bureau of Economic Research, made public through the release of advance figures taken from a copyrighted statement issued by the National Bureau, was 119,306,000, or a growth since the same date ten years ago of 14,299,000.

These figures are embodied in a 500-page report which the National Bureau will publish within a few days, entitled *The National Income and Its Purchasing Power*, and are revealed in a comprehensive tabulation of the number of persons in this country who are gainfully employed, meaning those who earn money in the form of salaries or wages, or whose incomes are derived from the conduct of enterprises which they personally control.

72,726,000 Non-Earners

As a result of the National Bureau's research work along these lines, covering a period of twenty years beginning with 1909, many interesting economic facts are brought to light. For instance the report shows that about 61 per cent of the population of the country is supported by the earnings of the other 39 per cent. In other figures, last year 46,580,000 workers took care of themselves and supported about 72,726,000 others. This proportion is not affected appreciably by the number of persons whose incomes are derived from rentals, dividends and interest on stocks and bonds and from securities of a similar nature, the percentage of such individuals being small.

In the following table which accompanies the National Bureau's report the figures are brought up to July 1, 1928 and tell the story of the steady growth of this country's population, the proportion of those fifteen years old and over and the number gainfully occupied, in each year since 1909:

	Total	15 Years and Over	Gainfully Occupied
1909	90,508,000	61,439,000	34,255,000
1910	92,422,000	62,869,000	35,100,000
1911	93,837,000	63,968,000	35,700,000
1912	95,249,000	64,997,000	36,237,000
1913	97,111,000	66,392,000	37,028,000
1914	98,974,000	67,738,000	37,782,000
1915	100,390,000	68,264,000	37,956,000
1916	101,787,000	69,515,000	38,638,000
1917	103,234,000	70,484,000	39,373,000
1918	104,377,000	71,132,000	40,383,000
1919	105,007,000	71,558,000	40,282,000
1920	106,422,000	72,539,000	40,008,000
1921	108,370,000	74,037,000	40,819,000
1922	109,742,000	75,055,000	41,330,000
1923	111,478,000	76,523,000	42,156,000
1924	113,466,000	78,193,000	43,123,000
1925	115,004,000	79,511,000	43,844,000
1926	116,380,000	80,804,000	44,912,000
1927	117,843,000	82,204,000	45,747,000
1928	119,306,000	83,600,000	46,580,000

This table indicates in general that the growth of population has followed a straight line since 1909, but the annual increase was somewhat retarded during the period of the great war, mainly because immigration to this country was prevented by war conditions and by the interference of European governments. Since 1919, the report states, the absolute rate of growth has been approximately as large as it was during the period preceding the war, even though the proportional rate of increase has somewhat declined. In the five years between 1909 and 1914 the growth in total population was approximately 8,466,000. In the five years ending in 1928 the increase is estimated at 7,828,000.

Analysis of Table

Analyzing still further the figures in the table the National Bureau's report states that while inhabitants of all ages have increased in number during the past two decades, the total number of persons fifteen years of age and over has grown more rapidly than has the total population. In other words, the percentage which those above the age of fifteen years constitute of the total population, appears to have increased. This increase is apparently accounted for by the fact that a reduced death rate among children has resulted in a larger proportion of the population surviving to the age of fifteen years.

The estimate of the number of persons under fifteen years of age in 1909 is 29,069,000. In 1919 there were 33,449,000 and in 1928 the estimate is 35,706,000.

The figures in the table, the report says, also indicate that recently there has been an increase in the proportion of the total population classed as gainfully occupied, the reason, doubtless, being the same as that causing the rise in the percentage of the population who are adults.

"However," the report continues, "the proportion of the adult population gainfully occupied is at present slightly smaller than was the case of a score of years ago. This fall is doubtless due to the fact that of persons over fifteen years of age a larger proportion attend school now than was formerly the case. To some extent the diminution due to this source has been offset by the tendency of women to cease work in the home in order to enter gainful occupations."

How the Figures Are Obtained

For those who are curious about the method employed by the National Bureau to get the population figures for the years that intervene between the ten year periods in which the Government census is taken, and which is necessary in making estimates of the national income, the report contains this explanation:

"Since the census of population is taken only once in a decade it is necessary to estimate the population for each inter-censal year. The method employed in interpolating population estimates has been to build up from the last census by calculating for each year the number of births and deaths and the net immigration. Obviously, if births and net immigration are added together, and the number of deaths subtracted the remainder represents the population increase during the given period.

"During recent years the census registration area for deaths has come to cover the major portion of the population of the United States. The probabilities are that the great majority of deaths actually occurring within that area are reported to the proper registration official, and that, therefore, the statistics for the registration area are reasonably accurate and constitute a sample which now may be safely used to represent the population as a whole."

NATIONAL BUREAU OF ECONOMIC RESEARCH, INC.

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

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

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

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

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

OFFICERS

GEORGE O. MAY, Chairman of the Board
THOMAS S. ADAMS, President
HARRY W. LAIDLER, Vice-President
GEORGE E. ROBERTS, Treasurer
EDWIN F. GAY }
W. C. MITCHELL } Directors of Research
OSWALD W. KNAUTH, Recording Secretary
GUSTAV R. STAHL, Executive Secretary

DIRECTORS AT LARGE

HARRY W. LAIDLER, Executive Director, The League for Industrial Democracy.
THOMAS W. LAMONT, Member of the Firm of J. P. Morgan and Company.
GEORGE O. MAY, Member of the Firm of Price, Waterhouse and Company, New York.
ELWOOD MEAD, United States Commissioner of Reclamation, Washington, D. C.
GEORGE SOULE, Director, The Labor Bureau, Inc.
N. I. STONE, Industrial and Financial Consultant, New York.
L. C. MARSHALL, Institute for the Study of Law, Johns Hopkins University.
MATTHEW WOLL, President, Union Labor Life Insurance Company.

DIRECTORS BY UNIVERSITY APPOINTMENT

T. S. ADAMS, Professor of Political Economy, Yale University.
JOHN R. COMMONS, Professor of Economics, University of Wisconsin.
EDWIN F. GAY, Professor of Economic History, Harvard University.
WESLEY C. MITCHELL, Professor of Economics, Columbia University.
JOSEPH H. WILLITS, Professor of Industry, and Director, Department of Industrial Research, Wharton School of Finance and Commerce, University of Pennsylvania.

DIRECTORS BY APPOINTMENT OF OTHER REPRESENTATIVE ORGANIZATIONS

HUGH FRAYNE, American Federation of Labor.
DAVID FRIDAY, American Economic Association.
LEE GALLOWAY, American Management Association.
ROBERT B. WOLF, American Engineering Council.
GEORGE E. ROBERTS, American Bankers Association.
MALCOLM C. KORTY, American Statistical Association.
A. W. SHAW, National Publishers Association.
GRAY SILVER, American Farm Bureau Federation.

RESEARCH STAFF

EDWIN F. GAY
FREDERICK C. MILLS
HARRY JEROME
WALTER F. WILLCOX
WILLARD L. THORP
PIERCE WILLIAMS
WESLEY C. MITCHELL
FREDERICK R. MACAULAY
LEO WOLMAN
WILLFORD I. KING
SIMON KUZNETS
RALPH J. WATKINS

EIGHT INDUSTRIES GIVE WORK TO 35,000,000 GAINFULLY OCCUPIED

Manufacturing Leads in Number of Employees With Upward Trend During Last Two Decades—Workers Leaving Farms

OF the 46,580,000 men and women in the continental United States, who, in 1928, earned money with which to support themselves and their 72,726,000 dependents, about 35,000,000 chose their occupations from among eight great industries. These, in the order of the number of employees are, manufacturing; agriculture; mercantile; transportation; government; construction; mining, quarries and oil wells, and banking. The 11,000,000 or so other earners were employed by the unclassified industries, which, although individually small compared with those already named, collectively contribute a large income.

This information and much more bearing upon the nation's business, is contained in a 500-page report to be published soon by the National Bureau of Economic Research, under the title, *The National Income and Its Purchasing Power*. This gives the results of an exhaustive investigation by Dr. Willford I. King and a corps of assistants, all under the general direction of Profs. Edwin F. Gay and Wesley C. Mitchell, Directors of Research.

Advance figures taken from a copyrighted statement, issued by the National Bureau on "gainful occupations" cover the years from 1909 to 1928, the complete figures being brought up to 1927.

Workers Leaving the Farms

Tables prepared by the bureau's experts indicate that the number of employees who chose the work of some one of the eight principal industries moved steadily upward during the two decades covered, except in the case of agriculture. In 1909 those who worked on the farms numbered 8,733,000. By 1927 enough farmers had taken up other pursuits to bring the number of those left on the farms down to 8,432,000, or, a loss to that industry of 301,000. In contrast to this, the report shows that manufacturing has increased the number of its employees from 7,930,000 in 1909 to 10,746,000 in 1927. The number grew steadily until 1919 but since that date there has been a shrinkage of about 750,000.

Several industries showed notable gains in the number of persons employed for the period 1909 to 1927. Expressed in percentages these gains are: Mercantile, 67 per cent; Government, 71 per cent; Banking, 89 per cent; Pullman, 50 per cent; Transportation by water, 54 per cent; Telegraphs, 120 per cent; Telephone, 156 per cent; Private electric light and power, 300 per cent; Unclassified, 52 per cent.

Newer Goods and Service Demanded

Commenting on the results of its researches in the field of industrial employment the bureau's report makes this deduction:

"Since, during this period the total number of persons gainfully occupied expanded by less than 38 per cent, it is evident that the industries just listed have been gaining at the expense of the other fields. The branches of industry which have been stationary or slow of growth are in general those commonly considered the more basic in their nature, such as, agriculture, manufacturing, mining, construction and railroad transportation. It appears then, that with increasing prosperity, the people of the country have demanded less of these old fashioned products and more of the newer types of goods and service."

Study of the National Bureau's tables shows that railroad wage workers grew in numbers from 1909 to 1920, but since the last mentioned date the railroads have

operated with fewer employees of this class. The express business and transportation by water have shown a trend similar to that of railways.

During the last twenty years the Pullman industry has shown steady growth in the number of wage workers employed. Street railways took on more wage workers

from 1909 to 1919 and remained approximately on the same level for four years, but since 1923 have again advanced to a higher level.

In the telephone and telegraph, and especially in the private electric light and power industries, the number of wage workers has been increasing at a rapid rate.

The following table shows the estimated apportionment among different industries of the total population normally engaged in gainful occupations:

(Number for year expressed in thousands)

	Agriculture	Manufacturing	Mines, Quarries, Oil Wells	Construction	Banking	Mercantile	Government	Transportation	Unclassified
1909	8,733	7,930	1,077	1,674	154	3,654	1,643	2,417	6,974
1910	8,814	8,176	1,099	1,650	158	3,783	1,709	2,597	7,115
1911	8,844	8,341	1,167	1,650	167	3,877	1,765	2,657	7,233
1912	8,800	8,604	1,173	1,676	172	3,970	1,821	2,714	7,308
1913	8,810	8,790	1,226	1,795	177	4,073	1,879	2,865	7,414
1914	8,792	8,943	1,204	1,795	183	4,176	1,947	2,883	7,858
1915	8,831	9,016	1,211	1,584	185	4,262	2,013	2,882	7,972
1916	8,801	10,009	1,180	1,375	188	4,345	2,085	2,874	7,780
1917	8,836	10,830	1,208	1,302	190	4,394	2,744	2,929	6,937
1918	8,862	11,276	1,191	1,037	197	4,278	5,210	3,077	5,256
1919	8,947	11,492	1,208	1,343	213	4,476	4,042	3,275	5,285
1920	8,871	11,389	1,239	1,092	232	4,618	2,719	3,494	6,355
1921	8,860	10,953	1,254	1,092	246	4,705	2,689	3,456	7,564
1922	8,643	10,928	1,269	1,363	252	5,126	2,618	3,438	7,693
1923	8,626	10,891	1,273	1,453	265	5,694	2,633	3,476	7,845
1924	8,672	10,654	1,214	1,532	271	5,485	2,674	3,445	9,176
1925	8,646	10,647	1,199	1,799	277	5,781	2,736	3,314	9,444
1926	8,529	10,829	1,294	1,787	288	5,906	2,785	3,350	9,794
1927	8,432	10,746	1,300	1,753	291	6,122	2,819	3,311	10,599

Estimate of total for all industries for 1928.....46,580,000

Agriculture Furnishes Employees Little Income

Although agriculture is one of the most important industries when ranked on the basis of the total value of its products, it is relatively insignificant when considered from the standpoint of the amount of money it disburses to its employees. The reason given for this is that the largest part of the work on the farm is performed by the farmers themselves and their families, the hired man receiving only a minor part of the money paid out by the farmer.

Manufacturing and the unclassified industries are the leading dispensers of wages and salaries. Each pays out approximately twice the amount disbursed in this form by any other single industry.

In the group next in importance as a source of income to the worker are the mercantile, government and transportation industries, each now distributing in wages and salaries five or six billion dollars annually.

FARMER'S NET RECEIPTS FOR 1928 TOTALED \$10,519,000,000

Crops Not Fed to Livestock, and Meat and Dairy Products Are Largest Sources of Farmer's Income

CCAREFUL research work during the last four years by the staff of the National Bureau of Economic Research discloses, among other economic facts, that the net receipts of the American farmer for the year 1928 totalled \$10,519,000,000.

These figures together with much interesting information as to the various sources of the farmer's income and the manner in which he has to handle his finances to realize receipts of more than ten and a half billion dollars, will be found in the National Bureau's forthcoming report which also will cover all the income producing activities of the nation from 1909 to 1928.

Accompanying that part of the report having to do with agriculture in the continental United States is a series of tables which show the amounts paid by the farmer in

wages and salaries to those who help him run his business, the proportion of the money he takes in that he has to give up to a dozen different industries before he can strike his yearly balance, and the total amount that he retains with which to keep his bank account in a more or less healthy condition.

Where the Money Comes From

In 1928, according to the National Bureau's report, the sources of the farmer's receipts and the amount derived from them were as follows: Crops not fed to live stock \$5,124,000,000; dairy products \$1,753,000,000; eggs \$565,000,000; poultry \$455,000,000; other meat products \$2,438,000,000; wool and mohair \$114,000,000; honey and wax \$12,000,000. Another source of income came from the sale of horses, mules and dairy cows amounting to \$13,000,000, and \$48,000,000 realized from the sale of land, these two last items being designated in the report as "sold for urban use."

What the Farmer Pays Out

Another interesting feature of the National Bureau's report is the table dealing with the payments for business purposes made by agriculture to other industries. This, being interpreted, means the money the farmer has to spend for the necessary implements, fertilizer, automobiles and other things with which to carry on his business.