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Distinctive Feature of National Bureau Set Forth in President's Address

HE distinctive feature of the National Bureau of Economic Research, Inc. is its effort to carry on and conclude investigations in the field of economic, social, and industrial science, under conditions of critical examination and review which insure their impartiality and disinterestedness," said Professor Thomas S. Adams, of Yale University, in delivering his report as President of the National Bureau of Economic Research, Inc., at the annual meeting of the Bureau's Board of Directors Monday, February 4.

"There are many other organizations engaged in economic research. There is none, to my knowledge, whose work must before publication be submitted to the critical representatives of almost every shade of business, economic, social and political opinion.

Entering Its Tenth Year

"The National Bureau has now been in existence for nine years. It has carried on and published investigations dealing with such delicate subjects as the distribution of income among the various classes of the American people; employment, hours, and earnings in prosperity and depression; the growth of American trade unions; the shortage and surplus of American labor in relation to immigration and emigration; business cycles and unemployment; changes in the cost of living as affecting different classes and the behavior of

"In the course of these investigations it was necessary not only to handle difficult data but to devise new methods of treatment and to supplement recorded facts with far-reaching estimates, in order to make the factual studies yield practical conclusions.

"The figures, the methods, the estimates and the conclusions have all been submitted to the critical examination and check mentioned above.

Test Met Successfully

"Perhaps the most significant result of the Bureau's work is the fact that they have met this test successfully. Neither the research workers of the Bureau, nor its group of critical collaborators, are sure that the data, the methods or the conclusions are absolutely sound. But all are satisfied that they are disinterested; that they are substantially the best that can be devised in the present state of knowledge; that the facts and conclusions set forth are in their respective fields the best material which can be used as a basis of interpretation, deduction and argument by those differing classes which determine our political, social and business

"Social and economic science will probably never attain the accuracy and precision of the physical sciences. But they can, as regards fundamental conditions of fact, match the physical sciences in disinterestedness and freedom from bias. The short history of the National Bureau of Economic Research goes far to prove this conclusion. If it does no more the National Bureau will have achieved this distinctive hope

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the Economic Foundation.

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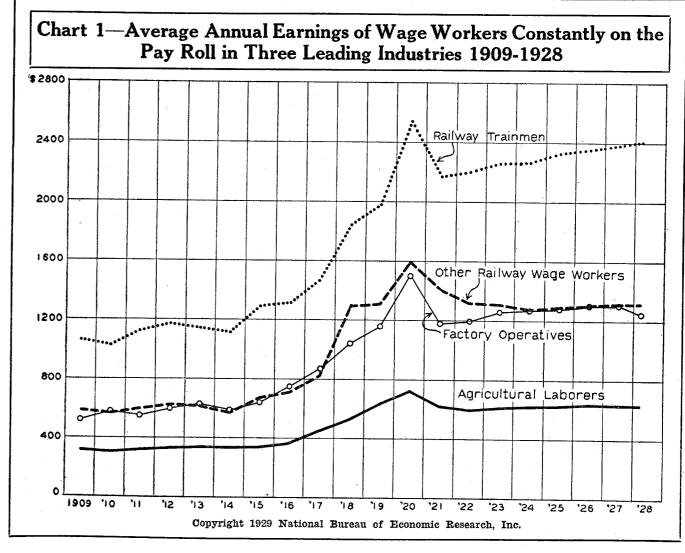
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National Bureau of Economic Research, Inc.

February 10, 1929

Wage Earners Participate in National Prosperity



STIMATES indicating the extent to which four large groups of wage earners have participated in the national prosperity since 1909 to date .ave just been prepared by Dr. Willford I. King of the Research Staff of the National Bureau of Economic Research, Inc., under the general direction of Drs. Edwin F. Gay and Wesley C. Mitchell, directors of research, and approved for publication today in the News-Bulletin by vote of the National Bureau's Executive Committee. These figures which form part of the investigation of the amount and distribution of the national income, upon which the National Bureau is continuously engaged, show that in the entire period between 1909 and 1928 the total per-

centages of increase, when measured in dollars having purchasing power equivalent to that in 1913, are approximately as follows:

In the same period the average annual increases in terms of 1928 dollars are roughly as follows:

Kailway trainmen	\$26.52
Other railway workers	
Factory operatives	
Agricultural laborers	10.73

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.

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Text of Statement

The text of the statement as submitted by Dr. King to the Executive Committee follows:

The Bureau of the Census defines a person as being gainfully occupied when he or she is engaged in an occupation bringing in a money return. In the United States, at the present time, nearly 46 million out of the 119 million inhabitants fall into this eategory. The gainfully occupied may be divided into three main classes:

1. Entrepreneurs

2. Salaried Employees

3. Wage Workers

Entrepreneurs include all persons such as manufacturers, merchants, farmers, lawyers, physicians, engineers, etc., engaging in business on their own account. Some entrepreneurs have employees to assist them, while other entrepreneurs operate their businesses individually or with such assistance as their families can give them. At present the number of entrepreneurs in the United States is probably about 9,700,000 as contrasted with nearly 36,000,000 employees.

Employees in Two Main Categories

Employees have been classified more or less arbitrarily by the Federal Census Bureau into two main categories, salaried employees and wage workers, a salaried employee being a person who occupies some administrative or managerial position, or who is engaged in clerical work and has relatively secure tenure. At the present time salaried employees number around 8,300,000.

The remainder of the gainfully occupied are commonly classified as wage workers. Some 28,000,000 or about 61 per cent of all persons gainfully occupied, are in this category at the present date. The income of these 28 million wage workers consists mainly of earnings received for their labor, although these earnings are pieced out in very many families by profits obtained by keeping boarders and lodgers, by milk, vegetables and fruits secured through spare-time effort, by gifts, and by rent or interest received from property owned or funds invested. The fact remains, however, that it is upon earnings that the wage earner and his family must primarily depend.

Before a statistical study can be made of earnings, it is necessary to define carefully just what kind of earnings is meant. Wages are payable by the hour, day, or week. When hours are shortened, if the wage rate remains unchanged, earnings will fall.

Three Measures Defined

Average annual earnings may be calculated on three different bases:

The average pay received by all persons "attached to the industry," that is, by those normally making their living in the industry: This average is calculated by dividing the total wages paid annually by the estimated number attached to the industry. It is the average which is most significant from the standpoint of the worker's welfare for it

takes account of over-time, short-time, and unemployment.

February 10, 1929

- 2. Average full-time earnings: This is a weighted average of the estimated amounts earned in the various occupations in the various plants by those workers employed for the number of hours nominally constituting full time. The weights used in computing the average are the average numbers actually working at the specified occupations in the various plants. This average is not affected by over-time, short-time or unemployment.
- 3. Average earnings of those workers constantly on the payroll: This average is computed by dividing the total amount of wages paid during the year by the average number of workers on the payroll. It, unlike the preceding averages, is affected by both overtime and short-time work, but it resembles the average immediately preceding in that it is not affected by the fact that workers have been removed from the payroll, for when this occurs, the number of workers and the total pay are both diminished correspondingly.

Basis of Choice

This third average is the one here presented. From the standpoint of the welfare of the employee, since it does not take account of unemployment, it is less significant than the first average. However, it has the advantage of being far easier to calculate with a reasonable degree of assurance as to its approximate accuracy. The reason for this greater dependability is that the volume of unemployment is hard to measure with any degree of precision.

In the course of its investigations concerning the income of the people of the United States, the National Bureau of Economic Research has, of course, been compelled to study in considerable detail the earnings of wage workers in various industrial fields. Concerning several industries, information is scanty, and estimates for such industries are therefore necessarily subject to wide margins of error. In certain other fields, as for example in the electrical industries, the Census provides adequate information, but the reports appear only once in five years. It is therefore extremely difficult to bring the figures for such fields up to date.

How Earnings are Calculated

For three important groups of employees, however, the data available are sufficiently complete to show with a fair degree of accuracy for the entire period 1909 to 1928 inclusive the course of the average annual earnings of those workers not dropped from the payroll. Since these industries employ a large proportion of all wage workers in the United States, it seems worth while to present the figures for these fields. The figures here given are on an

annual basis. They have been arrived at by dividing the estimated total of wages paid by the estimated average number of wage earners on the payroll. Average earnings, as the term is here used, are evidently reduced when workers on the payroll work only part time and increased when they work overtime.

Sources of Figures

Figures for railway employees are approximately complete, since the Interstate Commerce Commission secures data from most of the leading railways of the United States. Figures for the manufacturing industry are also reasonably well established, inasmuch as information concerning wages in manufacturing is collected not only by the United States Bureau of Labor Statistics, but by the Labor Departments of a number of the leading States, and, once in two years, complete data are secured by the Bureau of the Census from all of the larger manufacturing establishments in the nation. The last Census of Manufactures for which reports are available was taken in 1925. The estimates of wages in manufacturing since that date are, therefore, subject to the possibility of a slight error. Data concerning the earnings of farm hands are collected by the United States Department of Agriculture. While it is somewhat difficult to state exactly how many farm hands are employed under various types of wage contracts at any given time, and while we have but scanty data concerning total payrolls, it is still possible to picture with a considerable degree of confidence the trend of the earnings of agricultural labor. The statements of the absolute amounts earned are doubtless subject to a moderate percentage of error.

Railway Trainmen Fare Above Average

Chart 1 portrays the courses pursued respectively by the average annual earnings of those wage workers on the payrolls of the four important groups covered by this particular study. A glance at this chart shows that, throughout the period, the average earnings of railway train men have been far above those of the wage workers in the other fields studied. Part of this discrepancy is due to the fact that wages of men average higher than wages of women. and the fact that the manufacturing industry employs many female wage workers lowers the average for that field. Furthermore, the term "Railway Trainmen" is used to cover a group consisting almost entirely of conductors, ticket collectors, engineers, motormen, firemen, brakemen, switchmen, flagmen and baggagemen. These classes constitute of course a limited fraction of all railway employees, comprising but 24 per cent of all railway wage workers. Groups of employees could doubtless be selected from among those working in the manufacturing industry who would have equally high average earnings, but it does not appear that they would constitute any such large proportion of all workers in manufacturing as do railway trainmen of all railway workers.

AVERAGE EARNINGS PER WAGE WORKER FOR THOSE CONSTANTLY ON THE PAYROLL IN THREE LEADING INDUSTRIES

expressed both in

CURRENT DOLLARS

and in

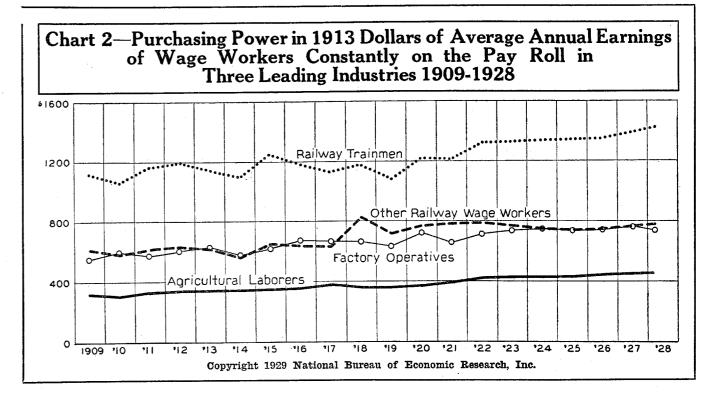
DOLLARS OF 1913 PURCHASING POWER

(These industries have been selected because they represent fields in which reasonably dependable data are available.)

	CURRENT DOLLARS			INDICES OF PRICES OF GOODS USED BY		DOLLARS HAVING PURCHASING POWER EQUAL TO THAT OF 1913				
YEAR		RAILWAYS				Factory	RAILWAYS		Agri-	
	Factory Opera- tives	Train- men	Other Wage Workers	Agri- cultural Laborers	Urban Workers	Agri- cultural Laborers	Opera- tives	Train- men	Other Wage Workers	cultural Laborers
1909	\$ 520	\$1,053	\$ 583	\$319	.945	.989	\$550	\$1,115	\$617	\$323
1910	574	1,026	566	310	.969	1.006	592	1,059	584	308
1911	552	1,121	597	324	.969	.977	570	1,157	616	332
1912	594	1,166	622	333	.982	.972	605	1,187	633	343
1913	629	1,141	618	341	1.000	1.000	629	1,141	618	341
1914	589	1,111	569	336	1.017	.976	579 620	1,092 1,246	559 651	345 353
1915	642	1,290	674	339	1.035 1.116	.962 1.040	671	1,240	635	356
1916	749	1,314	709	370	1.304	1.040	667	1,126	631	379
1917 1918	870 1,045	1,468 1,838	823 1,293	455 530	1.572	1.472	665	1,169	823	360
1919	1,156	1,976	1,312	634	1.831	1.754	631	1,079	716	361
1920	1,500	2,539	1,599	726	2.088	1.963	718	1,216	766	370
1921	1,180	2,171	1,411	621	1.800	1.584	656	1,206	784	392
1922	1,195	2,195	1,316	595	1.676	1.398	713	1,310	785	425
1923	1,254	2,253	1,310	615	1.707	1.436	735	1,320	767	428
1924	1,271	2,265	1,277	626	1.706	1.460	745	1,328	749 740	429 434
1925	1,280	2,326	1,290	630	1.744	1.451	734	1,334	742	445
1926	1,303*	2,352	1,302	641	1.755	1.440	742*	1,340	760	451
1927	1,305*	2,385	1,308	638	1.722	1.416	758*	1,385	774	456*
1928	1,246*	2,404*	1,315*	636*	1.700*	1.397*	733*	1,414*	114	400.

^{*} Preliminary Estimate

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The average wage for other railway workers differs but little from the average for all factory operatives. On the other hand, the earnings of agricultural laborers have consistently been much lower than those of any of the other three classes considered. It may be mentioned parenthetically that the wages of agricultural laborers, as here given, include the farm value of such board and lodging as is furnished to the laborers by their employers.

Psychic Income of Farm Laborers

A question which at first seems difficult to answer is why it is that, despite migration to the city, many laborers continue, year after year, to work on the farms of the nation for returns so much lower than those received in urban occupations. Presumably several forces unite to bring about this result. First, many a man probably prefers to work on a farm for a return smaller than he could obtain in the city. City life has no attractions for him. He dislikes its crowding and its suppression of individuality, and hence he prefers rural conditions, even though he knows full well that the pay is less in the country. Second, custom has ordained that in the country it is unnecessary to spend as much in order to maintain appearances as seems essential in the city. Third, and perhaps the most important of all, prices of the necessities of life, including especially food, fuel, and lodging, are much lower in the country than they are in the city. hence every dollar of the agricultural laborer's income will buy of these commodities from 50 to 100 per cent more in quantity than he could obtain of like articles in the city.

Earnings and Prices

All four graphs show much the same tendencies as regards earnings—namely, a relatively slow increase between 1909 and 1914, a sharp rise from 1914 to 1920, followed by a brief but severe decline, and a steady increase since 1922. The evidence of the graphs gives but little support to the common saying that wages tend to lag behind prices, for it will be observed that 1920—the year when the price level was highest-marked the peak of earnings in all four fields and that, in two fields out of the four, the price decline of 1921 brought earnings immediately to a minimum, from which they have been since advancing. In the case of the miscellaneous railway wage workers, there is, however, some evidence of earnings lagging behind prices, for apparently their average wage continued to decline until 1924, even though prices had been recovering since 1922. What does, however, appear to be generally true, is that earnings fluctuate less than prices, but at approximately the same dates as prices, any lags that may exist covering, as a rule less than one year.

Reader is Warned

The fact should be kept in mind that the graphs in Chart 1 all represent earnings and not wage rates, and that earnings are affected by changes in the number of hours worked as well as by changes in the rate of pay per hour. Evidently, then, conclusions pertaining to earnings are not necessarily applicable to wage rates.

Furthermore, the averages presented are all stated in terms of the dollars current at the respective dates. But these dollars were not of the same value at different periods. To the recipient, wages are worth only what wages will buy. In order, then, to obtain any light upon the question as to whether the condition of wage workers has been growing better or worse during the last 19 years, it is essential to reduce the nominal amounts to dollars of constant purchasing power.

How Earnings Are "Deflated"

In the present instance, this has been done by dividing the annual full time earnings in each year by a price index indicating the prices relative to 1913 of the goods purchased by the various classes of workers. The index used in deflating the earnings of railway wage workers and factory operatives is the "cost of living" index of the United States Bureau of Labor Statistics, carried back from 1913 to 1909 on the basis of a special investigation made by the National Bureau of Economic Research. The average annual earnings of agricultural laborers have been deflated by dividing by an index number prepared by the last-mentioned Bureau especially for this purpose. Both of these index series appear in the accompanying table.

The graphs in Chart 2 show the average annual "full time earnings" of the four classes of wage workers when all such earnings are reduced to dollars of constant purchasing power. A rise in any one of these graphs indicates, then, that, with the pay received for his year's efforts, the average worker who remained on the payroll throughout the year was able to purchase more commodities than

he could before.

Unemployment Factor Unmeasured

The fact should, however, not be overlooked that these figures do not allow for unemployment when the worker was removed from the payroll and therefore do not necessarily give a true picture of the comparative welfare of the wage working classes each year. For example, in 1921, the graphs show that, in most fields, the workers were approximately as well off as in 1920. This was, however, true only of those who retained their places, a great number being "laid off," with the result that their actual earnings were greatly curtailed.

Though it is true that the discrepancy between the average earnings of workers on the payroll and average earnings of workers attached to the industry is important in single years it seems probable that. for the period covered, the long-time trends of the two types of earnings resemble each other closely. for such evidence as is available gives no indication that the trend of the volume of unemployment has departed materially from the horizontal. While, then, the figures as given do not pretend to show fluctuations in actual annual earnings from year to year, the trends of the graphs portraying the average earnings of those remaining on the payroll are probably approximately the same as would be the trends of those showing actual earnings for all wage-workers attached to the industry.

Steadiness of Upward Trends

When all data are reduced to terms of values in

dollars of 1913, the striking feature is the steadiness of the upward trends of wages in all the fields recorded. The trends of three graphs out of the four approximate straight lines. Only in the case of miscellaneous railway wage workers is there any noticeable departure from the straight line, a slight hump being apparent during the period 1918-1922. The full time earnings of factory operatives show a small decline in 1911, due to the mild depression of that year, a more marked decline in 1914, caused by the severe depression at that date, a slight decline in 1919, brought about by the failure of wages to rise to the same extent as prices, a sharp break in 1921, caused by the extraordinary slump in business at that date, and a moderate decline in 1928 resulting from the mild depression during the winter of 1927-1928.

We see, then, that factory earnings fall off when the manufacturing business is slack, even when unemployment is not taken into account. Part of this decline is accounted for by the fact that some of the wage earners are put on short time, thus reducing earnings even though the wage rate may not be cut. Part of the decline results from actual cuts in wage rates. The wages of the other three classes of employees are clearly less affected by conditions of prosperity and depression than are the wages of factory operatives.

Annual Figures Presented

The slope of a straight line trend fitted, by the method of least squares, to the data on earnings of railway trainmen, when measured in dollars of 1913, indicates an average increase of \$15.60 a year. A similar form of measurement indicates that the earnings of other railway wage workers have increased only \$10.94 a year. The increase for factory operatives has been at an average of \$10.46 a year. Agricultural laborers have gained only about \$7.50 per annum. The reader should keep in mind that all these figures are expressed in dollars of 1913 purchasing power, and, to translate them into dollars of 1928 value, it is necessary to multiply the figures for urban workers by 1.7 and for agricultural laborers by 1.397. This would give average annual increases in terms of 1928 dollars as follows:

Railway trainmen	
Other railway workers	
Factory operatives	17.78
Agricultural laborers	10.73

In the entire period between 1909 and 1928, the total percentages of increase, when measured in dollars having purchasing power equivalent to that in 1913, are as follows:

Railway trainmen	%
Other railway workers35	%
Factory operatives35	
Agricultural laborers47	%

Each of the four classes, has, then, in varying degree, participated in the national prosperity, but the progress has been gradual rather than spectacular.

Four Important Scientific Reports Near Completion

February 10, 1929

THE results of four important scientific investigations, two of them probably appearing in two-volume editions, are scheduled for early publication in 1929, according to the plans of the National Bureau of Economic Research, Inc.

The two most voluminous reports are the Survey of Recent Economic Changes and The Growth of the World's Population. The two one volume works nearing completion are Income in the United States, 1922-1928 and The American Labor Market.

From Depression to Prosperity

Foremost in magnitude, is the Survey of Recent Economic Changes which the National Bureau of Economic Research, Inc., has been making for a Sponsoring Committee of which President-Elect Herbert Hoover is Chairman. This Survey, which was proposed by Mr. Hoover at the time he was Secretary of Commerce, may be considered a continuation on a somewhat larger scale of the investigation of business conditions which the National Bureau made in 1922 for a Standing Committee of President Harding's Conference. At that time the nation was in the throes of a business depression, and the Conference was called, under Mr. Hoover's Chairmanship, to devise remedies. The results of that investigation were published under the title Business Cycles and Unemployment. Today business activity is in sharp contrast to that of 1922. What has happened in the period, is the question the new investigation is intended to answer.

Divided Into Twelve Main Sections

The field of inquiry has been divided into twelve main sections. The sections and those responsible for them are as follows:

Changes in the Standard of Living—Dr. Leo Wolman Industry: Technical Development—Mr. L. P. Alford; Changes in New and Old Industries—Dean Dexter S. Kimball; The Construction Industry—Mr. John M. Gries; Changes in Physical Organization—Dr. Willard L. Thorp. Transportation: Railroads—Prof. W. J. Cunningham;

Shipping—Mr. E. S. Gregg.

Marketing—Prof. Melvin T. Copeland
Labor—Dr. Leo Wolman.

Management—Mr. Henry S. Dennison
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Price Structure—Dr. Frederick C. Mills
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Foreign Markets and Loans—Prof. J. Harvey Rogers
Effect of Money and Credit Conditions on Business—
Prof. O. M. W. Sprague and Dr. W. Randolph Burgess
Conclusion—Dr. Wesley C. Mitchell

Measuring the World's Population

Second only to the Hoover Study in magnitude is the investigation of the Growth and Distribution of the World's Population Since the Great Migrations, which the National Bureau of Economic Research, Inc., under the editorship of Professor Walter F. Willcox, has been making with the cooperation of the League of Nations International Labour Office Migration Section.

The first volume containing in 1,086 pages the International Migration Statistics collected for the National Bureau of Economic Research, Inc., by Dr. Imre Ferenczi of the Geneva Office is now complete in page proof and is awaiting its second revision by Dr. Ferenczi. The proof reading of this great collection of statistics from every country of the world and colonies and settlements in remote parts has entailed great labor and the revision has also made unforeseen demands upon the time of the editor.

For the second volume of this monumental work, Dr. Willcox now has in hand chapters from twenty writers in as many countries, each analyzing and discussing the migration statistics of his country. Professor Willcox has been engaged not only in the revision of the material for both volumes but also upon the two chapters which he himself will contribute to the second volume. There as a necessary background to the movements of migrants, he has examined critically the estimates of the present and past population of the earth. Professor Willcox is making the pioneer effort of recent times to estimate the growth of the world's population since the middle of the seventeenth century.

Estimates of National Income

Dr. Willford I. King has virtually completed his revised report on the National Income of the United States. Of the total number of tables, 120 altogether, which will appear in the new volume, all but seven are ready, giving estimates for the National Income as completely as possible from 1909 to 1925, and preliminary estimates for 1926 to 1928. Meanwhile Dr. Morris A. Copeland has summarized and supplemented Dr. King's current estimates in one of the chapters of Recent Economic Changes.

Labor Market

After the three reports just named have been issued, Dr. Leo Wolman's first volume on the American Labor Market may be expected. The bulk of this volume will be devoted to the discussion of wages in the manufacturing industries, in the coal industry and in rail transportation, the building trades and other trade-union rates of wages. Dr. Wolman has developed a number of new and interesting series and index numbers, such as series of full-time weekly earnings and derived hourly earnings, of wage differentials, and indexes of wages and of unemployment for persons on the payrolls.

Mechanization and Restriction of Immigration

Dr. Harry Jerome plans to complete this year his survey of Mechanization and the Restriction of Immigration.

This study in the effects of immigration restriction and the causes of changing productivity will deal with such subjects as:

The Industrial Distribution of Unskilled and Foreignborn Workers; The Volume of Immigration During Restriction; Economic Conditions During Restriction; Types of Machines and of Labor-saving Changes; Changes in the Degree of Mechanization; The Present Degree of Mechanization; Characteristics of the Machine-producing Industries; Economics of Mechanization; Factors hastening; Factors retarding; Effects.

The following selected industries will be covered:

Materials Handling; Clay Products: Brick and Tile; Pottery; Iron and Steel; Foundries; Cottons and other textiles; Paper and Pulp; Building Construction; Highway Construction; Marine and Railway Terminals; Agriculture; Mining; Domestic and Personal Service; Glass; Other Manufacturing Industries.