

ring the possibility of reformulation eventuating from more specific studies.

Closely allied with this major problem of maintaining economic balance, and perhaps more susceptible to statistical analysis, are two topics also suggested for early investigation—the state of competition in the United States and the economic characteristics of the cartel system (for example, in Germany) in view of the possible developments in industrial organization in this country.

The all-day conference was held at the offices of the National Bureau. Those present were: Walton H. Hamilton, Oswald W. Knauth, H. W. Laidler, George E. Roberts, M. C. Rorty, N. I. Stone, Wesley C. Mitchell (Directors); J. Steele Gow, Martha Anderson, Charles A. Bliss, Arthur F. Burns, Ralph C. Epstein, Meredith B. Givens, Simon Kuznets, W. A. Paton, A. G. Silverman, Willard L. Thorp.

PUBLICATIONS, 1921-1933

- *1 INCOME IN THE UNITED STATES
By WESLEY C. MITCHELL, WILLFORD I. KING, FREDERICK R. MACAULAY and OSWALD W. KNAUTH
Volume I (1921) Summary 152 pp.
- 2 *Volume II* (1922) Details 440 pp.
- 3 DISTRIBUTION OF INCOME BY STATES IN 1919 (1922)
By OSWALD W. KNAUTH 30 pp., \$1.30
- 4 BUSINESS CYCLES AND UNEMPLOYMENT (1923)
By the NATIONAL BUREAU STAFF and 16 COLLABORATORS 405 pp., \$4.10
- *5 EMPLOYMENT, HOURS AND EARNINGS IN PROSPERITY AND DEPRESSION, UNITED STATES, 1920-22 (1923)
By WILLFORD I. KING 147 pp.
- 6 THE GROWTH OF AMERICAN TRADE UNIONS, 1880-1923 (1924)
By LEO WOLMAN 170 pp., \$2.50
- 7 INCOME IN THE VARIOUS STATES: ITS SOURCES AND DISTRIBUTION, 1919, 1920 AND 1921 (1925)
By MAURICE LEVEN 306 pp., \$3.50
- 8 BUSINESS ANNALS (1926)
By WILLARD L. THORP, with an introductory chapter, *Business Cycles as Revealed by Business Annals*, by WESLEY C. MITCHELL 380 pp., \$2.50
- 9 MIGRATION AND BUSINESS CYCLES (1926)
By HARRY JEROME 256 pp., \$2.50
- 10 BUSINESS CYCLES: THE PROBLEM AND ITS SETTING (1927)
By WESLEY C. MITCHELL 489 pp., \$5.00
- *11 THE BEHAVIOR OF PRICES (1927)
By FREDERICK C. MILLS 598 pp.
- 12 TRENDS IN PHILANTHROPY (1928)
By WILLFORD I. KING 78 pp., \$1.00
- 13 RECENT ECONOMIC CHANGES (1929)
By the NATIONAL BUREAU STAFF and 15 COLLABORATORS 2 vol., 950 pp., per set, \$7.50
- 14 INTERNATIONAL MIGRATIONS
Volume I, Statistics (1929), compiled by IMRE FERENCZI of the International Labour Office and edited by WALTER F. WILLCOX 1,112 pp., \$7.00

- 18 *Volume II, Interpretations* (1931) edited by WALTER F. WILLCOX 715 pp., \$5.00
- *15 THE NATIONAL INCOME AND ITS PURCHASING POWER (1930)
By WILLFORD I. KING 394 pp.
- 16 CORPORATION CONTRIBUTIONS TO ORGANIZED COMMUNITY WELFARE SERVICES (1930)
By PIERCE WILLIAMS and FREDERICK E. CROXTON 347 pp., \$2.00
- 17 PLANNING AND CONTROL OF PUBLIC WORKS (1930)
By LEO WOLMAN 260 pp., \$2.50
- 19 THE SMOOTHING OF TIME SERIES (1931)
By FREDERICK R. MACAULAY 172 pp., \$2.00
- 20 THE PURCHASE OF MEDICAL CARE THROUGH FIXED PERIODIC PAYMENT (1932)
By PIERCE WILLIAMS 308 pp., \$3.00
- 21 ECONOMIC TENDENCIES IN THE UNITED STATES: ASPECTS OF PRE-WAR AND POST-WAR CHANGES (1932)
By FREDERICK C. MILLS 639 pp., \$5.00
- 22 SEASONAL VARIATIONS IN INDUSTRY AND TRADE (1933)
By SIMON KUZNETS 455 pp., \$4.00

* Out of print.

FORTHCOMING PUBLICATIONS

Two National Bureau reports are in final stages of preparation and are expected to be released by autumn. The first of these, *Strategic Factors in Business Cycles*, is a report prepared by Professor John Maurice Clark of Columbia University for the Committee on Recent Economic Changes. It is an analysis by an outstanding theoretical economist of those factors which are 'strategic' in the sense that they influence business conditions and are susceptible of conscious control.

The second is Dr. Arthur F. Burns' exhaustive analysis of the trends of production series during the past 50 to 60 years. Dr. Burns' conclusions, based upon the application of a nicely elaborated technique, point to the generality of retardation in industry as well as to the presence of periodic swings in rates of change—long cycles—which seem to be related to the more severe business cycles.

Other National Bureau reports now being prepared for submission to the Board of Directors prior to their publication include Harry Jerome's study of mechanization in American industries, Leo Wolman's study of trade union membership, Frederick C. Mills' analysis of recent price movements, Ralph C. Epstein's study of industries' profits and Willard Thorp's study of national income in various countries.

The next issues of the *Bulletin*, scheduled for October and December, will include articles on Prices During the Depression by Dr. Mills and on National Income by Dr. Simon Kuznets. Dr. Kuznets' article will present summary estimates of national income in the United States for the years 1929-1932.

National Bureau of Economic Research

JUNE 30, 1933

BULLETIN 47

51 MADISON AVE., NEW YORK

A NON-PROFIT MEMBERSHIP CORPORATION FOR IMPARTIAL STUDIES IN ECONOMIC AND SOCIAL SCIENCE

EMPLOYMENT DURING THE DEPRESSION

Copyright 1933, National Bureau of Economic Research, Inc.

Meredith B. Givens

THE IMPACT of the depression on the individual earnings of those workers who have retained employment has been revealed by an analysis of wage changes in the preceding *Bulletin* of this series. The present article is confined to an analysis of the cumulative shrinkage in those lines of employment for which fairly satisfactory data are available. For this purpose average annual figures are more useful than the monthly figures—hence no description of the monthly changes in employment is presented at this time. As this *Bulletin* goes to press there is evidence of a definite lift in employment which may prove to have more than a delayed seasonal significance, but these current changes are not described here.

Current employment figures in the major occupational or industrial groups are incomplete in coverage and uneven in quality. Utilizing the two basic sources of information—the federal Census and the monthly reports of the United States Bureau of Labor Statistics—it is possible, with varying degrees of accuracy, to compute the trends in employment for groups aggregating more than twenty million workers, comprising somewhat less than two-thirds of the total number of non-agricultural employees among the forty-eight million gainfully occupied persons in the United States.

For groups not covered in the tables information is scanty, unreliable or entirely lacking. Among the "known" groups the figures for manufacturing and steam railroads are by far the best. For mining, public utilities and communications they are reasonably good. For trade, finance, selected services and construction the monthly returns are small and somewhat inconclusive, yet sufficiently indicative to reveal approximate trends. For the service occupations generally, for water, automotive and air transport, and for other important miscellaneous lines no current trends can be determined. Nor is it possible to determine the number on the public payrolls, except in the federal civil service whose average increased from 587 thousand in 1929 to a peak of 613 thousand in 1931, holding to a level of 609 thousand in 1932 prior to the heavy cuts initiated and in prospect under the new administration. Those engaged in public service occupations identifiable in the Census aggregated 700 thousand in 1930, whereas an independent estimate has placed the total number so employed at about two and three-quarter millions in that

Census year.¹ That the public payroll (exclusive of public works) has been diminished during the depression is probable, but no direct measure of the change is available.

EMPLOYMENT BY MAJOR INDUSTRY GROUPS

Table I presents for principal groupings the shrinkage in employment during the depression, in both relative and absolute numbers. The various industries are arranged according to their relative resistance to depression as shown by the 1932 levels of employment as compared with those of 1929. These figures make no allowances for part-time employment.

This array reveals clearly the greater stability of the financial, clerical, public utility and service employments (Group A) as compared with the industries engaged directly in the production and physical movement of raw materials and commodities (Group B). Based upon returns from a substantial number of relatively small institutions the figures for real estate and the financial employments are indicative of the high degree of security of the employed personnel of these organizations. Meanwhile the closing of several thousand banks has had an undetermined effect, temporary or permanent, upon the total number employed by the financial institutions of the country. Aside from the financial employments the power and light industry heads the list for stability of operation and employment. Employment in these utilities has undergone approximately the same rate of shrinkage as has the production of electric power during the same period. With declines in the volume of traffic the telephone and telegraph workers were harder hit than the power and light companies. The drop in the services (laundries, dyeing and cleaning, hotels) has been fairly uniform as between the different groups. The marked falling off of numbers in the electric railway industry is no doubt due to the continued competition of automotive transportation with the trolleys, as well as to the depression.

Taken as a whole, Group A shows a cumulative decline of from twenty to twenty-five per cent since 1929, whereas Group B carries barely half of its former workers on its payrolls. It must be remembered, of course, that employ-

¹Estimated by R. G. Hurlin. See Hurlin and Givens in *Recent Social Trends* (New York, 1933), Ch. VI, p. 290.

TABLE 1
EMPLOYMENT BY MAJOR INDUSTRY GROUPS, 1929—1933 (a)

Industry	Index Numbers Monthly average 1929 = 100					Estimated Total Number Employed (in thousands)	
	1929	1930	1931	1932	1933 (b)	1929	1932
GROUP A							
Banks, Brokerage, Insurance, Real Estate	100.0	(c)	(c)	98.5 (d)	97.0 (d)	(e)	(e)
Power and Light	100.0	103.0	95.6	83.0	77.3	287	238
Dyeing and Cleaning	100.0	(c)	92.7	81.4	73.6	99	80
Retail Trade	100.0	95.9	89.4	80.9	75.1	4,032	3,262
Laundries	100.0	(c)	89.4	80.1	74.4	285	228
Telephone and Telegraph	100.0	97.9	86.6	79.1	73.5	558	441
Hotels	100.0	99.2	91.7	79.0	73.0	314	248
Wholesale Trade	100.0	96.0	86.6	78.2	74.2	1,605	1,255
Electric Railroads	100.0	93.4	84.7	75.5	70.3	190	143
GROUP B							
Anthracite Coal	100.0	92.2	73.7	61.5	54.4	112	69
Steam Railroads (Class I)	100.0	89.1	75.4	61.8	56.5 (e)	1,670	1,032
Manufacturing	100.0	86.8	73.6	60.9	57.2	8,839	5,448
Crude Petroleum Production	100.0	87.4	65.7	55.3	56.9	189	105
Bituminous Coal	100.0	85.6	65.4	52.2	53.4	359	188
Quarrying and Non-Metal Mining	100.0	84.3	67.4	49.0	36.1	86	42
Metalliferous Mining	100.0	83.2	59.1	36.5	30.8	119	43
Building Construction	100.0	91.8	60.0	34.0	23.0	2,209	752
TOTALS							
Group A (b) (e)	100.0	96.5	88.8	80.0	74.6	7,370	5,895
Group B (e)	100.0	87.9	71.1	56.0	51.1	13,583	7,679
All Industries (f) (e)	100.0	91.6	77.3	64.5	59.3	20,953	13,574

(a) Not including reductions in working hours among those still employed.

(b) Four months.

(c) Not available.

(d) These figures probably underestimate the extent of the actual drop in employment.

(e) Two months.

(f) Omitting Banks, Brokerage, Insurance, Real Estate.

(g) Weighted average.

ment in 1929 reflects an abnormally high rate of industrial activity.

There is a remarkably close correspondence in the extent of the employment decline in transportation and in manufacturing, but both lines fared better than the extractive industries and construction. The tremendous drop in metal mining reflects the virtual stagnation of the iron and steel industry and the metal trades. The coal figures represent the dilution of employment in an already demoralized industry.²

Most amazing of all is the current drop in construction to a low point at less than twenty-five per cent of the 1929 employment level. The heaviest losses have occurred, of course, in those employments in Group B in which the largest number of employees are clustered, especially in manufacturing and construction. Manufacturing has suffered a net loss of over three million workers, while of the five million remaining many are on part time. If the indicators of employment and of building activity are to be relied upon, fully seventy-five per cent of the building tradesmen employed in 1929 were unable to find work in their regular trades in the first quarter of 1933. It should be noted that the figure for the first quarter of the current year reflects the inactivity of the winter season in addition to the depression factors. The employment indexes for construction should be used with caution since the reporting is not yet adequately representative of the industry.

²Compiled from U. S. Bureau of Mines figures. Employment figure obtained by dividing average daily output in tons by net tons mined per day per man.

EMPLOYMENT CHANGES WITHIN THE MANUFACTURING INDUSTRIES

Comparison by Geographic Districts. Table 2 shows that the employment shrinkage in manufacturing has been unevenly distributed among industrial districts, though severe in all. Factory employment in the South Atlantic states has been maintained far better than in any other district, but the number of industrial workers is small in this already depressed agricultural area. In the agricultural areas of the West North Central, too, the drop in manufacturing employment has been relatively less than in the more heavily industrial districts. Among the industrialized states employment has shown greater tenacity along the eastern seaboard with its concentration of population and wealth (the mid-Atlantic and New England regions) than in the East North Central area which includes the growing cities of the Great Lakes and northern Mississippi basin. In the East- and West-South Central districts almost half of the small number of employees have been dropped from the payrolls of the small manufacturing plants of these non-urbanized sections. In the Mountain states still a smaller proportion, less than half, have remained on the rolls.

Except in the South Atlantic states the scanty industrial population of the agricultural states has sustained a heavier degree of depression than have the greater number of factory employees in the eastern industrial district. The latter has fared better, however, than the industrial mid-west. The relative severity of the industrial

TABLE 2
EMPLOYMENT IN MANUFACTURING BY GEOGRAPHIC DISTRICTS, 1929—1933 (a)

District (b)	Indexes of Employment Monthly average 1929 = 100					Estimated Total Number Employed (in thousands)	
	1929	1930	1931	1932	1933 (c)	1929	1932
South Atlantic	100.0	90.4	80.9	72.8	72.1	912	665
West North Central	100.0	90.4	77.0	66.0	62.0	474	313
Mid-Atlantic	100.0	87.1	76.7	62.9	57.8	2,562	1,611
New England	100.0	83.3	77.4	61.8	57.1	1,099	679
East South Central	100.0	83.3	69.4	58.7	54.3	378	222
West South Central	100.0	85.4	67.1	57.6	55.9	298	172
Pacific	100.0	85.0	70.0	56.7	50.0	471	267
East North Central	100.0	82.0	69.1	56.1	51.4	2,542	1,427
Mountain	100.0	88.8	68.4	45.0	36.8	102	46

(a) Not including reductions in working hours among those still employed.

(b) South Atlantic—Delaware, District of Columbia, Florida, Georgia, Maryland, North Carolina, South Carolina, Virginia, West Virginia; West North Central—Iowa, Kansas, Minnesota, Missouri, Nebraska, North Dakota, South Dakota; Middle Atlantic—New Jersey, New York, Pennsylvania; New England—Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont; East South Central—Alabama, Kentucky, Mississippi, Tennessee; West South Central—Arkansas, Louisiana, Oklahoma, Texas; Pacific—California, Oregon, Washington; East North Central—Illinois, Indiana, Michigan, Ohio, Wisconsin; Mountain—Arizona, Colorado, Idaho, Montana, New Mexico, Nevada, Utah, Wyoming.

(c) Three months only.

depression in the rural states is dwarfed in the midst of the vaster depression in agriculture, and the displaced industrial workers of these regions are swallowed up amid the hardships of the outlying population.

For the industrial as against the agricultural states as a whole, however, employment shrinkage in manufacturing has been most serious, both in absolute and relative terms, in the predominantly industrial areas of New England, the Mid-Atlantic and the East North Central. These three combined show from 1929 to 1932 an absolute shrinkage of 2,487 thousand persons and a relative drop of 40.1 per cent. In the rest of the country, the absolute shrinkage was 952 thousand persons, a percentage decline of 36.1. Some of the regional differences in manufacturing may be due to differences in the character of the activities, that is, relative proportions of capital and durable goods, and of non-durable consumption goods in total output.

Comparison by Individual Industries. Within the manufacturing group there has been a marked unevenness in employment trends during the depression. F. C. Mills in his recent study, *Economic Tendencies in the United*

States,³ has emphasized the greater instability of the durable goods industries as compared with those producing relatively perishable goods or products destined mainly for direct use by individual consumers. This contrast is again revealed by the comparative employment records of individual manufacturing industries during the current depression. Table 3 shows in striking fashion the comparatively good performance of the food, leather, printing, tobacco and textile industries, while the heavier industries have trailed behind both in the earlier and later stages of depression. The machinery industry held its own relatively well during the first year of depression, but the severe declines in 1931 and 1932 reflect the general inactivity in the manufacture of productive equipment and the accumulating obsolescence of capacity during the later phases of depression. Lumber, cement, clay, glass, and structural steel as a factor in the basic iron and steel industry, are pulled down to low levels by the virtual stagnation of the construction industry. An inclusive measure of the effect of construction demand in industrial production is furnished by the Federal Employment Stabilization Board's index of employment in the production of six major construction materials. This index, upon a 1929 base, drops to 83.6 in 1930, to 66.1 in 1931 and to a low of 44.3 in 1932, representing a cumulative layoff of over one hundred and fifty thousand workers.

RELATIVE DECLINES IN EMPLOYMENT IN TWO DEPRESSIONS

For manufacturing and steam railroads it is possible to compare the employment experience of the current depression with that of 1921. The short, sharp character of the earlier depression is manifested in the more severe drop in manufacturing employment in 1921 to 76.4 per cent of the preceding year, followed by steady recovery. In the current depression two years were required for factory employment to drop to the 1921 level relative to the pre-depression year, while the decline has been still more rapid during the third year of unemployment.

³Published by the National Bureau of Economic Research, 1932.

TABLE 3
EMPLOYMENT IN MANUFACTURING BY MAJOR GROUPS,
1929—1933 (a)

Industry	Indexes of Employment Monthly average 1929 = 100				
	1929	1930	1931	1932	1933 (b)
Food Products	100.0	95.0	88.8	82.2	78.2
Leather and Products	100.0	91.7	85.5	80.6	80.8
Paper and Printing	100.0	97.1	89.3	80.0	76.5
Tobacco Manufactures	100.0	95.4	86.6	76.1	66.0
Textiles and Products	100.0	87.4	80.4	70.1	71.9
Chemicals and Products	100.0	93.1	79.3	68.5	68.7
Rubber Products	100.0	76.4	66.4	59.8	50.3
Iron and Steel	100.0	88.1	72.5	56.6	50.8
Transportation Equip- ment	100.0	80.4	63.8	51.7	47.1
Cement, Clay, Glass	100.0	84.4	68.9	50.8	41.9
Non-Ferrous Metals	100.0	77.3	63.9	49.8	43.5
Machinery	100.0	83.9	62.4	44.8	37.6
Lumber and Products	100.0	78.3	59.2	43.9	37.4
Total	100.0	86.8	73.6	60.9	58.1

(a) Based on Federal Reserve Board indexes.

Not including reductions in working hours among those still employed.

(b) Three months only.

TABLE 4

RELATIVE DECLINE IN EMPLOYMENT
IN TWO DEPRESSIONS, 1920-1922 AND 1929-1932^a
Index Numbers (Base Years = 1920 and 1929)

Manufacturing		Steam Railroads	
1920.....100.0	1929.....100.0	1920.....100.0	1929.....100.0
1921.....76.4	1930.....86.8	1921.....82.5	1930.....89.1
1922.....83.6	1931.....73.6	1922.....81.7	1931.....75.4
1923.....96.5	1932.....60.9	1923.....93.4	1932.....61.8

(a) Not including reductions in working hours among those still employed.

For steam railroads the immediate drop in employment was less marked than for manufactures in both depressions. However, in 1921-22 the employment shortage was more sustained for steam railroads than in manufacturing, and for both groups relatively more severe in the first year of the earlier depression than in 1930.

UNDER-EMPLOYMENT AND STAGGERED WORK

An unprecedented phase of this depression has been the widespread resort to staggered work schedules which have taken the form of short days, short weeks or other varieties of irregularity and dilution. These practices have been encouraged by the "share-the-work" campaigns. The extent of part-time work is not revealed by employment figures drawn from returns showing the total number of persons on payrolls during some specified period of the month. Statistics of actual man-hours worked furnish the most sensitive indicator of employment changes, and can be related to the number of employees on payrolls to reveal the volume of that "unemployment within employment" which eludes ordinary methods of estimate. Unfortunately the statistics of man-hours are not yet well developed. The best measure of part-time employment can be derived from returns from representative firms in twenty-five industries as compiled by the National Industrial Conference Board. Drawn from this source, comparisons between the depressions of 1921 and of 1930-32 are given in Table 5. The tremendous drop in working hours during the past three years is contrasted sharply with the slight average reduction in working time for 1921. If we assume that all workers in manufacturing industries were employed only three-quarters time in 1932, as the Conference Board figures indicate, then net employment in manufacturing in 1932 sank to forty-five per cent of the 1929 level. As to the extent of under-employment in other groups we can only guess, in the absence of data.⁴

⁴The method of computing employment for coal mining in Table 1 has made a minimum allowance for irregular work in the mines.

TABLE 5

CHANGES IN WEEKLY HOURS OF FACTORY WORK IN TWO
DEPRESSIONS, 1920-23 AND 1929-1932^(a)

Year	Average Actual Hours Per Week		Index 1920=100	Year	Average Actual Hours Per Week		Index 1929=100
	1920	1923			1929	1932	
1920	48.2		100.0	1929	48.4		100.0
1921	45.6		94.6	1930	44.0		90.0
1922	49.2		102.1	1931	40.3		83.3
1923	49.1		101.9	1932	34.9		72.1

(a) Based on figures for twenty-five manufacturing industries published by the National Industrial Conference Board.

EMPLOYMENT SHRINKAGE AND UNEMPLOYMENT

It will be noted that the shrinkage in employment in the seventeen "known" groups shown in Table 1 has reached an aggregate approaching eight million in the spring of 1933. It must not be inferred that this shrinkage in the number on industrial payrolls measures the volume of unemployment, although it may be the leading factor therein at such a time as the present. In the current state of our statistics the approximate measurement of unemployment in the United States requires an estimate of the margin between the total supply of labor and actual employment. This necessitates careful estimates of employment in the "unknown" categories of gainful work, as well as painstaking calculations in determining the probable total number of persons who are "gainfully occupied" or "attached" in each group of industries.⁵ Utilizing the various available methods a detailed analysis of changes in employment and unemployment is now in progress at the National Bureau.

Today it is seriously questioned whether the recovery of pre-depression production levels can bring reemployment of existing "reserves" of labor in existing major industries, especially in those enumerated under Group B in Table 1 of this *Bulletin*. In all probability most existing industries can now produce at former levels with fewer men than they have hitherto employed. The disposition of industrial workers released from their accustomed lines of work is one of the grave problems confronting the program of immediate recovery. Whether the release from these industries has created a transitory or a permanent and growing problem only the longer time will show.

Yet it is a mistake to refer to current displacement as "technological unemployment" in accordance with the prevalent jargon. Brief consideration of the larger background of these changes will reveal a persistent confusion of thought in the common use of this term. The concept presumes a relationship between two independent phenomena—*technological change* and *unemployment*. Technological change is a physical fact, whose effects are statistically measurable, characteristically resulting in reduced labor requirements in production. The facts of changing productivity have been brought out in previous National Bureau studies and elsewhere. In computing changes in productivity the statistics of labor time represent direct operating labor in most instances (for these figures are most readily obtainable)—although in the more general studies, both the direct and indirect labor applied in the particular processes under review are included. Usually the salaried and office workers are not counted, and statistics are not available to cover the labor expended in transporting, financing and selling the product. No allowances are made for changes in the number of workers required in commerce and finance, without

⁵Cf. *Recent Economic Changes* (National Bureau of Economic Research, 1929), Vol. II, pp. 466-78.

whose services the output of industry would find no outlet and would fail to reach the ultimate consumer.

Meanwhile, it remains to be seen whether newly rationalized industries will appear after this depression to absorb larger labor forces than ever, as improved technique lowers costs and selling prices. There is little solid basis for prediction in these matters. Whether production and consumption will increase to maintain or augment employment in a progressive industry depends upon the price policy, the elasticity of demand for the product, the foresight and efficiency of management, the general competitive situation, governmental policy and a host of other factors in addition to the rate of productivity. This is true for industry as a whole as well as for single industries.

Technology, then, is only one cause of reduction in labor time per unit of product. Changes in consumption habits and shifts in market demand may have a dislocative effect on employment similar to that of increased productivity. To make the transition from technological change to unemployment requires assumptions regarding a series of relationships between production, prices and alternative employment opportunities, so that work shortage, if it results, becomes not "technological" but a part of that general unemployment which arises from permanent changes in the structure and organization of industry. The current unemployment should be regarded as "depressional" rather than "technological," due to a complex of factors among which technological change represents an important but not a clearly differentiated element.

CONCLUSIONS

Since 1929 employment in the financial, clerical, public utility and service lines has manifested greater resistance to depression than in the underlying industries engaged in physical production and transport. Transportation and manufacturing have fared better than the extractive industries, while construction has suffered most severely of all.

In manufacturing, the eastern seaboard generally has fared better, relatively, than the inland districts. Industrial employment in the agricultural states has suffered heavily, but less heavily in general than in the industrial states of the mid-west. The durable goods industries, always less stable than those producing more perishable commodities, have experienced severe declines, while foods, leather, printing and textiles have shown greatest resistance among the major groups. The slump in construction and in rail traffic has had serious effects in the manufacturing industries.

In manufacturing and in the railroad industry the present depression has set in more slowly but has had a more disastrous cumulative effect on employment than the relatively drastic but short-lived decline of 1921. By 1932 the part-time work schedules in manufacturing had reduced existing employment to two-thirds of the average working week of 1929, whereas the dilution of employment in 1921 was inconsequential.

Employment shrinkage must not be confused with vol-

ume of unemployment, though the employment decline of the current depression is the most significant single indicator of unemployment. The term *technological unemployment* is probably a misnomer, but *technological displacement* is real enough, taking the form of a shift in the type of worker required in a given industry, bringing about temporary or permanent reduction in the number of workers required, or perhaps affecting the identity of the employed without affecting their number. It is possible that reduced employment in many existing lines may be revealed as permanent following this depression. In that event, new types of private and public enterprise must develop or be stimulated in combination with plans for shorter hours, earlier compensated retirement and various devices to reduce at the margins the numbers of those normally seeking gainful employment.

Meredith B. Givens, who is Secretary for Industry and Trade of the Social Science Research Council, has been associated with the National Bureau of Economic Research in various tasks since 1925. For a time he was a special investigator for the United States Bureau of Labor Statistics, and he has conducted labor market studies under other auspices. At present he is actively associated with the newly organized Committee on Government Statistics and Information Services in Washington, and is a member of the special advisory committee which has been invited to conduct a thorough examination of the statistical work of the United States Department of Labor.

ECONOMIC TENDENCIES IN THE UNITED STATES

Economic Tendencies in the United States, Aspects of Pre-War and Post-War Changes, by F. C. Mills, appears on the American Library Association List of Forty Notable Books of 1932. The list is compiled annually from ballots of librarians, critics and university professors, and represents their opinion of what books published during the year have permanent value for American libraries.

Dr. Mills' volume was also recommended by Henry Hazlitt, in his discussion with Louis Fischer on "The Depression and the Profit System" (*Nation*, May 24, 1933) as a main textbook for an intensive study of the period 1922-29. He characterizes the volume as a "thorough and meticulous study" and quotes certain findings.

SEASONAL VARIATIONS IN INDUSTRY AND TRADE

From *Dun & Bradstreet Monthly Review*: "Simon Kuznets' study of seasonal variations is accurate and comprehensive. Evidence of painstaking exactitude in the preparation and presentation of material is abundant. Yet this care, rather than interfering in any way with the readability of the thesis, imparts to it a precision and clarity which makes it vitally interesting.

"Because of the wealth of statistical material and supplementary data the book has definite, practical value to the average reader as well as to the specialist."

NATIONAL BUREAU OF ECONOMIC RESEARCH, INC.

The National Bureau of Economic Research was organized in 1920 in response to a growing demand for scientific determination and impartial interpretation of facts bearing upon economic and social problems. Freedom from bias is sought by the constitution of its Board of Directors without whose approval no report may be published. Rigid provisions guard the National Bureau from becoming a source of profit to its members, directors or officers, or from becoming an agency for propaganda.

Officers

H. W. LAIDLER, *Chairman of the Board* JOSEPH H. WILLITS, *Vice-President*
OSWALD W. KNAUTH, *President* GEORGE E. ROBERTS, *Treasurer*
CHARLES A. BLISS, *Executive Secretary*

Research Staff

WESLEY C. MITCHELL, *Director of Research*
SIMON KUZNETS FREDERICK C. MILLS
FREDERICK R. MACAULAY WILLARD L. THOMP
LEO WOLMAN

Directors At Large

OSWALD W. KNAUTH GEORGE O. MAY
H. W. LAIDLER ELWOOD MEAD
SHEPARD MORGAN GEORGE SOULE
L. C. MARSHALL N. I. STONE
MATTHEW WOLL

Directors By University Appointment

EDWIN F. GAY, *Harvard*
WALTON H. HAMILTON, *Yale*
HARRY JEROME, *Wisconsin*
HARRY ALVIN MILLIS, *Chicago*
WESLEY C. MITCHELL, *Columbia*
JOSEPH H. WILLITS, *Pennsylvania*

Directors Appointed By Other Organizations

HUGH FRAYNE
American Federation of Labor
DAVID FRIDAY
American Economic Association
LEE GALLOWAY
American Management Association
GEORGE E. ROBERTS
American Bankers Association
M. C. RORTY
American Statistical Association
A. W. SHAW
National Publishers Association
ROBERT B. WOLF
American Engineering Council

A PLANNING CONFERENCE

On June 1 the research staff and special investigators of the National Bureau met with the Executive Committee and other immediately available Directors for the purpose of reviewing the National Bureau's program as a whole. Mr. Knauth presided and introduced the question of the adaptation of National Bureau activities to the needs and demands of the times. The discussion was then opened by Dr. Mitchell. Foremost among the subjects considered was the attitude the National Bureau should adopt towards the pressure for investigations of immediate utility in the formulation of programs of social welfare. Today precedents are being set. The national government is embarking on experiments and acting with new vigor as an agency for the control of economic conditions. While a reaction may occur against the extent of this activity, the nation cannot go back to where it was. The demand for research work is increased as well as redirected by the novel operations of government. And due account must be taken of the responsibility which this situation creates for agencies like the National Bureau.

At the same time the National Bureau must safeguard its own specific task. It has its distinctive and unique character, as revealed by the definition of its purpose in its charter, by the constitution of its Board of Directors, and by its regulations regarding publication which ensure

that the final product in each case represents not only the careful work of specialists but also the critical judgment of the Directors. The National Bureau takes the stand that every determination of policy should be based on the impartial discovery and analysis of the essential and relevant facts. It has engaged largely in studying those aspects of controversial problems which are susceptible of scientific investigation. Without advocating any line of action, the National Bureau can present the facts which must be considered regardless of the solution adopted. Indeed, it was felt by those at the conference that the National Bureau should continue to devote the major portion of its attention to the compilation and analysis of the data which are ultimately requisite for economic planning, public or private, systematic or partial. It is particularly fitted for this task since there are many gaps in data which only a skilled staff such as its can fill.

A body that devotes itself so largely to quantitative analysis as does the National Bureau must keep in mind the consideration that statistical measurements are not in themselves economic facts. Every economic fact is the expression of a relationship between a given item and the situation in which it occurs, and the fact is not properly stated until it is referred to the total situation of which it is an index. Furthermore, we should not confine ourselves to the study of single problems in isolation. Although factors must often be scrutinized separately for a time, they must presently be regarded as parts of a larger interrelated whole. The interdependence of its parts is one of the outstanding characteristics of the economic system. The maintenance of the relations among parts of the whole economic organism must be kept ultimately in view in every partial investigation we undertake. In this way, and by stressing the practical bearings of the findings of each piece of research, we can contribute towards the development of a real economic science in a form that will make it of genuine use in economic practice and in designing solutions with an increasing measure of success.

The concensus of opinion at the meeting was that the National Bureau should keep its most important statistical series up to date, releasing new figures from time to time, and that it should welcome any attempt to develop a clearing-house service in the field of economic investigation and do its share in coordinating economic research, cooperating whenever feasible with other agencies.

The National Bureau program, including projects which have been suggested as within its province, may be outlined as follows. Obviously, to carry out even the projects which seemed to those present at the conference of primary importance would require considerable resources in addition to those necessary for the completion of the investigations already in progress. But for efficient coordination long-range planning is requisite. Consequently, the new projects suggested are grouped with those actually in progress under the four major divisions into which National Bureau investigations may conveniently be classified.

A. The NATIONAL INCOME AND ITS DISTRIBUTION, one of the National Bureau's primary undertakings, has four aspects:

1. Estimates of total income by industrial sources
2. Forms of payment—wages, income from ownership, and profits
3. Distribution of personal incomes
4. Consumption and saving.

Dr. Kuznets is engaged at present in revising and extending Dr. King's estimates of national income classified by industrial sources and forms of payment. This work, for the years 1929-32, is being carried through in cooperation with the Department of Commerce. It is planned that he will proceed to an examination of the distribution of personal incomes by size and to a study of the adjustment of income estimates for changes in the cost of living of the various income classes.

To supplement Dr. Wolman's study of wages, related to the second aspect, a history of wages in the United States was proposed. Also that income from ownership—dividends, interest, rent and profits—should be studied intensively.

Under the fourth aspect, the use of incomes, are included the subjects of standards of living, capital formation, and the government's activity. Of these, only one aspect is now being studied, that of capital formation as evidenced by the production of capital goods. To supplement this investigation by Dr. Kuznets, four other topics directly related to this problem were suggested: savings by business enterprises and by individuals; the mechanism for the investment of savings; the rate of return on invested capital, with full account taken of investment losses; and finally the obsolescence of corporate securities.

Three new projects were recommended under the heading of standards of living: a history of economic welfare in the United States, the costs of social insurance, and consumers' credit and its relation to consumers' incomes.

Under the third topic included under the uses of national income, it was suggested that government expenditures and their objects should be studied, as well as sources of government revenues and borrowings, covering such subjects as taxation and its economic effects, and the mechanism and effects of government loans. While there is no dearth of treatises on taxation, we are prone to regard taxes only as burdens and forget the services which we obtain indirectly in exchange. Hence the government's increasing share in economic activities—as an agency for meeting social needs and economic emergencies, regulating private enterprises and maintaining economic balance—ought also to be considered.

B. The two major ELEMENTS OF INCOME—PRODUCTION AND PRICES—classified by areas, industrial divisions and significant groups, are already being studied by Dr. Mills. Other phases of prices include the interrelations among money, credit and inflation; flexible and rigid prices and the effects of their coexistence; reaction

of the price system to 'inflation'; and the price system as an instrument of economic control.

C. When we turn to the next major division, the FUNCTIONING OF OUR ECONOMIC ORGANIZATION, we find the National Bureau's several studies of economic fluctuation. Current activity in the field includes the recently published *Seasonal Variations in Industry and Trade* by Dr. Kuznets; a volume by Arthur F. Burns on secular trends in production since 1870, scheduled for publication in the early autumn; and the second volume of Dr. Mitchell's study of business cycles which is in prospect for early 1934. To complete this series it was suggested that two other types of economic fluctuation might profitably be investigated, namely, major cycles and random perturbations.

Under a sub-heading, Mechanism for Production, four subjects were suggested. While it was felt that the National Bureau could contribute little to the great mass of information already available on agriculture, in the industrial fields such topics as the relation between scale of business, costs and profits, the histories of individual industries, and economic stabilization through planning offered a wide area of work.

A study of mechanism for the distribution of goods and services, and specifically, of the distributive trades, were urged as of fundamental importance. Dr. Stone pointed out that whereas we had made great strides in increasing the efficiency of fabrication, little had been accomplished of similar nature in the field of distribution.

As to the financial mechanism, a fourth element of our economic organization, it was felt that research dealing with the banking system of the United States was clearly within the scope of the National Bureau's work, but that despite the additional factual evidence rapidly becoming available, the suggested study of the influence of finance upon industry could not as yet be divorced from opinion.

In the field of international relations the National Bureau has hitherto been concerned solely with the movements of population. With the necessity for international planning forcing itself upon us, those present at the conference felt that a study of the international mobility of capital and labor, including foreign trade and tariffs, and statistical studies of world markets would be of value.

D. On the PROBLEM OF MAINTAINING ECONOMIC BALANCE IN A SYSTEM SUBJECT TO CONTINUAL ECONOMIC CHANGE, there was prolonged discussion over the concept of balance. Dr. Mitchell said that he liked the phrase economic balance because it stresses the functional interdependence of all factors. Colonel Rorty and Mr. Roberts especially endorsed a general survey of the nature of economic balance that would indicate the tolerable adjustment of the various elements, so proportioned and so related functionally as to allow the effective maintenance of the system as a whole. Some objections were raised to the vagueness of the concept as well as to the mechanical implications it conveyed. It was generally agreed that the problem was worthy of further exploration without bar-