

1532

MIDDLE ATLANTIC REGION
INDUSTRIAL DEVELOPMENT

1942

NATIONAL RESOURCES PLANNING BOARD



X9.731.N4
+ H2
45096

X9.731.N4
H2
045096

MIDDLE ATLANTIC REGION

INDUSTRIAL DEVELOPMENT

JULY 1942

NATIONAL RESOURCES PLANNING BOARD

UNITED STATES GOVERNMENT PRINTING OFFICE - - - - - WASHINGTON, D. C.

For sale by the Superintendent of Documents, Washington, D. C. - - - - - Price 15 cents

NATIONAL RESOURCES PLANNING BOARD
FIELD OFFICE
POST OFFICE BUILDING
BALTIMORE, MARYLAND

Mr. Charles W. Eliot, *Director*
National Resources Planning Board
North Interior Building
Washington, D. C.

July 15, 1942.

Dear Mr. Eliot:

Herewith is the report of industrial studies in Region 2, the Middle Atlantic Region, as requested in your memorandum of April 9, 1941. It represents in large measure the work of Mr. Alexander Fleisher, Mr. William H. Ludlow, and Miss Mary S. Strow of this office, and Miss Leila Small of the Washington office.

This report gives the general picture of the important industries of the Region and the forces which are making for shifts in the pattern of their location and for changes in employment opportunities. Although the report was written for the most part before the entrance of the United States into the war, it also attempts to indicate the effects of the war program on certain industries and, in consequence, on the communities affected by these activities. Some of the resistances to change, both industrial and human, are also discussed. In addition, the point of view of this Regional Office in regard to industrial studies as part of the national and state planning function is presented, and the need of determining standards for the measurement of "successful" areas is pointed out. If such criteria are developed—and we believe that they should and can be—effective planning toward definite goals should be possible.

If an understanding of the future of industries is a necessary basis for planning in general, it is equally essential if we are to lay a foundation at this time for sound post-war thinking and planning. Many communities in this Region are being affected markedly by the war expenditures. New industries are being developed; industries long thought dead are being revived; peace-time needs are being subordinated to those of war. The post-war period holds promise for some of these communities. For others it holds grave threats. The results in any one will depend, in large measure, on the programs, procedures, and plans that are developed now.

War needs and post-war problems present the immediate challenge. The long-time trends of various industries and the changes within the major ones must be understood and appreciated, if there is to be adequate planning for the communities of this Region. It is our hope that the facts presented in this report, pointing as they do to long-time trends that will carry into the post-war period, will be of assistance in crystallizing thought and action for the period when the nightmare of war will be a thing of the past.

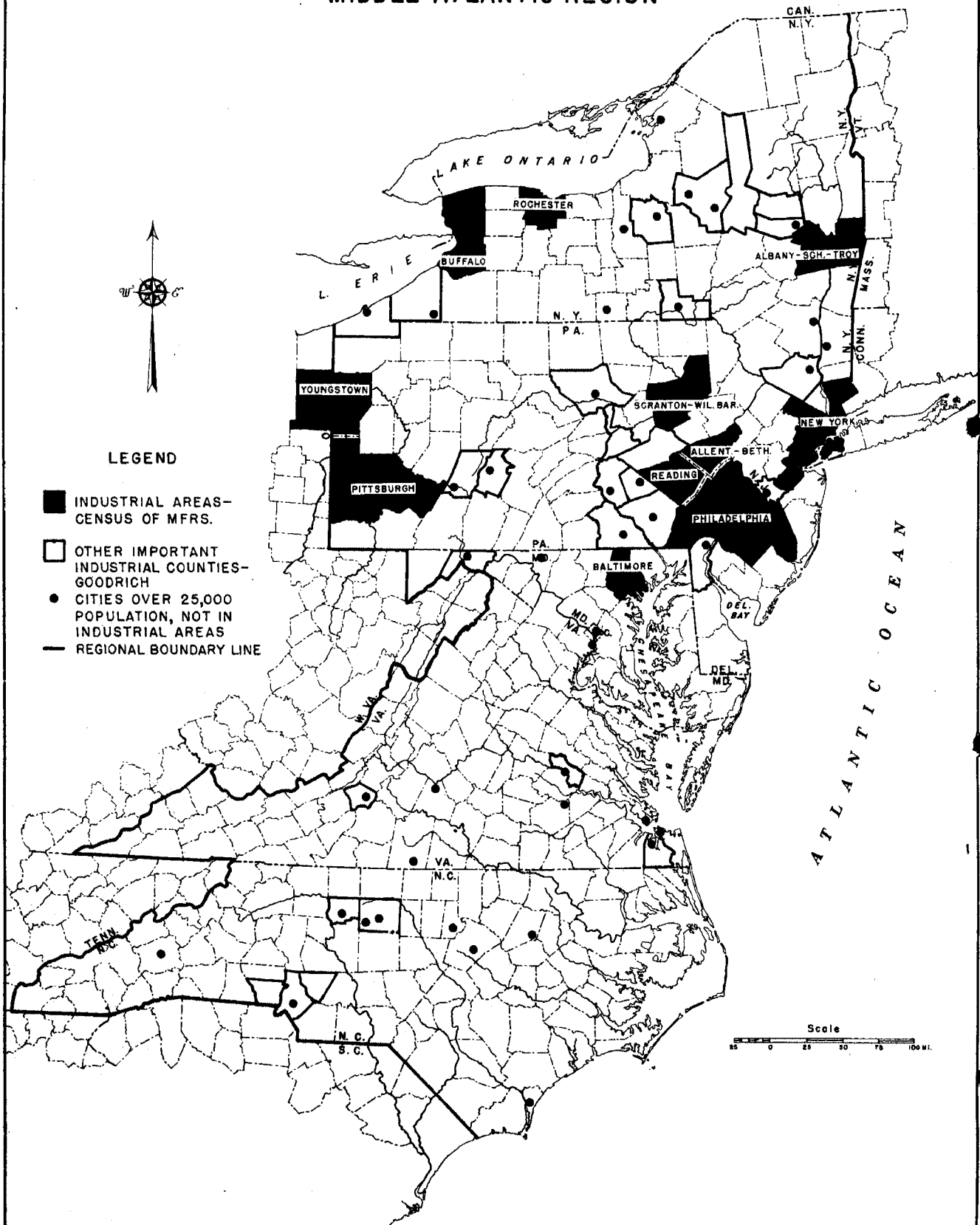
Sincerely yours,

Morton L. Wallerstein
Chairman, Region No. 2

CONTENTS

	<i>Page</i>
SUMMARY	IV
INTRODUCTION	1
The Pattern	2
Pressures for Change	2
Stabilizing Influences	3
PART I. THE PEOPLE OF THE REGION	5
Regional Settlement	5
Rates of Population Growth	5
Urban-Rural Distribution	6
Population Concentration	7
Growth of Urban Communities	8
Births, Deaths, and Migration	9
Age Distribution and Labor Force	10
PART II. INDUSTRIAL PATTERN OF THE REGION	12
The Regional Manufacturing Economy	12
Location of Major Manufacturing Industries	14
Mining	20
PART III. PRESSURES ON THE INDUSTRIAL PATTERN	21
Over-all Trends in Manufacturing Employment and Productivity	21
Pressures on Selected Industries	22
Women's Clothing	23
Hosiery	24
Men's Shirts	25
Men's Clothing	25
Footwear	26
Bread and Bakery Products	26
Cotton Manufactures	27
Rayon and Silk Goods	29
Printing and Publishing, Book, Music and Job	30
Steel Works and Rolling Mills	30
Electrical Machinery	31
Foundry and Machine Shop Products	32
Motor Vehicles	32
Furniture	33
Coal	34
Summary by States	36
Stabilizing Influences on the Industrial Pattern	38
War Activities as a Pressure on the Pattern	40
PART IV. FUTURE CHANGES IN THE INDUSTRIAL PATTERN	42
Major Industries	42
Apparel	42
Other Non-durable Goods	42
Durable Goods	43
Coal	43
Effect on Communities	43
Suburbanization	43
War Production	43
Long-Term Trends	44
APPENDICES	47

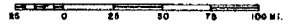
MAJOR INDUSTRIAL AREAS IN MIDDLE ATLANTIC REGION



LEGEND

- INDUSTRIAL AREAS—
CENSUS OF MFRS.
- OTHER IMPORTANT
INDUSTRIAL COUNTIES—
GOODRICH
- CITIES OVER 25,000
POPULATION, NOT IN
INDUSTRIAL AREAS
- REGIONAL BOUNDARY LINE

Scale



SUMMARY OF THE REPORT

From the facts and figures set forth in this report, the following conclusions are drawn:

1. The population of the Region is concentrated in relatively limited areas. One-half of the population, or one-seventh of that of the United States, lives in metropolitan districts within the 225 miles between the Washington and New York City areas, and within 100 miles of the Atlantic Coast.

2. Within the Region, industry is concentrated in relatively circumscribed areas. Of the manufacturing wage earners of the Region, one-third, or 12 percent of those in the United States, is in New York, almost as many are in Pennsylvania, while 6 percent of those in the country are in New Jersey.

3. Similar types of industry tend to congregate in relatively limited areas. Pennsylvania has one-third of the Nation's employees in steel works and rolling mills. North Carolina has a quarter of the workers in cotton goods and the same proportion of the national total in hosiery. New York has 45 percent of the workers in women's clothing, and a large proportion of those in the other wearing apparel industries. One-half of the cigar makers are in Pennsylvania and New Jersey, and 80 percent of those making cigarettes are in North Carolina and Virginia.

4. The pattern of industry in the country was set in its main essentials 50 years ago. Although the over-all pattern has remained substantially the same, there have been marked changes in the opportunities for employment in certain industries. Employment has been rising in some, dropping in others. For example, in the wearing apparel group it has increased even in the period from 1929 to 1939. In coal mining, it has decreased notably for 20 years.

5. Before 1929, the Region apparently was losing its manufacturing position in respect to the Nation. Since that time the Region appears to be holding its own. Slight losses in New York and Pennsylvania have been offset by gains in other States, particularly in North Carolina.

6. A few industries have moved their location or shifted their major centers of employment. Cotton textiles moved to the South; rayon and

silk manufacturing moved from New Jersey to Pennsylvania, and then to North Carolina and Virginia. Much hosiery employment has gone to North Carolina from Pennsylvania. Steel, after moving steadily westward, is apparently reaching an equilibrium. In most cases, however, the old industrial locations, if not holding their own proportionately, are at least of continuing importance.

7. A great threat to the opportunities for employment in manufacturing lies in the increasing productivity per man-hour in practically all industries. This is more marked in some industries than in others. Since 1919, however, the increases in output per man-hour have been largely offset by a big drop in the average hours worked per week, so that the number of workers required to produce a given output has remained reasonably in balance.

8. The war-production program has affected notably the established trends in a number of industries. Certain trends are being accentuated by the war program, others have been slowed down or reversed, with a consequent change in the industrial future of certain communities. Many consumers' goods industries will recede in the future because of legal restrictions.

9. There are indications that taxation differentials, subsidy and other plans, and the efforts of public and private development agencies usually thought to affect decisions on industrial location appear to have had comparatively little influence in the Region in recent years. Differentials in freight rates do seem to have affected the relative importance of certain coal fields and perhaps the location of other industries.

10. Working against the pressures for movement of the industry are a large number of human and industrial inertias. Capital investment, marketing conditions, and the human desire of both executives and wage earners to live where one is known and has friends are among the influences that make for stability of the industrial pattern. It is too soon to determine how much the Fair Labor Standards Act and recent union agreements which have sought to eliminate wage differentials in various parts of the country are contributing to a fixed industrial pattern.

INTRODUCTION

The Middle Atlantic Region is composed of New York, New Jersey, Pennsylvania, Delaware, Maryland, the District of Columbia, and two States below the Potomac River, Virginia and North Carolina. Lying between the workshops of New England and the widespread manufacturing cities of the Lake States and Ohio Valley Region¹, it covers an area which forms the heart of industrial America. The three groups of States comprising the entire northeast section of the country accounted for 6 of the 8 million manufacturing wage earners in the United States in 1939. Nearly 3 million were in the Middle Atlantic Region alone. This Region's industrial employment topped that of the Lake States and Ohio Valley Region by a half million, and far outstripped that of New England, the Nation's third largest manufacturing region.

The Middle Atlantic Region has been the major industrial area of the United States for many years, and indications are that it will remain so. With 27 percent of the population of the country, it had 36 percent of the industrial wage earners in 1939 and 34 percent of those engaged in the extraction of minerals. Approximately one-fourth of the people in the Region are directly engaged in these two activities. In each of the 42 of the 60 major manufacturing industries or industry groups which employed 25,000 or more wage earners in the United States in 1939, more than one-fourth of the employees were in the coastal states from New York to North Carolina.²

In addition to manufacturing and mining, the Middle Atlantic Region is important as the commercial hub of the country. Its ports cleared 40 percent of the tonnage, and 75 percent of the value of the country's water-borne exports and imports in recent pre-war years. New York and Baltimore ranked as the Nation's two largest seaports in terms of total water-borne tonnage. Philadelphia and Norfolk are among the leading ten.³ New York is the financial and commercial capital of the country, containing the central operating offices of many of the Nation's largest banking, insurance, and business enterprises. Washington is the seat of the Federal Government, and contains the central offices of its increasingly important services. However, these important commercial, financial, and governmental functions are secondary to manufacturing in the economy of the Region.

Modern industrial units require large concentrations of workers and tend to settle in or near large cities, of which this Region contains more than a score (over 100,000). The Region's total

urban population in the last 30 years has increased from 61 to 68 percent. Two-thirds of the Region's population live in metropolitan areas, as classified by the Census, while in the Nation as a whole only 40 percent live in such communities. In the metropolitan districts from Washington to New York City, and within 100 miles of the Atlantic Coast, there are 17 1/2 million people, one-half of the population of the Region and over 13 percent of that of the Nation. In addition, there are the concentrations represented by the Pittsburgh, Buffalo-Niagara, and other upper New York State metropolitan areas, and by those of the Virginia and North Carolina Piedmont.

Only in Virginia and North Carolina do more than half of the people live outside of cities and towns. During the last 30 years, the urban population of these two States has increased from 19 to 31 percent, due to the growth of industries in the South. Although this growth is significant and contributes to the predominance of manufacturing in the Region as a whole, Virginia and North Carolina have a number of characteristics distinguishing them from the States north of the Potomac River.

Virginia and North Carolina contain one-sixth of the population of the Region, predominantly rural. Furthermore, whether one examines population changes, ratio of births to deaths, or changes in age distribution, Virginia and North Carolina have a growing population, whereas the five Northern States, especially New York, New Jersey, and Pennsylvania, have reached a stability and maturity similar to the New England Region. In Virginia and North Carolina, agriculture is more important in terms of the number of wage earners than is manufacturing; in the other States, manufacturing leads. In several industries, however, North Carolina and Virginia rank high. Thus, one-fourth of the Nation's cotton and hosiery workers are in North Carolina. Nearly three-fourths of cigarette workers are in the two States; and large gains have been made in North Carolina in rayon and silk goods and in furniture. The differences of sections within the Region are thus sufficiently important that separate notice of the States south of the Potomac River frequently will be made in this report.

Comparisons of economic activities on a regional basis fail to indicate the true importance of agriculture. Manufacturing and mining assume such overwhelming National and Regional proportions on a percentage basis that the inferior ranking of agriculture may give the impression that it is unimportant in the Regional economy. Some of the finest farm land of the Nation is found within the Region, however, and the importance of several individual States is very great in terms of specific farm produce such as dairy products in New

¹The Lake States and Ohio Valley Region includes Illinois, Indiana, Kentucky, Michigan, Ohio, West Virginia, and Wisconsin.

²See Table 25.

³Statistical Division, Board of Engineers for Rivers and Harbors, War Department. Data for 1937.

York, truck crops in New Jersey, and tobacco in North Carolina. North Carolina has the third largest number of agricultural workers, and Virginia, New York, and Pennsylvania lead States such as Indiana, Michigan, and Kansas. In terms of estimated gross farm income (1939), New York ranks just below Minnesota and Ohio, and above Wisconsin. Pennsylvania and North Carolina, with Indiana in between, closely follow. On this basis, New York, Pennsylvania, and North Carolina, in fact, are among the leading quartile of the States. It is apparent that the Middle Atlantic Region is an important agricultural section of the country.

The Pattern

An overwhelming percentage of certain industries is located in rather limited areas, especially durable goods and consumers goods manufactures, and the extractive industries. Coal mining is limited to a few anthracite counties in north-eastern Pennsylvania and bituminous to the west central and southwestern area of the same State, together with the western tip of Maryland, and the southwestern corner of Virginia. Although much steel is made in Buffalo, eastern Pennsylvania and Baltimore, the Pittsburgh area maintains an outstanding position in the Region. Shipbuilding is confined largely to New York harbor, Newark Bay, the Delaware River, Baltimore harbor, Hampton Roads, and the Cape Fear River. Women's clothing and, to a lesser extent, men's clothing are made largely in the New York City area. Almost all the cigarettes of the country are made in Virginia and North Carolina.

Concentration of industry is both an effect of and cause of concentration of population. This Region shows both tendencies. While both industry and population have become concentrated in cities and in metropolitan districts, both have shown a tendency in recent years to shift toward the outskirts of the congested areas. The bulk of industry, except in certain special instances, has remained within rather limited geographic confines. The special shifts are important, but only to the communities that have been directly affected.

In regard to the major industrial areas composed of the 200 industrial counties which have held three-fourths of the Nation's manufacturing workers continuously since 1899, it has been said:

Although the older areas have declined in relative importance, they remain the main centers of manufacturing. . . . New England, the Middle Atlantic and the East North Central regions combined, i. e., the Northeast industrial area, accounted for 86 percent of industrial area jobs in 1899 and still accounted for 82 percent in 1935. . . . But the gross pattern of industrial location was already established 50 years ago. The developments of these years have modified but in no substantial way reshaped this pattern.⁴

⁴The Structure of the American Economy, pp. 58-59.

A qualifying proviso is added, however, indicating that certain important shifts have taken place:

The major industries which have shifted their location have been lumber, cotton textiles and industries subsidiary thereto, the shoe industry, hosiery, iron and steel, rubber tires, and to a lesser extent, furniture and clothing. Although very marked shifts have characterized some of these industries, only lumber and cotton textiles involved a significant decline in the volume of employment in the older centers.⁵

Pressures for Change

Nevertheless, the pattern does change somewhat. Coal, although still the major energy resource, is not as important as it once was. Moreover, West Virginia has replaced Pennsylvania in first position among the states in bituminous coal output. Full-fashioned hosiery, originally a monopoly of eastern Pennsylvania, has become of considerable importance in the North Carolina Piedmont. With the shift in population and industrial requirements for steel, the Chicago area, Birmingham, and Detroit have become steel making districts, lessening the predominance of the Pittsburgh area. Changes such as these affect seriously the workers in a given industry and often have far-reaching repercussions both on the community from which an industry moves and that to which it goes.

The pressures for change of the existing industrial patterns are of various kinds. Some of the causes of the changes may be summarized as follows:

1. Local and national shifts in location of industry.
2. Rise and fall of specific industries.
3. Local natural resource exhaustion.
4. Population and income trends.
5. Technological changes in production methods in existing industries and in the development of new industries and new products.
6. Major national efforts, such as the present war activities.

1. *Local and National Shifts in Location of Industry.*—There have been continual local shifts of specific industries and of businesses within the same rather narrow geographic area. The movements from Manhattan to Long Island and neighboring New Jersey have been in progress for a long time. The effect on the individual worker is rarely serious because he can usually follow his work, but the effect on the community, especially if the movement is to a different political subdivision, may be serious. It may even lead to the development of blighted areas with vacancies and consequent tax delinquencies. Yet public facilities remain and must be serviced.

Among the wider but rarely sudden movements of specific industries, the most striking is that of

⁵The Structure of the American Economy, National Resources Committee, 1938, *Ibid.* See also Carter Goodrich, et al., *Migration and Economic Opportunity*, 1938; Daniel C. Creamer, *Is Industry Decentralizing?*, 1935.

textiles from New England and eastern Pennsylvania into the Southeastern States. A similar shift is the transfer of much silk production from northern New Jersey to eastern Pennsylvania. In these cases, the effect both on individual communities and on workers was marked.

2. *Rise and Fall of Specific Industries.*—Certain industries are rising in terms of employment, while others are dropping. Often, these changes are due to the development of new products which supplant ones formerly used. Rayon has partly replaced silk and is a partial substitute for wool and cotton in certain textiles. As a result, some communities have gained, others have lost.

3. *Local Natural Resource Exhaustion.*—Two outstanding examples of resource exhaustion are lumber and coal. New York and Pennsylvania, formerly major lumber States, are producing only 10 percent of what they did 50 years ago, when Pennsylvania ranked third in National production. On the other hand, the output in Virginia and North Carolina has risen during this period. The situation of the coal industry and its dependent employment is more complicated. Coal has not been able to meet the competition of other sources of energy. Pennsylvania and Maryland have lost their previous standing among the States because their thicker and higher quality seams are becoming more depleted than those of West Virginia and Kentucky beds. Also affecting employment is the markedly increased mechanization of mining. These factors have made many ghost towns. Many communities must look forward to continuously decreasing opportunities for employment, if their only industrial basis is coal.

4. *Population and Income Trends.*—Changes due to population shifts and consequently to the effects upon markets and available labor supply, are reasonably frequent. The western shift of steelmaking is an example. The tendency of certain major industries to develop branch plants is another. There are numerous instances of the reverse process. Long-established branch plants are closed, so that operations may be centralized. Unfortunately, the openings and closings are not necessarily in the same communities, and even if they are, the skills of the workers involved are rarely interchangeable.

5. *Technological Change.*—A major factor causing change of industrial or plant location and of the opportunities for employment is technological change. This pressure is of two kinds: changes within an industry resulting in increased productivity per worker, and changes in product. Of every 100 men in manufacturing in 1924, increased productivity displaced 32 by 1929, but 27 were absorbed in increased output. On the average, a quarter of a million wage earners are displaced annually.⁶ This process continued during the

⁶David Weintraub, "Displacement of Workers Through Increases in Efficiency and Their Absorption by Industry", *Quarterly Journal of the American Statistical Association*, December 1932, pp. 383-400. See also Goodrich et al, *op cit.*, p. 449.

depression. The effect on the worker displaced by new machinery and new methods is serious, especially for the skilled workman who finds the demand for his particular skill, which may have taken several years to develop, is decreasing steadily. His alternatives are to learn a new skill or trade, which may require several years, to accept a less skilled and, consequently, lower-paid job, or to face permanent unemployment. Though the community may be only indirectly touched by such technological unemployment, it will suffer serious detriment, if enough persons are affected by these changes.

This was apparently the case in the closing of the major industry of New Castle, Pennsylvania. A new process required a new plant; for a variety of reasons, a new location in a different community was selected. The result was a stranded community of 45,000 persons.⁷

Improved quality of a product may also reduce employment opportunities, but increased demand may expand the market, to take up the slack. The development of new products may have far-reaching effects. Before the war, nylon had replaced silk in 20 percent of the full-fashioned hosiery market, but no nylon is now available for civilian use. When again available, its longer wearing quality will reduce the number of hose required and, in consequence, the need for workers, provided, of course, that there is no compensating expansion in the market for hose of this grade. There are indications that the newer full-fashioned hosiery machinery, a larger proportion of which is in Southern mills, can handle the yarn more effectively than the older machines in the North. If so, the movement of the industry to the South will be accentuated.⁸

6. *Major National Efforts: The War Program.*—The most important recent factor affecting occupational opportunities has been the war program. Some defense centers are absorbing the local unemployed, where the slack from long-depressed industries has been taken up. In many other communities, however, the war activities have brought migrants pouring in, creating community problems in housing, health, education, recreation, and sanitation. A problem for the future will be to take care of groups of population stranded at the close of the period of national emergency.⁹

Stabilizing Influences

Working against changes of location and changes in processes are the inertia of both industry and labor, and also recent tendencies to equalize the competitive wage position of the States by national legislation and union agreements.

The moving of a business from one community to

⁷H. J. and S. Ruttenberg, "War and the Steel Ghost Towns", *Harpers Magazine*, Jan. 1940, pp. 147-155.

⁸Study in process by U. S. Dept. of Labor, Bureau of Labor Statistics.

⁹See Report of the Select Committee to Investigate the Interstate Migration of Destitute Citizens, House of Representatives, 366, 1941.

another is a serious problem when faced by management. This is particularly true if plants are owned and if heavy and intricate machinery is involved. The personal interests of the management in a given community are important factors. Ties of all kinds, business as well as personal, are involved.

More important, perhaps, is the inertia of workers and their unwillingness or inability to move.¹⁰

¹⁰See National Resources Committee, *The Structure of the American Economy*, Part I 1939, p. 117. Also Ewan Clague and Walter J. Couper, *After the Shutdown*, Part I: "The Readjustment of Industrial Workers Displaced by Two Plant Shutdowns," 1934. Also Daniel B. Creamer and Gladys V. Schwachamer, *Cigar Makers After the Layoff*, W.P.A. National Research Project, No. L-1, Philadelphia.

English experience is similar. The Royal Commission on the Distribution of the Industrial Population heard testimony to the effect that industry was more mobile than labor and that there was a marked tendency for a population to be left when an industry moved.¹¹

Differentials in taxation are frequently advanced as causes of change in industrial location. Impartial studies are rare and far from conclusive. An outstanding one indicates that local and State taxation because it is a relatively minor item in the cost of production has had little or no effect on the movement of industry.¹²

¹¹Part III, paragraphs 4-6.
¹²George A. Steiner, "The Tax System and Industrial Development", *Bulletin of the National Tax Association*, Jan., 1936.

PART I THE PEOPLE OF THE REGION ¹

Regional Settlement

When the United States became a Nation, more than half of its population lived in the area from New York to Virginia. New England and the South were important, and there were a few settlements to the westward, but most of the people lived along the coastal rivers and waters of the seven States south of New England. The first census, in 1790, showed 63.0 percent of the population in this area, one-quarter in New England. Fifty years later, in 1840, these States still accounted for 41.6 percent of the Nation's population. By 1890, however, the proportion had dropped to 27.8 percent. Each census since that date has shown that the proportion has remained practically stationary, fluctuating between 27.5 percent and 27.9 percent. In other words, the population of the country and of the group of States from New York to North Carolina has increased during the past 50 years at approximately the same rate.

With the coming of industry, these States became the focal points of its development. Iron was smelted at many points in the Middle Atlantic States from colonial days on. Ores were readily available. With the introduction of coal for iron smelting, the two were brought together in convenient localities where both were accessible. Thus, the basis for the steel age was laid in Pennsylvania, and in the neighboring States. Moreover, the concentration of population made this location the reasonable one for the development of consumers goods industries as well. People representing a market for goods were available, people as a potential labor force were at hand.

Although the population of the Region has grown at the same rate as that of the United States for the past 50 years, the rates of growth between various sections, between city and country, and between various communities have been exceedingly uneven. Until the last decade, the pull of the city was overwhelming. The opportunities for employment and for human contact offered by the city overcame the human inertia against change. The cities and towns grew very rapidly; the countryside relatively slowly. Since 1930, however, the rate of urban growth has slowed markedly or even stopped. In only a few parts of the Region, in New York City, Baltimore, Virginia, and North Carolina cities and particularly Washington, has urban growth been significant. Generally, except in the Southern States, the stream of migration to the cities in highly industrialized areas has become a trickle. Meanwhile, the shift from central cities to suburbs has continued, resulting in actual population losses in a number of cities.

¹Statistical material herein is derived from the U. S. Dept. of Commerce, Bureau of the Census, except as otherwise noted.

Rates of Population Growth

The present distribution of population by States in the Region and the proportion of the persons in each State is shown by Table 1.

TABLE 1.—Population in the United States, and in The Middle Atlantic Region by States 1940

	Population, 1940	Percent Distribution	
		Region	United States
United States	131,669,275	...	100.0
Region	36,539,723	100.0	27.7
New York	13,479,142	37.0	10.2
New Jersey	4,160,165	11.2	3.2
Pennsylvania	9,900,180	27.1	7.5
Delaware	266,505	0.7	0.2
Maryland	1,821,244	5.0	1.4
Washington, D. C.	663,091	1.7	0.4
Virginia	2,677,773	7.5	2.0
North Carolina	3,571,623	9.8	2.7

One out of every 4 persons in the United States lives in the Region; one in every 5 of the Nation is in New York, New Jersey, and Pennsylvania. Three-quarters of the people in the Region are in these States. Five sixths live north of the Potomac River.

As indicated above, the proportion of the Nation's population living in the Region has remained practically the same for the last 50 years. (See Table 2.)

TABLE 2.—Percent Distribution of Total United States Population by States in The Middle Atlantic Region, 1890-1940

	1940	1930	1920	1910	1900	1890
United States	100.0	100.0	100.0	100.0	100.0	100.0
Region	27.7	27.9	27.6	27.7	27.5	27.8
New York	10.2	10.3	9.8	9.9	9.6	9.5
New Jersey	3.2	3.3	3.0	2.8	2.5	2.3
Pennsylvania	7.5	7.8	8.2	8.4	8.3	8.4
Delaware	0.2	0.2	0.2	0.2	0.2	0.3
Maryland	1.4	1.3	1.4	1.4	1.6	1.7
Washington, D. C.	0.5	0.4	0.4	0.4	0.4	0.4
Virginia	2.0	2.0	2.2	2.2	2.4	2.6
North Carolina	2.7	2.6	2.4	2.4	2.5	2.6

Although the rate of population growth of the Region has been equal to that of the United States, there have been marked differences in the rate of change in the different States. New York has shown a marked increase, not only in total population but in the proportion of the national population living in that State. As shown in Table 3, this is accounted for largely by the gain in the lower New York area, composed of New York City and adjoining counties. The rest of the State in the last 30 years did not increase nearly as rapidly as the United States as a whole.

In New Jersey, population growth was more rapid between 1910 and 1930 than in any other State in

TABLE 3.—Percentage Increase of Population by Decades 1910-40 in States in the Middle Atlantic Region and in the United States.

	1930-40	1920-30	1910-20	1910-40
United States	7.2	16.1	14.9	43.1
Region	6.8	17.0	15.1	43.8
New York	7.1	21.2	14.1	47.8
New York, lower ¹	9.2	27.7	8.3	65.0
Rest of State	3.4	11.5	7.9	24.4
New Jersey	2.9	28.1	24.4	64.0
Pennsylvania	2.8	10.5	13.8	29.2
Delaware	11.8	6.9	10.2	31.6
Maryland	11.6	12.5	11.9	40.5
Washington, D. C.	36.2	11.3	32.4	100.2
Virginia	10.6	4.9	12.0	29.8
North Carolina	12.7	23.9	16.0	61.9

¹New York City, Suffolk, Nassau, Westchester, and Rockland Counties.

the Region. Most of this increase was in the northeastern portion of the State which is part of the New York City area. The spectacular growth of 1910-30, however, did not continue in the following decade. From 1930 to 1940, New Jersey had the lowest rate of increase of any State in the Region except Pennsylvania. Pennsylvania also had relatively lower rates of growth than the country as a whole in the two preceding decades. Rates of increase in Delaware, Maryland, and Virginia were lower than the nation from 1910-30 but higher in the last decade. North Carolina's population has consistently increased more rapidly than that of the United States since 1910. During the last decade its rate of growth was higher than any other state in the Region, and in the two previous decades, second only to New Jersey. The District of Columbia over the last 30 years, and particularly in the last 10 years, has increased in population much more rapidly than any State in the Region. The next most rapid increases in the Region, as already indicated, have been in the New York City area on both sides of the Hudson and in North Carolina. In the last decade, population growth almost came to a standstill in Pennsylvania, New Jersey, and New York State, with the exception of the New York area. All States of the Region south of Pennsylvania, however, showed continued growth.

State figures, however, are not fully indicative of the important changes in population location, or growth that may be going on, and that may be indicative of industrial changes. The cities of North Carolina, especially those of the Piedmont, showed marked increases during the last 10-year period. This was true as well of the largest cities of Virginia, Richmond and Norfolk. On the other hand, a marked reversal of trend took place in a number of areas.

Particularly striking is the fact that the largest cities of northern New Jersey did not gain in population during the past 10 years. This cannot be accounted for in full by the movement to the suburbs, because 5 of 7 counties in the New Jersey section of New York City industrial area (northern New Jersey) did not gain as much

population as did the State as a whole. These counties are the most populous in the State. On the possibility that this shift in population may be due to industrial change, this and similar changes should be given further study.

An example of movements of population directly traceable to industrial changes is the situation in the anthracite area of Pennsylvania.

Table 4 indicates marked population losses in the counties and cities of the anthracite area. Each of the 5 major counties lost in population in the past 10 years. Only 2 of the 7 largest cities in the area held their own in population.

TABLE 4.—Population of Pennsylvania Counties and Cities in the Anthracite Coal Region, 1930 and 1940.

County or City	1930	1940	Gain or Loss, 1930-40	
			Number	Percent
5 counties containing most of anthracite fields				
Carbon	63,380	61,735	-1,645	-2.6
Lackawanna	310,397	301,243	-9,154	-2.9
Luzerne	445,109	443,518	-1,591	-0.4
Northumberland	128,504	126,887	-1,617	-1.3
Schuylkill	235,505	228,331	-7,174	-3.0
Total	1,182,895	1,159,714	-23,181	-2.0
8 cities in anthracite area				
Scranton	143,433	140,404	-3,029	-2.1
Wilkes-Barre	86,626	86,236	-390	-0.5
Hazleton	36,765	38,009	1,244	3.4
Pottsville	24,300	24,530	230	0.9
Shenandoah	21,782	19,790	-1,992	-9.1
Carbondale	20,061	19,371	-690	-3.4
Pittston	18,246	17,928	-318	-1.7
Total	351,213	346,168	-5,045	-1.4

Detailed studies of individual areas and communities in relation to industrial developments should be made.

Urban-Rural Distribution

North of the Potomac, the Region has proportionately a large urban character. At least since 1910, in the States in this section, more than half of the population has lived in areas classed as urban by the Bureau of the Census². Table 5 shows by States, the number of persons who lived in urban communities in 1940 and the proportion living in cities and towns at the census periods from 1910 to 1940.

²Incorporated places of over 2,500 population plus a few other areas included under special rules.

TABLE 5.—Urban and Rural Population, 1940, and Percent Urban 1910-40, in the States in the Middle Atlantic Region and in the United States.

	Population, 1940 (thousands)		Percent of urban population			
	Urban	Rural	1940	1930	1920	1910
United States	74,424	57,246	56.5	56.2	51.4	45.8
New York	11,165	2,313	82.8	83.6	82.7	78.8
New Jersey	3,395	765	81.6	82.6	78.4	75.2
Pennsylvania	6,587	3,313	66.5	67.8	64.3	60.4
Delaware	439	127	52.3	51.7	54.2	48.0
Maryland	1,080	741	59.3	59.8	60.0	50.8
Washington, D.C.	663	---	100.0	100.0	100.0	100.0
Virginia	944	1,733	35.3	32.4	29.2	23.1
North Carolina	974	2,597	27.3	25.5	19.2	14.4

In the Region as a whole 2 out of 3 persons live in cities and towns. North of the Mason and Dixon line, the proportion is 3 in 4. In New York and in New Jersey, the proportion is even greater—4 in 5. In Pennsylvania, it is 2 out of 3, and in Maryland 3 out of 5. South of the Potomac River, the situation is reversed. Only one in 3 Virginians live in cities and towns, and only one in 4 North Carolinians.

During the past 30 years, there has been a continuing movement toward urban areas. The change has been much more marked in Maryland, Virginia, and North Carolina than in the northern States, which were already largely urbanized and where the rate of urban growth is much slower. Beginning with 1930, the movement toward cities and towns practically stopped in the northern States. A slightly smaller proportion of the population in the northern States is composed of urban dwellers than in 1930, but a higher percentage obtained than for the country as a whole, except in the case of Delaware. Although Virginia and North Carolina are still essentially rural States and have a much higher percentage of rural population than does the rest of the country, there is a marked trend toward urbanization.

The situation may be summed up by saying that in the industrialized northern States, the same proportion of city dwellers continues. There has been no marked change in 20 years. This statement is true of the whole United States since 1930. In the southern States, the urbanization process is newer. It has not gone nearly so far, but the rate of change is faster.

Analysis of urban-rural proportions within the Region tends to under-emphasize the real importance of the rural population, especially within the large industrial States. The Region contains one-fifth of the rural population of the United States, and Pennsylvania has the second highest population classified as rural. North Carolina and New York are among the first 5 States, and Virginia ranks fifteenth.

Population Concentration

The concentration of population is an important factor in the composition of the Region. Metropolitan districts, as established by the Bureau of the Census, include the outlying developed producing and trading area of a population center. The development of basic statistics covering these urban areas that overlap county and, in some instances, State lines, is very helpful. In the Middle Atlantic Region are 31 of the Nation's 140 metropolitan districts. Six of those in the Region overlap State lines: New York, Philadelphia, Washington, Wilmington, Trenton, Allentown-Bethlehem-Easton. In addition, a small portion of the Youngstown district is in Pennsylvania.

As shown in Table 6, over half of the population of the Region lives in the larger communities, those with more than 25,000 inhabitants. One-third of the population is in cities of over

TABLE 6.—Population of Groups of Cities of 25,000 or more by size in the Middle Atlantic Region, 1940.

Population Group	Population	Percent of Region
Cities over 500,000	12,156,080	32.8
250,000-500,000	1,055,908	2.9
100,000-250,000	1,990,165	5.5
50,000-100,000	2,064,904	5.7
25,000-50,000	1,717,459	4.9
Total Cities of 25,000	18,984,516	51.8
Region	36,539,723	100.0

500,000. Another indication of the importance of major concentrations is the fact that located in the Middle Atlantic Region are 6 of the 14 cities of the United States with a population of more than 500,000, as well as 3 of the 23 with populations of 250,000 to 500,000 and 15 of the 55 with 100,000 to 250,000 inhabitants. This is shown in Table 7.

In New York State almost 75 percent of the population is in cities of over 25,000, in New Jersey and Maryland, more than 50 percent, in Pennsylvania and Delaware 40 percent, in Virginia 25 percent. Even more striking as an indication of industrial and population concentration is the percentage of the population living in cities of more than 100,000. These figures do not include residents in suburbs that are not a part of the incorporated city itself. Over 40 percent of the people of the Region lives in communities of this size. In New York State as a whole, about 65 percent and outside New York City, 25 percent, lives in cities of 100,000 or more. In New Jersey almost 30 percent does so. In Pennsylvania 25 percent of the population is in Philadelphia and in Pittsburgh. Almost half the people in Maryland live in Baltimore. In Delaware, 40 percent is in Wilmington, and in Virginia, one-eighth lives in Richmond or in Norfolk. Concentration is much greater in the northern than in the southern States.

More important as a basis for studying industrial location and development is the concentration of population in the major cities, in satellite cities, and in the suburban area immediately adjacent. More than two-thirds of the population are in the Region's 31 metropolitan districts, and over one-half is in the 10 industrial areas (see Table 8).³

About one-half of the population of the Region is in the New York, Philadelphia, Pittsburgh, Baltimore, and Buffalo areas. In these 5 major industrial areas are 55.3 percent of the Region's manufacturing wage jobs.⁴ Of course, these areas include many large cities in addition to the central cities mentioned. For example, 5 cities of over 100,000 population are included in the New York City area, and Camden is part of the Philadelphia area.

³For a list of the 31 Metropolitan districts, see Table 9. For a list of the 10 industrial areas and the counties comprising them, see Appendix B.

⁴See Table 24.

TABLE 7.—Cities of 25,000 Population and Over by Size Groups, and Percentage of Population in these Cities by States in the Middle Atlantic Region, 1940

State	All Cities over 25,000		Cities over 50,000		Cities 250,000-500,000		Cities 100,000-250,000		Cities 50,000-100,000		Cities 25,000-50,000	
	No. of Cities	Percent of State pop.	No. of cities	Percent of State pop.	No. of cities	Percent of State pop.	No. of cities	Percent of State pop.	No. of cities	Percent of State pop.	No. of cities	Percent of State pop.
United States	412	40.0	14	17.0	23	5.9	55	5.9	107	5.6	213	5.6
Region	103	51.8	6	32.8	3	2.9	15	5.5	26	5.7	53	4.9
New York	23	72.3	2	59.6	1	2.4	4	4.3	6	3.3	10	2.7
New Jersey	29	53.3	...	...	2	17.6	4	11.8	6	10.5	17	13.4
Pennsylvania	28	41.5	2	26.2	...	...	3	3.6	8	7.7	15	4.0
Delaware	1	42.7	...	...	...	...	1	42.7	...	...	...	...
Maryland	3	51.0	1	47.0	...	...	...	...	...	...	2	4.0
Washington, D.C.	1	100.0	1	100.0	...	...	...	...	...	...	...	...
Virginia	9	25.9	...	...	...	...	2	12.6	2	6.6	5	6.7
North Carolina	9	13.9	...	...	...	...	1	2.8	4	7.0	4	4.1

TABLE 8.—Number, and Population of Metropolitan Districts and Other Cities over 25,000 in the Middle Atlantic Region, 1940

Population Group	Metropolitan Districts		
	No. of Areas	Population in thousands	Percent of Region
Over 1 million	4 ¹	17,630	48.2
500,000-1,000,000	3 ²	2,395	6.6
Under 500,000	24	4,353	11.9
Cities over 25,000 not in metropolitan districts	20	724	2.0
Total	51	25,102	68.7

¹New York, Philadelphia, Pittsburgh, Baltimore.
²Buffalo, Washington, Scranton-Wilkes-Barre.

Growth of Urban Communities

There are strong indications that the trend toward urbanization and toward concentration has been halted or at least slowed to a very marked extent in the area from Baltimore north. This is not true in Virginia, North Carolina, and the District of Columbia.

During the decade from 1920 to 1930, the 24 cities of over 100,000 population increased with the exception of one. In the last decade, 13 gained in population, while 11 lost. Of the 6 cities of more than 500,000, 4 gained and 2 lost population between 1930 and 1940. All cities with populations of 250,000-500,000 lost in population. Of those between 100,000 and 250,000, 9 gained and 6 lost. These figures are at the most only suggestive. They do not take into consideration changes in boundary lines that may have taken place since the last Census. Moreover, it has been long realized that there is a trend of population out from the central sections of cities to the suburbs. To determine the extent to which the slowing-up process has reached beyond the cities themselves into the surrounding area that they dominate, it is necessary to examine the figures for metropolitan districts, as shown in Table 9.

Eliminating the 6 metropolitan districts for which data are not available for the period 1920-30, of the 25 remaining metropolitan districts in the Region, only 6 increased more than 10 percent in

TABLE 9.—Metropolitan Districts in the Middle Atlantic Region Population, 1940, and Percentage Change, 1930-40 and 1920-30

Metropolitan District	Population 1940	Percentage Change in Population	
		1930-40	1920-30
New York-Northeastern N.J.	11,690,520	7.2	26.2
Philadelphia	2,898,644	1.8	16.1
Pittsburgh	1,994,060	2.1	15.4
Baltimore	1,046,692	10.9	16.1
Washington, D.C.	907,816	46.2	18.4
Buffalo-Niagara	857,719	4.5	22.1
Scranton-Wilkes-Barre	629,581	-3.5	10.5
Albany-Schenectady-Troy	431,575	1.5	12.7
Rochester	411,970	3.4	21.2
Allentown-Bethlehem-Easton	325,142	0.9	14.6
Norfolk-Portsmouth-Newport News	323,326	18.3	-8.3
Syracuse	258,352	5.4	22.0
Richmond	245,674	11.4	13.1
Trenton	200,128	5.2	17.2
Utica-Rome	197,128	3.3	9.2
Wilmington	186,974	15.5	7.4
Reading	175,355	2.9	18.0
Harrisburg	173,367	7.2	11.6
Johnstown	151,781	2.8	3.9
Binghamton	145,156	14.7	31.7
Erie	134,039	3.3	18.1
Lancaster	132,027	7.2	16.7
Altoona	114,094	-0.1	9.9
Charlotte	112,986	23.8	(1)
Roanoke	110,593	7.2	43.2
Winston-Salem	109,833	12.9	(1)
Atlantic City	100,096	-1.9	57.0
York	92,627	6.2	(1)
Asheville	76,324	8.2	(1)
Greensboro	73,055	15.1	(1)
Durham	69,683	19.1	(1)
Total	² 24,378,317		

¹Not a metropolitan district according to the definition used in the 1930 Census.

²Percent of total population of Region: 66.7.

Source: 1940 Population and Percentage Increase 1930-40, from 1940 Census releases. Percentage Increase 1920-30 from National Resources Committee, *Population Statistics*, J. Urban Data, 1937, p. 35.

population in the last decade, whereas 20 had population gains of more than 10 percent in the decade 1920-30. (See Table 10)

Between 1930 and 1940, 3 districts lost population, and only one gained more than 20 percent. In the previous decade, only one experienced a loss and 7 gained more than 20 percent. Only 3 districts, Washington, Wilmington, and Norfolk-Portsmouth-Newport News, increased in population faster in the decade 1930-40 than in the previous decade.

After the Census of 1930, a number of writers suggested that New England had reached maturity

and that the increase of population was, therefore, relatively small. It seems that the Middle Atlantic States have now attained the same status and that the northeastern section of the United States, east of the Alleghenies and north of the Mason-Dixon Line, has essentially "grown up", and that its population will not materially increase, or at least will increase but slowly.

A recent comment on the slowing down of the rate of population growth is worthy of consideration:

. . . are we likely to be better or worse off. . . we can be much better off. It is a superstition to believe that mere size in itself is good or that constant growth is a blessing. Up to a certain point, this is true: a rapidly growing population makes things easier for some people, especially investors and promoters. It relieves them of thinking and planning, since mistakes can be automatically compensated by mere increase in markets. But there are advantages in maturity as well. It gives us time to use the materials we have, to concentrate on problems of consuming rather than everlastingly hustling to produce more and more. For the first time in our national history, we can think about quality rather than quantity.⁵

Births, Deaths, and Migration⁶

Population changes within any area and between any two dates are directly affected by births, deaths, and by the number of persons who move in and who move out. The statistics of births and deaths are currently known. It is, consequently, possible to determine at any date whether a community is increasing, decreasing, or remaining stationary in so far as this factor is concerned. Migration, in and out, is more difficult to determine currently.

The excess of births over deaths in the various States is shown in Table 11.

Since 1938, there has been a slight increase in the birth rate accompanied by a continuing drop of the death rate.

Marked variation is shown in the gain in population from natural causes, ranging as it does in 1938 from 2.8 per 1000 in New Jersey to 13.3 in North Carolina. In all the years shown, the 5 northern States (excepting Pennsylvania) in 1925 and 1930 have lower ratios than that of the United States, and except for 1938, this is true of the District of Columbia as well. The ratios for Virginia and North Carolina are uniformly higher.

The drop in the excess of births over deaths is marked in all States. It is most striking in the Middle Atlantic States.⁷ Probably this

⁵Stuart Chase, *What the Census Means*, Public Affairs Pamphlet No. 56, 1941, p. 17.

⁶This section is tentative and necessarily based upon Census information available prior to the Census of 1940. Although the latter survey gathered special information on this subject, it was not accessible at the time this report was prepared.

⁷For analyses of the extent and causes of the drop in natural increase, see writings of Warren S. Thompson, P. K. Whelpton, Louis I. Dublin, Raymond Pearl, and Frank Lorimer.

TABLE 10.—Twenty-Five Identical Metropolitan Districts in the Middle Atlantic Region Classified by Rate of Growth, 1930-40 and 1920-30

Rate of Growth	Number of Districts	
	1930-40	1920-30
Loss 0-10 percent	3	1
Gain 0-10 percent	16	4
10-20 percent	5	13
20-30 percent	0	4
30 percent or more	1	3
Total	25	25

TABLE 11.—Excess of Births over Deaths per 1,000 Estimated Population in the States in the Middle Atlantic Region and in the United States for Selected Years

	1925	1930	1935	1936	1938
United States	9.7	7.6	6.0	5.2	7.0
New York	7.6	5.4	2.8	2.2	3.3
New Jersey	8.8	6.1	2.6	2.1	2.8
Pennsylvania	10.8	8.0	5.2	4.6	5.8
Delaware	6.7	5.1	3.3	2.3	4.7
Maryland	7.9	5.3	3.6	2.8	4.9
Washington, D.C.	4.1	4.1	3.9	4.2	7.9
Virginia	13.4	10.0	8.0	7.1	8.8
North Carolina	17.7	12.9	13.2	11.7	13.3

tendency toward a balancing of births and deaths will continue.

This country was settled by immigrants and migrants, persons who moved from the places of their birth. Such movement, interstate and intrastate, is still going on. To measure it, however, has proved difficult.⁸ Only limited estimates prior to 1930 are available. It is hoped that the Census of 1940 will throw light on the location of population movement and its extent. These statistics, coupled with those for population movement available by counties for previous decades, may prove valuable in indicating significant trends.

The situation for the decade 1920-30 has been summarized:

The most significant migration trend in the decade is the movement from the country and the concentration of population in and around the large urban agglomerations. Almost without exception, the rural areas of northeastern United States gave up population in varying amounts, and the urban centers received population.⁹

This movement, as indicated below, did not, except in special instances, continue into the last decade. The indications are that most large cities stopped growing, and possibly even the increases in metropolitan areas were not as great as the natural increases in these communities.

Closely connected with industrial conditions are changes in various coal districts as suggested above. The changes in population in the anthracite districts have been going on for a long time. Of

⁸Dorothy Swain Thomas, *Migration Differentials*, Social Science Research Council, No. 43, 1938.

⁹C. Warren Thornthwaite, *Internal Migration in the United States*, 1934, p. 26.

other migrational trends, it has been said:

In the bituminous coal areas of Pennsylvania, West Virginia, and Kentucky, a southern movement of population is suggested. In the earlier decade (1910-20), the coal counties of northern Pennsylvania were losing, whereas those of southern Pennsylvania were gaining rapidly. Between 1920 and 1930 practically the entire coal area of Pennsylvania lost extensively through migration, whereas the mining counties of southern West Virginia and eastern Kentucky gained heavily. . . The southward shift of the textile industry. . . resulted in rather large immigrations into a number of the mountain and Piedmont counties of North Carolina. . .¹⁰

The metropolitan area of greatest attraction to migrants in both decades was New York City. In the first decade over 800,000 people and in the second over 1,500,000 migrated to the area.¹¹

Among the cities discussed by Thornthwaite, New York received more people in 1920-30, Philadelphia and Pittsburgh less than in the preceding decade.¹²

During the depression years there were indications of a reversal of trend; people moved from the cities to the country. With the increase in business activity, this has apparently again been changed and people are moving back to the cities.

TABLE 12.—Estimated Net Migration in the States in the Middle Atlantic Region, 1930-40¹

	Actual Increase	Excess of Births over Deaths	Estimated Net Migration
New York	891,100	347,400	+ 543,700
New Jersey	118,800	104,300	+ 14,500
Pennsylvania	268,800	510,800	- 242,000
Delaware	28,100	9,300	+ 18,800
Maryland	189,700	61,300	+ 128,400
Washington, D.C.	176,200	33,800	+ 142,400
Virginia	256,000	212,300	+ 43,700
North Carolina	401,300	443,100	- 41,800

¹The excess of births over deaths for each State for the years 1935-38 (the last provisional) were averaged and multiplied by 10. This figure was deducted from the population gain of the State to obtain a figure of the net migration, plus or minus

In the decade 1930-40, the Census Bureau has estimated an increase by migration in its Middle Atlantic Division of 280,000. In the South Atlantic Division from Maryland to Florida, the Census Bureau estimated an over-all net in-migration of 180,000. By a simpler procedure, the figure of 316,000 is obtained for the Middle Atlantic Division. The migration in the various States in the Region, using the latter rather crude method, is shown in Table 12.

Age Distribution and Labor Force

With its predominantly urban environment, the population of the Middle Atlantic Region north

¹⁰*Ibid.*, p. 28.

¹¹*Ibid.*, p. 30.

¹²See Appendix A.

of the Potomac has a pattern of age distribution much like that of urban America. As shown in Table 13, the proportion of children is lower, that of young adults and middle-aged people higher, than in the United States as a whole. The chief influences bringing this about are lower birth rates and continued migration of young adults to cities. Conversely, in predominantly rural Virginia and North Carolina, the proportion of children is higher, and of middle-aged and old people, lower, than in the Nation. The effect of heavy emigration from North Carolina prior to 1920 is particularly evident in its very low proportion of middle-aged and old people. Rapid industrialization and urbanization in the past 20 years have undoubtedly been important in keeping the proportion of young adults not so far below the national average. The continuance of these trends will undoubtedly bring the proportion of middle-aged and old people in North Carolina and Virginia closer to the national average. In the States north of the Potomac, the percentage of old people is now approximately the same as in the United States as a whole.

TABLE 13.—Percentage Distribution of Population by Age Groups in the United States and in the States in the Middle Atlantic Region, 1930 and 1940

	1930				1940			
	Under 20	20-44	45-64	65 and over	Under 20	20-44	45-64	65 and over
United States	38.8	38.3	17.5	5.5	34.5	39.0	19.7	6.8
New York	33.6	42.4	18.6	5.3	29.0	42.1	22.1	6.8
New Jersey	36.1	40.7	18.2	5.0	30.2	41.4	21.8	6.7
Pennsylvania	39.4	37.5	17.7	5.3	34.1	38.8	20.3	6.8
Delaware	35.9	37.9	19.2	7.0	31.2	40.7	20.2	7.8
Maryland	37.1	38.8	18.1	5.7	33.0	40.8	19.4	6.7
Washington, D.C.	28.0	45.5	20.5	5.6	25.5	48.0	20.5	6.1
Virginia	44.4	34.9	15.9	4.8	29.2	38.2	16.8	5.7
North Carolina	49.2	34.2	12.9	3.6	43.8	37.8	13.9	4.4

In the past 10 years the proportion of children has fallen rapidly while the adult population, particularly in the number of old people, has increased. In 1930 for every 10 adults of working age (20-64 years old) in the Region north of the Potomac, there were 6 children and young people (under 20 years old), but in 1940 only 5 children and young people. Virginia and North Carolina had nearly as many youths under 20 in 1930 as working-age adults, but by 1940 there were only about 7 children to every 10 adults (20-65 years). These ratios also indicate the very much heavier burden of child care and support in these two Southern States, although that burden is rapidly declining.

Another phenomenon of interest is the changing position of the largest age group. In 1930, there were more people between 5 and 9 years than in any other 5-year interval. In 1940, because of the drop in the number of births, this largest group had moved up to 15 to 19 years of age. Whereas this now results in an accentuation of the problems of youth, a continuance of this trend will mean fewer young adults in the most fertile

ages within a relatively short time and, consequently, an accentuation of the decline in birth rates.

The rapid increase in the proportion of the population in the middle and older age groups between 1930 and 1940 was accompanied by an increasing percentage of the population in the labor force as shown in Table 14. In the Middle Atlantic Region during the last week in March, 1940, 42.3 percent of the population were in the "labor force." The definition of "gainful workers" used in the 1930 and previous Census is somewhat broader than the concept "labor force." "Gainful workers" may include retired workers, some inmates of institutions, recently incapacitated workers, and seasonal workers neither working nor seeking work at the time of the Census. These were generally not included in the classification "labor force" as defined in the 1940 Census. Thus, the increase of 1.5 percent of the population between gainful workers in 1930 and labor force in 1940 is, in all probability, an understatement of the actual increase. The increase in the Region is greater than the comparable increase in the Nation as a whole. In the two decades previous to 1930, the trends in the Region and in the United States were nearly similar, as shown in Table 14.

TABLE 14.—Percentage of Population Gainfully Occupied 1910-30, in Labor Force 1940, in the United States, and in the States in the Middle Atlantic Region

	Gainfully occupied			Labor Force, 1940
	1910	1920	1930	
United States	41.5	39.4	39.8	40.2
Region	42.2	40.7	40.8	42.3
New York	44.4	43.4	40.4	44.4
New Jersey	42.4	41.6	42.4	44.6
Pennsylvania	40.8	39.3	38.6	40.3
Delaware	42.4	40.9	41.1	43.6
Maryland	41.8	41.6	41.2	42.3
Washington, D.C.	47.7	54.0	50.0	51.5
Virginia	39.7	36.2	36.3	38.7
North Carolina	42.9	35.0	36.0	37.6

Among the several States in the Region, the District of Columbia, New York, and New Jersey have the highest percentages of population in the labor force. This is apparently due to a higher percentage of women of working age who actually have jobs or are seeking work, as well as a higher proportion of population of working age. In Virginia and North Carolina, the low proportion of population in the labor force is apparently mainly due to the lower proportion of population of working age and perhaps the fact that more women are required to care for the larger number of children.

485362 O - 42 - 3

It is interesting to note that approximately 80 percent of all males of 14 years and over are in the labor force in all the States in the Region and in the United States. It should also be noted that, as between males and females, there are no significant differences in age distribution, although the percentage of females 14 years and over in the labor force varies from 24.9 percent in Virginia to 30.9 percent in New York and 45.1 percent in the District of Columbia, as shown in Table 15.

TABLE 15.—Percentage of Males and Females 14 Years and over Gainfully Occupied in 1930, in the Labor Force in 1940 in the United States and in the States of the Middle Atlantic Region

	Percent of Males 14 years and over		Percent of Females 14 years and over	
	Gainfully occupied 1930	In labor force 1940	Gainfully occupied 1930	In labor force 1940
United States	84.1	79.0	24.3	25.5
New York	85.2	79.2	29.3	30.9
New Jersey	85.5	80.4	27.6	30.7
Pennsylvania	83.6	78.6	23.3	25.3
Delaware	84.7	80.4	23.9	28.4
Maryland	85.3	80.0	26.4	28.3
Washington, D.C.	83.8	80.6	42.7	45.1
Virginia	83.8	80.2	21.9	24.9
North Carolina	84.9	80.2	25.7	27.8

Differences in definition between gainful workers in 1930 and labor force in 1940 make it impossible to determine from Table 15 whether the apparent decrease in the proportion of males 14 years and over who are employed or employable represents a real decrease due to such factors as a longer period of schooling, retirement at an earlier age, or a greater proportion physically or mentally incapacitated for work. In the case of females, however, it can be stated that a much larger proportion are now in the labor force than in 1930. Similar data for the decade 1920-30 do not show important changes in the proportion of population in the labor supply. However, the changes in age composition of the population between 1930 and 1940 and the greater proportion of women of working age released from home duties or otherwise made available in the labor market in recent years have undoubtedly accentuated the severity of the unemployment problem. As shown in Tables 13 and 15, these two factors are of greater significance in the Middle Atlantic Region than in the Nation.

PART II
INDUSTRIAL PATTERN OF THE REGION¹

The Regional Manufacturing Economy²

Out of 14 million gainful workers in the Middle Atlantic Region in 1930, nearly 4 million, or 28 percent, were in manufacturing, as shown in Table 16. This is more than twice as many as were employed in the next largest occupational group, trade.

Of the Region's gainful workers in so-called primary industries (manufacturing, mining, agriculture, forestry, and fishing) there was 68 percent in manufacturing, and 6 percent in extraction of minerals, mostly coal mining. In the United States as a whole, manufacturing accounted for slightly less than 50 percent of the workers in primary industries, and extraction of minerals 4 percent. In addition to a higher proportion of workers in manufacturing and mining, the Region had a slightly larger percentage of workers in each of the service occupations than did the United States. These higher proportions of manufacturing, mining, and service workers were offset by a much lower proportion of agricultural workers.

In all the States in the Region, except in Virginia and in North Carolina, manufacturing is more important than agriculture. As shown by occupational statistics,³ of all the States in the Nation, those in which manufacturing is of greatest relative importance are in New England. New Jersey and Pennsylvania, however, closely follow, and New York, Delaware, and Maryland also have a higher proportion of manufacturing workers than the Nation as a whole. North Carolina is below, and Virginia considerably below, the national average in percentage of workers in manufacturing. The dominance of the port and commercial functions in the New York City area is reflected in the high proportion of workers engaged in trade in New York State and to a lesser degree in New Jersey. In Pennsylvania, coal mining employs 8 percent of the workers as compared with only 1.50 percent in the United States. Other mines and quarries, and oil and gas wells, employ 1 percent of the Nation's workers, but a slightly lower percentage of workers in Pennsylvania

and much lower in all the other States in the Region. Coal mining in Pennsylvania in 1930 accounted for nearly one-fourth as many workers as manufacturing. In Maryland, coal mining is relatively insignificant, but in Virginia it accounted for about 14,000 workers, or one-twelfth as many as those in Virginia's manufacturing occupations in 1930.

Forestry and fishing are negligible except in Maryland, Virginia, and North Carolina, where the proportion of workers was higher than the National average. Even in Virginia, the State with the highest proportion, only 1.33 percent of all gainful workers were engaged in these occupations.

Agriculture employs 4 percent of all workers in New Jersey, 5 percent in New York, 7 percent in Pennsylvania, 13 percent in Maryland, 18 percent in Delaware, 31 percent in Virginia, and 44 percent

Table 16.—Occupational Distribution of Gainful Workers in the Middle Atlantic Region and in the United States, 1930

Occupation	Region		United States	
	Gainful workers (000's)	Percent Distribution	Gainful workers (000's)	Percent Distribution
	Total	Primary	Total	Primary
All Gainful workers	13,994	100.0	48,830	100.0
Primary Industries	5,711	40.8	23,256	47.5
Agriculture	1,456	10.4	10,472	21.4
Forestry and fishing	40	0.3	251	0.5
Extraction of minerals	336	2.4	984	2.0
Manufacturing	3,879	27.7	11,549	23.6
Service Occupations	8,283	59.2	25,574	52.5
Building	901	6.4	2,562	5.3
Transp. and Commun. ⁴	1,489	8.5	3,843	7.9
Trade ⁵	1,861	13.3	6,081	12.5
Pub. Ser-vice n. e. c. ⁶	296	2.1	856	1.8
Professional services ⁷	991	7.1	3,254	6.7
Domestic and pers. ser. ⁸	1,538	11.0	4,953	10.1
Clerical occupations ⁹	1,507	10.8	4,025	8.2

¹Direct employment in manufacturing by the United States Government, the States, and political subdivisions is omitted in this preliminary report, although the Federal Government may now be the largest single manufacturing employer in the Region, through navy yards, arsenals, etc.

²Statistics from *Census of Population, 1930*, "Gainful Workers by Occupations", and similar materials from Censuses of 1910 and 1920. Data for 1940 have not yet been released. All these occupational breakdowns are of limited reliability, depending as they do on information obtained from a member of the household and not necessarily from the gainful worker. For general comparisons of broad classifications, however, they may be considered adequate.

³P. Sargent Florence, "The Measurement of Economic Balance and Diversification", National Resources Planning Board, 1941, (mimeo.)

⁴Mainly railroad, street and highway transportation, and telephone workers.

⁵Mainly retail dealers, salespeople, etc.

⁶Includes officials, inspectors, police, firemen, guards, laborers and those in the armed forces. Professional and clerical workers in Government service are classified in the professional and clerical groups.

⁷About one-third school teachers; the rest largely engineers, chemists, doctors, lawyers, writers, artists, architects, theatrical, recreation and religious workers and their helpers.

⁸Includes servants, hotel, restaurant and laundry workers, barbers, janitors, etc.

⁹Includes clerks, stenographers, bookkeepers, cashiers, accountants, etc.

of all workers in the state of North Carolina.

In the States North of the Potomac where manufacturing predominates, larger proportions of all gainful workers are also in the so-called service occupations. Building, transportation, and trade are included in this group, as well as public, professional, domestic, and personal service. The building industry in 1930 was a fairly important segment of the economy, particularly in New York and New Jersey, and to a lesser extent in Delaware, Maryland, and the District of Columbia. The importance of transportation in the various States did not vary greatly, but trade claimed particularly high proportions of workers in New York and New Jersey and low proportions in Virginia and North Carolina. Obviously, a very high percentage of workers in the District of Columbia are in public service. Professional, domestic and personal service was of greatest importance in New York and the District of Columbia. Thus, although the pattern of occupational distribution of the Region as a whole varies from that of the Nation only in the greater importance of manufacturing and services and the lesser importance of agriculture, there are very marked variations in the emphasis on different occupations in the States of the Region.

TABLE 17.—Percentage Distribution of Gainful Workers in Major Occupations 1910-30, Middle Atlantic Region and United States

Occupation	Region			United States		
	1910	1920	1930	1910	1920	1930
Total	100.0	100.0	100.0	100.0	100.0	100.0
Primary Industries	57.8	54.1	47.2	63.6	59.8	52.8
Agriculture	17.6	12.7	10.4	32.6	25.7	21.4
Forestry; fishing	0.5	0.4	0.3	0.6	0.6	0.5
Mineral extraction	3.5	3.1	2.4	2.5	2.6	2.0
Manufacturing, mechanical	36.2	37.9	34.1	27.9	30.9	28.9
Service Occupations	42.2	45.9	52.8	36.4	40.2	47.2
Transportation; communication	7.4	8.2	8.5	7.0	7.4	7.0
Trade	10.8	10.8	13.3	9.5	10.2	12.5
Public service (n.e.c.)	1.4	2.3	2.1	1.1	1.8	1.8
Professional service	4.5	5.4	7.1	4.5	5.2	6.7
Domestic, personal service	11.8	9.2	11.0	9.8	8.1	10.1
Clerical	6.3	10.0	10.8	4.5	7.5	8.2

In tracing trends in the pattern of occupational distribution, it is necessary to combine the building industry with manufacturing in the group "Manufacturing and Mechanical Industries", because Census classifications do not give data for the building industry separately before 1930. Although the corresponding material of the 1940 Census was not available during preparation of this report, some light on general trends in employment opportunities is shown by an analysis of occupational shifts from 1910 to 1930 (see Tables 17 and 19).

As shown in Table 17, agriculture, forestry, fishing, and extraction of minerals are all becoming of lesser importance both in the Region and

in the Nation. On the other hand, every occupation in the service group, with the exception of domestic and personal service, has had increasing proportion of the population engaged in it. This is true for both the Region and the Nation. The manufacturing and mechanical industries increased their percentage of all gainful workers between 1910 and 1920, but decreased their percentage in the following decade. Although this was true for both the Region and the Nation, small increase followed by a greater decrease in the Region resulted in an over-all decrease for the period 1910-30 in the Region, while in the Nation there was a small over-all increase during the same period.

An analysis of the changing importance of manufacturing alone is shown in Table 18. In spite of certain statistical limitations,⁴ this indicates the general trend.

TABLE 18.—Ratio of Wage Earners in Manufacturing to All Gainful Workers in the Middle Atlantic Region and in the United States, 1919-1939

Year	(Figures in thousands)					
	Region			United States		
	Wage Earners in Mfg. ¹	Gainful Workers ²	Ratio (per cent)	Wage Earners in Mfg. ¹	Gainful Workers ²	Ratio (per cent)
1919	3,120	11,900	26.2	8,431	41,614	20.2
1929	2,921	13,994	20.9	8,381	48,830	17.2
1937	2,945	15,144	19.4	8,569	52,031	16.4
1939	2,824	15,431	18.2	7,887	52,841	14.9

¹Data from Census of Manufactures. Figures for 1919 and 1929 partly estimated to adjust for exclusion of railroad repair shops and manufactured gas since 1935. These two industries approximated 5 percent of total wage earners in manufacturing in 1929 in the United States.

²Figures from Census of Population as of Jan. 1, 1920; April 1, 1930 and 1940. Figure for 1937 obtained by interpolation. Figure for 1939 represents "labor force" as of 1940 and is not strictly comparable with earlier years.

A comparison of the two ratio columns in Table 18 indicates clearly the decreasing importance of manufacturing employment in both the Region and the Nation. This decrease was particularly marked in the Region between 1919 and 1929, perhaps due to the accentuation of war industries in the Region in the former year and their subsequent rapid decline. Adjusting for changes in the Census of Manufactures between 1929 and 1937, an increase in manufacturing wage earners of 1 to 2 percent was registered in both the Region and the Nation. At the same time, however, the estimated population gain was 5 to 6 percent and the gain in labor force 7 to 8 percent. Thus manufacturing employment, even between the peaks of 1929 and 1937, has not gained in proportion to the population or the available labor supply in either the Region or the Nation.

Before 1929 the Region was apparently losing its manufacturing position in respect to the Nation. Since that time, indications are that there has been a stabilization of the region in relation to the Nation. The Region appears to be holding its own.

⁴See footnotes, Table 16.

TABLE 19.—Number and Percentage Change of Gainful Workers by Occupations in the Middle Atlantic Region, and in the United States, 1910-30

Occupation	Gainful Workers in Region (Thousands)			Gain or Loss	Percent Gain or Loss	
	1910	1920	1930		Region	United States
All Gainful Workers	10,737.4	11,900.3	13,993.5	3,256.2	30	28
Agriculture	1,886.1	1,511.7	1,455.5	-430.6	-23	-16
Forestry and fishing	48.2	42.5	40.3	-7.8	-16	3
Extraction of minerals	369.2	368.9	335.9	-33.3	-9	2
Manufacturing and mechanical industries	3,896.4	4,506.1	4,779.9	883.5	23	32
Transportation and communication	792.7	979.8	1,189.5	396.8	50	44
Trade	1,163.3	1,289.9	1,861.4	698.1	60	68
Public service (n.e.c.)	152.5	268.8	295.5	143.0	94	99
Professional service	485.7	641.2	990.8	505.1	100	90
Domestic and personal service	1,268.5	1,094.8	1,537.5	269.0	21	32
Clerical occupations	674.8	1,196.6	1,507.2	832.4	123	135

Of equal importance with the changing pattern of occupational distribution are the actual percentage changes in numbers of workers in various occupations in the Region. These figures, presented in Table 19 and compared with trends in the United States as a whole, show the effect of the changing occupational pattern on the number of workers in various occupations in the Region. The greatest actual and percentage decline in workers was in agriculture which employed 430,600 less people in 1930 than in 1910, a drop of 23 percent in the Region as compared with a decline of 16 percent in the Nation. The percentage decline in every State in the Region was greater than that in the Nation, with the largest drops in New York and Pennsylvania and the smallest in New Jersey and North Carolina. The Region also suffered declining employment in forestry, fishing, and extraction of minerals as compared with slight increases in the Nation as a whole in these occupations over the whole period. Although the decline in forestry and fishing was inconsequential in all States in terms of number of workers, the decline in extraction of minerals was of special significance in Pennsylvania which accounts for 90 percent of the mineral workers of the Region. Between 1910 and 1930, Pennsylvania lost 28,500 mineral workers or 10 percent of the total. Since 1930, employment in anthracite and bituminous coal mines, which make up the bulk of the minerals industries, declined another 50,000 workers as of 1937.⁶ Meanwhile, Virginia has been experiencing a gradual increase in miners since 1910.

Each of the other occupational groups increased between 1910 and 1930 in the number of workers in the United States and in every State in the Region with one minor exception; gainful workers in domestic and personal service in Virginia declined by 7,600 between 1910 and 1930, or about 7 percent. The largest numerical gain in the Region was in manufacturing and mechanical industries followed closely by clerical occupations and trade. Whereas manufacturing and mechanical industries increased by 23 percent, all the service industries with the exception of domestic and personal service increased at a much more rapid rate. The

highest percentage gains were in clerical occupations, professional service, and public service, not elsewhere classified.

In all the service groups, the rate of increase in workers does not vary significantly between the United States, the Region, and the several States in the Region, with few exceptions; only professional service and transportation and communication increased faster in the Region than in the Nation. Among the various States, North Carolina and New Jersey have a particularly rapid rate of growth in all the service occupations. As shown in Table 20, these two States also

TABLE 20.—Number and Percentage Change in Gainful Workers in Manufacturing and Mechanical Industries in the States in the Middle Atlantic Region and in the United States, 1910-30

	Gainful workers (000's)			Increase 1910-30	
	1910	1920	1930	(000's)	Percent
United States	10,657	12,832	14,111	3,454	32.4
Region	3,897	4,507	4,781	884	22.7
New York	1,592	1,757	1,866	275	17.3
New Jersey	492	629	690	198	40.2
Pennsylvania	1,252	1,427	1,417	165	13.2
Delaware	30	35	34	4	12.8
Maryland	172	207	223	51	29.8
Washington, D.C.	39	45	47	8	20.4
Virginia	162	196	213	51	31.5
North Carolina	158	211	291	132	83.4

experienced the most rapid growth in manufacturing and mechanical industries. Other States with rapid growth in this group are Virginia and Maryland. The slowest rates of growth in manufacturing and mechanical industries were registered in Delaware and Pennsylvania, about 13 percent between 1910 and 1930. As a group, the States of the Region, with an increase of 23 percent in manufacturing and mechanical workers over the period, show a less rapid rise than in the Nation as a whole which had an increase of 32 percent.⁶

Location of Major Manufacturing Industries⁷

Manufacturing wage earners in the Region numbered 2,823,535 or 35.8 percent of those reported

⁶As indicated in the following section, the Regional increase in manufacturing employment in recent years has been largely south of the Mason-Dixon line.

⁷Statistics in this section are based on the Census of Manufactures, 1939, unless otherwise noted.

⁸U. S. Bureau of Mines, *Minerals Yearbook, 1939*.

for the United States, in 1939. Four out of 5 of these were in New York, New Jersey, and Pennsylvania. The others were in the States to the south, North Carolina having almost half of the remainder. (Table 21)

TABLE 21.—Manufacturing Wage Earners in the Middle Atlantic Region by States, 1939

State	Average Number of Wage Earners	Percent of Wage Earners in Region	Percent of Wage Earners in United States
New York	957,853	33.9	12.1
New Jersey	433,523	15.4	5.5
Pennsylvania	858,307	30.4	10.9
Delaware	20,392	0.7	0.3
Maryland	141,643	5.0	1.8
Washington, D.C.	7,877	0.3	0.1
Virginia	133,898	4.7	1.7
North Carolina	270,042	9.6	3.4
Total Region	2,823,535	100.0	35.8

Over one-third of the workers of the Region was in New York, almost a third in Pennsylvania, one-seventh in New Jersey, a tenth in North Carolina, and a tenth divided almost equally between Maryland and Virginia.

Of the 200 major industrial counties in the United States, 68 are in the Region.⁹ In 1937, over 80 percent of the manufacturing wage earners of the Region was located in these counties alone, as shown by Table 22.⁹ This indicates that not only was the concentration of workers in certain States marked, but within the States the concentration is great.

For example, in New York State one-half was in the New York State section of the New York industrial area. A tenth was in Buffalo. A quarter was in the two other industrial areas and in the 8 other industrial counties of the State. Twelve percent was in other parts of the State. A similar concentration in industrial areas and counties is found in the other States of the Region, excepting Virginia and North Carolina, where industrial wage earners are much more scattered. Seventy-one percent of the former and 64 percent of the latter were outside industrial counties.¹⁰

For the Region as a whole, as shown by Table 22, 63.3 percent of wage-earning jobs was in industrial areas, 17.2 percent was in industrial counties not included in industrial areas, and 19.5 percent was outside of the 68 important industrial counties.

The ways in which the manufacturing wage earners make their living, the types of industries in

⁹95 counties and 2 independent cities (Baltimore and St. Louis) are included in industrial areas as defined by the Census. The other 103 counties include all other counties containing a city of 100,000 or more in 1930 and other counties with at least 10,000 industrial wage earners in 1929. In Virginia, independent cities are considered as part of the important industrial county with which they are associated. For census description and exceptions, see the *Census of Manufactures, 1929, I. General Report*, pp. 11-12. For industrial counties in the Region, see the foregoing map and the list in Appendices B and C.

¹⁰The 1939 Census figures for all industrial areas and cities had not been released at the time of writing this report.

¹¹See Appendix D.

TABLE 22.—Percentage of Manufacturing Wage Jobs by Industrial Areas in the Middle Atlantic Region, 1937

Industrial Area	Percent
New York	28.7
Philadelphia	11.7
Pittsburgh	7.7
Buffalo	3.6
Baltimore	3.6
Rochester	2.0
Allentown-Bethlehem	1.9
Reading	1.5
Albany-Schenectady-Troy	1.5
Scranton-Wilkes-Barre	1.1
10 Industrial Areas	63.3
Important Industrial Counties (including portion of Youngs- town area, Pennsylvania)	17.2
Rest of Region	19.5
TOTAL	100.0

which they are employed, determine in large measure the economy of the Region and of the various communities that compose it. Table 23 gives the 57 major industries and industry groups of the Region in which 1 percent of the manufacturing wage earners in any State were engaged in 1939.¹¹ It gives the total number of wage employees in the United States, in the Region, and in each State. The proportion of employees in this Region to those in the country is shown as well. The 57 industries and groups account for 73.2 percent of the manufacturing employees of the country, and of those of the Region. With the exception of Delaware, they cover at least 66.2 percent of the of the total employees in each State. In four of the States and the District of Columbia, over three-quarters of the manufacturing wage earners are in these industries. This list includes 50 of the 60 manufacturing industries or groups in the United States that employ 25,000 or more wage workers.¹² The 10 not shown in Table 23 do not employ 1 percent of the workers in any State of the Region. These 10 industries or industry groups employed 360,400 wage earners, less than 5 percent of the total industrial workers in the United States. (See Table 26)

¹¹Statistics in this section on individual industries are based, unless otherwise noted, on the *Census of Manufactures, 1939, Preliminary Report—State Summaries*. Groupings of industries as classified for the 1939 Census have been made to conform as nearly as possible to the industries used in the reports of the National Research Project of the Works Progress Administration, *Production, Employment and Productivity in 59 Manufacturing Industries*, so that the effects of national trends in productivity and employment might be considered. In the case of industries not covered in the National Research Project list, groupings were made to conform to the industries used by the New York State Division of Planning in its statistical report, *Recent Trends in Important Manufacturing Industries in New York State*, in order to make use of material already compiled. A few industries included in neither of these two reports follow the *Census of Manufactures, 1939*. From this list of industries and industry groups, those with 1 percent or more of the total manufacturing wage earners in 1939 in any state in the Region (or the District of Columbia) were selected. Lack of space prevents the printing of the industries grouped under each heading. This is available in mimeographed form and will be forwarded on request by the National Resources Planning Board, Washington, D. C.

¹²Twenty-six of these 60 industries employ 25,000 or more wage earners in the Region. For list of these 26 industries, see Appendix E.

TABLE 23.—Employment in 57 Selected Industries in the United States and in the Middle Atlantic Region, by States, 1939 (including all industries employing more than 1 percent of total manufacturing wage earners in any state in the Region.)

Industry	Number of wage earners (thousands)										
	United States	Region	Region as percent of United States	New York	New Jersey	Pennsylvania	Delaware	Maryland	Wash., D.C.	Virginia	North Carolina
Food and kindred products											
Bread and other bakery products	230.7	83.1	36.0	36.0	10.8	25.1	0.4	4.6	1.7	2.1	2.4
Canned and preserved fruits and vegetables	116.8	32.1	27.5	10.0	5.1	5.1	1.3	7.7	...	2.7	0.2
Slaughtering and meat packing	132.9	20.8	15.1	7.3	3.4	6.2	0.0	2.1	0.3	1.1	0.4
Confectionery	49.7	16.3	32.8	6.3	1.9	6.0	...	0.6	...	0.9	0.6
Liquors, malt	36.1	10.6	29.4	4.4	1.3	3.7	...	1.1	...	0.1	...
Non-alcoholic beverages	21.3	5.7	26.8	1.7	0.8	1.3	0.1	0.4	0.1	0.5	0.8
Ice cream and ices	15.7	5.2	33.1	1.9	0.3	2.0	...	0.2	0.2	0.3	0.3
Ice, manufactured	16.0	4.0	25.0	1.2	0.5	1.0	0.1	0.3	0.1	0.4	0.4
Tobacco manufactures											
Cigars	50.9	26.8	52.6	2.2	8.8	15.6	...	0.2	...	...	...
Cigarettes	27.4	22.3	81.4	0.2	...	...	...	...	...	6.7	15.4
Textile-mill products, etc.											
Cotton manufactures	396.0	132.4	33.4	4.9	1.4	3.2	...	1.2	...	12.3	109.4
Hosiery	159.1	101.6	63.8	4.3	6.1	41.7	0.6	0.9	...	5.3	42.7
Rayon and silk goods	119.8	73.0	61.0	5.9	8.9	36.7	...	0.4	...	5.6	15.5
Woolen and worsted goods	146.1	36.4	24.9	7.1	11.2	12.8	...	0.6	...	1.4	3.3
Dyeing and finishing cotton, rayon, silk, woolens, etc.	64.1	27.8	43.4	5.4	12.9	5.4	...	...	...	0.7	3.4
Knitted underwear	38.5	23.2	60.2	9.3	...	9.2	...	...	...	1.6	3.1
Carpets and rugs, wool	25.6	20.0	78.0	12.7	2.5	4.8	...	...	...	...	...
Apparel, etc., from fabrics											
Clothing, women's etc., n.e.c.	269.7	188.0	69.8	122.3	30.2	32.6	0.2	2.4	...	0.3	0.0
Clothing, men's, etc., n.e.c.	161.7	96.6	59.8	45.4	11.6	25.4	...	11.9	...	2.3	...
Shirts, except work, etc.	70.5	44.1	62.6	9.9	5.5	20.2	1.0	5.3	...	1.1	1.1
Work clothing except shirts, etc.	57.0	16.0	28.1	2.9	2.5	3.9	...	1.0	...	3.3	2.4
Millinery	24.3	15.3	63.0	13.0	0.9	0.8	...	0.4	...	0.2	...
Fur coats, etc.	13.1	11.3	86.3	11.0	0.2	0.1	...	0.0	...	...	...
Lumber and timber basic products											
Lumber and timber products, n.e.c.	288.0	27.2	9.5	1.6	0.3	1.9	0.2	0.7	...	10.2	12.3
Planing mills, etc.	62.8	12.4	19.7	2.5	0.7	2.5	0.0	0.8	0.1	2.3	3.5
Furniture and other finished lumber products											
Furniture	159.4	57.3	36.0	16.9	2.3	10.5	...	1.4	...	8.4	17.8
Paper and allied products											
Paper	110.6	31.5	28.5	12.7	4.5	8.5	0.4	1.8	...	2.5	1.1
Boxes, paper, n.e.c.	69.2	29.2	42.2	14.0	5.5	6.5	0.4	1.2	...	0.7	0.9
Pulp mills	26.9	5.9	21.9	1.7	...	1.2	...	...	...	1.9	1.1
Printing, publishing and allied											
Printing and publishing, book, music and job	125.1	45.4	36.2	23.8	4.8	11.1	0.1	2.6	1.1	1.1	0.8
Newspapers and periodicals	118.7	38.3	32.3	17.7	2.9	12.2	0.2	1.3	1.6	1.2	1.2
Lithographing, etc.	26.0	10.3	39.6	6.9	0.7	1.6	...	0.6	0.2	0.2	0.1
Chemicals and allied products											
Chemicals, n.e.c., etc.	73.5	35.9	48.8	11.2	16.1	5.0	...	1.1	...	2.5	...
Rayon and allied products	48.3	128.3	58.6	12.5	...	17.0	11.0	17.0	...	10.8	...
Paints, pigments, varnishes	28.2	10.7	37.9	3.3	4.6	2.4	...	0.3	0.0	0.1	0.0
Fertilizers	18.7	7.3	39.0	0.2	0.7	0.5	0.1	2.0	...	1.9	1.9
Products of petroleum and coal											
Petroleum refining	72.8	16.8	23.1	1.5	6.1	8.2	...	11.0	...	...	...
Rubber products											
Rubber goods except tires and tubes	66.6	19.6	29.4	4.5	10.0	2.7	30.9	1.0	...	0.5	...
Leather and its products											
Footwear except rubber	218.0	454.3	24.9	31.2	2.5	18.7	...	2.7	...	43.2	...
Leather, tanned, curried, etc.	47.3	19.2	40.5	4.7	3.0	7.1	2.6	30.5	...	0.4	0.9
Stone, clay and glass											
Glass	69.8	27.2	39.0	4.8	4.6	16.5	...	1.3	...	...	...
Clay products other than pottery and non-clay refractories	61.5	18.4	29.9	2.0	2.8	10.4	...	0.6	...	1.2	1.4
Concrete products	17.4	5.4	31.0	1.3	1.1	1.9	0.1	0.4	0.3	0.5	0.2

See footnotes at end of table.

TABLE 23.—Employment in 57 Selected Industries in the United States and in the Middle Atlantic Region, by States, 1939 (including all industries employing more than 1 percent of total manufacturing wage earners in any state in the Region.) (Cont'd)

Industry	Number of wage earners (thousands)										
	United States	Region	Region as percent of United States	New York	New Jersey	Pennsylvania	Delaware	Maryland	Wash., D.C.	Virginia	North Carolina
Iron and steel, except machinery											
Steel works and rolling mills	399.0	¹ 184.6	46.3	17.7	7.2	141.8	² 1.3	16.6	...	...	...
Heating and cooking apparatus except electric	76.4	15.9	20.8	4.9	1.8	8.6	...	0.4	...	0.2	...
Fabricated structural steel, etc.	35.5	14.3	40.2	3.3	1.3	8.0	...	0.4	0.3	0.7	0.3
Tin cans and tinware n.e.c.	31.8	13.1	41.2	3.6	3.2	2.4	...	3.9	...	...	...
Stamped and pressed metal, etc.	54.3	10.9	24.5	5.3	2.1	3.5	...	³ 2.4	...	...	...
Non-ferrous metals and products											
Non-ferrous metal alloys, etc.	73.3	19.5	26.6	9.3	4.2	4.9	...	1.1	...	...	...
Primary smelting, non-ferrous metals	27.6	7.7	27.9	...	3.7	4.0	...	...	...	...	...
Electric machinery											
Electric machinery, etc.	213.0	76.4	35.9	25.7	23.0	25.6	...	2.0	0.0	...	0.1
Radios, tubes, phonographs	43.5	⁴ 17.9	41.1	4.9	⁵ 13.0	...	...	...	...	...	...
Machinery except electrical											
Foundry and machine shop products n.e.c.	320.6	83.7	26.1	28.5	15.6	34.5	0.0	2.9	0.0	1.2	1.0
Office and store machines n.e.c.	36.2	10.7	26.6	10.7	...	...	...	...	...	...	...
Automobiles and equipment											
Motor vehicles and bodies, etc.	397.5	40.8	10.3	16.1	9.0	13.6	0.0	1.7	...	...	0.4
Transportation equipment except automobiles											
Ship and boat building, etc.	69.2	⁶ 40.7	58.8	7.6	12.5	6.6	0.6	⁷ 5.0	...	8.4	...
Aircraft	⁸ 38.5	⁹ 15.2	39.5	¹⁰ 6.3	¹⁰ 0.1	100.7	¹⁰ 0.1	¹⁰ 9.0	...	...	...
Total 57 industries	5,768.2	2,067.0	35.8	634.2	296.7	649.0	11.7	114.0	6.0	109.0	246.4
Other industries	2,119.0	756.5	35.7	323.7	136.8	209.3	8.7	27.6	1.9	24.9	23.6
TOTAL WAGE EARNERS	7,887.2	2,823.5	35.8	957.9	433.5	858.3	20.4	141.6	7.9	133.9	270.0
Percent in 57 industries	73.2	73.2	...	66.2	68.4	75.6	57.4	80.5	75.9	81.4	91.3

Source: *Census of Manufactures, 1939*, supplemented by estimates in cases where wage earners are not revealed by the Census in order to avoid disclosing data for individual establishments. Estimates are made where adequate basis is available from sources such as industrial directories of various states, *1937 Census of Manufactures*, and data for "other industries" by industry groups in the 1939 Census. Where adequate basis for estimates is not available, number of wage earners is considered as zero. It is believed that all important cases of withheld figures have been covered by estimates. Composition of each industry is available on request from the National Resources Planning Board.

¹Includes estimates for N. Y. (2,500), Pa. (7,000), Del. (1,000), and Md. (7,000). ²Includes estimate for Md. (1,000). ³Includes estimate for Del. (900). ⁴Includes estimate for Va. (3,200). ⁵Includes estimate for Md. (2,400). ⁶Includes estimates for Del. (1,300). ⁷Includes estimate for N. J. (13,000). ⁸Includes estimates for Pa. (5,000), Md. (5,000). ⁹Estimated. ¹⁰Includes estimates for N. Y. (6,262), N. J. (115), Pa. (700), Del. (100), and Md. (8,000).

There are 19 industries or groups in the country that employed over 100,000 wage earners in 1939. These industries account for over half of all wage jobs in the United States. In 14 of these industries, 25 percent or more of the total workers were in the Region.¹³ Only seven had a smaller number of workers in the Region that might be expected if industry were distributed in proportion to population.

Of the 57 industries, four employed more than 100,000 wage earners in the Region: women's clothing, steel, cotton textiles, and hosiery. Seven employed between 50,000 and 100,000. These are men's clothing, electrical machinery, bread and other bakery products, foundry and machine

shop products, rayon and silk manufactures, furniture, and footwear. Together these 11 industries account for 40 percent of the manufacturing wage earners of the Region. The employees in the 15 other industries with over 25,000 each represent an additional 18 percent of the employees of the Region. In other words, the 26 industries of major importance, those employing over 25,000 workers in the Region, represent 58 percent of the manufacturing employment.

Over 60 percent of the Nation's manufacturing wage earners in women's clothing, hosiery, rayon and silk manufactures, and shirts are employed in the Region. Over 50 percent are in men's clothing, cigars, and shipbuilding.¹⁴ In three others, the

¹³For list of these industries, see Appendix F.

¹⁴These figures are for 1939 and consequently prior to the beginning of the defense program.

Region accounts for between 40 and 50 percent of the national industry. These are steel works and rolling mills, chemicals, and dyeing and finishing of textiles. In addition, there are nine other industries with between 11,000 and 25,000 Regional wage earners, in which over 40 percent of the workers are employed in the Region. The highest concentrations are fur coats (86 percent), cigarettes (81 percent), and carpets and rugs (78 percent).

The concentration of some industries in certain States is indicated by an analysis of the 57 selected industries with more than a fourth of all employees in the country in any one State in the Region. This is true of 15 of the 57 industries listed. An additional 6 industries have one-fifth of their workers in one State.

Of the so-called heavy industries, steel works and rolling mills showed one-third of the total employees of the country in Pennsylvania in 1939, chemicals had one-fifth in New Jersey, 8 of the 35,000 wage earners in structural steel were in Pennsylvania. Of the durable consumers goods industries, 11 of the 36,000 wage workers who make office and store machinery are located in New York State. More than one-fifth of the glass workers are in Pennsylvania. Virginia has one-fifth of the total of the Nation's workers who make rayon.

The 109,400 wage workers in cotton goods in North Carolina represent more than one-fifth of the national total. Almost a third of the workers making rayon and silk goods are in Pennsylvania.

The wearing apparel groups are highly concentrated in New York. Concentration in a single State is greater for women's wear than for men's. Almost half of the women's clothing workers of the women's clothing workers of the country are located in New York. An even higher proportion millinery workers and those engaged in making fur coats are in that State. More than one-fourth of the men's clothing makers are in New York. But Pennsylvania leads in the making of men's shirts; 20 of the 71,000 wage earners are located in that State. Hosiery workers are located largely in Pennsylvania and in North Carolina, one-fourth of the Nation's total are in each State. Nine thousand of the 39,000 wage earners who make knitted underwear are in New York, about the same number as in Pennsylvania.

One-fourth of the Nation's lithographing workers and one-fifth of the paper box employees are in New York.

Of the household furnishings group, the only industry having one-fourth of the Nation's workers in a State in the Region is carpets and rugs manufactures. New York has one-half of these workers.

Almost a third of the cigar makers of the country are in Pennsylvania. Over half of the cigarette workers of the United States are in North Carolina, almost 25 percent more are in Virginia.

Thus, the analysis of major industries shows marked concentrations of certain industries in

certain States. There are other industries, however, that are more evenly distributed in proportion to population. These include bread and bakery products, ice cream, newspaper printing, and others, although New York and Pennsylvania have somewhat higher percentages of the industries named than their population alone warrants.

In general, however, concentration seems to be more significant than diffusion in the Middle Atlantic Region. The corollary of concentration of important industries in certain States is that a very large percentage of the manufacturing wage earners in any State and in many cases, in a given community, are employed in a relatively small number of industries.

TABLE 24.—Percentage of Manufacturing Wage Earners in Larger Industries or Industry Groups in the United States and in States in the Middle Atlantic Region, 1939¹

State	Largest industry (Percent)	Three largest industries (Percent)	Industries employing one-half of wage earners	
			Number	Wage-jobs (Percent)
United States	5	15	18	50
New York	13	21	19	50
New Jersey	7	16	19	50
Pennsylvania	16	26	12	50
Maryland	12	26	10	50
Virginia	9	25	8	51
North Carolina	10	63	2	56

¹ Delaware and District of Columbia omitted because of small number of manufacturing wage earners.

Table 24 indicates this concentration in the States of this Region. Except in New Jersey and Virginia, at least one in eight manufacturing wage earners in each of the States are in the leading industry or industry group. In New York and New Jersey it is women's clothing. In Pennsylvania and in Maryland, the leading industry is steel works and rolling mills. Cotton goods is the leading manufacture in Virginia and North Carolina, in terms of employment.

If the three leading industries are combined, the marked concentration in the various States is also evident (see Table 24, column 2). The three leading industries in number of workers in the United States, steel works and rolling mills, motor vehicles, and cotton goods, each have about five percent of the total. Together the three account for 15 percent of all workers. No State in the Region has as small a percentage in its three leading industries or groups as the country as a whole. In four of the States three industries or groups employ 25 percent or more of the manufacturing wage earners.

The last two columns of Table 24 indicate that the concentration of manufacturing wage earners in a limited number of industries is more marked in this Region than in the country as a whole. In the United States, half of the employees in manufacturing jobs are in the 18 largest industries. A nearly similar situation exists in New York and in New Jersey, where 19 and 17 industries

TABLE 25.—Ten Leading Industries in States¹ in the Middle Atlantic Region, 1939. Number of Wage Earners in thousands

New York		New Jersey		Pennsylvania	
Industry	Wage Earners	Industry	Wage Earners	Industry	Wage Earners
Clothing, women's	122.3	Clothing, women's	30.2	Steel works	141.8
Clothing, men's	45.4	Electric machinery	23.0	Hosiery	41.7
Bread	36.0	Chemicals n.e.c.	16.1	Rayon-silk fabric	36.7
Footwear	31.2	Machine shop products	15.6	Machine shop products	34.5
Machine shop products	28.5	Radios	13.0	Clothing, women's	32.6
Electric machinery	25.7	Dyeing fabric, etc.	12.9	Electric machinery	25.6
Book and job printing	23.8	Ship building	12.5	Bread	25.1
Newspapers	17.7	Clothing, men's	11.6	Clothing, men's	25.4
Steel works	17.7	Woolen and worsted	11.2	Shirts	20.2
Furniture	16.9	Bread	10.8	Glass	16.5
Total	365.2	Total	156.9	Total	400.1
Percent of State	37	Percent of State	37	Percent of State	47
Maryland		Virginia		North Carolina	
Industry	Wage Earners	Industry	Wage Earners	Industry	Wage Earners
Steel works	16.6	Cotton manufactures	12.3	Cotton manufactures	109.4
Clothing, men's	11.9	Rayon manufacture	10.8	Hosiery	42.7
Aircraft	8.0	Lumber, timber	10.2	Furniture	17.8
Canned goods	7.7	Furniture	8.4	Rayon-silk fabric	15.5
Rayon manufacture	7.0	Ship building	8.4	Cigarettes	15.4
Shirts	5.3	Cigarettes	6.7	Lumber, timber	12.3
Bread	4.6	Rayon-silk fabric	5.6	Planing mills	3.5
Tin cans	3.9	Hosiery	5.9	Dyeing fabric, etc.	3.4
Machine shop products	2.9	Work clothing	3.3	Woolen and worsted	3.3
Footwear	2.7	Footwear	3.2	Knitted underwear	3.1
Total	70.6	Total	74.2	Total	226.4
Percent of State	50	Percent of State	55	Percent of State	84

Source: Taken from Table 23.

¹Delaware and District of Columbia omitted because of small number of wage earners.

respectively employ half of these States' manufacturing wage earners. A much smaller number of industries account for half of the manufacturing workers in other States.

A more detailed analysis of Table 23 and reference to Table 25 reveals the importance of the leading industries in the several States in the Region. In New York, 23 percent of the total manufacturing wage earners is engaged in the major needle trades. In addition to 13 percent in women's clothing, 4 percent is employed in making millinery, fur coats, hosiery, and knitted underwear. Six percent is making men's clothing, regular or work clothing, and shirts. The next in numbers were those in the bakery, footwear, electrical machinery, and foundries industries. No industry in the latter groups accounted for more than 4 percent of the total.

In New Jersey, women's and men's clothing together account for 10 percent, the electrical machinery industry accounts for 7 percent, chemicals for 4 percent. No others reach this figure.

The leading concentrations in Pennsylvania, in addition to the 16 percent in steel, are 9 percent in the clothing trades (women's, men's, and shirts), 5 percent in hosiery and 4 percent each in rayon and silk goods and in foundry and machine shop products.

In Maryland, 1939, steel with 12 percent, men's clothing with 8 percent, aircraft, canning, and rayon ranked in the order named. Each of these last three employed 5 percent or more of the workers.

Lumber and rayon, each with 8 percent followed

cotton goods as the major industries in terms of workers in Virginia. Furniture and shipbuilding employed 6 percent each and cigarettes 5 percent.

Six industries account for 80 percent of the employment in North Carolina. Forty percent are in the manufacture of cotton goods, 16 percent in hosiery, 7 percent in furniture, 6 percent each in rayon and cigarettes, and 5 percent in lumber.

A carefully developed technique for measuring the extent of concentration or diversification of the number of persons engaged in various occupations has been developed by Florence.¹⁰ Using the percentages engaged in a given industry in the United States, he shows the extent to which the proportion in each of the states varies from the national figure. This method has the advantage of using the entire population rather than only the manufacturing employees in plants with a business of over \$5000 as is done by the *Census of Manufactures*. It presents quickly the deviations of each state from the national picture and the extent of these deviations. There are certain advantages, however, when considering industrial employment, in using the *Census of Manufactures, 1939*. It is more recent. It gives more detailed breakdowns of industries. It eliminates the unemployed.

The Florence figures are based on the 1930 Census. As worked out by him, they present only the larger industrial groups and do not eliminate

¹⁰P. Sargent Florence, "The Long-Range Planning of the Location of New Productive Capacity", Preliminary memorandum, National Resources Planning Board, (mimeo.), 1940; also Florence, *op. cit.*

those who may be unemployed. They do, however, bring out the importance of at least two groups of industries that are inadequately discussed in this preliminary report, iron and steel other than steel rolling mills and blast furnaces, and metals other than iron and steel.

Other iron and steel as defined in the preceding paragraph were of importance in 1930 in New Jersey, Pennsylvania, and Delaware. They were below the national proportion in the other states in the Region. The states that exceed the national average of gainfully employed workers in metals other than iron and steel are New York, New Jersey, and Maryland. The Pennsylvania figure is about that of the United States. The others in the Region are lower.

Mining

Coal mining is the most important in the Region in numbers of workers employed. A larger number of persons are dependent on coal than on any other industry. It is the major support of large geographical areas. Almost 100,000 workers are employed in mining anthracite, and 130,000 in the production of bituminous in the Middle Atlantic Region.¹⁶

Over 25 percent of the bituminous coal mined in the United States comes from Pennsylvania, Maryland, and Virginia, 23 percent from Pennsylvania, Maryland, and Virginia, 23 percent from Pennsylvania alone. All of the anthracite, as classified by the Bureau of Mines, is mined in eight counties in the latter state. Pennsylvania is the largest coal producing state in the Nation, if both anthracite and bituminous are considered.

¹⁶This section and the others on coal are based largely on *Minerals Year Book*, U. S. Dept. of Interior, Bureau of Mines; Raymond E. Murphy, *Survey of Pennsylvania Mineral Industries*, Greater Pennsylvania Council, 1933; *The Bituminous Coal Industry with a Survey of Competing Fuels*, Federal Emergency Relief Administration, 1935; W. G. Fritz and T. A. Veenstra, *Regional Shifts in the Bituminous Coal Industry*, 1935; *Trends in Bituminous Coal Industry of Pennsylvania*, State Planning Board, Commonwealth of Pennsylvania, 1940; David Weintraub, Director, National Research Project of the Works Progress Administration, *Production, Employment and Productivity in the Mineral Extractive Industries, 1880-1938, 1940*.

In bituminous alone, it has for a number of years ranked second in production to West Virginia. Virginia ranks seventh among the coal producing states. Maryland produces only a relatively small tonnage.

Coal is the major source of energy used in the United States, and of the Nation's total coal production, bituminous and anthracite, more than a third comes from the Region. Of the Nation's annual supply of energy from mineral fuels and water power, approximately one-sixth comes from the coal mined in the Region.

The production of coal is concentrated in relatively limited areas. Five counties in Pennsylvania produce the bulk of the anthracite. Bituminous coal comes mainly from 15 counties in Pennsylvania with extensions into 13 more, 2 in Maryland and 3 in Virginia. In large measure, most of these counties are dependent almost entirely on this single product.

Petroleum and natural gas are produced in western Pennsylvania and, in small amounts, in southern New York. In 1937, these two States produced about 2 percent of the Nation's petroleum output, but employed over 9,000 workers, or 7 percent of the Nation's oil field workers. The two States accounted for nearly 6 percent of the Nation's natural gas output in 1937.

A very limited amount of iron is still mined in the Region; Pennsylvania produces about 1 percent of the Nation's iron requirements.

New York is one of the Nation's major salt producing states. It has been second for the past 25 years.¹⁷

Portland cement is produced in the Lehigh area of Pennsylvania and in New York State. The Region produces 25 percent of the cement of the country. Twenty percent of the total comes from Pennsylvania and 5 percent from New York. There were 5,500 employees in Pennsylvania and 1,500 in New York in 1939.

¹⁷The proportion of the national totals has dropped since 1916 from 29.3% to 22.2%. Ohio, which at the beginning of the period produced only half as much as New York, is now producing about the same.

TABLE 26.—Employment in Ten Industries of Over 25,000 Wage Earners in The United States in 1939, But Less Than One Percent of Total Wage Earners in Any State in the Middle Atlantic Region*

Industry	U.S.	Region	Region as % of U.S.	N.Y.	N.J.	Pa.	Del.	Md.	D.C.	Va.	N.C.
Furniture and other finished lumber products											
Wooden boxes except cigar boxes	25.4	3.8	15	0.7	0.7	0.6	0.1	0.4	...	0.6	0.7
Printing, publishing and allied											
Bookbinding, etc.	25.8	13.1	51	9.0	1.8	1.4	...	0.6	0.1	0.1	0.1
Rubber products											
Tires and inner tubes	54.1	¹ 4.9	9	¹ 1.8	² 0.2	2.1	...	³ 0.8	...	...	...
Stone, clay and glass											
Pottery including porcelain	33.1	² 7.1	21	0.7	4.3	1.4	...	² 0.7	...	...	0.0
Iron and steel, except machinery											
Hardware n.e.c.	35.6	5.8	16	2.5	0.6	2.7	...	...	...	...	...
Wirework n.e.c.	30.4	7.9	26	2.2	2.5	2.6	...	0.6	...	...	...
Machinery except electrical											
Agricultural machinery	59.1	3.1	5	1.9	...	0.6	...	...	...	0.3	0.3
Machine tools	36.6	³ 4.5	7	2.0	0.5	³ 2.0	...	...	...	...	...
Machine tool accessories, etc.	25.1	3.6	14	1.4	0.8	1.4	...	0.0	...	...	...
Refrigerators, etc.	35.2	6.5	18	1.8	0.6	4.0	...	0.1	...	...	0.0
Total 10 industries	350.4	60.3	16	24.0	12.0	14.8	0.1	3.2	0.1	1.0	1.1

Source: Same as Table 23.

¹Includes estimates for N.Y. (1,800), N.J. (200), and Md. (800).

²Includes estimate for Md. (700).

³Includes estimate for Pa. (2,000).

⁴Number of wage earners in thousands.

PART III
PRESSURES ON THE INDUSTRIAL PATTERN

At present, many important industries are markedly concentrated not only in the Region, but in certain States. The foregoing description of their location by States, however, is at most a sketch in rough outline. A study of their localization by industrial areas and by communities is essential as a basis for planning.

Such a description can present at best a static design. Although the general pattern of industrial location was established 50 years ago, industry does not stand still. There is continual change caused by forces both inside and outside industry. Periods of prosperity and retrogression succeed each other. They affect all industries, but not all equally. The durable goods and mining industries have wider fluctuations in employment than do consumers goods industries.¹ Natural resources become exhausted or new sources of supply make it impossible for the old location to compete. New materials and substances are developed which displace the ones formerly used. Changes in manufacturing techniques noticeably change the established pattern. The automobile or the airplane replace the horse and buggy, and lessen the importance of the railroads and the industries dependent on them. These are forces for change. There are also important forces resisting change. Habits and customs, legislation and location of resources and markets are often forces working for stability. It is necessary to evaluate the strength of these various pressures if we are to have the true picture of the major industries of the Region. Such a true picture is essential for sound planning.

Over-all Trends in Manufacturing Employment and Productivity

Over the past 40 years, the ratio of the wage earners in the Region to the national total has been dropping slowly. It decreased from 39.5 percent in 1899 to 35.8 percent in 1939. In the past 20 years, however, there has been but little change in the proportion, in the past 10 years it increased slightly (see Table 27).

Although the Regional proportion of the country's wage earners has remained almost the same since 1919, there have been marked differences among the States. The most highly industrialized, those with the greatest number of manufacturing wage earners, have decreased most rapidly. This was particularly true of Pennsylvania and New York. These proportions, however, are less significant than the trends in actual numbers of wage jobs in manufacturing. In the United States

¹Glenn E. McLaughlin, "Industrial Diversification in American Manufacturing Cities," *Quarterly Journal of Economics*, November, 1930, pp. 131 ff.

as a whole, the number of wage earners in manufacturing reached a peak in 1919 followed by peaks nearly as high in 1923 and 1929, and an all-time high in 1937 slightly above the 1919 level.² Except for marked cyclical variations, the level of employment in manufacturing seems to have become stabilized at around 8 million wage earners in the Nation and at 3 million wage earners in the Region. The trends in employment since 1925 in the United States and the States in the Region are presented in Table 28.

In New York, New Jersey, and Pennsylvania, the trend seems to be slightly downward, while the States south of the Mason-Dixon Line are gaining in manufacturing employment, particularly North Carolina. The losses in the northern part of the Region are approximately balanced by these gains in the southern part, so that the Region as a whole is holding its place as compared with the Nation.

Manufacturing industries as a whole have been employing a decreasing proportion of the labor force since 1919 as already discussed in connection with Table 18. This change has not been due

²Census of Manufactures, 1937, pp. 18-19.

TABLE 27.—Percentage of Manufacturing Wage Earners of the United States in the Middle Atlantic Region, 1899-1939

	1899	1919	1929	1939
United States	100.0	100.0	100.0	100.0
Region	39.5	36.6	34.6	35.8
New York	15.4	13.5	12.5	12.1
New Jersey	4.6	5.6	5.0	5.5
Pennsylvania	14.1	12.5	11.5	10.9
Delaware	0.4	0.3	0.3	0.3
Maryland	2.0	1.6	1.5	1.8
Washington, D.C.	0.1	0.1	0.1	0.1
Virginia	1.4	1.3	1.3	1.7
North Carolina	1.5	1.7	2.4	3.4

Source: *Census of Manufactures*. Figures for 1939 not strictly comparable with those for earlier years since "railroad repair shops" and "gas, manufactured, illuminating and heating" were excluded by the *Census of Manufactures* after 1935.

TABLE 28.—Indices of Average Number of Manufacturing Wage Earners by States in the Middle Atlantic Region, 1925-1939.¹

	1925 = 100							
	1925	1927	1929	1931	1933	1935	1937	1939
United States	100	100	105	78	72	88	105	96
New York	100	101	104	80	69	83	94	91
New Jersey	100	96	104	79	69	89	102	101
Pennsylvania	100	99	102	78	72	84	99	89
Delaware	100	102	114	83	77	86	110	106
Maryland	100	101	104	86	80	95	118	115
Virginia	100	103	107	92	90	109	127	128
North Carolina	100	112	115	98	110	126	143	150

¹"Railroad repair shops" and "Gas, manufactured, illuminating and heating," excluded by the *Census of Manufactures* after 1935. Index numbers after 1935 based on number of wage earners in 1935, excluding "Railroad repair shops" and "Gas, manufactured, illuminating and heating."

TABLE 29.—Fourteen Industries Specially Analyzed and Census Groups of Which They Are a Part

Thousands of Wage Earners in the United States, 1939				
14 Industries Covered in Special Analyses		All Manufacturing Industries by 1939 Census Groups		Percent Coverage
Apparel				
Women's clothing	270	Apparel from fabrics, etc.	758	
Hosiery	159	Knit Goods	237	
Shirts	71	Footwear	218	
Men's clothing	162			
Footwear	218			
Sub-total	880		1,213	73
Other Non-durable Goods				
Bread and bakery products	231	Food and allied	824	
Cotton manufactures	396	Tobacco	87	
Rayon and silk goods	120	Textile mills except knit goods	839	
Printing and publishing (Book, Music, Job)	125	Paper	265	
		Printing, publishing and allied	325	
		Chemicals and allied	287	
		Petroleum and coal products	105	
		Rubber products	121	
		Leather except footwear	110	
Sub-total	872		2,963		29
Metals and Metal Products				
Steel works	399	Iron and steel except machinery	966	
Electrical machinery	213	Non-ferrous metals	229	
Foundries and machine shop products	321	Electrical machinery	256	
Motor vehicles	398	Other machinery	523	
		Automobiles	399	
		Other transportation equipment	157	
Sub-total	1,331		2,530	53
Other Durable Goods				
Furniture	159	Lumber	361	
		Furniture and finished lumber	294	
		Stone, clay and glass	287	
		Miscellaneous	239	
Sub-total	159		1,181	13
GRAND TOTAL	3,242		7,887	42

to lower production in proportion to population. Rather, the increase in productivity per man-hour has been the major factor. "In less than two decades (beginning in 1919), output per man-hour (in 59 industries) increased by more than 75 per cent."³ During the period 1923-1939, one worker in twenty was forced every two years to seek employment in a new manufacturing industry or in non-manufacturing work.⁴ This process continued during the depression so that in most major industries the productivity of workers increased faster between 1929 and 1935 than in the period 1919-29. In general it took one-fifth less labor time to produce manufactured goods in 1936 than it required in 1929.⁵

The process is still going on. Increased productivity has more than compensated for increased hourly wage rates since 1937. "Although industry has found it necessary to pay progressively higher prices for a man-hour of labor during recent years, labor efficiency has increased even faster. As a result, labor costs per unit of product are lower than in 1937."⁶ A recent computation indicates that in the production of non-durable goods,

³David Weintraub, Director, National Research Project of the Works Progress Administration, *Production, Employment and Productivity in 59 Manufacturing Industries, 1939*, p. xiv.

⁴Goodrich et al., *op. cit.*, p. 447.

⁵Corrington Gill, Letter of Transmittal of David Weintraub, *op. cit.*

⁶*Business Advisor*, Standard and Poor's Corporation, April 25, 1941.

the output per man-hour increased over 6 percent between February, 1940, and February, 1941.⁷

But as Gill says, "Man hours are one thing; jobs are another. It is a fact that the increases in output per man-hour have been largely offset by a big drop in the average hours worked per week. Average weekly hours were 48 in 1929 and 39 in 1936. Thus, although output per man-hour was much higher in 1936 than in 1929, the output per wage earner was actually a little less."⁸ Since 1936 there has been an increase in average hours worked in many industries and a consequent increase in production without a corresponding increase in wage earners.

Pressures on Selected Industries

The simplest way to get the "motion picture" of an industry is to consider the various pressures to which it has been and is being subjected. In this section an attempt will be made to do this by analyzing the changes that have taken or are taking place in the most important industries in the Region.

An examination of these industries indicates or at least suggests their importance in the future national pattern of industry as a whole and in consequence, the future of communities in which they are located.

⁷*Labor Notes*, Labor Research Assoc., New York, May, 1941.

⁸Gill, *op. cit.* See also Spurgeon Bell, *Productivity, Wages and National Income*, 1941, p. 176.

In this preliminary report the 14 largest industries or groups in the Region have been selected from the 57 listed in Table 23. These 14 industries comprise all those with more than 40,000 wage earners in the Region in 1939. Together they furnished 1,238,000 wage jobs in 1939 or 45 percent of the Regional total. The 14 selected industries are listed in Table 29 together with the number of wage jobs in each in the United States in 1939. As shown in this table, the 5 apparel industries give fairly adequate coverage of this segment of manufacturing. In metals and metal products, the 4 selected industries cover slightly over half the total wage jobs, and should be supplemented by other metals industries in order to obtain adequate coverage. Coverage of "other non-durable goods" manufactures and of "other durable goods" is not satisfactory. It should be noted that these analyses of coverage apply to the national rather than the Regional picture. Regionally the coverage is probably better because the 14 industries were selected on the basis of their significance to the Region rather than to the Nation. Further evidence of better coverage regionally than nationally is the fact that the 14 industries employ 45 percent of the Region's wage earners but only 42 percent of the Nation's.

For most industries discussed, the period from 1929 to 1939 is used as a basis of both wage earners employed and the proportion of wage earners in the industry in the various States. This 10-year period seems adequate in most industries to indicate the evolving locational changes. For some industries such as cotton textiles and steel, which have shown marked geographical shifts over a longer period, a greater number of years is considered. In considering technological changes as shown by output per man-hour, the period from 1919 is used in most instances.⁹

Women's Clothing

Women's clothing has experienced more rapidly growing employment than any other of the Region's major industries. In 1939, it had 44 percent more workers than in 1929. After a drop of 15 percent from 1929 to 1933, it has increased steadily until today it employs over a quarter of a million workers.

Manufacture of women's clothing has always been centered in New York. The style element, which is the controlling locational factor in the

industry, necessitated a single center, and New York City assumed leadership in the early days of the development of "women's ready-to-wear," and has maintained its dominant position in the industry. Some changes in the industry are based largely on changes in style. For instance, dresses forced out shirtwaists and woolen suits. In spite of temporary revivals of the latter, dresses have held their own, causing a marked expansion of the industry because of the possibility of greater variety of apparel for different occasions, of lower costs, and of rapid changes in design. See Table 30.

TABLE 30.—Number and Percentage of Wage Earners in Women's Clothing Industry in Leading States and Selected Industrial Areas, 1929-1939

	Number of Wage Earners (Thousands)				Percentage of U. S. Total			
	1929	1933	1937	1939	1929	1933	1937	1939
State in Region								
New York	102.1	80.0	115.5	122.3	54.5	50.0	47.6	45.4
Pennsylvania	14.7	13.6	24.7	32.3	7.8	8.5	10.2	12.1
New Jersey	9.0	10.1	23.6	30.2	4.8	6.3	9.6	11.2
Maryland	3.8	2.5	2.2	2.4	2.0	1.6	1.0	0.9
Outside Region								
Illinois	13.8	11.8	16.0	16.4	7.4	7.4	6.6	6.1
Massachusetts	6.9	6.2	10.9	21.1	3.7	3.9	4.5	7.8
California	7.2	6.8	9.7	10.0	3.8	4.3	4.0	3.7
Connecticut	3.5	4.6	7.1	8.8	1.9	2.9	2.9	3.3
All Other States	26.5	24.2	33.2	25.9	14.1	15.1	13.7	9.5
United States	187.5	159.8	242.9	269.7	100.0	100.0	100.0	100.0
Selected Industrial Areas								
New York City	96.0	74.5	97.3	110.3	51.2	46.6	40.1	40.9
Rest of New York Area	8.2	9.0	24.5	25.5	4.4	5.7	10.0	9.5
Philadelphia City	8.5	6.4	6.9	12.1	4.5	4.0	2.0	3.6
Rest of Philadelphia Area	1.0	1.3	1.1	4.2	0.6	0.8	1.3	2.4

¹Not strictly comparable. Part of data withheld.

Although the number of workers in the industry has increased remarkably, the growth has been very uneven in the various States. In New York, the industry had 20,000 more wage earners in 1939 than in 1929, an increase of 20 percent. Because of the still more rapidly increasing employment in other States, however, New York dropped from 52 to 45 percent of the national total in 10 years. During this period, New Jersey increased its numbers of workers by as many as New York, and Pennsylvania had an only slightly smaller numerical gain. But these increases meant a trebling of the wage jobs in New Jersey and a doubling in Pennsylvania. Moreover, both Massachusetts and Connecticut have doubled their number of workers since 1929. The increases in the percentage of total workers in New Jersey and in Pennsylvania account for the decrease in New York. Yet in 1939, the total number of wage earners in these two States was only half of those in New York.

The Regional total of 187,000 employees in the industry group is slightly less than 70 percent of the national figure for 1939. The Regional proportion was the same in 1929, only at that time,

⁹All comparisons of output per man-hour are from David Weintraub, Director, National Research Project of the Works Progress Administration, *Production, Employment and Productivity in 59 Manufacturing Industries*, Report S-1, Parts 2 and 3, 1939. Reference to these volumes is not repeated as a footnote for each industry. Data on employment is compiled from *Census of Manufactures*. Industry classifications and groupings made to obtain comparability between years is available from the National Resources Planning Board. Special tabulations were made for 1939 data by the Bureau of the Census in order to obtain comparability. In a number of cases, however, (indicated in footnotes) data necessary to obtain strict comparability was withheld to avoid disclosing figures for individual establishments.

New York had 54 percent compared with 45 percent at the later date. Maryland has played a small and decreasing role, dropping in ten years from four thousand to two thousand workers.

The suburbanization of the industry is clearly shown by the data for the New York and Philadelphia areas. New York City, in spite of an increase in number of workers between 1929 and 1939, declined in its share of the national employment from 51 to 41 percent. The rest of the New York industrial area had a numerical increase in wage jobs greater than the city itself, amounting to a gain from 8 to 19 percent of the industrial area's jobs in women's clothing in ten years. On a very much smaller scale Philadelphia showed a similar development; the number of wage jobs increased in the city, the ratio of increase in the outside territory was twice as rapid.

The increases in New Jersey, Connecticut, and Pennsylvania are a further indication of a spreading out of shops but not of a movement outside the area that New York can and does dominate in prices as well as in style.¹⁰ The continued concentration under a single style center is shown by the fact that the increase in number of employees in all States except the three major producing ones in this Region, and Connecticut and Massachusetts accounted for less than 16 percent of the national increase in 10 years.

Statistics for New York dress manufacture emphasize several points that are true of the entire industry. Most shops have a small number of employees, can move readily and are unstable. The average number of workers increased one-third in five years, yet the average shop had only 42 workers and only a fifth of the shops had more than 50 employees. Twenty-two percent of all jobbers and manufacturers in business during 1939 went out of business that year. A fifth of the new firms formed that year liquidated the same year, one-fourth of those in business prior to that year liquidated in 1939. Only half of the total number of firms in 1939 were in business prior to 1937 but these accounted for three-quarters of the business.¹¹

Hosiery

The hosiery industry has grown very rapidly in the last twenty years, production trebling and employment doubling. In 1939, 60 percent of the employment was in full-fashioned hosiery and 40 percent in seamless hose. North Carolina has about half seamless and half full-fashioned workers. In Pennsylvania, however, 85 percent of the hosiery employment is in full-fashioned plants.

Since 1929, the Region as a whole has maintained about the same proportion of the Nation's hosiery employment, approximately five-eighths. There has been a major shift, however, from

¹⁰Julius Hochman, "Industrial Planning through Collective Bargaining," *International Ladies' Garment Workers' Union*, 1941, p. 45.

¹¹Hochman, *op. cit.*, pp. 10 and 46. See also Helen E. Micklejohn, "Dresses—the Impact on a Business", in Hamilton, Walton and Associates: *Prices and Price Policies, 1938*.

TABLE 31.—Number and Percentage of Wage Earners in Hosiery Industry in Leading States and Selected Industrial Areas, 1929-1939.¹

Area	Number of Wage Earners (Thousands)			Percentage of U.S. Total		
	1929	1937	1939	1929	1937	1939
States in Region						
North Carolina	19.7	34.1	42.7	15.2	22.7	26.8
Pennsylvania	48.8	46.4	41.7	37.7	30.8	26.2
New Jersey	4.9	6.0	6.1	3.8	4.0	3.8
Virginia	1.9	3.7	5.3	1.5	2.5	3.3
New York	4.7	4.4	4.3	3.6	2.9	2.7
Outside Region						
Tennessee	13.4	14.6	15.5	10.3	9.7	9.8
Georgia	4.5	8.3	8.6	3.5	5.5	5.4
All Other States	31.6	33.0	34.9	24.4	21.9	22.0
United States	129.5	150.5	159.1	100.0	100.0	100.0
Selected Industrial Areas						
Philadelphia City	(1)	13.2	10.3	(1)	8.8	6.5
Rest of Philadelphia Area	(1)	7.9	8.5	(1)	5.2	5.3
Reading	(1)	18.9	15.8	(1)	12.6	9.9

¹Comparable figures not available for 1933 nor for selected industrial areas for 1929.

Pennsylvania to North Carolina. Whereas in 1929, Pennsylvania employed two and a half times as many hosiery workers as North Carolina, in 1939 the southern State accounted for a little more hosiery employment than Pennsylvania. Between the years 1937 and 1939, this trend was more pronounced than in earlier years. Tennessee, the second most important southern State, maintained its position in the industry, but Georgia and Virginia experienced marked gains at the expense of some of the States of minor importance in hosiery manufacture, such as New York. In Pennsylvania, the Philadelphia and Reading areas are the dominant hosiery centers. Between 1929 and 1937 most of the loss in employment in the State was at Philadelphia, while Reading actually gained. From 1937 to 1939, however, the Reading area and the city of Philadelphia suffered severe losses in employment but the Philadelphia-Camden area outside the Philadelphia city limits gained.

A major reason for the movement of hosiery was the lower wage scales in the South. Movement of the industry was easier in the case of seamless than full-fashioned hosiery, because fewer trained operatives are required. A major shift of the full-fashioned industry is more difficult because a majority of the trained workers are in the North. Moreover, unionization has gone much further in the full-fashioned branch of the industry and wage scales are adjusted so as to maintain the competitive position of individual firms, with a resultant tendency toward stabilization of locational shifts in employment.¹²

As already indicated, hosiery output has increased rapidly. In this increase the style factor has been very important. The production of all-pure-thread-silk, full-fashioned women's

¹²"Union-Management Cooperation", *Monthly Labor Review*, Bureau of Labor Statistics, June 1941, p. 1356.

hosiery increased from 3,079 thousand dozen pairs in 1927 to 18,841 thousand dozen pairs in 1935. The over-all hosiery production index (1929=100) rose from 43.7 in 1919 to 110.0 in 1935. During the same period, productivity doubled but because of a shortened work week, the index of output per wage earner rose only from 70.8 to 103.3 (1929=100).

Men's Shirts

Of the 70,000 wage earners in the industry, 60 percent are employed in the Region. Forty-three percent are in Pennsylvania and New York. The four leading States, Pennsylvania, New Jersey, New York, and Maryland, are all in the Region.

After a drop in employment of 10 percent from the peak of 1929, the industry has shown a steady growth, so that the total number of wage earners was 11,000 more in 1939 than in 1929. (Table 32)

Pennsylvania and Maryland showed a steady increase during the years following 1929. Maryland was the fifth State in 1929. The number of workers doubled in the next decade and the State now ranks fourth. Pennsylvania did not share in the increase of the national figure after 1937. New York dropped sharply after 1929, and has just held its own at the low figure of 1933.

The industry is scattering from its former main centers. In 1929, a quarter of the Nation's workers in the industry were located in States other than the leading six. In 1939, over 30 percent were in these States. Of the 11,000 increases in wage jobs in the industry between 1929 and 1939, 7,000 were added to employment outside the six most important States, an increase of 50 percent.

The indications of a movement from the main centers are the decrease of 5,000 workers from 1929 to 1939 in New York, and the increase of

TABLE 32.—Number and Percentage of Wage Earners in Men's Shirts Industry in Leading States and Selected Industrial Areas, 1929-1939.¹

	Number of Wage Earners (Thousands)				Percentage of United States Total			
	1929	1933	1937	1939	1929	1933	1937	1939
States in Region								
Pennsylvania	16.5	19.3	20.6	20.2	27.6	35.8	30.4	28.6
New York	15.1	9.2	10.7	9.9	25.2	17.1	15.8	14.1
New Jersey	4.7	4.2	5.7	5.5	7.9	7.8	8.5	7.8
Maryland	2.5	2.7	4.3	5.3	4.1	5.0	6.3	7.5
Outside Region								
Missouri	3.6	2.7	3.5	3.8	6.0	5.1	5.2	5.4
Connecticut	2.4	3.1	4.0	3.6	4.0	5.8	6.0	5.1
All Other States	15.0	12.6	18.8	22.2	25.2	23.4	27.8	31.5
United States	59.8	53.8	67.6	70.5	100.0	100.0	100.0	100.0
Selected Industrial Areas								
New York City	3.4	1.5	1.8	2.0	5.7	2.8	2.7	2.8
Rest of New York Area	3.9	3.2	4.6	4.5	6.5	5.9	6.8	6.4
Philadelphia City	3.1	1.8	2.2	2.1	5.2	3.3	3.3	3.0
Rest of Philadelphia Area	1.2	0.9	1.4	1.2	2.0	1.7	2.0	1.7
Albany-Schenectady-Troy	(1)	4.6	5.2	4.6	(1)	8.6	7.7	16.5
Baltimore	1.1	1.5	2.2	3.1	1.8	2.8	3.3	4.4
Allentown-Bethlehem	0.8	1.4	2.6	3.0	1.3	2.6	3.8	4.3

¹ Figures not exactly comparable. In 1929 work shirts were included while collars and night wear were not. 1933, 1937, and 1939 included collars and night wear, but excluded work shirts.

2,000 in New Jersey and Connecticut. New York City, the Albany-Schenectady-Troy area, and Philadelphia have been declining in their shares of the nation's workers, the rest of the New York and Philadelphia industrial areas have very nearly maintained their proportion. Baltimore, the Allentown-Bethlehem and other Pennsylvania areas have been gaining rapidly. This is a further evidence of dispersion from former centers.

Men's Clothing

Of the three leading States in men's clothing,

TABLE 33.—Number and Percentage of Wage Earners in Men's Clothing Industry in Leading States and Selected Industrial Areas, 1929-1939.¹

	Number of Wage Earners (Thousands)				Percentage of United States Total			
	1929	1933	1937	1939	1929	1933	1937	1939
States in Region								
New York	47.2	33.1	44.3	45.4	31.5	27.8	28.0	28.1
Pennsylvania	18.5	17.1	22.9	25.4	12.3	14.3	14.5	15.7
Maryland	10.0	9.5	10.8	11.9	6.7	8.0	6.8	7.3
New Jersey	7.9	8.5	11.5	11.6	5.3	7.1	7.3	7.2
Outside Region								
Illinois	20.3	13.4	16.0	15.2	13.5	11.2	10.1	9.4
Ohio	13.2	10.7	14.7	11.6	8.8	9.0	9.3	7.2
All Other States	32.8	27.0	38.0	40.6	21.9	22.6	24.0	25.1
United States	149.9	119.3	158.2	161.7	100.0	100.0	100.0	100.0
Selected Industrial Areas								
New York City	28.5	20.8	29.7	31.6	19.0	17.4	18.8	19.5
Rest of New York Area	5.1	5.3	7.8	7.4	3.4	4.5	4.9	4.6
Philadelphia City	10.7	9.2	12.3	13.4	7.1	7.7	7.8	8.3
Rest of Philadelphia Area	3.4	3.5	4.0	4.5	2.3	2.9	2.5	2.8
Baltimore	9.4	8.3	8.8	9.9	6.3	7.0	5.6	6.1
Rochester	10.6	7.0	8.7	8.9	7.1	5.9	5.5	5.5
Buffalo	1.8	1.1	1.2	1.3	1.2	0.9	0.8	0.8
Allentown-Bethlehem	0.7	0.6	1.2	1.9	0.5	0.5	0.8	1.2

¹ Data for 1929 and 1933 not strictly comparable with later years due to minor changes in classification.

² Not strictly comparable. Part of data withheld.

New York, Pennsylvania and Illinois, two are in the Middle Atlantic Region. Fifty-nine percent of the industry's wage earners are in the Region, a slightly higher proportion than the Region had in 1929: whereas New York has declined, New Jersey, Pennsylvania and Maryland have increased in importance during the past decade.

Between 1929 and 1939, employment in the industry as a whole increased by 12,000 wage earners, two-thirds of these in States other than the leading six. During the decade there were a number of marked changes in the employment situation in the leading States. New York and Illinois suffered most severely during the depression and showed the greatest decrease from 1929 to 1933. Since that time New York recovered most of the loss but in 1939 still had fewer workers than in 1929. Illinois has given little indication of recovery from the low point of the depression. In 1939, it employed 5,000 fewer persons than in 1929. Table 33.

On the other hand, the number of workers in Pennsylvania increased by 6,600 or a third. In 1929 it had fewer workers than Illinois. It now has 10,000 more. Maryland except for a slight drop in 1933 has shown a slow but steady increase. It is probable that the marked increase in New Jersey has resulted from the movement of New York City and Philadelphia shops to this State.

The drop in employment in New York State between 1929 and 1939 was due largely to a decrease in wage jobs in Rochester, Buffalo, and the smaller cities and towns of the State. Employment in New York City increased by over 3,000 workers, and held its own in relation to the country as a whole. The other parts of the New York Industrial Area increased more rapidly than the city itself, indicating some dispersion. The same was true in the Philadelphia area in which the city gained but not quite as rapidly as the surrounding counties. The Baltimore area gained slightly but the increase in Maryland was more rapid.

Footwear

The American shoe industry, starting in Massachusetts, has been moving westward for a long time. The fact that most of the establishments in the industry do not own their equipment (in 1935, approximately 90 percent of all the shoe-making machinery and equipment in use was leased, mainly from the United and the Compo Shoe Machinery Corporations) facilitates plant migration and makes it possible for producers with limited resources to enter the industry.¹³

The first major moves were from Massachusetts to New York and to Missouri, but Massachusetts still remains the leading State in number of employees. Recently there has been a tendency for the industry to scatter more widely, largely at the expense of the two leading States, Massachusetts and New York. Together with Missouri, however, these States had nearly half of the total number of employees of the industry in 1929. That

¹³David Weintraub, *op. cit.* - Part 2, p. 10.

half the employers showed a deficit in income tax returns (1936) is an indication of the instability of many of the employers, especially the smaller ones.¹⁴

The continuing dispersion of the industry is shown by the fact that the entire increase of 12,400 wage earners in the United States between 1929 and 1939 was in the less important shoe manufacturing States. The two leading States, Massachusetts and New York, lost heavily in number of employees.¹⁵ Pennsylvania and New Hampshire gained 4,000 wage earners each during the depression decade, Illinois 3,000, and Missouri 2,000.

New York State's rank as second in shoe manufacturing in the country is due largely to the Endicott Johnson plants and others in and around Binghamton. This corporation employs 60 percent of the State's shoe workers, 9 percent of those in the Nation. The dispersion of the industry is also indicated by the steady drops in the New York, Rochester, and Philadelphia industrial areas, (Table 34).

Over the past 20 years, the shoe output has increased about as rapidly as population. In 1919, the industry produced 3.1 pairs *per capita*; in 1939, 3.2 pairs *per capita*. From 1919 to 1936, the index of production increased from 88.0 to 111.1 (1929=100). Productivity per man-hour over this period rose from 82.8 to 138.7 on the same base. Because of shortening of working hours, however, the index of output per wage earner rose only from 85.8 to 114.3 in the same period.

These trends are continuing. Between February, 1940, and February, 1941, production increased 9.9 percent, man-hours 2.9 percent and output per man-hour 6.8 percent.¹⁶ The industry lends itself to this increased productivity per man because of the division of labor. Each of the several hundred operations in the making of a shoe may be performed by a different operator.

The net result of these trends has been a relatively stable level of employment over the past 20 years. The peak number of wage earners was 225,000 in 1923; the lowest was 179,000 in 1932; the latest census numbers 218,000 in 1939.

Bread and Bakery Products

This group is composed of two major industries, the manufacture of biscuits and crackers, and the baking of bread, rolls, cakes, pastry, etc. The demarcation between the two is not always clear because one manufacturer frequently makes both types of products. Biscuit and cracker manufacture is essentially a factory operation whose "products are packed in containers to retain palatability for an indefinite period." The other branch of the industry is composed for the most part of large and small bakeries manufacturing products for consumption within a relatively few days. Essentially its market is urban and social.

¹⁴Statistical Abstract of the United States, 1939, p. 201.
¹⁵The competition of imported shoes may have been a factor in this situation. This point has not been investigated.

¹⁶Labor Notes, Labor Research Assoc., May, 1941, p. 4.

TABLE 34.—Number and Percentage of Wage Earners in Footwear Industry in Leading States and Selected Industrial Areas, 1929-1939

States	Number of Wage Earners (Thousands)				Percentage of United States Total			
	1929	1933	1937	1939	1929	1933	1937	1939
States in Region								
New York	37.0	33.8	33.7	31.2	18.0	17.7	15.6	14.3
Pennsylvania	10.4	10.1	12.9	14.7	5.0	5.3	6.0	6.7
New Jersey	1.4	1.4	2.3	2.5	0.7	0.7	1.1	1.1
Outside Region								
Massachusetts	55.1	46.7	46.7	45.6	26.8	24.5	21.7	20.9
Missouri	24.9	22.1	26.1	26.9	12.1	11.6	12.1	12.3
New Hampshire	14.5	11.6	17.7	18.5	7.1	6.1	8.2	8.5
Illinois	14.7	15.8	16.7	17.4	7.2	8.3	7.7	8.0
All Other States	47.6	49.4	59.3	61.2	23.1	25.8	27.6	28.2
United States	205.6	190.9	215.4	218.0	100.0	100.0	100.0	100.0
Selected Industrial Areas								
New York City Area	15.6	13.5	14.4	12.2	7.6	7.1	6.7	5.6
Rochester	4.4	3.1	2.7	2.1	2.1	1.6	1.3	1.0
Philadelphia-Camden	3.3	2.2	2.1	2.2	1.6	1.2	1.0	1.0

Except for the period from 1929 to 1932, the trend of employment for this major branch of the industry has been upward, largely because of a reduction of the work week. Production has increased only moderately and productively very little. The number of employees has increased 42 percent since between 1923 and 1939. The trend of employment in the making of biscuits and crackers has been downward. In 1923, there were 35,000 wage earners; in 1939, 29,000. The proportion of these employees to those in the entire industry group dropped in this period from 28 percent to 14 percent.

Because most of the workers are engaged in manufacturing bread, rolls, etc., and because these products are distributed over a relatively limited area, employment is widely scattered. Almost half of its workers are in 5 highly urbanized States: New York, Pennsylvania, Illinois, and Ohio, the Nation's four most populous, and in New Jersey. In addition to 72,000 workers in New York, New Jersey and Pennsylvania, there are 11,000 workers in the other States of the Region. Of the industrial areas of the Region, the most important gain was in the New York area outside the city. Philadelphia-Camden and Scranton--Wilkes-Barre had smaller increases. Pittsburgh declined.

Between 1929 and 1939, the number of workers in the country increased 15 percent. The number of workers in New York, Pennsylvania, and Illinois increased but did not reach this percentage of growth. Ohio and New Jersey exceeded it.

Although the industry has a tendency to increase in conformity with urban population, the proportion of workers in the more populous States exceeds the number based on population alone. This is particularly true of the northern States of the Region. In part this is because they are "exporters" of biscuits and crackers to other States. Nevertheless, the proportion of workers in New York and in Pennsylvania decreased during the 10-year period. Illinois held its own, Ohio and New Jersey gained. The proportion in the "other states" remained about the same. (Table 35.)

Employment in the biscuit and cracker industry has been decreasing, largely because of the increase of output per wage earner, which amounted to more than 40 percent between 1923 and 1936. For the other part of the industry, employment generally increased. Output per wage earner decreased in almost direct relation to the decrease in the average weekly working hours. This, coupled with some increase in total production, accounts for the rising level of employment.

Cotton Manufactures¹⁷

Cotton goods is one of the three largest manufacturing industries of the country in number employed. Cotton goods, steel and motor vehicles each had almost 400,000 wage earners in 1939. The cotton goods industry began in New England, and for long, this region had a virtual monopoly of the active cotton spindles. In 1840, only one in twelve spindles was in the cotton-growing States. By 1890, the proportion had risen to one in nine. At the turn of the century, it was one in five. From that date, the change was rapid. In the late 1920's the proportion rose to more than half of the total and has been increasing since that time. If the active cotton spindle hours are used as a measure, almost 80 percent were in the Southern States in 1938-39. A similar situation holds true of the other branches of the industry.

The reasons for the change of location have been closer proximity to the source of supply and cheaper labor in the South than in New England. Wages in this industry in the cotton-growing States have been consistently lower and hours have been longer than in other States.¹⁸ The original location of cotton manufactures in the southern Piedmont region was practically dictated by the necessity for appropriate climatic conditions of temperature and humidity for spinning. The wide

¹⁷See forthcoming study by R. R. West, Bureau of Industrial Research, University of Virginia.

¹⁸Harriet R. Herring comments on this situation: ". . . the southeast should hardly make efforts to secure more cotton yarn or cloth mills or should (hardly) wave flags when one is built." *Southern Industry and Regional Development*, 1940, p. 17.

TABLE 35.—Number and Percentage of Wage Earners in Bread and other Bakery Products Industry in Leading States and Selected Industrial Areas, 1929-39

	Number of Wage Earners (Thousands)				Percentage of United States Total			
	1929	1933	1937	1939	1929	1933	1937	1939
States in Region								
New York	33.7	31.6	37.3	36.0	16.8	17.3	15.6	15.6
Pennsylvania	24.0	22.2	28.0	25.1	11.9	12.2	11.7	10.9
New Jersey	7.2	7.6	11.1	10.8	3.6	4.2	4.6	4.7
Outside Region								
Illinois	16.9	14.9	20.0	18.8	8.4	8.2	8.4	8.2
Ohio	13.6	12.0	17.7	17.2	6.8	6.6	7.4	7.5
All other States	105.4	94.1	125.3	122.8	52.5	51.5	52.3	53.1
United States	200.8	182.4	239.4	230.7	100.0	100.0	100.0	100.0
Selected Industrial Areas								
New York City	23.4	22.1	25.0	24.3	11.7	12.1	10.4	10.5
Rest of New York area	6.2	6.6	9.8	10.2	3.0	3.6	4.1	4.5
Philadelphia-Camden	8.7	8.9	11.4	9.6	4.3	4.9	4.8	4.2
Pittsburgh	6.5	4.8	6.2	5.7	3.2	2.6	2.6	2.4
Buffalo	2.8	2.6	3.2	2.9	1.4	1.4	1.3	1.3
Scranton—Wilkes-Barre	1.7	1.9	2.6	2.7	0.8	1.0	1.1	1.2

TABLE 36.—Number and Percentage of Wage Earners in Cotton Goods Industry in Leading States and Selected Industrial Area, 1929-1939

	Number of Wage Earners (Thousands)				Percentage of United States Total			
	1929	1933	1937	1939	1929	1933	1937	1939
States in Region								
North Carolina	91.8	87.7	104.2	¹ 109.4	21.6	23.1	24.7	¹ 27.6
Virginia	7.7	8.5	12.0	¹ 12.3	1.8	2.2	2.8	¹ 3.1
New York	5.8	3.2	4.6	¹ 4.9	1.4	0.9	1.1	¹ 1.2
Pennsylvania	7.8	4.8	¹ 3.8	¹ 3.2	1.8	1.3	¹ 0.9	¹ 0.8
New Jersey	4.8	2.6	¹ 1.4	¹ 1.4	1.1	0.7	¹ 0.3	¹ 0.4
Outside Region								
South Carolina	71.7	74.6	81.0	¹ 74.6	16.9	19.7	19.2	¹ 18.9
Georgia	55.9	57.2	69.7	61.9	13.1	15.1	16.5	15.6
Massachusetts	70.8	45.4	42.5	35.3	16.7	12.0	10.1	8.9
All other States	108.6	95.4	103.1	93.0	25.6	25.0	24.4	23.5
United States	424.9	379.4	422.3	396.0	100.0	100.0	100.0	100.0
Selected Industrial Areas:								
New York City Area	3.7	(1)	(1)	¹ 3.3	0.9	(1)	(1)	¹ 0.8
Philadelphia-Camden	7.3	4.0	2.9	¹ 2.8	1.7	1.1	0.7	¹ 0.7

¹Not strictly comparable. Part of data withheld.

TABLE 37.—Number and Percentage of Wage Earners in Rayon and Silk Goods Industry in Leading States, 1929-1939

	Number of Wage Earners (Thousands)				Percentage of United States Total			
	1929	1933	1937	1939	1929	1933	1937	1939
States in Region								
Pennsylvania	61.5	49.2	41.2	36.7	47.1	44.7	35.3	30.6
North Carolina	2.9	9.3	13.2	15.3	2.2	8.4	11.3	12.8
New Jersey	21.4	10.7	10.2	8.7	16.4	9.7	8.7	7.3
Virginia	2.2	2.5	3.3	4.3	1.7	2.3	2.8	3.6
New York	10.3	6.1	5.6	3.5	7.9	5.5	4.8	2.9
Maryland	0.9	0.6	0.3	0.4	0.7	0.5	0.3	0.3
Outside Region								
South Carolina	Not given	0.6	7.2	11.7	...	0.5	6.2	9.8
Massachusetts	7.4	9.3	12.3	10.0	5.7	8.4	10.5	8.4
Rhode Island	7.6	9.2	7.5	8.0	5.8	8.3	6.4	6.7
All other States	16.3	12.8	16.0	21.2	12.5	11.7	13.7	17.6
United States	130.5	110.3	116.8	119.8	100.0	100.0	100.0	100.0
Selected Industrial Areas								
New York City	3.4	2.2	(1)	2.8	2.6	2.0	(1)	2.3
Rest of New York Area	18.7	8.5	(1)	7.1	14.3	7.7	(1)	6.0
Scranton—Wilkes-Barre	17.6	14.8	(1)	10.9	13.5	13.4	(1)	9.1
Allentown—Bethlehem	13.4	10.4	(1)	¹ 6.3	10.3	9.4	(1)	15.3

¹Not strictly comparable due to withholding of part of data.

introduction of air-conditioning no longer makes this necessary. (Table 36.)

This concentration of the industry in a few Southern States was intensified during the depression years. In 1929, North Carolina, South Carolina, and Georgia had 51.6 percent of the total wage earners in the industry. In 1939 they showed 62.1 percent. During this period New England lost, especially Massachusetts, which dropped from 16.7 to 8.9 percent.

During the decade ending in 1939, North Carolina gained 17,600 wage workers; Virginia, South Carolina, and Georgia together 13,500. During the same period, Massachusetts lost 35,500 wage workers and the States of less importance in the industry 24,600.

Even more striking is the localization in North Carolina between 1937 and 1939. The number of workers increased over 5,000 even though the number in the country decreased, and Massachusetts, South Carolina and Georgia lost from 6,000 to 8,000 workers each.¹⁹ North Carolina is not only much the largest cotton goods State but is increasing in number of employees more rapidly than any of the others. This trend has been counter to the decreasing number of employees in the industry as a whole. In 1937, the number of wage earners in cotton manufactures in the United States almost equaled that of 1929 but dropped off again in 1939.

Cotton is also an increasingly important manufacture in Virginia. New York, New Jersey, and Pennsylvania have small cotton goods manufactures but all three lost employment heavily in the depression. Since 1933 New York has regained some of its loss but Pennsylvania and New Jersey have declined even further. The Philadelphia-Camden and New York City industrial areas account for the bulk of this industry in the Middle Atlantic States.

In considering the position of the South, the difference in product manufactured compared with that in the rest of the country must be borne in mind. The South ". . . produces principally coarse- and medium-yarn fabrics, which, as staple products may be made under mass production conditions, while New England specializes in fine and style fabrics".²⁰ This difference in product is shown by the higher consumption of raw material and of output per man-hour in the Southern mills.

The index of output per man-hour (1929=100) has risen sharply in the industry, from 85.0 in 1919 to 132.6 in 1936. Two-thirds of this increase took place in the depression years. The increase in output per man-hour between February 1940, and February 1941, in the manufacture of textile fabrics is reported as 9.5 percent.²¹ The decrease in hours has markedly reduced the output per wage earner, however, especially in the South. Before 1929, output per wage earner was increasing, but

between 1929 and 1936 there was little change. In the cotton-growing States, the reduction in hours has resulted in a marked drop of the index of the output per wage earner. In 1935, this stood at only 79.5 percent of the 1929 figure, although the output per man-hour had increased 13.4 percent in this period of six years. In New England the output per wage earner has held its own while output per man-hour increased 31.0 percent since 1929.

It would seem that, as the shorter working week becomes stabilized in the southern States, the effect of increased man-hour production, which is general throughout the industry, will be felt, and that the output per man will increase sharply. No figures are available at present to show whether or not the Wages and Hours Law has changed or will change the marked locational trends that have been noted.

Rayon and Silk Goods

Three major changes are going on in the rayon and silk fabrics industry, including throwing and spinning.²² The industry is losing in the Middle Atlantic States (New York, New Jersey, and Pennsylvania), gaining markedly in the South and slightly in New England; rayon is replacing silk; and the productivity per worker is increasing very rapidly. (Table 37.)

Nationally employment was fairly stable between 1919 and 1929, but after the depression, never recovered to former levels.

In 1929, three-quarters of the workers in the industry were in the Region, in 1939, only 60.8 percent. Pennsylvania, New Jersey, and New York were the leading States at the earlier date and had 93,200 of the 130,500 workers, 61,500 in Pennsylvania alone. In 1939, these States had lost almost half of their wage jobs. In the meantime, the other important States manufacturing rayon and silk had increased the number of their employees in spite of the decrease in the total number of workers in the industry. The largest gains were made by North Carolina and South Carolina. Wage jobs in Massachusetts, Rhode Island, Virginia, and in the "other States" increased as well.

In 1939, Pennsylvania had only three-fifths as many workers as 10 years before, New Jersey only two-fifths, and New York two-fifths as many. The New York area outside of New York City, essentially the Paterson-Passaic section, suffered the largest numerical loss of any industrial area. The Scranton-Wilkes-Barre and Allentown-Bethlehem areas which account for half of Pennsylvania workers lost less severely. In spite of these sharp decreases, Pennsylvania, New Jersey, and New York still had 40 percent of the nation's rayon and silk employment. In Virginia, North and South Carolina, there were 32,800 wage earners in 1939, nearly as many as in Pennsylvania alone, representing an increase of 26,200 in 10 years.

¹⁹Explanation for this change in the southern situation is not now available.

²⁰David Weintraub, *op. cit.*, Part 2, p. 64.

²¹Labor Notes, Labor Research Association, May 1941.

²²This does not include the making of rayon yarn.

TABLE 38.—Number and Percentage of Wage Earners in Printing and Publishing (Book, Music and Job) Industry and Selected Industrial Areas, in Leading States, 1929-1939¹

States	Number of Wage Earners (Thousands)				Percentage of United States Total			
	1929	1933	1937	1939	1929	1933	1937	1939
States in Region								
New York	32.4	21.7	27.3	23.8	21.4	20.7	19.3	19.0
Pennsylvania	11.3	9.3	12.2	11.1	7.5	8.9	8.6	8.9
New Jersey	4.9	4.1	5.2	4.8	3.2	3.9	3.7	3.8
Outside Region								
Illinois	26.4	15.7	24.6	22.4	17.4	15.0	17.4	17.9
Ohio	10.2	8.1	11.1	9.2	6.7	7.7	7.8	7.3
Massachusetts	9.4	6.2	8.9	7.1	6.2	5.9	6.3	5.7
All Other States	56.9	39.6	52.1	46.7	37.6	37.9	36.9	37.4
United States	151.5	104.7	141.4	125.1	100.0	100.0	100.0	100.0
Selected Industrial Areas								
New York City	25.9	16.7	20.7	18.6	17.1	16.0	14.6	14.9
Rest of New York Area	5.3	4.1	5.0	4.8	3.5	3.9	3.6	3.8
Philadelphia-Camden	6.3	5.3	7.4	6.5	4.2	5.1	5.2	5.2

¹Data for 1929 not strictly comparable with later years. Does not include printed labels.
²Not strictly comparable. Part of data withheld.

The rate of decrease in the number of employees in Pennsylvania was slightly higher between 1937 and 1939 than over the previous 8 years. The rate of increase in North Carolina was not as marked in this period as previously, but South Carolina was still increasing very rapidly. Thus, there is as yet no definite indication of a slowing up of the southern movement.

Change in the basic product from silk to rayon and the increased productivity per man-hour have been factors in the change of location. Between 1929 and 1935, the output of all-silk, broad goods was cut in half, while all-rayon broad goods increased ten-fold. In the latter year, the output of rayon broad goods was three times that of silk. Newer plants in the Southern States have been a factor in the rapid increase in output per wage earner and particularly per man-hour. The former almost doubled between 1919 and 1935, the latter increased two and one-half times in the same period. Since 1929, there have been sharp fluctuations but the trend in output is still upward.

Printing and Publishing, Book, Music and Job

Seventy-seven percent of the employees in this industry group are engaged in general commercial (job) printing, 18 percent in book publishing and printing and 5 percent in typesetting. The proportions in the Region are practically the same. Half of the job printing employees of the Region are in New York, a quarter in Pennsylvania. Together they account for 27 percent of the national total. In book publishing and printing, New York and Pennsylvania account for a slightly higher proportion of the national total, slightly higher than in the case of job printing. (Table 38.)

The volume of employment in this industrial group seems to be decreasing. In 1933, it was 31 percent below the 1929 figure and in 1937, the high year of the decade, it was 7 percent below. In 1939 the number of workers was 17 percent below the 1929 peak.

Over half of the employment is in the four most populous States of the Union, one-fifth in New York, slightly less in Illinois. New York City, with three-fourths of the State's workers, has dropped in number of wage jobs and in its proportion of the nation's employment. The Philadelphia-Camden area and the States of New Jersey and Pennsylvania have increased their employment and their proportion of the national total between 1929 and 1937. These proportions were maintained or increased further by 1939.

Steel Works and Rolling Mills^{2,3}

The steel industry since its very beginning has been of major importance in this Region. It grew out of the iron industry which was of importance in the economy of New Jersey, Pennsylvania, and Maryland from colonial times. Some of the present Eastern steel centers (Bethlehem, Sparrows Point, and Philadelphia) are located at the points where early iron furnaces flourished.

This industry employs more manufacturing wage earners than any other in the Region, but somewhat fewer workers than bituminous and anthracite coal mining combined. In 1939, the Region had 185,700 wage earners or 46.4 percent of the Nation's steel workers, more than in any other Region. Pennsylvania had over a third of the workers in the Nation, Ohio a fifth, and Illinois-Indiana combined a sixth of the total.

From colonial days until 1933, the "geographical center" of iron and later steel production moved westward.²⁴ Since 1933, because of changes in the relative importance of Ohio and of Michigan, the trend has been reversed and the "center" has moved slightly east and north to a point midway between its position in 1923 and 1933. In

²³Blast furnaces not included as the number of employees is small and does not affect the conclusions. See also C. R. Daugherty *et al.*, *Economics of the American Iron and Steel Industries*, New York, 1937; and publications of the American Iron and Steel Institute, New York.

²⁴"Ton times miles basis", *Steel Facts* No. 47, May, 1941, p. 4.

1873, the "center" was in central Pennsylvania, between 1884 and 1903, in the Pittsburgh area. Since then, it has been in Ohio because of the development of the Illinois-Indiana steel district.

Thirty years ago, Pennsylvania produced 50 percent more steel than Ohio, Indiana, and Illinois combined. In the 20 years following, this proportion was reversed. In the past decade, a marked tendency toward stabilization of the relative positions of the two areas has developed.

TABLE 39.—Number and Percentage of Wage Earners in Steel Works and Rolling Mills in Leading States and Selected Industrial Areas, 1929-1939

	Number of Wage Earners (Thousands)				Percentage of United States Total			
	1929	1933	1937	1939	1929	1933	1937	1939
States in Region								
Pennsylvania	145.7	101.5	166.0	141.8	36.9	36.7	34.6	35.6
New York	18.0	10.3	20.6	17.7	4.5	3.7	4.3	4.4
Maryland	13.0	9.4	18.3	16.6	3.3	3.4	3.8	4.2
New Jersey	8.1	5.0	8.9	7.2	2.0	1.8	1.9	1.8
Outside Region								
Ohio	89.1	64.3	95.5	76.4	22.6	23.2	19.9	19.1
Indiana	29.2	22.4	43.4	38.3	7.4	8.1	9.1	9.6
Illinois	30.4	17.0	41.4	30.5	7.7	6.1	8.6	7.6
West Virginia	12.9	13.4	14.7	13.0	3.3	4.8	3.1	3.3
Michigan	4.7	5.6	21.0	11.3	1.2	2.0	4.4	2.8
All Other States	43.5	27.9	49.5	46.2	11.1	10.2	10.3	11.6
United States	394.6	276.8	479.3	399.0	100.0	100.0	100.0	100.0
Selected Industrial Areas								
Pittsburgh	80.4	56.8	96.6	85.0	20.4	20.5	20.2	21.3
Buffalo	12.4	6.9	14.4	12.9	3.1	2.5	3.0	3.2
Philadelphia-Camden	13.1	7.6	14.4	11.1	3.3	2.7	3.0	2.8
Allentown-Bethlehem	...	Not given	...	11.3	...	...	...	2.8

¹Estimated.

As indicated in Table 39, Pennsylvania since 1929 has lost only a very small share of its proportion of the total workers in the industry. The Pittsburgh Industrial Area is the nation's major steel center, furnishing over one-fifth of the employment in the industry. Between 1929 and 1937 it maintained its position and in the two years following gained in relation to the country as a whole. The modernization of plants, accounting in large measure for recent changes, came later to the Pittsburgh area than to some of the other steel-making centers.

The Philadelphia area has been declining, but Maryland, since 1933, has increased its share of the industry. Nearly all of Maryland's steel plants are in the Baltimore area. The Buffalo area, with two-thirds of New York State's steel workers, after a severe decline in the depression has improved its position slightly. The rest of New York State and New Jersey have been losing.

The Region as a whole has maintained its position with very little loss. Indiana has gained steadily since 1929. Illinois and Michigan increased until 1937 but dropped off in 1939. The gains in Indiana, Illinois, Michigan, and Alabama are balanced by losses in Ohio.

It seems to be the intention of the large steel companies to remain in the areas in which

they are now located. The installation of new cold rolled strip mills in the last few years by Bethlehem Steel Company at Buffalo and Baltimore and by the United States Steel Corporation and Jones and Laughlin in the Pittsburgh area are evidences of this. Another example is the recent request of the United States Steel Corporation to the Reconstruction Finance Corporation for a loan of \$85,000,000 for the expansion of its Homestead and Duquesne Plants in the Pittsburgh area.

Between 1929 and 1937, there was a marked national and regional increase in employment in steel. Even in 1939, employment was at about the 1929 level, and now under the impact of armaments production is undoubtedly far above 1929. It is significant to note that these changes in employment have taken place during a period when the average hours per week dropped sharply. The average working week was 63.7 hours in 1919, 52.7 hours in 1929, and after a marked drop during depression years, rose somewhat, but was only 40.9 hours in 1936. At the same time, the output per man-hour doubled between 1919 and 1936. It is thus apparent that in spite of rapid technological changes tending to reduce the number of workers required, employment has been kept up and even increased at peak periods by reduced working hours and possibly by higher demands for steel products.

Electrical Machinery

In spite of wide fluctuation in various years, the trend of employment in the industry is distinctly upward. Employment increased over 40 percent between 1931 and 1937, and then lost half the increase in 1939, so that, in that year, it was 18 percent above the 1931 figure. (Table 40.)

TABLE 40.—Number and Percentage of Wage Earners in Electrical Machinery Industry in Leading States and Selected Industrial Areas, 1931-1939¹

	Number of Wage Earners (Thousands)				Percentage of United States Total			
	1931	1933	1937	1939	1931	1933	1937	1939
States in Region								
Pennsylvania	27.1	17.5	33.8	26.6	15.0	13.4	13.1	12.0
New York	23.8	17.0	28.1	25.7	13.2	13.0	10.9	12.1
New Jersey	18.5	12.3	25.8	24.0	10.3	9.4	10.0	10.8
Outside Region								
Ohio	20.1	19.7	34.5	30.3	11.2	15.0	13.4	14.2
Illinois	28.9	14.1	35.0	28.7	16.0	10.8	13.6	13.5
Massachusetts	17.1	12.4	25.6	16.7	9.5	9.5	10.0	8.8
Indiana	12.4	12.1	20.6	15.6	6.9	9.2	8.0	7.3
Connecticut	10.4	9.2	16.7	13.6	5.8	7.0	6.5	6.4
All Other States	21.8	16.6	37.5	31.8	12.1	12.7	14.5	14.9
United States	180.1	130.9	257.6	213.0	100.0	100.0	100.0	100.0
Selected Industrial Areas								
New York City	6.5	6.7	9.6	9.0	3.6	5.1	3.7	4.2
Rest of New York Area	18.0	11.2	24.6	21.7	10.0	8.6	9.6	10.3
Pittsburgh	13.9	9.6	17.8	12.5	7.7	7.3	6.9	5.9
Philadelphia-Camden	6.9	5.0	7.6	6.7	3.8	3.8	2.9	3.1

¹No comparable data available for 1929 because of inclusion of radios and radio tubes in "Electrical machinery" in 1929 census.

There has been some spreading out of the industry to other than the 6 leading States, but it has not been marked. In 1931, 75 percent was in these States, and in 1939, 72 percent. Following 1931, when 38.5 percent of the employment in the industry was in the Middle Atlantic States (New York, New Jersey, and Pennsylvania), there was a slight decrease in the ratio in these States to the national total.

These changes in the Region have been due to decreases in the proportion of workers in Pennsylvania and in New York. Since 1937, the drop continued in the former State, but was reversed in New York. New Jersey has remained steady.

Over the 8-year period, Ohio, Indiana, and Connecticut gained at the expense of Pennsylvania, Illinois, and Massachusetts, and to a lesser extent, New York. No explanation for the apparent sudden changes in trend in 1933 in New Jersey, Ohio, Illinois, and Connecticut is at present available.

The changes in the larger industrial areas indicate more precisely the effects on individual communities. The drop in Pennsylvania has been entirely in the Pittsburgh area where employment was lower in 1939 than in 1931, in spite of the national increase. Pittsburgh's proportion of national employment has been decreasing steadily over the period. The Philadelphia-Camden area's proportion also decreased, but the rate of decline was not as sharp. New York City has been improving its position slightly in relation to the country, but the remainder of the State has been losing. Census figures do not reveal how much of this is in the Schenectady area, dominated by the General Electric Company. The rest of the New York industrial area, essentially northern New Jersey, has recovered from the serious drop in 1933, and in 1939 had a slightly larger share of national employment than in 1931.

Foundry and Machine Shop Products

This is an industry group making a wide variety of durable goods. In 1933, it employed only half as many persons as in 1929. The upswing brought the number of workers in 1937 to 95 percent of predepression peak. Two years later, it had again dropped 25 percent. (Table 41.)

In some States, particularly in Michigan, the variations in employment were even greater.

These industries are widely scattered, and as a result, the five States with the highest number of employees show only half of the employment of the country. Even among these, there is no concentration. Ohio has one-eighth of the wage jobs, Pennsylvania and Illinois one-tenth each. The trend is toward a wider spreading among the States. This development is slow, however. In 1929, the 5 States had 55.4 percent, in 1939, 50.9 percent. The proportion of employees is dropping in four of the 5 States. Only Illinois had a slightly higher percentage of the national total in 1939 than in 1929. Ohio, Pennsylvania, Michigan, and

TABLE 41.—Number and Percentage of Wage Earners in the Foundry and Machine Shop Products Industry in Leading States, 1929-1939¹

	Number of Wage Earners (Thousands)				Percentage of United States Total			
	1929	1933	1937	1939	1929	1933	1937	1939
States in Region								
Pennsylvania	55.4	27.1	47.6	33.9	12.1	12.4	11.0	10.6
New York	48.0	20.2	38.6	28.0	10.5	9.2	8.9	8.7
New Jersey	22.4	10.4	19.8	13.2	4.9	4.7	4.6	4.1
Outside Region								
Ohio	61.6	28.1	58.1	40.2	13.5	12.8	13.4	12.6
Illinois	45.7	19.9	42.9	32.7	10.0	9.1	9.9	10.2
Michigan	42.6	26.0	60.5	28.3	9.3	11.8	14.0	8.8
All Other States	181.0	87.8	165.5	144.3	39.7	40.0	38.2	45.0
United States	456.7	219.5	433.0	320.6	100.0	100.0	100.0	100.0

¹Data for 1929 and 1933 not strictly comparable with later years because of minor changes in classification. Data on selected industrial areas are not sufficiently complete to warrant inclusion.

New York had a smaller proportion than in the latter year. Essentially, the same was true in 1937, except for an unexplained situation in Michigan.

The Region had 25 percent of the employees in the country in 1939; all but 5,000, or 6 percent of the regional total, were in Pennsylvania, New York, and New Jersey. In 1929, these three States had 27.5 percent of the total. Except for a minor shift, each has had a relatively smaller proportion of the industry's employment in each of the census years shown.

Motor Vehicles

Of the Nation's 3 largest manufacturing industries, motor vehicles is the only one in which this Region is relatively unimportant. Although there are 40,500 employees in the Region, they comprise but 10.2 percent of the national total. All of these with the exception of 1,400 in Maryland and 400 in North Carolina, are in New York, New Jersey, and Pennsylvania. A large proportion of the motor vehicle workers in the Region are in assembly plants of the major automobile manufacturing companies. (Table 42.)

Between 1929 and 1939, there has been a decrease in wage jobs in the Region and in the proportion to the total for the country. In 1929, there were 58,300 workers; in 1933, 24,500; in 1937, 43,200; and in 1939 only 33,700 in these 3 States. The regional percentage of the total dropped from 13 percent in 1929 to 9 percent in 1937. In 1939, it was slightly higher.

This drop in the proportion of national wage earners has occurred in most of the States except Michigan. Ohio and Indiana, New York and Pennsylvania have all shown a decrease since 1929. Between 1929 and 1933, the industry became increasingly centralized in Michigan, the proportion of workers rising from 48 to 62 percent of the total, and remaining at about this figure since then. The effect of concentration has been

TABLE 42.—Number and Percentage of Wage Earners in the Motor Vehicle Industry in Leading States, 1929-1939¹

	Number of Wage Earners (Thousands)				Percentage of United States Total			
	1929	1933	1937	1939	1929	1933	1937	1939
States in Region								
New York	30.2	10.9	19.7	16.1	6.8	4.5	4.1	4.0
Pennsylvania	19.4	10.0	16.2	13.6	4.3	4.1	3.4	3.4
New Jersey	8.7	3.6	7.3	9.0	1.9	1.5	1.5	2.3
Outside Region								
Michigan	214.4	151.2	297.5	253.9	47.9	62.1	61.9	63.9
Ohio	57.6	23.2	41.2	29.8	12.9	9.5	8.6	7.5
Indiana	34.2	15.2	32.6	26.8	7.7	6.2	6.8	6.7
All Other States	82.9	29.5	65.8	48.3	18.5	12.1	13.7	12.2
United States	447.4	243.6	480.3	397.5	100.0	100.0	100.0	100.0

¹Data for 1929 not strictly comparable, manufacture of trailers is not included in that year. Data on selected industrial areas are not sufficiently complete to warrant inclusion.

felt most severely by Ohio and New York. New Jersey is one of the few exceptions. It has shown an increase in employment and in its proportion of the national total. The number of workers was higher in 1939 than in 1937 although there was a drop in employment nationally.

The available statistics on man-hour output do not differentiate branch or assembly plant operation figures from those of the industry as a whole, and are of little help in indicating the tendencies of employment in the industry in the Region. For the entire industry output per man-hour almost trebled between 1919 and 1936. This may be one of the causes of the reduced opportunities for employment in the Region. The decrease in number of hours worked reduced the output per wage earner slightly after 1929.

Furniture

The number of employees engaged in manufacturing furniture, including store and office fixtures, decreased after 1929. In 1932 employees numbered only half of the 1929 figure. Employment revived to 88 percent in 1937 but dropped again in 1939. Employment had been increasing from 1919 to 1929, except for a sharp drop for the year 1921.

The value of the product increased each year from 1919. The increased volume prior to 1929 was obtained in spite of a steadily falling price index by sharing the savings of increased volume and productivity with the consumer. (Table 43.)

In 1939, one-third of the employees in the industry were in this Region. During the depression there was a sharp shift in the relative importance of the States. In 1929, New York, Illinois, and Michigan were the leading States in number of employees in the order named. In 1939, North Carolina had assumed the first position, followed by New York and Illinois.

Each of the 3 leading States have between 10 and 12 percent of the total number of employees.

All the leading States, including Virginia and Pennsylvania, showed a drop in employment between 1937 and 1939, except North Carolina which increased 6 percent. The number of workers in the "all other" States has decreased slightly in the decade beginning in 1929, although the proportion of workers has increased from 36.6 to 39.9 percent.

During the decade 1929 to 1939, two States in the Region showed an increase in the number of employees, North Carolina and Virginia. Each showed 2,000 more workers than in 1929 and showed marked increases in their proportion to the National total. North Carolina increased its relative share from 8.1 to 11.2 percent and Virginia 3.2 to 5.3 percent.

On the other hand, Michigan decreased 40 percent in number of workers in the same period, New York lost 33 percent (half the loss between 1937 and 1939), and Illinois, 31 percent. In actual numbers New York and Michigan had 8,500 less workers in the industry, Illinois, 7,500, and Indiana 5,000. Pennsylvania, the fourth State in the Region, had fewer employees in 1939 than 10 years before, but increased its proportion of the national figure.²⁵

New York City, with nearly half the State's workers, declined less than the State. Outside the city but in the industrial area employment held its own. The Philadelphia-Camden and Buffalo areas declined particularly heavily in the depression and never regained their former positions.

²⁵It has not been determined the extent to which the shift to the South has been due to changes of consumers requirements in quality and price, to the change in proportion of household and other furniture or to changes in basic materials used.

TABLE 43.—Number and Percentage of Wage Earners in Furniture Industry by Leading States and Selected Industrial Areas, 1929-1939

	Number of Wage Earners (Thousands)				Percentage of United States Total			
	1929	1933	1937	1939	1929	1933	1937	1939
States in Region								
North Carolina	15.6	11.8	16.8	17.8	8.1	11.2	9.9	11.2
New York	25.2	13.2	20.4	16.9	13.0	12.5	12.0	10.6
Pennsylvania	12.2	7.0	11.0	10.5	6.3	6.7	6.5	6.6
Virginia	6.3	6.6	8.5	8.4	3.2	6.2	5.0	5.3
Outside Region								
Illinois	23.8	10.1	17.7	16.3	12.3	9.5	10.4	10.2
Indiana	18.7	8.7	15.4	13.8	9.7	8.3	9.1	8.6
Michigan	20.9	9.0	14.9	12.1	10.8	8.6	8.7	7.6
All Other States	70.7	39.1	65.4	63.6	36.6	37.0	38.4	39.9
United States	193.4	105.5	170.1	159.4	100.0	100.0	100.0	100.0
Selected Industrial Areas								
New York City	10.7	5.6	9.1	7.6	5.5	5.3	5.3	4.8
Rest of New York Area	2.2	1.1	2.2	2.1	1.2	1.1	1.3	1.3
Philadelphia-Camden	4.3	1.8	3.2	3.1	2.2	1.7	1.9	1.9
Buffalo	2.4	1.1	1.6	1.5	1.2	1.0	0.9	1.0

¹Not strictly comparable. Part of data withheld.

Prior to the depression there was a steady increase in output per wage earner and per man-hour so that the former figure was one-third higher than in 1919. The latter was only a little lower because of a slight reduction in hours from 49 to 47 per week. From 1929 to 1936 the output per man-hour remained stationary. Because of the sharp reduction in hours the output per wage earner dropped sharply.²⁶ The weekly hours dropped to 34.5 in 1932 and increased slowly to 42.4 in 1936.

Coal

Not only does coal mining employ more workers than any single manufacturing industry in the Region, but it is the Region's major "problem" industry. It has been characterized by chronic unemployment and under-employment for 20 years. As a result, workers and their communities have suffered. There has been a marked drop in the national consumption of coal, and consequently in output. Twenty years ago, coal supplied more than three-fourths of the fuel energy needs of the country; today it supplies only half.²⁷ Since 1923, the relative importance of bituminous coal in the Nation's economy has sharply declined. In 1939, bituminous coal production in the United States was 73.2 percent of the 1916-20 average; in Pennsylvania, it was only 54.6 percent, in Maryland 35.3 percent and in Virginia 133.1 percent. The proportion of the Nation's total output produced in the States in this Region and in the 4 leading coal producing States, as well as the changes since the World War I period, is shown in Table 44.

A further change in the last 20 years has been that West Virginia passed Pennsylvania as the leading producer of bituminous among the States. Before World War I, Pennsylvania produced over one-third of the National total. In 1939 it was

²⁶In view of the relatively long hours in this industry prior to 1929, the effect of the Wages and Hours Law on the industry, especially in the South, should be studied.

²⁷David Weintraub, *Production, Employment and Productivity in the Mineral Industries*, p. 18.

TABLE 44.—Coal Production in the United States, States in the Middle Atlantic Region, and in Other Leading States, 1939, and Comparison with 1916-20

	1939		1939 as proportion of Average output 1916-20
	Tons (000's)	Percent of U.S. Output	
Bituminous			
United States	393,065	100.0	73.8
Pennsylvania	92,190	23.4	54.6
Maryland	1,468	0.4	35.3
Virginia	13,230	3.4	130.2
West Virginia	107,938	27.4	125.0
Illinois	46,450	11.8	59.4
Kentucky	42,805	10.9	142.0
Ohio	19,632	5.0	48.4
Anthracite			
Pennsylvania	51,487	100.0	55.5

Source: *Statistical Abstract of the United States, 1940*, p. 784.

TABLE 45.—Trend in Coal Consumption in the United States in Various Industries¹

	Electric Power	Railroads	Steel
	Pounds of coal per kilowatt hr.	Pounds of coal per 1,000 gross ton-miles	Pounds of coal per ton of pig iron
1920	3.39	174	3,577
1927	1.84	131	2,820
1933	1.47	121	2,875
1938	1.41	115	2,865

¹Federal Emergency Relief Administration, *op. cit.*, pp. 138 ff., and Pennsylvania State Planning Board, *op. cit.*, p. 7, 1918.

producing less than one-quarter of the National total and less than 60 percent of the tonnage produced in the earlier period. Similar drops in output took place in Maryland, Illinois, and Ohio. On the other hand, Virginia, West Virginia, and Kentucky showed striking increases in production.

The reasons for changes in the importance of coal and of Pennsylvania as the leading producer of bituminous among the States has been summarized as follows:²⁸

1. . . . Because of increased economy in the use of fuel, and increased efficiency in the generation and transmission of power, our Nation's energy requirements are not growing so rapidly as its industrial production.

2. Competitive energy sources have gained, at least, a temporary dominance over coal . . .

3. New bituminous fields have gained in importance. . . This has been due to three types of advantage that have favored the southern fields during the past twenty-five years:

a. The advantages of thicker, more easily workable coal seams. This is a natural advantage of comparatively new coal fields, as against those of longer development in which the thicker seams have been largely exhausted.

b. The benefit of a lower wage scale in the Southern fields.

c. . . . A freight rate structure designed to encourage Southern production. . .

These factors are analyzed in more detail in the following paragraphs.

A few samples of the increased efficiency in coal consumption, suggestive of the importance of the reduction in fuel needs, are shown in Table 45.

Electric power stations, the railroads, and the steel industry, which have been and are large consumers of coal, have by technological changes reduced the number of coal units required to produce a unit of their product. It takes but 40 percent as much coal to produce a given quantity of electricity. Railroads require only two-thirds as much to move a given quantity of freight, as was required 20 years ago. Twenty percent less coal is required to make pig-iron.

The railroads have always been the largest consumers of bituminous coal, using about 20

²⁸Pennsylvania State Planning Board, *op. cit.*, p. 4-5.

percent of the amount produced in recent years. The drop in rail traffic as a result of the competition of other forms of transportation has been a major cause of the decreasing demand for coal. Another marked decrease in demand is due to the drop in the requirements for bunker coal. Increasingly oil has superseded coal for fuel on ships. On the other hand, the demand for coal by the public utilities has increased, as shown in Table 46.

The gradual disappearance of the export market for bituminous coal has been another factor in the decreased demand. In the period from 1911-15 to 1930, except in 1922, a minimum of 16 million tons of coal was exported annually. Since 1930, exports have fluctuated between 8 and 13 millions. There are several reasons for this: Costs of production, freight rates, and subsidies on exports by a number of coal-producing countries.

Although the demands of the country for energy have been rising steadily, coal has been losing out as a source of energy. Since 1934, more energy has come from petroleum, natural gas, and water power combined than from bituminous coal.²⁹ In 1918, crude oil supplied 10 percent of the supply of energy in the country; in 1937, this source was supplying 30 percent.

Another factor seriously affecting the coal counties of Maryland and large sections of Pennsylvania is changes in the relative importance of major centers of production, particularly the shift to the less exploited fields of West Virginia and Kentucky.

From coal seams of less than four feet in width was mined 21.8% of Pennsylvania's production, only 7.8% of West Virginia's, and 17.3% of Kentucky's. From seams 4-8 feet in width, generally accepted as the most workable and productive thickness, only 49.6% of Pennsylvania's coal was extracted as compared with 77.8% from West Virginia and 73.7% from Kentucky.³⁰

In addition, there has always been a wage differential between the northern and the southern mines. The effect of the efforts to eliminate it in 1941 coal agreement cannot as yet be determined. Differentials in freight rates have also played a part in the shifts.³¹

The situation in anthracite is similar:

In 1880, anthracite furnished 37 percent of all energy, in 1937 only 5 percent. The annual production of anthracite varied less than that of any other fuel in the period 1880-1938, increasing from 29 million tons in the former year to a maximum of 93 million tons in 1923, then declining to 46 million tons in 1938.³²

²⁹Weintraub, *Production, Employment and Productivity in the Mineral Extractive Industries, 1880-1938*, p. 168.

³⁰Pennsylvania State Planning Board, *op. cit.*, p. 24.

³¹*Ibid.*, pp. 30-32.

³²David Weintraub, *op. cit.*, p. 18. Production in 1939 was 51 million tons.

TABLE 46.—Bituminous Coal Consumption in the United States by Class of Consumer, 1919, 1929, 1937

	1919		1929		1937	
	Tons ¹	Percent of total	Tons ¹	Percent of total	Tons ¹	Percent of total
Colliery Fuel	11.1	2.3	4.7	0.9	2.8	0.7
Locomotive Fuel (Class I RRS)	119.7	24.9	113.9	21.9	73.8	19.0
Bunkers, Vessels in Foreign Trade	8.2	1.7	4.3	0.8	1.5	0.4
Coke Ovens, beehive and by-products	65.6	13.6	86.8	16.7	63.5	16.8
Electric public utilities	35.1	7.3	44.9	8.6	46.2	12.2
All other uses	242.0	50.2	265.0	51.0	190.1	50.3

Source: *Statistical Abstract of the United States, 1940*, p. 786.

¹Tons in millions.

Many of the difficulties in the anthracite industry are the same as those found in the Pennsylvania bituminous situation: Increased efficiency in the use of coal, the disappearance of an export market, and the inability to meet the competition of other fuels. Freight rates have been a factor here as well. The delivery of Kentucky and West Virginia coal using rail to tidewater and water to New York and New England has proved serious competition to anthracite.

The loss of population of the 5 major hard coal counties shown in Table 4, is symptomatic of the serious situation. There are in these counties a population of 1,160,000 or 2 percent less than in 1930. If the present trends continue, the devastating effect on the people working in these areas will continue.³³

The declines in output, both bituminous and anthracite, in the Region have naturally affected the volume of employment. In addition, the needs for man power have been further reduced by technological changes within the industry. Speaking of all mining (in which coal is the major element), Gill³⁴ points out that although production in 1937 had recovered to 91 percent of 1929, total man-hours were only 73 percent of the 1929 figure and output per man-hour exceeded 1929 by 25 percent. He states that this rise in output has persisted in the face of increasing natural handicaps in mineral extraction.

Although bituminous mining reached production peaks of approximately the same height in 1918, 1920, 1923, and 1926, each succeeding production peak showed a lower level of employment. This is not quite so marked in anthracite production. Production declined after 1917, but the output per man-hour and employment did not change markedly until after 1929. Since 1929, production has dropped to two-thirds, but man-hours had declined to less than half of the 1929 figure.³⁵ The indices for production employment and the

³³C. Warren Thornthwaite, *op. cit.*, p. 28.

³⁴Corrington Gill, in Letter of Transmittal in David Weintraub, *op. cit.*

³⁵David Weintraub, *op. cit.*, p. 16.

TABLE 47.—Indices for Bituminous Coal Mining in the United States 1929 = 100

Year	Production	Employment	Man-hours	Output per	
				Wage Earner	Man-hour
1919	87.1	119.0	109.6	73.2	79.5
1929	100.0	100.0	100.0	100.0	100.0
1937	83.3	108.8	74.7	76.6	111.5
1938	64.4	86.2	59.1	78.7	109.0

TABLE 48.—Indices for Anthracite Coal Mining in the United States 1929 = 100

Year	Production	Employment	Man-hours	Output per	
				Wage Earner	Man-hour
1919	119.3	101.4	120.6	117.7	98.9
1929	100.0	100.0	100.0	100.0	100.0
1937	70.2	60.7	50.3	115.7	139.6
1938	62.4	53.6	42.4	116.4	147.2

productivity in bituminous and anthracite mining shown in Tables 47 and 48.³⁶

The marked increase in output per man in bituminous coal mining is clearly expressed by the statement that in 1890, the output per man per day was 2.56 tons, in 1938, 4.89 tons. The corresponding figures for anthracite are 1.85 tons in 1890 and 2.79 in 1938.³⁷ The major factor in the increased output per man is in the use of machinery underground. In 1936, 80 percent of bituminous was undercut by machinery and 12 percent was mechanically loaded.³⁸ In West Virginia and Kentucky over 90 percent was undercut by machine, in Pennsylvania, only 77 percent.³⁹ Since the size of seams in large part determines the practicability of using machinery, Pennsylvania has suffered from higher comparative costs.

The pressure of competition will force increased mechanization of mines. As this occurs, except in so far as the richest seams become exhausted, the continuation of the trend toward greater output per man and, consequently, lowered relative employment will continue.

Summary by States

Although the 14 manufacturing industries considered above are the largest from the point of view of employment in the Region as a whole, they do not include all the leading industries in each State as shown in Table 25. For instance, of the 10 leading industries in New York State, newspaper printing and publishing is not covered. In Pennsylvania the glass industry is not discussed. Similarly, among the 10 leading industries of the other States, 5 of New Jersey's, 4 of Maryland's, 5 of Virginia's, and six of North Carolina's are not considered. Obviously, from the point of view of the several States, additional industries should be studied before an adequate analysis of the State's position could be presented. In order to analyze the major industrial communities of the Region, an even greater number of separate industries will have to be reviewed.

³⁶Ibid, p. 57 and p. 69.

³⁷Statistical Abstract of the U. S., 1940, p. 785

³⁸Pennsylvania State Planning Board, op. cit. p. 24.

In spite of the inadequacy of the sample, it seems desirable to summarize the effects on the industrially important States in the Region of the changes which are revealed in the data on the 14 industries and industry groups presented in Tables 30 to 43. The shifts in number of wage earners gained or lost between 1929 and 1939 are presented in Table 49. Table 50 shows for the 14 industries the percentage changes nationally and the trend of employment in each State in relation to the national trend.

As indicated in Table 50, each of the 5 apparel industries showed a higher national employment in the peak year of 1937 than in 1929, and each continued to expand in the period 1937 to 1939. The most rapid rise was in the women's clothing industry, and the least rapid in men's clothing and footwear.

Of the four other non-durable goods industries, bread is the only one that has been expanding in employment. Cotton, rayon, and silk textiles required somewhat fewer workers in both 1937 and 1939 than in 1929. Book and job printing showed a cyclical decline from 1937 to 1939 which was apparently an accentuation of a general downward trend indicated by the failure to recover to 1929 employment levels in the peak year of 1937.

In durable goods, cyclical variations are pronounced, particularly in the 4 metal industries, which experienced marked declines from 1937 to 1939. Disregarding cyclical changes, steel works increased their employment slowly,

TABLE 49.—Gain or Loss in Wage Jobs in 13 Selected Manufacturing Industries¹ in the United States and in States of the Middle Atlantic Region, Between 1929 and 1939.

Industry	(Number of Wage Earners in Thousands)							
	U.S.	N.Y.	N.J.	Pa.	Md.	Va.	N.C.	
Apparel								
Women's clothing	82	20	21	18	-2	(3)	(2)	
Hosiery	30	0	1	-7	x	3	23	
Shirts	11	-5	1	4	3	(3)	(2)	
Men's clothing	12	-2	4	7	2	(3)	(2)	
Footwear	12	-6	1	4	(3)	(2)	(2)	
Other Non-durable goods								
Bread, etc.	30	2	4	1	(3)	(3)	(3)	
Cotton Manufacture	-29	-1	-2	-5	(3)	5	18	
Rayon-silk fabrics	-11	-4	-13	-25	(3)	3	13	
Book and job printing	-26	-9	0	0	(3)	(3)	(3)	
Durable goods								
Steel works	4	0	-1	-4	4	(3)	(3)	
Foundry and machine shop products	-136	-20	-7	-21	(3)	(3)	(3)	
Motor vehicles	-50	-14	0	-6	(3)	(3)	(3)	
Furniture	-34	-8	x	-2	(3)	2	2	
Net Gain or Loss								
Selected Industries	-105	-47	9	-36	8	13	56	
Other Industries	-388	-60	-8	-61	11	14	9	
All Industries ²	-493	-107	1	-97	19	27	65	

¹Data on electrical machinery not available because of change in classification of radios between 1929 and 1931.

²Not shown on Tables 30 to 43 because industry is insignificant or data are lacking.

³Adjusted to conform to the 1939 Census of Manufactures by elimination of "Railroad Repair Shops" and "Manufactured Gas" from 1929 data.

TABLE 50.—Employment Trends in 14 Selected Manufacturing Industries, Percentage Changes in the United States and Comparative Trends in the States in the Middle Atlantic Region, 1929-39

Industry	Percentage Change in the United States			Trend in Important States in Region in Relation to U.S. Trend 1929-39 ¹						
	1929-39	1929-37	1937-39	N. Y.	N. J.	Pa.	Md.	Va.	N. C.	
Apparel										
Women's clothing	44	29	11	m	ppp	pp	mmm	(3)	(3)	
Hosiery	23	16	6	mm	p	mm	(3)	ppp	ppp	
Shirts	18	13	4	mm	m	p	ppp	(3)	(3)	
Men's clothing	8	6	2	m	pp	p	p	(3)	(3)	
Footwear	6	5	1	m	ppp	pp	(3)	(3)	(3)	
Other Non-durable Goods										
Bread, etc.	15	19	-4	m	pp	m	(3)	(3)	(3)	
Cotton manufactures	-7	-1	-6	m	mmm	mmm	(3)	ppp	pp	
Rayon-silk fabrics	-8	-10	3	mm	mmm	mm	(3)	ppp	ppp	
Book and job printing	-17	-7	-11	m	p	p	(3)	(3)	(3)	
Durable Goods										
Steel works	1	21	-17	m	m	m	pp	(3)	(3)	
Electrical Machinery	(2)	(2)	-17	m	p	m	(3)	(3)	(3)	
Foundry and Machinery shop products	-30	-5	-26	m	m	m	(3)	(3)	(3)	
Motor vehicles	-11	7	-17	mm	p	m	(3)	(3)	(3)	
Furniture	-18	-12	-6	m	(3)	p	(3)	ppp	pp	

¹Key: p—Trend 0-25% above U.S.; pp—Trend 25-50% above U.S.; ppp—Trend 50% or more above U.S. m—Trend 0-25% below U.S.; mm—Trend 25-50% below U.S.; mmm—Trend 50% or more below U.S.

²Not available because of change in classification of radios between 1929 and 1931.

³Not shown on Tables 30 to 43 because industry is insignificant or data is lacking.

whereas foundry and machine shops slumped badly. This apparent slump may be due to lack of data in the 1939 *Census of Manufactures* on certain segments which make up this industry group rather than an actual decline in employment. Data on electrical machinery and motor vehicles is in the one case not available, in the other inconclusive for determining the general trend since 1929. In the furniture industry, employment is gradually declining.

Against this background of national trends, the behavior of these industries in each State will be briefly considered. Although the period 1929-39 is too short to indicate long-term trends, and although there was a cyclical decline in some industries between 1937 and 1939, the period 1929-39 is probably as adequate as any which might be selected for indicating recent changes.

In New York State, all of the industries listed in Table 50 were losing employment relative to national trends, motor vehicles and foundry and machine shop products particularly heavily. Numerical gains of 20,000 wage earners in women's clothing, and 2,000 in bread and other bakery products, were not sufficient to make the State percentage gains in these industries as high as those for the Nation. Losses in the 11 other industries listed in Table 49 offset these gains and resulted in a net loss of 47,000 wage jobs in the 13 industries covered. These industries represent about a quarter of the State's manufacturing

workers, but account for nearly half of the total loss of manufacturing employment in the State between 1929 and 1939.

In New Jersey, largely because of a relatively small cyclical drop between 1937 and 1939, total manufacturing employment was slightly higher in 1939 than in 1929. A gain of 21,000 wage earners in women's clothing and bread probably represent dispersion from New York City. Other industries which increased in New Jersey more rapidly than in the Nation were motor vehicles, electrical machinery, and book and job printing. Gains in these industries were partly offset by losses of 13,000 wage jobs in rayon and silk, 7,000 in foundry and machine shop products, and a slight decrease in steel and cotton goods.

There were also losses in other industries not listed. In general it appears that New Jersey has maintained its industrial employment as compared with substantial losses in New York largely because of suburban decentralization from New York City.

Manufacturing employment in Pennsylvania dropped 10 percent between 1929 and 1939, the same percentage decline as in New York State.² Major losses were in rayon and silk fabrics and foundry and machine shop products. There were also losses in hosiery, motor vehicles, cotton manufactures, steel works, and furniture. The loss in hosiery, 7,000 wage earners, represents a rapid rate of decline in the industry in this State in view of the rapid rise nationally. Major gains in employment in women's clothing and smaller gains in men's clothing, footwear and shirts represent increases of these expanding industries in the State at rates more rapid than in the Nation. This was apparently at the expense of New York State. The 12 industries covered account for nearly half of Pennsylvania's manufacturing employment. However, the net loss of 36,000 wage jobs in these 12 industries represents little more than the State's employment losses in all manufacturing industries. In other words, these 12 industries are holding up better than others in the State.

For Maryland, data on only four industries are given. Three of these, steel works, shirts and men's clothing, have increased their employment in Maryland more rapidly than in the Nation as a whole, particularly rapidly in men's clothing and steel. These gains are partly offset by a small loss in women's clothing as compared with a rapid rise nationally in this industry. The total gain of 8,000 wage jobs in these four industries which account for only a quarter of the manufacturing employment in the State, represents nearly half of the total gain of 19,000 wage jobs in all manufacturing industries in the State between 1929 and 1939. Thus all industries in Maryland combined, except the four analyzed, increased in employment about 10 percent while those 4 industries showed an increase of more than 20 percent between 1929 and 1939.

²See Table 28, of this report.

For Virginia and North Carolina, data is given for the same four industries in both States: cotton manufactures, hosiery, rayon and silk fabrics and furniture. All four of these industries have expanded very rapidly in these States as compared with national decreases in all except hosiery. Gains in hosiery have been particularly large in North Carolina which employed 23,000 more wage earners in this industry in 1939 than in 1929. Including a gain of 3,000 wage jobs in Virginia, these two States combined accounted for 90 percent of the national increase in hosiery employment. This disregards, of course, offsetting gains and losses in other States. Gains in cotton manufactures and rayon and silk fabrics were also large in North Carolina, and of lesser magnitude in Virginia. Gains of 2,000 wage jobs in furniture in each state are significant when contrasted with a national loss of 34,000 wage earners between 1929 and 1939. These four industries account for less than a quarter of Virginia's manufacturing employment, but for nearly half of the gains between 1929 and 1939. In North Carolina the four industries account for two-thirds of the manufacturing jobs and nearly nine-tenths of the gain in employment between 1929 and 1939.

In these brief analyses of the important manufacturing States in the Region, the industries analyzed cover only a portion, in four States only a quarter, of the total manufacturing jobs. Except in Pennsylvania, however, their significance as indicators of major sources of gains or losses in employment is greater than the portion of all manufacturing represented would suggest. With the addition of several more industries, a fairly adequate analysis of the industries occasioning significant shifts in manufacturing employment in the States of the Region could be obtained.

Stabilizing Influences on the Industrial Pattern⁴⁰

Although the industrial pattern of the Nation was set fifty years ago in its main essentials, there have been certain marked deviations such as the growth of the Illinois-Indiana steel area and the movement of textiles and hosiery to the South.⁴¹

The reasons that the overwhelming number of industries are essentially in the same area as they were at the beginning of the century are forces both inside and outside the industries themselves. Among the inside forces are the need of holding trained supervisory personnel and skilled labor, established marketing methods, investments in plant and equipment, and geographical influences. Outside forces include trade union activities and legislation to equalize wages

⁴⁰In a consideration of changes, movements taking place within a reasonably narrow area should be distinguished from regional shifts. The suburbanization of industry has gone on for a long time. This type of movement, whether interstate or not, is not here discussed.

⁴¹National Resources Committee, *The Structure of the American Economy*, Part I, 1938, p. 58-59.

and working conditions. Perhaps most important of all is normal human inertia.

The power of this inertia is shown by the maintenance of major steel plants at locations that would seem far from ideal. Bethlehem Pennsylvania, is an example. When Bethlehem was started, there was adequate and readily available iron in northwestern New Jersey and in eastern Pennsylvania. Most of this iron ore cannot at present compete with that from other sources. Heavy investment in equipment and buildings, and accessibility to the Eastern markets were factors in the plant remaining. The fact that specially skilled workers had their roots in the community undoubtedly also played a part.

Another example of regional, although not community, stability in the steel industry is the erection of a new modern steel plant in the Pittsburgh district replacing the outmoded New Castle, Pennsylvania, plate mills, indicating that availability of raw materials, transportation facilities, markets, financial exigencies and administrative convenience within a giant corporation, exerted controlling pressures for regional stability.⁴² The war demand for steel has temporarily changed the situation.

It has been frequently emphasized that industry moves more readily than workers.⁴³ Moreover, it is young people who move, and not the skilled workers and members of the supervisory force who are older.⁴⁴ The situation of the older workers in the coal counties of the Region is proof of this statement. At many points the coal industry has disappeared, but the former workers have stayed. In Virginia and North Carolina mobility of labor appears to be greater than farther north. For many decades migration by young people to southern cities and to the north has been common. To a greater or less degree throughout the Region, however, home ownership, established social ties, and lack of familiarity with other areas tend to hold workers in a particular community. Moreover, specialized techniques of industry, and the specialized skills developed to fill particular jobs, limit shifts from skilled or semi-skilled work in one industry to jobs of corresponding skill or wage rate in another. Workers are often loathe to undergo the necessary extensive retraining and accompanying loss of income. In addition, the uncertainty of the duration of much war work retards shifts from peace time industries.

Frequently the long established trade habits of an industry hold it in a certain locality as in the case of women's wearing apparel. Because New York is the main trading center, that industry

⁴²Even had the new plant been located at New Castle, there would have been approximately the same serious effect on that community, since the new plant required relatively few workers compared with the thousands needed at the old plant. The loss of thousands of jobs at New Castle was thus due primarily to technological rather than locational factors.

⁴³National Resources Committee, *The Structure of the American Economy*, Part I, 1938, pp. 117-118.

⁴⁴Dorothy Swain Thomas says, "... internal migration is selective of young adults; the direct analyses further indicate a very narrow age range within which this selection occurs." *op. cit.*, p. 182.

remains in or near there. Although individual plants have moved into New Jersey and eastern Pennsylvania, New York City's control is still effective because buyers are accustomed to coming to the New York market and because the speed with which successful styles must be adapted to price ranges makes essential a central market. It also follows that auxiliary industries--millinery, furs, and the rest--must be located in or near New York City.

The geographical reasons for an industry not moving are obvious. For instance, shipbuilding must be concentrated in certain well-defined areas. The plants were originally located on navigable rivers, not far from the ocean, or protected harbors; once established, they remained because the choice of possible locations was limited.

Another important pressure from outside an industry has been the efforts of trade unions to establish national standards of wages and working conditions. Labor costs between different sections of the country have been an important cause for the relocation of industry. To the extent that union pressure has been successful in securing greater uniformity, this cause for movement is removed. Another way in which the movement of industry because of wage differentials has been minimized is illustrated in the full-fashioned hosiery industry. The union's attempt to secure national standardization has been tempered by a willingness to adapt demands to local situations and operating conditions of individual businesses. Union wage rates for individual plants are often set with due consideration for maintaining the competitive position of the firm so that it will not be forced out of business or to move. Such modifications of the national wage scale are permitted by the Union on condition that employers exert all possible energy in the direction of installing new equipment so that they can maintain their competitive position against newer mills. This policy is designed to discourage further movement of the hosiery industry.⁴⁶

An example of a strong union's attempt to eliminate regional wage differentials is found in the bituminous coal industry. In reaching the Bituminous Coal Agreement of 1941, the major disagreement was over a lower wage scale for Southern fields.

The strength of unions in certain industries has tended to stabilize the industrial pattern in two other ways. "Run-away" shops, ones which have sought to escape restrictions by leaving a unionized community, have found that the union could follow them and usually does. Consequently, the purpose of the change of location has usually not been successful. Another way in which union activity results in geographical stability is illustrated in the women's clothing industry, where the International Ladies' Garment Workers' Union is cooperating with employers in New York

City to maintain it as the Nation's style center in order to provide employment for workers there. Their recent agreement with employers provides for an advertising fund, better methods of management, and active help by the union for more effective operation.⁴⁶

The first attempt on a Nation-wide basis to equalize working conditions by law was the Federal Child Labor Amendment. Although not adopted, it laid the basis of the National Industrial Recovery Act and for the Fair Labor Standards Act. The latter sought to establish minimum wages and hours. Although the present wage minimum is low, it tends to raise wages of the lowest group. For instance, in a group of identical establishments in 20 representative industries surveyed by the Bureau of Labor Statistics, the proportion of adult male common laborers receiving an entrance rate of less than 30 cents an hour in the South and Southwest in 1940 was only 2.5 percent as compared to 49 percent in 1939.⁴⁷ As the wage minimums increase over a period of years as provided by the law, it will have a tendency to fix the present industrial location pattern, in so far as wage differentials are a factor. The law has been in force for too short a time to determine definitely the results.

Human inertia coupled with long-established ties make most individuals unwilling to "pull up stakes". This applies to the executives of organizations as it does to the workers. Numerous individual instances might be cited where the attitude of an executive seemed a factor in keeping a business from moving. Whether or not it was the sole or controlling factor cannot be established, of course.

Even in the industries which have shown movement, shifts are largely in the form of reduced employment or closing old businesses in one location and increasing employment or opening new businesses in another location. The very minor part played by actual transplanting of businesses from one area to another is indicated by the fact that within three consecutive two-year periods from 1928 to 1934, the percentage of all wage earners in the United States in relocated businesses as reported to the Bureau of Census ranged from 34/100 to 36/100ths of one percent in each biennium.⁴⁸ Thus, even if all changes had been in one direction, the alteration of the locational pattern would not have been appreciable.

The industries that have had important shifts in plant locations appear to be essentially of two types. Branch plants have been opened by expanding corporations, and new businesses in different locations have been opened largely in industries which required relatively light machinery, in which machinery was not of prime importance, or which require essentially semi-skilled or

⁴⁶Three-year agreement for the New York dress industry, signed February 18, 1941. For discussion, see *Women's clothing* above.

⁴⁷Entrance Wage Rates of Common Laborers, *Monthly Labor Review*, Bureau of Labor Statistics, January 1941, p. 22, Table 8.

⁴⁸Carter Goodrich, et al., *op. cit.*, pp. 339-340.

⁴⁶Union-Management Cooperation, *Monthly Labor Review*, Bureau of Labor Statistics, June 1941, p. 135B.

unskilled workers. For most industries, however, the pressures against moving are stronger than those that make for change of location.

War Activities as a Pressure on the Pattern⁴⁹

Any major change in the national economy affects all industries, although not every industry equally. As previously pointed out, this is true of periods of depression and those of prosperity, of long-time periods of rising prices and those of falling prices. Major changes in the emphases of production, such as result from the war program, have marked although uneven effects on industries.

Although the Region had 36 percent of the nation's manufacturing wage earners in 1939, it had received as of April 1, 1942, less than 26 percent of the nation's war contracts and facility projects, and, of the new war industrial facilities alone, only 22 percent (see Table 52). In part, this may be accounted for by the policy of the War Department to locate new explosive plants more than 200 miles from the coasts, which policy, of course, rules out much of the Region. Also, the

⁴⁹This section deals essentially with industries. Other effects of "defense changes" are discussed in Part IV of this Report.

War Department prefers, if possible, to place other new industrial facilities, particularly airplane plants, more than 200 miles inland. For a variety of reasons, however, large new plants have been located near such coastal cities as New York, Philadelphia, and Baltimore.

Qualifications must be used in interpreting war contract data. Subcontracting is not included, nor do contract figures reveal the location of a considerable production of basic war materials (such as steel). Also, contracts are sometimes shown as being placed at the head office of a business although the work may actually be done at one or more plants in other locations.

It should also be noted, by way of explaining the relatively low share of war work in the Region, that the huge volume of small business and light industry in New York City has participated hardly at all in war production, certainly so far as supply contracts and facilities projects are concerned.

The counterpart of the rapid expansion of explosives production in certain inland states is the shipbuilding boom on the Atlantic coast. Table 51 shows that the Region has had almost 36 percent of all supply contracts for shipbuilding, and this is reflected in huge increases in employment at all of the Eastern shipbuilding

TABLE 51.—Distribution of Major Prime Supply Contracts and Facilities Projects of the Army, Navy, and Maritime Commission By Industrial Areas, June, 1940, through March, 1942
(thousands of dollars)

	Total: Supply Contracts & Facilities Projects	Supply Contracts				Facilities Projects		
		Total	Aircraft	Ships	All Other	Total	Indus- trial	Non- indus- trial
Albany-Schenectady- Troy	501,285	460,136	19,040	...	441,096	41,149	28,166	12,983
Alexandria	94,198	2,193	...	237	1,956	92,005	16,708	75,297
Allentown-Bethlehem	193,987	132,546	...	...	132,546	61,441	61,441	...
Baltimore	1,151,189	1,015,306	536,787	316,390	162,129	135,883	128,549	7,334
Binghamton	43,803	43,480	...	...	19,891	323	323	...
Bloomsburg, Pa.	127,108	123,192	...	242	122,950	3,916	3,416	...
Buffalo	1,472,827	1,277,697	1,154,265	4,015	114,417	195,130	194,539	591
Camden	630,991	576,576	...	534,403	42,173	54,415	31,583	22,832
Dover	20,384	17,004	...	...	17,004	3,380	2,542	838
Erie	71,688	35,439	566	1,724	33,649	35,749	35,749	...
Indianhead, Md.	7,080	...	...	...	...	7,080	5,945	1,135
Johnstown	881	881	...	...	881	...	...	...
Nassau, L. I.	530,281	466,836	461,213	4,636	987	63,445	57,217	6,228
New York City	1,109,112	866,304	37,468	134,876	693,960	242,808	197,350	45,458
Newark-Jersey City	2,251,036	1,961,343	928,385	384,171	648,787	289,693	232,477	57,216
Norfolk-Newport News	718,525	490,046	...	486,966	3,080	228,479	117,472	111,007
Philadelphia	1,333,372	1,005,928	68,042	375,425	561,961	327,445	293,221	34,224
Pittsburgh	773,452	420,849	54	92,402	328,393	352,603	352,569	34
Radford-Pulaski	111,795	25,165	...	...	25,165	86,630	86,630	...
Reading	42,464	28,653	212	...	28,441	13,816	13,816	...
Richmond	50,437	4,127	...	...	4,127	46,810	14,500	32,310
Rochester	168,115	145,285	...	...	145,285	22,830	22,830	...
Scranton-Wilkes- Barre	16,129	16,124	114	...	16,010	...	...	...
Syracuse	103,106	40,104	...	...	40,104	63,002	43,850	19,152
Trenton	218,825	203,894	180,022	...	23,872	14,931	14,931	...
Utica	134,492	87,668	...	...	87,668	46,824	18,582	28,242
Williamsport	60,185	53,750	51,124	...	2,626	6,435	6,435	...
Wilmington	80,710	61,033	61	37,400	23,572	19,677	13,726	5,951
York-Harrisburg- Lancaster	177,620	111,672	615	...	111,057	65,948	31,179	34,769

Source: War Production Board, Statistics Division, *Summary of War Supply and Facility Contract by Industrial Area, April 28, 1942.*

NOTE: Certain of the Region's war contracts and new facilities are located in places not within any of these "industrial areas", and therefore are not included in this tabulation.

areas. Of course, this expansion does not create a new industry, but merely revives an old one to previously unreachd peaks of production.

Aircraft expansion has also been very important in certain parts of the Region, in some places representing an entirely new industry, in others a very rapid increase in workers to as high as five and even ten times pre-war employment of airplane firms. In addition to large assembly plants, many new or converted facilities are producing motors, instruments, and parts of various types.

Table 53 indicates the importance that aircraft, shipbuilding, and other industries producing transportation equipment for the war machine are assuming in three of the Region's large industrial centers.

Many consumers' durable goods industries have, of course, been sharply curtailed in the Region. Generally speaking, however, these industries are subsequently being converted to war production, as for example, the typewriter, business machine, and automobile industries. Such curtailments and conversions do not necessarily reflect future changes in the industrial pattern, since most industry is held in place preparatory to re-conversion to civilian production. The extent to which these civilian industries will be displaced by similar manufactures in new centers after the war is a matter for some speculation, but there are no present indications that this will happen on a large scale.

The smaller plants may, in the long run, be affected by the war program more than the larger ones. Those which normally make consumers' goods will feel the effect of priorities and of curtailed consumption most seriously. With the loss of their usual markets, they will increasingly devote their activities to the making of war materials and after the emergency, may find it difficult to reestablish their old outlets.

An exception to the general policy of locating ordnance plants further inland has been the establishment of plants in the Area of Virginia. Employment at these plants

TABLE 53.—Estimated Percentage of Manufacturing Employment in Aircraft, Shipbuilding, etc., in Three Selected Areas, end of 1942

	Philadelphia-Camden	Baltimore Area	Buffalo-Niagara
Shipbuilding	10 percent	15 percent	...
Aircraft	3 "	20 "	35 percent
Tanks, trucks, etc.	7 "	...	...
TOTAL	20 percent	35 percent	35 percent

Source: Estimated from U.S. Employment Service data. Industrial Areas as defined by Census of Manufactures.

will reach approximately 15,000, and is providing manufacturing employment for the first time to a large number of Virginians in this area. Other ordnance plants, proportionately somewhat less important in their respective areas, are located in northwestern Pennsylvania, central Pennsylvania, and northwestern New York. Expansion of ordnance production in the area between Baltimore and Wilmington, Delaware is also significant. Small arms ammunition production in western Maryland is creating another large volume of employment which is likely to be temporary. While these new ordnance facilities do not make much of an impression on the total industrial pattern of the Region, they are in a few cases very important to the economies of particular areas.

Most other industrial areas of the Region have been affected quite differently by the war program, which in most cases has merely stimulated existing industries (including shipbuilding). The Albany-Schenectady-Troy area has had approximately 20,000 workers added to its manufacturing employment rolls, mostly in its large, expanding electrical industry. An arsenal in the area has also been expanded.

In the Utica area, there has been one large new plant facility, to manufacture guns, with an employment of 5,000 to 6,000. Supply contracts drawing on the production of Utica's existing plants have been numerous. The same holds true for Binghamton's large shoe industry. There has also been a large-scale conversion of the International Business Machine Company in this area.

TABLE 52.—Distribution of Major Prime Supply Contracts and Facilities Projects of the Army, Navy, and Maritime Commission by State, June 1940, through March, 1942
(thousands of dollars)

	Total	Supply Contracts				Facilities Projects		
		Total	Aircraft	Ships	All Other	Total	Industrial	Non-Industrial
New York	4,585,284	3,791,886	1,864,973	164,645	1,762,268	793,398	628,395	165,003
New Jersey	3,196,144	2,802,954	1,108,407	921,204	773,343	387,190	282,200	104,990
Pennsylvania	3,168,920	2,088,206	122,600	470,929	1,494,677	1,080,714	959,903	120,811
Delaware	82,929	61,648	61	37,718	23,869	21,281	14,000	7,275
Maryland	1,363,321	1,109,501	577,502	320,380	311,619	253,820	183,247	70,573
Virginia	1,085,041	544,041	...	487,819	56,222	541,000	223,325	317,675
North Carolina	417,478	195,894	...	131,942	63,902	221,584	13,557	208,027
Regional Total	13,893,117	10,604,130	3,673,543	2,534,687	4,385,900	3,298,987	2,304,627	994,354
National Total	53,898,311	36,567,906	14,112,787	7,099,955	15,355,164	17,240,405	10,676,934	6,563,471
Percent of National Total	25.8	29.0	26.0	35.7	28.6	19.1	21.6	15.2

Source: War Production Board, Statistics Division, State Distribution of War Supply and Facility Contracts, April 28, 1942.

Buffalo has been especially crowded with war work, since in addition to the expanded operation of its steel and machinery production, two large aircraft facilities have been located in the area and an automobile assembly plant has been converted to war production. Total manufacturing employment in the Buffalo-Niagara area is expected to rise from 130,000 at the beginning of 1940 to 230,000 by 1943.

Syracuse, Elmira, and Rochester have received large contracts, but no radical change in industrial patterns has been effected. Much of the industry of these cities has been readily adaptable to war production, but there have been some conversions, as those of the Remington-Rand Company. Other upstate New York activity of importance is the aluminum ingot production in the St. Lawrence Valley area. Facilities have been greatly enlarged and are quite likely to provide a permanent basis for an enlarged aluminum fabricating industry in upstate New York.

In contrast to this picture of upstate New York is the industry of New York City, which has had a much smaller proportional increase in employment during the war period than the rest of the country. Consequently, there are about 300,000 to 400,000 jobseekers in the immediate metropolitan area, with many more expected to enter the labor market this June. Reasons for this situation are fairly obvious, since New York City's light manufacturing, especially the wearing apparel industry, is not adapted to the demands of war production. Furthermore, its industry is one of many small businesses, and the war program has been characterized by a high concentration of war contracts in the hands of the largest companies.

The industrial situation on Long Island is different, for the great aircraft expansion in Nassau county is increasing employment by about 20,000 to 30,000 workers. There is also some shipbuilding activity on the Island.

Northern New Jersey shows one of the greatest concentrations of war industry in the country. Shipbuilding, aircraft, and electrical machinery have all been greatly expanded. In 1941, about 125,000 workers were added to payrolls in the Newark-Jersey City area, making a total of 500,000 manufacturing wage-earners. Another 70,000 to 80,000 will be added in 1941. Trenton has had some industrial expansion and a large portion of supply contracts, but nothing like that of Newark-Jersey City.

Employment in the Philadelphia-Camden area has been greatly increased by the war program, especially in shipbuilding, electrical machinery, and various metals manufacture. Indeed for Philadelphia, the war demands have meant a reversal of what appeared to be a downward trend, or at least a declining rate of growth, in manufacturing employment.

Pittsburgh's steel industry has been affected by the war program in excess of what is shown by the figures for new facilities projects and supply contracts. From 10,000 to 15,000 workers were added in 1941, and another 15,000 to 20,000

will be hired in 1942. Steel production facilities in other Pennsylvania areas have been similarly affected, and there have been large-scale hirings in Allentown-Bethlehem, Harrisburg-York, and Johnstown. And in New Castle, Pennsylvania, a steel plant which had been closed down because of its out-dated facilities, was reopened and 3,000 workers were hired.

Erie, besides expansions in steel, has been very active in the manufacture of electrical equipment. From 4,000 to 5,000 workers were hired in 1941, and about 6,500 more will be added in 1942. This is one of the most congested industrial areas in Pennsylvania.

Of apparent significance is the paucity of war work in the depressed anthracite area of Pennsylvania. No new plants have been planned so far for this anthracite area, and the supply contracts in Scranton and Wilkes-Barre have been quite limited in size. Unemployed miners are still found in the area, while many others have left for war work in other industrial centers. It may be said, therefore, that the industrial expansion program of the War has done nothing to change the downward trend of the anthracite area's economy. Possibilities still exist, however, for a new war industry to be located in the area.

In addition to the explosives plants already mentioned in connection with Wilmington, Delaware, there has also been a great shipbuilding expansion in the area. Baltimore, too, has had great shipbuilding activity, besides a very large new aircraft development. Approximately 40,000 to 50,000 new workers will be hired in and about Baltimore in 1942. Western Maryland also has an aircraft expansion, involving ultimately about 6,000 workers in the Hagerstown area.

Of all the areas in the Middle Atlantic Region, the Hampton Roads cities are most dependent on a single war industry--shipbuilding. The immigration of workers to Norfolk and Newport News has been very great, not only to the private shipbuilders but also to the Navy Yard. Thousands of sailors and soldiers are also at bases in this area. The number of new shipbuilding workers in the area is difficult to estimate, but there must be 30,000 to 40,000 new workers now employed, (1942) with about 20,000 yet to be hired this year.

Richmond, on the other hand, has had no great industrial expansions. Other inland cities in Virginia and North Carolina are in somewhat the same situation, since Roanoke, Charlotte, and Durham have received no new plants of appreciable size. The textile towns, of course, are busy on army quartermaster orders, but hosiery centers have suffered and the furniture industry will be seriously affected. In Burlington, N. C., an aircraft plant is being located, now scheduled to employ 1,000 workers, but likely to be expanded at a later date.

Wilmington, N. C., has had a large shipbuilding boom, which has caused the hiring of 4,300 new employees in 1941 and the expectation of adding at least 3,000 more in 1942.

PART IV
FUTURE CHANGES IN THE INDUSTRIAL PATTERN

Major Industries

The level of industrial employment in any region or community is largely dependent on national factors, such as the amount and distribution of national income, the volume of expenditures for war, and national fiscal policies. Technological changes which lower prices, widen markets, or introduce new products, and national and international policies affecting foreign markets and trade, are also important. The striking increase of productivity per man-hour is another national factor that will have marked effect on work opportunities. The determination of the effects of such factors on the national level of employment in various industries is not discussed. In this section, tentative conclusions are drawn as to the probable proportion of each of several major industries that will obtain in the various parts of the Region, if factors apparent in the pre-war period are controlling in the post-war economy.

Apparel

The women's clothing industry is centered in the New York City area. Competition of other sections of the country is keen, but the industry will probably not move because of the style elements and marketing methods. The present process of suburbanization, if the term is used to cover reasonably wide areas, will continue. Contract shops will continue to move to New Jersey and Pennsylvania. Men's wear has never been as concentrated as women's, although New York has dominated the industry for many years. Except for minor shifts evident during the past few years, between a few major manufacturing centers, no essential change is in sight. Recently, Chicago has lost to Philadelphia and to Baltimore.

The shift in hosiery from Pennsylvania to North Carolina, in process for 10 years and increasing more recently, will probably continue. It may be intensified with the increasing use of nylon because of the more modern machinery in the southern mills. On the other hand, a few businesses have returned to the North apparently because of higher wage costs per unit of output in North Carolina and Tennessee in spite of lower hourly wages.

The smaller apparel industries such as millinery, furs, and neckwear will probably remain in or near New York. Indications are that shirts will be made to an increasing extent in smaller towns.

Although all these are comparatively mobile industries because of light machinery and independence of local raw material, there has been no major shift except in the case of hosiery from one section to another. The women's wear industries have remained fixed for over fifty years. If they should move, they would probably have to

move as a unit in order to maintain a centralized wholesale market. Men's clothing has remained close to a few centers. The spreading of shops to smaller communities is essentially a phase of the suburbanization movement and not of change of sectional location.

The situation in the footwear industry is different. The style element is not as important in much of the output. As indicated, the fact that most of the machines are rented from two companies makes movement relatively simple. The scattering of the industry from centers in Massachusetts and New York has been going on over a long period. It will probably continue, with loss to New York and slight gains to other states in the Region.

Other Non-durable Goods

Bread has a tendency to follow urban population. It is probable that this process will continue. There may be a proportionate loss of jobs in the Northern states as this industry develops in the South, where it is now of less importance relatively than in the more highly urbanized sections of the country.

The future of slaughtering and meat packing is difficult to foretell because of the marked recent trend toward dispersion.¹ The industry will probably not decrease in the Region. It may increase if the process of decentralization from major midwestern centers continues.

In the cotton textile industry, the few mills in New York State seem to be losing ground. The shift within the southern States by which North Carolina and Virginia have gained in the last decade, especially between 1937 and 1939, at the expense of the other states, has not been investigated; therefore, no prediction as to the future course of the industry within this section can be made at this time.

Rayon and silk spinning, throwing, and weaving have shifted their location a number of times. Originally, Paterson, N. J., controlled the American broad silk market. The industry moved to eastern Pennsylvania to tap a readily available labor supply. Then a large section moved to the South, especially to North Carolina and a lesser portion to Virginia. Just prior to the shutting off of silk imports there was a movement of some plants back to Pennsylvania. It is too early to determine whether this last move is significant. Whether natural silk will ever be of major importance again is problematical.

¹ See National Resources Planning Board, forthcoming report, *Locational Policies for Industrial Development, 1942.*

New York and Pennsylvania have had a disproportionate share of printing and publishing. As job printing tends to follow general business and advertising centers, employment in this group will probably not increase in these States. As long as New York City remains the metropolis, it is probable that publishing will be located there.

Durable Goods

The movement of steel production away from the East seemed to have ended even before the development of the war program. Pennsylvania almost held its own during the depression years. Maryland gained and New York lost slightly. The installation of large improvement programs in the Pittsburgh, Baltimore, and Buffalo mills indicates that steel for the Eastern markets will continue to be made at these points. The future of the smaller steel centers is not clear. Whether they are equipped to meet the normal demand of the post-war market is problematical. The location of the demands in the future and the types of product that will be required will in large measure determine the future of steel production in all except the major centers in the Region.

Because of the wide variety of products grouped under electrical machinery and foundry and machinery products, it is impossible at this time to make reasonable predictions as to the future. Analyses of the various types of manufactures are needed, so that sound prognoses can be made for these industries and the many communities in which they are an important basis of employment.

Changes of location of the furniture industry will depend, in large measure, on the relative importance of the materials used, wood or metal and on the availability of raw materials. The industry has expanded in North Carolina because lumber was readily accessible and labor costs were low. If metal furniture should become more generally used, centers of metal furniture manufacture, such as Jamestown, New York would become relatively more important.

The motor vehicle industry has been of only minor importance in the Region. The pre-war trend was toward increasing centralization in Michigan. There is no indication that after the war the Region will appreciably increase its share of the industry. The war has raised aircraft and shipbuilding from relatively small to dominant industries. No examination of the post-war outlook or locational pattern of these industries is here attempted. Studies of this type are going forward in several agencies.

Coal

Because of war needs, coal production and pay-rolls are now considerably higher than they have been for several years.

The post-war future for employment in coal mining, however, is not bright in the Region except in limited sections close to steel-producing areas. If there is a readjustment of freight rates so that ton-mile rates are substituted for

present differentials, this situation would not hold true. Governmental encouragement of export of coal, provided freight rates are adjusted, would help the Pennsylvania and Maryland fields. Furthermore, equalization of wage rates may put the Pennsylvania industry in a better competitive position. In the more distant future, if new major oil supplies are not discovered, coal will again come into its own and, with the exhaustion of the most valuable veins in West Virginia and Kentucky, the older fields will be used again. Another development that would assist the major coal areas in this Region is the improvement of electrical transmission so that pitmouth production of electricity in the anthracite districts for use in the coastal areas will be practical. An offsetting factor would be a reduction in the amount of fuel used by railroads in hauling coal to electric generating stations.

Effect on Communities

Suburbanization

Within the three States, New York, New Jersey, and Pennsylvania, there has been no appreciable shift of industries away from the major industrial areas, but a marked movement within metropolitan areas from the central cities to the surrounding suburban areas is evident.² Similar trends are going on throughout the country and in the part of the Region south of the Mason-Dixon line.

Indications are that the trend from major cities to their environs will continue, seriously affecting the financial stability of cities, but only to a minor extent affecting the individual worker. Workers will follow their jobs within the same area. An example of this was the movement of the Baldwin Locomotive Works from the center of Philadelphia to the outskirts of Chester (15 miles). The vacated buildings have been demolished and the site used for parking lots. Most of the employees retained their positions.

Many new war plants or plant extensions, particularly those for aircraft production, have been located several miles beyond the built-up sections of cities. This war-time suburbanization will be important in the post-war period to the extent that these suburban plants continue their present production or convert to peace-time products.

War Production

Many communities in the Region are being seriously affected by the rapid expansion of airplane manufacture, powder plants, shipbuilding, and other war production, as has been outlined in the section on war activities. Except where a plant changes from peace to war production, new employees must be found. If the local labor supply and training program do not meet the need, workers

²This is indicated in Appendix G. The whole Region is not covered in this Table because of the classification of figures in the source used.

must be brought in. Problems of housing, transportation, utilities, recreation, and educational facilities are intensified.

An extreme community situation arises when a large plant is placed in a community that is not prepared to handle it, as in the case of the new powder plant at , Virginia, and the shipyard development at , N. C. In obtaining a supply of workers, the war industries tend to drain men from small existing industries of these areas. Rents soar. There is an absence of public facilities of all types. Extreme cases such as these, however, are exceptional in this Region.

Similar problems, but not as overwhelming, are raised by the development of new plants in a suburban location. Examples are the airplane plants near

, to which most workers commute by automobile. As local sources of labor are exhausted, new workers coming into the area require adequate housing at reasonable rents. This has been provided in only limited amount by private and public building. Furthermore, as tires wear out, serious transportation difficulties arise, since only a small proportion of workers are now or can be housed within walking distance. Many adjustments in public transportation are required.

The "single industry town" also presents difficulties if a large number of workers are added. Bethlehem, Pennsylvania, is an example. Employment in this community has been irregular at all times. It had a major boom during the last war. Because weekly hours have been reduced since that time, a larger number of workers will be required than at the last period of peak employment. This will cause an extra strain on housing, educational, and other facilities.

Certain cities have been resuscitated by war production contracts. Examples of these are Paterson, Kearny, and Hoboken, New Jersey. Until labor needs began to exceed available supply, such communities were not unduly affected. Now, however, shortages of labor, housing, transportation, and other effects are being felt over a wide area in north Jersey. In many war production areas, housing shortages have developed as workers are imported. Further dilution of labor, a willingness to use women and Negroes, and the breakdown of prejudice against the descendants of certain foreign-born groups can reduce the need for bringing new workers. To the extent that employers thus modify their habits and workers overcome fears and hostilities, many threatening community problems will be relieved.

Increases of employment by war plants and layoffs in non-essential occupations have not been evenly distributed among various communities. Communities threatened with serious unemployment may suddenly obtain war work that will require more workers than before, as in the case of Jamestown, New York. On the other hand, in the summer of 1942, New York City with port and financial

activities already limited by the war was experiencing increasingly severe unemployment due to more recent declines in clothing and printing industries.

Each community experiences its own peculiar problems of adjustment. Each must be studied individually as well as in relation to the particular national and international trends that may be of controlling importance to each. Close collaboration between various levels of government and with private interests is necessary if pressing problems are to be met.

Long-Term Trends

With an appreciation of the changes within the major industries of the Region, in their location, in the productivity of workers and the changes due to the war production program, it should be possible to foresee some of the probable post-war effects of these changes on individual communities. The most dramatic of these changes are, of course, those connected with war activities. In all communities, however, even before the effect of the war effort, some industries showed increasing opportunities for employment over a period of years, others were declining. Adjustments within industries change their importance in the total community picture. The same is true of individual businesses. Sound planning for the future of any community must appreciate the existence of these trends and of their relation to the future of the community.

In general, it seems that except in special cases such as shipbuilding, war production will not materially change the permanent industrial picture of the Region. The temporary effect on many communities is marked, in some cases serious, but the post-war industrial pattern and its relation to that of the United States will not be markedly different from the present one. The use of existing plant facilities and the extension of "going" plants has the tendency to "freeze" the present pattern of industry. Whether the attempt to place new plants away from the seacoast will change the permanent dominance of the Region in most of the major industries will depend on the extent and kinds of industries affected. Industries supplying relatively limited peacetime needs, such as powder manufacture, and to some extent aircraft, as they tend to move toward the West, will not be as important in changing the post-war pattern as for example, steel, which has apparently expanded in the Region about as rapidly as outside. The Western areas will wish to retain any newly won footholds in the industrial picture, however, and without doubt, the Middle Atlantic Region may anticipate a more complex competitive struggle for position when peacetime conditions return. The Middle Atlantic Region, therefore, might lose relatively to other regions, even though it did not lose absolutely. Unless new industries develop or our economy advances to a greater production, the Region should anticipate

more than its share of problems.

A major over-all consideration is the slower rate of population growth of the northern states of the Region. Another is the trend in per capita income payments indicating a tendency toward equalization of the wide differential between the southern and northern States in the Region. In 1939, however, per capita income in New York State was still 2.7 times that in North Carolina.

State	Per Capita Income by States in the Middle Atlantic Region			
	1929	1933	1939	Percent decrease 1929-39
New York	\$1,130	\$654	\$825	27.0
Pennsylvania	756	408	575	23.9
Delaware	1,025	582	848	17.3
Maryland	695	423	595	14.4
Virginia	419	250	385	8.1
North Carolina	325	195	302	7.1

Source: "Income Payments by States, 1929 to 1939," *Monthly Labor Review*, Jan., 1941, p. 129. N. J. and D. C. omitted because of relatively large interstate commuting.

These trends coupled with the recent movements of industry suggest in the long run a more rapid rate of industrial development in North Carolina, Virginia, and the Baltimore area than in the North. Southern expansion of industries that follow population, consumers' goods industries such as textiles, shoes, and food products, will be in part at the expense of the large industrial concentrations in the North, which at present supply many of the needs of other sections of the country for manufactured goods.

The effects of these changes on individual communities will vary greatly. In forecasting the probable future of individual areas, industrial studies should be of direct aid. The following brief summaries and tentative conclusions are based on statistical analyses of the most significant elements in each locality and the balanced judgment of experienced observers or participants in the communities and industries considered. Although, in some instances too superficial to warrant more than tentative conclusions, they are here presented in order to illustrate the type of findings which can be reached by the approach and methods used.

The future of the coal communities, anthracite as well as bituminous, is not promising. In the latter fields, there are relatively few cities dependent predominantly on coal and the numerous ghost towns are small. In the anthracite counties are Scranton, Wilkes-Barre, and five other cities of 15,000 or more. Unless new industries should locate in these communities, they will continue to decrease in population. Textile industries offering employment for women and girls will not solve the major problem of middle-aged miners or of young men who would have succeeded them in the mines if the industry had flourished. Many younger people have left for jobs in war industries elsewhere, but pre-war problems will recur in the post-war period to the extent that migrants return to their home towns.

Among the steel centers of the Region, the Pittsburgh, Baltimore, and Buffalo areas seem the most secure. Employment in the others is less certain and, as in the past, may be highly irregular.³

The Pittsburgh area because of easily available coking coal, special rail lines to the Great Lakes, and proximity to Eastern markets, now that production seems to have become stabilized in relation to the country, will probably maintain its present position. The opportunities for employment in the post-war period are dependent on technological changes in the industry, the demand for steel products, and company policies and programs which will determine which plants will manufacture the material to fill specific orders during periods of "excess capacity."

Employment in steel at Baltimore has expanded far above the 1929 level. Baltimore's tidewater location makes the use of imported iron ore practical, and furnishes low cost water transportation for finished products to Atlantic, Gulf, and Pacific ports. Favorable location, together with the wide variety of products manufactured, holds promise for the future.⁴ Shipbuilding and aircraft manufacture now surpass steel in employment because of war contracts, but their post-war outlook is problematical. The general diversity of Baltimore's other industries, however, and the upward trend in port activity suggest a relatively favorable economic outlook.

Buffalo's steel development appears to be holding its position in the industry and should fare as well as other steel centers after the war. Great expansion in war plane plants threatens post-war stability. Electro-process industries at Niagara Falls and related industries are not likely to continue expansion at the previously rapid rate because low cost industrial power is becoming available at other points in the country. Less well diversified than Baltimore and subject to severe cyclical fluctuations, this area should be able to hold its share of the nation's industry, as in the past.

The Philadelphia-Camden area, on the other hand, although temporarily revived by shipbuilding and other war industries, has been suffering from a declining industrial base, particularly loss of textiles. Port activity, too, has declined.

An examination of Reading, Pennsylvania, a major hosiery manufacturing center, shows that the expansion of this industry up to 1937 compensated for losses of employment in steel products, hardware, and other manufactures that were formerly the industrial backbone of the city. Since 1937 and particularly since the beginning of the war, hosiery has lost ground. Even before the war, however, the increasing use of longer

³An exception is Johnstown which seems to have suffered less than other "steel towns" during the depression.

⁴Harry A. Grine, *Report on the Iron and Steel Industry of Maryland*, Maryland State Planning Commission, 1938.

wearing nylon and competition of North Carolina plants with newer machinery better suited to nylon threatened the Reading industry. To maintain its industrial employment after the war, Reading will probably have to depend on expansion of industries other than hosiery.

These thumb-nail sketches of the industrial future of selected communities are the result of applying information on locational factors in specific industries as outlined in this report to the experience of selected communities. Super-

ficial as this analysis has been of necessity, it does furnish tentative conclusions that can be checked by more detailed examination of local situations and more thorough study of specific industries and the pressures affecting their location.

Predictions arrived at in the manner indicated and checked against reasonably established criteria for successful industrial communities, can form the basis for sound community and regional planning.

APPENDICES

APPENDIX A

Migrations into New York, Philadelphia, and Pittsburgh Metropolitan Areas

	1910-20	1920-30		1910-20	1920-30
New York Area	828,257	1,574,927	Philadelphia Area	348,281	244,626
New York City	288,974	746,612	Delaware County	49,185	92,628
Queens County	148,163	571,659	Montgomery County	24,070	51,050
Bronx County	230,697	453,378	Camden County (N.J.)	53,610	42,734
Kings County	175,468	284,122	Atlantic County (N.J.)	37,926	37,102
Richmond County	23,908	36,029	Gloucester County (N.J.)	20,457	17,320
New York County	- 309,262	- 579,576	Bucks County	3,471	7,522
Westchester County	31,041	172,418	Burlington County (N.J.)	9,276	5,973
Nassau County	32,724	159,754	Chester County	1,602	3,293
Bergen County (N.J.)	136,975	129,744	Philadelphia County	148,684	- 12,996
Essex County (N.J.)	114,403	115,485			
Union County (N.J.)	88,411	77,880	Pittsburgh Area	128,803	36,031
Suffolk County	15,635	50,304	Allegheny County	60,374	56,596
Monmouth County (N.J.)	39,821	37,861	Beaver County	26,590	20,193
Middlesex County (N.J.)	30,812	26,433	Washington County	30,978	- 12,635
Morris County (N.J.)	25,541	24,355	Westmoreland County	10,861	- 25,923
Somerset County (N.J.)	14,678	14,007			
Passaic County (N.J.)	17,607	12,414			
Rockland County	- 3,179	12,038			
Hudson County (N.J.)	14,814	- 3,578			

Source: C. Warren Thornthwaite, *Internal Migration in the United States, 1924*, p. 29.

APPENDIX B

Industrial Areas in the Middle Atlantic Region and the Counties Comprising Them*

New York Industrial Area		Pittsburgh Industrial Area	
(New York City)	(In New Jersey)	Allegheny	Washington
New York	Bergen	Beaver	Westmoreland
Kings	Essex	Allentown-Bethlehem Industrial Area	
Queens	Hudson	Lehigh	Northampton
Bronx	Middlesex	Reading Industrial Area	
Richmond	Passaic	Berks	
Westchester	Union		
Buffalo Industrial Area		Scranton-Wilkes-Barre Industrial Area	
Erie	Niagara	Lackawanna	Luzerne
Rochester Industrial Area		Baltimore Industrial Area	
Monroe		Baltimore City	Baltimore County
Albany-Schenectady-Troy Industrial Area		Youngstown Industrial Area	
Albany	Schenectady	Lawrence, Pa.	Mahoning, Ohio
Rensselaer		Mercer, Pa.	Trumbull, Ohio
Philadelphia Industrial Area			
Philadelphia	Montgomery		
Bucks	Burlington (N.J.)		
Chester	Camden (N.J.)		
Delaware	Gloucester (N.J.)		

*As defined by the Census of Manufactures, 1929. See footnote 8, Part II, of this report.

APPENDIX C

Other Important Industrial Counties in the Middle Atlantic Region*

New York State

Broome
 Chautauqua
 Fulton
 Herkimer
 Montgomery
 Onandaga
 Oneida
 Orange

New Jersey

Mercer

Pennsylvania

Blair
 Cambria
 Dauphin
 Erie
 Lancaster
 Lebanon
 Lycoming
 Northumberland
 Schuylkill
 York

Delaware

New Castle

Maryland

Allegany

Virginia

Henrico, and Richmond
 City Norfolk, and Norfolk,
 Portsmouth and South Norfolk
 Cities Roanoke, and Roanoke
 City

North Carolina

Cabarras
 Forsyth
 Gaston
 Guilford
 Mecklenburg

*As defined by the Census of Manufactures, 1929.

See footnote⁹, p. 15 of this report.

APPENDIX D

Location of Manufacturing Wage Earners by States, Industrial Areas and Important Industrial Counties, in the Middle Atlantic Region, 1937

	Mfg. Wage Earners 1937	Percent of Region	Percent of State		Mfg. Wage Earners 1937	Percent of Region	Percent of State
NEW YORK Total	995,658	33.7	100.0	DELAWARE Total	21,092	0.7	100.0
New York Industrial Area ¹	528,848		53.1	New Castle County	17,292		82.0
Buffalo Industrial Area	105,722		10.6	Rest of State	3,800		18.0
Rochester Industrial Area	57,890		5.8	MARYLAND Total	145,932	4.9	100.0
Albany-Schen.-Troy Ind. Area	44,084		4.4	Baltimore Industrial Area	105,615		72.4
8 Important Indus. Cos.	139,373		14.0	Allegany County	15,208		10.4
Rest of State	119,941		12.1	Rest of State	25,109		17.2
NEW JERSEY Total	436,745	14.8	100.0	DISTRICT OF COLUMBIA	7,879	0.3	100.0
New York Industrial Area ²	319,497		73.1	VIRGINIA Total	132,643	4.5	100.0
Philadelphia Indus. Area ²	43,425		10.0	3 Important Indus. Cos.	38,181		28.8
Mercer County	23,368		5.4	Rest of State	94,462		71.2
Rest of State	50,455		11.5	NORTH CAROLINA Total	258,771	8.8	100.0
PENNSYLVANIA Total	954,340	32.3	100.0	5 Important Indus. Cos.	92,298		35.6
Philadelphia Indus. Area ³	302,128		31.7	Rest of State	166,473		64.4
Pittsburgh Industrial Area	227,675		23.8	Source: Census of Manufactures, 1937.			
Allentown-Bethlehem Area	56,850		5.9	¹ Portion of Industrial Area in New York State.			
Reading Area	45,429		4.8	² Portion of Industrial Area in New Jersey.			
Scranton-Wilkes-Barre Area	33,363		3.5	³ Portion of Industrial Area in Pennsylvania.			
Youngstown Industrial Area ³	25,789		2.7				
10 Important Indus. Cos.	158,398		16.6				
Rest of State	104,708		11.0				

APPENDIX E

Manufacturing Industries and Industry Groups with 25,000 or more Wage Earners in the Middle Atlantic Region, 1939

	Number of Wage Earners in thousands		Percent in Region		Number of Wage Earners in thousands		Percent in Region	Percent in Region
	U. S.	Region			U. S.	Region		
Clothing, women's, etc., n.e.c.	269.7	188.0	69.8	Printing & Publishing, book, music & job	125.1	45.4	36.2	6.8
Steel works & rolling mills	399.0	184.6	46.3	Shirts, except work, etc.	70.5	44.1	62.6	6.2
Cotton manufactures	396.0	132.4	33.4	Motor vehicles, etc.	387.5	40.8	10.3	6.0
Hosiery	159.1	101.6	63.8	Ship and boat building, etc.	66.2	40.7	61.3	6.8
Clothing, men's, etc., n.e.c.	161.7	96.6	59.8	Newspapers & periodicals	118.7	38.3	32.3	6.2
Foundry & machine shop prod., n.e.c.	320.6	83.7	26.1	Woolen & worsted goods	146.1	36.4	24.9	6.2
Bread & other bakery prod.	230.7	83.1	36.0	Chemicals, n.e.c., etc.	73.5	35.8	48.8	6.8
Elec. machinery, etc.	213.0	76.4	35.9	Canned & preserved fruits, etc.	116.8	32.1	27.5	6.7
Rayon and silk goods	119.8	73.0	61.0	Paper	110.6	31.5	28.5	6.8
Furniture, etc.	159.4	57.3	36.0	Boxes, paper, n.e.c.	69.2	29.2	42.2	6.2
Footwear except rubber	218.0	54.3	24.9	Rayon & allied products	48.3	28.3	58.6	6.8
				Dyeing & finishing, etc.	64.1	27.8	43.2	6.8
				Lumber & timber products	288.0	27.2	9.5	6.9
				Glass	69.8	27.2	39.0	6.8
				Cigars	50.9	26.8	52.6	6.8

Source: Table 23. See note to Table 23 for estimates and basis of estimates.

APPENDIX F

Manufacturing Industries and Industry Groups with 100,000 or more Wage Earners in the United States, and Number and Percentage of Wage Earners in the Middle Atlantic Region, 1939

	Number of Wage Earners in thousands		Percent in Region		Number of Wage Earners in thousands		Percent in Region	Percent in Region
	U. S.	Region			U. S.	Region		
Steel works & rolling mills	399.0	185.7	46.4	Hosiery	159.1	101.6	63.8	6.8
Motor vehicles, etc.	387.5	40.5	10.2	Woolen & worsted goods	146.1	35.9	24.6	6.2
Cotton manufactures	396.0	132.3	33.4	Slaughtering & meat packing	132.9	20.8	15.1	6.2
Foundry & machine shop prod.	320.6	80.2	25.0	Printing & publishing, book, music & job	125.1	45.4	36.2	6.8
Lumber & timber prod.	288.0	27.2	9.5	Rayon & silk goods	119.8	68.8	57.4	6.8
Clothing, women's, etc., n.e.c.	269.7	187.1	69.4	Newspapers & periodicals	118.7	38.3	32.3	6.2
Bread & other bakery prod.	230.7	83.1	36.0	Canned & preserved fruits, etc.	116.8	31.1	26.6	6.8
Footwear except rubber	218.0	54.4	24.9	Paper	110.6	31.5	28.5	6.8
Elec. machinery	213.0	92.1	43.2					
Clothing, men's etc., n.e.c.	161.7	96.3	59.6					
Furniture, etc.	159.4	57.1	35.8					

Source: Table 23. See note to Table 23 for estimates and basis of estimates.

APPENDIX G

Percentage Distribution of Wage Jobs in the Middle Atlantic States by Geographic Areas of Concentration 1899-1939

	9 Industrial Areas				19 Important Industrial Counties	All the Rest	Total for Middle Atlantic States
	Principal Cities	Satellite Cities	Peripheries	Sub-Total			
1899	52.0	7.0	16.2	75.2	11.9	12.9	100.000
1919	44.9	8.2	22.3	75.4	12.9	11.7	100.000
1929	44.2	7.2	23.9	75.3	13.5	11.2	100.000
1938	43.4	6.8	24.2	74.2	14.4	11.4	100.000
1937	41.1	6.8	27.2	74.9	13.6	11.5	100.000

Source: 1899-1938 data from Goodrich et al. op. cit. p. 322. 1937 date computed from Census of Manufactures, 1937. Not strictly comparable since Railroad Repair shops and manufactured gas have been dropped by the Census after 1935.