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AGRICULTURAL ECONOMIC REPORT NO. 73

EMPLOYMENT, UNEMPLOYMENT, AND LOW INCOMES

in Appalachia

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CONTENTS

	Page
LIST OF TABLES	ii
LIST OF FIGURES	ii
HIGHLIGHTS	iii
INTRODUCTION	1
THE PROBLEM	2
PURPOSE AND METHOD OF STUDY	2
The Subareas	2
The Region	4
LOW INCOMES	5
Location of Low Incomes	6
Subarea Size and Low Incomes	6
UNEMPLOYMENT	9
Location of Unemployment	9
Subarea Size and Unemployment	11
THE COMPOSITE PATTERN OF LOW INCOMES AND UNEMPLOYMENT	13
EMPLOYMENT	14
Employment Changes in Appalachia and the Nation	14
The Location of Employment Change	18
Subarea Size and Employment Change	26
Distribution and Structure of Employment Among Subareas	29
IMPLICATIONS	34
Policy Objectives	34
Income Needs	35
New Job Requirements	35
Areas with Development Potential	36
Conclusions	37
APPENDIX A	37
APPENDIX B	43
APPENDIX C	45
APPENDIX D	47

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LIST OF TABLES

Table	Page
1.--Number and percentage distribution of families with incomes under $3,000, for subareas in Appalachia grouped by size of central place, and for the rest of the United States, 1959	5
2.--Number and percentage of unemployed in subareas of Appalachia and in the rest of the United States, by sex, and by group according to size of central place, 1960	11
3.--Number and percentage distribution of the unemployed in excess of 4 percent of the labor force, among subareas grouped by size of central place, Appalachia, 1960	13
4.--Percentage distribution of total employment among major economic activities, Appalachia and the rest of the United States, 1950 and 1960	16
5.--Population, employment in major activities, and unemployment, Appalachia and the rest of the United States, 1960 compared with 1950	17
6.--Percentage change in population, employment in major industries, and unemployment, for subareas grouped by size of central place, Appalachia, 1950-60	28
7.--Change in population, number employed in major industries, and number unemployed, for subareas grouped by size of central place, Appalachia, 1950-60	30
8.--Population and percentage distribution of employment in major industries, among subareas grouped by size of central place, Appalachia, 1950 and 1960	31
9.--Percentage distribution of employment among major industries within subareas grouped by size of central place, Appalachia, 1950 and 1960	33
10.--Subareas in Appalachia: Population of central place, and counties composing areas, from north to south, 1950	39
11.--Data on low-income families, 1959, and unemployment, 1960, in the subareas of Appalachia	43
12.--Percentage distribution of employment among major industries in the subareas of Appalachia, 1960	45
13.--Change in number employed in major industries within the subareas of Appalachia, 1950 and 1960	47

LIST OF FIGURES

Figure		Page
1	Subareas of the Appalachian Region	3
2	Percent of families with incomes under $3,000, Appalachian Region, 1959	7
3	Number of families with incomes under $3,000 per square mile, Appalachian Region, 1959	8
4	Percent of labor force unemployed, Appalachian Region, 1960	10
5	Unemployment in excess of 4 percent, number per square mile, Appalachian Region, 1960	12
6	Ranking of subareas by concentration of low-income families and unemployment, Appalachian Region, 1960	15
7	Percent change in total employment, Appalachian Region, 1950-60	19
8	Changes in total employment (in thousands), Appalachian Region, 1950-60	21
9	Percent change in population, Appalachian Region, 1950-60	22
10	Reductions in employment in agriculture, forestry, and fisheries (in thousands), Appalachian Region, 1950-60	23
11	Reduction in mining employment (in thousands), Appalachian Region, 1950-60	24
12	Change in manufacturing employment (in thousands), Appalachian Region, 1950-60	25
13	Change in nonbasic employment (in thousands), Appalachian Region, 1950-60	27

HIGHLIGHTS

Appalachia has a disproportionate share of the Nation's unemployed workers and low-income families. However, the economy of the region is neither entirely nor uniformly "depressed". Considerable variation exists among subareas of the region in the number and percent of persons unemployed, and of families with incomes below $3,000. The variation reflects in part recent differential growth rates among subareas in employment and population. Some local economies have expanded rapidly, some slowly, and others have contracted precipitously.

Variations in the incidence of both unemployment and low incomes appeared to be related to the location of subareas in the region and to the size of their cities or towns. Subareas with high percentages of families with low incomes were more prevalent in the southern than in the northern portion of the region. The proportion of low-income families was also generally higher in subareas with small population centers than in those with large urban places. Unemployment rates were highest in the east Kentucky-southern West Virginia core of the region, and above average in the remainder of West Virginia and most of Pennsylvania. They were low in most subareas on the southeastern and southwestern flanks of the region. Subareas with small population centers averaged higher rates of unemployment than those with large centers.

Even though rates of unemployment and percentages of families with low incomes were highest in the more rural subareas with small-population centers, the greatest numbers of the unemployed and the low-income families were in the large center subareas. In 1960, 58 percent of the unemployed and 47 percent of the low-income families lived in subareas with centers of 100,000 and over; 83 and 81 percent, respectively, were located in subareas with centers of 25,000 and over.

Employment and population growth rates varied considerably among subareas in the 1950's. Subareas on the periphery of the region and those with large population centers grew most rapidly. The east Kentucky-southern West Virginia core areas had significant contractions in both jobs and people. Agriculture and mining were the two basic industries contributing most to decline in employment. Rural subareas heavily oriented to these industries were usually unable to offset their declines with expansions in other economic activities. Manufacturing on a regional basis expanded almost as rapidly as in the rest of the Nation.

Rates of growth in jobs other than agriculture and mining were often higher in small-population center subareas than in large urban subareas. However, absolute increases in the number of these kinds of jobs in small-population center subareas were relatively small. The bulk of the new jobs in manufacturing in the region accrued to the larger population center subareas. In addition, the high proportions of total employment still in agriculture and mining in small-population center subareas, after a decade of considerable decrease in these two industries, suggest that it will be difficult for many of these subareas to reverse their recent trends of declining total employment in the near future. This is especially true of small-population center subareas in the center of the region. However, some small-population center subareas on the periphery of the region with larger manufacturing bases, higher

numerical increases in manufacturing employment over the past decade, and less dependence on agriculture and mining may indeed be able to reverse recent declines in employment, and thereby expand total employment in the next decade.

The geographic incidence of unemployment, low-income situations, and recent employment and population growth has important implications for economic development efforts in the region. Higher rates of unemployment and larger percentages of families with low incomes in the more rural, small-population center subareas indicate that development strategy for Appalachia ought to consider both the amounts of financial resources available for development and a determination of which subareas have growth potential. Thus, programs would be of three kinds: (1) those designed to expand economic activity, (2) those to upgrade welfare transfers, and (3) those designed to increase the employability of surplus labor. Whether area development funds should be concentrated in subareas with the greater potentials, or whether such funds should also be made available in the subareas with less capacity for attracting new or expanding existing economic activities, is a basic decision for policymakers.

EMPLOYMENT, UNEMPLOYMENT, AND LOW INCOMES IN APPALACHIA

by

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INTRODUCTION

Appalachia is a predominantly rural region. In general, its rural areas, including the small population centers, are not sharing adequately in national growth and prosperity. As a result, large pockets of underemployment, unemployment, and relatively low incomes exist among rural and small town residents of the region.

Appalachia has long been plagued by high rates of unemployment and relatively low family incomes. Sharp changes in the amount and composition of employment in the region have been instrumental in creating these chronic conditions. The major problems of unemployment and low incomes are associated with a sharp decline in manpower needs in two resource-oriented industries -- agriculture and mining. Reduced manpower requirements in these industries have created a pool of unemployment which has not been drained appreciably by expansion of other activities.

As a result of the abnormally high concentration of low-income families and unemployed persons in the region, numerous public and private efforts to remedy conditions have been proposed and, in some cases, launched. Federal, State, and local governments, as well as private community and business groups, have acted to stimulate economic growth and ameliorate poverty. To date, the actions of these formal groups, as well as the adjustments made by thousands of individuals through outmigration, have not eliminated the economic problems of the region. Additional efforts are necessary for development of practical and workable programs. Solutions to the low-income problems are complex, since they require the development of new economic opportunities, the possible restructuring of whole communities and areas, and the retraining of large numbers of the labor force. The commitment of large amounts of social overhead investments will be needed to bring about long-term economic development needs of the region.

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THE PROBLEM

This report presents information on the extent of unemployment and low-income situations in Appalachia as a prerequisite step towards understanding the nature of these problems, and developing programs to increase employment and incomes. A high incidence of unemployed persons and of low-income families, two major manifestations of a depressed economy, indicate human needs and unused productive capacity. Trends in the composition of economic activity in Appalachia are also considered in this report. Knowledge and understanding of such trends provide clues as to where present and future problems and potentials may exist.

High proportions of unemployed persons and low-income families are usually the result of acute reductions in the demand for labor by one or more industries, without comparable increases in demand for labor by other activities. This has been the general case in Appalachia. However, changes in the extent and nature of the demand for labor have not been equal throughout this predominantly rural region. Geographic variations in the changing structure of economic activities have caused drastic employment reductions in some areas, moderate declines in some, and actual increases in others. Economic conditions within the region are extremely variable. Therefore, Appalachia is not entirely depressed, nor is it uniformly so.

The geographic distribution of areas in the region with contracting or expanding local economies may well be relevant to considerations of actions to remedy economic ills. Most types of welfare and developmental assistance have to be applied in some spatial pattern. Inevitably, then, questions center on where various types of technical and financial assistance should be applied to secure maximum economic growth and to reduce human discomfort and need. Intelligent answers demand knowledge of (a) the spatial incidence of unemployment and low-income situations (covered in this study), and (b) areas in the region with potentials for economic development.

PURPOSE AND METHOD OF STUDY

The objective of this report is to present a perspective on needs and trends in the economy of Appalachia which may be useful in the formulation of programs and policies to induce economic growth in the region and to decrease the number of unemployed persons and low-income families. Accordingly, this report (1) examines the extent of unemployment and low incomes within Appalachia, and (2) describes recent trends in the amount and composition of employment within the region which have contributed to geographic variations in the extent of unemployment and low incomes. Low-income and unemployment conditions and employment trends in the region are compared with those in the remainder of the United States. Variations in conditions and trends within Appalachia are described through a division of the region into subareas.

The Subareas

The subareas into which the Appalachian Region is divided for this study are outlined in figure 1. Each subarea consists of two or more contiguous

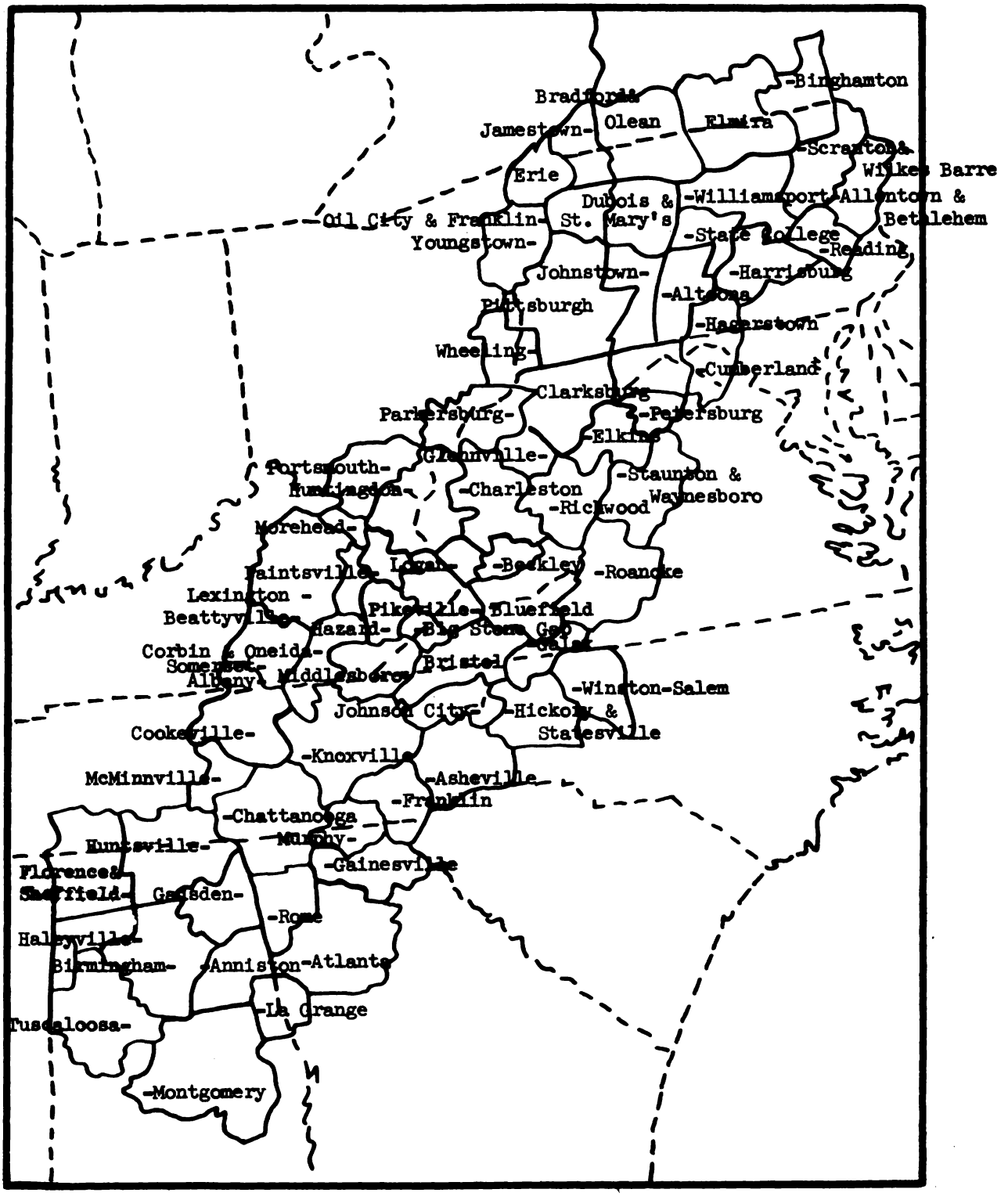

Figure 1. SUBAREAS OF THE APPALACHIAN REGION

counties grouped on the basis of the largest city or town (in 1950) within a 50-mile radius. Fifty miles was considered a maximum commuting radius in most parts of the region. The subareas therefore approximate the trade areas and laborsheds of their central cities or towns.

Since the subareas represent laborsheds, or areas within which workers may readily take on or change employment without altering their place of residence, they are useful in an analysis of the economic needs, potentials, and adjustment possibilities of the region. This spatial approach provides a geographic breakdown which can be used to locate concentrations of unemployment and low income, and in turn to make estimates of amounts of adjustment (either through local job or income creation, or outmigration) needed to raise various areas to a satisfactory economic condition. The subareas are also spatial units in which recent economic trends can be noted and growth prospects assessed; such evaluation will aid in determining which areas have the potential to meet their unemployment and income needs.

In the description of economic conditions and trends, subarea data are often grouped on the basis of the size of the central places in subareas. The following tabulation shows the groupings used and the number of subareas in each group:

Size of central place in subareas of Appalachia, 1950	Number of subareas
250,000 and over	6
100,000 to 249,999	11
50,000 to 99,999	10
25,000 to 49,999	15
10,000 to 24,999	8
Under 10,000	19
Total	69

A list of the subareas, the size of their central places, the counties included, and additional comments on the method of subarea delineation comprise appendix A (p. 37).

The Region

The Appalachian Region delimited for this study and outlined in figure 1 varies somewhat from the region designated by the President's Appalachian Regional Commission. The region included in this study encompasses all counties in the region specified by the Commission except for eight in southwest Ohio. It also includes counties adjacent to the boundaries of the Commission's designated region which were within 50 miles of cities within the region (and thus parts of subareas of cities within the region), or counties containing

cities within 50 miles of counties within the region (cities which were centers of subareas to which the counties belonged). The Appalachian Region used in this study is therefore a set of complete subareas.

LOW INCOMES

Appalachia has a disproportionate share of the Nation's low-income families. In 1959, over 1.4 million, or 28 percent of the families in the region, had incomes of less than $3,000--the level considered the rough upper boundary of poverty. The incomes of only 21 percent of all families in the remainder of the United States were in this poverty category (table 1).

Table 1.--Number and percentage distribution of families with incomes under $3,000, for subareas in Appalachia grouped by size of central place, and for the rest of the United States, 1959

Area	Subareas in size group	All families	Families with incomes under $3,000		
	Number	Number	Number	As percentage of all poverty families	
Subareas with population of--					
250,000 and over-----	6	1,837,166	360,306	19.6	25.1
100,000 to 249,999---	11	1,142,888	308,426	27.0	21.5
50,000 to 99,999-----	10	756,656	226,823	30.0	15.8
25,000 to 49,999-----	15	782,090	265,932	34.0	18.6
10,000 to 24,999-----	8	324,919	108,782	33.5	7.6
Under 10,000---------	19	286,776	162,685	56.7	11.4
Appalachia, total----	69	5,130,495	1,432,954	27.9	100.0
Rest of United States--	--	39,820,239	8,193,500	20.6	--

Source: U. S. Census of Population, 1960, PC(1)-Series C, "General Social and Economic Characteristics," table 86.

Low-income families were not distributed equally within Appalachia. Wide variations existed in both the proportion and density of impoverished families among the subareas of the region, and among geographic areas and subareas with different-sized central places. Variations were also evident in the spatial configuration of two measures of the extent of low income: (1) The proportion of all families with incomes under $3,000, and (2) the number of such families

per square mile. The former measure is suggestive of the relative importance of the low-income population within and among subareas, and the latter of the absolute density of low-income situations in the various subareas of the region.

Location of Low Incomes

The percentage of families within the various subareas of Appalachia with incomes under $3,000 is presented in figure 2. Subareas with the highest percentages were located in the central and southern parts of the region. Over 60 percent of the families in eastern Kentucky had incomes under $3,000. Subareas having 40 to 59 percent of all families in the "poverty" classification were located in eastern West Virginia, western Virginia, far-western North Carolina, northeast Georgia, much of northern and central Alabama, and central Tennessee. On the other hand, all subareas of Pennsylvania and western Maryland had less than 30 percent of families in the "poverty" classification. The Shenandoah Valley counties of Virginia, the Ohio River portions of West Virginia, and the Atlanta area of Georgia were also under 30 percent. The general pattern indicates a clustering of subareas with high percentages of low-income families in the more rural and remote subareas of the region.

The number of families per square mile with incomes under $3,000 in 1959 is presented in figure 3. Six large urban subareas stand out with densities of 12 or more families per square mile. They are Birmingham, Atlanta, Pittsburgh, Youngstown, Scranton-Wilkes-Barre, and Reading. A large group of contiguous subareas with densities of from 8-12 families per square mile was located in east Tennessee, western Virginia, far-eastern Kentucky, and southeast West Virginia. Low densities of under 4 families per square mile characterized subareas in eastern West Virginia and adjacent Virginia, as well as north-central Pennsylvania and southern New York.

A comparison of figures 2 and 3 indicates that the subareas with the highest percentages of low-income families are usually not those with the highest population densities of these families. Frequently, the predominantly rural subareas appear to have the high percentages of low-income families, and the urban subareas the high densities. The main exception is a group of contiguous subareas in northeast Tennessee, southwest Virginia, southeast West Virginia, and far-eastern Kentucky which have medium densities of low-income families and medium-to-high percentages of all families with low incomes.

Subarea Size and Low Incomes

Additional evidence that proportions of families with low incomes were higher in rural subareas and that densities were greater in urban subareas is presented in table 1. Subareas with centers of 250,000 and over averaged less than 20 percent of families with incomes under $3,000. Those with centers of 100,000-249,999 averaged 27 percent, while others with centers from 10,000-99,999 ranged in the low thirties. An average of 56.7 percent of all families had incomes under $3,000 in areas with centers of under 10,000 population.

Within groups of subareas ranked by size of central place, the proportion of families with low incomes tends to increase as one moves south in the region.

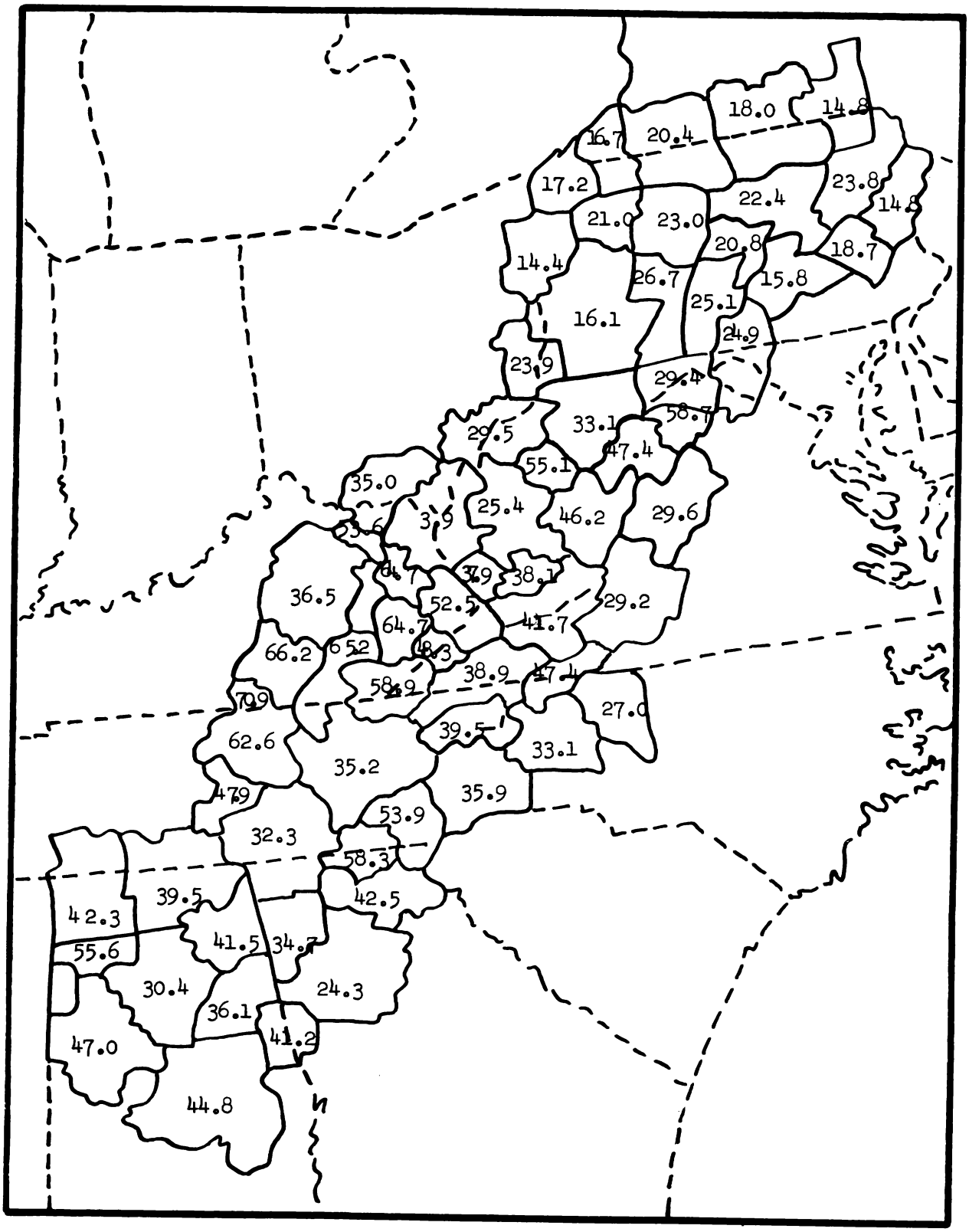

Figure 2. PERCENT OF FAMILIES WITH INCOMES UNDER $3,000, APPALACHIAN REGION, 1959.

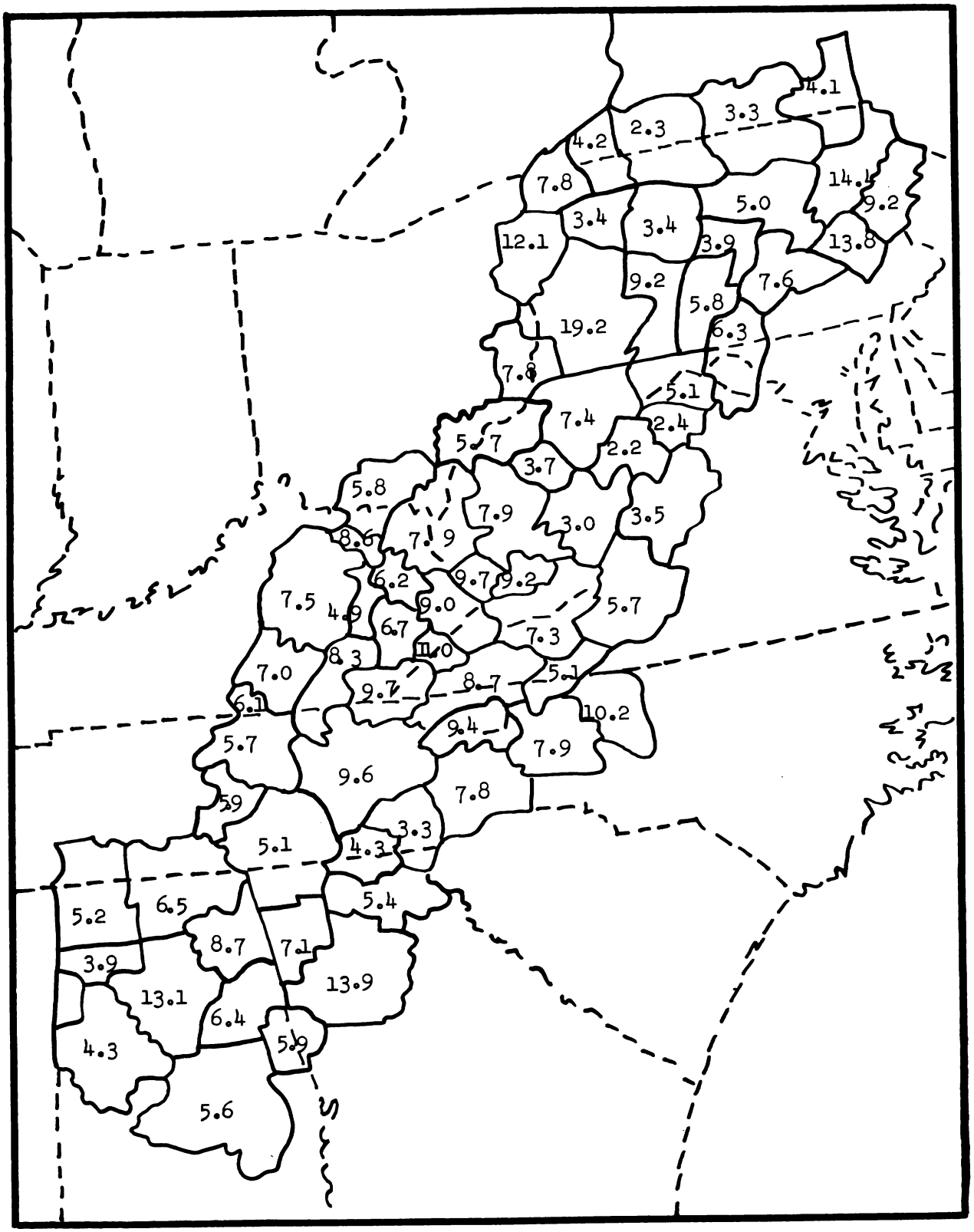

Figure 3. NUMBER OF FAMILIES WITH INCOMES UNDER $3,000 PER SQUARE MILE, APPALACHIAN REGION, 1959.

For example, subareas in the 100,000-249,999 group in Pennsylvania and West Virginia had under 30 percent of the families with incomes under $3,000; whereas all such subareas in Tennessee and Alabama had over 30 percent and some over 40 percent. However, even though the most urbanized subareas had the smallest proportions of families with low incomes, they contained the bulk of Appalachia's total population of low-income families. Data in table 1 indicate that the 17 subareas with central places of 100,000 and over contained over 46 percent of Appalachia's families with incomes under $3,000. Subareas with population centers of 25,000 and over had 88 percent of the region's families in the "poverty" classification. Of course, the proportion and number of families with low incomes varied considerably among subareas within size groups. Data for individual subareas in appendix B (p. 43) reveal this variation.

UNEMPLOYMENT

Low family incomes are symptomatic of a complex of many deep-seated problems. One of these is usually an excessive amount of unemployment. This is the case in Appalachia. The region not only has a disproportionate number of low-income families, but also an abnormal share of the Nation's unemployed.

In 1960, approximately 6.4 percent of the labor force in the region was unemployed. The comparable figure for the rest of the United States was 5.0 percent (table 2). Appalachia had 466,141 unemployed in that year, or 13.3 percent of the total unemployed in the Nation. This number is probably conservative since it neither includes those persons who had given up looking for work, nor an unemployed equivalent of the underemployed. Unemployment was higher among the male than among the female labor force in the region -- a reverse of the pattern for the remainder of the United States.

As with low-income families, the distribution of the unemployed within Appalachia varied greatly. The variations are relevant to efforts to combat unemployment in the region, and should be noted along with their relation to the geographic incidence of low incomes. Two measures can be used to describe the extent of unemployment within the region: (1) The percent of the labor force unemployed, and (2) the number of unemployed per square mile. In the following analysis, the latter measure is modified to include only the number of unemployed in excess of 4 percent. The rationale is that 4 percent approximates that portion of the labor force which would probably be unemployed even in periods of full employment. Areas that have unemployment rates in excess of 4 percent have economic growth problems that may be ameliorated by effecting sound development programs. As with low-income families, the description of variations in unemployment will cover both geographic and subarea size group differentials.

Location of Unemployment

The percentages unemployed in 1960 in the 69 subareas of the region are presented in figure 4. Subareas with the highest rates -- over 10 percent -- were located in southern West Virginia, eastern Kentucky, and west-central Pennsylvania. Subareas with 8 and 9 percent unemployed were in Pennsylvania and

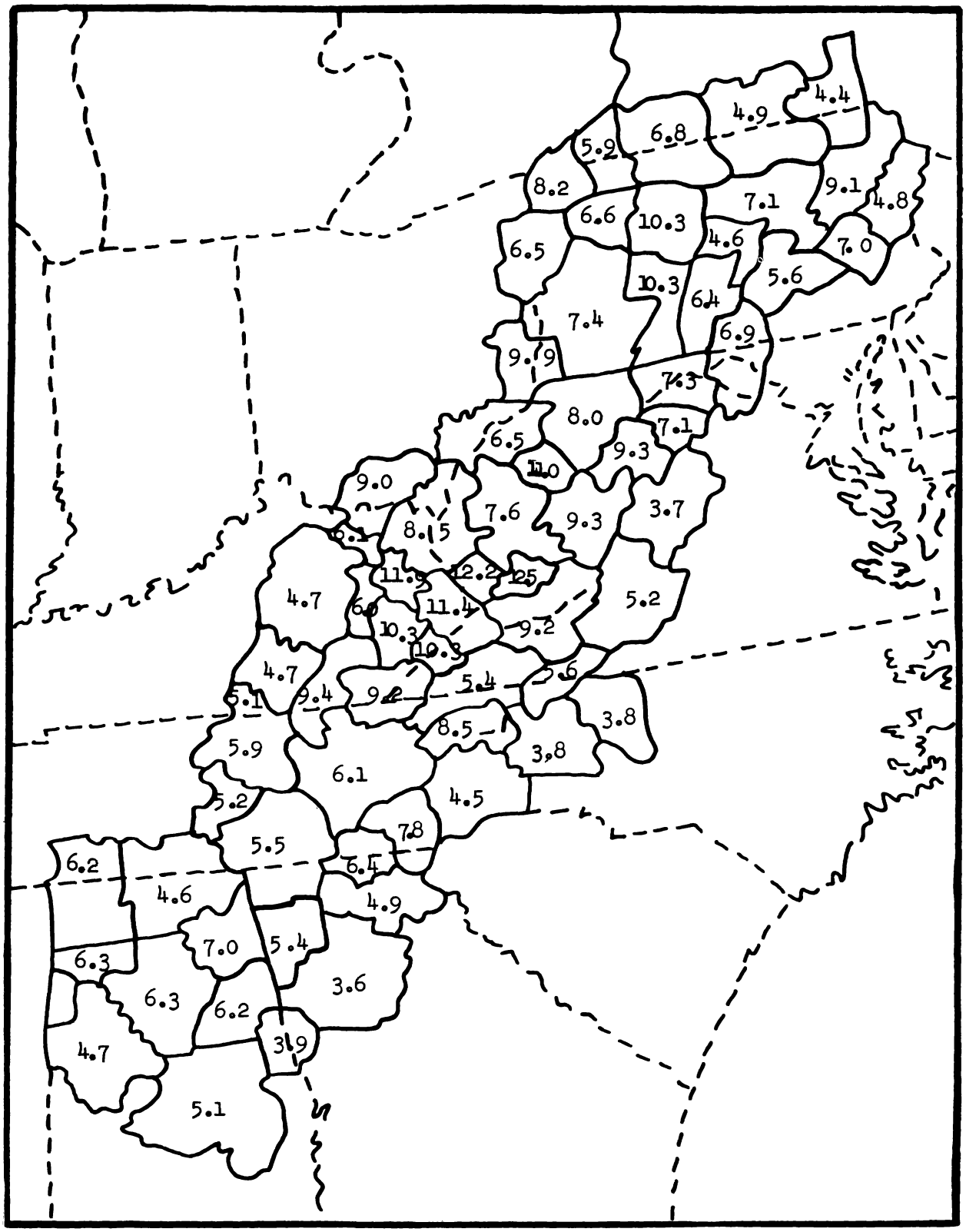

Figure 4. PERCENT OF LABOR FORCE UNEMPLOYED, APPALACHIAN REGION, 1960.

Table 2.--Number and percentage of unemployed in subareas of Appalachia and in the rest of the United States, by sex, and by group according to size of central place, 1960

Area	Number of subareas	Unemployed					
		Total		Male		Female	
		Number	Percent	Number	Percent	Number	Percent
Subareas with population of--							
250,000 and over------	6	171,883	6.4	124,591	6.7	47,292	5.6
100,000 to 249,999----	11	102,099	6.1	72,006	6.4	30,093	5.5
50,000 to 99,999------	10	63,778	5.8	43,417	5.9	20,361	5.8
25,000 to 49,999------	15	70,426	6.5	50,620	6.7	19,806	6.0
10,000 to 24,999------	8	31,397	6.9	22,688	7.3	8,709	6.1
Under 10,000----------	19	26,558	7.9	22,162	9.1	4,396	5.2
Appalachia, total-----	69	466,141	6.4	335,484	6.7	130,657	5.7
Rest of United States---	--	3,038,686	5.0	1,960,234	4.8	1,078,452	5.4

Source: U. S. Census of Population, 1960, PC (1)-Series C, "General Social and Economic Characteristics," table 83.

covered most of West Virginia. The urban industrial subareas of Birmingham, Knoxville, Charleston, Pittsburgh, and Youngstown all had unemployment rates of 6 percent, or over. Relatively low rates -- under 6 percent -- were found mainly in subareas on the southeast and southwest flanks of the region.

The number of unemployed (in excess of 4 percent) per square mile in 1960, or the absolute concentration of the unemployed, is presented in figure 5. Subareas with the heaviest densities were Pittsburgh, Youngstown, Scranton and Wilkes-Barre, and Reading -- all in the northern part of the region. Subareas with medium densities covered most of the remainder of Pennsylvania, nearly all of West Virginia, and parts of far-eastern Kentucky, eastern Tennessee, and north-central Alabama. The southeast and southwest flanks of the region had relatively low densities.

Subarea Size and Unemployment

The rate of unemployment appears somewhat related to the central-city size of subareas. Data in table 2 indicate that, as subarea centers decrease from 100,000 to under 10,000 people, the unemployed proportion of the total and male

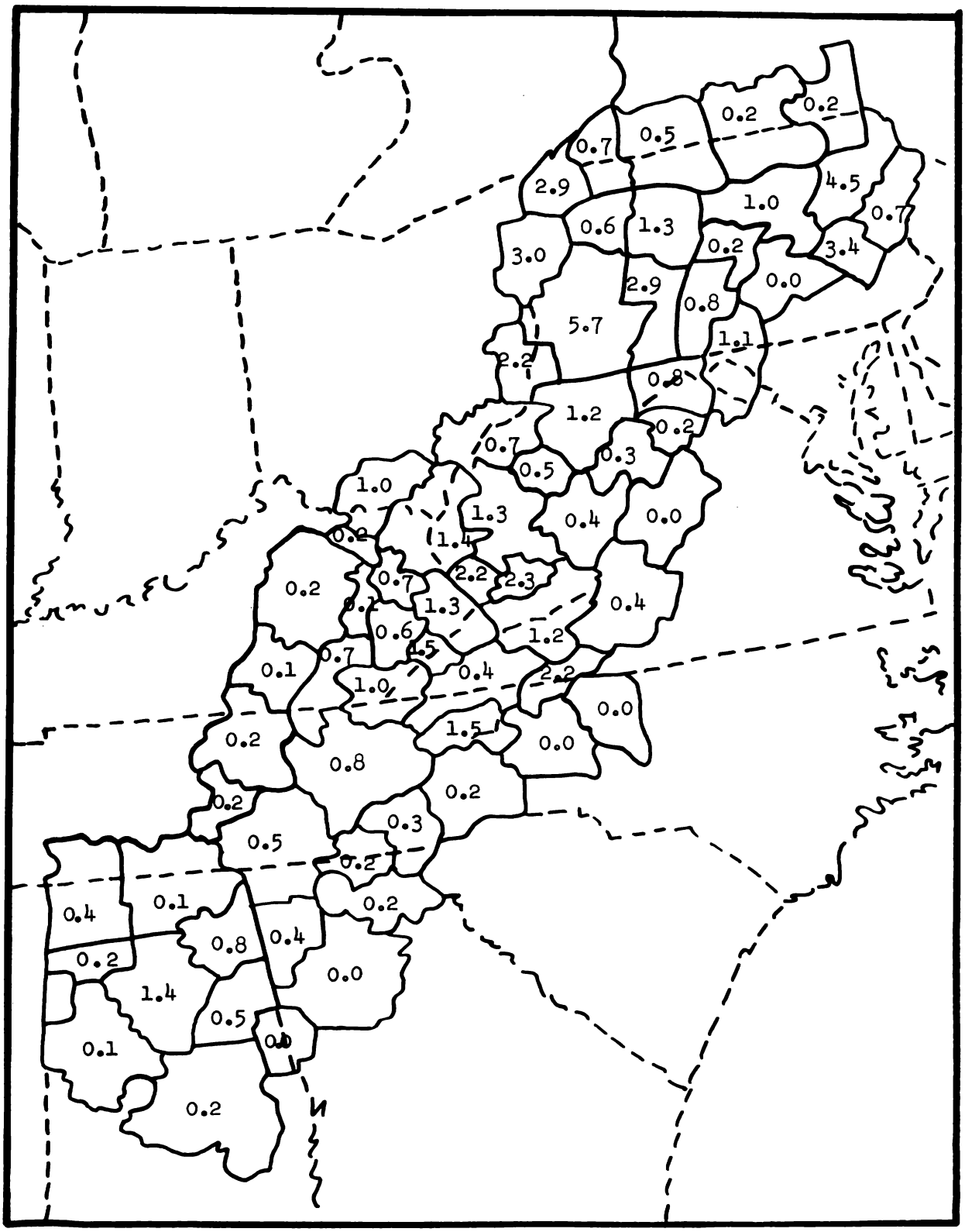

Figure 5. UNEMPLOYMENT IN EXCESS OF 4 PERCENT, NUMBER PER SQUARE MILE, APPALACHIAN REGION, 1960.

labor forces increases. Male unemployment averaged highest in subareas under 10,000 (9.1 percent). The rate of female unemployment was lowest in these subareas (5.2 percent). This situation is probably explained by the fact that apparel, textile, and food manufacturing have recently been the most rapidly growing manufacturing industries in these areas.

As was the case with the distribution of low-income families among subareas ranked by size, the unemployed were concentrated in the more urbanized subareas. Data in table 3 indicate that 58 percent of all the unemployment in excess of 4 percent was located in subareas of 100,000 and over; approximately 85 percent was in subareas with centers of 25,000 and over.

Table 3.--Number and percentage distribution of the unemployed in excess of 4 percent of the labor force, among subareas grouped by size of central place, Appalachia, 1960

Subarea size group	Number of subareas	Unemployed in excess of 4 percent	
		Number	Percentage of Appalachia total
250,000 and over	6	64,089	37.1
100,000 to 249,999	11	35,486	20.5
50,000 to 99,999	10	20,103	11.6
25,000 to 49,999	15	26,928	15.6
10,000 to 24,999	8	13,229	7.6
Under 10,000	19	13,110	7.6
Appalachia, total	69	172,945	100.0

Source: U. S. Census of Population, 1960, PC (1)-Series C, "General Social and Economic Characteristics," table 83.

Variations in rates of unemployment and in numbers unemployed among individual subareas are listed in appendix B (p. 43).

THE COMPOSITE PATTERN OF LOW INCOMES AND UNEMPLOYMENT

The uneven geographic distribution of low-income families and unemployed persons within Appalachia raises questions as to the economic events that brought about this situation. What changes have occurred in the amount and structure of employment among subareas that have left some with high densities and others with low densities of low-income families and unemployment? This question will be examined in the following section, along with the problem of where expansions in employment may occur in the future. However, before reviewing the spatial configuration of past employment trends, the composite pattern of the incidence of low incomes and unemployment should be noted in

order to indicate the subarea where job and income needs in combination are greatest.

Data in figure 6 present the relative magnitude of both low-income and unemployment problems among the subareas of Appalachia. Utilizing data on the number of low-income families and unemployed persons (in excess of 4 percent) per square mile, subareas are ranked according to their position in the top, middle, or bottom third of the total distribution of each measure.

EMPLOYMENT

Unemployed persons and low-income families are more prevalent in Appalachia than in the rest of the United States as a whole, and are more heavily concentrated in some subareas of the region than in others. These conditions suggest that differential economic development has been occurring (a) between Appalachia and the remainder of the Nation, and (b) among subareas of the region. The conditions also imply that the amount of adjustment needed to reduce unemployment and low-income situations to an acceptable level varies considerably among subareas. Areas with high densities of unemployed persons and low-income families obviously need larger absolute increases of new jobs and income, or greater absolute amounts of outmigration of the unemployed and low-income families to nonlocal jobs than do subareas with low densities.

Local, State, or national, and private or governmental groups may promote either of two alternative lines of action (or both) for reducing unemployment and poverty in "depressed" subareas: (1) local economic development and job creation, or (2) outmigration of the unemployed.

To determine the appropriate major course of action for specific subareas, estimates are needed of the propensity of subareas to develop additional economic activity -- especially under alternative programs that might be undertaken by private or governmental groups. It may be unwise, for example, to attempt the promotion of new economic activities in certain subareas, even though they have high incidences of unemployment and low-income situations. They may have little or no capacity to attract or sustain new industry on a competitive basis, regardless of what is done to alter their economic environments. Programs to eliminate unemployment and low incomes in Appalachia need to be based on knowledge of where economic development may or may not be generated. If subareas could be judged as "viable" or "nonviable", development efforts might be pursued in areas with growth potential, and programs to facilitate outmigration and strengthen welfare (i.e., through more adequate transfer payments) might be promoted in areas with little capacity for expansion.

Employment Changes in Appalachia and the Nation

Review of the overall structure of economic activity in Appalachia and comparison of this structure with that of the remainder of the United States are instructive on the causes of "depressed conditions" in the region. The data in table 4 give the percentage distribution of total employment among major economic activities in 1950 and 1960 for Appalachia and the rest of the Nation. Several

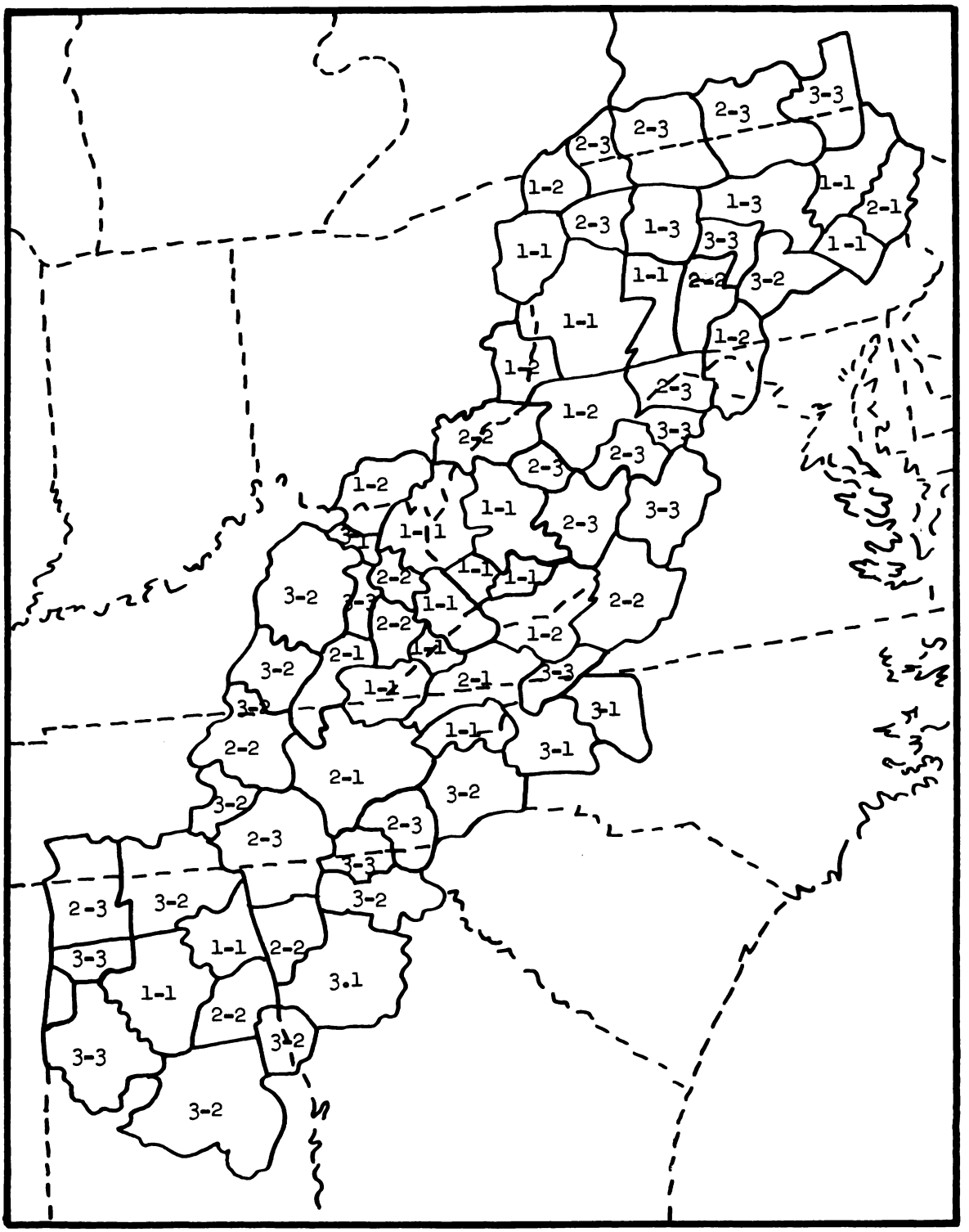

Figure 6. RANKING OF SUBAREAS BY CONCENTRATION OF LOW-INCOME FAMILIES AND UNEMPLOYMENT, APPALACHIAN REGION, 1960.

1 = top third, 2 = middle third, 3 = bottom third
1-1 = top third in density of unemployed - top third in density of low-income families.

Table 4.--Percentage distribution of total employment among major economic activities, Appalachia and the rest of the United States, 1950 and 1960

Activity	Appalachia		Rest of the United States	
	1950	1960	1950	1960
	Percent			
Agriculture, forestry, & fisheries	12.7	6.2	12.4	7.0
Mining	7.1	2.9	0.9	0.8
Manufacturing	28.7	32.6	25.7	26.4
Construction	5.6	5.8	6.2	5.9
Transportation, communication, & public utilities	7.6	6.9	7.9	6.9
Wholesale & retail trade	15.9	16.9	19.0	18.3
Finance, insurance, & real estate	2.1	2.9	3.6	4.3
Services	18.9	23.0	22.8	26.2
Industry not reported	1.4	3.0	1.5	4.2
Total employment	100.0	100.0	100.0	100.0

Source: U. S. Census of Population, 1950, Vol. II, "Characteristics of the Population," table 43. U. S. Census of Population, 1960, PC(1)-Series C, "General Social and Economic Characteristics," table 85.

striking differences characterized the economy of Appalachia, especially in 1950. In that year, a higher proportion of employment in Appalachia was devoted to mining (7 percent) and to manufacturing (29 percent) than in the rest of the Nation (1 and 26 percent, respectively). In the same year, Appalachia had below-average proportions employed in the trade and service industries. By 1960, the primary industries of agriculture and mining became relatively much less important in both Appalachia and the rest of the Nation. Combined they comprised only 9 percent of total employment in Appalachia and 8 percent in the remainder of the country. In 1960, manufacturing was still relatively more important; trade and services remained less important in Appalachia than in the rest of the Nation.

The employment changes in major economic activities responsible for shifts in the distribution of total employment in the 1950's are given in table 5. Total employment in the region increased by only 2.2 percent over the decade, while expanding 16.2 percent in the rest of the Nation. This differential change in total employment was accompanied by a 40-percent increase in unemployment in the region, compared with a 21-percent rise elsewhere in the Nation. Population over the decade expanded 4.5 percent in Appalachia, compared with a 21-percent expansion in the rest of the country.

Table 5.--Population, employment in major activities, and unemployment, Appalachia and the rest of the United States, 1960 compared with 1950

Population, employment, and unemployment	Appalachia				Change in United States (excluding Appalachia), 1950-60
	1950	1960	Change, 1950-60		
	Number	Number	Number	Percent	Percent
Population	19,423,669	20,299,665	875,996	4.5	21.0
Employment in--					
Agriculture, forestry, & fisheries	849,824	423,034	-426,790	-50.2	-36.5
Mining	473,294	199,271	-274,023	-57.8	-0.6
Manufacturing	1,931,442	2,227,647	296,205	15.3	19.8
Construction	374,037	394,842	20,805	5.5	10.9
Transportation, communication, & public utilities	511,810	472,979	-38,831	-7.6	1.2
Wholesale & retail trade	1,068,015	1,160,152	92,137	8.6	12.6
Finance, insurance, & real estate	140,625	198,341	57,716	41.0	40.3
Services	1,268,528	1,577,462	308,934	24.4	33.8
Industry not reported	94,948	208,649	113,701	119.7	220.6
Total employment	6,712,523	6,862,377	149,854	2.2	16.2
Unemployment	333,509	466,141	132,637	40.0	20.5

Source: U. S. Census of Population, 1950, Vol. II, "Characteristics of the Population," table 43. U. S. Census of Population, 1960, PC(1)-Series C, "General Social and Economic Characteristics," table 85.

An examination of employment changes in the major economic activities in the 1950's indicates that the important basic industries fared considerably less well in Appalachia than elsewhere in the Nation. Agricultural and mining employment in the region dropped by 50 and 58 percent, respectively, compared with 36.5 and 0.6 percent decreases in the remainder of the Nation. Approximately 700,000 jobs were lost in the two industries over the decade in the region. Manufacturing expanded, but not as rapidly as elsewhere in the country. Employment in all other major activities except finance, real estate, and insurance also failed to match the national growth rate. Many of these other activities might be classified on a regional basis as service-type or nonbasic activities which generally grow in response to employment and income expansions in basic or export industries, such as agriculture, mining, and manufacturing. In view of the large reductions over the decade in agriculture and mining, and the below-average rate of increase in manufacturing employment, growth of the nonbasic or service-type industries would be expected to be slower than in the rest of the Nation.

The overall picture then of employment change in the 1950's for Appalachia relative to the rest of the Nation was one of lag. Sharp reductions in two basic industries which were structurally important, especially at the beginning of the decade, more than offset a sizeable expansion in manufacturing employment and undoubtedly slowed the growth of service activities. The optimistic side of the changes for Appalachia was that (a) employment in mining and agriculture was reduced so drastically that neither can again create such a pool of unemployment in the region, even if they were to decline by 100 percent; and (b) employment in manufacturing -- the region's most important basic industry -- did expand at almost the national rate. The expansion rate for the manufacturing sector suggests that the "climate" for this industry may be nearly as favorable in the region as in the rest of the United States. However, the composition of manufacturing in Appalachia is weighted more heavily toward slow-growth industries than in the rest of the Nation. This condition may impede future growth.

The Location of Employment Change

The incidence of low incomes and unemployment varied considerably among the various subareas of Appalachia. The same holds true for recent changes occurring in total employment and employment in major industries. Economic development has been highly uneven in the region.

Data in figure 7 indicate percent changes in total employment from 1950-60 for subareas of the region. In general, the spatial pattern of change was characterized by employment expansion on the peripheries of the region and contraction in the center. The eastern side of Appalachia was almost completely bordered by a string of subareas extending from Allentown - Bethlehem, Pa., to Atlanta, Ga., exhibiting increased total employment in the 1950's. Another area of expansion ran on a line from Bristol, Tenn., to Tuscaloosa, Ala., mushrooming out in Alabama to include Huntsville and Anniston. The Lexington, Ky., subarea was the only locale with growth in the central part of the western side of the region. Some growth in total employment also occurred in the Pittsburgh-Youngstown areas in northwestern Appalachia. Employment expansion in all these areas usually was modest. Only 5 subareas out of the 69 in the

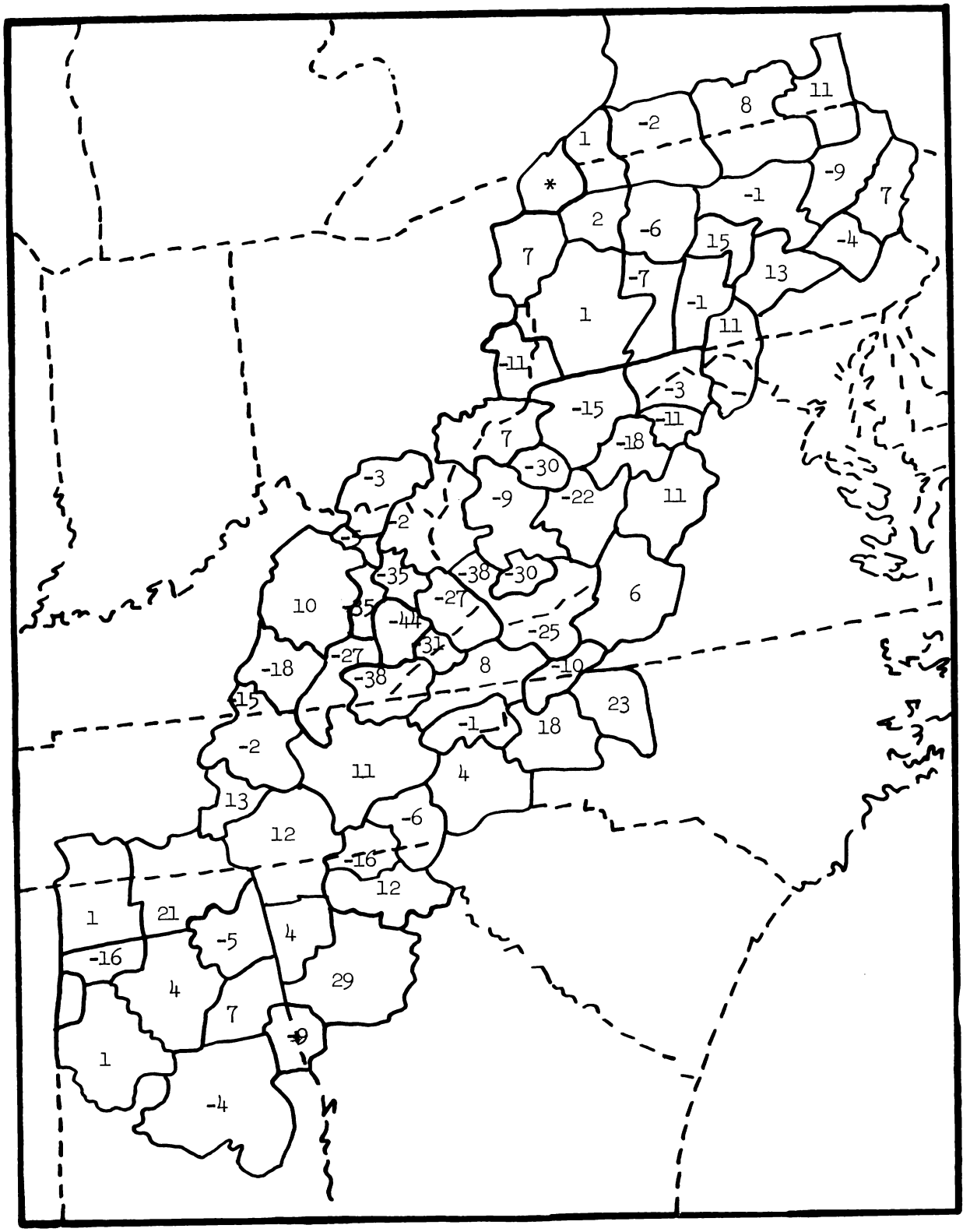

Figure 7. PERCENT CHANGE IN TOTAL EMPLOYMENT, APPALACHIAN REGION, 1950-60.

* Change between 0.5 and -0.5 percent. U. S. average was 14.5 percent.

region had growth rates exceeding the U. S. average of 14.5 percent. These were the Winston-Salem, N. C., Hickory-Statesville, N. C., Atlanta, Ga., Huntsville, Ala., and State College, Pa., subareas.

Decline in total employment was experienced by nearly all subareas from central Pennsylvania through eastern Kentucky and western Virginia. Most of the subareas in southern West Virginia and eastern Kentucky had contractions in employment of over 30 percent. Reductions in the central Pennsylvania subareas were under 10 percent.

Changes in number of total employed are presented in figure 8. The subareas of greatest absolute growth can be noted. The Atlanta subarea stands alone with an outstanding increase of 111,000 employed. Harrisburg, Pa., Youngstown, Ohio, Winston-Salem, N. C., Knoxville, Tenn., and Chattanooga, Tenn., follow with expansion ranging between 20,000 and 30,000. By contrast, subareas in southern West Virginia and eastern Kentucky generally lost 10,000 to 20,000 jobs.

Associations between changes in total employment and population among subareas over the 1950's can be noted by comparing figures 7 and 9. The percent changes in population of subareas generally paralleled in direction the employment changes. The peripheries of the region, plus the Bristol, Va.-Tenn., to Tuscaloosa, Ala., axis in the South, gained population during the 1950's while most of the interior subareas declined in population.

The composition of employment change among the subareas of the region is indicated in figures 10-12 which provide numerical changes in agricultural, mining, and manufacturing employment over the 1950 decade. The geographic patterns of change in these basic industries are instructive of causes underlying area changes in total employment. Almost without exception, both agricultural and mining employment contracted in all subareas between 1950 and 1960. Only about five subareas on the southeastern periphery of the region had modest increases of under 500 employed in mining. No subareas experienced an increase in agricultural employment. A comparison of declines in mining and agricultural employment reveals dissimilar geographic patterns. Agriculture had rather modest numerical contractions in most of the nothern and central parts of the region, and large reductions in most of the southern subareas. The large numerical declines in mining employment were restricted mainly to the eastern Kentucky and southern West Virginia heartland of Appalachia, and to southwest and northeast Pennsylvania.

Manufacturing displayed an economically healthier pattern of change in the region in the 1950's. Only eight subareas actually had fewer persons employed in manufacturing in 1960 than in 1950. Three of these were rural subareas in eastern Kentucky, and three others were in east-central and northern West Virginia. The areas of greatest expansion in manufacturing employment were centered in the southern third of the region. Only two subareas north of Tennessee and North Carolina (Lexington, Ky., and Scranton-Wilkes-Barre, Pa.) gained over 10,000 jobs in the decade. Eight subareas in the southern third of the region had employment expansions of 10,000 or over. The Atlanta subarea led with 37,000 new jobs.

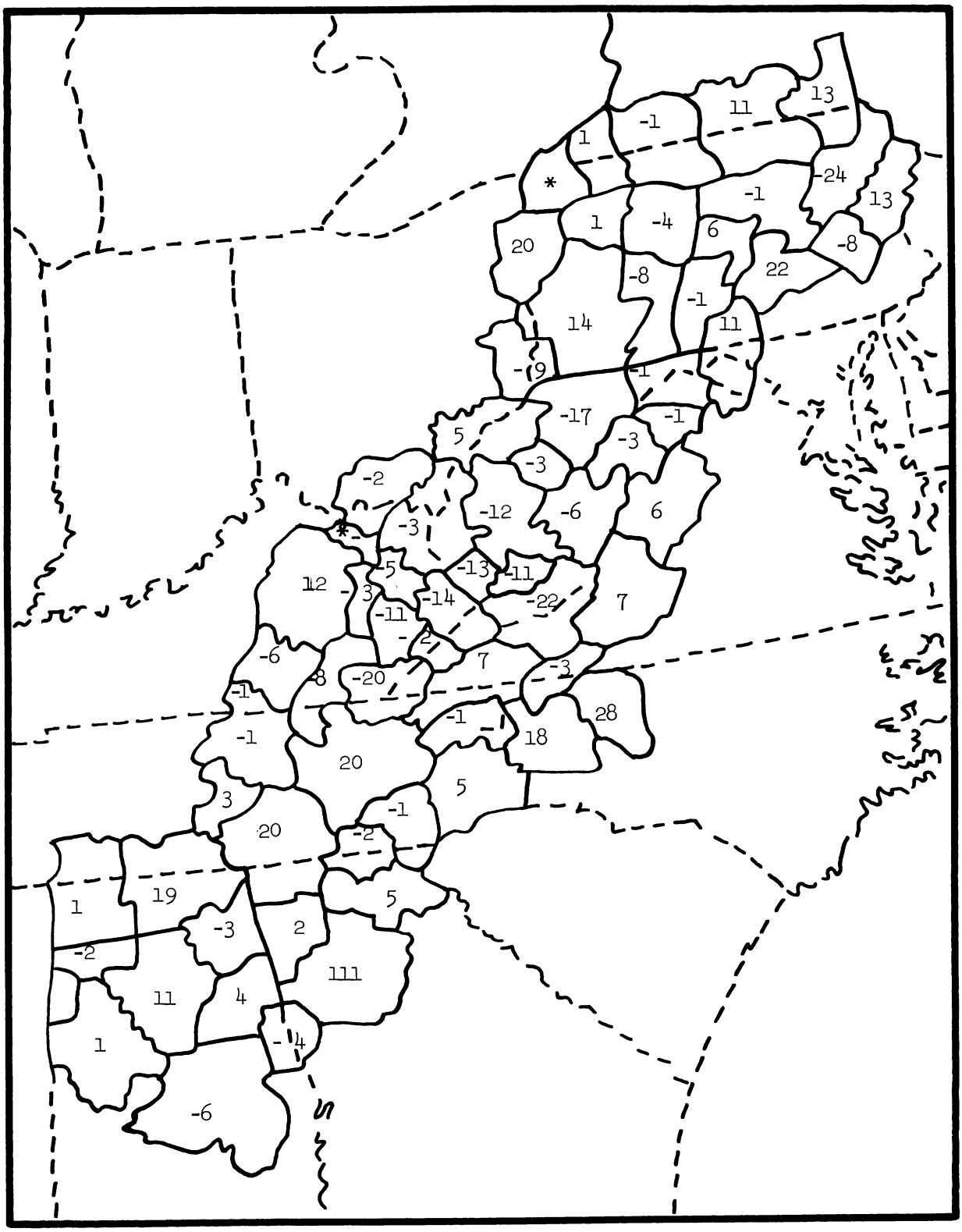

Figure 8. CHANGES IN TOTAL EMPLOYMENT (IN THOUSANDS), APPALACHIAN REGION, 1950-60.

*Change between -499 and 499.

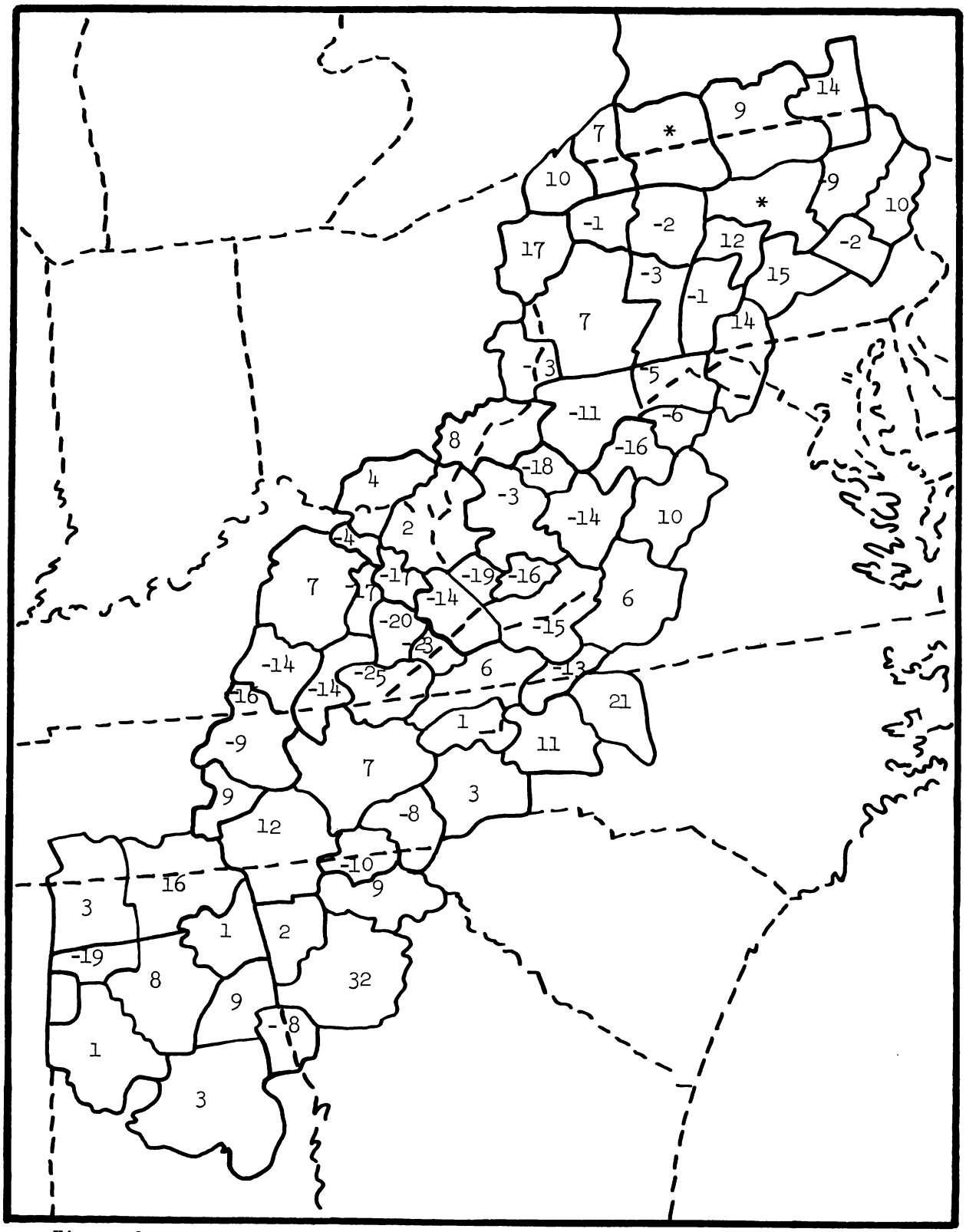

Figure 9. PERCENT CHANGE IN POPULATION, APPALACHIAN REGION, 1950-60

* Change between 0.5 and -0.5 percent. U. S. average was 18.4 percent.

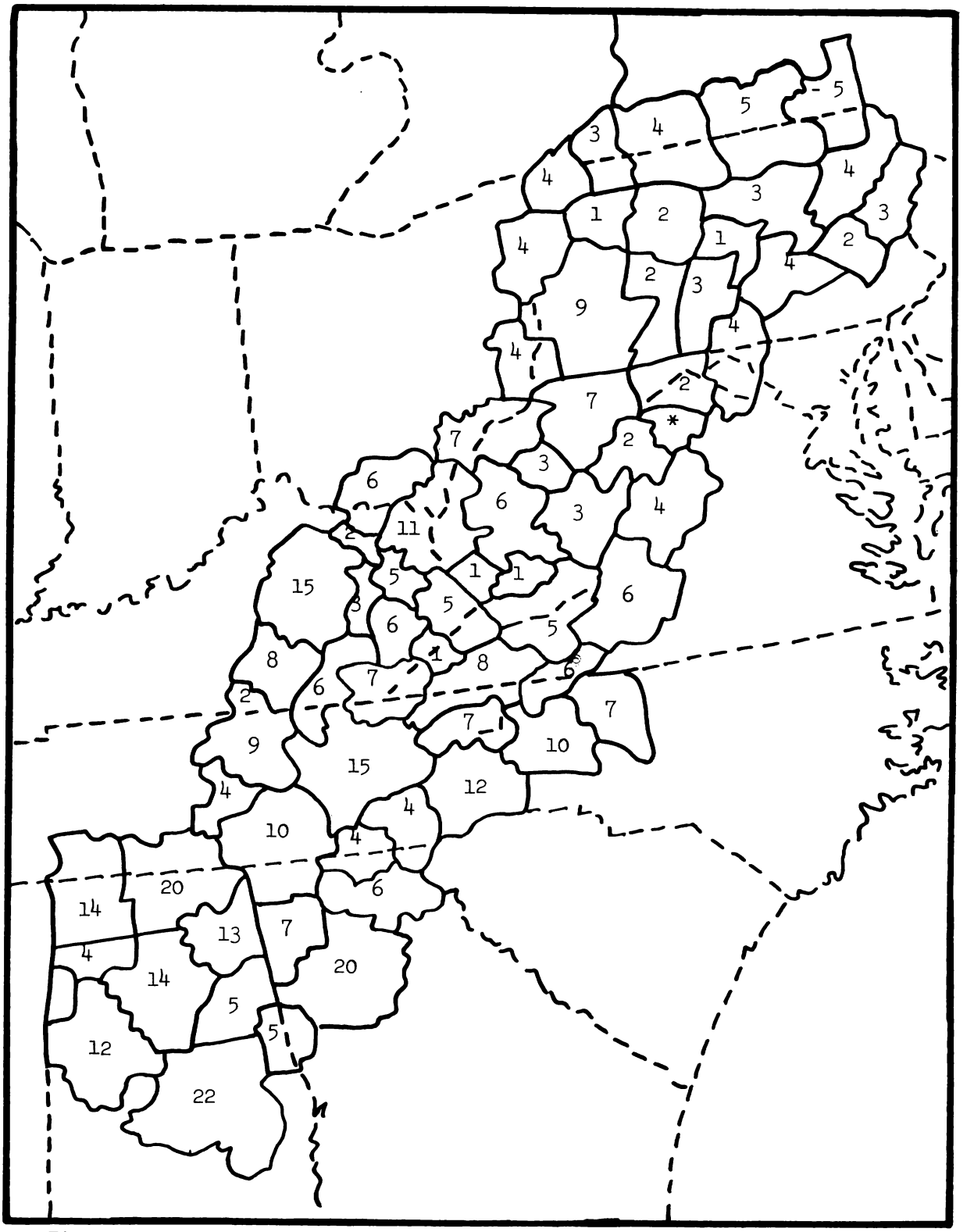

Figure 10. REDUCTIONS IN EMPLOYMENT IN AGRICULTURE, FORESTRY, AND FISHERIES (IN THOUSANDS), APPALACHIAN REGION, 1950-60

*Decrease of less than 500.

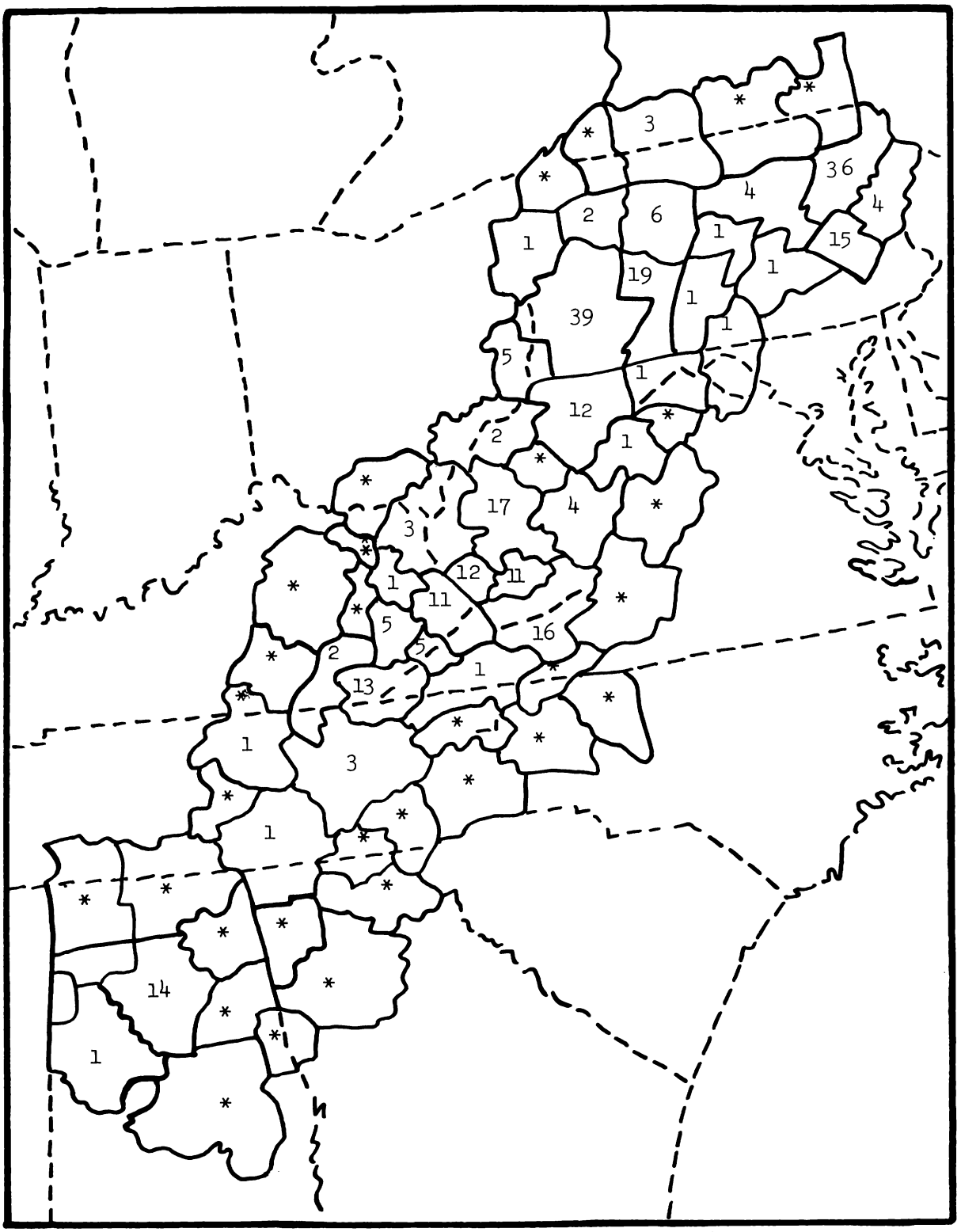

Figure 11. REDUCTION IN MINING EMPLOYMENT (IN THOUSANDS), APPALACHIAN REGION, 1950-60.

* Change between -499 and 499.

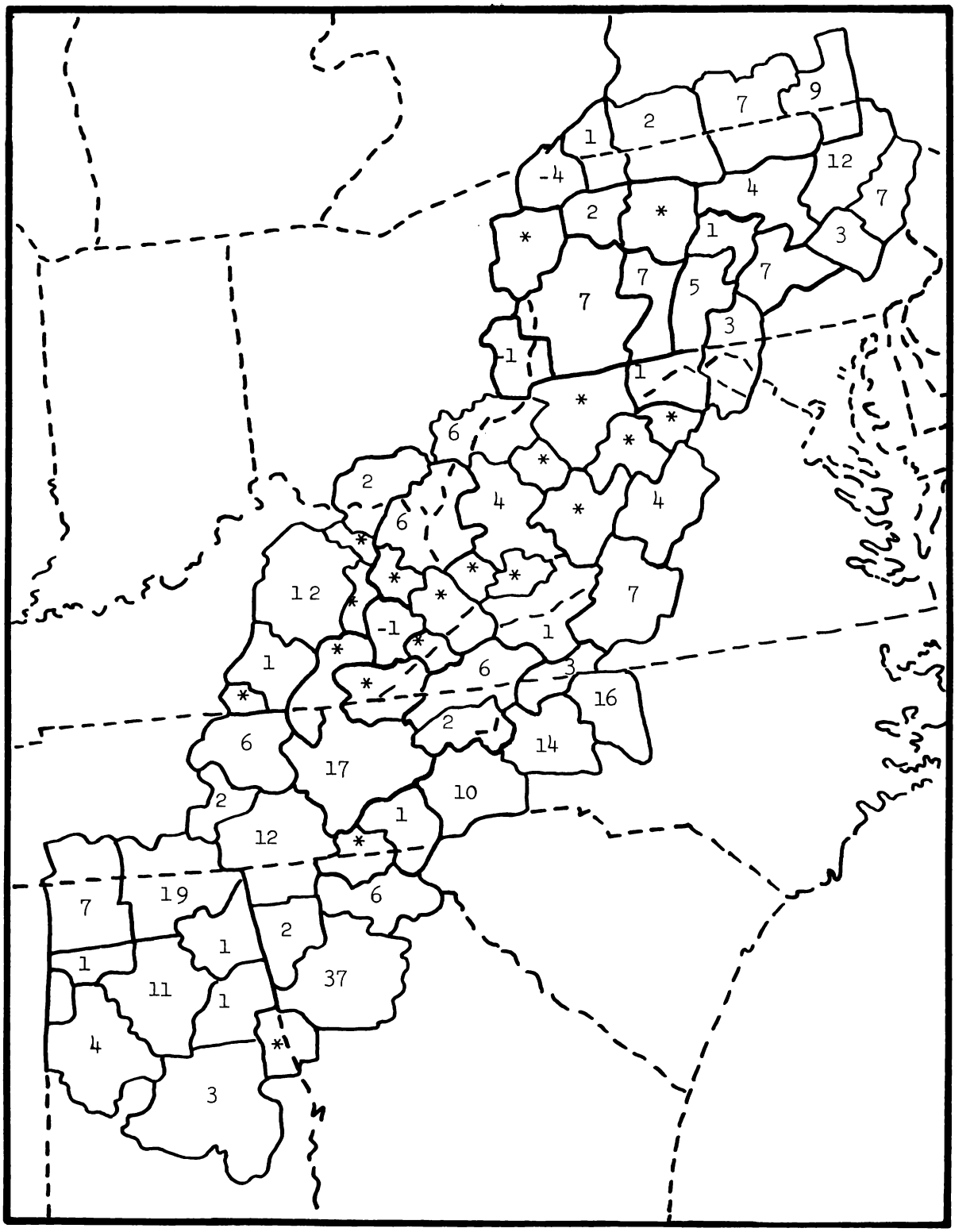

Figure 12. CHANGE IN MANUFACTURING EMPLOYMENT (IN THOUSANDS), APPALACHIAN REGION, 1950-60

* Change between -499 and 499.

The overall geographic pattern of growth in manufacturing employment is encouraging. Almost all the peripheral areas and some in the interior of the region gained employment. Gains were generally modest, however, in the central core of the region, where unemployment and low-income situations are in part concentrated. If the 1950-60 subarea trends in manufacturing growth hold in the future, such growth could conceivably cause total employment to turn upward in several subareas in the region where declines have been experienced in the last decade. Of course, overall employment expansion will most likely occur in those subareas where declines in agriculture and mining will bottom out or where these two industries have shrunk to such a small fraction of total employment that further large percentage declines will cause insignificant changes in total employment.

Future expansions in manufacturing should generate employment in the nonbasic or service-type industries. The data in figure 13 indicate employment change in these industries for the subareas of the region. Only eight subareas experienced a net decline in these activities. Even areas with large net reductions in agriculture, mining, and manufacturing generally gained in nonbasic employment. Such occurrences indicate that income did not fall as rapidly as employment in these subareas. Wage increases in certain industries, increased transfer payments into the region, and some upgrading of the labor force resulting from specialized educational efforts may also have been responsible.

Subarea Size and Employment Change

An important aspect of recent changes in employment within Appalachia relative to area development decisions is the incidence of such change among different-sized subareas. Determination of whether variations in rates of growth in total employment and employment in major industries have been associated with the size of the urban centers of subareas is vital. Have the environments of large, medium, or small centers been the most conducive to economic growth? The purpose of this section is to examine some recent historical trends concerning this question.

Data in table 6 present rates of change in total employment, employment in major industries, unemployment, and population for subareas grouped by size of their central place. The rates of change in both total employment and population were positively related to the size of central place of subareas. Employment change ranged from an average 6.1-percent expansion in subareas with centers of 250,000 and over to a -19-percent contraction in subareas with centers under 10,000. Population change ranged from 10.3 percent to -13.6 percent in the same groups, respectively. Rates of change in numbers unemployed did not show a consistent association with size of central place, but it appears that subareas with centers under 25,000 had higher rates of increase than subareas with larger centers. Subareas with centers of 250,000 and over averaged only a 26.5-percent increase in unemployment, while subareas with centers of under 10,000 population averaged a 95.1-percent increase in unemployment.

The major economic activities also appeared to expand or contract at differential rates among subareas grouped by size of central place. Often,

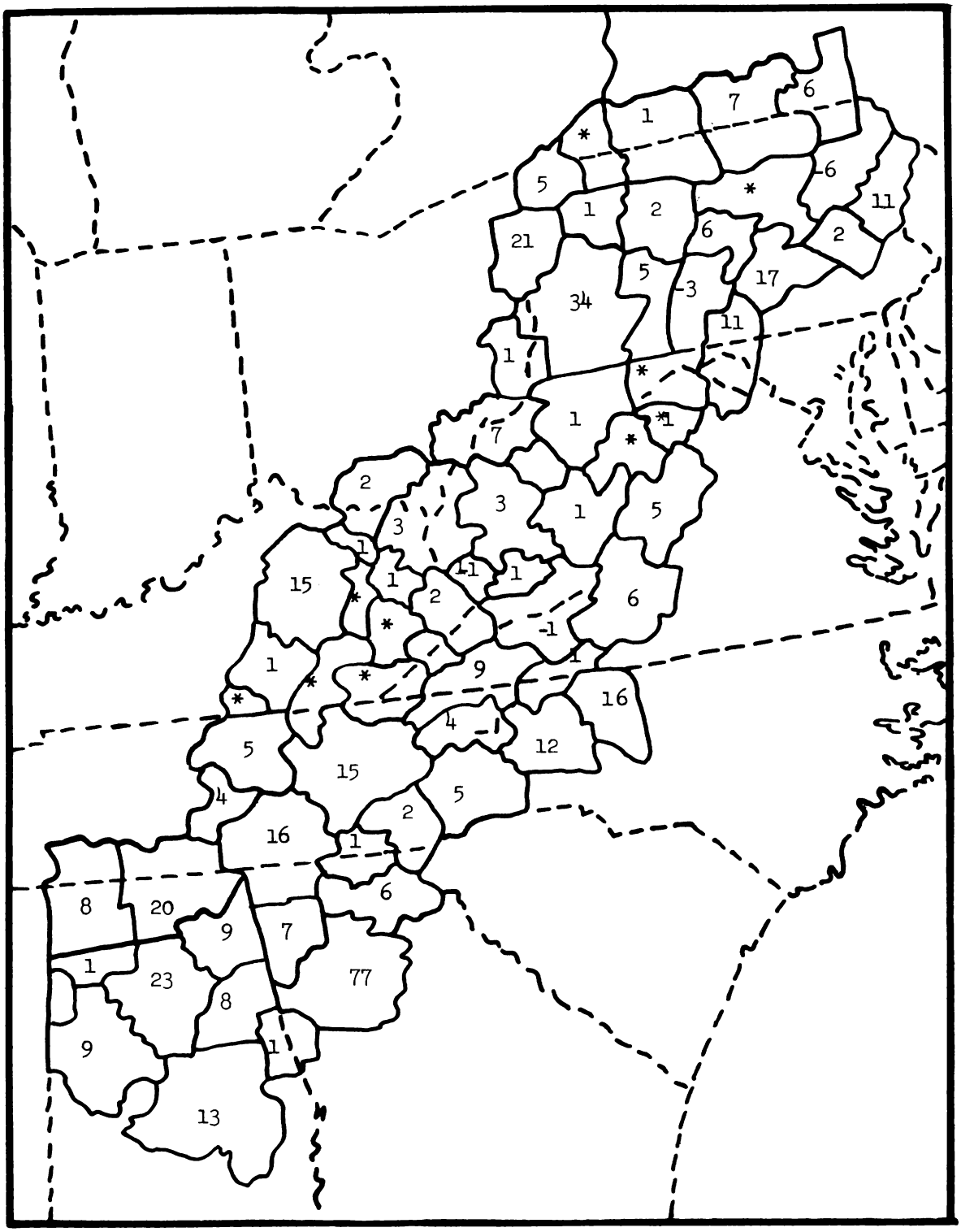

Figure 13. CHANGE IN NONBASIC EMPLOYMENT (IN THOUSANDS), APPALACHIAN REGION, 1950-60.

* Change between -499 and 499.

Table 6.--Percentage change in population, employment in major industries, and unemployment, for subareas grouped by size of central place, Appalachia, 1950-60

Population, employment, and unemployment	Size of central place						Appalachia
	250,000 & over	100,000 - 249,999	50,000 - 99,999	25,000 - 49,999	10,000 - 24,999	Under 10,000	
	Percent						
Population	10.3	5.9	4.8	1.9	-3.4	-13.6	4.5
Employment in--							
Agriculture, forestry, & fisheries	-49.8	-49.8	-44.3	-50.3	-50.5	-58.5	-50.2
Mining	-66.8	-59.1	-61.3	-49.6	-59.4	-42.7	-57.8
Manufacturing	9.0	13.7	28.4	19.0	20.9	38.6	15.3
Construction	6.1	-1.3	10.1	11.2	5.9	4.3	5.5
Transportation, communication, & public utilities	-5.9	-9.9	-12.2	-2.1	-5.9	-13.8	-7.6
Wholesale & retail trade	6.5	7.2	11.4	12.3	9.3	16.0	8.6
Finance, insurance, & real estate	37.7	42.9	43.1	46.7	50.2	40.5	41.0
Services	24.0	22.6	25.6	25.8	25.8	26.1	24.4
Industry not reported	218.0	132.4	78.7	53.1	68.0	11.4	119.7
Total employment	6.1	2.8	4.9	0.4	-4.4	-19.0	2.2
Unemployment	26.5	50.9	41.7	39.0	51.9	95.1	39.8

Source: U. S. Census of Population, 1950, Vol. II, "Characteristics of the Population," table 43. U. S. Census of Population, 1960, PC(1)-Series C, "General Social and Economic Characteristics," table 85.

however, the rates of change did not appear to be closely associated with subarea size. The two activities in which growth rates appeared to be most consistently associated with subarea size were manufacturing and trade. The rate of expansion in both was generally inversely proportional to subarea size. Manufacturing ranged from a 9-percent expansion in subareas with centers of 250,000 and over to a 38.6-percent increase in subareas under 10,000. Trade employment grew an average of 6.5 percent in the largest centers and 16 percent in the smallest. This is an unexpected relationship, considering the positive correlation between both growth in total employment and population and subarea size. It is possible that total disposable income has held up in the smaller centers, even though total employment has not.

There was an inverse association between rate of employment growth in the finance, insurance, and real estate category, and subarea size down through subareas of 25,000 and over. This activity grew 37.7 percent in centers of 250,000 and over, and 50.2 percent in population centers of 10,000 - 24,999. Mining and agricultural employment contracted over 40 percent in all subarea size groups. Agricultural employment contracted more rapidly than mining employment in the small-population center subareas.

Rates of employment change give only part of the total picture of occurring adjustments. Sometimes they tend to exaggerate change, e.g., a small numerical increase occurs on a small base, resulting in a large percentage figure of growth and a misleading indication that expansion has been significant. In order to balance the evidence of growth presented by percentage changes, it is desirable to review changes in absolute numbers employed by industry and subarea size group. Data on these changes are in table 7.

In examining employment changes in manufacturing and trade, the two industries where rates of expansion were inverse to subarea size, the bulk of the employment increase occurred in subareas with large centers. Growth was generally greatest where expansion had occurred in the past, although the percentage figures indicated some proportionate spreading out of employment in the two industries into the smaller centers. Most of the employment expansion in construction, finance, insurance, real estate, and services also occurred in the subareas with large centers. Subareas with centers under 10,000 secured only 1.7 and 4.2 percent of total regional employment gains in finance and services, even though they had about 6 percent of the population in 1960. The declines in agriculture and mining were as similar among subarea size groups as changes for any major industry, with the small center subareas in total losing about as many jobs as the large center subareas. However, the losses in these industries in the small center subareas were not offset by expansions in other activities, whereas they were in the large center subareas (table 7).

Distribution and Structure of Employment Among Subareas

The overall effects of variations in employment change from 1950-60 in major industries on the distribution of employment among subareas grouped by size of central place are presented in table 8. The data indicate the proportional distribution of employment in each major industry among the subarea size groups. The distribution of population among subarea groups is also given so

Table 7.--Change in population, number employed in major industries, and number unemployed, for subareas grouped by size of central place, Appalachia, 1950-60

Population, employment, and unemployment	Size of central place						Appalachia
	250,000 & over	100,000 - 249,999	50,000 - 99,999	25,000 - 49,999	10,000 - 24,999	Under 10,000	
	Thousands						
Population	668.3	250.8	135.4	58.1	-46.9	-189.7	876.0
Employment in--							
Agriculture, forestry, & fisheries	-54.0	-87.6	-78.0	-98.4	-30.4	-78.3	-426.7
Mining	-93.1	-45.1	-27.8	-33.2	-44.9	-29.9	-274.0
Manufacturing	73.7	61.1	71.8	49.7	24.3	15.6	296.2
Construction	7.9	-1.2	5.5	6.4	1.3	0.9	20.8
Transportation, communication, & public utilities	-11.7	-12.3	-9.4	-1.4	-1.4	-2.6	-38.8
Wholesale & retail trade	27.6	17.7	16.9	18.0	5.5	6.4	92.1
Finance, insurance, & real estate	25.9	13.9	7.2	7.0	2.7	1.0	57.7
Services	110.7	69.3	49.5	47.2	19.1	13.1	308.9
Industry not reported	58.6	28.4	12.6	9.0	4.3	0.8	113.7
Total employment	145.5	44.0	48.5	4.3	-19.6	-72.8	149.9
Unemployment	36.0	34.4	18.8	19.8	10.7	12.9	132.6

Source: U. S. Census of Population, 1950, Vol. II, "Characteristics of the Population," table 43. U. S. Census of Population, 1960, PC(1)-Series C, "General Social and Economic Characteristics," table 85.

Table 8.--Population and percentage distribution of employment in major industries, among subareas grouped by size of central place, Appalachia, 1950 and 1960

Population and employment, by year	Size of central place: 250,000 & over	100,000 - 249,999	50,000 - 99,999	25,000 - 49,999	10,000 - 24,999	Under 10,000	All size groups
	Percent						
Population							
1950	33.3	22.0	14.6	15.8	7.1	7.2	100.0
1960	35.2	22.3	14.7	15.4	6.5	5.9	100.0
Employment in--							
Agriculture, forestry, & fisheries							
1950	12.7	20.7	20.7	23.1	7.1	15.7	100.0
1960	12.8	20.9	23.2	23.0	7.0	13.1	100.0
Mining							
1950	29.5	16.1	9.6	14.1	15.9	14.8	100.0
1960	23.2	15.6	8.8	16.9	15.4	20.1	100.0
Construction							
1950	34.5	24.8	14.5	15.3	5.7	5.2	100.0
1960	34.6	23.2	15.2	16.1	5.7	5.2	100.0
Manufacturing							
1950	42.3	23.0	13.1	13.5	6.0	2.1	100.0
1960	40.0	22.7	14.5	14.0	6.3	2.5	100.0
Transportation, communication, & public utilities							
1950	39.0	24.2	15.0	13.4	4.8	3.6	100.0
1960	39.8	23.6	14.2	14.2	4.8	3.4	100.0
Wholesale & retail trade							
1950	40.0	23.0	14.8	13.7	5.6	3.7	100.0
1960	39.2	22.7	14.3	14.2	5.6	4.0	100.0
Finance, insurance, & real estate							
1950	48.8	23.0	11.9	10.7	3.8	1.8	100.0
1960	47.7	23.3	12.1	11.1	4.0	1.8	100.0
Services							
1950	36.4	24.2	15.2	14.4	5.8	4.0	100.0
1960	36.3	23.8	15.4	14.6	5.9	4.0	100.0
Industry not reported							
1950	28.3	22.6	16.9	17.8	6.6	7.8	100.0
1960	40.9	23.9	13.7	12.4	5.1	4.0	100.0
Total employment							
1950	35.4	22.6	14.6	15.1	6.6	5.7	100.0
1960	36.8	22.8	14.9	14.8	6.2	4.5	100.0

Source: U. S. Census of Population, 1950, Vol. II, "Characteristics of the Population," table 43. U. S. Census of Population, 1960, PC(1)-Series C, "General Social and Economic Characteristics," table 85.

that comparisons can be made between proportions of employment and population contained in subarea size groups.

Two important facts can be noted from observing the distribution of the agricultural and mining industries among subarea size groups. First, relative to population, employment in both of these basic industries was most disproportionately distributed in the less-urbanized subareas. In 1960, after a decade of radical contraction in these two industries, subareas with centers under 25,000 still had 20 percent of the agricultural and 36 percent of the mining employment of the region. Their share of total population was about 12 percent. Second, there was some shifting in the distributions of the two industries over the decade among "rural" and "urban" subareas (table 8). Agricultural employment was somewhat more concentrated in the more urban subareas; mining employment was more concentrated in the more rural subareas. The more urban subareas appeared to hold some comparative advantage for agricultural production. From a marketing standpoint, their greater increases in population over the decade certainly must have enhanced their advantage over more rural subareas. Also, the urban subareas may have superior topographic and soil resources for agricultural production than the more rural subareas. The relative increase in the concentration of mining employment in the more rural subareas may reflect some exhaustion of economically retrievable reserves of coal deposits in the proximity of large urban centers.

Manufacturing employment in both 1950 and 1960 was disproportionately concentrated relative to population in the large urban centers. In 1960, only the subarea size groups of 100,000 and over had higher proportions of manufacturing employment than population. However, over the decade the more rural subareas did make some relative gains.

All of the other industry groups were also disproportionately clustered in the more urban subareas, although generally not quite as intensively as manufacturing. Trade, finance, and the like, as well as services, tended to be diffused more into the smaller subareas over the decade. Total employment and population, of course, were more heavily concentrated in the large urban subareas in 1960 than in 1950. Subareas of 100,000 and over had 59.6 percent of total regional employment and 57.5 percent of regional population in 1960, compared with 58 and 55.3 percent, respectively, in 1950.

The data in table 9 indicate the effects of industry employment changes from 1950-60 on the employment structure of subareas by size group. The overall pattern in 1950 and 1960 was for mining and agriculture to represent an increasingly large proportion of total employment as subarea size decreases, and for all other industries to claim smaller percentages. In 1950, for example, mining and agriculture constituted only 10.4 percent of total employment in subareas with centers of 250,000 and over, and 51.3 percent in subareas with centers under 10,000 population. By 1960, the figures were 3.9 and 30.8 percent, respectively, for these two size groups. These two resource-based industries still constituted nearly one-third of all employment in the most rural subareas. In both 1950 and 1960, manufacturing and the other major industries generally comprised a smaller and smaller percentage of total employment as subarea size decreased. However, all of these industries became relatively more important in the smaller center subareas during the 1950's. There were of course, variations

Table 9.--Percentage distribution of employment among major industries within subareas grouped by size of central place, Appalachia, 1950 and 1960

Activity	Size of central place												Appalachia	
	250,000 & over		100,000 - 249,999		50,000 - 99,999		25,000 - 49,999		10,000 - 24,999		Under 10,000			
	1950	1960	1950	1960	1950	1960	1950	1960	1950	1960	1950	1960	1950	1960
	Percent													
Agriculture, forestry, & fisheries	4.5	2.1	11.6	5.6	18.0	9.5	19.4	9.6	13.6	7.0	33.0	17.9	12.7	6.2
Mining	5.9	1.8	5.0	2.0	4.6	1.7	6.6	3.3	17.1	7.3	18.3	12.9	7.1	2.9
Manufacturing	34.4	35.4	29.2	32.3	25.8	31.6	25.9	30.7	26.2	33.2	10.6	18.1	28.7	32.6
Construction	5.4	5.4	6.1	5.9	5.5	5.8	5.7	6.3	4.8	5.3	5.1	6.6	5.6	5.8
Transportation, communication, & public utilities	8.4	7.5	8.2	7.1	7.8	6.5	6.8	6.6	5.5	5.4	4.8	5.2	7.6	6.9
Wholesale & retail trade	18.0	18.0	16.2	16.9	15.2	16.1	14.4	16.2	13.4	15.4	10.5	15.0	15.9	16.9
Finance, insurance, & real estate	2.9	3.7	2.1	2.9	1.7	2.3	1.5	2.2	1.2	1.9	0.7	1.2	2.1	2.9
Services	19.4	22.7	20.2	24.1	19.7	23.6	18.0	22.6	16.7	22.0	13.1	20.4	18.9	23.0
Industry not reported	1.1	3.4	1.4	3.2	1.6	2.9	1.7	2.5	1.4	2.5	1.9	2.7	1.4	3.0
Total employed	100	100	100	100	100	100	100	100	100	100	100	100	100	100

Source: U. S. Census of Population, 1950, Vol. II, "Characteristics of the Population," table 43. U. S. Census of Population, 1960, PC(1)-Series C, "General Social and Economic Characteristics," table 85.

in the composition of employment among subareas within size groups. These are noted in appendix C (p. 45) which lists the percentage distribution of employment among major industries for all subareas in 1960. Changes in the number employed in major industries for all subareas are listed in appendix D (p. 47).

IMPLICATIONS

Examination of unemployment, low-income, and recent employment changes provide general insights on subarea differences in (a) job and income "needs", (b) ability to finance welfare and development projects, and (c) employment and income growth potential. Information on each of these factors is relevant to program formulation by private or public, and by Federal, State, and local groups. Knowledge of the number of unemployed persons and low-income families in the various subareas is essential to determine which areas need the most new jobs, or in the absence of new jobs, the heaviest outmigration of surplus labor and low-income families. Variations among subareas in unemployment and the proportion of families with low incomes provide clues as to which subareas with job and income "needs" may require the most outside capital to finance either developmental projects, training programs, or increased transfer payments to the impoverished. Recent employment gains in subareas, along with information on their industry structures, suggest which areas may have expansion potentials in the near future, and which areas are the most favorable for expanding economic activity further.

Policy Objectives

Solutions to the economic conditions of Appalachia might well involve (a) creation of employment by an expansion of the private sector of the region's economy; (b) training programs designed to increase the employability of surplus -- unemployed and underemployed -- labor; and (c) increases in transfer payments to impoverished families unable to raise their incomes through the gainful employment of family members. Creating employment in subareas where surplus labor is located would minimize the transfer costs of workers and dislocations of service-type activities. Unfortunately, such a solution is not available to the same extent for all areas. Such subareas with surplus labor probably do not have the capacity--with or without Government aid--to attract and sustain sufficient amounts of new activity and jobs to eliminate their labor surpluses.

Development efforts will be more effective if directed toward creating economic activity in subareas with surplus labor that have the greatest potential for economic expansion. If programs to expand economic activity are concentrated in the more viable subareas, then programs to facilitate the mobility of labor and improve welfare could be pursued in subareas with little growth potential that have surplus labor and excess numbers of low-income families. Of course, subareas in the region containing little or no surplus labor or minimal proportions of low-income families may not require either type of aid. Rather, they might be considered as absorption areas for the surplus labor of other subareas.

In light of the stated objective of decreasing unemployment and underemployment and excessive proportions of low-income families in all subareas, how might specific programs be applied geographically in Appalachia to achieve maximum regional benefits? What do the data in this report suggest as to the needs for development as well as to the potential for development?

Income Needs

First, if increased transfer payments are used to raise family incomes closer to a "minimum" acceptable level, which subareas need the most aid? Data for 1959 on numbers and proportions of families with incomes under $3,000 give some clues. Many of the subareas with medium or small centers had low densities of low-income families. However, medium and small center subareas in southern West Virginia and eastern Kentucky had relatively high densities and extremely high proportions of low-income families (fig. 2). The subareas with large urban centers generally had low proportions of low-income families. The high percentage of families with low incomes in the southern West Virginia-east Kentucky area suggests a low per capita income and, therefore, probably a limited ability in local areas to finance increased transfer payments to the impoverished. Such subareas undoubtedly are in greatest need of additional assistance to raise incomes to an acceptable level.

New Job Requirements

Which subareas need the most additional jobs to absorb their surplus labor? Apparently, the relevant indicator here is not so much the percent unemployed in the subareas of the region as the number of the unemployed in excess of certain levels 2/ and the underemployment as indicated by the number of families with low incomes. The number unemployed and with low incomes shows the extent of surplus labor in different parts of the region, and thus where the greatest number of new jobs or the most outmigration of workers is required to adjust subarea economies. The geographic pattern of surplus labor among subareas, coupled with the spatial incidence of development potential among subareas, could be a guide to where efforts to develop increased economic activity should be channeled. The pattern also is an indicator of subareas where programs to facilitate the mobility of labor are needed in the absence of effective development.

The data in the section on unemployment (p. 9) and the tabulation of number unemployed in excess of 4 percent by subarea in appendix B suggest that the subareas with large urban centers in eastern and western Pennsylvania, the Ohio River portion of the region, and north-central Alabama have the highest densities of excess unemployment. Most of the other subareas with large centers have low densities. The subareas of southern West Virginia and far-eastern Kentucky with medium- and small-size population centers also have high densities.

2/ A 4-percent rate of unemployment has been considered as an "interim target level" for the U. S. economy by the President's Council of Economic Advisors (see Economic Report of the President, Jan. 14, 1964, U. S. Govt. Printing Off., p. 37). A similar target might be appropriate for small area economic planning.

Most of the remaining subareas with medium- or small-size centers have low densities of excess unemployment. Densities are lowest on the eastern periphery of the region from Harrisburg, Pa., to Atlanta, Ga., and on the western flank from Huntsville, Ala., to Lexington, Ky. Data on total numbers of excess unemployment in appendix B indicate 7 subareas in 1960 with under 100 and 19 subareas with under 500 such persons. The range of age, education, and skills among a surplus labor force of even 500 persons might restrict the industries which could be developed in such subareas, or the retraining programs which might be initiated to facilitate outmigration.

It would appear, then, that based on the criterion of the amount of surplus labor, the above-mentioned subareas with medium-to-high densities of unemployment and those mentioned in the preceding sections with low incomes are in most need of job creation programs.

Areas with Development Potential

A final important criterion which might be used to determine alternative types of welfare and development aids is the economic development potential of subareas. Which subareas appear most likely to expand in the future? Which appear to be the most favorable locations for efforts to stimulate additional economic activity?

These are, of course, difficult questions without hard and fast answers. Despite the absence of precise predictions, the data suggest certain subareas which may have the greater propensity to generate sustained increments to employment and income from new investments in plant and equipment for industry, in community facilities, and in the training of labor. Recent employment growth trends among the subareas of the region suggest that growth potential is not equally distributed. Expansions have not occurred randomly over the region but have been concentrated in specific areas. Total employment in the 1950's expanded in most of the peripheral subareas of the region (fig. 8) and generally declined in the central Pennsylvania-West Virginia-east Kentucky heartland. Subareas with large urban centers generally had larger additions to total employment over the decade than subareas with small population centers. In large part, this pattern of change resulted from the fact that the industry structures of the "heartland" subareas and the peripheral subareas with small population centers were heavily weighted either to mining or agriculture--two industries with rapidly declining labor requirements. The increase in employment in industries other than mining or agriculture was at the highest rate in many of the medium-to-small population subareas. Significantly, however, only part of the subareas primarily dependent on mining or agriculture were able to make substantial gains in a substitute basic industry such as manufacturing. These were most often the small center subareas on the periphery of the region (i.e., in the central portions of Tennessee and Kentucky).

Employment growth recently has occurred mainly in subareas with large population centers, or in selected small center subareas located on the periphery of the region. Should this pattern be altered in the future by formal actions by Federal, State, or local groups, so as to create more development in interior subareas with small population centers? Are there industries which

might prosper in these subareas, either under existing conditions, or with financial assistance to physical plants, community facilities and roads?

The fact that the larger population centers and more peripheral subareas of Appalachia have evidenced the greatest growth in population and employment in the past decade and may continue to do so in the future should not spell the end of development efforts in the rural heartland of the region. Special efforts may be needed to locate those industries that can succeed there, and in specific instances, loans or grants to finance either plant and equipment or to serve needed supporting community facilities may be warranted.

Conclusions

This report indicates which subareas have excess unemployment and disproportionately large numbers of low-income families. The data are for 1950 and 1960, however, and should be constantly updated to be most useful as criteria for the distribution of development and welfare aid in Appalachia. Recent growth trends of employment among subareas were reviewed to suggest which subareas may have the most growth potential. Historical patterns, however, cannot be taken as precise indicators of future developments. Also, with adequate investments, public or private, it is possible to reverse the trends and induce viable growth in almost any type of area. The size of such investments and alternatives for their use become the crucial question in such cases. To determine more adequately the growth potential of various subareas in the region, detailed studies are needed of the location requirements and product demands of specific industries, and of the composition of existing economic activities and resources in specific subareas.

APPENDIX A

Subareas of the Appalachian Region

Delimitation of Subareas

Analysis of the economy of Appalachia demands some subdivision of the region so that differences among areas may be noted. For purposes of this study, the region was therefore divided into subareas consisting of contiguous counties grouped by the size of the largest "urban cluster" within approximately 50 miles. An urban cluster was defined as an urban center, plus the incorporated or unincorporated places with population of 2,500 or over, within 15 road miles of the center. The size of an urban cluster was measured by its 1950 population. Use of 1950 data for delimitation of urban clusters and associated subareas was considered more logical for the analysis of the spatial location of economic change than the use of 1960 data. The year 1950 was used as the base for measuring change. Urban clusters and their respective subareas of adjacent counties were then arbitrarily grouped into subarea types representing varying levels of urban concentration. These types were as follows:

Subarea type	Includes contiguous counties--		
	Containing or within 50 miles of an urban cluster of:	and	Over 50 miles from an urban cluster of:
1	500,000 or over		---------
2	250,000 - 499,999		500,000 or over
3	100,000 - 249,999		250,000 or over
4	50,000 - 99,999		100,000 or over
5	25,000 - 49,999		50,000 or over
6	10,000 - 24,999		25,000 or over
7	Under 10,000		10,000 or over

The actual delimitation procedure was to locate first all urban clusters of 500,000 or more in the region and circumscribe all counties within approximately 50 road miles of these clusters. This classification eliminated all counties within 50 miles of clusters of 500,000 or more. The procedure was then repeated for urban clusters of 250,000-499,999, 100,000-249,999, etc., until only counties over 50 miles from a cluster of 10,000 or over remained. These residual counties were grouped into subareas on the basis of their proximity to centers of less than 10,000 within their borders. All subareas were given the name of their largest urban center (or centers). A total of 69 subareas was delimited.

Counties were selected as the building blocks of subareas chiefly because most of the secondary data necessary for the analysis were not available for finer geographic breakdowns. Subareas were formed rather than using strictly county data for two main reasons: First, the employment data to be used are from the Census of Population which reports on the basis of residence of worker rather than location of job. Therefore, to insure that the Census data at least approximated the actual location of employment changes, counties had to be combined so that they reflected labor market areas which minimized between-areas commuting. Secondly, subareas built around urban clusters with a radius of approximately 50 miles were thought to represent the primary impact area for labor and trade of the clusters.

Table 10.--Subareas in Appalachia: Population of central place, and counties composing areas, from north to south, 1950

Central place in subareas	Population of central place (in thousands)	County
Subareas with central places of 250,000 and over:		
Scranton-Wilkes-Barre, Pa.	436.5	Columbia, Lackawanna, Luzerne, Wayne, and Wyoming, Pa.
Allentown-Bethlehem, Pa.	265.6	Carbon, Lehigh, Monroe, Northampton, and Pike, Pa.
Youngstown, Ohio	317.3	Columbiana, Mahoning, Trumbull, Lawrence, and Mercer, Ohio
Pittsburgh, Pa.	1,210.7	Allegheny, Armstrong, Beaver, Butler, Fayette, Greene, Washington, and Westmoreland, Pa.; Brooke and Hancock, W. Va.; Jefferson, Ohio
Atlanta, Ga.	374.9	Barrow, Butts, Carroll, Cherokee, Clayton, Cobb, Coweta, DeKalb, Douglas, Fayette, Forsyth, Fulton, Gwinnett, Henry, Newton, Paulding, Rockdale, Spaulding, and Walton, Ga.
Birmingham, Ala.	399.0	Blount, Cullman, Jefferson, Shelby, St. Clair, and Walker, Ala.
Subareas with central places of 100,000-249,999:		
Binghamton, N. Y.	120.0	Broome, Chenango, and Tioga, N. Y.; Susquehanna, Pa.
Erie, Pa.	134.2	Crawford, and Erie, Pa.
Reading, Pa.	136.6	Berks, and Schuylkill, Pa.
Harrisburg, Pa.	145.3	Cumberland, Dauphin, Juniata, Lebanon, Perry, and Snyder, Pa.
Wheeling, W. Va.	115.2	Marshall, and Ohio, W. Va.; Harrison, and Monroe, Ohio
Huntington, W. Va.	126.4	Cabell, Lincoln, Mason, and Wayne, W. Va.; Boyd, Carter, Greenup, and Lawrence, Ky.; Gallia, and Lawrence, Ohio
Charleston, W. Va.	113.2	Boone, Clay, Fayette, Kanawha, Putnam, and Roane, W. Va.
Roanoke, Va.	102.4	Alleghany, Bedford, Botetourt, Craig, Floyd, Franklin, Montgomery, Pulaski, and Roanoke, Va.
Knoxville, Tenn.	124.8	Anderson, Blount, Campbell, Cocke, Grainger, Hamblen, Jefferson, Knox, Loudon, Monroe, Morgan, Roane, Sevier, and Union, Tenn.

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Table 10.--Subareas in Appalachia: Population of central place, and counties composing areas, north to south, 1950 -- continued

Central place in subareas	Population of central place (in thousands)	County
Subareas with central places of 100,000-249,999: (con.)		
Chattanooga, Tenn.	144.6	Bledsoe, Bradley, Grundy, Hamilton, Marion, McMinn, Meigs, Polk, Rhea, and Sequatchie, Tenn.; Catoosa, Dade, Murray, Walker, and Whitfield, Ga.
Montgomery, Ala.	110.9	Autauga, Bullock, Coosa, Chilton, Dallas, Elmore, Lowndes, Macon, Montgomery, Pike, and Tallapoosa, Ala.
Subareas with central places of 50,000-99,999:		
Elmira, N. Y.	62.2	Chemung, Schuyler, Steuben, and Tompkins, N. Y.; Bradford, and Tioga, Pa.
Williamsport, Pa.	66.0	Clinton, Lycoming, Montour, Northumberland, Sullivan, and Union, Pa.
Altoona, Pa.	89.0	Bedford, Blair, and Huntingdon, Pa.
Johnstown, Pa.	96.3	Cambria, Indiana, and Somerset, Pa.
Parkersburg, W. Va.	62.5	Pleasants, Ritchie, Tyler, Wirt, and Wood, W. Va.; Athens, Meigs, and Washington, Ohio
Lexington, Ky.	87.0	Bath, Bourbon, Boyle, Clark, Estill, Fayette, Garrard, Harrison, Jackson, Jessamine, Lincoln, Madison, Mercer, Montgomery, Nicholas, Powell, Robertson, Rockcastle, Scott, and Woodford, Ky.
Winston-Salem, N. C.	91.4	Davidson, Davie, Forsyth, Stokes, Surry, and Yadkin, N. C.
Asheville, N. C.	53.0	Buncombe, Haywood, Henderson, Madison, Polk, Rutherford, Transylvania, and Yancey, N. C.
Gadsden, Ga.	63.3	Cherokee, DeKalb, Etowah, and Marshall, Ala.
Tuscaloosa, Ala.	50.3	Bibb, Fayette, Greene, Hale, Pickens, and Tuscaloosa, Ala.
Subareas with central places of 25,000-49,999:		
Jamestown, N. Y.	49.7	Chautaugua, N. Y., and Warren, Pa.
Oil City-Franklin, Pa.	36.7	Clarion, Forest, and Venango, Pa.
Hagerstown, Md.	36.3	Washington, Md.; Franklin, and Fulton, Pa.; Berkeley, Jefferson, and Morgan, W. Va.; Clark, and Frederick, Va.

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Table 10.--Subareas in Appalachia: Population of central place, and counties composing areas, north to south, 1950 -- continued

Central place in subareas	Population of central place (in thousands)	County
Subareas with central places of 25,000-49,999: (con.)		
Cumberland, Md.	44.6	Allegany, and Garrett, Md.; Hampshire, and Mineral, W. Va.
Clarksburg, W. Va.	37.4	Barbour, Doddridge, Harrison, Lewis, Marion, Monongalia, Preston, Taylor, Upshur, and Wetzel, W. Va.
Portsmouth, Ohio	41.6	Adams, Jackson, Pike, and Scioto, Ohio; Lewis, Ky.
Staunton-Waynesboro, Va.	32.3	Augusta, Barth, Highland, Rockbridge, and Rockingham, Va.
Bluefield, W. Va.	38.2	McDowell, Mercer, Monroe, and Summers, W. Va.; Bland, Giles, Tazewell, and Wythe, Va.
Bristol, Tenn.	37.4	Russell, Scott, Smythe, and Washington, Va.; Hawkins, Johnson, and Sullivan, Tenn.
Johnson City, Tenn.	38.6	Carter, Greene, Unicoi, and Washington, Tenn.; Avery, and Mitchell, N. C.
Rome, Ga.	29.8	Bartow, Chattooga, Floyd, Gordon, Haralson, and Polk, Ga.
LaGrange, Ga.	28.8	Chambers, Heard, Randolph, and Troup, Ala.
Florence-Sheffield, Ala.	41.4	Colbert, Franklin, Lauderdale, and Lawrence, Ala.; Lawrence, and Wayne, Tenn.
Huntsville, Ala.	34.8	Jackson, Limestone, Madison, and Morgan, Ala.; Franklin, Giles, Lincoln, and Moore, Tenn.
Anniston, Ala.	34.3	Calhoun, Clay, Cleburne, and Talledega, Ala.
Subareas with central places of 10,000-24,999:		
Olean-Bradford, N. Y.	22.9	Allegany, and Cattaraugus, N. Y.; McKean, and Potter, Pa.
St. Marys-Dubois, Pa.	18.7	Cameron, Clearfield, Elk, and Jefferson, Pa.
State College, Pa.	22.9	Centre, and Mifflin, Pa.
Beckley, W. Va.	22.0	Raleigh, and Wyoming, W. Va.
Logan, W. Va.	15.3	Logan, W. Va.
Middlesboro, Ky.	18.4	Bell, Harlan, and Knox, Ky.; Lee, Va.; Claiborne, and Hancock, Tenn.
Hickory-Statesville, N. C.	20.8	Alexander, Iredell, Wilkes, Watauga, Burke, Caldwell, and Catawba, N. C.

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Table 10.--Subareas in Appalachia: Population of central place, and counties composing areas, north to south, 1950 -- continued

Central place in subareas	Population of central place (in thousands)	County
Subareas with central places of 10,000-24,999: (con.)		
Gainesville, Ga.	11.9	Banks, Dawson, Franklin, Gilmer, Habersham, Hall, Lumpkin, Pickens, Stephens, and White, Ga.
Subareas with central places under 10,000:		
Petersburg, W. Va.	1.9	Grant, and Hardy, W. Va.
Elkins, W. Va.	9.1	Pendleton, Randolph, and Tucker, W. Va.
Glennville, W. Va.	1.8	Braxton, Calhoun, and Gilmer, W. Va.
Richwood, W. Va.	5.3	Greenbrier, Nicholas, Pocahantas, and Webster, W. Va.
Morehead, Ky.	3.1	Fleming, and Rowan, Ky.
Paintsville, Ky.	4.3	Elliot, Johnson, Magoffin, and Morgan, Ky.
Beattyville, Ky.	1.0	Lee, Menifee, Owsley, and Wolfe, Ky.
Pikeville, Ky.	5.2	Floyd, Martin, and Pike, Ky.; Buchanan, and Dickenson, Va.
Hazard, Ky.	7.0	Breathitt, Knott, Leslie, and Perry, Ky.
Big Stone Gap, Va.	5.2	Wise, Va., and Letcher, Ky.
Corbin-Oneida, Ky.	7.7	Clay, Laurel, McCreary, and Whitley, Ky.; Scott, Tenn.
Somerset, Ky.	7.1	Adair, Casey, Pulaski, Russell, and Wayne, Ky.
Albany, Ky.	1.9	Clinton, and Cumberland, Ky.
Galax, Va.	5.2	Carroll, and Grayson, Va.; Alleghany, and Ashe, N. C.
Cookeville, Tenn.	6.9	Clay, Cumberland, Fentress, Jackson, Overton, Pickett, Putnam, Smith, and White, Tenn.
McMinnville, Tenn.	7.6	Coffee, DeKalb, VanBuren, and Warren, Tenn.
Franklin, N. C.	2.0	Graham, Jackson, Macon, and Swain, N. C.; Raburn, Ga.
Murphy, N. C.	2.4	Clay, and Cherokee, N. C.; Fannin, Towns, and Union, Ga.
Haleyville, Ala.	3.3	Marion, and Winston, Ala.

Table 11.--Data on low-income families, 1959, and unemployment, 1960, in the subareas of Appalachia

Subarea	Families with incomes under $3,000, 1959			Unemployment, 1960		
	Total number	Number per square mile	Percentage of all families	Number in excess of 4 percent		Percentage of labor force
				Total	Per square mile	
	Number	Number	Percent	Number	Number	Percent
Subareas with central places of 250,000 & over:						
Pittsburgh	124,174	19.2	16.1	36,479	5.7	7.4
Scranton-Wilkes-Barre	42,824	14.4	23.8	13,430	4.5	9.1
Birmingham	62,405	13.1	30.4	6,599	1.4	6.3
Atlanta	78,299	13.9	24.3	0	0.0	3.6
Youngstown	31,715	12.1	14.4	7,813	3.0	6.5
Allentown-Bethlehem	20,889	9.2	14.8	1,703	0.7	4.8
Subareas with central places of 100,000-249,999:						
Harrisburg	20,516	7.6	15.8	0	0.0	3.6
Chattanooga	42,459	5.1	32.3	2,796	0.5	5.5
Reading	22,719	13.8	18.7	5,666	3.4	7.0
Erie	14,278	7.8	17.2	5,238	2.9	8.2
Huntington	30,964	7.9	31.9	5,622	1.4	8.5
Knoxville	54,912	9.6	35.2	4,669	0.8	6.1
Binghamton	12,244	4.1	14.8	481	0.2	4.4
Wheeling	14,018	7.8	23.9	4,012	2.2	9.0
Charleston	29,203	7.9	28.4	4,756	1.3	7.6
Montgomery	43,137	5.6	44.8	1,597	0.2	5.1
Roanoke	23,976	5.7	29.2	1,510	0.4	5.2
Subareas with central places of 50,000-99,999:						
Johnstown	23,850	9.2	26.7	7,611	2.9	10.3
Winston-Salem	26,040	10.2	27.0	0	0.0	3.8
Altoona	14,182	5.8	25.1	1,866	0.8	6.4
Lexington	38,599	7.5	36.5	1,040	0.2	4.7
Williamsport	17,409	5.0	22.4	3,593	1.0	7.1
Gadsden	21,821	8.7	41.5	2,082	0.8	7.0
Parkersburg	17,176	5.7	29.5	1,975	0.7	6.5
Elmira	16,167	3.3	18.0	1,229	0.2	4.9
Asheville	31,066	7.8	35.9	614	0.2	4.5
Tuscaloosa	20,513	4.3	47.0	477	0.1	4.7
Subareas with central places of 25,000-49,999:						
Jamestown	8,284	4.2	16.7	1,388	0.7	5.9
Cumberland	10,589	5.1	29.4	1,572	0.8	7.3
Portsmouth	14,776	5.8	35.0	2,636	1.0	9.0
Florence-Sheffield	20,849	5.2	42.3	1,409	0.4	6.2
Rome	15,856	7.1	34.7	1,005	0.4	5.4
Johnson City	18,460	9.4	39.5	2,974	1.5	8.5
Bluefield	25,449	7.3	41.7	4,199	1.2	9.7

--Continued

Table 11.--Data on low-income families, 1959, and unemployment, 1960, in the subareas of Appalachia -- continued

Subarea	Families with incomes under $3,000, 1959			Unemployment, 1960		
	Total number	Number per square mile	Percentage of all families	Number in excess of 4 percent		Percentage of labor force
				Total	Per square mile	
	Number	Number	Percent	Number	Number	Percent
Subareas with central places of 25,000-49,999: (con.)						
Bristol	28,414	8.7	38.9	1,348	0.4	5.4
Clarksburg	27,141	7.4	33.1	4,258	1.2	8.0
Oil City - Franklin	5,682	3.4	21.0	975	0.6	6.6
Hagerstown	18,900	5.1	24.9	3,315	1.1	6.9
Huntsville	32,064	6.5	39.5	702	0.1	4.6
Anniston	16,181	6.4	36.1	1,384	0.5	6.2
Staunton - Waynesboro	11,858	3.5	29.6	0	0.0	3.7
La Grange	11,429	5.9	41.2	0	0.0	3.9
Subareas with central places of 10,000-24,999:						
State College	6,056	3.9	20.8	294	0.2	4.6
Olean-Bradford	10,068	2.3	20.4	2,043	0.5	6.8
Beckley	10,199	9.2	38.1	2,543	2.3	12.5
Hickory - Statesville	26,071	7.9	33.1	0	0.0	3.8
Dubois - St. Mary's	10,338	3.4	23.0	3,957	1.3	10.3
Middlesboro	22,499	9.7	58.9	2,267	1.0	9.7
Logan	8,537	9.7	37.9	1,975	2.2	12.2
Gainesville	15,014	5.4	42.5	456	0.2	4.9
Subareas with central places of under 10,000:						
Elkins	4,764	2.2	47.4	686	0.3	9.3
Corbin - Oneida	14,748	2.4	65.2	1,267	0.7	9.4
McMinnville	8,308	5.9	47.9	292	0.2	5.2
Somerset	14,880	7.0	66.2	192	0.1	4.7
Hazard	10,711	6.7	64.7	960	0.6	10.3
Cookeville	19,527	5.7	62.6	779	0.2	5.9
Richwood	9,410	3.0	46.2	1,286	0.4	9.3
Big Stone Gap	8,237	11.0	48.8	1,133	1.5	10.3
Galax	8,218	5.1	47.4	282	0.2	5.6
Pikeville	20,348	9.0	52.5	3,011	1.3	11.4
Paintsville	7,284	6.2	64.7	881	0.7	11.9
Haleyville	5,414	3.9	55.6	277	0.2	6.3
Morehead	3,077	8.6	53.6	156	0.2	6.1
Murphy	6,680	4.3	58.3	323	0.2	6.4
Franklin	7,226	3.3	53.9	659	0.3	7.8
Albany	3,022	6.1	70.9	61	0.1	5.1
Petersburg	2,535	2.4	58.7	171	0.2	7.1
Glennville	4,176	3.7	55.1	588	0.5	11.0
Beattyville	4,120	4.9	75.1	105	0.1	6.0

Source: U. S. Census of Population, 1960, PC (1) - Series C, "General Social and Economic Characteristics," tables 83 and 86.

Table 12.--Percentage distribution of employment among major industries in the subareas of Appalachia, 1960

Subarea	Percentage of total employment among--							
	Agr., for., and fish.	Mining	Manu-facturing	Transporta-tion and public utilities	Trade	Services	Other	Total
	Percent							
Subareas with central places of 250,000 & over:								
Scranton-Wilkes-Barre----	3	4	36	7	17	20	13	100
Allenton-Bethlehem-------	2	1	47	6	15	19	10	100
Youngstown-------	2	1	45	6	17	19	10	100
Pittsburgh-------	1	2	37	8	18	22	12	100
Atlanta----------	3	-	26	8	20	27	16	100
Birmingham-------	3	3	27	8	20	26	13	100
Subareas with central places of 100,000-249,999:								
Binghamton-------	6	-	42	5	15	21	11	100
Reading----------	3	3	43	6	15	18	12	100
Erie----------	4	-	40	7	17	21	11	100
Harrisburg-------	4	1	28	8	16	31	12	100
Wheeling---------	5	6	29	7	19	22	12	100
Charleston-------	2	9	26	9	19	23	12	100
Huntington-------	5	2	28	12	18	23	12	100
Roanoke----------	7	-	28	11	17	24	13	100
Knoxville--------	7	2	31	6	18	23	13	100
Chattanooga------	5	1	37	6	16	22	13	100
Montgomery-------	13	-	19	6	17	35	10	100
Subareas with central places of 50,000-99,999:								
Elmira----------	8	-	33	6	15	27	11	100
Williamsport-----	5	2	40	7	16	21	9	100
Altoona----------	5	1	25	19	19	22	9	100
Johnstown--------	5	9	31	7	18	22	8	100
Parkersburg------	6	3	28	7	18	25	13	100
Lexington--------	20	1	16	6	17	29	11	100
Winston-Salem----	9	-	43	5	14	19	10	100
Asheville--------	9	-	36	4	16	22	13	100
Gadsden----------	14	1	25	4	15	31	10	100
Subareas with central places of 25,000-49,999:								
Jamestown--------	6	-	40	5	17	21	11	100
Oil City-Franklin	5	4	36	7	16	21	11	100
Hagerstown-------	10	1	28	8	17	26	10	100
Cumberland-------	7	2	29	14	16	20	12	100
Clarksburg-------	5	13	21	9	18	25	9	100
Portsmouth-------	11	1	31	8	18	20	12	100
Staunton-Waynesboro------	12	1	31	5	15	26	10	100

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Table 12.--Percentage distribution of employment among major industries in the subareas of Appalachia, 1960 -- continued

Subarea	Percentage of total employment among--							
	Agr., for., and fish.	Mining	Manu-facturing	Transporta-tion and public utilities	Trade	Services	Other	Total
	Percent							
Subareas with central places of 25,000-49,999: (con.)								
Bluefield	7	19	15	9	19	23	8	100
Bristol	14	2	32	6	16	19	11	100
Johnson City	15	1	28	6	16	22	12	100
Rome	7	1	42	5	15	21	9	100
Huntsville	15	-	30	4	15	23	13	100
Florence-Sheffield	14	-	29	7	16	20	14	100
Anniston	5	1	36	5	15	29	9	100
La Grange	7	-	49	3	12	22	7	100
Subareas with central places of 10,000-24,999:								
Bradford-Olean	8	4	33	6	16	24	9	100
Dubois-St. Mary's	3	7	36	8	16	19	11	100
State College	7	2	27	5	16	35	8	100
Beckley	1	31	8	7	18	26	9	100
Logan	-	38	6	8	19	22	7	100
Middlesboro	16	19	9	6	17	23	10	100
Hickory-Statesville	7	-	49	4	13	18	9	100
Gainesville	12	-	40	4	15	19	10	100
Subareas with central places under 10,000:								
Elkins	14	7	20	8	17	24	10	100
Petersburg	28	2	19	5	16	19	11	100
Glennville	18	13	12	8	15	22	12	100
Richwood	8	19	14	6	17	26	10	100
Galax	23	2	38	3	11	14	9	100
Paintsville	25	12	7	6	17	21	12	100
Beattyville	44	7	7	4	10	20	11	100
Morehead	29	1	15	5	16	22	12	100
Big Stone Gap	2	39	5	6	18	22	8	100
Pikeville	2	43	5	6	15	20	9	100
Hazard	6	31	7	5	16	25	10	100
Corbin-Oneida	16	13	13	9	18	21	10	100
Somerset	39	1	15	4	14	17	10	100
Albany	43	4	13	3	14	16	7	100
Cookeville	24	2	28	3	14	18	11	100
McMinnville	18	-	27	4	14	24	13	100
Murphy	19	9	22	4	16	20	10	100
Franklin	13	1	26	5	16	25	14	100
Hayleyville	18	4	30	6	13	19	10	100

Source: U. S. Census of Population, 1960, PC (1) - Series C, "General Social and Economic Characteristics," table 85.

Table 13.--Change in number employed in major industries within the subareas of Appalachia, 1950 and 1960

Subarea	Change in number employed in--							
	Agr., for., and fish.	Mining	Manu-facturing	Transporta-tion and public utilities	Trade	Services	Other	Total
	Thousands							
Subareas with population of 250,000 & over:								
Scranton	-3.7	-35.7	11.9	-4.2	-4.0	2.5	9.5	-23.7
Allentown-Bethlehem	-3.3	-4.0	6.9	-0.4	1.6	7.6	4.6	13.0
Youngstown	-4.3	-0.6	-0.1	-1.4	4.3	13.9	8.4	20.2
Pittsburgh	-8.6	-38.9	6.6	-12.5	1/ -.0	40.1	0.8	14.1
Atlanta	-19.7	0.1	37.3	8.0	20.9	32.9	21.3	110.8
Birmingham	-14.3	-14.2	11.1	-1.1	4.9	13.9	11.1	11.1
Subareas with central places of 100,000-249,999:								
Binghamton	-4.5	1/ +.0	8.6	-0.8	-0.1	5.5	4.1	12.8
Reading	-2.1	-14.8	3.4	-2.4	-0.1	4.6	3.1	-8.3
Erie	-3.5	-0.1	-4.0	-1.2	0.4	5.0	3.4	0.4
Harrisburg	-4.1	-0.6	6.5	-1.9	4.5	12.6	5.4	22.4
Wheeling	-4.3	-5.0	-1.0	-1.1	-0.7	1.6	1.7	-8.8
Charleston	-5.8	-17.4	3.8	0.2	-0.4	3.9	3.3	-12.4
Huntington	-10.8	-2.8	5.6	-2.8	0.7	4.0	3.5	-2.6
Roanoke	-6.4	-0.4	6.5	-2.0	2.1	4.9	1.9	6.6
Knoxville	-14.6	-2.7	17.4	-0.2	5.3	9.8	4.8	19.8
Chattanooga	-9.7	-1.3	11.5	0.2	3.5	8.5	7.2	19.9
Montgomery	-21.9	1/ -.0	2.8	-0.3	2.4	8.8	2.5	-5.7
Subareas with central places of 50,000-99,999:								
Elmira	-5.3	-0.1	6.8	-2.0	-0.5	8.4	3.5	10.8
Williamsport	-2.6	-4.3	4.0	-2.9	-0.1	3.5	1.3	-1.1
Altoona	-2.6	-1.3	4.9	-6.0	0.6	2.6	0.8	-1.0
Johnstown	-2.3	-18.7	6.9	-0.6	1.1	3.9	1.5	-8.2
Parkersburg	-7.1	-2.0	5.9	-0.4	1.0	5.3	2.0	4.7
Lexington	-15.0	-0.2	11.7	-0.1	4.5	7.9	3.6	12.4
Winston-Salem	-6.8	0.1	16.4	2.2	4.1	7.0	5.4	28.4
Asheville	-11.6	-0.1	9.6	-0.5	2.2	1.7	3.7	5.0
Gadsden	-13.2	1/ -.0	1.3	0.7	2.0	3.6	2.4	-3.2
Tuscaloosa	-11.5	-1.2	4.3	0.4	2.0	5.5	1.2	0.7
Subareas with central places of 25,000-49,999:								
Jamestown	-2.7	-0.3	0.7	-0.1	-0.5	2.1	1.6	0.8
Oil City-Franklin	-1.1	-2.3	2.3	-0.3	0.4	0.9	0.6	0.5
Hagerstown	-4.0	-0.6	3.0	0.6	2.8	6.2	2.7	10.7
Cumberland	-2.0	-0.9	0.9	-1.3	-0.1	0.7	1.4	-1.3
Portsmouth	-5.5	-0.4	1.5	-1.2	0.4	2.2	1.4	-1.6
Staunton-Waynesboro	-3.5	0.1	3.9	0.2	1.3	3.4	0.9	6.3
Bluefield	-5.3	-16.4	0.8	-2.4	0.5	1.5	-0.9	-22.2

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Table 13.--Change in number employed in major industries within the subareas of Appalachia, 1950 and 1960 -- continued

Subarea	Change in number employed in--							
	Agr., for., and fish.	Mining	Manu-facturing	Transporta-tion and public utilities	Trade	Services	Other	Total
	Thousands							
Subareas with central places of 25,000-49,999: (con.)								
Bristol	-8.4	-0.8	5.7	0.4	2.8	4.7	2.3	6.7
Johnson City	-7.4	0.2	2.1	1/ -.0	0.7	2.9	0.8	-0.7
Rome	-6.7	1/ -.0	2.1	0.4	1.5	3.1	1.9	2.3
Huntsville	-20.1	-0.1	18.5	1.1	4.7	8.9	5.8	18.8
Florence-Sheffield	-14.1	-0.1	6.8	1.1	2.3	2.6	2.0	0.6
Anniston	5.1	-0.1	1.3	0.7	1.4	4.6	1.3	4.1
La Grange	5.4	1/ +.0	0.1	-0.1	0.2	0.8	0.3	-4.1
Subareas with central places of 10,000-24,999:								
Bradford-Olean	-3.6	-2.5	2.4	-0.7	1/ -.0	1.8	1.2	-1.4
Dubois-St. Mary's	1.5	-5.5	0.1	-0.5	1.1	1.4	1.3	-3.6
State College	-0.9	-0.8	0.7	0.1	0.8	4.7	1.0	5.6
Beckley	-1.0	-11.0	0.2	-0.3	-0.2	1.5	-0.3	-11.1
Logan	-0.5	-11.8	0.1	-0.6	-0.5	0.5	-0.3	-13.1
Middlesboro	-6.6	-12.9	0.2	-0.8	-0.4	0.8	0.1	-19.6
Hickory-Statesville	-9.8	1/ -.0	14.3	1.0	3.3	5.9	3.4	-18.1
Gainesville	-6.3	-0.2	6.2	0.4	1.4	2.5	1.4	5.4
Subareas with central places Under 10,000:								
Elkins	-1.9	-1.0	0.3	-0.1	0.1	0.1	-0.1	-2.6
Petersburg	-1.3	-0.1	0.3	1/ +.0	0.2	0.1	0.1	-0.7
Glennville	-3.3	-0.1	0.2	-0.1	0.1	1/+.0	1/ -.0	-3.2
Richwood	-2.8	-3.7	-0.4	-0.2	0.6	0.4	-0.1	-6.2
Galax	-6.2	1/ +.0	2.9	1/ -.0	0.3	0.3	-0.1	-2.6
Paintsville	-5.0	-1.1	0.3	-0.1	0.3	0.5	-0.1	-5.3
Beattyville	-3.0	-0.2	0.1	1/ -.0	0.1	0.2	0.1	-2.7
Morehead	-1.7	-0.1	0.3	1/ -.0	0.3	0.6	0.2	-0.4
Big Stone Gap	-1.2	-5.3	1/-.0	-0.4	-0.5	0.3	-0.1	-7.4
Pikeville	-5.4	-10.6	0.1	-0.3	0.6	1.7	0.4	-13.5
Hazard	-5.9	-5.0	-0.6	-0.3	0.1	0.7	0.4	-10.6
Corbin-Oneida	-6.2	-1.9	-0.4	-0.8	0.3	0.8	0.4	-7.8
Somerset	-7.5	1/ -.0	1.3	-0.2	0.7	0.9	-0.7	-5.5
Albany	-1.5	1/ +.0	0.3	1/ +.0	0.1	0.3	-0.1	-0.9
Cookeville	-9.3	-0.8	5.5	-0.1	1.3	1.7	1.0	-0.7
McMinnville	-3.5	-0.1	2.2	0.1	0.6	2.5	0.8	2.6
Murphy	-4.1	0.4	0.4	-0.1	0.4	0.5	0.2	-2.3
Franklin	-4.4	1/ -.0	1.3	1/ -.0	0.8	0.9	0.4	-1.0
Haleyville	-4.1	-0.4	1.4	0.1	0.1	0.4	0.4	-2.1

1/ +.0 : Change between 1 and 49
-.0 : Change between -1 and -49

Source: U. S. Census of Population, 1950, Vol. II, "Characteristics of the Population," table 43. U. S. Census of Population, 1960, PC (1) - Series C, "General Social and Economic Characteristics," table 85.