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REPORT

Economic Restructuring and Rural Community Transformation in Pennsylvania

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by

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INTRODUCTION

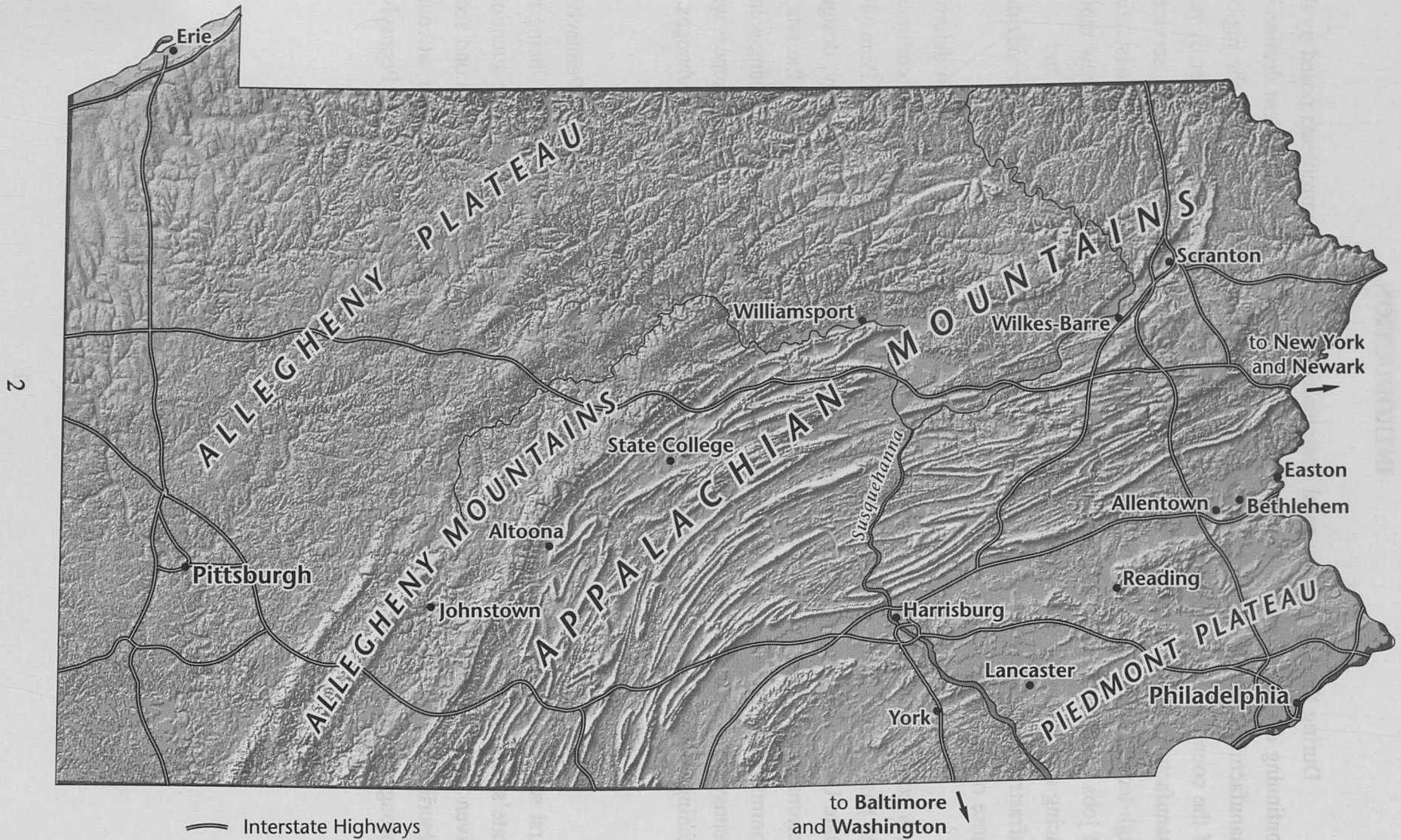
During the 1980s many rural communities faced serious problems posed by the continuing decline in natural resource-based employment and the coincident decline in manufacturing employment as many companies relocated production out of the region or out of the country. Some communities were able to adapt to those stresses, either by retaining manufacturing employment, or by developing new jobs in the growing trade, service, and high-tech manufacturing sectors. Others did not fare so well, and suffered substantial losses of jobs and population. Still others, especially those in urban fringe areas grew rapidly, facing a different set of problems - problems of providing adequate services and infrastructure, and problems of harmonizing expectations of long-time rural residents with those of newly arrived exurbanites.

Community organization and activeness may play an important role in determining how communities respond and adapt to stresses such as those faced by rural communities in the past decade. This monograph is a preliminary report of a study by The Pennsylvania State University, Department of Agricultural Economics and Rural Sociology, designed to determine the extent to which community organization and activeness affect the fate of rural communities. This report describes the socio-demographic and economic changes in Pennsylvania's rural communities during the period 1980 to 1990. A later report will detail findings with respect to the role of community activeness in affecting those changes.

Organization of the Report

Following a brief description of the landforms and urban centers of Pennsylvania, the first section of the report describes changes in population and economic well-being in the state's rural communities. The focal period is 1980 to 1990, although some attention is given to earlier trends to place recent changes in a broader context. The second section describes the transformations that have taken place in rural economies - first, at county level throughout the northeastern United States, then in the rural communities of Pennsylvania.

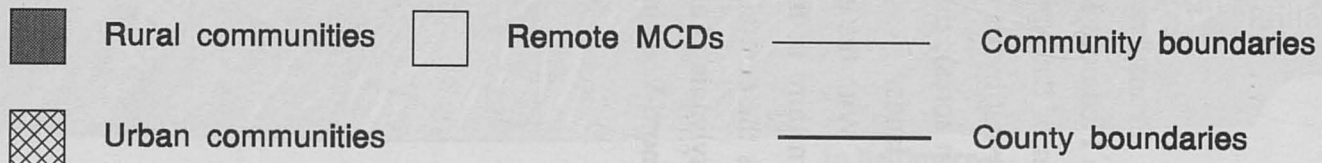
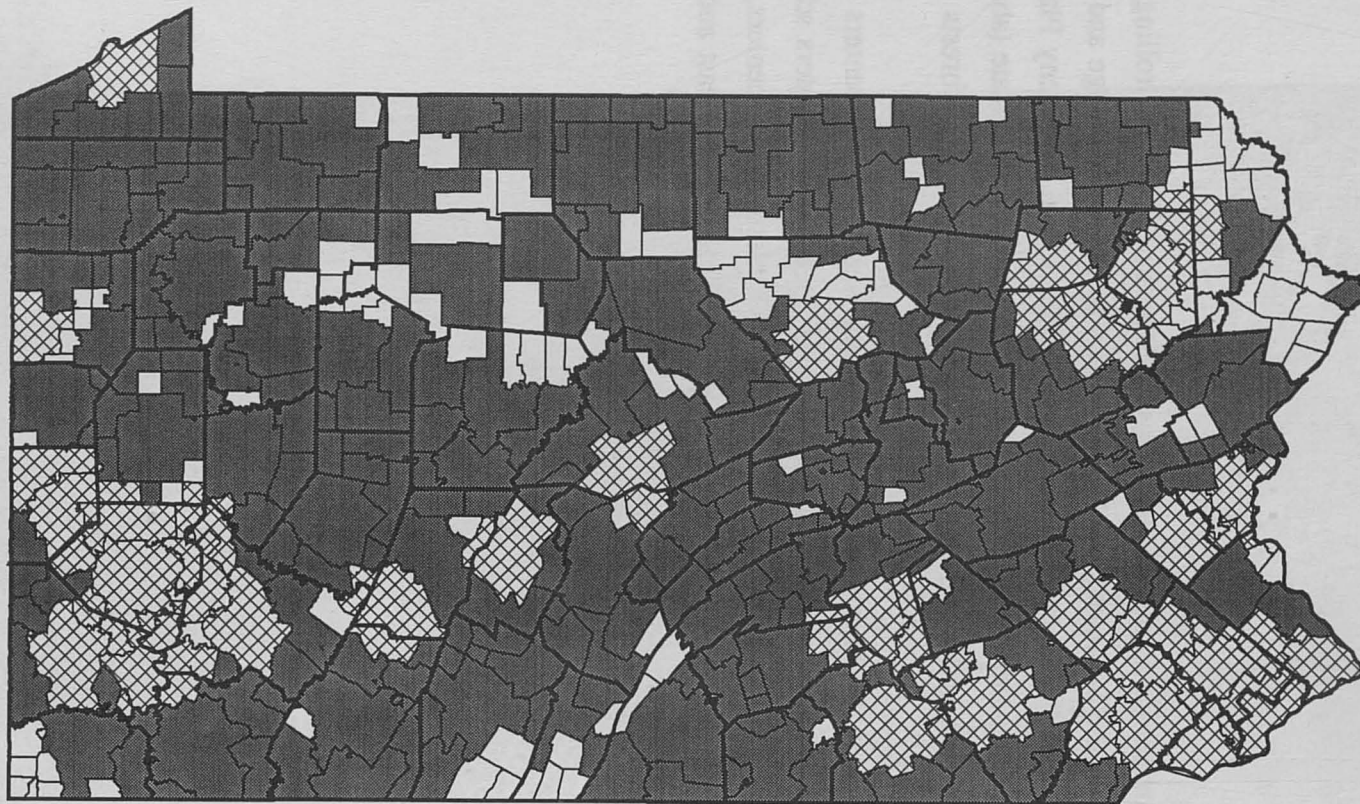
Map 1. Landforms and major urban centers of Pennsylvania



Pennsylvania is primarily a land of mountains and forests. The rich, rolling farmland of the Piedmont Plateau in the Southeast quickly gives way to the rugged ridge and valley system of the Appalachian and Allegheny Mountains, and then to the Allegheny Plateau, deeply cut by its many creeks and rivers. Forests cover 58 percent of the state (about 17 million acres), including three and a half million acres in national and state forests and state game lands.

With the exception of Pittsburgh, all of Pennsylvania's major urban centers are in the eastern third of the state, although there are several smaller metropolitan centers scattered across the central and western regions. In addition to its own metropolitan centers, Pennsylvania is affected by the New York-Newark megalopolis to the northeast and by the Baltimore-Washington area to the south.

**Map 2. Pennsylvania rural communities as defined for study of Economic Restructuring
and Rural Community Transformation**



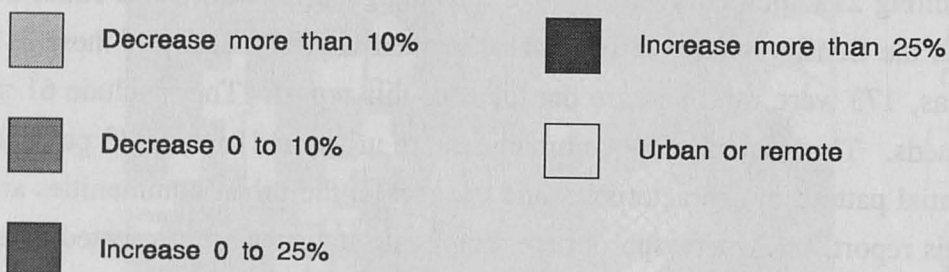
Demarcation of Rural Communities

To study the socio-demographic and economic changes that have occurred in rural Pennsylvania over the past decade, the rural parts of the state were first divided into community areas. To be sociologically meaningful, a community should include a center of concentrated population and economic activity together with its surrounding hinterland. For this purpose, counties are too large and minor civil divisions (townships, boroughs, etc.) are generally too small. Preliminary definition of communities in both urban and rural areas was accomplished using a computer algorithm based on central place theory. First, the highest-population "place" in the state was taken as the center of a community, and all minor civil divisions (mcds) within ten miles of its center were assigned to that community. Then the next-highest-population place (not included in the previously defined community) was taken as the center of the second community, and all mcds within ten miles of its center (and not included in the previously defined community) were assigned to it. This process was continued until no census defined "places" remained.

The resulting 212 community areas were then assigned urban or rural status in accordance with the Census Bureau-defined status of their central place. Of these 212 community areas, 173 were rural and are the focus of this report. They include 61 percent of the state's mcds. The remaining 39 communities are urban and include 33 percent of the mcds. The spatial pattern of characteristics and changes in the urban communities are not examined in this report, but where appropriate, aggregate statistics are presented as a point of comparison for the rural communities.

About 5 percent of the state's mcds are not within ten miles of any census defined place, and were not included in any defined community area. These are referenced on the maps as *remote mcds*, and are not included in the rural community analyses.

Map 3. Population change 1950-1990 in Pennsylvania's rural communities

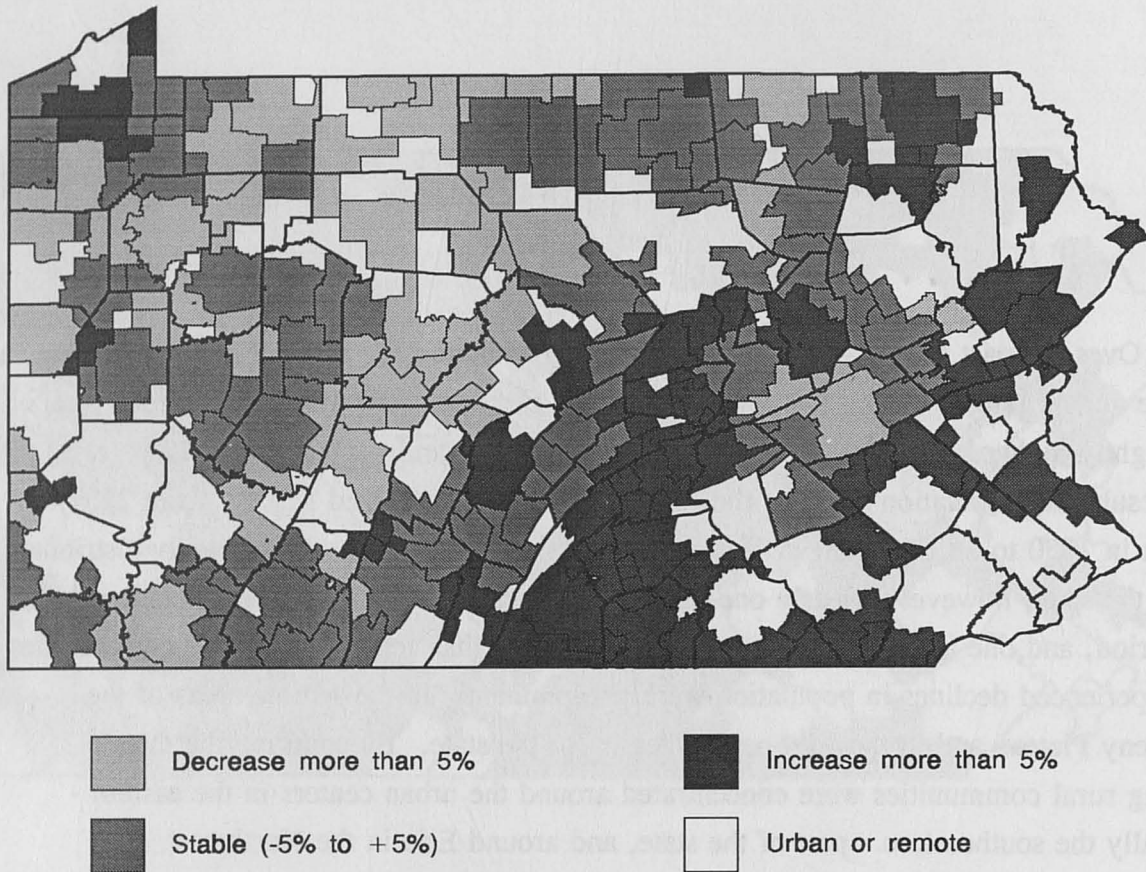


Summary of population change from 1950 to 1990

- Pennsylvania +14%
- Rural communities (as defined for this study) +18%
- Urban communities (as defined for this study) +12%

Over the past four decades, Pennsylvania's population has increased by 14 percent, an average annual rate of increase of only .33 percent per year. Growth over the forty years was slightly higher in its rural communities (18 percent) than in urban areas (12 percent). As a result, the population share of the rural communities increased slightly from 27.6 percent in 1950 to 28.6 percent in 1990. This rural growth was far from evenly distributed across the state, however. Nearly one third of the rural communities lost population during this period, and one in five (33 communities) lost more than ten percent. The communities that experienced declines in population were predominantly in the remote areas of the Allegheny Plateau and in the East-central region of the state. By contrast, the fastest-growing rural communities were concentrated around the urban centers in the eastern - especially the southeastern - part of the state, and around Erie in the Northwest. Additionally, there was a growth area north of Harrisburg along the Susquehanna River. There were only three high-growth rural communities in the region surrounding Pittsburgh.

Map 4. Population change 1980-1990 in Pennsylvania's rural communities

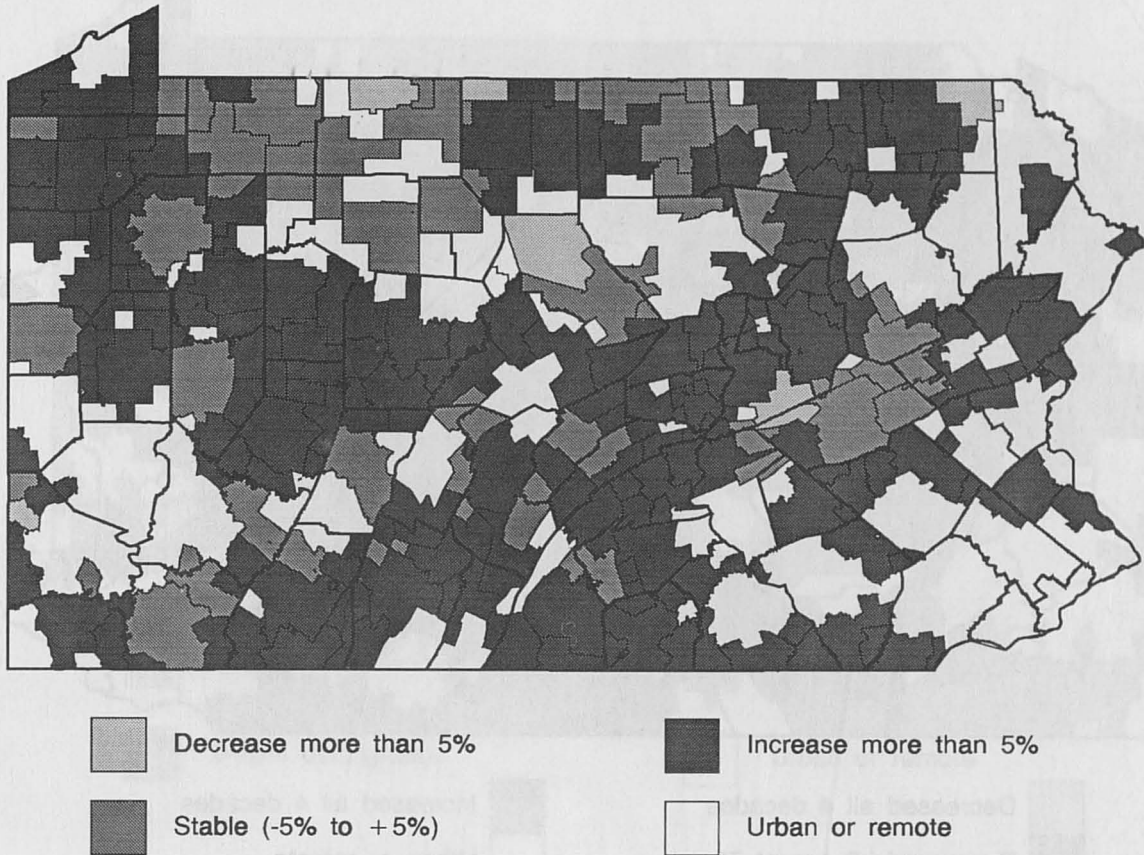


Summary of population change from 1980 to 1990

- Pennsylvania 0%
- Rural communities +2%
- Urban communities -1%

Although Pennsylvania's population remained essentially stable during the 1980s, the pattern of growth and decline observed during the period 1950 - 1980 persisted. Over half of the rural communities lost population during the decade; 27 percent lost more than five percent. The major growth areas were those surrounding large urban concentrations in the Southeast, around Erie in the Northwest, and north of Harrisburg along the Susquehanna River. In addition, several communities in the Northeast and a few scattered in the Central and South-central regions experienced rapid growth. Those losing more than five percent of their population were found in the remote parts of the northwestern two-thirds of the state and in a pocket northeast of Harrisburg.

Map 5. Population change 1970-1980 in Pennsylvania's rural communities

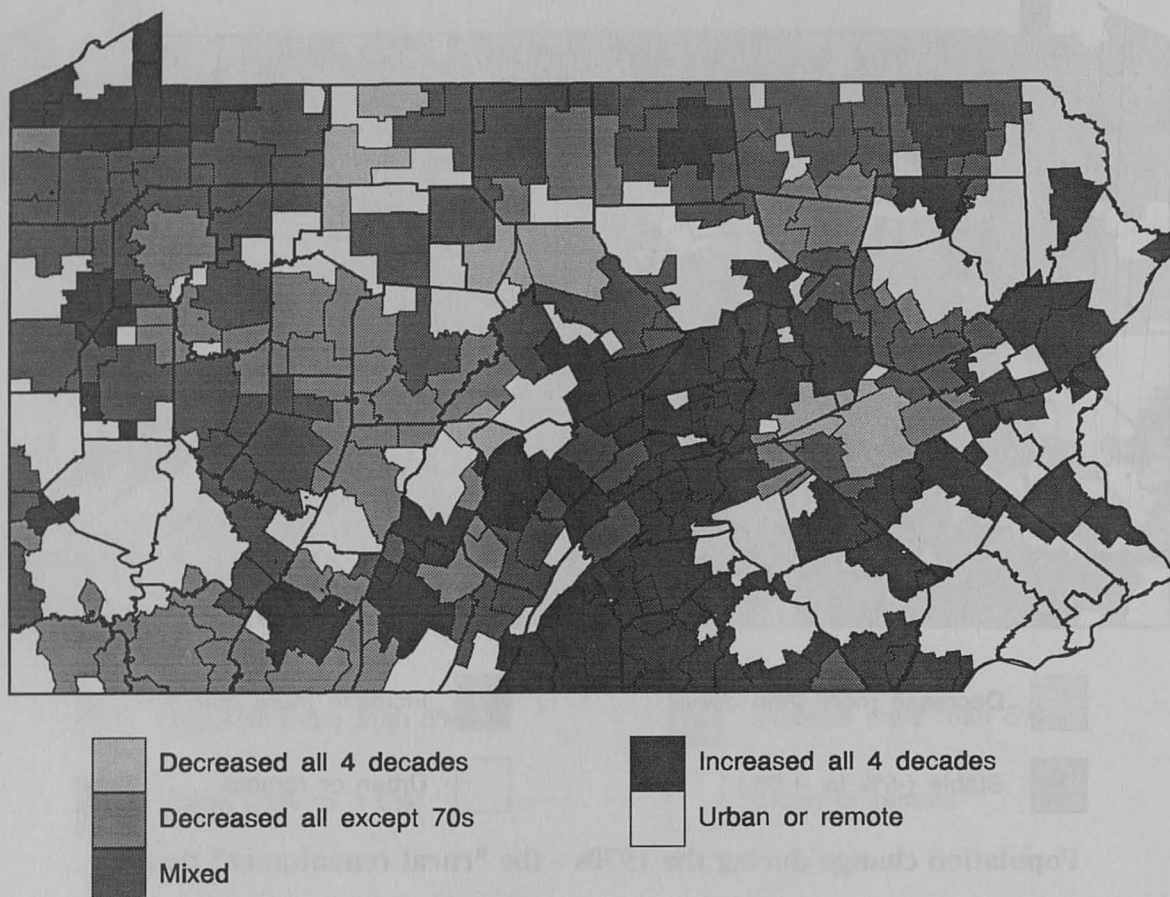


Population change during the 1970s - the "rural renaissance" decade

- Pennsylvania +1%
- Rural communities +10%
- Urban communities -3%

The 1970s were widely hailed by demographers and ruralists as the "turnaround decade" when the long pattern of rural-to-urban migration reversed. The effects of this reversal were clear in Pennsylvania. While overall population growth was near zero, the population in its rural communities increased by ten percent. Furthermore, that growth extended even to many remote rural areas of the state. Population increased in 155 of its 173 rural communities, and growth exceeded five percent in 124, while only seven communities lost more than five percent. Unfortunately (for remote rural areas) this trend did not persist into the 1980s. The largest area bypassed by the growth of the 1970s was found along a band extending from just north of the center of the state toward Erie in the Northwest. As shown on the previous map, this area was part of the largest region of declining population during the 1980s.

Map 6. Patterns of population change 1950-1990 in Pennsylvania's rural communities



Over the course of four decades. . .

- 8 communities lost population all four decades
- 34 lost population every decade except the 1970s
- 64 gained population all four decades
- 67 experienced other mixtures of population growth and decline

The communities that grew consistently over the past four decades were, with very few exceptions, the same ones that experienced substantial population growth during the 1980s. Those that lost population consistently or in every decade except the 1970s were those in areas most remote from urban centers, and in areas where coal production decreased dramatically - the area northeast of Harrisburg, and that just west of the center of the state. If there are any surprises in the patterns of population change, they would be the communities along the eastern half of northern tier and several south of Altoona and Johnstown that grew in all four decades.

Map 7. Net migration in Pennsylvania's rural communities - 1980-1990



Net migration from 1980 to 1990

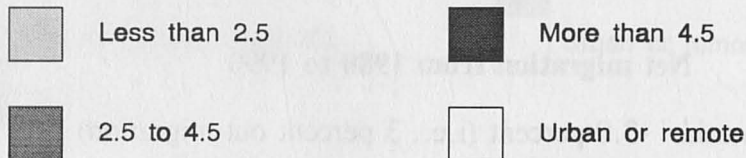
- Pennsylvania: -3.0 percent (i.e., 3 percent out-migration)
- Rural communities: -1.5 percent
- Urban communities: -3.9 percent

Population change results from two demographic processes: natural increase (births less deaths) and net migration. In principle one may tend to increase population and the other to decrease population, resulting in little or no net change. However, in most of Pennsylvania's rural communities the two worked in concert during the 1980s. That is, most of the high growth communities experienced both high net immigration and high natural increase, with the reverse being true in the communities experiencing the most precipitous population declines. In fact, with almost no exceptions the communities experiencing net immigration are the same communities whose populations increased more than five percent (see map 4). Similarly communities experiencing more than ten percent net outmigration correspond almost exactly with those that experienced overall population decrease of more than five percent.

Map 8. Annual natural increase in Pennsylvania's rural communities - 1980-1990



Annual natural increase per thousand

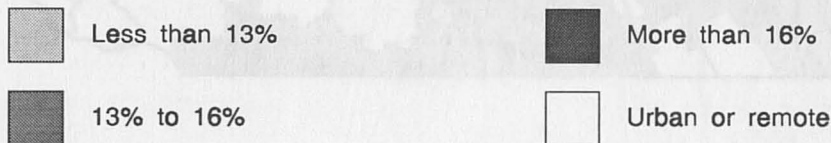


Annual rate of natural increase (per thousand population)

- Pennsylvania: 2.5
- Rural communities: 2.8
- Urban communities: 2.4

Natural increase in Pennsylvania's rural communities was slightly higher than that in its urban areas, but still modest at 2.8 per thousand. The pattern of natural increase was generally coincident with that of population growth, but not as precisely so as was the case with the migration pattern. A number of the high-growth communities in the Southeast experienced only low or moderate rates of natural increase. On the other hand, several communities in the north-central part of the state had high rates of natural increase, but stable, or even declining populations.

Map 9. Percent elderly in Pennsylvania's rural communities - 1990

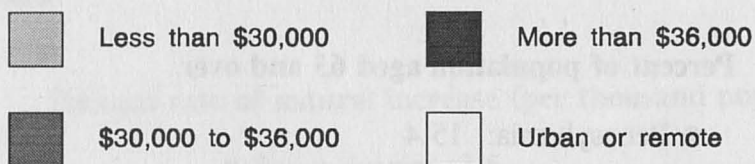


Percent of population aged 65 and over

- Pennsylvania: 15.4
- Rural Communities: 15.1
- Urban Communities: 15.6

The age structure of a community's population is a result of birth rates, death rates, and age-specific migration rates over previous years and decades. Among Pennsylvania's rural communities, the correspondence of high percent elderly with geographic remoteness and with economic hardship suggests that young people have been leaving those communities due to lack of economic opportunity, and/or that retired persons have migrated into those communities in disproportionate numbers. This latter trend could be a result of the attractiveness of low-cost housing or the attractiveness of the communities' rural residential amenities.

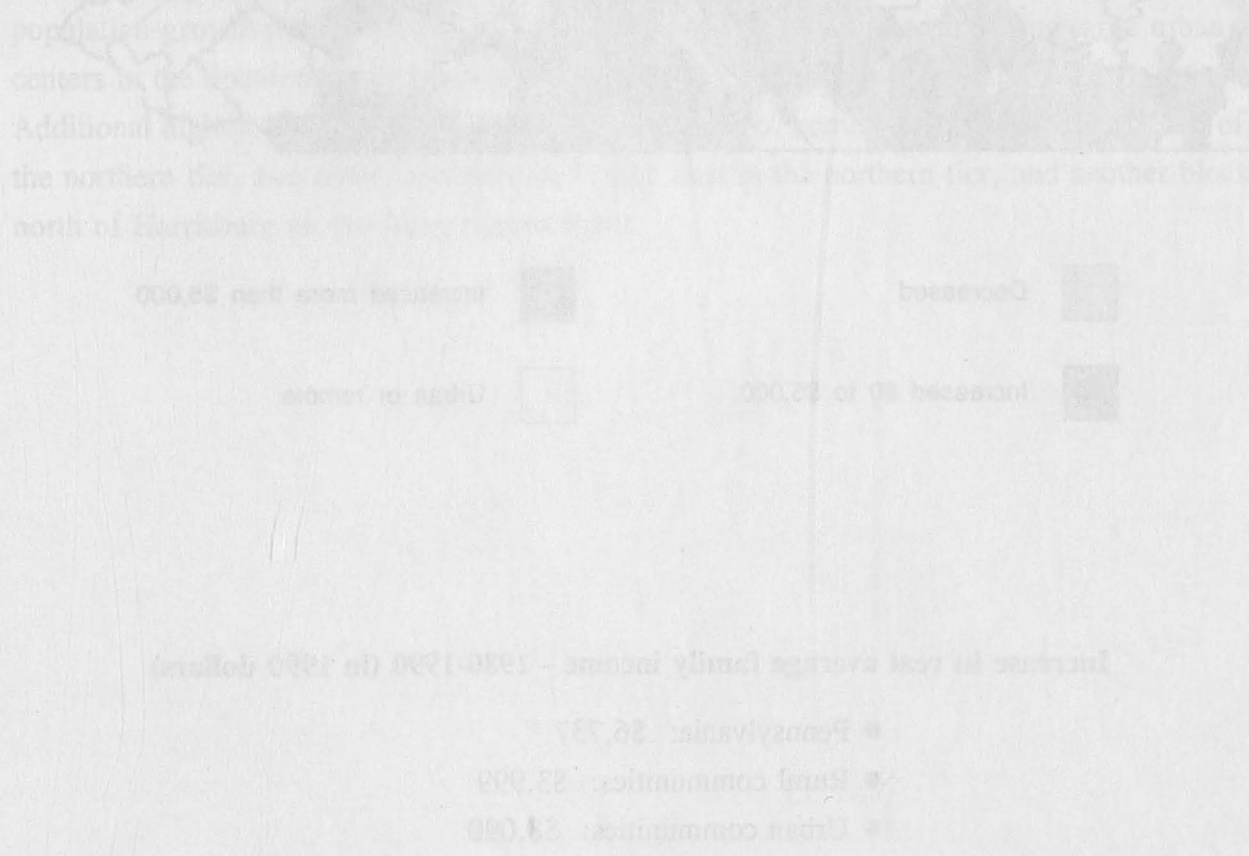
Map 10. Average family income in Pennsylvania's rural communities - 1990



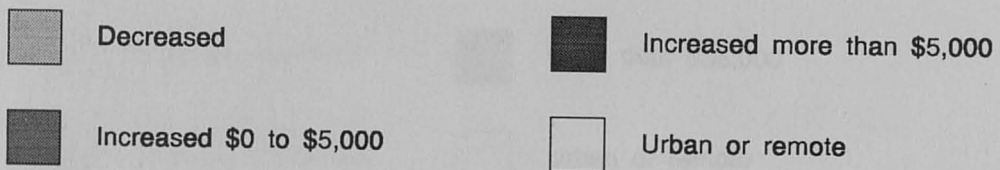
Average family income in 1990

- Pennsylvania: \$42,600
- Rural communities: \$36,400
- Urban communities: \$45,500

Average family incomes were highest in rural communities surrounding the urban centers in the Southeast, around smaller urban centers such as Erie, Harrisburg, and State College, and, to a lesser extent, around Pittsburgh. There were, in addition, several high-income communities north of Harrisburg, a few at the east and west ends of the Northern Tier, and one north of Johnstown. The lowest-income communities lie generally in a diagonal band from southwest to northeast across the center of the state. The unweighted mean of family income in these 43 lowest-income communities was \$27,740, just two thirds that in the 47 highest-income communities (\$41,718).



**Map 11. Change in average family income
in Pennsylvania's rural communities 1980-1990**

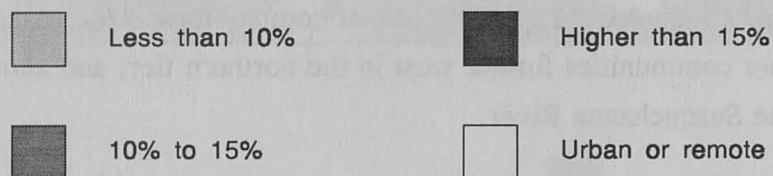


Increase in real average family income - 1980-1990 (in 1990 dollars)

- Pennsylvania: \$6,737
- Rural communities: \$3,999
- Urban communities: \$8,090

Average family income (adjusted for inflation) increased in Pennsylvania's rural communities during the 1980s, although the increase was less than half that in urban areas. As a result, the ratio of average family income in rural areas to that in urban areas, which stood at .866 in 1980, decreased to .800 in 1990. More seriously, real family income decreased in 37 rural communities (21 percent). All of these communities are located in the west-central and south-western part of the state, in an almost solid and contiguous block. Average family income increased more than \$5,000 in 48 rural communities (28 percent). The geographic pattern of these high-income-growth communities is generally similar to the population-growth pattern (see map 4), including the communities surrounding large urban centers in the Southeast, and smaller urban centers of Harrisburg, Erie, and State College. Additional high-growth areas included a sizeable block of communities at the eastern end of the northern tier, two other communities further west in the northern tier, and another block north of Harrisburg on the Susquehanna River.

Map 12. Poverty rates in Pennsylvania's rural communities - 1990

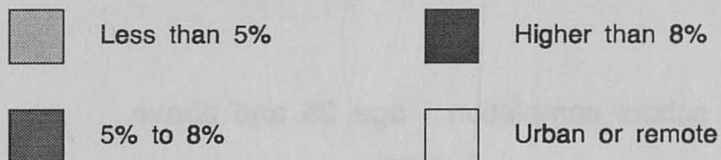


Poverty rate - 1990

- Pennsylvania: 11.1%
- Rural communities: 11.2%
- Urban communities: 11.1%

In Pennsylvania's rural communities, 11 percent of the population lived in families with income below poverty level in 1990, a rate virtually identical to that in urban communities. Poverty rates exceeded 15 percent in 48 of the 173 rural communities. The location of these high-poverty communities corresponds highly with geographic remoteness from population centers. None of them is located southeast of the Appalachian ridge-valley system.

Map 13. Unemployment rates in Pennsylvania's rural communities - 1990



Unemployment rates

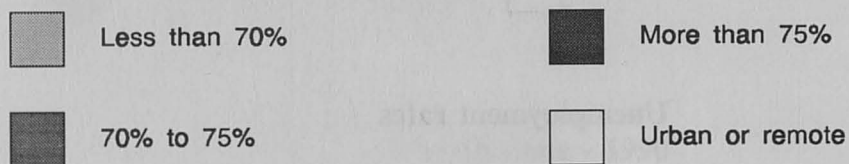
- Pennsylvania: 6.0%
- Rural communities: 6.1%
- Urban communities: 5.9%

Unemployment rates in Pennsylvania's rural communities generally increased from southeast to northwest. Forty-five communities had unemployment rates below five percent; all but three of them were in the southeast quarter of the state. At the other extreme, fifty-five communities had unemployment rates in excess of eight percent. Virtually all were in the remote areas of the western two-thirds of the state. Earnings from employment is the primary component of family income, so it is not surprising that the spatial pattern of unemployment corresponds almost precisely with that of poverty rates (see map 12).

Map 14. Educational attainment in Pennsylvania's rural communities - 1990

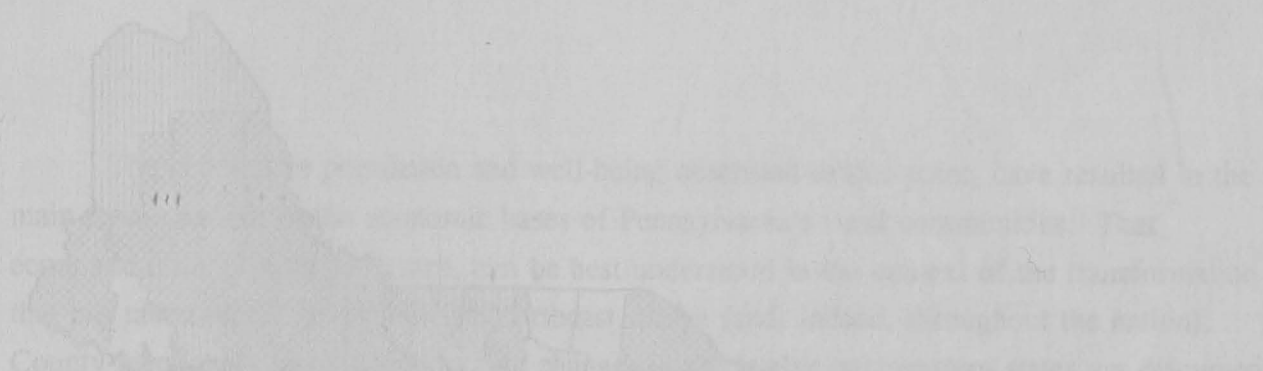


High school completion - age 25 and above



Percent of persons over age 25 who have completed high school

- Pennsylvania: 74.6%
- Rural communities: 72.1%
- Urban communities: 75.8%



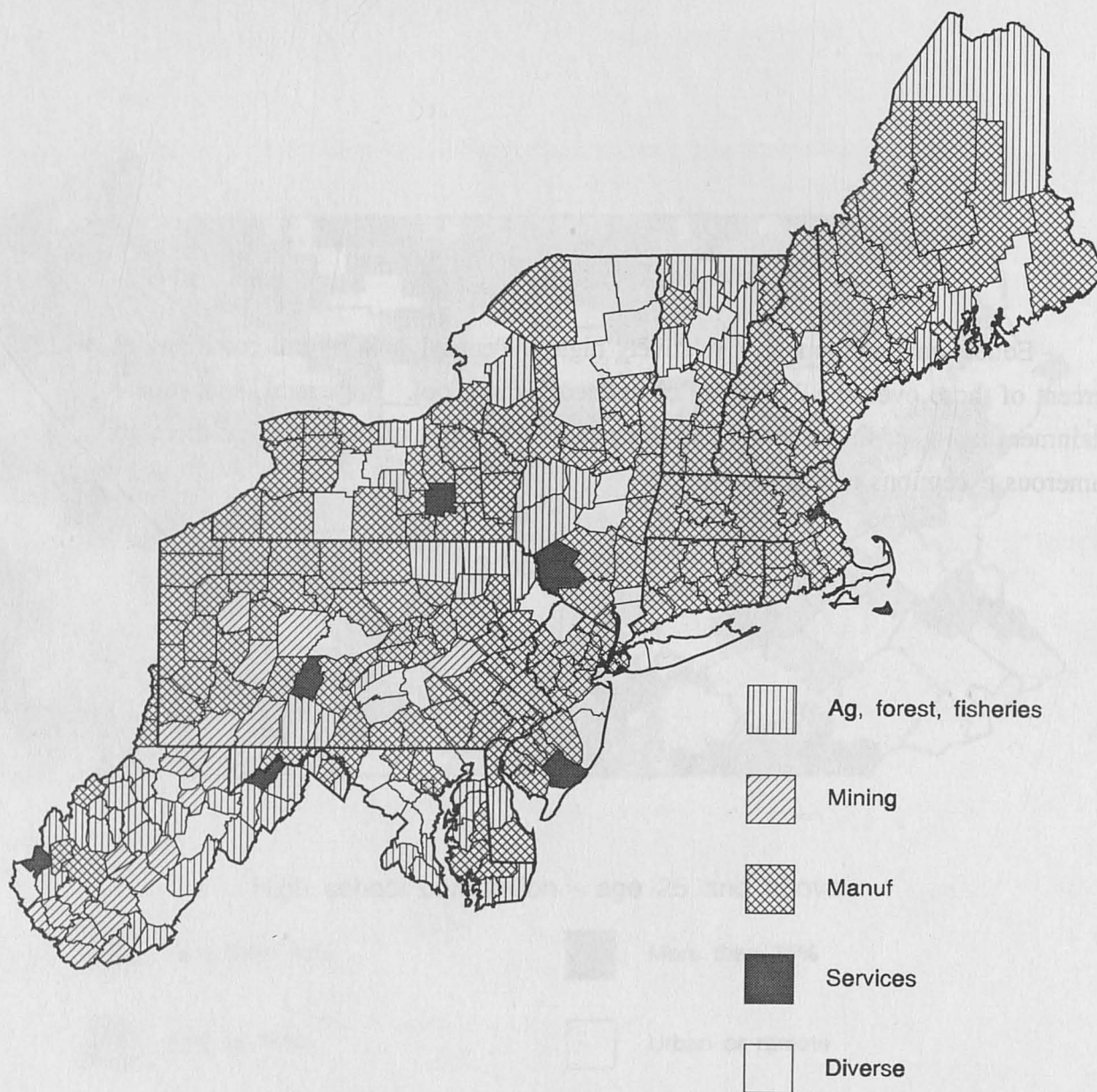
Educational attainment is relatively high in Pennsylvania's rural communities, with 72 percent of those over age 25 having completed high school. In general, educational attainment is higher in the North and West than in the rest of the state, but there are numerous exceptions to this pattern.

employment share. The map shows that the most common specialization in rural Pennsylvania is agriculture, which accounts for 22 percent of the total employment share. Manufacturing is the second most common specialization, accounting for 16 percent of the total employment share. Services are the third most common specialization, accounting for 9 percent of the total employment share. Diverse is the fourth most common specialization, accounting for 5 percent of the total employment share. The map also shows that the most common specialization in the North and West is agriculture, while the most common specialization in the South and Southeast is services. The map also shows that the most common specialization in the Central and Eastern counties is manufacturing.

In 1990 a substantial number of counties in Pennsylvania were specialized in agriculture, with 14 counties having more than 15 percent of the total employment share in agriculture. The map shows that the most common specialization in the North and West is agriculture, while the most common specialization in the South and Southeast is services. The map also shows that the most common specialization in the Central and Eastern counties is manufacturing.

7	22	Agriculture
26	16	Manufacturing
9	9	Services
12	5	Diverse

Map 15. Industry sector specializations in Northeastern United States counties - 1950



Specialized Northeast counties (1950)

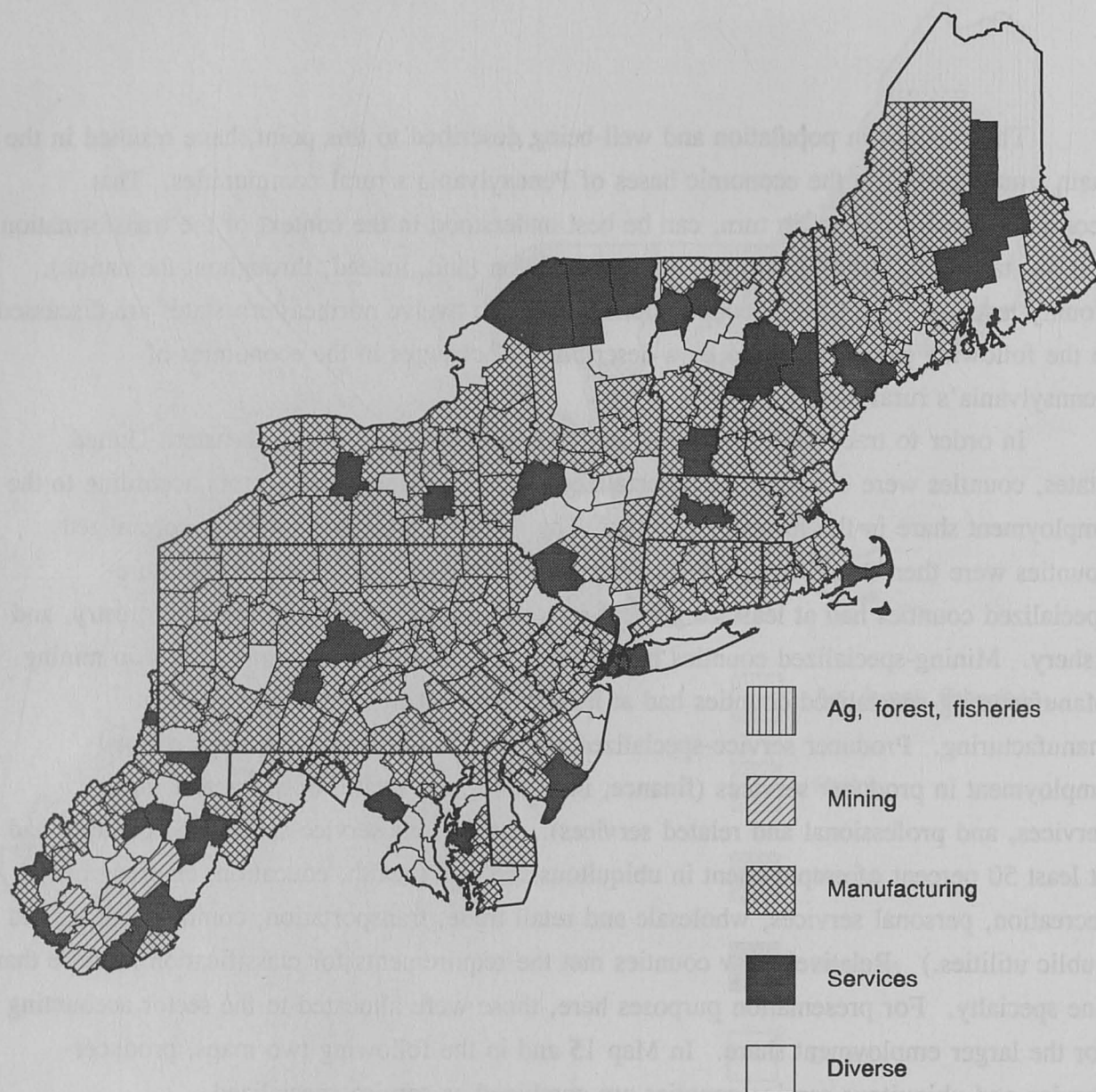
	<u>number</u>	<u>%</u>
● Agriculture, forestry and fishery	57	19
● Mining	22	7
● Manufacturing	167	56
● Services	9	3
● Diverse	44	15

The changes in population and well-being described to this point, have resulted in the main from changes in the economic bases of Pennsylvania's rural communities. That economic transformation, in turn, can be best understood in the context of the transformation that has taken place throughout the Northeast region (and, indeed, throughout the nation). County-level analyses of the economic changes in the twelve northeastern states are discussed in the following pages, followed by a description of changes in the economies of Pennsylvania's rural communities.

In order to trace the transformation of the economies of the northeastern United States, counties were classified as "specialized" in various industrial sectors according to the employment share in the respective sector. The numbers and distribution of specialized counties were then traced over a forty-year period from 1950 to 1990. Agriculture-specialized counties had at least 20 percent of total employment in agriculture, forestry, and fishery. Mining-specialized counties had at least 20 percent of total employment in mining. Manufacturing-specialized counties had at least 25 percent of total employment in manufacturing. Producer service-specialized counties had at least 20 percent of total employment in producer services (finance, insurance, real estate, business and repair services, and professional and related services). Ubiquitous service-specialized counties had at least 50 percent of employment in ubiquitous services (health, education, entertainment, recreation, personal services, wholesale and retail trade, transportation, communication, and public utilities.) Relatively few counties met the requirements for classification in more than one specialty. For presentation purposes here, those were allocated to the sector accounting for the larger employment share. In Map 15 and in the following two maps, producer-service and ubiquitous-service counties are combined as service-specialized.

In 1950 a substantial number of counties still depended mainly on extractive industries, although manufacturing counties predominated. The nine counties identified as specialized in services depended on ubiquitous services; no county in the Northeast had more than 15 percent of its employment in producer services in 1950.

Map 16. Industry sector specializations in northeastern United States counties - 1970



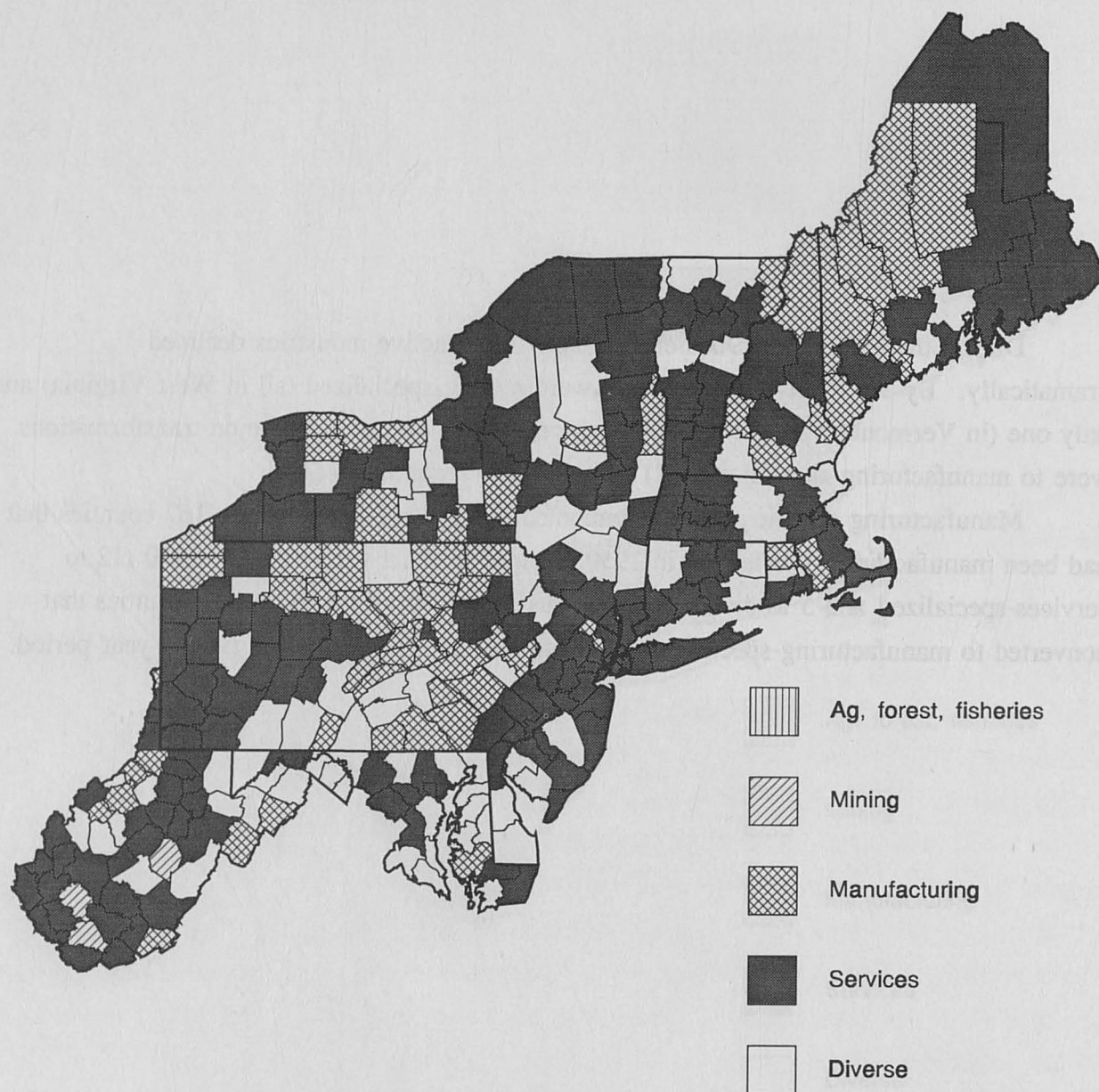
Specialized Northeast counties (1970)

	<u>number</u>	<u>%</u>
● Agriculture, forestry and fishery	1	0
● Mining	8	3
● Manufacturing	191	64
● Services	42	14
● Diverse	57	19

During the 1950s and 1960s employment in extractive industries declined dramatically. By 1970 only eight counties were mining-specialized (all in West Virginia) and only one (in Vermont) was still agriculture-specialized. The most common transformations were to manufacturing-specialized (32) and to diverse economies (29).

Manufacturing counties still predominated in 1970. Only 17 of the 167 counties that had been manufacturing-specialized in 1950 changed to other categories by 1970 (12 to services-specialized and 5 to diverse). This was more than offset by the 41 counties that converted to manufacturing-specialized from other categories during the twenty-year period.

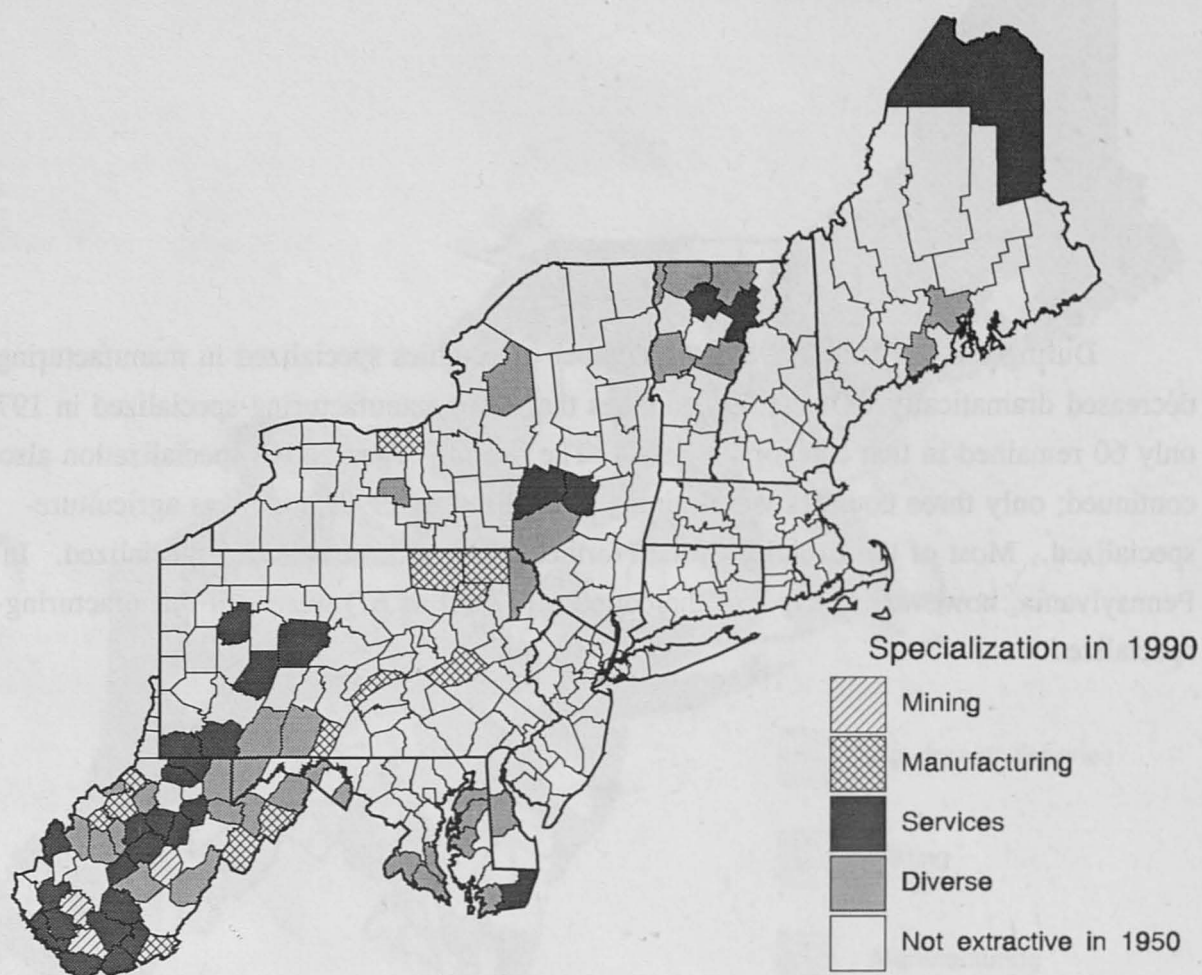
Map 17. Industry sector specializations in Northeastern United States counties - 1990



Specialized Northeast counties (1990)

	<u>number</u>	<u>%</u>
● Agriculture, forestry and fishery	0	0
● Mining	3	1
● Manufacturing	60	20
● Services	156	52
● Diverse	80	27

Map 18. Transitions of extractive-specialized counties: Industry-sector specialization in 1990 of counties that were extractive specialized in 1950

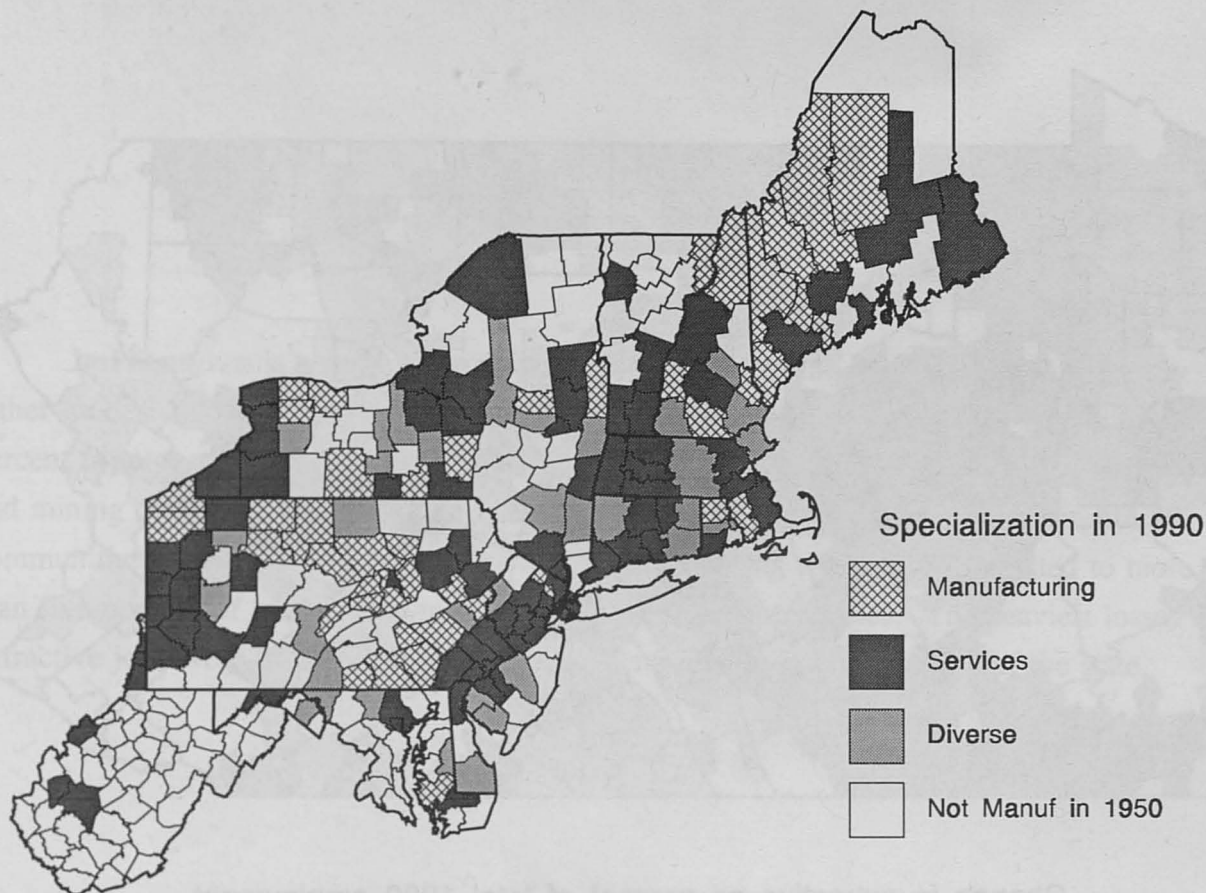


Specialization in 1990

	<u>number</u>	<u>%</u>
● Agriculture, forestry and fishery	0	0
● Mining	3	4
● Manufacturing	13	16
● Services	28	35
● Diverse	<u>35</u>	<u>44</u>
TOTAL	79	100

In 1950, 79 counties were extractive specialized, 57 in agriculture, forestry, and fishery, and 22 in mining. By 1990 the majority of these counties shifted to either services-specialized or diverse economies. Only three counties (all in West Virginia) remained specialized in mining.

Map 19. Transitions of manufacturing-specialized counties: Industry-sector specialization in 1990 of counties that were manufacturing specialized in 1950



Specialization in 1990

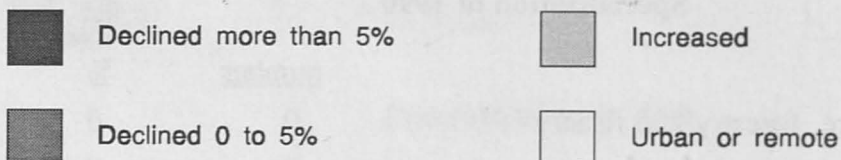
	<u>number</u>	<u>%</u>
• Agriculture, forestry and fishery	0	0
• Mining	0	0
• Manufacturing	46	28
• Services	86	51
• Diverse	<u>35</u>	<u>21</u>
TOTAL	167	100

Less than half of the manufacturing counties remained specialized in manufacturing throughout the time period. The majority of counties that did remain specialized in manufacturing were metropolitan. Most of the counties that shifted away from manufacturing shifted to service-specialized economies. The shift to service employment differed by metropolitan status; metropolitan counties were more likely to shift to producer services, whereas nonmetropolitan counties generally shifted to ubiquitous services.

**Map 20. Change in employment in extractive industries
in Pennsylvania's rural communities 1980-1990**



Change in extractive as percent of total 1980 employment

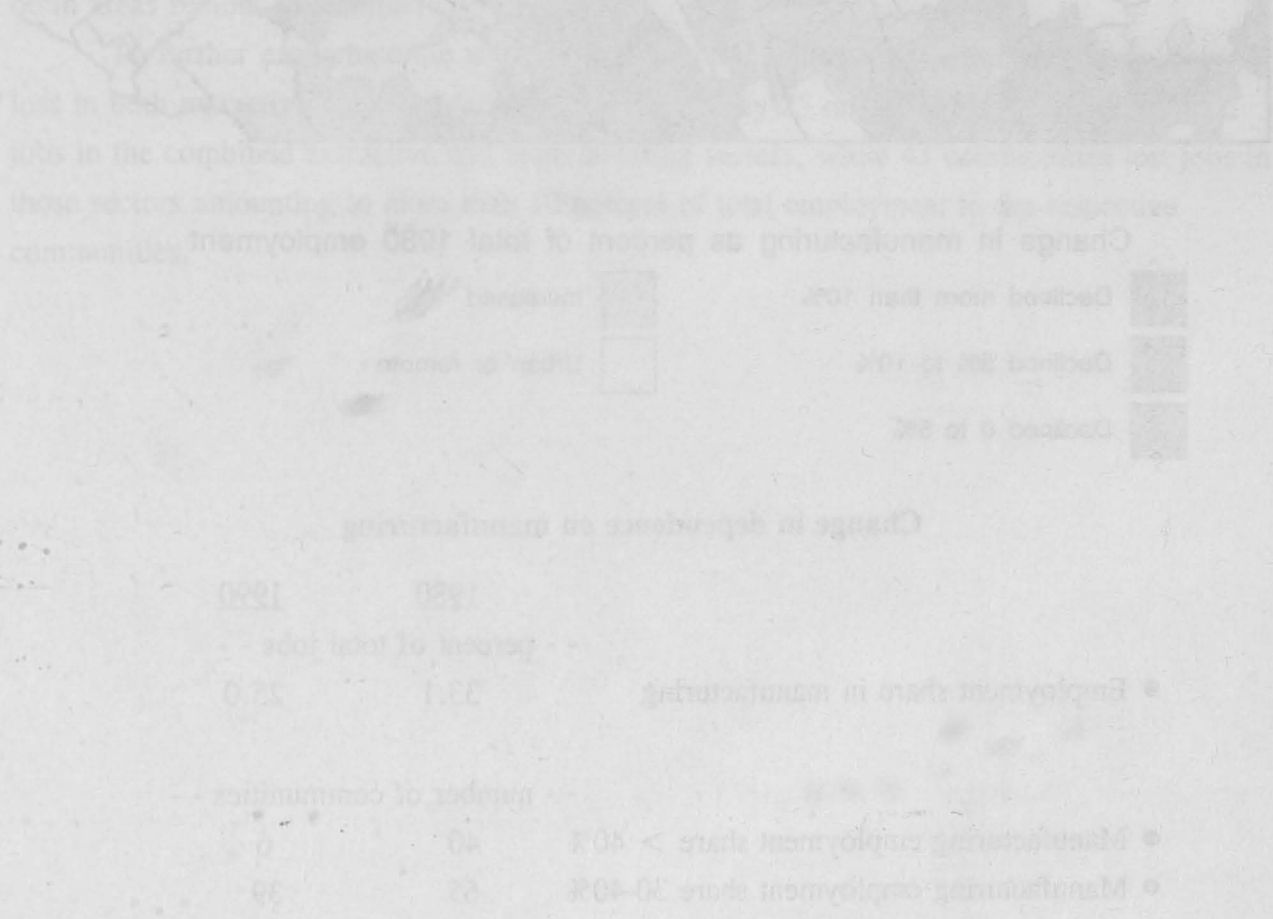


Change in dependence on extractive sector

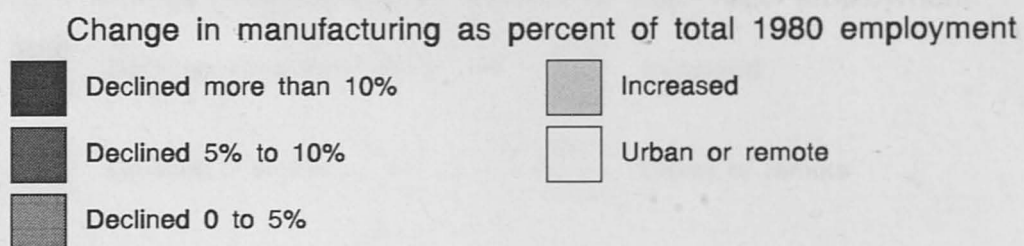
	<u>1980</u>	<u>1990</u>
- - percent of total jobs - -		
• Employment share in extractive	6.33	4.89
- - number of communities - -		
• Extractive employment share > .20%	14	2
• Extractive employment share 15-20%	11	7

Map 21. Change in employment in manufacturing
in Pennsylvania's rural communities 1980-1990

In Pennsylvania's rural communities, too, the role of the extractive sector, already rather modest by 1980, continued to decline during the 1980s. By 1990 less than five percent to total employment in the rural communities was in agriculture, forestry, fishery, and mining combined. In only two communities did that share exceed 20 percent. In 19 communities the loss of jobs in the extractive sectors during the decade amounted to more than five percent of total employment in the respective communities. The heaviest losses in extractive jobs were in the west-central, north-central, and southwest parts of the state.



**Map 21. Change in employment in manufacturing
in Pennsylvania's rural communities 1980-1990**



Change in dependence on manufacturing

	<u>1980</u>	<u>1990</u>
	-- percent of total jobs --	
● Employment share in manufacturing	33.1	25.0
	-- number of communities --	
● Manufacturing employment share > 40%	40	6
● Manufacturing employment share 30-40%	65	39

The decline of manufacturing during the 1980s in rural Pennsylvania was dramatic. In 1980 manufacturing accounted for one third of all jobs; by 1990 it accounted for just one fourth. The vast majority of Pennsylvania's rural communities (145 out of 173) lost manufacturing jobs during the decade. Twenty five communities lost manufacturing jobs amounting to more than ten percent of total employment in the respective communities. The communities experiencing heaviest manufacturing job losses were scattered across the state, but were more prevalent in the West and North than in the Southeast. They also tended to be in areas remote from urban centers.

To further exacerbate the situation, many communities experienced substantial job loss in both extractive and manufacturing sectors. Only 25 of the 173 communities gained jobs in the combined extractive and manufacturing sectors, while 43 communities lost jobs in those sectors amounting to more than 10 percent of total employment in the respective communities.

**Map 22. Change in employment in services
in Pennsylvania's rural communities 1980-1990**



Change in services as percent of total 1980 employment



Change in dependence on services

	<u>1980</u>	<u>1990</u>
- - percent of total jobs - -		
● Employment share in services	44.5	52.7
- - number of communities - -		
● Services employment share > 50%	21	83
● Services employment share 40-50%	76	77

As extractive and manufacturing employment declined, Pennsylvania's rural economies became progressively more dependent on service sectors. Overall the service sectors accounted for more than half the jobs in rural Pennsylvania by 1990. Unfortunately for many communities, new service sector jobs did not generally correspond spatially with lost extractive and manufacturing jobs. Most of the new jobs were in communities near urban centers. Lowest levels of service-sector job growth occurred in the most geographically remote rural communities - in many cases the same communities that suffered greatest job losses in extractive and manufacturing sectors.

SUMMARY

Are there "two faces of Pennsylvania" as suggested by the Center for Rural Pennsylvania?² The spatial analyses presented above suggest that there are, but that the picture is more complicated than this. During the decade from 1980 to 1990, changes in population, income, poverty rates, and unemployment conformed to two simultaneous spatial patterns with remarkable consistency. First, rural communities in the East and Southeast - roughly the quarter of the state southeast of the Appalachian Mountains - generally experienced higher growth and higher levels of well-being than did those in the rest of the state. Second, throughout the state, rural communities near metropolitan centers grew more rapidly and experienced higher levels of well-being than did those in geographically remote regions. These two patterns were additive, resulting in very high levels of disadvantage in remote rural communities in the northern, central, and western parts of the state.

Economic restructuring may provide a partial explanation for these spatial patterns. Over the past four decades, Pennsylvania, along with other states in the Northeast, experienced a major shift in employment away from extractive and manufacturing sectors and toward service sectors. In Pennsylvania, however, this shift was not uniform across rural areas. Loss of employment in extractive and manufacturing sectors was generally most serious in rural communities north and west of the Appalachian Mountains, and in communities geographically remote from metropolitan centers - the same areas that experienced lowest growth (or greatest declines) in population and income and highest levels of distress. At the same time, growth in service-sector jobs was lower in those areas than it was in the Southeast and in communities near metropolitan centers.

In a later report the spatial association of economic restructuring, demographic and household economic change, and well-being will be explored more fully. In addition, the ability of communities to affect their economic and demographic destinies by concerted action of local residents and organizations will be investigated and described.

²See *Rural Pennsylvania Enters the 1990s: Economic Development Outlook and Opportunities*, Center for Rural Pennsylvania, Harrisburg, PA, (undated).

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