

# **Brooke-Hancock Region Labor Market Study**

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## Executive Summary

This report analyzes the Brooke and Hancock County labor market from a regional perspective. It is designed to identify both the strengths and weaknesses of the regional labor force and will enable development professionals to market the region's strengths. It will also provide opportunities for improvement by identifying the weaknesses of the regional labor force. We will examine the socio-economic and demographic structure of the region and look at recent trends in population change, job growth, wages, and unemployment rates. The Brooke-Hancock region is comprised of the two most northern counties in West Virginia.

Job growth in the Brooke-Hancock region during the last 20 years has been slow, at best. The regional job mix is dominated by manufacturing, with steel production accounting for the majority of manufacturing jobs. Further, the manufacturing sector has registered huge job losses, which have rippled through the regional economy. These job losses have been partially offset by gains in services, but expansion in this sector has not been enough to generate overall job gains similar to the state or national averages.

Average wages per worker in the region were, until recently, above the state and national level. This owes much to the concentration of jobs in a relatively high-paying manufacturing sector (steel). However, as job losses and competitive pressures have intensified, average annual wage gains in the region have come to a halt. Annual wages per worker remain above the state average, but are now below the national level.

When compared to the state and the nation, the occupational structure of Workforce Investment Area 5 (which includes Brooke and Hancock County) is more heavily weighted toward precision production and blue-collar jobs. However, there are high-paying services occupations in the region, such as professional and technical occupations (accountants, doctors, and lawyers). Further, the latest occupational projections available suggest that there will be little net job growth in the precision production and blue-collar occupations, in contrast to strong gains in sales and service occupations. The continued restructuring of the occupational (and industry) mix in the region will impact income growth, as relatively high-paying occupations (precision production) are replaced by lower-paying jobs in sales and services occupations.

Wage gains are often connected to educational attainment. Nationally, residents with a college education earn nearly twice as much as those with only a high school degree. Educational attainment in the Brooke-Hancock region (as measured by the share of residents with at least a high school degree in 1990) was 72.1 percent. That exceeded the state average of 67.2 percent, but fell short of the national rate (75.4 percent). In terms of college-level educational attainment (measured by the share of the region's population age 18 and older with a bachelor's degree or better), however, the region fell just below the state average and well below the national rate. Indeed, the regional population share with a bachelor's degree or better was just 10.3 percent in 1990, compared to 11.4 percent for the state, and 18.5 percent for the nation.

Overall, the region's educational attainment rates are slightly better than the state average (primarily due to fewer residents without high school degrees) but well below national rates. Education matters not only for individual economic prosperity, but for a region's prosperity as well. Job growth in the future (particularly for jobs which pay above average wages) will likely demand increasing levels of education. Further, employers looking to locate in a region (and successful homegrown firms) will be keenly aware of the education levels of the available workforce.

With little or no job growth (and a relatively high median age) the region's population has steadily dropped during the last 20 years. According to data from Census 2000, the Brooke-Hancock region lost 4,111 residents from 1990 to 2000. This translates into an annual rate of decline of 0.7 percent per year, which contrasts with state population growth of 0.1 percent per year and national population growth of 1.2 percent per year. Both Brooke and Hancock County lost residents during the decade and both registered median ages that ranked in the top ten in the state. The region posted large population losses in the under-45 age group during the decade, while recording moderate gains in the 45-and-older age group.

With job stability in the region during the 1990s, coupled with population losses, the regional unemployment rate is well below recent highs. Further, at 3.9 percent in 2000, the region's unemployment rate is well below the state rate (5.5 percent) and just below the national rate (4.0 percent). This is due partly to employment stability but also likely due to out-migration from the Brooke-Hancock region during the decade. The region's declining unemployment rate need not necessarily indicate labor shortages in the region, because there are literally thousands of unemployed residents within easy commuting distance.

The commuting reach of the Brooke-Hancock region extends well beyond the two-county region and even beyond the component counties of the Steubenville-Weirton Metropolitan Statistical Area (MSA). These commuting flows include both exports and imports of workers. However, 83.9 percent of MSA residents also worked within the MSA in 1990. Further 75.0 percent of Brooke-Hancock region residents worked within the two-county region in 1990. While commuting is important for the region, the commutes of Brooke-Hancock region residents tend to be shorter than those for West Virginians and U.S. residents.

The Brooke-Hancock region labor market has endured severe economic restructuring during the last 20 years. The region has experienced severe job losses, particularly in the manufacturing sector, which have rippled through the regional economy. Even so, the region has generated job gains in other sectors, notably the services industry. Educational attainment of the regions residents has been close to or better than the state average, but below national levels. The region's unemployment rate has fallen during the last half of the 1990s, but these reductions have been accompanied by population declines.

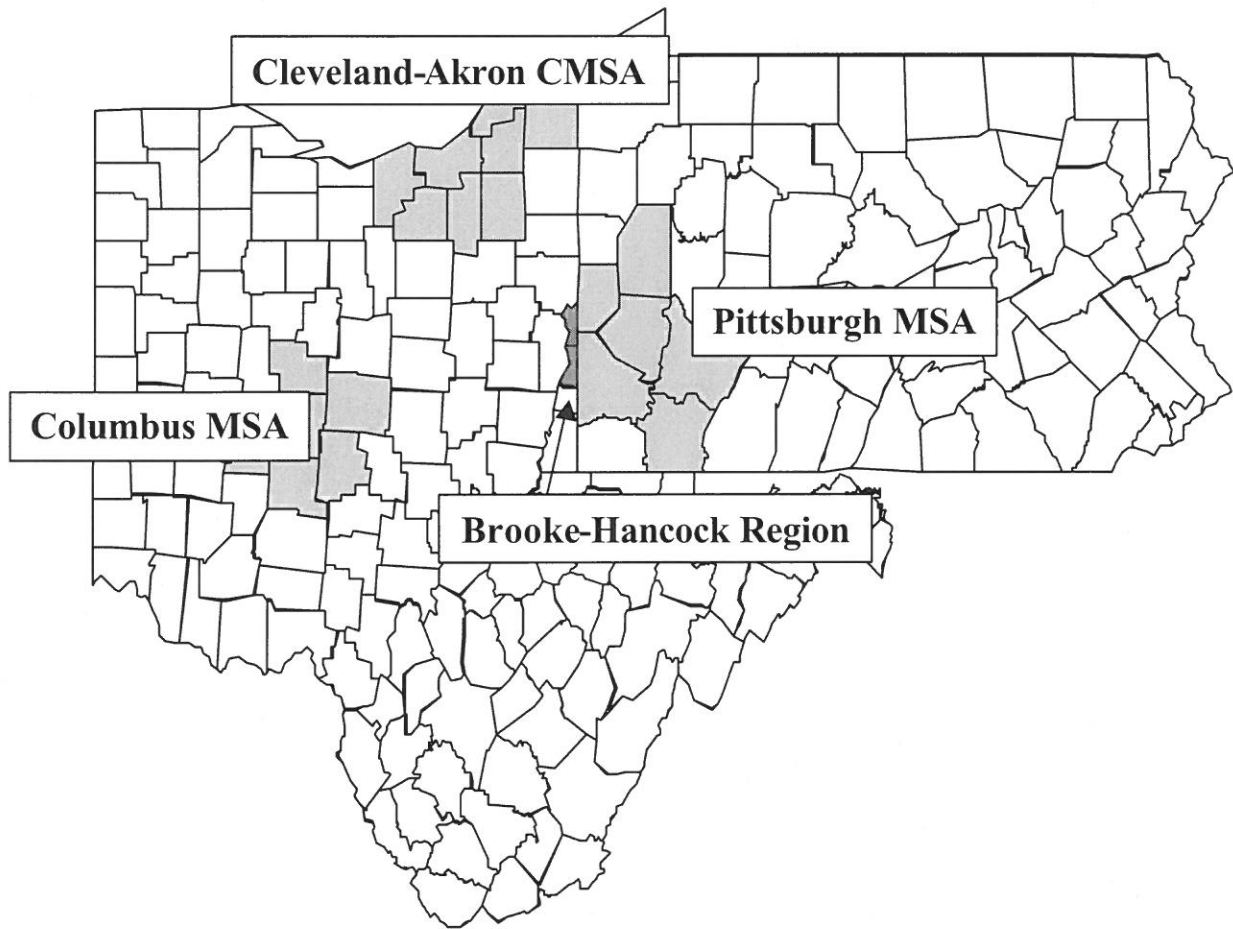
## **Description of the Brooke-Hancock Region**

Brooke and Hancock County are located in the Northern Panhandle of West Virginia and, with Jefferson County, Ohio, make up the Steubenville-Weirton Metropolitan Statistical Area (MSA). The two-county region is centrally located with respect to several major metropolitan areas, is near several major interstate highways, and is close to a major international airport.

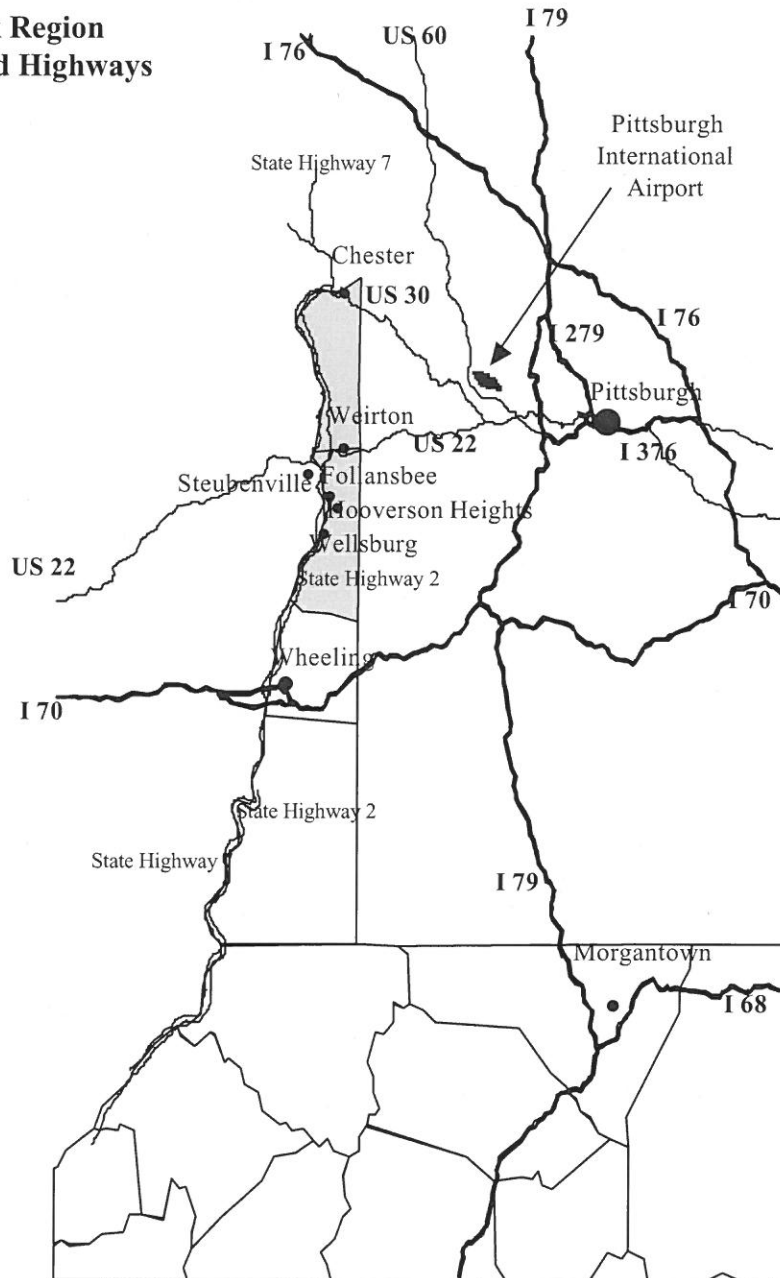
As Map 1 shows, the Brooke-Hancock region is located close to several major metropolitan areas, including the Cleveland-Akron, Ohio Consolidated Metropolitan Statistical Area (CMSA) (with 2,945,831 residents in 2000), the Pittsburgh, Pennsylvania MSA (with 2,358,695 residents in 2000), and the Columbus, Ohio MSA (with 1,540,157 residents in 2000). In addition, there are several smaller MSAs nearby, including the Youngstown-Warren, Ohio MSA, the Canton-Massillon, Ohio MSA, the Wheeling, West Virginia MSA, the Parkersburg-Marietta MSA, and the Sharon, Pennsylvania MSA.

By far the largest city in the region is Weirton, but Follansbee, Wellsburg, and Chester also counted large numbers of residents in 2000. As Map 2 shows, no interstate highway passes through the two-county region, but several interstates pass nearby. The major roads in and around the region include U.S. Route 22 and State Route 7. The region is also near a major international airport, as the map also shows. Overall, the region is well placed with respect to several major metropolitan markets and has good access to highway and air transportation infrastructure.

**Map 1**  
**Brooke-Hancock Region and**  
**Neighboring Major**  
**Metropolitan Areas**



**Map 2**  
**Brooke-Hancock Region**  
**Major Roads and Highways**



## Demographics of the Brooke-Hancock Region

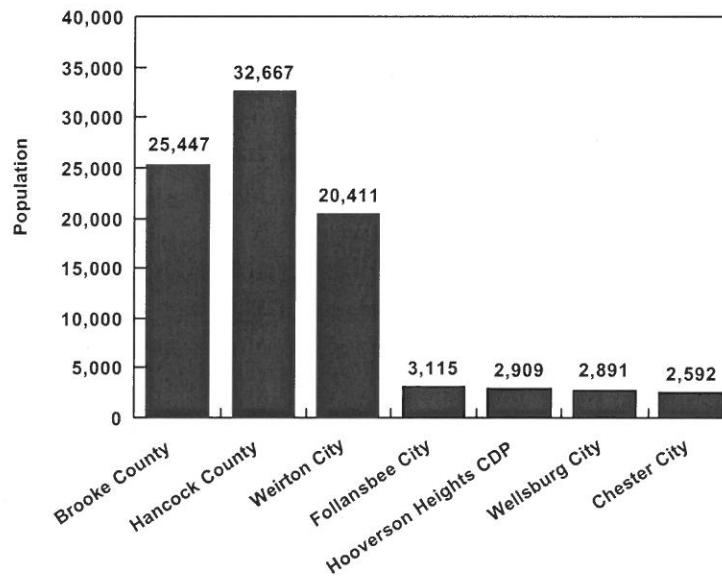
Understanding a region's past, current, and future demographic structure is essential for economic development efforts. This section examines several properties of the Brooke-Hancock region's population, with primary focus on changes in the region's age composition, historical trends in population, and migration patterns of the region's residents. Historical population data are obtained from the U.S. Bureau of the Census, including the latest available data from Census 2000.

According to the latest data, the Brooke-Hancock region lost 4,111 residents from 1990 to 2000. This translates into an annual rate of decline of 0.7 percent per year, which contrasts with state population growth of 0.1 percent per year and national population growth of 1.2 percent per year. Both Brooke and Hancock County lost residents during the decade and both registered median ages that ranked in the top ten in the state. The region posted large population losses in the under 45 age groups during the decade, while recording moderate gains in the 45 and older age groups.

### *Population Levels and Trends*

The population of the Brooke-Hancock region in 2000 was 58,114, which accounted for approximately 3.2 percent of West Virginia's total resident population of 1,808,344. As Figure 1 shows, the population of Hancock County (at 32,667) is larger than that for Brooke County (25,447). The figure also shows 2000 population for the largest Census places in 2000. Weirton is by far the largest city or Census Designated Place (CDP) in the region. Further, most of Weirton's residents live in Hancock County, with just 3,886 of the city's residents living in the Brooke County portion in 2000.

**Figure 1**  
**Census 2000 Population for the**  
**Brooke-Hancock Region**

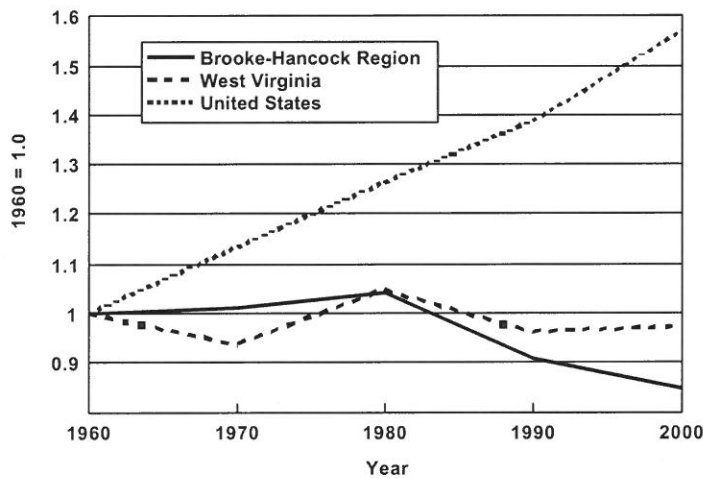




During the 1990s, the Brooke-Hancock region lost 4,111 residents, which translates into an annual rate of decline of 0.7 percent. The region's population losses contrast with slow population growth for the state, which added 14,867 residents (0.1 percent annual rate of growth), and steady population growth nationally (1.2 percent per year). The city of Weirton recorded population declines during the decade as well, losing 1,713 residents.

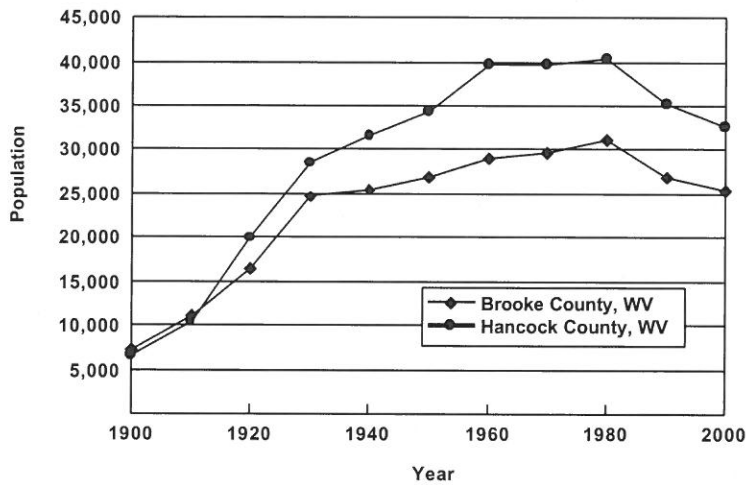
As Figure 2 shows, Brooke-Hancock region population growth held up better during the 1960s than it did for the state, although growth fell short of the national average. The region added residents at a slower rate than the state did during the 1970s, and has registered population losses in each of the last two Census counts. Both the region and the state have recorded population growth rates far below the national rate since 1980.

**Figure 2**  
**Population Trends from 1960 to 2000**  
**Brooke-Hancock Region, West Virginia, and U.S.**



As Figure 3 shows, Brooke and Hancock County had roughly the same population in 1900 (with Brooke County slightly larger with 7,219 residents, compared to 6,693 residents for Hancock County). By 1920, Hancock County population exceeded that for Brooke County and the gap widened significantly by 1960. According to the latest data for 2000, Hancock County remains the larger of the two, but the margin has fallen since 1960.

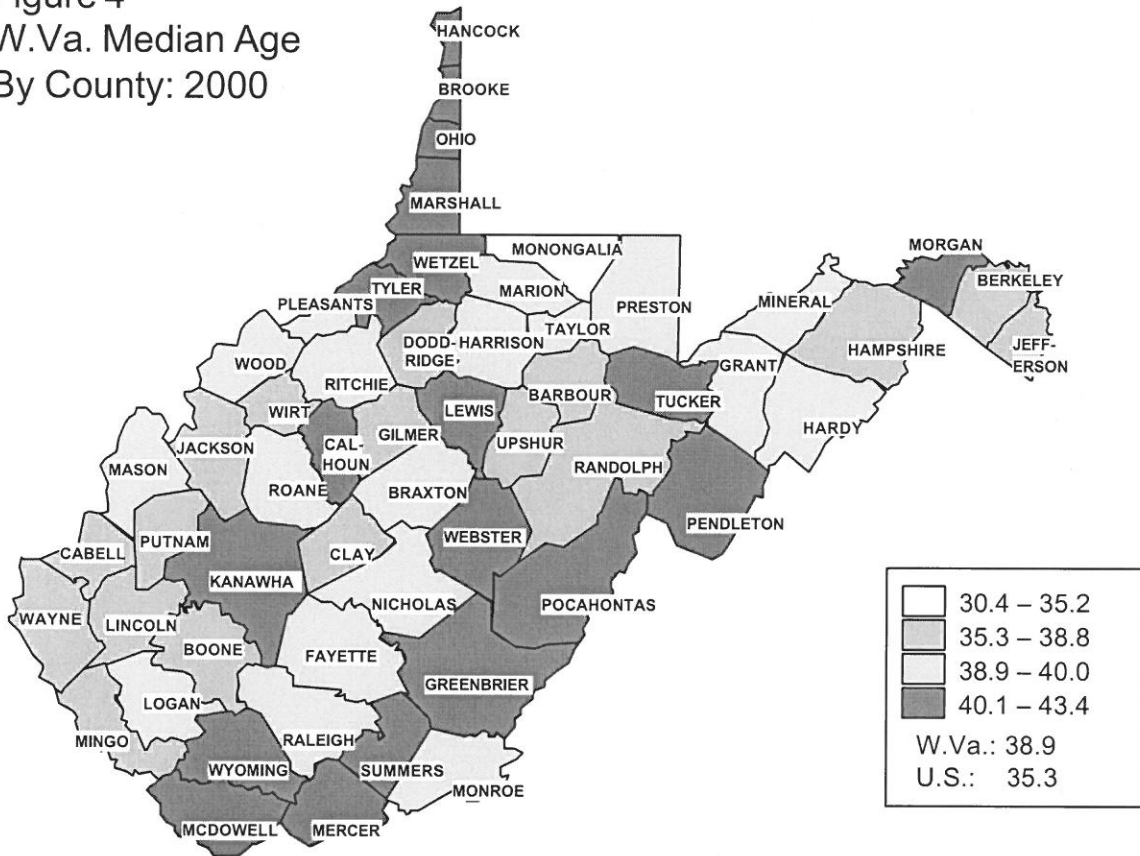
**Figure 3**  
**Brooke and Hancock County Population**  
**Census Counts: 1900-2000**



*Population by Age Group*

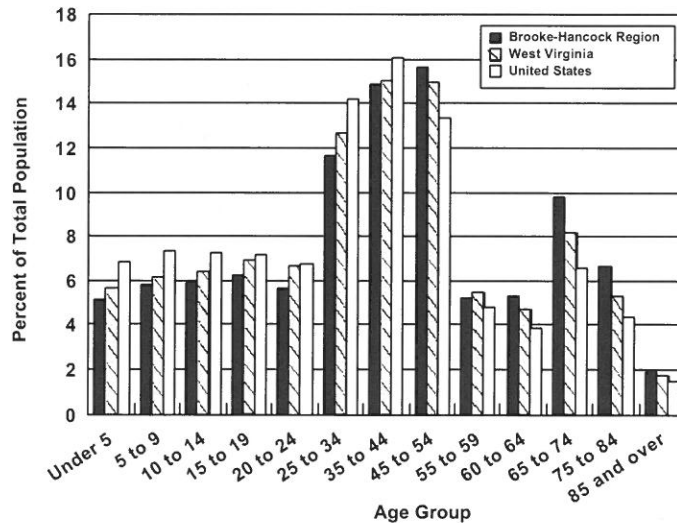
According to data from Census 2000, the age distribution of the region’s population is weighted toward older age groups. This is clear when we consider the median ages for Brooke and Hancock counties. Median age is the age that splits the region’s population in half, with half the population above the median age and half the population below the median age. Brooke and Hancock counties have relatively high median ages, at 41.2 and 41.7 years, respectively. These median ages rank Brooke County 7th highest in the state and Hancock County 4th highest. Further, both counties have median ages far in excess of the state (38.9 years) and the nation (35.3 years). As Figure 4 shows, most Northern Panhandle region counties have high median ages, as do many counties in the southeastern part of the state.

Figure 4  
 W.Va. Median Age  
 By County: 2000



The region gets its high median age from a relatively low share of residents in the younger age groups, combined with a high share of residents in the older age groups. Figure 5 shows the age distribution for the region, compared to the state and the nation. It is clear from the figure that the region has much lower shares of residents in the age groups under 44 years, and higher shares of residents in the over-45 age groups, particularly in the 65-to-74 age group.

**Figure 5  
Population by Age Group: 2000**

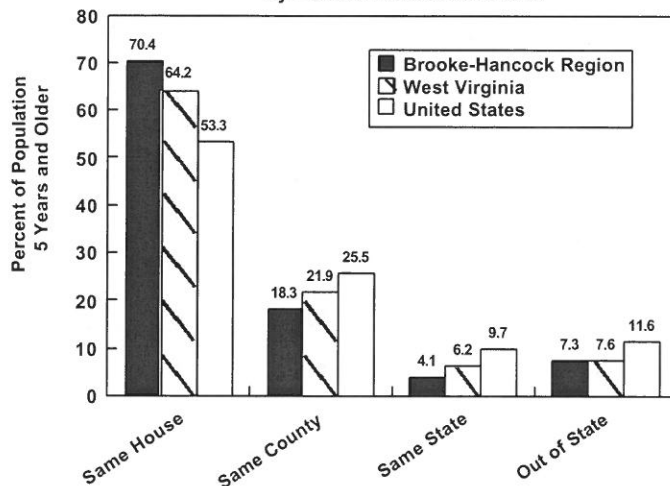


Further, the region suffered a large drop in residents under the age of 45 during the 1990s, with the number of residents in that age group falling from 38,213 in 1990 to 32,206 by 2000. This contrasts with growth in the 45-and-older age group, which has grown from 24,012 residents in 1990 to 25,908 residents by 2000.

*Migration*

Approximately 70.4 percent of people living in the Brooke-Hancock region in 1990 lived in the same house five years earlier, as Figure 6 shows. This was a higher rate than the state (64.2 percent) and national (53.3 percent) averages. In addition, a lower percentage of Brooke-Hancock region residents moved from another county or state than statewide or nationally. Of those who moved to the Brooke-Hancock region from another state, the greatest numbers came from the Midwest (1,637 residents), followed by the Northeast (1,314 residents) and the South (1,047). With a total of 120 residents, the percentage of population moving to the Brooke-Hancock region from abroad was nearly identical to the state percentage of 7.3.

**Figure 6**  
**Migration Trends**  
 Place of Residence in 1990  
 by Place of Residence in 1985



## Educational Attainment and Enrollment

Educational attainment is a critical factor in a region's prospects for growth in the 21st century. We address this issue in this report because the level of educational attainment in a region influences location decisions by firms. In addition, information regarding education levels is important for state and local government officials as they allocate resources impacting a region's training and education needs.

As Table 1 shows, educational attainment in the Brooke-Hancock region (as measured by the share of residents with at least a high school degree in 1990) was 72.1 percent. That exceeded the state average of 67.2 percent, but fell short of the national rate (75.4 percent). In terms of college level educational attainment (measured by the share of the region's population age 18 and older with a bachelor's degree or better), however, the region fell just below the state average and well below the national rate. Indeed, the regional population share with a bachelor's degree or better was just 10.3 percent in 1990, compared to 11.4 percent for the state, and 18.5 percent for the nation.

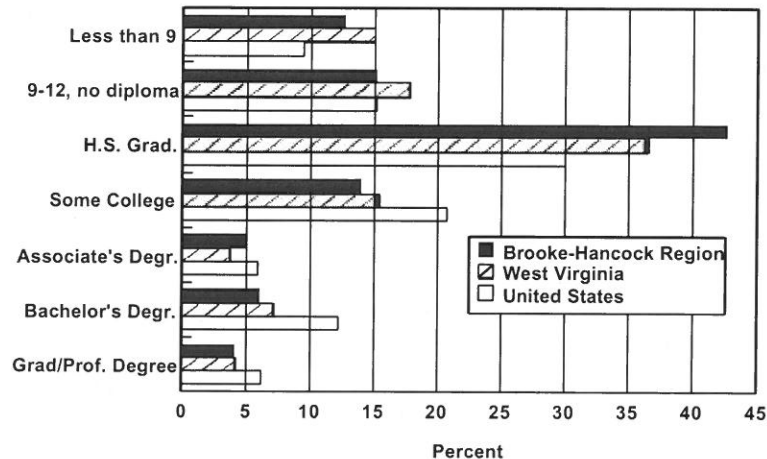
**Table 1**  
**Educational Attainment in 1990**  
**(percent of population age 18 and older)**

	<b>High School Degree or More</b>	<b>Bachelor's Degree or More</b>
Brooke County	71.6	12.2
Hancock County	72.5	8.9
<b>Brooke-Hancock Region</b>	<b>72.1</b>	<b>10.3</b>
West Virginia	67.2	11.4
United States	75.4	18.5

Source:  
 U.S. Bureau of the Census, Summary Tape Files 3C & 3A

The Brooke-Hancock region posted a high share of residents with a high school degree as their highest level of educational attainment in 1990, with 42.7 percent. This exceeded the state average of 36.5 percent and the national average of 30.1 percent, as Figure 7 shows. The region improved on state and national results in terms of the percentage of residents without at least a high school degree. The region also recorded a higher share than the state or the nation of residents with an associate degree as the highest level of educational attainment in 1990.

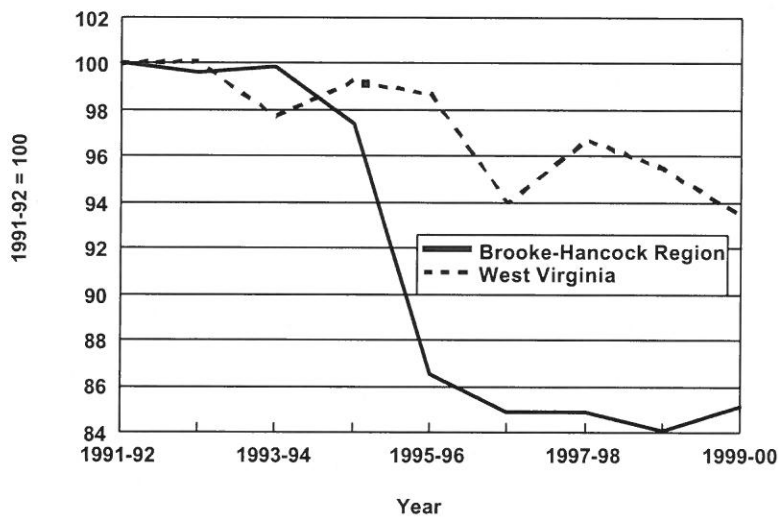
**Figure 7**  
**Highest Level of  
 Educational Attainment in 1990**  
 (percent of residents age 18 and older)



Overall educational attainment rates are slightly better than the state average (primarily due to fewer residents without high school degrees) but well below national rates. Education matters not only for individual economic prosperity, but for a region's prosperity as well. Job growth in the future (particularly for jobs which pay above average wages) will likely demand increasing levels of education. Further, employers looking to locate in a region (and successful homegrown firms) will be keenly aware of the education levels of the available workforce.

School enrollment provides local planners, educators, and businesses with information on future labor force characteristics and prospective students. According to data for the 1999-2000 school year, there were 4,264 students enrolled in grades K-6 and 3,989 students enrolled in grades 7-12 in the Brooke-Hancock region. Most of these students will eventually graduate to either the workforce or continue their education in the region (or elsewhere). Graduation trends in the region reflect falling population levels during the 1990s. Local high schools graduated 736 students in the 1991-1992 school year. That level fell during the decade to 627 in the 1999-2000 school year. This mirrors an overall trend in the state, as state graduates fell from 20,801 in 1991-1992 to 19,440 in 1999-2000, as Figure 8 shows.

**Figure 8**  
**Number of High School Graduates**



The drop in educational enrollment and graduation levels reflects declines in the school age population during the decade. In 1990, the region boasted just over 11,000 residents between the ages of 5 and 17. By 2000, the region counted nearly 9,000 residents of school age. In addition, the percent decline in school age residents in the region (-18.3 percent) nearly doubled the percentage decline for the state (-10.8 percent).

## Labor Force Statistics

This section analyzes labor force trends in the Brooke-Hancock region, including trends in the civilian labor force, the number of employed residents, the number of unemployed residents, the unemployment rate, and labor force participation rates. We also compare the performance of the region to the state and the nation.

We find in this section that the regional unemployment rate is well below recent levels (at 3.9 percent in 2000). This is due partly to employment stability but also likely due to out-migration from the Brooke-Hancock region during the decade. The region's declining unemployment rate need not indicate labor shortages in the region, because there are literally thousands of unemployed residents within easy commuting distance.

*Labor Force Statistics: What do they tell us?*

Labor force statistics allow us to characterize the performance of a given labor market, whether that market is national, statewide, or county level. These statistics tell us about the size of the civilian labor force by measuring the number of employed and unemployed residents. Further, by utilizing a measure of the non-institutional population, we can explore the extent to which the population participates in formal labor market activities.

Two fundamental building blocks for this dataset are the number of employed and unemployed residents. Note that in this section we evaluate the employment status of residents, even if these residents hold a job in another state or county. We also restrict our attention to residents age 16 and older that are not institutionalized. Examples of institutionalized residents are inmates in a correctional system, patients at nursing homes and hospitals, and residents at mental institutions. We will further focus our attention on the civilian labor force and population.

Our measures of the number of employed and unemployed residents are based on a monthly survey, for which employees of the U.S. Bureau of Labor Statistics actually interview a sample of county residents. Interview subjects are asked to respond to a number of questions, including their employment status. If a resident holds at least one job, that resident is counted as employed. If a resident is not currently employed, but is available and actively seeking work, then that person is counted as unemployed. If a resident is not employed and not actively seeking and available for work, then that resident is counted as not in the labor force.

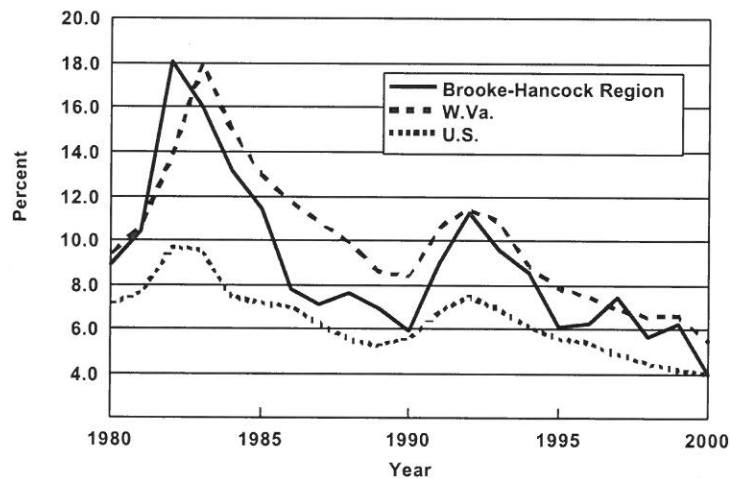
The sum of the number of employed and unemployed residents is called the labor force. The unemployment rate is the ratio of the number of unemployed residents to the labor force. The labor force participation rate is the ratio of the labor force to the non-institutionalized population age 16 and older.



### *Unemployment rate trends in the Brooke-Hancock region*

As Figure 9 shows, the Brooke-Hancock region unemployment rate has followed the state rate in registering consistent declines since 1992. Indeed, at 3.9 percent in 2000, the regional unemployment rate is now less than one half (and is nearly one third) of its 1992 level of 11.3 percent.

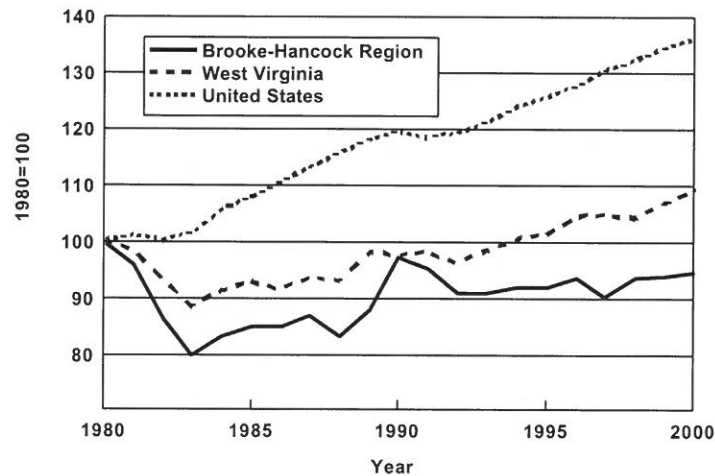
**Figure 9**  
**Brooke-Hancock Region Shadows**  
**the W.Va. Unemployment Rate**



Further, the regional unemployment rate in 2000 is well below the state rate of 5.5 percent and just below the national rate of 4.0 percent. Overall, the regional labor market is using the available labor supply much more efficiently than earlier in the decade.

While the recent declines in the rate of unemployment are positive, they do not necessarily reflect improved employment growth. Indeed, as Figure 10 shows, the Brooke-Hancock region unemployment rate declined during the 1990s because the number of unemployed residents declined strongly, from 3,100 residents in 1992 to 1,040 in 2000. However, these reductions in resident unemployment were not achieved through gains in resident employment. The Brooke-Hancock region has registered little growth in the number of employed residents during the 1990s. It's fair to say that the resident employment level has remained fairly stable during the decade.

**Figure 10**  
**Brooke-Hancock Region, W.Va.,**  
**and U.S. Resident Employment**



The bottom line is that the region likely achieved strong declines in the rate of unemployment for two reasons: 1) stability (or slow growth) in resident employment, and 2) migration of unemployed residents out of the region.

*Labor force trends*

While the Brooke-Hancock region labor market is tighter than it was during the early 1990s, that does not mean that the local labor force is completely employed. One way to see this is to look beyond just the two-county region and consider a wider local labor market. We can do this by examining commuting trends from the 1990 Census. This data will give us an indication of the counties from which the Brooke-Hancock region draws workers, and thus provide a better picture of the available labor force.

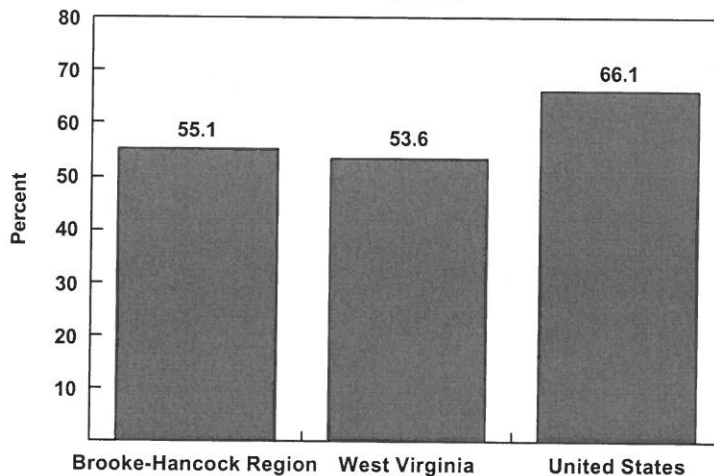
Using the 1990 Census commuting data and a 1.0 percent threshold (so that commuters from outlying counties must account for 1.0 percent or more of Brooke-Hancock region jobs), we identify Jefferson County, Ohio; Columbiana County, Ohio; Washington County, Pennsylvania; Ohio County, West Virginia; Allegheny County, Pennsylvania; and Belmont County, Ohio as counties which contribute significant numbers of workers to the region.

Further, these counties (plus the Brooke-Hancock region) compose a region with a significant labor force, registering a civilian labor force of over 900,000 residents in 2000. Further this region contained over 35,000 unemployed residents in 2000. This suggests that even though the Brooke-Hancock region unemployment rate is low, attractive employment opportunities would be met with a significant number of residents looking for work.

We can further explore these ideas using the civilian, non-institutional labor force participation rate. This rate shows us the percentage of the resident population that is actively participating in labor market activities (either working or looking for work). This rate is affected by the age distribution of the population, with older regions (containing a higher share of retirees) tending to register lower levels of labor market participation. Regions with a large share of school-age children will also tend to post low levels of labor force participation. Finally, regions with significant numbers of discouraged workers (those that are not employed and not looking for work) will also post low participation rates.

Figure 11 shows 1990 participation rates for the region, the state, and the nation. As the figure shows, the labor force participation rate for the region exceeds that for the state, but falls well below the national rate. As discussed in the demographics section of this report, the region has a relatively large share of its population age 65 and older, compared to the state average. Ordinarily, we would expect this to produce a lower participation rate in the region than the state, other things equal. However, the fact that the Brooke-Hancock region is more urban than are many areas of the state offsets the age-mix effect. The region's participation rate fell well below the national rate in 1990 and the reason in this case is likely the age-mix effect.

**Figure 11**  
**Civilian Labor Force Participation Rates**  
**1990**



Overall, the region is utilizing its available labor supply more efficiently now than it has in the recent past. In other words, the unemployment rate is well below recent levels. This does not mean that the region is running out of available labor. At 3.9 percent in 2000, the Brooke-Hancock region unemployment rate was near the rates for the Pittsburgh

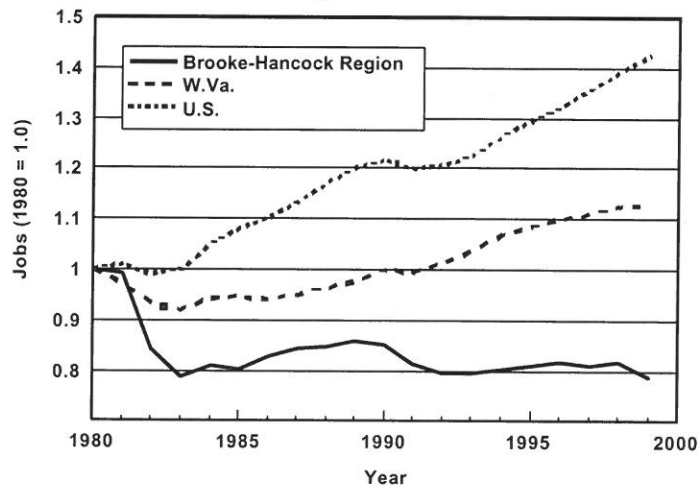
MSA (4.1 percent) and the Cleveland MSA (4.4 percent), and well below the rate for the Wheeling MSA (4.8 percent). In addition, in 2000 there were literally thousands of unemployed workers within easy commuting distance.

### Industry Employment and Wages

Job growth in the Brooke-Hancock region has been slow, at best, during the last 20 years. Further, the region endured huge job losses during the early 1980s, and to a lesser extent during early 1990s. Employment data presented here are a count of the number of jobs located within the specific geographic region. We examine employment (jobs) and wages within the Brooke-Hancock Region, West Virginia, and the nation. These data are from the West Virginia Bureau of Employment Programs and the Bureau of Labor Statistics, U.S. Department of Labor. The jobs data include jobs with firms participating in the unemployment compensation program. Therefore, they do not include railroad workers, self-employed workers, student workers, most church workers, and unpaid family workers. This is in contrast to the resident employment data that are part of labor force statistics. Those data estimate the total number of people living in a particular geographic area that also have one or more jobs. Employment data in this section are a measure of jobs. Resident employment is a count of residents with jobs. Since one person may hold more than one job, the two measures do not match.

Employment in the Brooke-Hancock region fell sharply during the recessionary periods of the early 1980s and early 1990s (Figure 12). Job growth following the declines has been weak with the region even recording net job losses from 1998 to 1999, the most recent year available for this data. The Brooke-Hancock region recorded net job losses of 6,253 from 1980 to 1999. The state and nation both recorded overall job gains during this same time period.

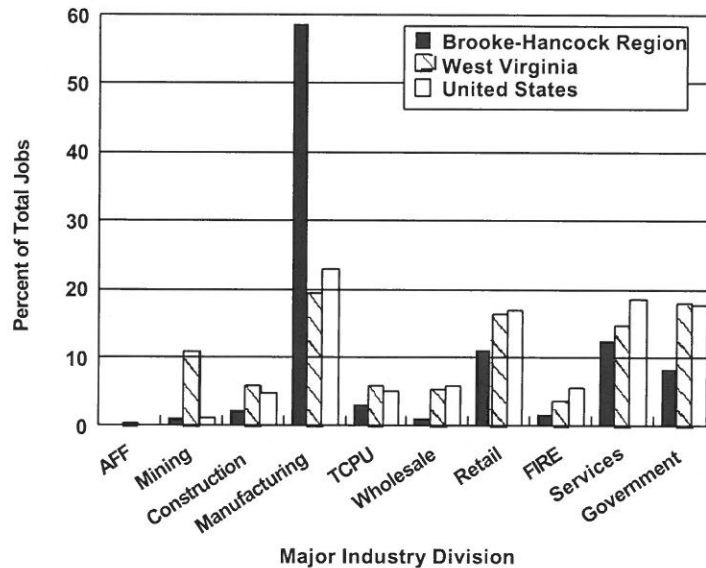
**Figure 12**  
**Brooke-Hancock Region Employment**  
**Growth Lags W.Va. and U.S.**



## Industry Mix

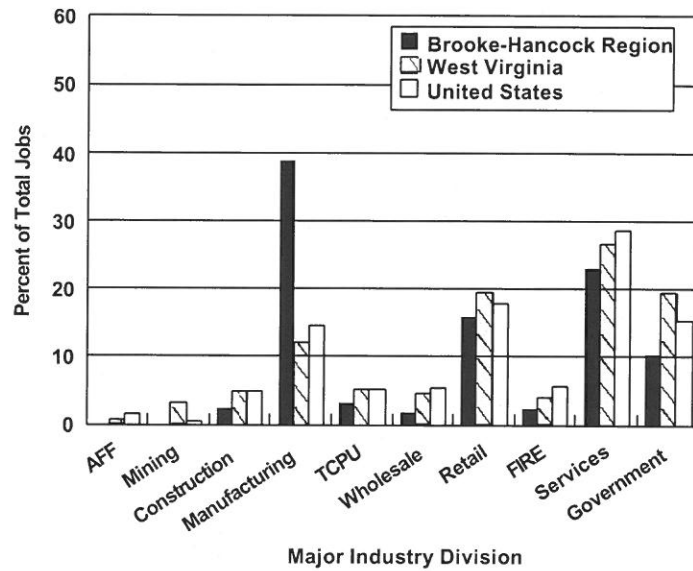
The poor job performance of the Brooke-Hancock region is connected to several factors. The first is the industry mix of the region. Figure 13 and Figure 14 show the industry mix of the region, state, and nation for 1980 and 1999, respectively. Manufacturing clearly dominated the regional economy in 1980, accounting for over 58 percent of all jobs in the region. The region fell short of both the state and national averages in all other industries. This lack of employment diversification played an important role in the poor job growth performance of the region.

**Figure 13**  
**Manufacturing Dominates**  
**Brooke-Hancock Region Economy in 1980**



As Figure 14 shows, manufacturing still dominates the Brooke-Hancock region in 1999, although to a smaller extent. Manufacturing jobs are a smaller share of total jobs in 1999 due to job losses in manufacturing and because of job growth in the services sector of the economy. The Brooke-Hancock region still falls short of the state and nation in share of jobs in all industries with the exception of manufacturing.

**Figure 14**  
**Manufacturing and Services Dominate**  
**Brooke-Hancock Region Economy in 1999**



*Job Growth*

Job growth by major industry also explains some of the overall poor job performance in the regional economy. Figure 15 shows the percent job growth by major industry from 1980 to 1999 for the Brooke-Hancock Region, West Virginia, and the nation. The region fared worse than the state and nation in almost every industry. Most notable though are the manufacturing and services industries. Manufacturing is important because it makes up such a large share of the jobs in the region, while services is where the state and nation saw much of their job growth. Poor job performance in manufacturing along with weaker than average job growth in services explains much of the overall job declines in the region.

**Figure 15**  
**Manufacturing Losses Thousands of**  
**Jobs in the 1980s and 1990s in the**  
**Brooke-Hancock Region**

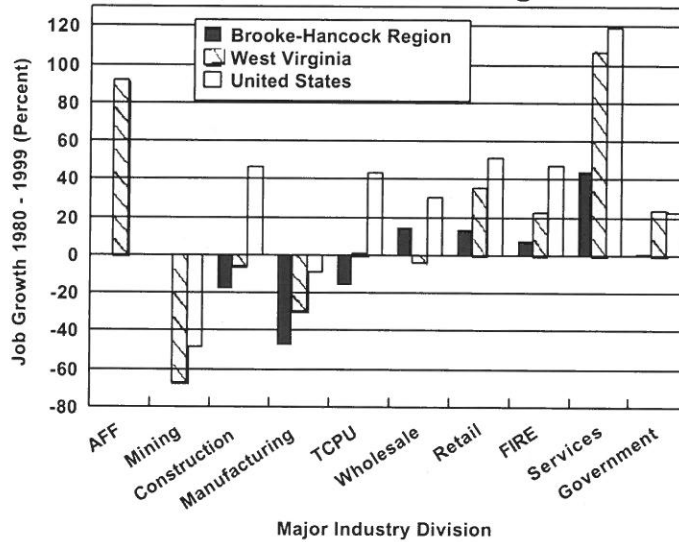
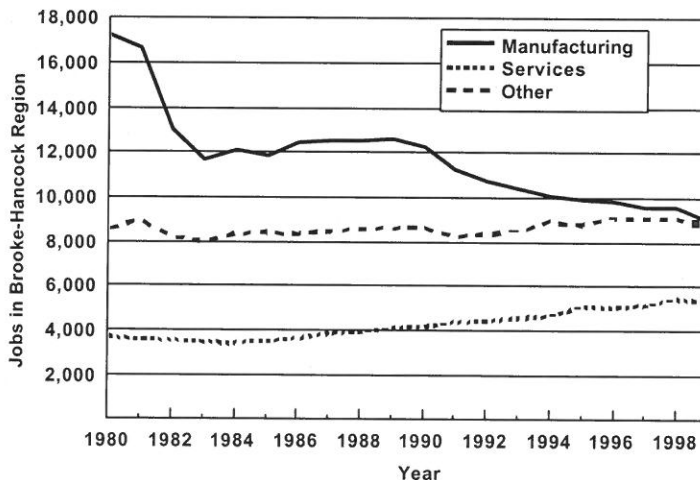


Figure 16 shows employment trends in the Brooke-Hancock region broken down into manufacturing jobs, services jobs, and other jobs. As can be seen in the graph, manufacturing employment has recorded steady job declines since 1990 (in addition to severe job losses in the early 1980s). The services sector has helped to cushion the impact of manufacturing job losses. This sector includes a wide variety of activities, including health care and social services, business services, and travel and tourism related services (among a host of other activities). Services sector jobs have shown moderate job growth, but not nearly enough to offset the declines in the manufacturing sector of the economy.

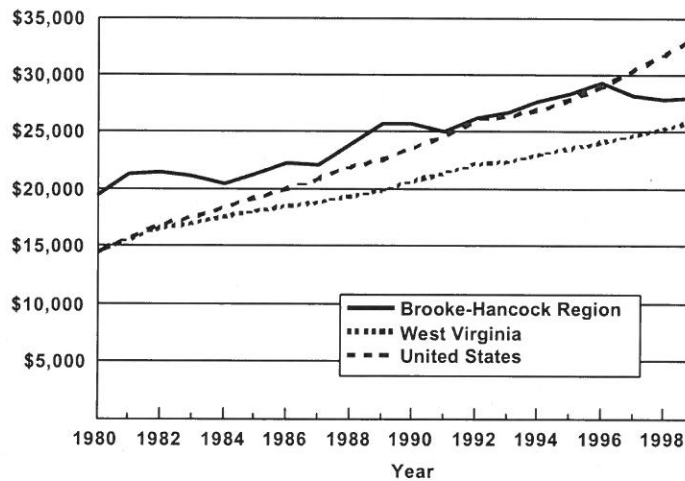
**Figure 16**  
**Services Job Growth Overshadowed by**  
**Significant Job Losses in Manufacturing**



### *Wages per Worker*

Wages paid per employee have been higher in the Brooke-Hancock region than both the state and nation until recently (Figure 17). Wages in the region actually increased at rates similar to the state and nation until 1996 when wages per employee fell. The higher than average wages were mostly due to large employment shares in high-paying industries such as steel. Declines in jobs in high-paying sectors and job growth in lower-paying sectors have caused average wages per employee to stop growing and even decline slightly. The wages have not been adjusted for inflation. Adjusting for inflation would make the declines in wages more severe.

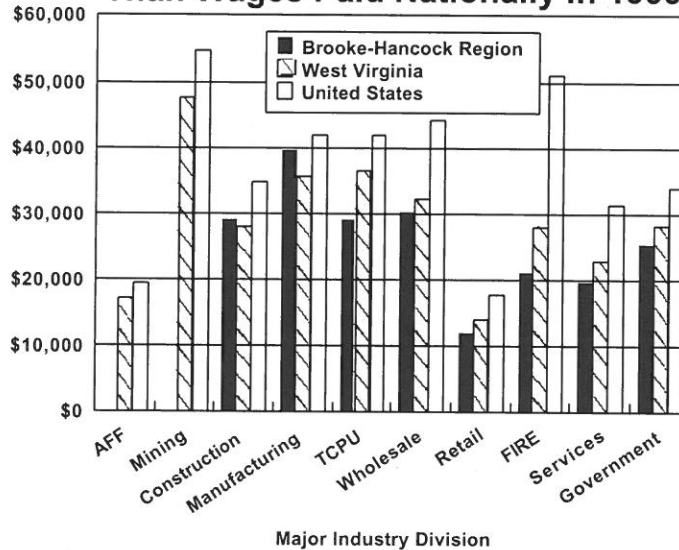
**Figure 17**  
**Average Annual Wages Decline in Recent Years in the Brooke-Hancock Region**



Average wages paid per employee by industry paints a similar picture. Figure 18 shows the average wages paid per employee in 1999 by major industry. With the exception of manufacturing and construction, wages in the Brooke-Hancock region were less than both the state and the nation. Wages in finance, insurance, and real estate, as well as services and transportation and public utilities, were significantly lower than the national average. Overall wages in the region are kept high due mostly to large employment shares in the high-paying manufacturing industries.



**Figure 18**  
**Wages in All Industries Within the**  
**Brooke-Hancock Region are Less**  
**Than Wages Paid Nationally in 1999**



## Occupational Structure

Employment can be classified in a number of different ways. Two of the most frequently used methods for organizing employment and wage data are by industry and by occupation. Examples of industries include mining, wood products manufacturing, health care services, and state government. Examples of occupations include clerical workers, engineers, bookkeepers, doctors, and lawyers. While there is naturally some overlap between these two classification systems (for instance, cashiers figure prominently in retail trade industry employment), it is useful to consider industries and occupations separately, especially when considering relative levels of investment in education.

This section analyzes occupational projections and occupational wage data from the West Virginia Bureau of Employment Programs. The occupational wage data are available for all Metropolitan Statistical Areas (MSAs) in West Virginia, the state of West Virginia, and the nation. The Steubenville-Weirton MSA includes Brooke and Hancock counties in West Virginia and Jefferson County in Ohio.

Occupational projections are available for the Workforce Investment Areas in West Virginia, the state of West Virginia, and the nation. The occupational projection data include forecasts from 1998 to 2008. Workforce Investment Area 5 (WIA5) includes Brooke, Hancock, Marshall, Ohio, Tyler and Wetzel counties.

When compared to the state and the nation, the occupational structure of Workforce Investment Area 5 is more heavily weighted toward precision production and blue-collar jobs. However, there are high-paying services occupations in the region, such as professional and technical occupations (accountants, doctors, and lawyers). Further, the latest occupational projections available suggest that there will be little net job growth in the precision production and blue-collar occupations, in contrast to strong gains in sales and service occupations. The continued restructuring of the occupational mix in the region will impact income growth, as relatively high-paying occupations (precision production) are replaced by lower-paying jobs in sales and services occupations.

*Occupations in 1998*

Occupations, like industries, are assigned codes to simplify database processing. Occupational codes have five digits and (in general) the first digit refers to an overall occupation type and the remainder of the digits successively narrow the occupational description. For example, as shown in Table 2, occupational code 10000 refers to managerial and administrative occupations. Thus, any occupational code starting with a 1 belongs to this major occupational group. Likewise, occupational code 15000 narrows that definition to line and middle managers. The process of narrowing continues until, for example, we have occupational code 15014, which refers to industrial production managers. Table 2 shows the major occupations and their occupational codes.

**Table 2**  
**Occupational Codes for**  
**Major Occupations**

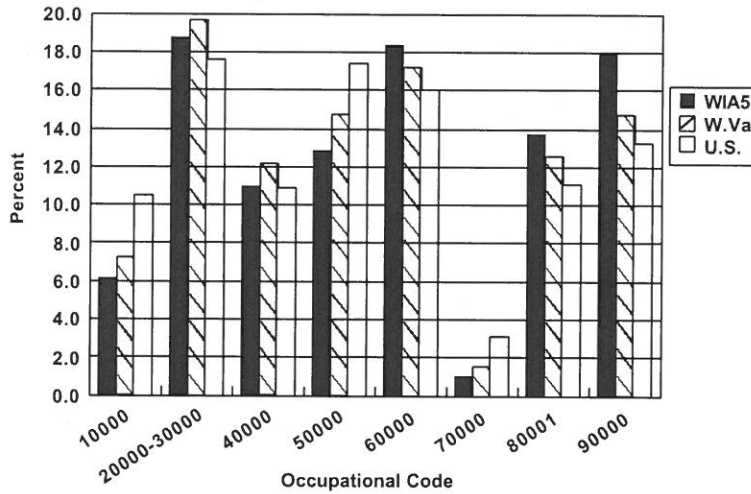
Occ. Code	Occupational Description
10000	Managerial and Administrative
20000-30000	Professional, Paraprofessional, Technical
40000	Sales and Related
50000	Clerical and Administrative Support
60000	Service
70000	Agriculture, Forestry, Fishing, and Related
80001	Precision Production, Craft, and Repair
90000	Operators, Fabricators, and Laborers

Source: W.Va. Bureau of Employment Programs,  
Research, Information and Analysis Division  
[www.state.wv.us/bep/LMI/](http://www.state.wv.us/bep/LMI/)

As Figure 19 shows, the region specializes in precision production and blue-collar jobs. Indeed, these two occupational categories accounted for 31.7 percent of Workforce Investment Area 5 jobs, compared to 27.3 percent for the state, and 24.3 percent for the

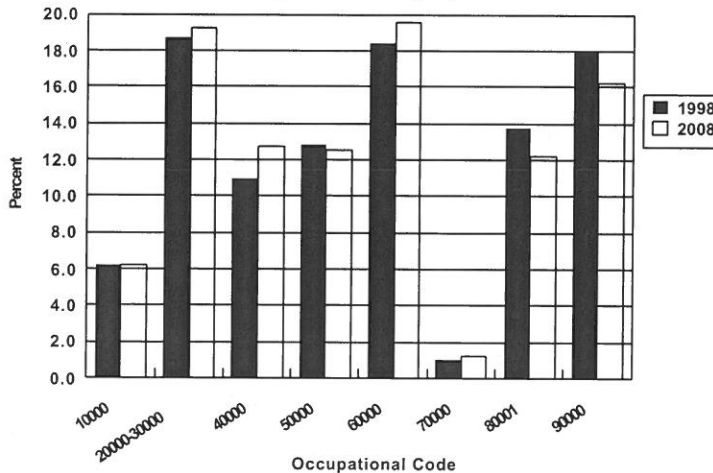
nation. The region also posted a larger share of jobs in service occupations than did the state, and the nation. In contrast, management and professional occupations (25.0 percent) accounted for a smaller share of WIA 5 jobs than they did for the state (26.9 percent) and the nation (28.1 percent).

**Figure 19**  
**Distribution of Occupations in 1998**  
 (percent of total jobs)



Occupational projections for WIA5 (published by the West Virginia Bureau of Employment Programs) call for the restructuring in the regional economy to impact the occupational mix as well. As Figure 20 shows, the outlook calls for the regional occupational mix to be less concentrated in blue-collar and precision production in 2008 than it was in 1998. State and national projections call for similar, but less pronounced changes in occupational mixes.

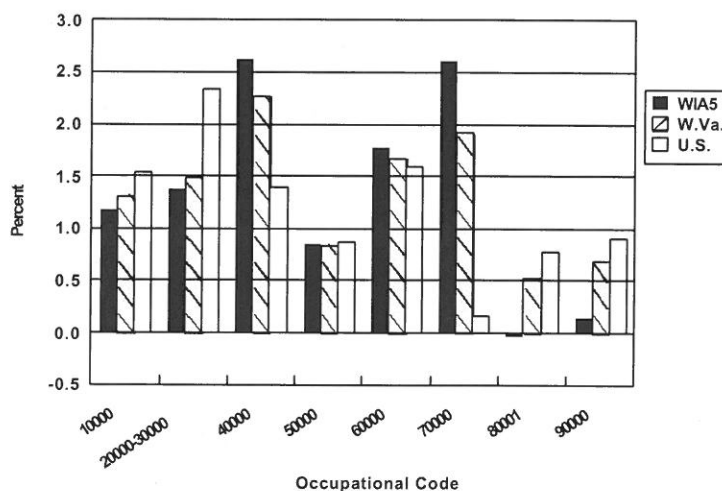
**Figure 20**  
**Change in the Distribution of Occupations**  
**in WIA5 During the 1998-2008 Period**  
 (percent of total jobs)



In contrast to smaller concentrations in blue-collar and precision production occupations, the outlook calls for the region to register increased concentration in the managerial and professional occupations, although at a slower rate than nationally (and at about the same rate as the state). However, the region remains well behind the nation in the share of jobs in these occupations. The region is expected to record strong gains in service occupations during the forecast period.

The occupational outlook calls for marketing and sales occupations; agriculture, forestry, fishing, and related occupations; and service occupations in WIA5 to record the fastest growth during the 1998-2008 period. Each of these occupations is expected to grow faster than the state and national averages, as Figure 21 shows. Job gains in managerial, professional, blue collar, and precision production occupations are forecast to grow slower than the state and national averages.

**Figure 21**  
**Annual Job Growth By Occupation**  
**1998-2008**



This restructuring in the occupational mix will impact average wages in the region. Job losses in the relatively high paying precision production occupations will likely only be partially offset by gains in service, management, and professional occupations.

We can exploit a different dataset to gain a rich picture of occupational wages. This dataset provides occupational wages for 1999 for the Steubenville-Weirton MSA (not just for WIA5, as is the case for occupational projections), the state, and the nation. Unfortunately, the occupational codes used for occupational wages do not match those in Table 2, do to a recent revision by the U.S. Bureau of Labor Statistics.

As Table 3 shows, for most of the major occupational categories annual wages in the region fall well below national wages for the same group. The occupations for which regional annual wages exceed the national average are the same occupations that are expected to see little job growth or net declines.

**Table 3**  
**Annual Wages per Worker by Occupation**

SOC Code*	Occupation Title	Annual Wages in 1999 (\$ per worker)		
		Steubenville- Weirton MSA	W.Va.	U.S.
11-0000	Management Occupations	48,640	46,190	64,740
13-0000	Business and Financial Operations Occupations	30,520	36,660	46,100
15-0000	Computer and Mathematical Occupations	41,600	42,880	54,930
17-0000	Architecture and Engineering Occupations	45,740	42,440	51,600
19-0000	Life, Physical, and Social Science Occupations	39,510	38,590	45,660
21-0000	Community and Social Services Occupations	32,230	22,090	31,640
23-0000	Legal Occupations	53,560	38,900	66,780
25-0000	Education, Training, and Library Occupations	30,990	34,030	36,040
27-0000	Arts, Design, Entertainment, Sports, and Media Occupations	25,750	28,410	37,650
29-0000	Healthcare Practitioners and Technical Occupations	42,780	41,470	45,250
31-0000	Healthcare Support Occupations	16,250	15,110	19,780
33-0000	Protective Service Occupations	25,610	21,880	29,650
35-0000	Food Preparation and Serving Related Occupations	12,770	13,240	15,600
37-0000	Building and Grounds Cleaning and Maintenance Occupations	14,910	15,980	18,910
39-0000	Personal Care and Service Occupations	14,600	15,430	20,300
41-0000	Sales and Related Occupations	19,820	19,380	27,060
43-0000	Office and Administrative Support Occupations	20,350	20,740	25,310
45-0000	Farming, Fishing, and Forestry Occupations	17,180	23,720	18,000
47-0000	Construction and Extraction Occupations	28,550	31,170	33,650
49-0000	Installation, Maintenance, and Repair Occupations	35,210	30,100	32,810
51-0000	Production Occupations	32,020	26,130	25,400
53-0000	Transportation and Material Moving Occupations	25,310	20,450	24,630

\* These codes do not match the occupational codes used for the 1998 employment projections.

## Commuting Patterns

All regional economies experience inflows and outflows of workers through commuting. Smaller geographic areas (like cities or counties) tend to show more pronounced impacts from commuting. Knowledge of commuting flows enables businessmen, policymakers, and educators to gauge the true extent of labor market issues. For instance, a county with a very low unemployment rate may not be in danger of exhausting its labor supply if it is surrounded by counties with significant commuting flows (and available labor).

The commuting reach of the Brooke-Hancock region extends well beyond the two-county region and even beyond the components counties of the Steubenville-Weirton Metropolitan Statistical Area (MSA). These commuting flows include both exports and imports of workers. However, 83.9 percent of MSA residents also worked within the MSA in 1990. Further 75.0 percent of Brooke-Hancock region residents worked within

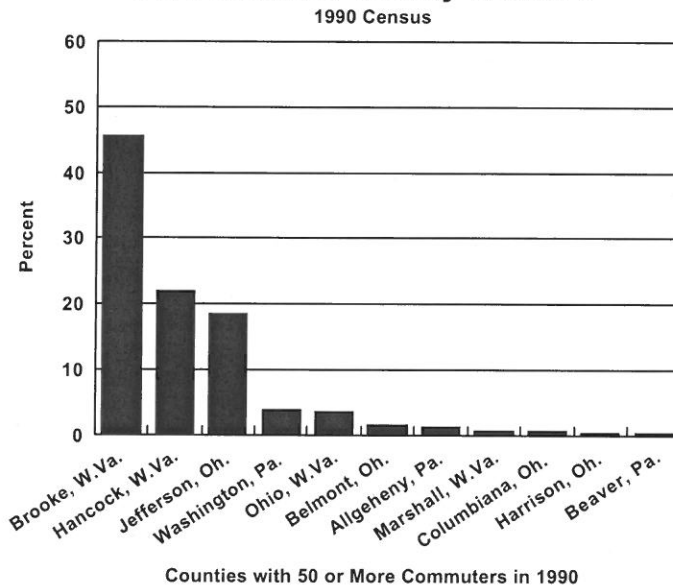
the two-county region in 1990. While commuting is important for the region, the commutes of Brooke-Hancock region residents tend to be shorter than those for West Virginians and U.S. residents.

*Commuting In-flows into Brooke and Hancock County*

Since Brooke and Hancock counties in West Virginia and Jefferson County in Ohio are part of one MSA we expect there to be significant commuting flows between these three counties. Indeed, Brooke County drew 40.6 percent of its workers from Hancock and Jefferson counties in 1990 (the most recent Census data available). Likewise, Hancock County drew 23.6 percent of its workers from Brooke and Jefferson counties in 1990. This is usual for MSA component counties because MSAs are defined (in part) using commuting flows.

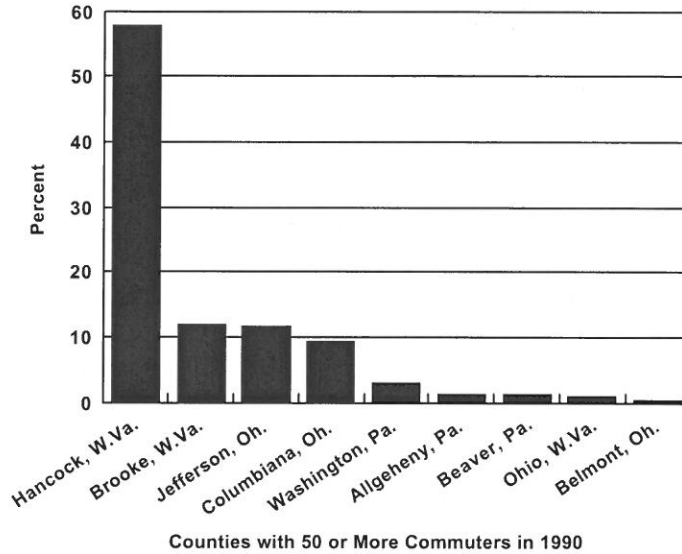
However, there are other counties that contributed significant numbers of workers to Brooke and Hancock counties in 1990. Figures 22 and 23 show the top counties contributing workers to Brooke (Figure 22) and Hancock (Figure 23) County in 1990 (as a share of workers in each county).

**Figure 22**  
**Brooke County Commuting Inflows**  
**As Percent of County Workers**



**Figure 23**  
**Hancock County Commuting Inflows**  
**As Percent of County Workers**

1990 Census



As the figures show, residents of both Brooke and Hancock counties contributed significantly to their own labor supply. However, Brooke County imported workers to fill 54.4 percent of its jobs, while Hancock County imported workers to fill 42.3 percent of its jobs.

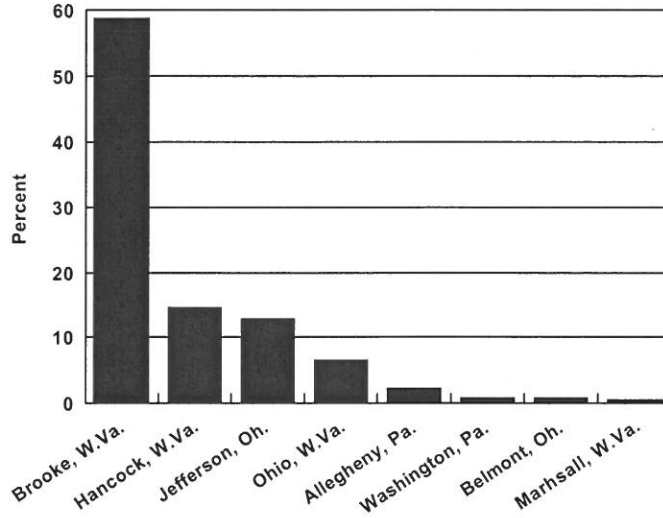
*Commuting Out-flows from Brooke and Hancock County*

Out-flows are the other side of the commuting coin. In 1990, Brooke County contributed 41.2 percent of its residents to jobs outside of the county, while Hancock County exported 45.5 percent of its residents to jobs outside of the county. This implies that 58.8 percent of Brooke County residents were employed in the county and that 54.5 percent of Hancock County residents were employed in the county.

Figures 24 and 25 show that Brooke and Hancock County residents commuted to a wide range of counties in 1990. Again, outflows of region residents tended to go to MSA component counties (as we expect). However, there are flows to counties outside of the MSA as well.

**Figure 24**  
**Brooke County Commuting Outflows**  
**As Percent of County Residents**

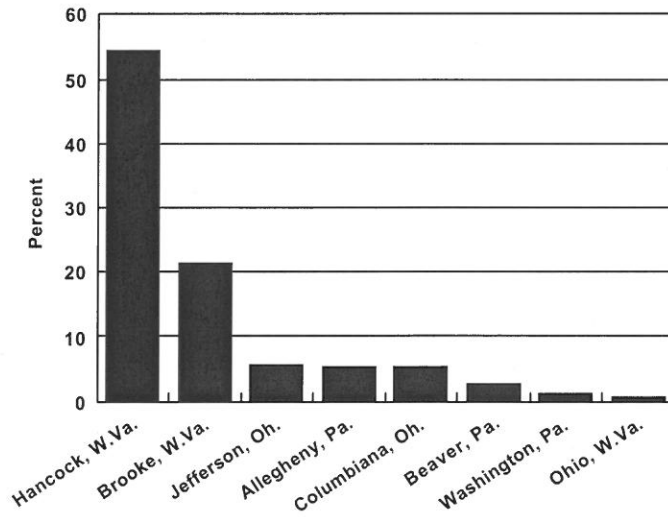
1990 Census



Counties with 50 or More Commuters in 1990

**Figure 25**  
**Hancock County Commuting Outflows**  
**As Percent of County Residents**

1990 Census



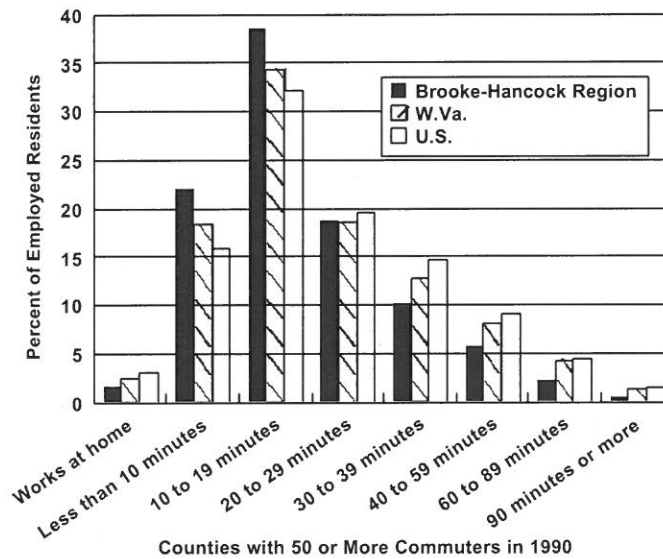
Counties with 50 or More Commuters in 1990



## Journey to Work

Commuting to and from work involves costs. These costs include fuel, vehicle wear and tear, and lost time. The 1990 Census includes data on commuting time to work. As Figure 26 shows (for the Brooke-Hancock Region), most residents of the region had commutes that were relatively short, compared to the state and the nation. Indeed, in 1990, 63 percent of employed residents in the region had a commute lasting less than 20 minutes, compared to 55 percent for the state and 51 percent for the nation.

**Figure 26**  
**Brooke-Hancock Region**  
**Travel Time to Work**  
1990 Census



## Labor Market Inflow and Outflow Regions

The Brooke-Hancock region draws employees from and contributes employed residents to surrounding counties. Thus, the labor market reach of the region extends beyond simple county boundaries. In order to examine the extent of reach for the Brooke-Hancock region, we look to commuting data from the 1990 Census. This data tells us the number of residents of the two-county region that commute to jobs outside the region and the number of jobs in the region which are taken by residents of other counties.

*Brooke-Hancock Region Inflow LMR*

We care about flows of commuters into the region because this tells us something about the potential labor supply. After all, the region need not be as concerned about exhausting the two-county labor supply if there are significant numbers of available workers residing in nearby counties with strong commuting links.

Table 4 summarizes data on commuting flows into the Brooke-Hancock region. In 1990, Brooke-Hancock region residents accounted for 68.5 percent of regional jobs. However, 15.2 percent of region jobs were taken by residents of Jefferson County, followed by 5.0 percent of jobs taken by residents of Columbiana County. Using a lower bound of 1.0 percent as our measure of commuting reach, the inflow labor market region also includes Washington County, Ohio County, Allegheny County, and Belmont County.

**Table 4**  
**Brooke-Hancock Region Inflow Labor Market Counties**  
**Commuting Data from 1990 Census**

<u>Counties in LMR</u>	<u>% of Core Region Jobs</u>
Brooke-Hancock Counties	68.5%
Jefferson County, Oh.	15.2%
Columbiana County, Oh.	5.0%
Washington County, Pa.	3.6%
Ohio County, W.Va.	2.3%
Allegheny County, Pa.	1.4%
Belmont County, Oh.	1.1%

Source: 1990 Census

With our inflow labor market region, we can gauge the size of the potential labor force for the Brooke-Hancock region. Including all eight counties in the region, the civilian labor force totaled 905,830 in 2000. Further, also in 2000, there were 35,850 unemployed residents within commuting distance of the Brooke-Hancock region.

The unemployment rate for the inflow region as a whole was on par with the nation in 2000 (at 4.0 percent) and well below the West Virginia average. However, several inflow region counties posted unemployment rates higher than the inflow region average (and higher than the Brooke or Hancock County rates), such as Washington County (4.6 percent), Belmont County (5.1 percent), Columbiana County (5.1 percent), and Jefferson County (5.2 percent).

Further, there were significant numbers of college-educated residents in the inflow region in 1990. For instance, there were 187,285 residents with at least some college education, but no degree, 76,341 residents with an Associate's degree, 159,438 residents with a Bachelor's degree, and 95,155 residents with a graduate or professional degree. Indeed,

in terms of the percentage of residents in 1990 with a Bachelor's degree or better, the inflow region exceeded the West Virginia and national average.

This does not necessarily mean that these residents would be willing or capable of taking a job in the region, but it does highlight the point that job gains in the region need not necessarily be restricted by labor supply problems in the two-county area.

*Brooke-Hancock Region Outflow LMR*

Just as the region imports workers from nearby counties, it also contributes workers to jobs outside of the region. Table 5 shows outflow commuting patterns for Brooke-Hancock region residents. In 1990, 75.0 percent of region residents held jobs in the region. Jefferson County attracted 8.9 percent of employed region residents and Allegheny County drew 4.2 percent. Using a 1.0 percent cutoff, we also find that Ohio County, Columbiana County, Beaver County, and Washington County attracted significant numbers of employed region residents.

**Table 5**  
**Brooke-Hancock Region Outflow Labor Market Counties**  
**Commuting Data from 1990 Census**

<u>Counties in LMR</u>	<u>% of Core Region Employed Residents</u>
Brooke-Hancock Counties	75.0%
Jefferson County, Oh.	8.9%
Allegheny County, Pa.	4.2%
Ohio County, W.Va.	3.4%
Columbiana County, Oh.	3.1%
Beaver County, Pa.	1.6%
Washington County, Pa.	1.2%

Source: 1990 Census

The job mix for the outflow region is better balanced than is the Brooke-Hancock region. Using covered employment by industry data for 1999, the outflow region is more specialized in manufacturing than is West Virginia, but less concentrated in this industry than is the nation. It is less exposed to the mining industry than is the state, but more so than the nation. Services accounts for a much larger share of outflow region jobs (over 35 percent in 1999) than it does for West Virginia or the nation, while government jobs are less important for the outflow region than for West Virginia or the nation.