**SECTION V**
**REGIONAL INFLUENCES**

## A. ECONOMIC INFLUENCES

This section provides an overview of the economic environment in Ohio Appalachia. A number of different indicators are used illustrate the changes that the region underwent during the 1980s and continue to experience. A brief examination of economic determinants of educational access is followed by a description and analysis of the 29-county region's economy.

## ECONOMIC INFLUENCES ON EDUCATIONAL ACCESS

An analysis of the economic status of the region is highly pertinent to a consideration of participation rates in higher education. Both the overall health and composition of the regional economy are determinants of educational access. In turn, the level of education of a region's population affects its economic potential. This is increasingly true where the labor market is demanding skill levels[114] that poorer rural youth will be unable to supply unless educational access is improved. Although there are many influences other than economic on the decision to participate in higher education, the ease and effectiveness with which policy intervention can occur in this area make it especially important to consider.[115]

### Family Income

The ability to pay for an education as well as the socioeconomic status of a student's family jointly affect the participation rate.[116] For example, data for 1990 from the Current Population Survey show that low levels of educational attainment are clearly associated with high poverty rates in the United States, even when controlled for ethnicity.[117]

Pelavin and Kane found that students with family incomes below $15,000 are less than half as likely to pursue higher education than those with family incomes above $25,000.[118] Thus, lower than average per capita and family incomes in Ohio Appalachia than in the state and the United States account to a large extent for the poor participation rate.

### Regional Economic Structure / The Labor Market

Family income alone, however, is not the sole economic determinant of higher education participation. The human capital model assumes that an individual's decision to go on to higher education will in part

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[114]M.L. Blackburn, D.E. Bloom, and R.B. Freeman, "The Declining Economic Position of Less-Skilled American Men," National Bureau of Economic Research, 1989, NBER 3186.

[115]Jerry S. Davis and Kingston Johns, Jr., "Low Family Income: A Continuing Barrier to College Enrollment?" Journal of Student Financial Aid (February 1982): 5-10.

[116]Winship C. Fuller, Charles F. Manski, and David A. Wise, "New Evidence on the Economic Determinants of Postsecondary Schooling Choices." The Journal of Human Resources XVII (Fall 1982): 477-98; Stafford, Lundstedt, and Lynn; Stage and Hossler; Borus and Carpenter; Thomas G. Braun, "An Analysis of the Effects of Geographic-Demographic Factors on College Attendance," Research in Hi her Education 19, no. 2 (1983): 131-52; J. S. Davis and K. Johns, "Low Family Income: A Continuing Barrier to College Enrollment?" Journal of Student Financial Aid 12 (February 1982): 5-10.

[118]Pelavin and Kane, 37.

be influenced by a judgement about the expected future earnings to be gained as a result of higher educational attainment. This involves an assessment, albeit crude, by the potential student of the likelihood of attaining the desired level of future income either with or without the additional education.[119]

Paulsen reports findings that a student is more likely to attend college when college graduates are in greater demand in the labor market and when noncollege graduates face fewer job opportunities. In addition, evidence suggests that this effect is stronger for students from lower-income families."[120] Thus, where there are fewer job opportunities for non-college graduates, the probability of entering higher education increases at a higher rate for lower-income individuals than higher-income individuals. Ohio Appalachia, with its concentration of lowerincome families and changing industrial structure, should--following this argument-be experiencing increasing demand for higher education. The participation rate figures indicate that this did indeed occur during the latter half of the 1980s see table 0.1).

Although it was not explored in this study, it would be interesting to know the geographic extent of the region that high school students consider for future employment possibilities. Many students in Ohio Appalachia almost certainly consider employment opportunities outside the region."[121] Thus, although the condition of the regional economy is an important determinant of higher education participation rates, the health of the wider economy, however each individual defines this, must also be taken into consideration.

**Educational Attainment and the Regional Economy**

The relationship between a region's economic well-being and the educational level of its residents is dynamic and self-reinforcing:

> a low participation rate may affect the economic and social well-being of a state because it results in an insufficiently educated labor force that is poorly positioned to respond to emerging economic and social conditions and the growing challenges of high-technology.[122]

As this is true for a state, so it holds for regions within a state. Areas with low levels of education, where families have low socioeconomic status, will tend to reproduce the characteristics over time, as will individual families. If the situation is to improve, this cycle must be broken through intervention at one or more points. If this cannot be achieved, Ohio Appalachia is likely to become increasingly

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[119]Stafford, Lundstedt, and Lynn, 593.

[120]Paulsen, 29.

[121]See page 30 for a discussion of the high school students' intentions to remain in or leave the region.

[122]Stafford, Lundstedt, and Lynn, 591.

differentiated and marginalized from the rest of the state.

In 1980, Ohio was the thirty-third highest state in terms of the percentage of the population enrolled in public and private institutions of higher education.[123] Circumscribed educational access for the state as a whole compromises Ohio's future economic viability. As has been shown, Ohio Appalachia exhibits a participation rate significantly lower than that of the state as a whole. The increasingly weak economic base in the region thereby hurts not only the region itself, but also diminishes its contribution to the health of the state's economy:

> Skills and economic growth are interdependent . . . a less skilled workforce will impede economic growth and improvements in productivity.[124]

Across the nation, "the 1980s saw the deterioration of several industries important to rural America;"[125] Ohio Appalachia was no exception to this trend. Declining manufacturing employment "had a devastating impact on all young people, but its impact was especially severe for those with deficiencies in basic education and skills."[126]

The economy of Ohio Appalachia traditionally had a strong base in the extractive and heavy manufacturing industries. The industries, while offering very high wages for semi and unskilled workers, did not in general demand a high level of formal education. This is typical of rural areas, which often exhibit highly undiversified economies. One sector--mining, for example--is typically relied upon as a source of economic development. Although this may provide wealth in the short term, it does little to broaden the skill base within the economy and thus renders it vulnerable to structural change.

As Ohio Appalachia's traditional economic base continues to decline, rural communities will have to seek an alternative basis for economic development. Whatever this may be (high-technology industry is believed to have a great deal of potential in this role[127]), it is likely to require higher levels of skill in the labor force than has previously been the case.[128] If rural areas are to be competitive, the required skills will have to be inculcated in the local labor force.

The lack of opportunities within the rural community has led to high rates of outmigration among

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[123]Ibid., 592.

[124]Berlin and Sum, 26.

[125]Pollard and O'Hare, iii.

[126]Berlin and Sum, 12.

[127]See Glasmeier.

[128]See, for example, Berlin and Sum, 13; Fairweather, 3; Hersh, 5-8.

young people, particularly among those with higher levels of education (appendix III, table V.1). Those who remain in the area tend to be the individuals with lower levels of skill and education.[129] The challenge to rural areas such as Ohio Appalachia is therefore twofold: to endow its youth with the skills necessary to take advantage of economic opportunities and, simultaneously, to create opportunities within rural areas to arrest and reverse the relative decline that has occurred in the past decade.

[129]Pollard and O'Hare, 2-3.

## THE ECONOMY OF OHIO APPALACHIA

The Ohio Appalachia region is examined as a whole to provide a general picture of its characteristics. Within the region, however, there is a great deal of diversity. For example, to say that Ohio Appalachia has suffered from the decline of the coal mining industry would be correct but misleading if generalized to all counties. Coal mining was concentrated in only some counties of the region, which have thus tended to bear the brunt of its relative demise. To give a more representative account of the region's characteristics, counties or subregions that exhibit characteristics distinct from those of the wider region are highlighted and discussed.

The indicators used to describe the economic environment are poverty and unemployment rates, per capita and family incomes, and employment by industrial sector.[130] To analyze the sectoral changes in employment during the period 1980-1989, a shift-share analysis was performed.[131] Shift-share is a simple methodology for studying the components of regional growth.[132] It is used here, however, purely as a descriptive tool to illustrate the sectoral changes in industrial composition for each county.

As noted in the introduction, the influence of Clermont County creates a problem when examining averages for the 29-county region. For example, if Clermont County is included in the shift-share analysis, the employment growth rate of the region is 8.6 percent--representing a gain of 25,296 jobs--compared to a national rate of only 3.8 percent. This picture is clearly unrepresentative of the region's overall character. Excluding Clermont County, the growth rate is 3.9 percent. This high rate of employment growth in Clermont County was largely the result of development spillover from Cincinnati during the 1980s and was concentrated in the northwest quadrant of the county. Regional averages, unless noted in the text, refer to the 28-county region *excluding* Clermont County.[133]

### Per Capita and Family Income

The family plays a role as a resource provider for the high school senior wishing to continue on to higher education. Below-average family income is therefore a significant barrier to educational access. The median family income for Ohio in 1989 was $34,531, while in the 28-county region it was only $25,802. With the exception of Clermont, no county within the region has a median family income above $30,000. The range is fairly evenly distributed from a low of $21,226 in Adams

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[130] Data for each of these variables are presented at the county level in appendix III.

[131] 1989 was the most recent year of County Business Pattern data available at the time of this report's preparation. Changes since 1989 are analyzed with the aid of supplemental data.

[132] Francisco J. Arcelus, "An Extension of Shift-Share Analysis," Growth and Change 15 (January 1984): 2. For a description of the methodology, its uses, and limitations, see Darryl R. Holden, Alasdair G. M. Nairn, and J. K. Swales, "Shift-Share Analysis of Regional Growth and Policy: A Critique," Oxford Bulletin of Economics and Statistics 51, no. 1 (1989): 15-34.

[133] The summary tables in appendix II show regional averages both including and excluding Clermont county.

County to a high of $29,863 in Washington County (table V.2). The impact of the lower family incomes in Ohio Appalachia is increased by the larger average family size in the region compared to the state as a whole, as limited economic resources are distributed among more family members (appendix 111, table V.3).

Per capita income figures are closely correlated with family incomes. The average per capita income in Ohio is $13,461; the only Appalachian county approaching this is again Clermont, with a per capita income of $13,338, compared to the 28-county average of $9,808. Per capita income is important as an indicator of the level of resources available to families to provide financially for their children. The significantly lower income levels in Ohio Appalachia in comparison to the rest of the state create a financial barrier to higher education. In addition, those who receive higher education will be more likely to leave the region to seek employment that offers higher wages elsewhere.

**Poverty and Unemployment**

As might be expected, unemployment is higher in Ohio Appalachia than the remainder of the state. The average unemployment rate in the 7 region in 1990 was 8.0 percent, in comparison to 6.5 percent for Ohio. Monroe, Perry, Harrison, and Adams Counties all suffer from unemployment rates above 10 percent (table V.2). The high rates of unemployment are all the more significant when one examines the types of jobs that have been lost. In each of the four counties, with the exception of Adams, the unemployment is mainly explained by large job loss during the 1980s in the high-wage mining sector. Adams County had the majority of its job losses in manufacturing, again a sector paying high wages to semi and unskilled workers. Holmes County has the lowest unemployment rate in the region, 4.7 percent, but this is probably a function of the large Amish population, as explained in the introduction, page 25.

The unemployment rate, although often used as an indicator of the economic well-being of a region, is, however, an insufficient and at times misleading measure of local economic disadvantage. This is due both to the inadequacies of the standard federal definition of unemployment[134] and the rise in numbers of "working poor"[135] during the 1980s. The federal definition of unemployment excludes both "discouraged workers," those who would like to work but are not actively seeking employment in the belief that opportunities are unavailable, and "involuntary part-time workers," workers who would prefer to be in full-time employment but are unable to find it and therefore remain in parttime positions.[136] Both the poverty rate and the structure of an economy must be analyzed to gain a clearer picture of the economic resources available to support educational participation.

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[134] For a more complete discussion, see Isaac Shapiro, Laboring For Less Working But Poor In Rural America (Washington, DC: Center on Budget and Policy Priorities, 1989), 29.

[135] Ibid., xi.

[136] Ibid., 29.

TABLE V.2
ECONOMIC CHARACTERISTICS OF OHIO APPALACHIA

| REGION | PER CAPITA INCOME 1989[a] | MEDIAN FAMILY INCOME 1989 | POVERTY RATE 1990 | UNEMPLOYMENT RATE 1990 |
|---|---|---|---|---|
| Ohio | 13,461 | 34,351 | 15.0 | 6.5 |
| Appalachia | 9,929 | 26,171 | 23.1 | 7.9 |
| Appalachia (exc. Clermont) | 9,808 | 25,802 | 23.6 | 8.0 |
| Adams | 8,407 | 21,226 | 32.9 | 12.0 |
| Athens | 9,170 | 25,702 | 24.2 | 5.9 |
| Belmont | 10,329 | 25,945 | 20.5 | 5.7 |
| Brown | 10,498 | 28,840 | 24.6 | 7.9 |
| Carroll | 10,693 | 29,341 | 22.6 | 6.2 |
| Clermont | 13,338 | 36,511 | 10.2 | 5.0 |
| Columbiana | 10,567 | 27,666 | 20.9 | 5.9 |
| Coshocton | 10,685 | 28,606 | 18.1 | 6.5 |
| Gallia | 9,711 | 25,077 | 25.6 | 7.7 |
| Guernsey | 9,929 | 25,225 | 25.9 | 8.7 |
| Harrison | 9,146 | 24,432 | 32.4 | 11.1 |
| Highland | 9,848 | 26,224 | 21.4 | 8.0 |
| Hocking | 10,265 | 26,715 | 18.0 | 9.4 |
| Holmes | 9,191 | 27,531 | 22.3 | 4.7 |
| Jackson | 9,228 | 22,611 | 23.3 | 8.5 |
| Jefferson | 11,001 | 27,839 | 22.6 | 6.1 |
| Lawrence | 9,336 | 23,603 | 27.5 | 6.2 |
| Meigs | 8,644 | 21,884 | 27.6 | 7.5 |
| Monroe | 9,101 | 24,162 | 27.5 | 10.8 |
| Morgan | 9,373 | 25,847 | 21.0 | 8.7 |
| Muskingum | 10,844 | 29,480 | 18.1 | 8.5 |
| Noble | 9,028 | 25,625 | 29.5 | 8.5 |
| Perry | 9,247 | 24,985 | 18.5 | 11.9 |
| Pike | 8,958 | 22,567 | 32.1 | 9.7 |
| Ross | 10,758 | 28,634 | 18.2 | 8.1 |
| Scioto | 9,253 | 21,848 | 25.6 | 8.7 |
| Tuscarawas | 11,141 | 29,303 | 12.9 | 6.4 |
| Vinton | 8,825 | 21,693 | 33.5 | 9.1 |
| Washington | 11,438 | 29,863 | 13.6 | 6.0 |

Sources: CEOGC, 139; Bureau of the Census, 1990 Census of Population and Housing. Summary Social, Economic and Housing Characteristics Ohio 1990 CPH-5-37 (Washington, DC: Government Printing Office, 1992): 237; Sam Crawford, Ohio Appalachian Counties (Jackson: Ohio Cooperative Extension Service, Ohio State University, 1992), 69.

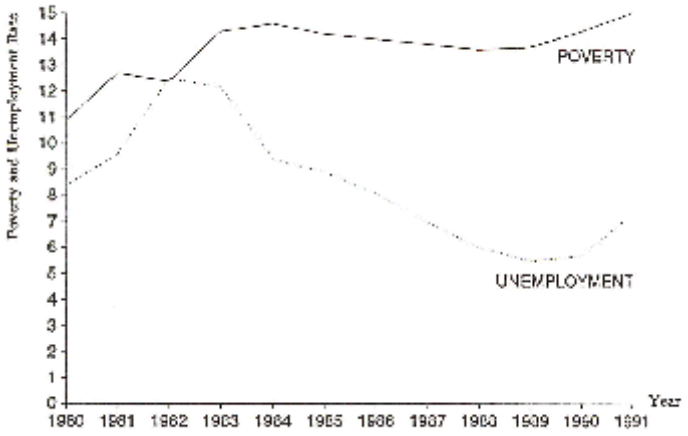
a 1989 dollars

As figure V.1 demonstrates, the relationship between poverty rates and unemployment is not simple. Between 1980 and 1991, the overall poverty rate in Ohio grew by 37 percent, with fluctuations during this period."[137] Whereas unemployment in Ohio peaked in 1982 at 12.5 percent and then fell until 1989, poverty rates for the state continued to climb throughout the decade.

With the exception of Ashtabula County in northeastern Ohio, all the poorest counties in the state are in the Appalachian region. Of the fifteen counties with poverty rates above 23 percent, fourteen are Appalachian.[138] Thus Appalachia, despite having only a small proportion of the state's population, "retains Ohio's most severe concentration of economic disadvantage in 1991./[139] Poverty increases as you travel from the northwest to the southeast of Ohio. The highest poverty rates are concentrated in the Appalachian counties."[140] During the 1970s, poverty rates in Appalachia declined by 18 percent. Since 1980 the region has experienced a 66 percent increase in the poverty rate, leaving it in a worse position now than twenty years ago.[141]

One must also bear in mind that as poverty has increased over the period from 1980 to 1991, "funding for the states anti-poverty programs simultaneously has been reduced by 59%."[142] Also, as unemployment started to fall at the end of the 1980s, the poverty rate continued to climb, thus illustrating the divergence between the two indicators.

FIGURE V.1 OHIO UNEMPLOYMENT AND POVERTY RATES 1980-1991




Source: CEOGC and Ohio Bureau of Employment Services

[137] CEOGC, 3.

[138] Ibid., 24.

[139] Ibid., 51.

[140] Ibid., 53.

[141] Ibid., 51.

[142] Ibid., 5.

Although figure V.1 shows major declines in unemployment during the latter part of the 1980s, this "did not lead to comparable reductions in economic disadvantage within Ohio."[143] The major reason for this is the change in industrial composition. "The most important cause of Ohio's poverty rate growth has been a major shift in the state's economy . . . 23 percent of Ohio's manufacturing jobs have disappeared since 1979."[144] Those jobs created have been predominantly in low-wage occupational sectors. This effect is compounded by the 12 percent decrease in average earnings in the remaining manufacturing jobs.[145]

It has been demonstrated that "increased levels of education are associated with substantially reduced risk of poverty in the United States."[146] If Ohio Appalachians are to improve their standard of living, they will have to increase their level of educational attainment.

**Structural Change in the Ohio Appalachia Economy**

Between 1980 and 1989, the 28-county region made a net gain of 10,940 jobs, a 3.9 percent rate of growth. This compares to national growth of 3.8 percent over the same period (table V.4).

These apparently impressive figures should not, however, lull one into an overly optimistic impression of the region. Although there were job losses recorded in three of the nine one-digit Standard Industrial Classification (SIC) categories, the vast majority of the losses were in just two sectors: mining and manufacturing. The former, which on average is the highest paying sector at this

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[143] Ibid., 60.

[144] Ibid., 4.

[145] Data on the average wages across industrial categories at the one- and two-digit SIC level are presented in the wage data tables in appendix III.

[146] Ibid., 92.

level of aggregation[147], lost 9,675 jobs, 49.7 percent of the total mining employment. Manufacturing industry, meanwhile, lost 11,480 jobs, which represents an 11.7 percent decrease in total manufacturing employment. At the one-digit SIC level of aggregation, all other sectors showed job gains, with the exception of transport and public utilities, where there was a minor loss of 74 jobs.

The largest gains were in the service sector, exhibiting a net increase in employment of 20,880, or 41.6 percent, over the nine-year period. Second to this comes the retail trade sector, which grew by 9,801 jobs, a 16.1 percent increase. Of the nine one-digit sectors analyzed, these were the third lowest and lowest paying sectors, respectively.

Looking at the more detailed two-digit SIC level can give a clearer picture of changes. Of

[147] Data on the average wages across the industrial categories at the one- and two-digit SIC level are presented in the wage data tables in appendix III.

## TABLE V.4
## APPALACHIAN REGION EMPLOYMENT GROWTH
## BY COUNTY 1980-1989

| REGION | % GROWTH | ABSOLUTE GROWTH | RANKED BY % GROWTH |
|---|---|---|---|
| United States | 3.8 | 2,836,397 | - |
| Appalachian Region | 8.6 | 25,296 | - |
| Appalachian Region (exc. Clermont) | 3.9 | 10,940 | - |
| Adams | -16.2 | -395 | 26 |
| Athens* | 27.6 | 2,195 | 3 |
| Belmont* | -23.9 | -4,771 | 28 |
| Brown | 13.0 | 599 | 9 |
| Carroll | 18.2 | 669 | 4 |
| Clermont | 92.8 | 14,356 | 1 |
| Columbiana | 5.5 | 1,413 | 15 |
| Coshocton* | 14.9 | 1,620 | 7 |
| Gallia | 9.7 | 697 | 10 |
| Guernsey* | 1.9 | 224 | 20 |
| Harrison | -40.0 | -1,756 | 29 |
| Highland | 15.3 | 982 | 6 |
| Hocking | 2.6 | 130 | 19 |
| Holmes | 57.5 | 3,366 | 2 |
| Jackson | 9.0 | 531 | 11 |
| Jefferson* | -11.4 | -2,772 | 24 |
| Lawrence* | 3.2 | 245 | 18 |
| Meigs | 5.6 | 215 | 14 |
| Monroe | -17.3 | -1,094 | 27 |
| Morgan | -13.9 | -460 | 25 |
| Muskingum* | 16.5 | 3,932 | 5 |
| Noble | -5.3 | -100 | 23 |
| Perry | 3.9 | 186 | 17 |
| Pike* | 5.8 | 338 | 13 |
| Ross* | 7.0 | 1,104 | 12 |
| Scioto* | 4.3 | 666 | 16 |
| Tuscarawas | 13.3 | 3,168 | 8 |
| Vinton* | -4.8 | -104 | 22 |
| Washington | 0.7 | 121 | 21 |

* County selected for survey

Source: ILGARD shift-share analysis, 1992

64 sectors represented in the regional economy, employment fell in 28. The largest declines, in descending order, were in the primary metal industries, which lost 9,628 jobs; the bituminous coal and lignite industry, which lost 7,523; machinery manufacturing, which lost 3,895; and stone, clay, and glass product manufacturing, which lost 3,728. Six other sectors lost over 1,000 jobs each.

Employment increases were registered across a wide range of sectors, with over 15 sectors adding more than 1,000 jobs. The largest gains were in health services, with 9,661 new jobs; eating and drinking places, showing gains of 6,486; lumber and wood products, increasing employment by 3,783; and business services, with just over 3,000 new jobs. Three of the sectors offer relatively low-wage earning opportunities, while health services can offer mid-level wages. Of the four sectors, health services is the one that would on average require higher levels of formal education, once more reinforcing the link between education and economic opportunity.

Eight counties in the 29-county region lost jobs, while in the other 21 employment growth ranged from 0.7 percent in Washington County to 92.8 percent in Clermont County (table V.4). The highest percentage losses were in Harrison County, which lost 40.0 percent of its employment and Belmont County, which lost 23.9 percent of its employment (appendix III table V.5). Twelve counties experienced proportionally heavy losses in either mining or manufacturing sectors; four of them predominantly in mining and eight mainly in manufacturing. There was a concentration of particularly high losses in these sectors in the northeast part of the region: Belmont, Harrison, Jefferson, and Monroe Counties.

In general, job gains occurred in the retail and service sectors. Exceptions to this trend include Coshocton County, which gained 852 manufacturing positions, and Holmes County, which gained 1,958 manufacturing positions, the majority of them in the lumber and wood products sector.

One local economic development professional observed that "as long as we don't lose any more jobs in coal and steel, we've gone through the worst of it."[148] Apart from counties such as Meigs, which is still highly vulnerable due to its dependence upon the mining sector, Ohio Appalachia may well have already suffered the worst of the structural changes affecting the whole nation. Now the economy must be reconstructed in a different image. This will demand a different style of economic development.

Human capital is increasingly the factor of production that creates competitive advantage; natural resources are declining in importance and global capital markets are becoming more efficient. Rather than trying to attract large 105 companies to the area or relying on natural resources, economic development will have to be more concerned with creating sustainable employment utilizing the region's human resources. The role of education will become ever more important in preparing people for the labor market.

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[148] Interview with Don Myers, Belmont County Department of Development, May 1992.

The overall picture is of an economy increasingly devoid of its basic industries. The future of the area will require generating employment opportunities to retain the region's young people, particularly those with higher levels of education. According to a recent study of educational and occupational aspirations of twelfth grade students in Ohio, rural students tend to aspire to occupations that are not represented within their communities.[149] If they follow through with this desire, the human capital stock of the region is depleted, further weakening its future economic base.

Declines in manufacturing employment have impacted everyone in the labor market. The individuals most affected, however, are those with lower levels of education and basic skills.[150] This focuses attention once more on the dilemma faced by Ohio Appalachia: the region must equip its youth with the skills necessary for employment opportunities, while simultaneously revitalizing the economy to create new jobs. The failure to achieve both of these objectives will cause Ohio Appalachia to lag further behind the state.

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[149]McCracken and Barcinas, 9.

[150]Berlin and Sum, 12.

## DEMOGRAPHIC EFFECTS ON EDUCATIONAL ACCESS

Demographic factors are considered from two perspectives. First, the size and age structure of the region's population determines the size of the potential college student population. Second, certain demographic factors, such as family structure and race, are correlated with educational attainment.

The racial composition of the region was *not* determined to be an important influence in the context of the present study. Ohio Appalachia is very racially homogeneous, its population being over 97 percent white. African Americans, the second largest racial group in the region, represent only 2 percent of the population, compared to 11 percent in Ohio.

Although there is still controversy in the literature over the issue of racial determinants of higher education access, it has generally been found that race itself is not the casual factor; rather, it is the variables correlated with race that lead to power probabilities for minorities to attend college.[151] In addition, Mortenson found that "after 1984 the difference between the black and white college enrollment rate appears to have narrowed, especially for nonmetropolitan blacks.[152] Taken together, these three factors sufficiently justify the lack of consideration given in the present study to racial barriers to educational participation.

Nonwhites will, however, comprise an increasingly large proportion of the traditional college-age population in the future.[153] To the extent that the Ohio Appalachia nonwhite population increases in size, racial barriers to educational attainment, if these exist above and beyond barriers related to class and socioeconomic status, could become an important factor to consider.

There is substantial evidence that a student's household structure has an observable influence on aspirations for, and likelihood of, higher education. Stage and Hossler found that if a student's parents are married, this slightly increases the probability of participating in higher education.[154] Similarly, McCartin and Meyer found that:

> the traditional family constellation with two parents was likely to produce adolescents with higher academic success and plans to gain

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[151] See, for example, Borus and Carpenter, 174.

[152] Mortenson and Wu, 44.

[153] James R. Mingle, Focus on Minorities: Trends in Higher Education Participation and Success (Denver: Education Commission of the States and State Higher Education Executive Officers, 1987), ix.

[154] Stage and Hossler, 312.

additional schooling.[155]

They also observed, however, that this finding was explained in part by the higher socioeconomic status of families with two incomes. It is certainly still the case "in both Ohio and the United States that the poorest demographic group is unquestionably households that are headed by single female parents.[156] At least to the extent that family income exerts an influence on higher education participation, family structure will be correlated with lower rates of educational attainment.

Finally, the age structure of a population has a vital influence on participation rates: it determines the size of the potential pool of college goers. The size of the traditional college population, 18 to 24 years old, although an important factor to consider, should not be examined in isolation; nontraditional age students are enrolling at increasingly high rates which may, to some extent, compensate for changes in the number of traditional-age students.

In addition, education is becoming less of a once-in-a-lifetime event. As rapid technological change continues, individuals are finding that new skills must be acquired during their working lives. Institutions of higher education will doubtless play an increasingly significant role in this process.

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[155] McCartin and Meyer, 390.

[156] CEOGC, 86.

## REGIONAL DEMOGRAPHIC CHARACTERISTICS

### Population Change

The Appalachian region's 1,372,893 residents, including Clermont County, in 1990 accounted for 12.7 percent of Ohio's population (table V.6), a very slight decrease from 1980. Excluding Clermont County, which gained 21,704 people over the decade, the 28-county region lost 24,878 people, approximately 2 percent of its population. This decline is almost completely accounted for by heavy losses, in both absolute and percentage terms, in four counties: Belmont, Harrison, Jefferson, and Monroe. These are the same four counties that suffered the largest declines in their manufacturing and mining sectors.

TABLE V.6
OHIO APPALACHIA POPULATION CHANGE 1980-1990
AND POPULATION PROJECTIONS FOR 2000 AND 2010

| REGION | TOTAL POPULATION | | PERCENTAGE CHANGE | POPULATION PROJECTIONS | |
|---|---|---|---|---|---|
| | 1980 | 1990 | 1980-1990 | 2000 | 2010 |
| Ohio | 10,797,630 | 10,847,115 | 0.5 | 10,533,087 | 13,398,336 |
| Appalachia | 1,376,067 | 1,372,893 | -0.2 | 1,395,521 | 1,379,401 |
| Appalachia (exc. Clermont) | 1,249,501 | 1,222,706 | -2.0 | 1,232,357 | 1,203,438 |
| Adams | 24,328 | 25,371 | 4.3 | 25,255 | 24,622 |
| Athens | 56,299 | 59,549 | 5.6 | 60,770 | 62,494 |
| Belmont | 82,569 | 71,074 | -13.9 | 76,112 | 71,768 |
| Brown | 31,920 | 34,966 | 9.5 | 38,755 | 41,345 |
| Carroll | 26,598 | 26,521 | 3.6 | 30,988 | 32,287 |
| Clermont | 128,483 | 150,187 | 16.9 | 165,164 | 176,963 |
| Columbiana | 113,572 | 108,276 | -4.7 | 101,699 | 99,417 |
| Coshocton | 36,074 | 35,427 | -1.7 | 37,131 | 37,093 |
| Gallia | 30,678 | 30,954 | 2.8 | 29,602 | 28,182 |
| Guernsey | 42,024 | 39,024 | -7.1 | 38,964 | 37,533 |
| Harrison | 18,152 | 16,085 | -11.4 | 11,759 | 9,836 |
| Highland | 33,477 | 35,728 | 6.7 | 35,821 | 35,254 |
| Hocking | 24,364 | 25,533 | 5.1 | 25,339 | 25,014 |
| Holmes | 29,426 | 32,849 | 11.7 | 31,734 | 32,284 |
| Jackson | 30,529 | 30,230 | -1.2 | 26,798 | 24,553 |
| Jefferson | 91,564 | 80,298 | -12.3 | 75,124 | 68,018 |
| Lawrence | 63,849 | 61,834 | -3.2 | 58,908 | 54,945 |
| Meigs | 23,641 | 22,987 | -2.8 | 22,583 | 21,187 |
| Monroe | 17,382 | 15,497 | -10.8 | 13,307 | 12,088 |
| Morgan | 14,241 | 14,194 | -0.3 | 13,553 | 13,914 |
| Muskingum | 83,340 | 82,068 | -1.5 | 84,955 | 82,856 |
| Noble | 11,310 | 11,336 | 0.2 | 10,961 | 10,944 |
| Perry | 31,032 | 31,557 | 1.7 | 32,497 | 32,800 |
| Pike | 22,802 | 24,249 | 6.3 | 27,159 | 27,211 |
| Ross | 65,004 | 69,330 | 6.7 | 74,883 | 76,479 |
| Scioto | 84,515 | 80,327 | -5.0 | 81,773 | 77,515 |
| Tuscarawas | 84,614 | 84,090 | -0.6 | 85,468 | 83,417 |
| Vinton | 11,584 | 11,098 | -4.2 | 10,829 | 10,065 |
| Washington | 64,266 | 62,254 | -3.1 | 67,027 | 68,912 |

Source: U.S. Department of Commerce: Bureau of the Census, 1990 Census of Population and Housing by County-Ohio (Washington, DC, Government Printing Office, 1992); U.S. Department of Commerce, Bureau of the Census, 1980 Census of Population, General Social and Economic Characteristics-Ohio, (Washington, DC: Government Printing Office, 1983); Ohio Data User's Center Population Projections, Populations Projections Ohio and Counties by Age and Sex: 1980 to 2010 (Columbus: Ohio Data User's Center, Department of Development, 1985).

With the exception of these four counties, Clermont County, and Holmes County, which increased its population by 3,433, or 11.7 percent, the magnitude of changes in the remaining counties was generally small. Of these 23 counties, 11 made small gains and the remaining 12 counties recorded net losses.

This change in population can be accounted for in two ways: net migration, which measures the number of people moving into the region minus the number of people moving out of it, and general demographic trend shifts such as changes in birth and death rates, both in the present and as a result of the cumulative effects of past changes.

**Net Migration**

Excluding Clermont County, the 28-county region experienced lower rates of net migration than the rest of the state in all age groups *except* 20-34 years (appendix III table V.1). Ohio's overall net migration rate from 1980-1990 was 5.7 percent, while in Appalachia it was 6.8 percent. In the 20 to 34 year-old group, however, Appalachia's net migration rate was 21.3 percent while Ohio's was 9.7 percent.

The 20 to 34 year-old group constitutes a large proportion of the economically productive section of the population. Although it cannot be confirmed from the data used herein, it is likely that those 20-34 year olds leaving the region are more highly educated than those remaining. They are leaving in order to find employment that is not available in the region.

Outmigration in this age group accounts for 68.3 percent of the total net migration for the region. Counties suffering particularly high rates of outmigration in this age group include Belmont, -44.5 percent; Harrison, -45.3 percent; and Monroe, -50.0 percent. Only two counties experienced positive net migration in this age group: Clermont County, 6.7 percent, and Athens County, 8.5 percent.

Overall, there are no other clearly discernible trends in net migration. Small amounts of in- and outmigration--with slightly more out- than in-migration-are apparent across the Ohio Appalachia region. Two counties stand out with significantly higher outmigration than the rest of the region: Monroe, -15.2 percent, and Jefferson, -15.1 percent.

**Under 18 Population**

The proportion of the population under 18 years of age offers an indication of the potential future size of the traditional-age potential college student population. Whereas between 1980-1990 Ohio's under-18 population shrank by 8.8 percent, that of the Appalachian region fell by 21.8 percent (table V.7). Every county made losses of above ten percent except Holmes, -2.5 percent, and Clermont, -6.7 percent. This decline in the under-18 age group is predominantly

explained as the tail end of the lower post-baby-boom birth rates. Children of the baby boom are being replaced by smaller numbers of cohorts born after 1965.[157]



TABLE V.7
UNDER 18 POPULATION CHANGE 1980-1990
IN OHIO APPALACHIA

| REGION | UNDER 18 POPULATION | | PERCENTAGE CHANGE |
|---|---|---|---|
| | 1980 | 1990 | |
| Ohio | 3,004,800 | 2,823,001 | -6.0 |
| Appalachia | 459,990 | 366,839 | -20.2 |
| Appalachia (exc. Clermont) | 412,742 | 322,793 | -21.8 |
| Adams | 8,719 | 7,358 | -15.6 |
| Athens | 18,424 | 12,131 | -34.2 |
| Belmont | 24,981 | 16,846 | -32.6 |
| Brown | 11,386 | 10,012 | -12.1 |
| Carroll | 8,880 | 7,253 | -18.3 |
| Clermont | 47,248 | 44,046 | -6.7 |
| Columbiana | 37,086 | 28,805 | -22.3 |
| Coshocton | 11,838 | 9,679 | -18.2 |
| Gallia | 9,858 | 8,266 | -16.1 |
| Guernsey | 13,622 | 10,477 | -23.1 |
| Harrison | 5,867 | 4,067 | -30.7 |
| Highland | 11,070 | 9,792 | -11.5 |
| Hocking | 8,199 | 6,793 | -17.1 |
| Holmes | 12,095 | 11,773 | -2.5 |
| Jackson | 10,205 | 8,303 | -19.1 |
| Jefferson | 27,990 | 18,947 | -32.3 |
| Lawrence | 21,855 | 16,707 | -23.6 |
| Meigs | 7,811 | 6,182 | -20.9 |
| Monroe | 5,858 | 3,987 | -31.9 |
| Morgan | 4,870 | 4,070 | -16.4 |
| Muskingum | 28,157 | 21,921 | -22.1 |
| Noble | 3,834 | 3,282 | -14.4 |
| Perry | 11,182 | 9,148 | -18.2 |
| Pike | 7,920 | 6,966 | -12.1 |
| Ross | 20,746 | 17,333 | -16.5 |
| Scioto | 27,931 | 21,500 | -23.0 |
| Tuscarawas | 26,843 | 22,152 | -17.5 |
| Vinton | 4,024 | 3,077 | -23.5 |
| Washington | 21,453 | 15,968 | -25.6 |

Source: U.S. Bureau of the Census, Census of Population and Housing, 1990: Summary Tape File 1 on CD-ROM, Ohio, prepared by Bureau of the Census (Washington, DC: The Bureau, 1991).

[157] Fishlow, i.

A significant percentage, 11.8 percent, of the decline can, however, be accounted for by outmigration from the region.

This result indicates that, by virtue of the region's demographic attributes alone, area colleges could expect to foresee enrollments declining in the near future. The potential pool of traditional-age college students has declined and will continue to decline in the future. Other factors, such as the condition of the labor market or a concerted effort to increase the participation rate, could be expected to offset this negative influence on total enrollment, however.

**Dependency Ratios**

Although conveying little directly about the size of the potential college-going population, dependency ratio data are an interesting indicator of the ability of a community to support itself economically. The higher the dependency ratio, the more people the earnings of economically productive members of the population have to support. In the context of the present study, this fact has great bearing on the impetus for Ohio Appalachia to increase the educational attainment levels of its population, so as to increase living standards and become more economically competitive.

Dependency ratios measure the number of economically non-productive individuals as a proportion of the economically active population (table V.8).[158] In all three dependency ratio measures, Ohio Appalachia displays a higher dependency than Ohio on the earnings of the economically active population. The Total Dependency Ratio of the 29-county region is 79.6 percent, significantly higher than that of Ohio, 72.2 percent. Population projections for the region indicate that the Total Dependency Ratio will fall to 69.2 percent in the year 2000 and further to 65.3 percent in the year 2010. The larger portion of this decrease is accounted for by decreases in the Youth Dependency Ratio. In all time periods considered, Holmes County is an anomaly by virtue of its unusually high dependency ratio (see page 25 of introduction).

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[158] The Aged Dependency Ratio is calculated by dividing the population of 65+ years by the population 20-64 years, then multiplying by 100. The Youth Dependency Ratio is calculated by dividing the population of 0-19 years by the population 2-64 years, then multiplying by 100. The Total Dependency Ratio is the sum of the Aged Dependency Ratio and Youth Dependency Ratio.

**Population Projections**

Population projections can give some idea of the future demographic environment that Ohio Appalachia educators will be facing. Whereas Ohio is forecasted to decrease its population 2.9 percent by the year 2000 and 4.7 percent by 2010, the Appalachian region is forecasted to increase population 0.8 percent by the year 2000 and lose only 1.7 percent of population by 2010. If Clermont County is included in regional averages, gains of 1.7 percent and 4.7 percent are forecasted for the years 2000 and 2010 respectively (appendix III table V.9). The region exhibits similar changes across age groups, as does Ohio, but of a different magnitude. All age groups in the region will experience declines in population, except the 35 to

TABLE V.8
DEPENDENCY RATIOS IN OHIO APPALACHIA

| REGION | AGED DEPENDENCY RATIO[a] | YOUTH DEPENDENCY RATIO[b] | TOTAL DEPENDENCY RATIO[c] |
|---|---|---|---|
| Ohio | 22.3 | 49.9 | 72.2 |
| Appalachia | 24.9 | 53.7 | 79.6 |
| Adams | 24.9 | 58.8 | 83.7 |
| Athens | 16.3 | 49.8 | 66.1 |
| Belmont | 34.1 | 47.9 | 82.1 |
| Brown | 23.0 | 56.6 | 79.6 |
| Carroll | 24.3 | 53.8 | 78.1 |
| Clermont | 14.7 | 54.5 | 69.3 |
| Columbiana | 26.7 | 52.8 | 79.4 |
| Coshocton | 25.9 | 53.7 | 79.5 |
| Gallia | 22.5 | 53.0 | 75.6 |
| Guernsey | 27.0 | 53.8 | 80.8 |
| Harrison | 31.8 | 51.5 | 83.3 |
| Highland | 27.4 | 55.2 | 82.6 |
| Hocking | 23.3 | 51.9 | 75.3 |
| Holmes | 21.4 | 77.6 | 99.0 |
| Jackson | 25.2 | 54.9 | 80.2 |
| Jefferson | 30.6 | 47.5 | 78.1 |
| Lawrence | 23.5 | 53.4 | 77.0 |
| Meigs | 27.2 | 53.8 | 81.0 |
| Monroe | 27.9 | 50.9 | 78.9 |
| Morgan | 27.9 | 57.9 | 85.8 |
| Muskingum | 24.6 | 53.2 | 77.8 |
| Noble | 28.1 | 59.0 | 87.1 |
| Perry | 23.4 | 57.7 | 81.1 |
| Pike | 24.7 | 57.5 | 82.2 |
| Ross | 20.6 | 46.1 | 66.7 |
| Scioto | 26.8 | 53.7 | 80.6 |
| Tuscarawas | [illegible] | [illegible] | [illegible] |
| Vinton | 24.9 | 56.3 | 81.2 |
| Washington | 23.7 | 50.0 | 73.8 |

Source: Sam Crawford, Ohio Appalachian Counties, (Jackson: Cooperative Extension Service, Ohio State University, 1992), 5-8.

[a]The Aged Dependency Ratio is calculated by dividing the population of 65+ years by the population 20-64 years then multiplying by 100

[b]The Youth Dependency Ratio is calculated by dividing the population of 0-19 years by the population 20-64 years then multiplying by 100.

[c]The Total Dependency Ratio is the sum of the Youth Dependency Ratio and the Aged Dependency

64 year-old group, which will increase in size 15.8 percent between the years 1990 and 2000

and 19.9 percent by 2010. When Clermont is included in the regional averages, population losses are slowed and gains occur in the over 65 year-old category. It is perhaps of most interest to note that the region's under-19 population is declining at a significantly lower rate than for Ohio, losing 13.9 percent compared to 21.0 percent by the year 2010. This bodes well for comparative future numbers of college-age individuals.

In summary, the decrease in both the under-18 population and the traditional college-age population correspond to national trends. These indicate that to the mid-1990s there will be a decline in these age categories, as children of the baby boom generation are replaced by a smaller number of persons born after 1965.[159]

**Family Structure**

Previous research has found that family structure is related to academic attainment. A student from a traditional family unit of two parents is more likely to aspire to college, having been more successful academically in high school.

In 1990, 61.1 percent of the 504,542 households in the 29-county region were married couples (table V.10). This was slightly higher than Ohio as a whole, with 56.1 percent of households married couples. The only significant deviations from around 60 percent are Athens County, 25.2 percent, explained by the influence of Ohio University, and Holmes County, 73.9 percent, explained by the large Amish population.

As might be predicted from this, Ohio Appalachia has a lower percentage of female-headed, single-parent households, 13.4 percent of households compared to 16.5 percent for the state as a whole. Following the findings in the literature, the lower number of nontraditional family structures is, therefore, one barrier that exerts less of an influence than in the rest of Ohio.

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[159] Fishlow, i.

TABLE V.10
HOUSEHOLD CHARACTERISTICS OF OHIO APPALACHIA

| REGION | TOTAL HOUSEHOLDS 1990 | % MARRIED COUPLES 1990 | % FEMALE HEADED 1990 |
|---|---|---|---|
| Ohio | 4,087,546 | 56.1 | 16.5 |
| Appalachia | 504,542 | 61.1 | 13.4 |
| Appalachia (exc. Clermont) | 451,816 | 61.0 | 13.4 |
| Adams | 9,192 | 62.4 | 14.6 |
| Athens | 20,139 | 25.2 | 15.9 |
| Belmont | 28,161 | 58.3 | 15.0 |
| Brown | 12,379 | 65.5 | 12.2 |
| Carroll | 9,667 | 66.2 | 9.9 |
| Clermont | 52,726 | 65.4 | 12.7 |
| Columbiana | 40,775 | 61.5 | 13.8 |
| Coshocton | 13,433 | 62.3 | 11.8 |
| Gallia | 11,367 | 62.1 | 13.6 |
| Guernsey | 14,894 | 58.0 | 15.7 |
| Harrison | 6,111 | 62.8 | 12.1 |
| Highland | 13,230 | 62.5 | 13.3 |
| Hocking | 9,351 | 63.5 | 12.0 |
| Holmes | 9,315 | 73.9 | 7.4 |
| Jackson | 11,260 | 60.0 | 15.6 |
| Jefferson | 31,311 | 57.4 | 16.2 |
| Lawrence | 23,899 | 61.4 | 15.9 |
| Meigs | 8,662 | 61.6 | 13.5 |
| Monroe | 5,754 | 66.1 | 10.5 |
| Morgan | 5,170 | 63.7 | 12.5 |
| Muskingum | 30,753 | 58.5 | 15.8 |
| Noble | 4,137 | 65.2 | 10.1 |
| Perry | 11,264 | 63.6 | 13.2 |
| Pike | 8,805 | 60.1 | 16.2 |
| Ross | 24,325 | [illegible] | [illegible] |
| Scioto | 29,786 | 57.0 | 17.7 |
| Tuscarawas | 31,971 | 62.5 | 11.6 |
| Vinton | 4,069 | 63.5 | 12.0 |
| Washington | 23,636 | 61.8 | 12.5 |

Source: CEOGC, Table 12.