

***Demographic and Socioeconomic Change
in Appalachia***

**HOUSING AND COMMUTING PATTERNS
IN APPALACHIA**

by

**Mark Mather
Population Reference Bureau**

January 2004



**POPULATION
REFERENCE
BUREAU**

*Celebrating
75 Years
1929-2004*



About This Series

“Demographic and Socioeconomic Change in Appalachia” is a series of reports that examine demographic, social, and economic levels and trends in the 13-state Appalachian region. Each report uses data from the decennial censuses of 1990 and 2000, plus supplemental information from other data sources.

Current reports in the series include:

- “Appalachia at the Millennium: An Overview of Results from Census 2000,” by Kelvin M. Pollard (June 2003)
- “Housing and Commuting Patterns in Appalachia,” by Mark Mather (January 2004).
- “The Aging of Appalachia,” by John G. Haaga (April 2004).
- “Households and Families in Appalachia,” by Mark Mather (forthcoming).
- “Educational Attainment in Appalachia,” by John G. Haaga (forthcoming).

Additional reports will cover: Labor Market Performance, Poverty, and Income Inequality; Migration and Immigration; Population Change and Distribution; Geographic Concentration of Poverty; and Race and Ethnicity.

You can view and download the reports by visiting either www.prb.org or www.arc.gov.

For more information about the series, please contact either Kelvin Pollard of the Population Reference Bureau (202-939-5424, kelvinp@prb.org) or Gregory Bischak of the Appalachian Regional Commission (202-884-7790, gbischak@arc.gov).

The authors wish to thank the Appalachian Regional Commission for providing the funding for this series.

Population Reference Bureau

1875 Connecticut Avenue, NW, Suite 520
Washington, DC 20009-3728

The Population Reference Bureau is the leader in providing timely and objective information on U.S. and international population trends and their implications.

Appalachian Regional Commission

1666 Connecticut Avenue, NW, Suite 700
Washington, DC 20009-1068

The Appalachian Regional Commission’s mission is to be an advocate for and partner with the people of Appalachia to create opportunities for self-sustaining economic development and improved quality of life.

INTRODUCTION

Appalachia is a region best known for its economic hardship. The area became a focus of political attention during Lyndon Johnson's War on Poverty in the 1960s, when the president's Appalachian Regional Commission (ARC) found that economic development in the region¹ lagged behind that of the rest of the United States. Since then, Appalachia has rarely been mentioned in national debates about economic growth. Instead, the focus has shifted to large urban areas where most of the country's poor people live and where social and economic problems tend to be more visible on a daily basis.

During the past four decades, economic conditions have improved in many areas of Appalachia, especially in counties bordering large metropolitan areas. But in other parts of the region—especially counties in central Appalachia²—the lack of job opportunities, high poverty rates, and social and economic isolation of families have contributed to serious housing problems. Welfare reform has moved millions of people into the labor force, but for many families, there is a “spatial mismatch” between the locations of new jobs for entry-level and low-skilled workers and the residences of poor people. This is usually discussed as a problem for inner cities, but it is also an acute problem in Appalachia.

The first part of this report addresses housing issues in two broad categories: homeownership rates and quality of housing. The second part of the report looks at commuting patterns in Appalachia and the location and affordability of homes relative to areas of job growth.

Most of the data in this report are based on county-level information from the U.S. decennial census. Data from Census 2000 are compared with data from the 1990 Census to look at changes in housing and commuting patterns during the 1990s. This report is part of a series of reports being written for the Appalachian Regional Commission on topics including population growth, labor markets, poverty, racial and ethnic diversity, marriage and family, age structure, migration, and education.

Data from the census are supplemented with information from the Census Bureau's *County Business Patterns data and County-to-County Worker Flow files*. The *County Business Patterns* data provide information about job growth from 1990 to 2000, while the commuting data are used to identify the number of people who traveled outside their resident counties to work in 1990 and 2000.

HOUSING

Homeownership

Buying a home has long been a key part of the American dream—an important step for families to improve their quality of life and to become financially secure. For most Americans, especially those living in poor or low-income families, a home is the most valuable asset they will ever own. In Appalachia, homeownership provides an important source of economic security for millions of families. In 2000, there were 6.6 million owner-occupied homes in Appalachia, and the homeownership rate in the region (73 percent) far exceeded the national average (66 percent) (see Table 1). Between 1990 and 2000, there was a 15 percent increase in the number of owner-occupied homes in Appalachia. In Appalachia's fast-growing southern subregion, the number of owner-occupied homes increased by 24 percent, exceeding the national average (18 percent).

High rates of homeownership were fairly widespread throughout the Appalachian region in 2000. Although metropolitan³ counties in Appalachia had a slightly lower rate of homeownership (72 percent) than nonmetropolitan counties (76 percent), this difference was less pronounced than the metro/nonmetro difference in areas outside Appalachia (64 percent vs. 74 percent, respectively). In part, this reflects the greater affordability of homes in metro counties in Appalachia, compared with metro areas in more expensive housing markets on the East and West coasts.

Homeownership rates were highest in Appalachia's Distressed⁴ counties (76 percent) and lowest in Attainment counties (69 percent). In Appalachia's most distressed communities, the lack of jobs may be contributing to high rates of homeownership, because of the low levels of residential and economic mobility among people who live in these areas.⁵ Many low-income families in distressed areas lack the financial resources to move closer to jobs, a problem that is exacerbated by the scarcity of affordable rental housing in the Appalachian region (an issue addressed later in this report). There has also been a recent increase in the number of mobile homes, which has boosted homeownership rates in Appalachia's poorest communities.

Table 1

Trends in Homeownership in the United States and Appalachia, 1990 to 2000

	1990			2000			Percent change in number of owner-occupied units
	Total occupied housing units (thousands)	Owner-occupied units (thousands)	Percent	Total occupied housing units (thousands)	Owner-occupied units (thousands)	Percent	
U.S.	91,947	59,025	64.2	105,480	69,816	66.2	18.3
Non-Appalachian U.S.	84,003	53,280	63.4	96,485	63,207	65.5	18.6
Metropolitan areas	68,760	42,289	61.5	79,136	50,446	63.7	19.3
Nonmetropolitan areas	15,242	10,991	72.1	17,349	12,760	73.6	16.1
Appalachia	7,945	5,745	72.3	8,995	6,609	73.5	15.0
Metropolitan areas	4,623	3,255	70.4	5,217	3,755	72.0	15.4
Nonmetropolitan areas	3,322	2,490	75.0	3,779	2,854	75.5	14.6
Distressed	990	744	75.2	1,092	834	76.4	12.1
Attainment	1,079	720	66.7	1,248	864	69.2	20.0
Competitive	697	496	71.2	847	619	73.1	24.7
Transitional	5,179	3,784	73.1	5,808	4,292	73.9	13.4
North	3,773	2,712	71.9	3,989	2,906	72.8	7.1
South	3,417	2,464	72.1	4,152	3,052	73.5	23.9
Central	755	569	75.3	855	652	76.2	14.6

Source: Population Reference Bureau, analysis of data from the 1990 and 2000 Censuses.

To a lesser degree, high homeownership rates in Appalachia also reflect the older age structure of Appalachia’s population and the fact that people age 65 and older are slightly more likely to own homes. In 2000, 27 percent of homes in Appalachia were owned by people age 65 and older, compared with 25 percent nationwide.⁶

In 2000, there were 102 counties in Appalachia (out of 410) where the homeownership rate was 80 percent or more. At the top of the list was Botetourt County, Virginia (outside Roanoke) and Forsyth County, Georgia (near Atlanta) at 88 percent each. What distinguishes Appalachia from the rest of the country is the high rates of homeownership in Distressed counties. In 2000, there were 29 counties nationwide where the homeownership rate was 80 percent or more and at least 20 percent of residents were living in poverty. Of these 29 counties, 13 were located in the Appalachian region—all but one in Distressed counties in central or southern Appalachia.

Homeownership is an American dream that cuts across racial, ethnic, and geographic boundaries. But there are well-documented differences in homeownership rates between whites and other groups. Nationwide, about 72 percent of non-Hispanic whites⁷ owned homes in 2000, compared with 46 percent of African Americans and Hispanics (see Table 2). In Appalachia, about 76 percent of non-Hispanic whites owned homes, while only 52 percent of African Americans did. Rates of homeownership were sharply lower among Hispanics living in Appalachia, at about 42 percent. Many of the Hispanics living in Appalachia arrived there fairly recently, which helps explain their low rates of homeownership compared with more established racial groups.

The racial gap in homeownership rates is highest in Attainment counties, where there are higher home values, on average. Many black and Hispanic families—who tend to have lower incomes—lack the resources to buy homes in these communities. In contrast, the greater affordability of homes in more distressed areas within Appalachia puts homeownership within reach for a greater share of families, regardless of race. In 2000, three-fourths of non-Hispanic whites (75 percent) owned homes in ARC Attainment counties, compared with less than half (44 percent) of blacks and only two-fifths (40 percent) of Hispanics. In contrast, about 77 percent of whites, more than two thirds (68 percent) of blacks, and over half of Hispanics (56 percent) living in Distressed counties owned homes.

Table 2
Homeownership Rates in the United States and Appalachia, by Race/Ethnicity, 2000

	Homeownership Rates		
	Non-Hispanic white households	African American households	Hispanic households
U.S.	72.4	46.3	45.7
Non-Appalachian U.S.	72.0	46.0	45.7
Metropolitan areas	71.0	44.1	44.6
Nonmetropolitan areas	76.1	60.0	58.3
Appalachia	76.0	52.0	42.2
Metropolitan areas	75.3	48.2	42.1
Nonmetropolitan areas	76.9	61.8	42.4
Distressed	77.3	67.9	55.9
Attainment	75.1	43.6	40.1
Competitive	76.3	49.2	38.3
Transitional	75.9	53.2	43.5
North	74.5	41.2	48.6
South	77.4	54.4	39.5
Central	76.9	57.1	51.4

Source: Population Reference Bureau, analysis of data from the 2000 Census.

For whites, homeownership rates in Appalachia’s metropolitan and nonmetropolitan areas were about equal in 2000 (75 percent vs. 77 percent, respectively). But among blacks, the rate in metro areas (48 percent) was substantially lower than the rate in nonmetro areas (62 percent). For Hispanics, homeownership rates were equal in metro and nonmetro areas, but at significantly lower levels (42 percent each).

Over the past decade, the racial gap in homeownership rates has narrowed, due in part to an increasing number of mortgage loans to low-income, minority households. According to a recent report from the Brookings Institution, mortgage lending increased by 98 percent for African American homebuyers and by 125 percent for Hispanic homebuyers during the 1990s.⁸ Rising rates of homeownership among minorities represent a positive step toward closing the wealth gap between whites and other groups. But recent economic data, showing increases in unemployment and mortgage foreclosures,⁹ suggest that many families are still struggling to make their dream of homeownership a reality.

Housing Quality

While homeownership is an important measure of economic security, it does not indicate anything about the environment in which people live. In 1949, the U.S. Congress established the goal of providing “a decent home and a suitable living environment for every American family.”¹⁰ Poor physical housing quality may indicate that families do not have the financial resources needed for maintenance and repairs. Homes with inadequate plumbing or without access to running water are of particular concern because of the potential health risk to the population—particularly children and the older population.

“The most common image of Appalachian housing is a small shack with a sagging porch, perched precariously on a hillside.”¹¹ Although historically, the quality of homes in the region has lagged behind the rest of the United States, there have been significant improvements during the past 50 years. Still, there are many geographic areas and subgroups of the population in Appalachia with significant housing problems.

Incomplete Plumbing

A key measure of housing adequacy is the availability of complete plumbing in the housing unit.¹² Between 1990 and 2000, the number of housing units in Appalachia with incomplete plumbing fell from 116,971 to 62,149, a 47 percent decrease. In 1990, about one out of every six U.S. homes with incomplete plumbing was located in Appalachia, but by 2000, Appalachia accounted for less than one out of every 10 homes with incomplete plumbing. In 2000, less than 1 percent of occupied housing units in Appalachia had incomplete plumbing (0.7 percent), compared with 0.6 percent nationwide (see Table 3). In areas outside of Appalachia, the number of homes with incomplete plumbing actually increased slightly during the 1990s, from 604,722 to 608,837.

Table 3

Trends in Occupied Housing Units with Incomplete Plumbing in the United States and Appalachia, 1990 to 2000

Area	1990		2000		Percent change in housing units with incomplete plumbing
	With incomplete plumbing (thousands)	Percent	With incomplete plumbing (thousands)	Percent	
U.S.	722	0.8	671	0.6	-7.0
Non-Appalachian U.S.	605	0.7	609	0.6	0.7
Metropolitan areas	363	0.5	445	0.6	22.6
Nonmetropolitan areas	242	1.6	164	0.9	-32.2
Appalachia	117	1.5	62	0.7	-46.9
Metropolitan areas	36	0.8	24	0.5	-32.5
Nonmetropolitan areas	81	2.4	38	1.0	-53.2
Distressed	44	4.4	17	1.6	-60.9
Attainment	4	0.4	5	0.4	19.3
Competitive	5	0.7	3	0.4	-32.7
Transitional	64	1.2	37	0.6	-42.6
North	41	1.1	25	0.6	-37.3
South	42	1.2	24	0.6	-43.3
Central	34	4.5	13	1.5	-62.6

Source: Population Reference Bureau, analysis of data from the 1990 and 2000 Censuses.

The growth in construction of new homes in urban and suburban areas in Appalachia and across the United States is the driving force behind the decades-long improvement in housing quality.¹³ The migration of the population out of Appalachia's rural areas has played an important role in this housing transformation. Many older homes with severe structural

deficiencies have been abandoned or replaced with new homes. Problems persist in Appalachia's Distressed counties, which were the most likely to have incomplete plumbing in 2000 (2 percent). In 2000, about 12 percent of all occupied housing units in Appalachia were located in Distressed counties, but Distressed counties accounted for over 25 percent of homes with incomplete plumbing. However, Distressed counties also experienced the biggest decrease in homes with incomplete plumbing during the 1990s (a 61 percent decrease).

There are also important racial differences in housing quality. In 2000, blacks in the United States were more than twice as likely and Hispanics were more than three times as likely as non-Hispanic whites to live in homes with incomplete plumbing. In Appalachia, the racial differences were not as large, with 0.6 percent of whites, 1.0 percent of blacks, and 1.1 percent of Hispanics in homes with incomplete plumbing.¹⁴

At the local level, Hancock County, Tennessee, had the highest share of homes in Appalachia with incomplete plumbing (8 percent). In Hancock, the public water and sewer systems do not extend outside of Sneedville, the county seat.¹⁵ However, most of the homes in Appalachia with plumbing deficiencies were located in Kentucky and West Virginia.

Even in Appalachia's poorest regions, there were dramatic improvements in plumbing during the 1990s. In 1990, there were 14 Appalachian counties where 10 percent or more households lacked complete plumbing. In 2000, there were no counties in Appalachia that exceeded this threshold, and only one that exceeded 5 percent.

Crowding

Another dimension of housing quality is the level of crowding in the housing unit. Crowding was once considered to be an urban problem, but it is also a growing problem in many rural communities and small towns. Low-income families—especially new immigrants—are more likely to live in crowded conditions in order to share the cost of housing,¹⁶ and recent research has shown that overcrowding has become a serious issue for many Hispanics living in rural areas.¹⁷ Severe overcrowding can lead to health and safety risks, particularly if crowded conditions are combined with physical housing deficiencies. In this report, crowded conditions are defined as having more than one person per room in a housing unit.¹⁸

In 2000, Appalachia had relatively few overcrowded housing units (2 percent), compared with the national average (6 percent) (see Table 4). This is explained, in part, by the lower cost of housing in the region, and the fact that there are slightly fewer people per household in Appalachia (2.5) than in the United States as a whole (2.6). Most likely, the difference reflects the relatively low levels of international migration to Appalachia compared with large metropolitan areas, such as New York and Los Angeles.

In 2000, crowding was more common in Appalachia’s renter-occupied housing units (4 percent), compared with owner-occupied units (1 percent), but outside of Appalachia there was an equal share of renters and owners living in crowded living conditions (6 percent each). There was little change in the level of crowding in Appalachia’s housing units between 1990 and 2000.¹⁹

At the local level, the county with the highest percentage of overcrowded housing units was Whitfield County, Georgia (10 percent), a Competitive county southeast of Chattanooga, Tennessee. A rapid increase in the Hispanic population in Whitfield County accounts for the large number of crowded housing units there. Hispanics from Central and South America are moving to Whitfield County in large numbers to work in the county’s carpet mills. In the 2000 Census, more than 20 percent of Whitfield’s population was identified as Hispanic or Latino.²⁰

Table 4
Trends in Housing Units with More than One Person Per Room in the United States and Appalachia, 1990 to 2000

Area	1990		2000		Percent change in number of crowded housing units
	More than one person per room (thousands)	Percent	More than one person per room (thousands)	Percent	
U.S.	4,312	4.7	6,073	5.8	40.9
Non-Appalachian U.S.	4,153	4.9	5,890	6.1	41.8
Metropolitan areas	3,604	5.2	5,250	6.6	45.7
Nonmetropolitan areas	548	3.6	640	3.7	16.8
Appalachia	159	2.0	184	2.0	15.5
Metropolitan areas	80	1.7	99	1.9	24.6
Nonmetropolitan areas	79	2.4	84	2.2	6.3
Distressed	32	3.2	25	2.3	-20.8
Attainment	16	1.5	31	2.5	88.1
Competitive	14	2.1	23	2.7	60.2
Transitional	96	1.9	104	1.8	8.3
North	52	1.4	52	1.3	-0.7
South	85	2.5	115	2.8	35.1
Central	21	2.8	16	1.9	-23.3

Source: Population Reference Bureau, analysis of data from the 1990 and 2000 Censuses.

In Appalachia as a whole, there were major differences in crowding among different racial and ethnic groups. Hispanics in Appalachia were by far the most likely to live in crowded conditions in 2000 (26 percent), compared with blacks (5 percent) or non-Hispanic whites (1 percent). In Competitive counties in Appalachia, about 38 percent of Hispanics lived in crowded conditions in 2000, far exceeding the national average for Hispanic households (29 percent).²¹

Severely Inadequate Homes

By combining measures of crowding and incomplete plumbing, it is possible to identify “severely inadequate” homes—those with both physical deficiencies (lack of complete plumbing) and crowded conditions (more than 1.5 occupants per room).²² In 2000, there were 86,625 occupied housing units nationwide that met both of these criteria. While Appalachia accounted for 9 percent of all occupied housing units in 2000, it accounted for only 2 percent of severely inadequate homes. This contradicts common perceptions about widespread problems in housing quality in Appalachia. However, because overcrowding is not a major problem in Appalachia, this particular measure may obscure other important housing problems in the Appalachian region.

Mobile Homes

One of the factors behind the improvement in housing quality in Appalachia is the increase in mobile homes. Because mobile homes tend to be newer than conventional homes in the region, mobile homes are less likely to have structural deficiencies or other major problems.²³ The Census Bureau defines “mobile homes” as any housing units built in a factory and towed to its site on its own wheels. In rural areas throughout the United States, mobile homes have become increasingly popular in recent years because of the significant cost savings compared with conventional homes.²⁴ In 2000, the median value of mobile homes was \$31,200, compared with \$119,600 for all owner-occupied homes.²⁵ The lower cost of mobile homes has made them appealing to low-income families,²⁶ who otherwise could not afford to buy a home. In Appalachia, the rapid increase in mobile homes is also related to the lack of suitable land because of the hilly and rocky terrain in many parts of the region.²⁷

Although mobile homes are economical and provide a means of establishing equity for many low-income families, there are concerns about the quality of these homes and whether they really are good investments for low-income families.²⁸ The popularity of mobile homes has boosted homeownership rates in Appalachia, but they may be a poor substitute for affordable rental housing in distressed areas. Mobile homes also carry a stigma of poverty that perpetuates negative stereotypes about Appalachia and the families who live there.

In 2000, there were 1.4 million mobile homes in Appalachia, accounting for about 14 percent of Appalachia’s housing units (see Table 5). This is twice the share of mobile homes outside the Appalachian region (7 percent). In nonmetro counties in Appalachia, about one in five housing units were mobile homes (19 percent), compared with 16 percent in nonmetro areas outside of Appalachia.

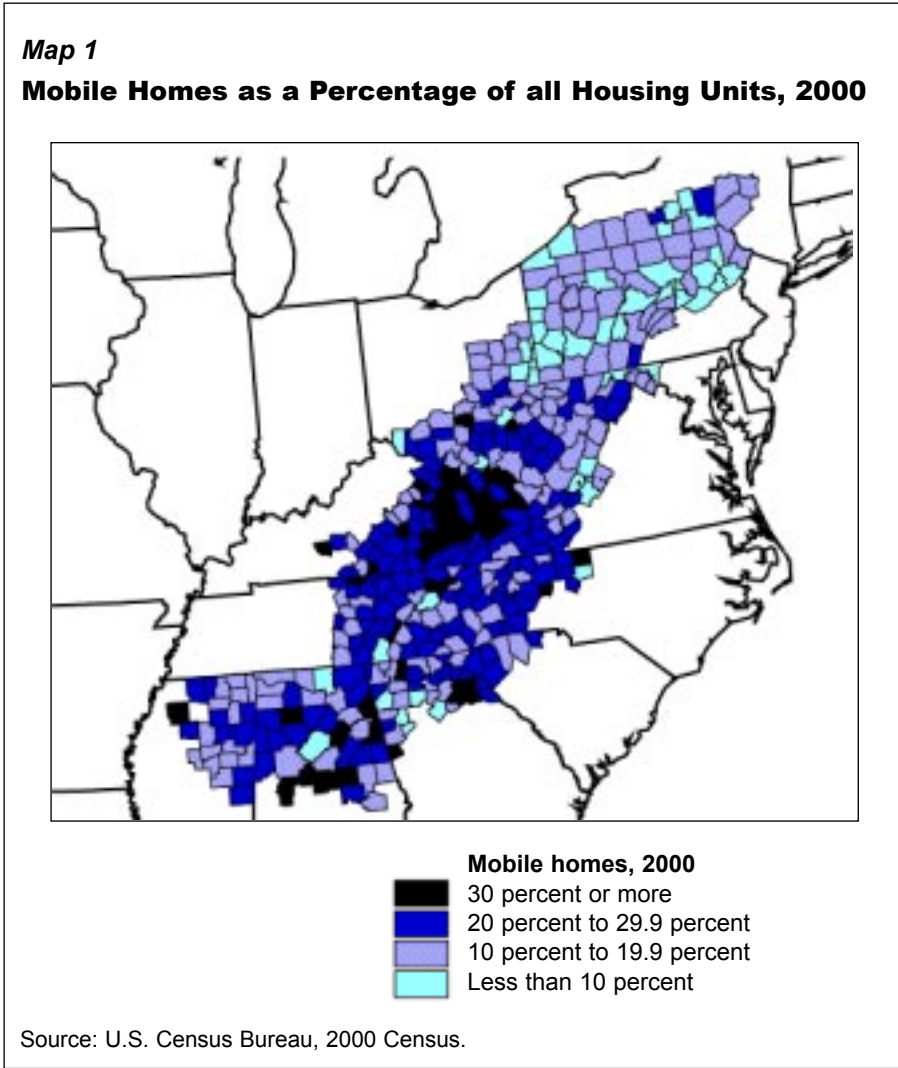
Table 5
Trends in Mobile Homes in the United States and Appalachia, 1990 to 2000

	1990		2000		Percent change in number of mobile homes
	Mobile homes (thousands)	Percent	Mobile homes (thousands)	Percent	
U.S.	7,324	7.2	8,779	7.6	19.9
Non-Appalachian U.S.	6,233	6.7	7,361	7.0	18.1
Metropolitan areas	3,637	4.8	4,159	4.9	14.3
Nonmetropolitan areas	2,596	14.2	3,203	15.5	23.4
Appalachia	1,091	12.3	1,418	14.0	30.0
Metropolitan areas	448	8.9	560	9.8	24.9
Nonmetropolitan areas	642	16.8	858	19.5	33.6
Distressed	223	20.0	310	24.7	39.0
Attainment	47	4.0	59	4.4	25.4
Competitive	97	12.8	115	12.5	18.8
Transitional	725	12.4	935	14.2	29.0
North	409	9.6	455	10.0	11.3
South	515	13.6	724	15.7	40.7
Central	167	19.9	239	24.7	42.6

Source: Population Reference Bureau, analysis of data from the 1990 and 2000 Censuses.

Mobile homes are highly concentrated in Distressed counties in Appalachia’s central region (see Map 1). In 2000, about one in four housing units in Distressed counties (25 percent) were mobile homes. In contrast, mobile homes accounted for only 4 percent of homes in Appalachia’s Attainment counties. About 10 percent of housing units in Appalachia’s

metropolitan areas were mobile homes, twice the share of mobile homes in metro areas outside the region.



Between 1990 and 2000, there was a 30 percent increase in the number of mobile homes in Appalachia, compared with a 20 percent increase nationwide. The share of mobile homes in Appalachia increased from 12 percent to 14 percent during the decade, with the fastest growth in the most distressed areas. The share of mobile homes increased by 5 percentage points in Appalachia’s Distressed counties during the 1990s.

The county with the highest share of mobile homes in Appalachia is Magoffin County, Kentucky. In 2000, about 44 percent of housing units in the county—including city hall—were mobile homes.²⁹

Housing Vacancy

The proportion of vacant units (or conversely, the occupancy rate) in an area is another way to gauge the economic health of a community.³⁰ Areas with a large number of vacant units are likely to have suffered population losses and may have trouble attracting new residents due to lack of job opportunities, high crime rates, or poor schools. In the case of Appalachia, many of the counties that once relied on coal mining have suffered population losses for decades. McDowell County, West Virginia, has lost 70 percent of its population since 1950, largely because of the decline in the coal industry.³¹ McDowell County had the highest percentage of vacant homes in the Appalachian region in 2000 (17 percent).

In 2000, there were 745,841 vacant housing units in Appalachia, accounting for 7 percent of all housing units (see Table 6). Nationwide, the share of vacant units was only slightly lower (6 percent). Although the percentage of vacant units in Appalachia did not increase much in percentage terms, the number of vacant units increased by 22 percent during the 1990s. Nationwide, the number of vacant units nationwide decreased by 5 percent during the decade.

Table 6
Trends in Vacant Homes in the United States and Appalachia, 1990 to 2000

Area	1990		2000		Percent change in number of vacant units
	Non-seasonal vacant homes (thousands)	Percent	Non-seasonal vacant homes (thousands)	Percent	
U.S.	7,234	7.1	6,846	5.9	-5.4
Non-Appalachian U.S.	6,622	7.1	6,100	5.8	-7.9
Metropolitan areas	5,036	6.7	4,474	5.3	-11.2
Nonmetropolitan areas	1,586	8.7	1,626	7.9	2.5
Appalachia	613	6.9	746	7.4	21.7
Metropolitan areas	326	6.5	398	7.0	22.0
Nonmetropolitan areas	287	7.5	348	7.9	21.3
Distressed	94	8.5	117	9.3	24.0
Attainment	80	6.9	88	6.6	10.2
Competitive	47	6.3	56	6.1	18.8
Transitional	391	6.7	485	7.3	23.9
North	278	6.5	315	7.0	13.3
South	265	7.0	341	7.4	28.7
Central	70	8.3	90	9.3	28.6

Source: Population Reference Bureau, analysis of data from the 1990 and 2000 Censuses.

In 2000, there were 71 counties in Appalachia with vacancy rates of 10 percent or more. This represents a substantial increase over the 40 counties that had high vacancy rates in 1990. Forty-seven of the counties with high vacancy rates in 2000 were located in three states—West Virginia, Kentucky, and Alabama. Forty-nine of the 71 were in the Distressed category; 67 were outside metropolitan areas; and 27 lost population between 1990 and 2000.

COMMUTING

Travel Time to Work

The time spent commuting to work has become a major concern of both policymakers and the public in recent years, especially with the increased attention to traffic gridlock and urban sprawl. In *The Cost of Sprawl—2000*, researchers at Rutgers University investigated the various costs of commuting to work.³² In addition to the monetary costs of fuel, vehicle maintenance, and auto insurance, many people spend a significant amount of time sitting in traffic each day. This reduces the time that people could be spending at work or at home with their families.

Robert Putnam cites suburban sprawl and long commutes as one of the major factors that has reduced the social capital (“community-connectedness”) in U.S. society.³³ With all of the time spent commuting to and from work, there is less time for social and civil engagement in society (e.g., voting, activism, club memberships, and dinner parties).

Although long commutes are most often discussed in terms of their negative impacts, they can also have positive effects for families and communities. Commuting provides economic links between urban centers and surrounding areas. Advances in transportation and technology have enabled some people to live far from their places of work. Plus, most families prefer to live in quiet, rural or suburban communities with low-density housing, good schools, and low crime rates. During the past several decades, many smaller cities and towns—particularly those within or adjacent to major metropolitan areas—have grown into wealthy bedroom communities.³⁴ In fact, some of the most economically developed counties in Appalachia are those bordering the Atlanta Metropolitan Area, which has experienced rapid economic and population growth during the 1990s.

Long commutes are more likely to represent a problem in more rural areas where there is limited public transportation and few job opportunities. Public transportation is virtually nonexistent in Appalachia; only 1 percent of workers took public transportation to work in 2000. Unemployment in Appalachia was relatively low overall (6 percent), but exceeded 10 percent in parts of central and southern Appalachia. There are counties in parts of central Appalachia that are similar to inner cities in their high unemployment rates, lack of job opportunities, and inadequate transportation systems to move people from their homes to areas of job growth. Long commutes, therefore, can be an indication of broader economic problems in the community.

Overall, Appalachian workers spent slightly less time traveling to work in 2000 than workers in the rest of the country. In 2000, the average travel time to work in the United States was about 26 minutes, compared with 25 minutes in Appalachia (see Table 7). Workers in central Appalachia spent more time commuting (27 minutes, on average) than those in southern (25 minutes) or northern Appalachia (24 minutes). The average travel time to work in Appalachia's nonmetropolitan counties (25 minutes) equaled the average travel time in metropolitan areas. But outside of Appalachia, the travel time to work was substantially higher in metro counties (26 minutes) compared with nonmetro counties (22 percent).

Table 7

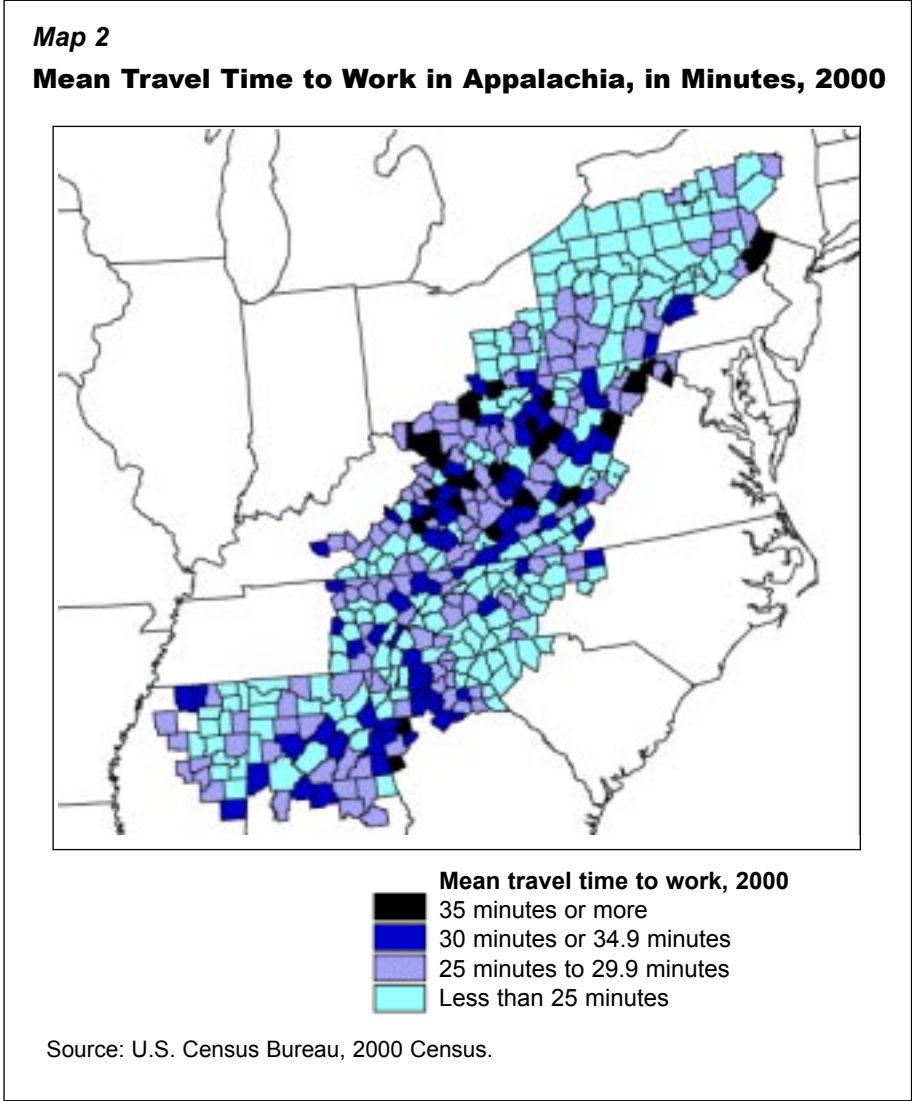
Mean Travel Time to Work in the United States and Appalachia, in Minutes, 1990 to 2000

	1990		2000		Percent change (mean travel time)
	People working outside the home (thousands)	Mean travel time	People working outside the home (thousands)	Mean travel time	
U.S.	111,664	22.4	124,095	25.5	14.1
Non-Appalachian U.S.	102,904	22.5	114,310	25.6	13.8
Metropolitan areas	86,314	23.3	95,299	26.2	12.8
Nonmetropolitan areas	16,589	18.5	19,012	22.4	20.9
Appalachia	8,761	20.9	9,785	24.8	18.8
Metropolitan areas	5,291	20.9	5,890	24.5	17.2
Nonmetropolitan areas	3,469	20.9	3,894	25.3	21.3
Distressed	874	22.9	975	28.0	22.4
Attainment	1,290	22.4	1,478	26.0	16.0
Competitive	878	21.5	1,021	24.9	16.1
Transitional	5,719	20.2	6,311	24.1	19.3
North	3,989	20.3	4,250	24.2	19.4
South	4,079	21.2	4,760	25.1	18.0
Central	693	22.5	775	26.9	19.3

Source: Population Reference Bureau, analysis of data from the 1990 and 2000 Censuses.

Workers in Appalachia’s Distressed counties had the longest commutes (28 minutes, on average). The time spent to commuting to work in Distressed areas in Kentucky and West Virginia was similar to that of the Washington, D.C., suburbs—one of the most congested areas in the country (see Map 2).

Another way to measure the distance that people travel to work is through the Census Bureau’s County-to-County Worker Flow files. With over 3,000 counties in the United States (many of them quite small in area), it is fairly common for people to work outside the counties where they live. In 2000, 27 percent of workers in the United States worked outside their counties of residence. About 29 percent of workers in Appalachia—and a third of the workers in Appalachia’s central region—commuted to jobs in other counties.



It is also possible to estimate the proportion of workers who resided in Appalachia but commuted to jobs outside the region. In 2000, about 900,000 workers in Appalachia (9 percent of the work force) commuted to jobs outside the region. The share of workers commuting outside the region was highest in southern Appalachia (10 percent), followed by central Appalachia (9 percent), and northern Appalachia (7 percent). The relatively large number of people commuting to work outside the Appalachian region indicates that many Appalachian counties—particularly those near the perimeter of the region—are highly integrated with nearby metropolitan areas.

Three of the five U.S. counties with the longest average travel times to work in 2000 were located in Appalachia, including Elliott County, Kentucky, Pike County, Pennsylvania, and Clay County, West Virginia (see Appendix 1). In each of these counties, the average travel time to work exceeded 45 minutes. That means that the average worker spent at least an hour and a half driving to and from work each day. Nationwide, there were 30 counties where more than 10 percent of workers traveled more than 90 minutes to work each day (a daily commute of at least two-and-a-half hours), and 10 of them were located in Appalachia (see Appendix 2).

Some of the counties whose residents had the longest commutes were either at the edges of or adjacent to metropolitan areas (for example, Pike and Monroe counties in Pennsylvania; Clay, Hampshire, Lincoln, and Jefferson counties in West Virginia; and Paulding and Heard counties in Georgia). But residents in some of Appalachia's more isolated rural counties also had long commutes. (Workers in Magoffin County, Kentucky, and Doddridge County in West Virginia, for example, commuted between 38 and 39 minutes to their jobs, on average.)

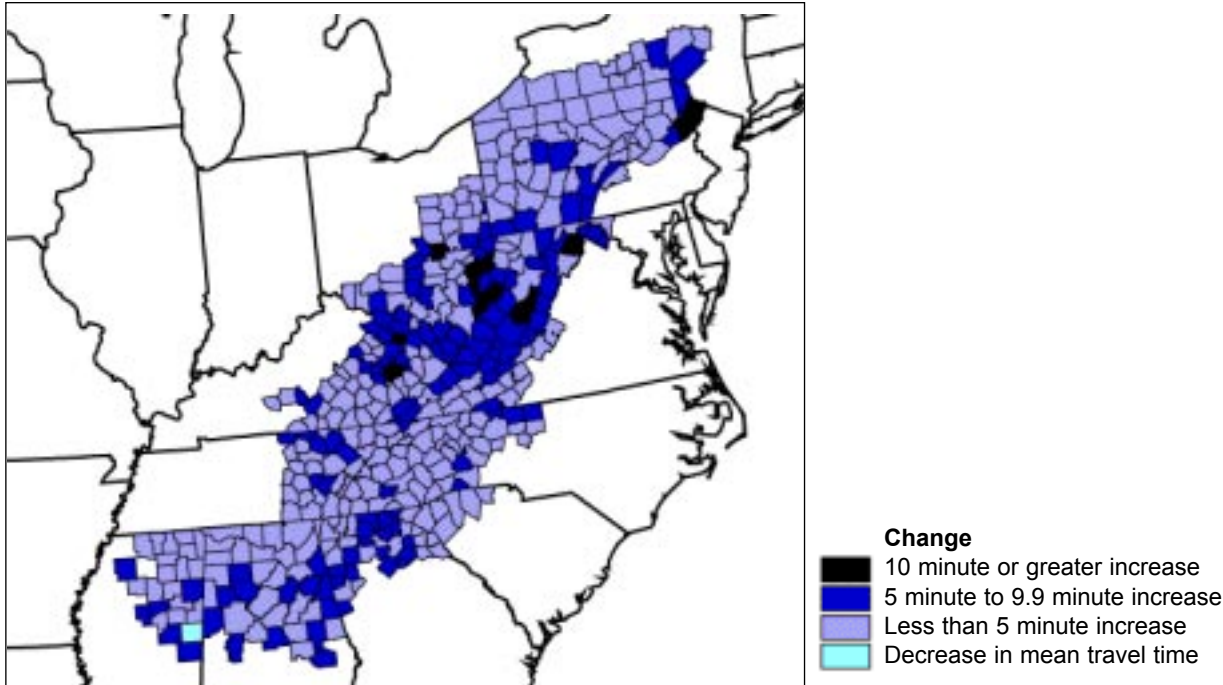
Appalachian counties that border large metropolitan areas tend to be economically better off than counties in more rural areas. For example, Pike County, Pennsylvania, and Elliott County, Kentucky, are both located in the Appalachian region, and workers in both counties travel over 45 minutes, on average, to work each day. But Pike County—only 75 miles from New York City—offers commuter bus and rail service to northern New Jersey and other parts of the New York metropolitan area. In 2000, about 47 percent of workers in Pike County commuted to jobs in New Jersey and New York state. The poverty rate in Pike County in 1999 was only 6 percent, and 5 percent of the civilian labor force was unemployed in 2000. In contrast, Elliott County, Kentucky, borders the much smaller Huntington-Ashland Metropolitan Area. Public transportation is virtually nonexistent. About 34 percent of Elliott County's labor force worked

in neighboring counties of Carter, Lawrence, Morgan, and Rowan. The remainder—about 30 percent—worked in nonadjacent counties in Kentucky, Ohio, and West Virginia. In 1999, 21 percent of the population was living below the poverty line, and 11 percent of the civilian labor force was unemployed in 2000.

This combination of high poverty rates and long commutes is typical in central Appalachia. In 2000, there were 46 U.S. counties where the travel time to work averaged 30 minutes or more and where at least one-fifth of the population was living in poverty (see Appendix 3). Of these counties, 23 are in Appalachia—almost all of them in Kentucky and West Virginia.

In Appalachia and in many other parts of the United States, the travel time to work increased during the 1990s. The average travel time to work increased by four minutes in Appalachia, compared with a three-minute increase nationwide. In Appalachia’s Distressed counties, the average travel time increased by five minutes. At the local level, there were 12 counties in Appalachia where average travel times increased by 10 minutes or more (see Map 3).

Map 3
Change in Travel Time to Work in Appalachia, in Minutes, 1990 to 2000



Source: U.S. Census Bureau, 1990 and 2000 Censuses.

This included a 19-minute increase in Pike County, Pennsylvania, a 17-minute increase in Clay County, West Virginia, and a 15-minute increase in Calhoun County, West Virginia. Of the 20 U.S. counties with the biggest increases in the travel time to work, seven were located in Appalachia (see Appendix 4).

What explains the increasingly long commutes in Appalachia's economically distressed areas? Welfare reform has played an important role. Welfare reform has moved millions of people into the labor force, but for many poor families, there is a disconnect between the locations of new jobs for entry-level and low-skilled workers and their residences. This is usually discussed as a problem for inner cities. It is argued that the spatial mismatch between central city residential location and suburban job growth has contributed to high unemployment rates and social and economic isolation of inner city residents, who have no easy way to travel between home and work.³⁵ Research on inner cities has focused on the distance that minorities—particularly African Americans—have to travel to get to jobs located in suburban areas. However, the increasingly long commutes in central Appalachia suggest that spatial mismatch is also an acute problem for rural areas.³⁶ In Appalachia, the mismatch is most evident in the location of poor households and areas of job growth.

In Appalachia and in rural areas across the country, labor market conditions in economically depressed areas have created challenges for families making the transition from welfare to work.³⁷ Welfare caseloads have dropped dramatically since the enactment of 1996 welfare reform legislation. In West Virginia, for example, there was a 65 percent drop in the number of public assistance recipients between 1996 and 2000.³⁸ At the same time, labor force participation rates in the Appalachian region have increased—particularly among families with young children. In Appalachia, there was an 8 percent increase in the share of children under age 6 with all parents in the labor force, compared with a 6 percent increase nationwide. In central Appalachia—where a relatively large proportion of families had relied on public assistance—the proportion of children with all parents in the labor force increased by 16 percent. Although welfare reform played an important role in rising labor force participation rates, other factors also contributed to the increase, including the strong U.S. economy and the expansion of the Earned Income Tax Credit, which provided financial incentives to low-income working families.³⁹

The employment growth in Appalachia has contributed to higher incomes for many low-income families, but the longer commutes—especially in central Appalachia—indicate that the transition from welfare to work has come at a high cost for some families.

Limited Employment Opportunities

In order to successfully move families from welfare to work, there has to be sufficient job opportunities in local areas to absorb the demand. In Appalachia, the limited employment opportunities in rural communities present a major obstacle for poor families. Families are further limited by low levels of human capital—especially low levels of education and lack of job skills—that restrict the types of jobs that are available to them.⁴⁰ In this context, many families in Appalachia adapted to the loss of public assistance income in the 1990s by seeking employment outside local labor markets, resulting in longer commutes.

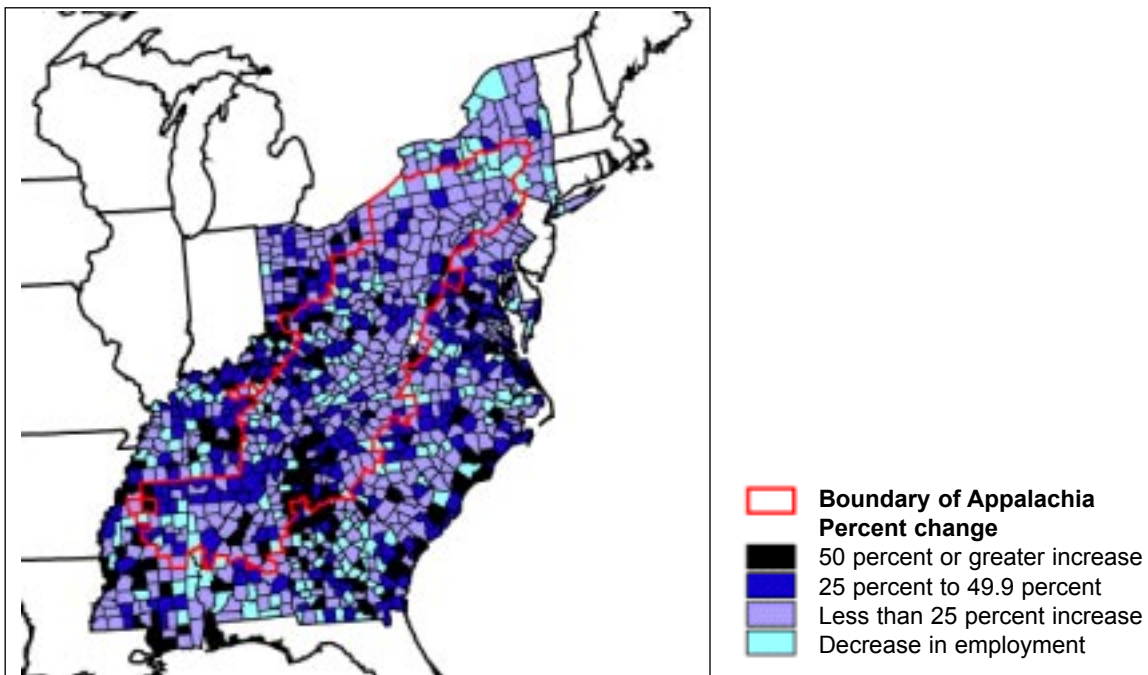
The 1990s was a period of unprecedented economic growth in the United States. In the U.S. as a whole, there was a 22 percent increase in the number of jobs during the 1990s. In Appalachia, there was a 19 percent increase in jobs, but most of the economic expansion took place in the southern region—especially in counties bordering the Atlanta Metropolitan Area.⁴¹

A map of job growth in the region during the 1990s indicates that the fastest growth occurred in the areas near the border of the Appalachian region—particularly in counties to the west of central and southern Appalachia (see Map 4). This geographic imbalance in the creation of jobs created conditions for longer commutes from areas of economic distress (in more rural parts of Appalachia) to areas of economic growth (in metropolitan areas within Appalachia or bordering the region).

Although the average travel time to work increased during the 1990s, there was not a significant increase in the proportion of people who lived in Appalachia but who commuted to jobs outside the region. The proportion working outside Appalachia increased from 8 percent in 1990 to 9 percent in 2000. There was an increase in the proportion of people in Appalachia who worked outside their counties of residence, however, from 25 percent in 1990 to 29 percent in 2000. In Distressed counties, the proportion who commuted to jobs in other counties increased from 30 percent to 35 percent during the 1990s.

Map 4

Percent Change in Number of Employees, 1990 to 2000



Source: U.S. Census Bureau, 1990 and 2000 County Business Patterns Data.

Housing Costs

Another obstacle for poor families in Appalachia—and a reason why families are willing to drive long distances to work—is the lack of affordable housing in areas with the most job growth. The high cost of housing is a growing problem in Appalachia and throughout the United States. High housing costs strain the finances of many homeowners but is more of a burden for renters, who tend to have lower incomes. Housing affordability is not just an issue in Appalachia’s Distressed counties; it is also a critical issue in Southern Appalachia because of the rapid population and employment growth in the region, which has created high demand for adequate and affordable rental housing.

Despite the economic prosperity of the late 1990s, over one-fourth of all U.S. households—and two-fifths of renters—lacked affordable housing in 2000. The U.S. Department of Housing and Urban Development considers housing “affordable” if total expenses (rent or mortgage payments, taxes, insurance, utilities, and other related payments) account for less than 30

percent of total household income. Paying 30 percent or more of income on housing may leave insufficient resources to cover other basic expenses, including food and health care. In this report, a 30 percent cutoff is used to indicate a lack of affordable housing.⁴²

In Appalachia, just under one-fourth of households (24 percent) lacked affordable housing in 2000, compared with 29 percent nationwide (see Table 8). Between 1990 and 2000, the percentage of households spending at least 30 percent of their income on housing increased only slightly, from 23 percent to 24 percent. There was little variation in housing affordability across Appalachia's economic areas or between metro and nonmetro counties.

About 19 percent of Appalachia's homeowners lacked affordable housing in 2000, while renters were twice as likely to have a high housing burden (38 percent). Higher costs for renters reflect the lower-incomes of this group relative to families that own their homes. The burden for renters was highest in Appalachia's Distressed counties, where 42 percent of households had high housing costs. Nationwide, there was a similar disparity, with 22 percent of homeowners lacking affordable housing, compared with 40 percent of renters.⁴³

Table 8
Trends in Housing Affordability in the United States and Appalachia, 1990 to 2000

Area	1990		2000		Percent change in households with high cost burdens
	Spend 30% or more (thousands)	Percent	Spend 30% or more (thousands)	Percent	
U.S.	21,249	28.2	25,014	28.6	17.7
Non-Appalachian U.S.	19,889	28.6	23,340	29.0	17.3
Metropolitan areas	17,375	29.6	20,361	29.9	17.2
Nonmetropolitan areas	2,514	23.5	2,979	24.0	18.5
Appalachia	1,360	22.8	1,674	24.4	23.1
Metropolitan areas	849	22.7	1,050	24.5	23.7
Nonmetropolitan areas	511	23.0	624	24.2	22.1
Distressed	156	25.4	173	25.5	11.3
Attainment	228	24.0	282	25.3	23.4
Competitive	116	21.4	161	23.6	39.0
Transitional	860	22.2	1,058	24.1	23.0
North	681	23.1	781	24.7	14.7
South	569	22.3	760	24.0	33.7
Central	111	23.4	133	24.5	20.1

Note: Data exclude households reporting no income or a net loss in 1989 and 1999.

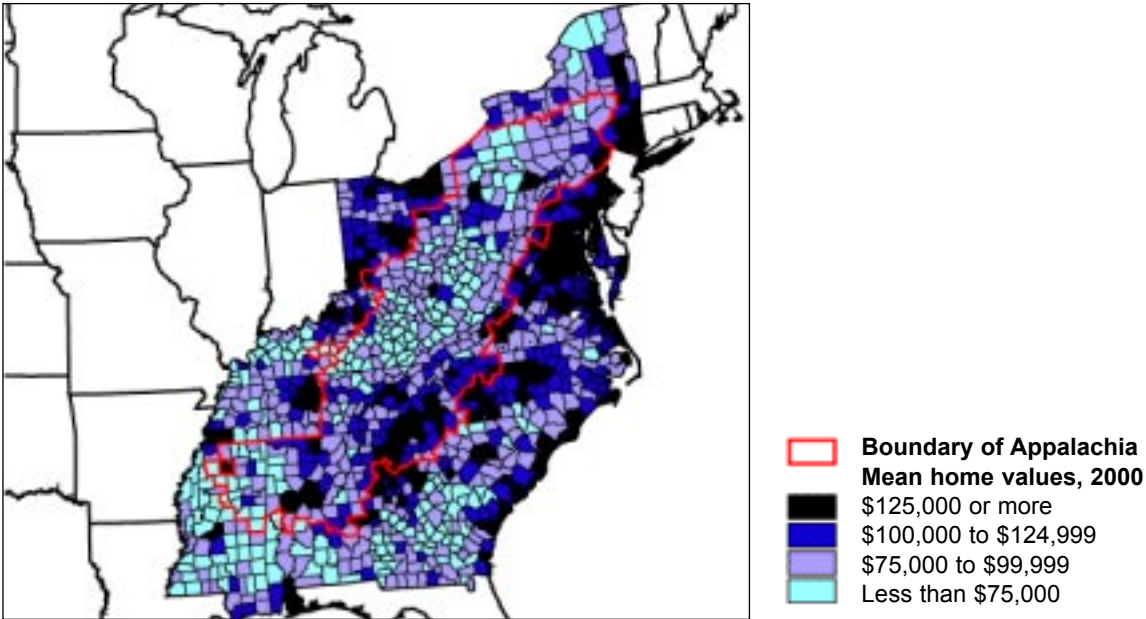
Source: Population Reference Bureau, analysis of data from the 1990 and 2000 Censuses.

The share of renters who lacked affordable housing decreased slightly during the 1990s, from 41 percent to 40 percent nationwide, and from 39 percent to 38 percent in Appalachia. However, costs for owners increased during the 1990s, from 20 percent to 22 percent nationwide, and from 15 percent to 19 percent in Appalachia.

Despite the high cost of housing in parts of Appalachia, the actual value of homes in the region is quite low. In 2000, the mean value of homes in Appalachia was \$106,000 compared with \$159,000 in the nation as a whole, and \$173,000 in U.S. metropolitan areas. In central Appalachia, the mean value of homes in 2000 was only \$79,000.⁴⁴

A map of housing costs in the region shows that mean home values in the majority of Appalachian counties are in the \$50,000-\$100,000 range (see Map 5). However, there is a ring of counties around the Appalachian region where mean home values are significantly higher—in the \$100,000 to \$150,000 range. Higher home values in these areas creates an economic barrier for low-income families that would consider moving outside the Appalachian region, and are likely contributing to longer commutes among low-income families.

Map 5
Mean Home Values in Appalachia, 2000



Source: U.S. Census Bureau, 2000 Census.

Vehicle Ownership

Buying and owning a private vehicle can be a major expense for low-income families.⁴⁵ In addition to the fees and interest rates associated with financing a vehicle, commuters have to pay for fuel, maintenance, insurance, tolls, and parking fees. Given the high costs of car ownership and maintenance, there are many families in Appalachia that do not own or have access to private vehicles. In the absence of public transportation, these families may be completely cut off from employment opportunities outside their local areas. Thus, while long commutes may be a burden for some, others face the more basic problem of finding a means of getting to work each day. For people not in the labor force, the lack of access to transportation may be the main barrier in moving from welfare to work.

Census data indicate that most households in Appalachia do have access to vehicles. In 2000, the share of households without a car was actually lower in Appalachia (9 percent) than in the U.S. as a whole (10 percent) (see Table 9). The U.S. average is slightly higher because of the availability of public transportation systems in New York and other large cities. In Appalachia, private vehicles are often the only means of transportation.

Table 9

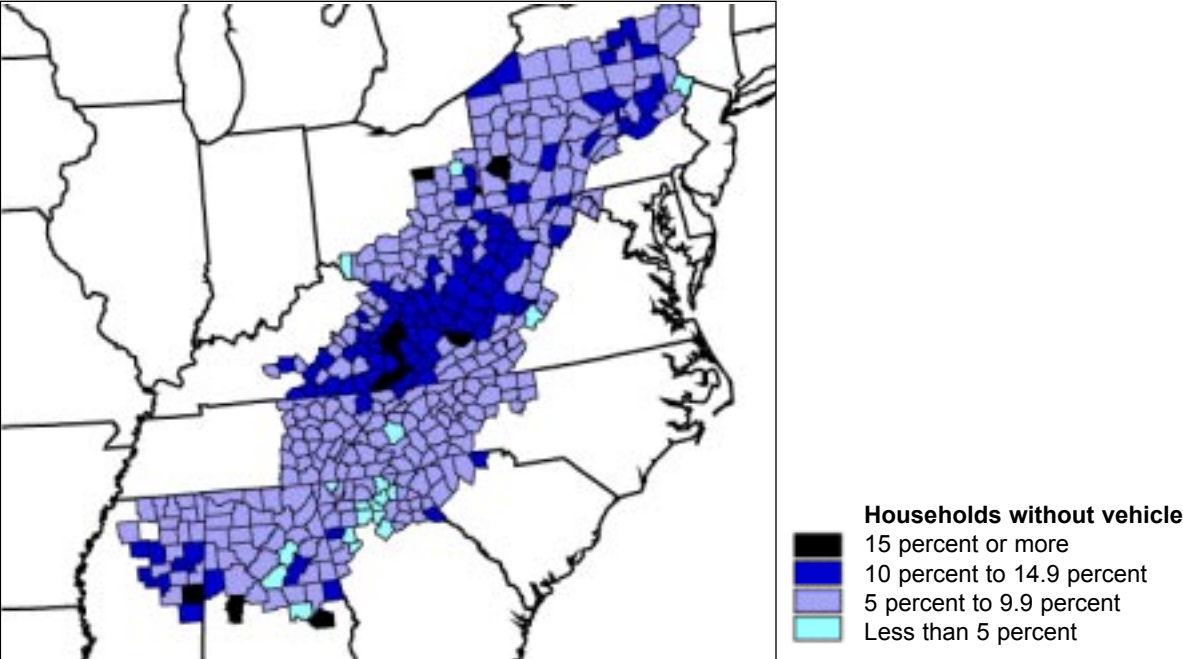
Trends in Housing Units Without Access to a Vehicle in the United States and Appalachia, 1990 to 2000

Area	1990		2000		Percent change in homes without cars
	Housing units with no cars (thousands)	Percent	Housing units with no cars (thousands)	Percent	
U.S.	10,602	11.5	10,861	10.3	2.4
Non-Appalachian U.S.	9,717	11.6	10,063	10.4	3.6
Metropolitan areas	8,399	12.2	8,776	11.1	4.5
Nonmetropolitan areas	1,318	8.6	1,287	7.4	-2.4
Appalachia	885	11.1	798	8.9	-9.8
Metropolitan areas	521	11.3	467	8.9	-10.5
Nonmetropolitan areas	364	10.9	332	8.8	-8.8
Distressed	138	14.0	120	11.0	-12.8
Attainment	145	13.5	130	10.4	-10.4
Competitive	55	7.0	56	6.6	1.3
Transitional	547	10.6	492	8.5	-10.0
North	479	12.7	413	10.4	-13.8
South	307	9.0	295	7.1	-3.8
Central	99	13.1	90	10.5	-9.1

Source: Population Reference Bureau, analysis of data from the 1990 and 2000 Censuses.

The proportion of households without access to a vehicle is highest in Appalachia’s Distressed areas (see Map 6). This area includes many of the same counties with long travel times to work, high poverty rates, and high unemployment rates. Overall, about 11 percent of households in Appalachia’s Distressed counties do not have access to private vehicles, compared with 10 percent in the northern region and only 7 percent in the southern region. The ARC county with the highest proportion of households without a vehicle is Holmes County, Ohio (31 percent), which is home to a large Amish community.

Map 6
Percent of Households Without a Vehicle in Appalachia, 2000



Source: U.S. Census Bureau, 2000 Census.

Telephone Availability

Telephone access is also critically important to low-income families because it can put people in contact with family members, potential job opportunities, and social networks. A report from the Annie E. Casey Foundation found that low-income households were much more likely to be without telephones than higher-income households.⁴⁶ The lack of telephone access in some areas can also complicate efforts to provide social and medical services to needy families.

Between 1990 and 2000, there was widespread improvement in telephone access in homes in Appalachia and across the United States.⁴⁷ Overall, the number of housing units without a phone has dropped from 569,000 in 1990 to 296,000 in 2000—a 48 percent decrease (see Table 10). In 1990, about 7 percent of Appalachian housing units—and 15 percent of units in Distressed areas—did not have access to a phone. By 2000, only 3 percent of occupied housing units in Appalachia—and 7 percent in Distressed areas—did not have a telephone. Nationwide, the share of homes without a phone fell from 5 percent to 2 percent during the 1990s.

In 2000, Holmes County, Ohio, had the highest percentage of homes without a telephone (28 percent). Other counties with high proportions of homes without phones included Clay County, Kentucky (18 percent), Lee County, Kentucky (15 percent), and Noxubee County, Mississippi (14 percent). In 1990, there were 221 counties in Appalachia—more than half of all counties in the region—where at least 10 percent of homes lacked telephone access. In 2000, there were only 23 counties in Appalachia that exceeded this threshold.

Table 10
Trends in Housing Units Without Access to a Telephone in the United States and Appalachia, 1990 to 2000

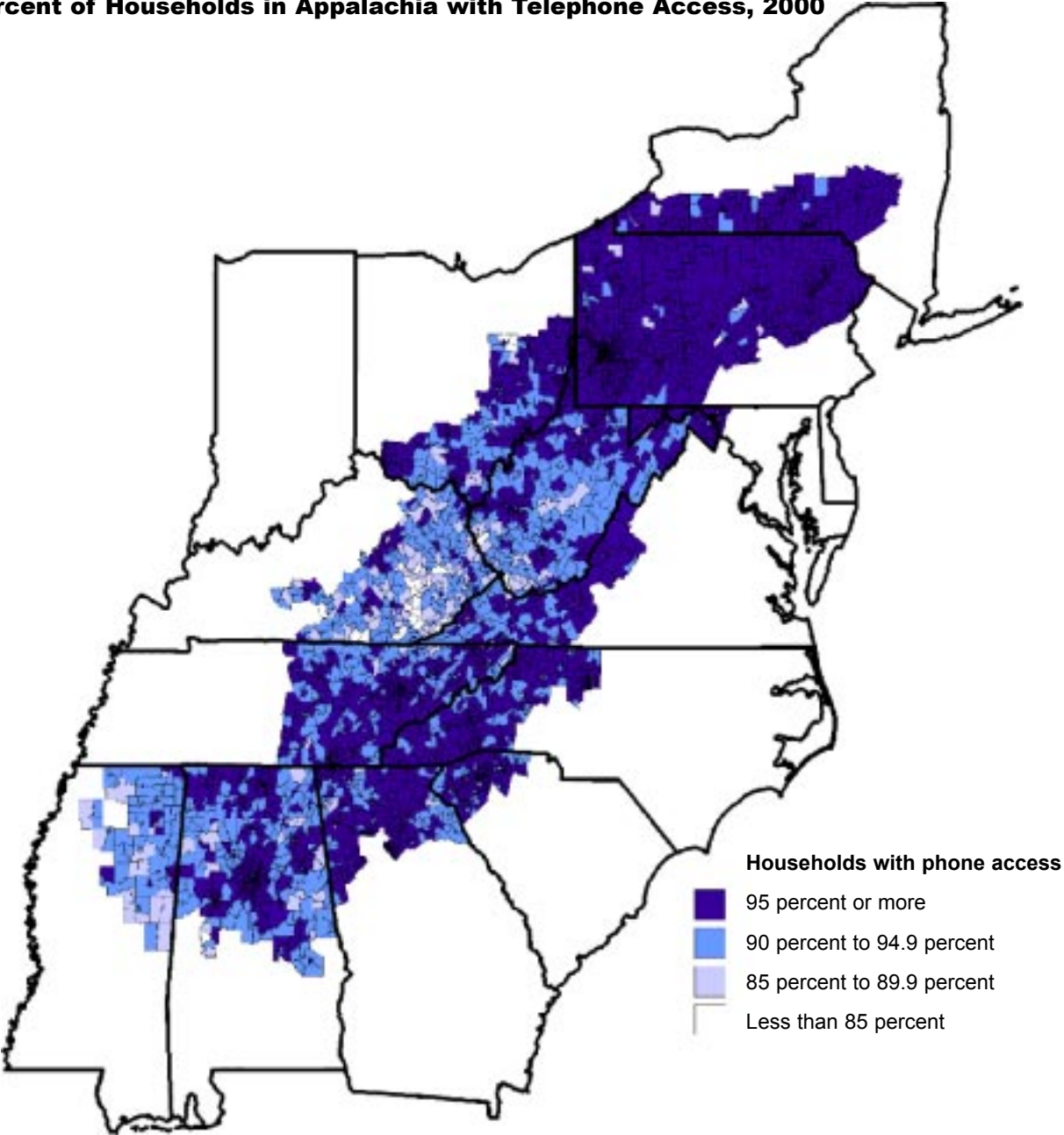
Area	1990		2000		Percent change in homes without access to phone
	Housing units with no phones (thousands)	Percent	Housing units with no phones (thousands)	Percent	
U.S.	4,817	5.2	2,571	2.4	-46.6
Non-Appalachian U.S.	4,249	5.1	2,275	2.4	-46.5
Metropolitan areas	2,942	4.3	1,560	2.0	-47.0
Nonmetropolitan areas	1,307	8.6	715	4.1	-45.3
Appalachia	569	7.2	296	3.3	-48.0
Metropolitan Appalachia	232	5.0	117	2.3	-49.3
Nonmetropolitan Appalachia	337	10.2	178	4.7	-47.1
Distressed	146	14.8	75	6.9	-48.4
Attainment	35	3.2	18	1.4	-49.1
Competitive	40	5.7	20	2.4	-48.9
Transitional	348	6.7	183	3.1	-47.6
North	179	4.7	90	2.2	-49.9
South	279	8.2	149	3.6	-46.6
Central	111	14.7	57	6.7	-48.3

Source: Population Reference Bureau, analysis of data from the 1990 and 2000 Censuses.

These census data do not indicate whether households lack telephone service because families cannot afford to pay the monthly phone bill, or because phone services are simply not available in their communities. Map 7 highlights census tracts in Appalachia with low rates of telephone access. Unusually low coverage rates in a community (e.g., less than 85 percent) may indicate that phone services are not available to all residents.

Map 7

Percent of Households in Appalachia with Telephone Access, 2000



Source: U.S. Census Bureau, 2000 Census.

CONCLUSION

For many families in Appalachia, the 1990s brought higher incomes, greater self-reliance, better housing conditions, and brighter economic futures. However, the long commutes in economically distressed areas in Appalachia indicate that many families in rural areas face challenges in their efforts to build economic security. Hundreds of thousands of households in Appalachia have been removed from the welfare rolls, but there are not enough job opportunities in local areas to absorb the demand. At the same time, the high cost of housing in areas of job growth prevents many families from moving outside the Appalachian region. These factors have contributed to a growing spatial mismatch between the places that poor and low-income families live and work, with possible negative effects on the time that parents spend with children, the potential earnings of low-income workers, and the social and familial bonds in rural areas.

Housing conditions have improved dramatically in Appalachia, but the growing number of mobile and vacant homes point to persistent economic problems—particularly in Appalachia’s central region. For many measures of housing quality, including plumbing adequacy, vacancy rates, home values, and access to vehicles and telephones, Appalachia continues to lag behind the rest of the United States. Housing quality is worse for households headed by blacks and Hispanics, and overcrowding is becoming a serious problem for the region’s growing Hispanic population. In addition, none of the risk factors covered in this report—housing costs, housing quality, overcrowding, affordability, or isolation—are mutually exclusive. Many households experience multiple problems that contribute to economic hardship and lower standards of living in the region. Renters are at particular risk because of their lower incomes.⁴⁸

What are the potential solutions to these problems? In inner cities, efforts have focused on providing work supports (public transportation, child care, job training) to link people to areas of job growth in the suburbs.⁴⁹ However, these types of supports are more difficult to implement in sparsely populated rural areas, and the lack of public transportation presents a major barrier for households without access to private vehicles. Promoting homeownership, by helping families build credit and secure loans, is another strategy used to strengthen families and build family assets in urban settings. However, high homeownership rates may be contributing to the economic isolation of households in Appalachia by discouraging the out-migration of low-income families.⁵⁰

Policy initiatives in Appalachia need to be place-based to target the specific needs of the people who live in this unique part of the country. Here are some of the specific steps that could be taken to improve the situation of families in the region:

1. Provide affordable rental housing for low-income families, especially minorities (to help low-income families move to areas closer to areas of job growth).
2. Provide affordable child care (to assist parents who travel long distances to work each day).
3. Assist families in building credit to help them secure vehicle loans.
4. Improve the quality of housing stock in the region by rehabilitating vacant homes.
5. Enact “lifeline” programs to provide telephone service to low-income families at discounted rates.⁵¹

More broadly, low-income families in Appalachia need better resources to help them make the transition from welfare to work. Program flexibility is needed to allow decisionmakers to implement and adapt policies for local communities. Although efforts may not have an immediate impact on housing conditions and commuting in the region, they can help low-income families build assets and secure the income they need to make decisions about where to live, work, and raise children.

Appendix 1:

Counties With the Longest Average Travel Times to Work, 2000

Rank	County	Travel Time to Work
1	Elliott County, Kentucky	48.7
2	Pike County, Pennsylvania	46.0
3	Mathews County, Virginia	45.8
4	Clay County, West Virginia	45.0
5	Park County, Colorado	44.8
6	Richmond County, New York	43.9
7	Kings County, New York	43.2
8	Bronx County, New York	43.0
9	Queens County, New York	42.2
9	San Jacinto County, Texas	42.2
11	Greene County, Mississippi	42.1
12	Amelia County, Virginia	41.5
13	Elbert County, Colorado	41.1
14	Matanuska-Susitna Borough, Alaska	40.7
15	Calhoun County, Illinois	40.4
16	Calvert County, Maryland	39.8
17	Hampshire County, West Virginia	39.7
18	Charles County, Maryland	39.3
19	Lincoln County, West Virginia	39.2
20	Paulding County, Georgia	39.1
20	Warren County, Virginia	39.1

Note: Counties in bold type are located in Appalachia.

Source: 2000 Census.

Appendix 2:

Counties With the Highest Proportion of People Traveling 90 Minutes or More to Work, 2000

Rank	County	Percent 90 Minutes or More
1	Pike County, Pennsylvania	18.7
2	Elliott County, Kentucky	16.9
3	Mathews County, Virginia	15.8
4	Magoffin County, Kentucky	14.4
5	Richmond County, New York	13.8
6	Westmoreland County, Virginia	13.1
7	Monroe County, Pennsylvania	13.0
8	San Jacinto County, Texas	12.2
9	Rains County, Texas	12.0
9	Greene County, Mississippi	12.0
11	Calhoun County, Illinois	11.9
11	Vinton County, Ohio	11.9
13	Adams County, Ohio	11.8
14	Lee County, Kentucky	11.4
15	Clay County, West Virginia	11.1
15	Culpeper County, Virginia	11.1
15	La Salle County, Texas	11.1
18	Page County, Virginia	10.9
19	Elk County, Kansas	10.8
19	Perquimans County, North Carolina	10.8
21	Washington County, Missouri	10.6
22	Kitsap County, Washington	10.5
23	Catahoula Parish, Louisiana	10.4
23	Robertson County, Kentucky	10.4
25	Breathitt County, Kentucky	10.3
25	Henderson County, Texas	10.3
27	La Salle Parish, Louisiana	10.2
28	Newton County, Texas	10.1
28	Matanuska-Susitna Borough, Alaska	10.1
30	Morgan County, Kentucky	10.0

Note: Counties in bold type are located in Appalachia.

Source: 2000 Census.

Appendix 3:

Counties With Long Travel Times to Work and High Poverty Rates, 2000

Rank	County	Average Travel Time to Work	Poverty Rate
1	Elliott County, Kentucky	48.7	20.6
2	Clay County, West Virginia	45.0	21.6
3	Kings County, New York	43.2	20.0
4	Bronx County, New York	43.0	23.5
5	Lincoln County, West Virginia	39.2	21.8
6	Magoffin County, Kentucky	38.5	26.8
7	Catahoula Parish, Louisiana	38.3	22.0
8	Calhoun County, West Virginia	38.0	20.0
9	Jefferson Davis County, Mississippi	37.2	22.0
10	Lowndes County, Alabama	36.3	23.9
11	Hancock County, Georgia	36.2	22.7
12	Menifee County, Kentucky	36.1	22.8
13	Lawrence County, Kentucky	36.0	23.5
14	St. Helena Parish, Louisiana	35.7	21.2
15	Lewis County, Kentucky	35.7	22.2
16	Lee County, Kentucky	35.4	23.3
17	Wyoming County, West Virginia	35.3	20.1
18	Mora County, New Mexico	35.1	20.2
19	Jackson County, Kentucky	35.0	23.2
20	Estill County, Kentucky	34.9	20.9
21	Wilkinson County, Mississippi	34.1	27.4
22	Wolfe County, Kentucky	33.8	26.4
23	Perry County, Alabama	33.7	26.1
24	Breathitt County, Kentucky	33.6	24.9
25	Leslie County, Kentucky	33.5	24.6
26	Kemper County, Mississippi	33.5	20.6
27	Morgan County, Kentucky	33.2	21.4
28	Jefferson County, Mississippi	33.0	26.5
29	Bienville Parish, Louisiana	32.9	20.7
30	Evangeline Parish, Louisiana	32.7	24.4
31	Hancock County, Tennessee	32.7	22.7
32	Walthall County, Mississippi	32.6	21.7
33	McDowell County, West Virginia	32.6	27.4
34	Franklin Parish, Louisiana	32.5	22.1
35	Grundy County, Tennessee	32.2	20.5
36	Avoyelles Parish, Louisiana	31.8	20.6
37	Williamsburg County, South Carolina	31.5	21.8
38	Webster County, West Virginia	31.5	24.1
39	Wilcox County, Alabama	31.3	28.5
40	Clay County, Kentucky	31.2	28.4
41	Red River Parish, Louisiana	31.0	23.0
42	Wayne County, Mississippi	30.8	20.2
43	Claiborne County, Mississippi	30.7	24.5
44	Tallahatchie County, Mississippi	30.5	24.4
45	Gilmer County, West Virginia	30.2	20.6
46	De Soto Parish, Louisiana	30.1	20.0

Note: Counties in bold type are located in Appalachia.
Source: 2000 Census.

Appendix 4:

Counties With Biggest Increases in Average Travel Time to Work, 1990 to 2000

Rank	County	Change in Average Travel Time
1	Pike County, Pennsylvania	18.5
2	Golden Valley County, Montana	15.5
3	Calhoun County, West Virginia	14.4
3	Clay County, West Virginia	14.4
5	La Salle Parish, Louisiana	13.6
6	Perry County, Alabama	13.0
7	Mathews County, Virginia	12.9
7	Elliott County, Kentucky	12.9
9	Monroe County, Pennsylvania	12.6
10	Morgan County, Ohio	12.5
11	Sterling County, Texas	12.0
12	Catahoula Parish, Louisiana	11.7
12	Roberts County, Texas	11.7
12	Roger Mills County, Oklahoma	11.7
12	Wheeler County, Oregon	11.7
16	Choctaw County, Alabama	11.6
16	hackelford County, Texas	11.6
18	Westmoreland County, Virginia	11.5
19	Wayne County, Missouri	11.4
19	Franklin Parish, Louisiana	11.4
19	Catron County, New Mexico	11.4
20	Pocahontas County, West Virginia	11.3

Note: Counties in bold type are located in Appalachia.

Source: 1990 Census and 2000 Census.

References and Notes

¹ The Appalachian region is made up of 410 counties identified by the Appalachian Regional Commission (ARC). The region covers all of West Virginia, as well as southern New York; most of Pennsylvania; southeastern Ohio; the western portions of Maryland, Virginia, and the Carolinas; the eastern portions of Tennessee and Kentucky; the northern portions of Georgia and Alabama; and northeastern Mississippi.

² As defined by the ARC, the Appalachian region is divided into three major subregions. Northern Appalachia contains every Appalachian county in New York, Pennsylvania, Maryland, and Ohio, as well as 46 of West Virginia's 55 counties. Central Appalachia includes West Virginia's nine southernmost counties, all of Appalachian Kentucky, the southwestern tip of Virginia, and the northwest part of Tennessee. Finally, southern Appalachia includes most of the Appalachian portion of Virginia and Tennessee, as well as the entire Appalachian sections of the Carolinas, Georgia, Alabama, and Mississippi.

³ Counties in metropolitan and nonmetropolitan areas are categorized based on 1999 definitions from the U.S. Office of Management and Budget.

⁴ The Appalachian Regional Commission has developed a system that classifies Appalachian counties based on four categories of economic development (Distressed, Transitional, Competitive, and Attainment). Each of these categories is based on three indicators of economic viability: per capita income, poverty, and unemployment. In this report, the main focus is on Appalachia's central region, where most of the area's Distressed counties are located.

⁵ James Mikesell and George Wallace, "Unique Housing Challenges Face Rural America and Its Low-Income Workers," *Rural Conditions and Trends* 11, no. 2: 75-79, accessed online at [www.ers.usda.gov/ Publications/RCAT/Rcat112/rcat1121.pdf](http://www.ers.usda.gov/Publications/RCAT/Rcat112/rcat1121.pdf), on Oct. 1, 2003.

⁶ PRB analysis of data from the 2000 Census.

⁷ Racial and ethnic categories used in this analysis include non-Hispanic, white (alone); black or African American (alone); and Hispanic. People of Hispanic origin may be of any race. Data for other racial groups are not considered because of their small numbers in the Appalachian region.

⁸ Nicolas P. Retsinas and Eric S. Belsky, ed., *Low-Income Homeownership: Examining the Unexamined Goal* (Washington, DC: Brookings Institution Press, 2002), accessed online at www.brookings.org/dybdocroot/savingsforthe poor/low_income_homeownership.htm, on Sept. 23, 2002.

⁹ Sandra Fleishman, "2nd-Quarter Foreclosure Rates Highest in 30 Years," *The Washington Post*, Sept. 14, 2002.

¹⁰ Public Law 87-181, § 2.

¹¹ Housing Assistance Council, "Housing Problems in Central Appalachia," accessed online at www.ruralhome.org/pubs/infoshts/appalachia.htm, on Oct. 5, 2003.

¹² Complete plumbing facilities include hot and cold piped water, a flush toilet, and a bathtub or shower. All three facilities must be located inside the house, apartment, or mobile home, but not necessarily in the same room. Housing units are classified as lacking complete plumbing facilities when any one of the three facilities is not present.

¹³ C. Theodore Koebel, "A Profile of Manufactured Housing in Virginia," in *Perceptions of Manufactured Housing in Virginia*, Julia O. Beamish and Rosemary Carucci Goss, ed., (Blacksburg, VA: College of Human Resources and Education, Virginia Tech, December 2000): 2.

¹⁴ PRB analysis of data from the 2000 Census.

- ¹⁵ Suzanne Minichillo Farmer, "Observations and Recommendations for Distressed Appalachian Counties: A Discussion of Children, Education, and Families in Hancock County, Tennessee and Owsley County, Kentucky," accessed online at: www.uky.edu/RGS/AppalCenter/instruction/courses/g600/g600—Minichillo-Farmer.pdf, on Dec. 22, 2003.
- ¹⁶ Housing Assistance Council, "Rural Rental Housing Supply," accessed online at www.ruralhome.org/pubs/hsganalysis/snrh/rental/supply.htm, on Oct. 1, 2003.
- ¹⁷ Leslie A. Whitener, "Housing Poverty in Rural Areas Greater for Racial and Ethnic Minorities," *Rural America* 15, no. 2 (May 2000).
- ¹⁸ For each unit, rooms include living rooms, dining rooms, kitchens, bedrooms, finished recreation rooms, enclosed porches suitable for year-round use, and lodgers' rooms.
- ¹⁹ PRB analysis of data from the 2000 Census.
- ²⁰ Dorie Turner, "The Changing South," *Chattanooga Times Free Press*, Aug. 17, 2003.
- ²¹ PRB analysis of data from the 2000 Census.
- ²² This measure does not use the same definition of severely inadequate homes as that of the American Housing Survey, which defines a home as having severe physical problems based on any serious problems with plumbing, heating, electricity, upkeep, or hallways.
- ²³ Koebel, "A Profile of Manufactured Housing in America": 2
- ²⁴ Housing Assistance Council, "Why Housing Matters: HAC's 2000 Report on the State of the Nation's Rural Housing," accessed online at www.ruralhome.org/pubs/hsganalysis/SNRH/why/whyhousingmatters.pdf, on Oct. 1, 2003.
- ²⁵ U.S. Census Bureau, Summary File 3, H76, "Median Value (Dollars) for Specified Owner-Occupied Housing Units," and H82, "Median Value (Dollars) for Mobile Homes," accessed online at <http://factfinder.census.gov>, on Oct. 5, 2003.
- ²⁶ Kimberly Vermeer and Josephine Louie, *The Future of Manufactured Housing* (Cambridge, MA: Joint Center for Housing Studies, Harvard University, 1997): 25.
- ²⁷ Housing Assistance Council, *Taking Stock of Rural People, Poverty, and Housing for the 21st Century: Central Appalachia*, accessed online at www.ruralhome.org/pubs/hsganalysis/ts2000/index.htm, on Oct. 2, 2003.
- ²⁸ AARP, *National Survey of Mobile Home Owners* (Washington, DC: AARP, 1999).
- ²⁹ Roger Alford, "Town Welcomes Mobile Homes; Even City Hall Is in One: Manufactured Housing Popular in Eastern Ky.," *The Associated Press*, June 8, 2002.
- ³⁰ Vacant units identified by the Census Bureau are subdivided into categories, including those for rent, for sale, for seasonal use, for migrant workers, and other vacant units. In this report, vacant homes intended for seasonal use are excluded.
- ³¹ Mark Ferenchik, "Looking for Leaders: Isolated W.Va. County Battles a Legacy of Neglect, Shame," *The Columbus Dispatch*, Sept. 30, 1999.
- ³² Robert W. Burchell et al., *Costs of Sprawl-2000* (Washington, DC: National Academy Press, 2002), accessed online at http://gulliver.trb.org/publications/tcrp/tcrp_rpt_74-c.pdf, on July 1, 2003.

- ³³ Robert Putnam, *Bowling Alone: The Collapse and Revival of American Community* (New York: Simon & Schuster, 2000).
- ³⁴ Glenn V. Fuguitt et al., "Recent Population Trends in Nonmetropolitan Cities and Villages: From the Turnaround, Through Reversal to the Rebound," Working Paper no. 97-12 (Madison, WI: Center for Demography and Ecology, University of Wisconsin, 1997).
- ³⁵ John Kain, "Housing Segregation, Negro Employment, and Metropolitan Decentralization," *Quarterly Journal of Economics* 82 (1968): 175-97.
- ³⁶ The spatial mismatch of jobs and residences in rural areas is also discussed in Monica G. Fisher and Bruce A. Weber, *The Importance of Place in Welfare Reform: Common Challenges for Central Cities and Remote-Rural Areas* (Washington, DC: The Brookings Institution Center on Urban and Metropolitan Policy and the Rural Policy Research Institute, June 2002).
- ³⁷ Fisher and Weber, *The Importance of Place in Welfare Reform*.
- ³⁸ U.S. Department of Health and Human Services, Administration for Children and Families, accessed online at www.acf.hhs.gov/news/stats/aug-dec.htm on Dec. 22, 2003.
- ³⁹ Robert A. Moffitt, "From Welfare to Work: What the Evidence Shows," Welfare Reform and Beyond Policy Brief no. 13, accessed online at www.brookings.org/es/research/projects/wrb/publications/pb/pb13.htm, on July 1, 2003.
- ⁴⁰ Cynthia Rogers and Brian Cushing, "Socio-Economic Review of Appalachia: The Appalachian Labor Force," paper commissioned by the Appalachian Regional Commission (1996).
- ⁴¹ PRB analysis of the Census Bureau's *County Business Patterns* data for 1990 and 2000.
- ⁴² Data on housing costs as a percentage of income exclude households reporting no income or a net loss in 1999.
- ⁴³ PRB analysis of data from the 2000 Census.
- ⁴⁴ Data on the mean value of owner-occupied homes include only one-family houses on less than 10 acres without a business or medical office on the property.
- ⁴⁵ Annie E. Casey Foundation, *2003 KIDS COUNT Data Book* (Baltimore: Annie E. Casey Foundation, 2003): 12.
- ⁴⁶ William O'Hare, "Disconnected Kids: Children Without a Phone at Home," *KIDS COUNT Snapshot* (September 2001), accessed online at www.aecf.org/kidscount/snapshot.pdf, on Oct. 2, 2003.
- ⁴⁷ The 1990 census question asked about the presence of a telephone in the home. In the 2000 census question, however, just having a telephone was not enough. The focus instead was on the presence of telephone service in the home-service through which occupants could make and receive calls.
- ⁴⁸ Housing Assistance Council, "Rental Housing in Rural America," accessed online at www.ruralhome.org/pubs/infoshts/RuralRental.pdf, on Oct. 4, 2003.
- ⁴⁹ Fisher and Weber, *The Importance of Place in Welfare Reform*.
- ⁵⁰ C. Theodore Koebel and Patricia Rennecker, "Socioeconomic and Housing Trends in Central Appalachia," paper prepared for the Appalachian Housing Summit, Mountain Lake, Va., April 25, 2002, accessed online at www.arch.vt.edu/caus/research/vchr/pdfreports/AppalachiaReport.pdf, on Oct. 5, 2003.
- ⁵¹ See O'Hare, "Disconnected Kids: Children Without a Phone at Home."