Nonmetropolitan Outmigration Counties

Some Are Poor, Many Are Prosperous

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Nonmetropolitan Outmigration Counties: Some Are Poor, Many Are Prosperous

David McGranahan, dmcg@ers.usda.gov
John Cromartie, jbc@ers.usda.gov
Timothy Wojan, twojan@ers.usda.gov

Abstract

Population loss through net outmigration is endemic to many rural areas. Over a third of nonmetro counties lost at least 10 percent of their population through net outmigration over 1988-2008. Some of these counties have had very high poverty rates, substantial loss in manufacturing jobs, and high unemployment. Lack of economic opportunity was likely a major factor in their high outmigration. Most high net outmigration counties, however, are relatively prosperous, with low unemployment rates, low high school dropout rates, and average household incomes. For these counties, low population density and less appealing landscapes distinguish them from other nonmetro counties. Both types of outmigration counties stand out on two measures, indicating that quality-of-life factors inhibit inmigration: a lack of retirees moving in and local manufacturers citing the area's unattractiveness as a problem in recruiting managers and professionals.

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Summary

What Is the Issue?

Population loss is a longstanding concern among rural development practitioners. Nearly half of today's nonmetropolitan counties lost population through net outmigration over the past 20 years; for over 700 counties, this loss has exceeded 10 percent. Population loss tends to increase tax burdens, reduce property values, and reduce both the demand for and supply of local goods and services. Rural outmigration is also troublesome because it is highly concentrated among young adults, especially those possessing or acquiring education and skills. But what makes outmigration counties different from nonmetro counties that gained from migration or at least had a more manageable loss over the past 20 years?

This report identifies 733 nonmetro counties with an estimated net loss in population due to net outmigration of over 10 percent between 1988 and 2008, and compares their characteristics with other nonmetro counties.

What Did the Study Find?

Outmigration counties fall into two distinct types with very different sets of characteristics. One type, with poverty rates exceeding 25 percent in 1999, is clearly hampered by a lack of economic opportunities. High school completion rates are low, poverty rates average over 30 percent, and unemployment rates are chronically high in these high-poverty outmigration counties. The other set of counties, however, is generally prosperous. Overall, these counties have higher educational attainment and lower unemployment than rural counties without high outmigration. These counties tend to be remote, thinly settled, and lacking in scenic appeal for prospective residents or tourists. Quality-of-life considerations appear to be a main drawback for these (low-poverty outmigration) counties.

Age cohort migration. In general, young adults leave rural areas to attend college, serve in the military, or see the world. Rural areas gain population through the inmigration of young families, midlife career changers, and retirees. Outmigration counties tend to have greater net outflow of young adults than other nonmetro counties, losing, on average, the equivalent of over 6 percent of their population this way in 1990-2000. During this period, the low-poverty outmigration counties regained about 1 percent of their population through the net inflow of young families, but had little gain or loss among older cohorts. High-poverty outmigration counties lost young families, probably due to a lack of economic opportunity, but they, too, had little gain or loss among older cohorts. Most of the young adults moving into outmigration counties appear to be return migrants and related family members, with social ties a major draw.

County characteristics. Outmigration counties with high poverty share some characteristics with low-poverty outmigration counties. Both groups tend to have less manufacturing than other nonmetro counties, and both are rarely classified as recreation counties. Otherwise, differences are more striking than similarities. Outmigration counties with high poverty tend to have working-age populations with low rates of high school completion, very high

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unemployment, low rates of self-employment, and other conditions reflecting socioeconomic hardship. Outmigration counties with less poverty, however, have working-age populations with higher educational attainment than other nonmetro counties and higher employment rates. These counties are disadvantaged by their remoteness and low population density, their lack of forest cover, and lack of public land. Most low-poverty outmigration counties are in the lowest third of all nonmetro counties in landscape appeal. Thus, although favored by the level of human resources, these counties have difficulties attracting industries or people without long-term ties to the area.

Local problems facing manufacturers. A 1996 ERS survey asked manufacturers about local factors impeding their competitiveness, and the results show why manufacturers (and other employers) have avoided outmigration counties. In high-poverty outmigration counties, the factor most often cited as a major problem, by 41 percent of local manufacturers, was the quality of local schools. Area attractiveness to managers and professionals was reported as a major problem by 28 percent of manufacturers in these counties, and 8 out of 10 of these manufacturers also reported the quality of schools as a major problem. In the low-poverty outmigration counties, only 8 percent cited the quality of local schools as a problem. Nonetheless, 25 percent of the manufacturers reported the unattractiveness of the area to managers and professionals as a major problem. In these counties, the problem appears to stem from their remoteness, small population size, and lack of landscape amenities. In addition, population loss itself may create an unattractive physical environment, characterized by empty commercial and residential buildings or public property with insufficient upkeep. Localities unattractive to manufacturing managers and professionals are likely unattractive to talented business owners and professionals in general.

How Was the Study Conducted?

ERS used annual estimates of net migration from the U.S. Census Bureau to identify nonmetro counties that lost 10 percent or more of their population through net outmigration. Statistical comparisons were made across a range of geographic, demographic, and socioeconomic indicators to determine what characteristics distinguish these counties from other nonmetro counties. Data from a variety of sources were used, including the 2000 Census of Population, the Bureau of Labor Local Area Unemployment System files, and the ERS Rural Manufacturing Survey.

Introduction

Population loss through net outmigration has long been a fact of life in many rural areas. Over a third of nonmetropolitan (nonmetro) counties lost over 10 percent of their population through net outmigration between 1988 and 2008 (fig. 1).[1] This includes most counties in the Great Plains and many in the Midwestern Corn Belt, as well as significant clusters in southern Appalachia, the Mississippi Delta, Alabama's "Black Belt," the southern Rio Grande Valley, and a scattering of counties in the West, some of them former mining counties. A few counties experience short-term periods of high outmigration, when industries shut down or during natural disasters, for instance. But in the vast majority of cases, high net outmigration is a chronic condition. Many if not most of these counties have been losing population for over half a century.

Rural development programs that promote entrepreneurship and stimulate business recruitment attempt to counter job losses that contribute to high outmigration, while infrastructure and housing programs can help communities adjust to changing demographic realities. In targeting assitance, however, Federal programs rely largely on traditional measures of local distress, such as unemployment and low income. rather than outmigration or population loss. USDA Rural Development funds tend to target outmigration counties only indirectly, through use of population size or density criteria in deter-

[1]In this report, rural areas are defined using counties classified as nonmetropolitan by the Office of Management and Budget (see glossary).

Figure 1

Nonmetro counties with net outmigration of 10 percent or more, 1988-2008, by poverty rate, 1999
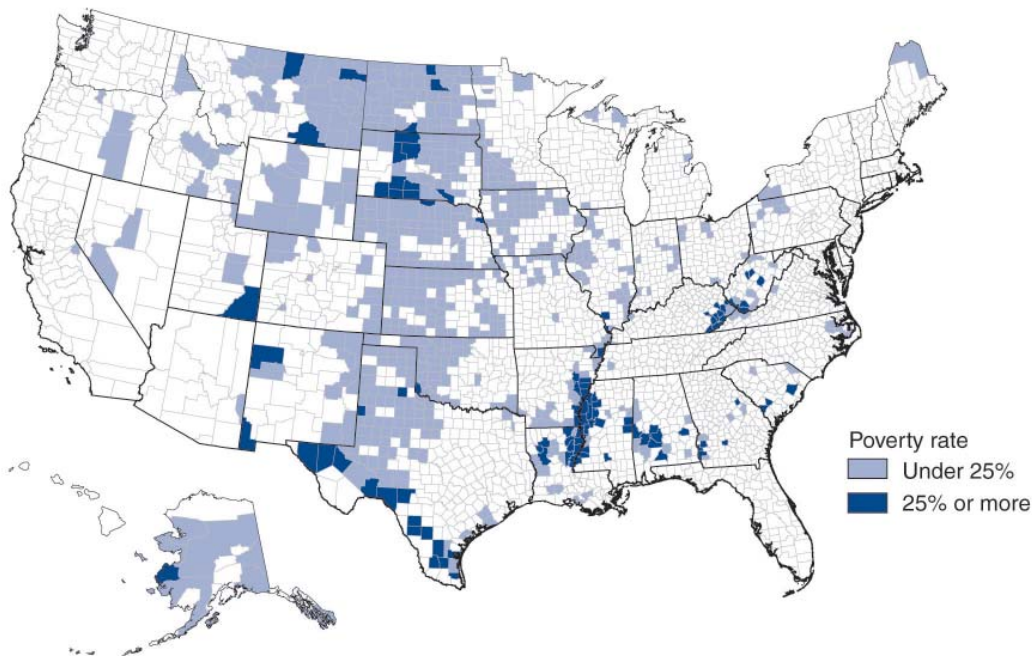
Poverty rate
- Under 25%
- 25% or more

Note: In this report, rural areas are defined using counties classified as nonmetropolitan by the Office of Management and budget (see glossary).
Source: USDA, Economic Research Service based on Bureau of the Census migration estimates and, for poverty, 2000 Census data SF3 data files.

mining program eligibility. Only a few Federal programs include explicit measures of population loss to target assistance funds,

Recent efforts have begun to emphasize the unique conditions and needs of rural outmigration counties. The 2002 Farm Act established the Northern Great Plains Regional Authority to spur economic development in rural communities suffering population loss. More recently, members of Congress representing Great Plains States have proposed a New Homestead Act that combines financial support for new residents in high outmigration areas with tax incentives meant to expand business and job opportunities.

All things being equal, people tend to "vote with their feet," leaving areas that are weak economically or that lack prized amenities. Residents typically view population loss as a strong indicator of distress because it tends to increase tax burdens, reduce property values, and reduce both the demand for and supply of local goods and services. Rural outmigration is highly concentrated among young adults, especially those possessing or acquiring education and skills. While some analysts argue that chronic population loss reflects healthy adjustment to both technological change in resource-based industries and the growing economic power of urban agglomerations, others sense that rural communities do not have the knowledge, organization, or financial resources to deal effectively with the broader forces affecting their livelihoods. But what makes "outmigration" counties different from other nonmetro counties, the ones that gained from migration or at least had a more manageable loss over the past 20 years?

For this study, we define "outmigration" counties as those that lost at least 10 percent of their population due to net outmigration between 1988 and 2008. Using the 2003 definition of nonmetropolitan (nonmetro) areas, 733 or over a third of all nonmetro counties fall into the outmigration category.[2]

[2]The use of a 1988 delineation of metropolitan and nonmetropolitan counties would have been more logical on statistical grounds if we were primarily interested in calculating factors leading to high outmigration. This report, however, focuses on what makes current nonmetro high outmigration counties different from other nonmetro counties. We focus on characteristics in 2000, roughly midway in the 20-year migration period. Some characteristics may be symptomatic of high outmigration rather than a cause.

Background

Rural population loss has historically been ascribed to weather conditions for crops (primarily drought-related) and changes in farm structure (Fuguitt and Beale, 1978; Frisbie and Poston, 1978; Albrecht, 1993). McGranahan and Beale (2002) argue, however, that what distinguishes counties with population loss today is less the fortunes of agriculture than remoteness and the lack of natural amenities. Whereas weather and changes in farm technology were particularly important in earlier decades, amenities have become more relevant, especially since 1970 (Fuguitt, 1981; Heaton et al., 1981; Cromartie, 1998; Gutmann et al., 2005).

Embedded in these analyses is a chicken-egg question that has long confounded regional economics: does migration lead to changes in jobs or do changes in jobs lead to migration (Muth, 1971)? The question is critical from a policy perspective. Policies promoting job creation through business recruitment or entrepreneurship will falter if quality of life is the central issue, and programs targeting quality of life (to attract migrants) are futile if jobs will not follow. Research suggests that there is no single answer. Some nonmetro counties may be losing many more people than they attract because they lack economic opportunities and others because they lack residential appeal, and this may change over time.

Counties lose population in two ways: they may experience more deaths than births (natural decrease) or they may have more people moving out than moving in (net outmigration). Birth and death rates change slowly over time and exhibit little geographic variation. Net migration is more volatile, as people choose where to live in response to changes in local conditions and their stage in the life cycle (Clark, 1982; McHugh and Gober, 1992). This explains the greater focus on net migration in both research and policy spheres, and why we choose in this report to characterize counties based on net outmigration rather than overall population loss.

Historically, net outmigration has been the primary driver of rural population loss. At the peak of rural net outmigration in the 1950s and 1960s, natural decrease was quite rare. Fewer counties lost population because natural increase often exceeded net migration. Over time, as fertility rates declined and protracted outmigration aged the population (because most rural outmigrants are in their late teens or twenties), natural decrease emerged in hundreds of counties throughout the Midwest and Great Plains (Johnson, 1993). Concern over net outmigration may be heightened today because it is more commonly tied with an overall loss of population.

Age exerts a strong influence on the overall level of migration and the propensity to reside in larger or smaller places (Plane and Heins, 2003; Cromartie and Nelson, 2009; Plane and Jurjevich, 2009). Motivations for moving are quite different among young adults than among empty nesters or retirees. Population loss in rural America is heavily concentrated among those in their late teens and twenties, but outmigration declines and inmigration increases as people reach their late 20s and 30s. Plane and Jurjevich (2009) show that this shift in the direction of migration is driven not just by

suburbanization but by migration across the entire urban-rural spectrum, even toward sparsely settled counties outside metropolitan areas.

Understanding these age-related dynamics is important when considering migration-related economic development policy, because different quality-of-life factors attract different age groups. For instance, it may be more important to understand what makes rural communities attractive to older adults with families than to try to woo recent high school graduates (Gibbs and Cromartie, 1994). In addition, differences in preference among age groups are likely to be heightened by education (Whisler et al., 2008). More educated populations are more likely to migrate in the first place and to move longer distances when they do move (Artz, 2003). Recent research suggests that rural outmigration among college grads is increasing as knowledge-based economies provide higher returns to those with professional skills and creativity (Domina, 2006). High rates of high school graduation and college attendance characterize most high outmigration counties, suggesting that these age-related migration patterns are particularly salient to their economic prospects.

Poverty and High Net Outmigration

In general, one would expect poverty and high outmigration to be closely related. However, this relationship holds only at the very high end of the poverty range, above an apparent 25-percent threshold (fig. 2). On average, counties with poverty rates between 20 and 25 percent in 1999 were no more likely to be outmigration counties than counties with poverty rates below 10 percent—in both groups, about 35 percent of counties were classified as having high outmigration. At poverty rates above 25 percent, the proportion of outmigration counties is nearly double, 60 percent. Of the 107 "high-poverty" outmigration counties, some are in the Great Plains, including many with substantial Native American populations, but most are well outside this region—in Appalachia, in former plantation regions in the Southeast, and in Hispanic areas of Texas along but not necessarily on the border with Mexico (fig. 1).

The high poverty rates in these counties signal lack of economic opportunity. However, many counties with very low rates of poverty have also lost population through outmigration. Comparing high- and low-poverty outmigration counties with each other and with other nonmetro counties highlights the differing circumstances under which high net outmigration can arise.

Figure 2
Only counties with very high poverty rates have an above-average proportion with high outmigration

Percent with high outmigration
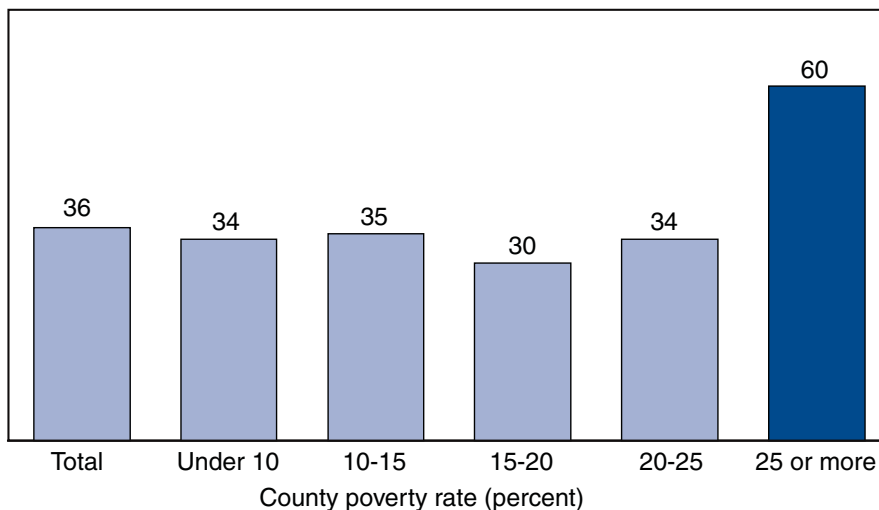
Source: ERS, based on U.S. Census of Population, 2000, SF3 files.

Who Leaves and Who Moves In?

Rural areas generally lose population as young adults leave to go to college, join the armed services, or see the larger world. These areas then tend to gain population through the inmigration of both families with children and retirees. In this section, we examine how high- and low-poverty outmigration counties may differ from this pattern. Since people seek different residential and economic environments over the life cycle, migration comparisons by age cohort indicate the particular weaknesses of outmigration counties in maintaining their populations.

Average population change, 1990-2000, due to migration in each age cohort is presented in figure 3 for both high- and low-poverty outmigration counties and the remainder of nonmetro counties (more recent data are not yet available). Although all three sets of counties show a substantial loss of young adults, their migration patterns are distinct. On average, the counties that did not have high outmigration gained the equivalent of 1.5 percent of their 1990 population through the net inmigration of children born during the course of the decade (age 0-9 in 2000) and another 1 percent through the inmigration of children age 0-4 in 1990 (10-14 in 2000). They lost about 2 percent of their population through the outmigration of those ages 20-29 in 2000. However, for each cohort between age 30 and age 64, these counties gained the equivalent of about 1 percent through net inmigration as families, midlife career changers, and retirees moved in. Overall, these nonmetro counties had an average gain of over 9 percent of their population over the decade.

The low-poverty outmigration counties also gained through the inmigration of children and lost through the outmigration of young adults, but the gain in children was considerably smaller and the loss of young adults greater. During 1990-2000, these counties lost the equivalent of over 6 percent of their population through the net outmigration of residents age 15-29 in 2000. These outmigration counties had a small gain in population age 30-39 in 2000, likely parents responsible for the gain in children.[3] For older adults, there was little net change in population due to migration. Overall, low-poverty outmigration counties had a net loss of about 6 percent of their population from net migration during 1990-2000, virtually all from the net outmigration of young adults.

While some of the outmigration of young adults may have stemmed from a lack of economic opportunities, it seems unlikely that this is severe, given the apparent net inmigration of young families. At the same time, the absence of any net inmigration by retirees, who are much more sensitive to quality-of-life considerations than economic opportunities, suggests that the low-poverty outmigration counties are less attractive as places to live than are other nonmetro counties.

The central difference between the high- and low-poverty outmigration counties is the net outmigration of young families and their children in the high-poverty counties, an indication of poor economic opportunities. These counties lost 1 percent of their population in 1990-2000 through the net outmigration of children age 0 to 14. At the same time, these counties are not attracting retirees. Overall, the high-poverty outmigration counties lost

[3]This gain in children and adults in their 30s was not apparent in another data set focusing on migration 1995-2000 and using a different methodology to estimate migration (See McGranahan et al., *Amber Waves*, Nov. 2010). One source of discrepancy may be that the *Amber Waves* study did not include migration to or from abroad, but the data are also from different time periods and based on different estimation methods.

Figure 3
Age-cohort migration, 1990-2000, relative to nonmetro county population, 1990

Average percen county population change due to migration
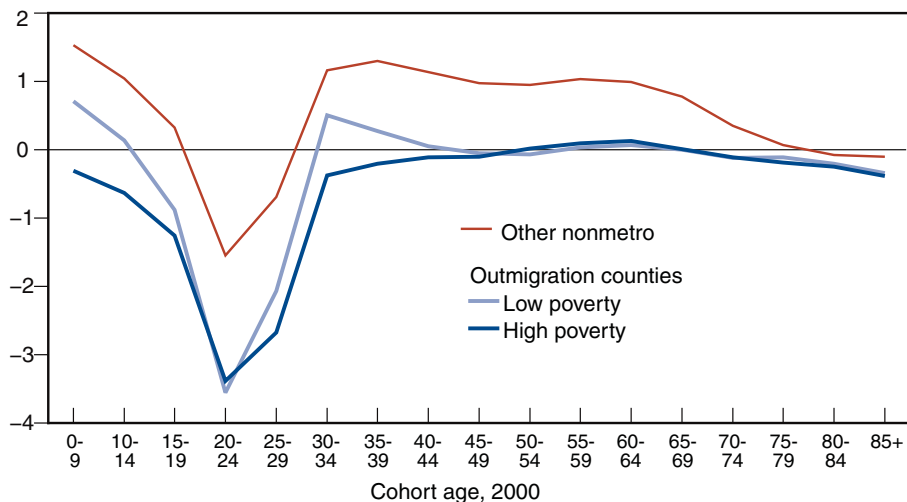
Source: ERS, based on estimates generated by Johnson et al., 2005.

an average of nearly 10 percent of their population between 1990 and 2000 because more people moved out than in.

This analysis of migration by age has focused on migration in the 1990s—a period of rapid national economic growth. Urban areas during this period grew through immigration from abroad, while rural areas as a whole had a net gain in population from internal migration as more people moved from urban to rural areas than in the other direction.

The 2000-2010 decade has been much more uncertain, even before the current recession started. While some net migration into rural areas may have occurred in the middle of the decade, net gains were not characteristic of the decade as a whole. Thus, the patterns of age cohort migration just depicted have not necessarily carried over to 2000-2010.

Return Migration

People often view the loss of young people right after high school as the critical migration issue facing rural America. For most communities, however, population growth and economic development depend less on retaining high school grads than on attracting newcomers or former residents back later in life (Cromartie and Gibbs, 1994). Return migration—usually defined as an individual moving back to a hometown or other previous place of residence—is a major component of inmigration to most U.S. counties. To more accurately gauge its importance to rural and small-town America, the definition may be broadened to include spouses, children, or others who are technically newcomers to a county but are moving as part of return migrant households (Cromartie and Stack, 1989). For the United States as a whole, just under 50 percent of 25- to 44-year-olds who migrated across county lines during 1995-2000 were part of return migration streams—reversing the paths taken by the same cohort 10 years earlier.[4] For nonmetro, high outmigration counties, well over 80 percent of migrants arrived as part of return migration streams.

[4] Return migration, whether defined narrowly or broadly, cannot be measured directly at the county level with existing census data. Here we report indirect estimates calculated by comparing outmigration streams at one time period with inmigration counterstreams at a later date—see box, "Measuring Return Migration."

Migrants returning to home communities tend to be in their late 20s to mid-30s, as they "settle down" to raise families and build careers based on education and experience gained elsewhere. Return migration may replenish human capital typically lost through the post-high-school exodus of young adults, shoring up the economic vitality of outmigration counties. The proposed Rural Homestead Act encourages residential relocation as a key feature of its economic development strategy. Similar strategies adopted in other countries, notably in Japan, and several Midwestern States are encouraging return migration by various means.[5]

As remoteness and other geographic disadvantages typical of outmigration counties increase, the overall rate of inmigration decreases. An analysis of outmigration streams of 15- to 34-year-olds during 1985-1990 compared with inmigration streams of 25- to 44-year-olds during 1995-2000 (the same cohorts 10 years older) shows this relationship. For every 100 migrants that left low-poverty outmigration counties during the late 1980s, only 51 inmigrants were counted 10 years later. For high-poverty outmigration counties,

[5]Iowa Governor Vilsack initiated a program to encourage ex-Iowans to come home: http://www.iowalifechanging.com/toolbox/downloads/iccprogramoverview.pdf; other programs include the Come Home to Kansas campaign (http://www.ktec.com/sec_press/coverage/kcstar_chtk.pdf) and South Dakota's Dakota Roots program (http://www.dakotaroots.com/about/).

Measuring Return Migration

Census data may be used to measure return migration at the State level but not at the county or community level. State-level return migration may be determined by comparing a person's current location with information on two previous locations provided by the Census: State of birth and residence 5 years prior. For example, data from the 2000 census could be used to estimate how many people were (1) born in Missouri, (2) lived in Chicago in 1995, and (3) lived in Branson, Missouri in 2000. We can count this as return migration to Missouri but not necessarily to Branson. Here we measure return migration for different types of nonmetro counties using an indirect method that does not depend on place-of-birth data. Instead, age-specific outmigration streams from county x to county y during one 5-year period (1985-1990) are compared with the matching counterstream from county y back to county x 10 years later (1995-2000).

From the earliest work on basic laws of migration, research shows that every major migration stream generates a counterstream. Large flows from point A to point B all but guarantee partially offsetting flows from point B to point A. Though not exclusively composed of returnees, counterstreams tend to be dominated by returnees together with newcomers who are moving as part of return migration households, most typically spouses and children of returnees. Analysis of counterstreams provides an untapped method for measuring the relative importance of return migration to different types of nonmetro counties, especially when measured for specific age cohorts to and from specific counties (or county groupings) over time. This analysis compares the migration of those age 15-34 in 1990 to those age 25-44 in 2000 (separately by 5-year age groups). To reduce the number of matched migration streams and counterstreams, counties within the same metropolitan or micropolitan areas were combined to create one inmigration or outmigration unit.

Regression analysis shows a strong correlation, as expected, between outmigration streams and their matched counterstreams 10 years later (the adjusted r-square was .44). The beta coefficient indicates that, on average, an additional 100 people in the 1985-90 outmigration stream was associated with an additional 64 migrants in the 1995-2000 counterstream. Residuals from the regression analysis were used to identify 1995-2000 counterstreams that were larger than expected (above .25 standard deviations of the mean) and thus were assumed to contain a larger proportion of newcomers than returnees. Counterstreams that were highly correlated or lower than expected were labeled as return migration streams.

Although we have conceptualized migration flows as discrete types, they obviously fall along a continuum between a complete lack of inflow at $t + 10$ despite an earlier outflow and an inflow despite a lack of outflow at t. There are no hard-and-fast rules guiding the selection of thresholds, and different thresholds yield different results on the relative proportion of return migration streams to a given county group. In general, a "large" positive residual indicates a counterstream flow likely dominated by newcomers, whereas a "large" negative residual implies a counterstream flow with a much higher proportion of returnees and related newcomers. For high outmigration counties, the percentage of migrants in return migration streams remains much higher than other nonmetro counties across different threshold selections.

Table 1

Migration patterns by county type for population age 25-44 in 2000

	Metro	Other nonmetro	Nonmetro High outmigration Low poverty	Nonmetro High outmigration High poverty
Outmigration, 1985-1990	13,880,445	2,966,450	912,339	169,915
Inmigration, 1995-2000	12,135,804	2,524,557	466,400	73,732
Ratio of inmigration to outmigration	0.87	0.85	0.51	0.43
Number in return migration streams, 1995-2000	4,567,262	1,668,827	397,125	65,012
Percent in return migration streams, 1995-2000	37.6	66.1	85.1	88.2

Note: Population was 15-34 years old when outmigration was measured in 1990. Return migration was estimated by comparing outmigration streams during 1985-90 with inmigration counterstreams during 1995-2000 by 5-year age groups (see box, "Measuring Return Migration").
Source: Economic Research Service, USDA, using data from the U.S. Census Bureau.

the ratio was even lower, 43 per 100 (table 1). In contrast, the ratio of late 1990s inmigrants to late 1980s outmigrants was well over 80 per 100 for both nonmetro counties not classed as outmigration and for metro counties.

Inmigration to any county consists of some mix of newcomers and returnees. As the overall rate of inmigration decreases with increasing geographic disadvantage, the ratio of returnees to newcomers increases. This is particularly true with the broadened concept of return migration used here—outmigration counties depend very heavily on return migrants and related household members for maintaining populations. Over 85 percent of 25- to 44-year-old inmigrants to outmigration counties were part of return migration counterstreams during 1995-2000, compared with 66 percent for other nonmetro areas.[6] The percentages were only marginally different between high-poverty and low-poverty outmigration counties (table 1). Migration streams dominated by newcomers were more typical of migration to metro counties, where less than 40 percent of inmigrants were identified as part of return migration counterstreams.

Survey studies are beginning to show what anecdotal evidence has indicated for years: return migrants and their families use their education, experience, and commitment to place to enhance the economic and social well-being of rural communities. Return migrants are attracted to many of the same features of rural areas as newcomers, such as a slower pace of life and access to outdoor activities. Most return migrants need employment and, like other migrants, often trade larger paychecks for quality-of-life gains. Return migrants differ in the strength of family-related factors motivating migration. These include relying on family support in times of economic stress, joining (or re-joining) family businesses, taking care of aging parents, raising children in safe, familiar environments with access to extended family members, and providing children good educational and sports opportunities (von Reichert and Arthun, 2009).

[6] The relative importance of return migrants is greater in outmigration counties because few others chose to move there. People who leave outmigration counties are less likely to return than people who leave other nonmetro counties. While we have a record of outmigration for 1985-1990 only and many could have left in later years, the ratio of return migration to the 1985-1990 outmigration is higher in other nonmetro counties (.56) than in low-poverty (.44) or high-poverty (.38) outmigration counties, suggesting that return migration occurs less often in the outmigration counties.

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Characterizing Outmigration Counties

In this section, we examine what makes outmigration counties (high- and low-poverty) different from other nonmetro counties—those with less loss from migration or actual gain. The comparisons cover a wide range of measures (table 2). Some are standard indicators used in socioeconomic comparisons (e.g., employment by industry, median household income, high school completion rates). Others are less traditional, including business start-ups and self-employment, creative class, landscape, and community prosperity. For both high- and low-poverty outmigration counties, logistic regression was used to test the statistical significance of differences from other nonmetro counties. For each type of outmigration county, the six measures that most distinguish the counties from other nonmetro counties are bold-underlined. The measures used for comparison are divided into seven subject areas—geography, landscape, demography, education, economy, entrepreneurship and creative class, and socioeconomic conditions.

Geography

Remoteness and sparse settlement have long handicapped rural areas. Larger towns and proximity to metropolitan areas mean greater accessibility to producer services for employers and to health, retail, and entertainment services for residents. Outmigration counties, whether high-poverty or not, are typically far from metropolitan areas and are thinly settled compared with other nonmetro counties. However, low population density is particularly characteristic of the low-poverty outmigration counties.

For many residents of outmigration counties, neither their own county nor neighboring counties display much economic growth, so commuting is seldom an answer. Many outmigration counties are surrounded by other outmigration counties (fig. 1). Outmigration counties, particularly those with high rates of poverty, are much more likely than other counties to fall in the bottom quarter of nonmetro counties in terms of job growth in neighboring counties.

Landscape

Scenic landscapes—with varied topography, a mix of forest and open country, little cropland, and access to water (lakes, ponds, or ocean)—have had a strong bearing on rural migration in recent decades (McGranahan, 2008, 1999). People moving to rural areas are often making a significant economic sacrifice to obtain a higher quality of life and secure access to the rural outdoors. A landscape index encompasses topography, land cover, and water area.[7] The highest scoring counties in this index are those with varied topography; lakes, ponds, or ocean; and a mix of forest and open country. Thus, counties along the mountain ranges of the West generally scored high, while counties in the Great Plains and Corn Belt tended to score low (fig. 4).

The low-poverty outmigration counties tend to score quite low on scenic qualities—although there are exceptions. These counties tend to have little forest—62 percent of the counties have less than 5 percent forest cover compared with only 12 percent of other nonmetro counties. They also tend to have a relatively large amount of cropland (table 2). As a result of these

[7]This index is derived from the net migration side of a 3SLS simultaneous equation of nonmetro employment growth and net migration in 1990-2000. The landscape measures include proportion of land in forest, the square of that term, the proportion of cropland, a measure of topographic variation, and the proportion of the county that was water area (including ocean), which was capped at 25 percent. The landscape index was constructed as the sum of the products of the coefficients and variable levels. See McGranahan (2008).

Table 2

Nonmetro outmigration counties differ from other nonmetro counties—and from each other, depending on poverty level

County characteristics	Other nonmetro	Outmigration counties			
		Low poverty		High poverty	
	Percent				
Geography					
Lowest 1/3 in population density (% of counties)	20.1	**60.7**		34.6	
Not adjacent to a metro area (% of counties)[1]	37.7	67.6		64.5	
Landscape					
Forestland under 5% of total land (% of counties)[2]	12.0	**61.9**		29.2	
Percent cropland (1997)[3]	26.3	**46.6**		27.3	ns
Lowest 1/3 in landscape score (% of counties)[4]	16.3	**70.0**		31.1	
Highest 1/3 in landscape score (% of counties)[4]	44.5	12.0		19.8	
Public land under 2% of total land (% of counties)[2]	42.9	73.9		56.6	
Demography					
Minority population over 50% (% of counties)	3.6	3.0	ns	**58.9**	
Natural population change, 1988-2008 (%)	5.0	1.9		11.3	
Natural population decrease (% of counties)	26.7	46.2		8.4	
Education (ages 25-64)					
No high school degree (%)	19.3	14.9		**30.1**	
College diploma (%)	15.7	16.8		12.6	
Lowest 1/3 in college diploma (% of counties)	38.8	17.7		57.0	
Median school grades completed, 1950, age 25 and over	5.1	5.6		**3.6**	
Economy					
Agriculture and forestry employment (%)	5.6	**13.3**		8.7	
Manufacturing employment (%)	18.1	11.9		11.7	
Recreation county (percent of counties)[5]	19.0	5.0		5.0	
Entrepreneurship and creative class					
Top 1/3 in nonfarm business start-ups per 100 nonfarm jobs, 1991-2000 (% of counties)[6]	31.5	38.5		27.4	ns
Net change in number of establishments, 1990-2008, per 1,000 1990 nonfarm business jobs[7]	26.1	2.9		-9.1	
Top 1/3 in creative class occupations (% of counties)[8]	40.8	21.5		8.4	
Top 1/3 in both creative class and start-ups	16.2	3.3		1.9	
Socioeconomic conditions					
Employment rate (age 21-64)	70.8	75.2		58.7	
Unemployment rate (age 20-29)	8.9	7.8		**19.0**	
Median household income ($1,000)	32.9	31.9		**22.8**	
Median value of single family houses ($1,000)	81.1	**54.9**		**50.0**	
Subpar housing (% of counties)[9]	13.6	2.3		52.8	
Prosperity county (% of counties)[10]	19.7	32.4		0.0	
Number of counties	1317	626		107	

Note: Unless otherwise noted, 2000 Census of Population data files are the original data source. Differences from "other nonmetro" counties are significant at p<.05 (based on Wald statistics from logistic regression) level unless noted with "ns." For each set of outmigration counties, the six factors most distinguishing them from other nonmetro counties are **bold underlined** (based on relative size of the Wald statistic).

[1]Source: ERS 2004 rural-urban continuum code, available at: www.ers.usda.gov/Data/TypologyCodes/.

[2]Source: ERS, based on USDA Forest Service, Northern Research Station, St. Paul, MN, forest inventory, 2003.

[3]Source: ERS, based on Census of Agriculture, 1997, data files.

[4]Scale based on water area (lakes, ponds, and ocean), topographic variation, forest cover and crop cover, weighted by strength of relation to nonmetro county net migration in 1990-2000 (see McGranahan, 2008).

[5]Source: ERS 2004 recreation counties, available at: www.ers.usda.gov/Data/TypologyCodes/

[6]Source: ERS, based on Bureau of the Census, Statistics of U.S. Businesses, special tabs (available only through 2006).

[7]Source: ERS, based on Bureau of the Census, County Business Patterns data files.

[8]Source: ERS, based on creative class definition in McGranahan and Wojan (2007).

[9]Source: ERS, based on Isserman (2009). Subpar housing exists when the proportion of housing units with one or more problems is higher than the national proportion, with problems defined as incomplete plumbing, incomplete kitchen facilities, more than 1.01 people per room, and monthly housing costs exceeding 30 percent of income.

[10]ERS, based on Isserman (2009). Prosperity is defined as lower rates of unemployment, poverty, school dropouts, and subpar housing than in the Nation as a whole (see Isserman et al., 2009).

scenic disadvantages, 70 percent of low-poverty outmigration counties score in the bottom third on the composite landscape scale. These counties also tend to have little of their land in the public domain. For people involved in agriculture, farming landscapes can be attractive and reassuring. But for others, these landscapes tend to present little ecological variation, few scenic vistas, and limited access to the rural outdoors. Thin settlement and lack of scenic appeal may also create problems for employers.

While most low-poverty outmigration counties score low on landscape attractiveness, 12 percent of the counties are actually in the top third on this measure. Many are or were mining counties, which may benefit from attractive landscapes and varied topography if the mining has not been ecologically disruptive.[8]

By most landscape measures, the high-poverty outmigration counties tend to fall between the low-poverty outmigration counties and the other nonmetro counties. For instance, the proportion with little or no forest (29 percent) is less than half that of the low-poverty outmigration counties (62 percent), but substantially higher than in other nonmetro counties. In general, the cause of net outmigration for high-poverty counties is low levels of schooling and poor socioeconomic conditions, not geography.

[8]Mining counties are defined periodically by ERS, based on county earnings by industry (see ERS County Typology Codes).

Figure 4
County landscape score
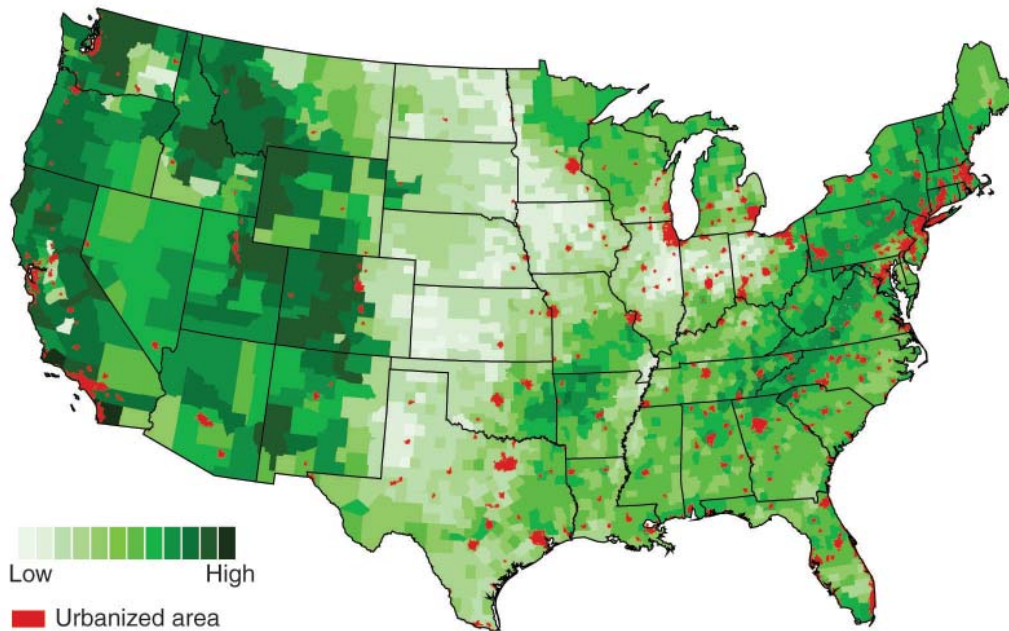
Source: McGranahan, 2008.

Demography

Population change is an outcome of both migration and "natural" population change stemming from resident births and deaths. In many of the low-poverty outmigration counties, population is diminished by both outmigration and natural decrease. The average rate of natural population change in these counties was only 2 percent over 1998-2008, and nearly half the counties experienced a natural decrease (table 2). The frequency of losing population through natural decrease in low-poverty outmigration counties is twice that found in other nonmetro counties; in part, this reflects the relatively old age of the population stemming from long histories of net outmigration.

In contrast, the high-poverty outmigration counties tend to have relatively high rates of natural increase for the study period (11 percent), more than twice the average for other nonmetro counties (5 percent). Few of these counties had natural decrease (8 percent), compared with other nonmetro counties (27 percent). In 13 percent of the high-poverty outmigration counties, natural increase was sufficiently high that these counties actually gained population in 1988-2008, despite high net outmigration. However, for 69 percent of the high-poverty outmigration counties, the combination of migration and natural change still left the population over 10 percent smaller in 2008 than it had been in 1988.

Figure 5
Nonmetro outmigration counties and minority population
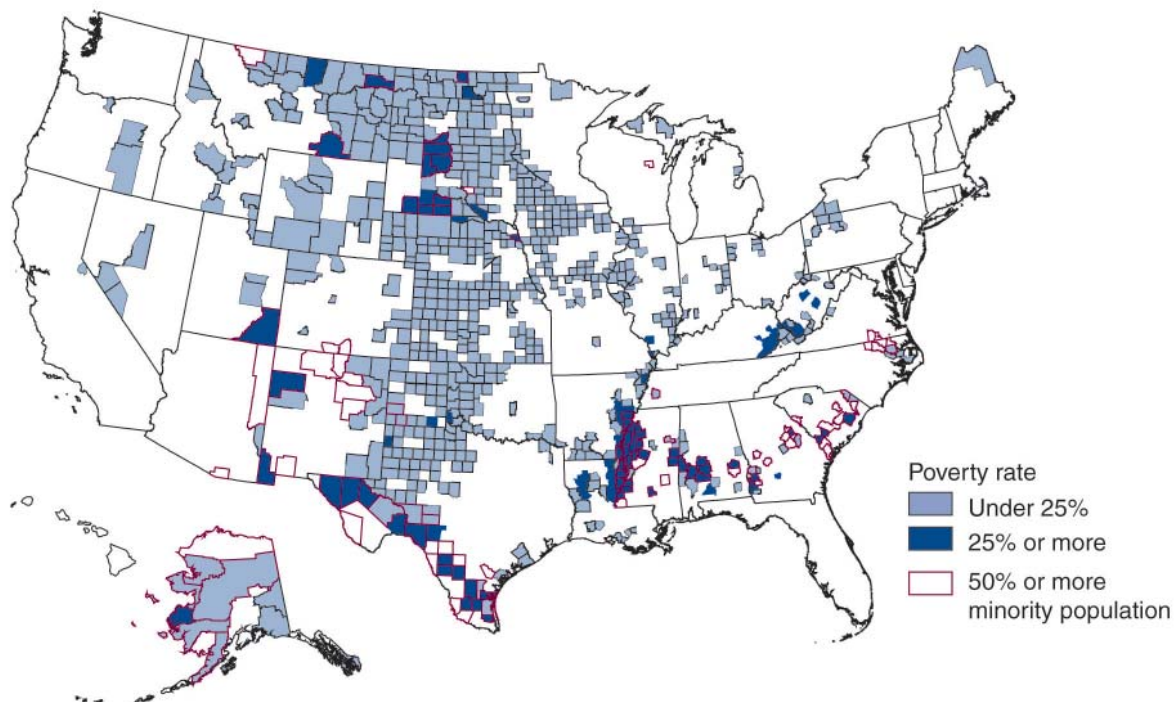
Poverty rate

- Under 25%
- 25% or more
- 50% or more minority population

Note: In this report, rural areas are defined using counties classified as nonmetropolitan by the Office of Management and budget (see glossary).
Source: USDA, Economic Research Service based on Bureau of the Census migration estimates and, for poverty, 2000 Census data SF3 data files.

Nonmetro poverty counties tend to have distinct county racial and ethnic makeups.[9] The high-poverty outmigration counties are not exceptional in this regard. Hispanics, Blacks and/or Native Americans comprise the majority of the population in nearly 60 percent of these counties, with each group in a distinctly different area (fig. 5). Almost all of the high-poverty outmigration counties in the northern Great Plains—and Alaska—are associated with Native American populations. Those in the Rio Grande area of southern Texas are primarily Hispanic, while those in the Mississippi Delta are predominately Black. Most high-poverty outmigration counties not associated with a minority are in eastern Kentucky and the West Virginia Highlands.

The differences in racial and ethnic composition—and the associated differences in location, history, and culture—make for different rates of natural increase. For instance, while the average rate of natural increase in high-poverty outmigration counties was 11 percent, the rate was as high as 33 percent among the primarily Native American counties. With this rate of increase, most Native American high poverty outmigration counties actually gained population over 1998-2008, despite high net outmigration. At the other extreme, the Appalachian and other high-poverty outmigration counties with relatively small minority populations had average natural increases of 5 percent—the same as in other nonmetro counties. None gained population in 1988-2008.

Education Completed

The argument that education is a key to rural development seems valid when examining high-poverty outmigration counties. Many of the working-age population in these counties lack high school degrees—an average of 30 percent compared with less than 20 percent in other nonmetro counties. Fifty-seven percent of high-poverty outmigration counties also fall in the bottom third in terms of college completion rates (table 2).

While low education levels in high-poverty outmigration counties may impede local growth in population or jobs, relatively high education levels in low-poverty outmigration counties are not sufficient in themselves to attract or generate rural growth. Residents of these low-poverty counties tend to have higher educational attainment than other nonmetro residents, despite the outmigration of young adults. This attainment arguably contributes to population loss as parental households with high levels of schooling are more apt to encourage and more able to support the outmigration of young adults to further their education and enhance employment opportunities.

Nonmetro differences in levels of schooling are longstanding. While schooling levels in 1950 were everywhere low by contemporary standards (table 2), even then the high-poverty outmigration counties were considerably behind in educational attainment, while low-poverty outmigration counties were ahead of other rural counties.[10]

Industry

Outmigration counties had little manufacturing employment or recreational activity in 2000, compared with other nonmetro counties (table 2). The

[9]See ERS Briefing Room: Rural Income, Poverty, and Welfare: High-Poverty Counties http://www.ers.usda.gov/briefing/incomepovertywelfare/highpoverty/.

[10]As a group, the predominately Native American high-poverty outmigration counties tend to have education levels comparable to other nonmetro counties, and did so even in 1950.

low-poverty outmigration counties continued to rely on agriculture, the mainstay of many rural areas for much of the past century. The high-poverty outmigration counties were relatively specialized in health, education, and government, all activities either in the public sector or largely dependent on public-sector spending.

American Community Survey data are not yet available post-2000 for counties with small populations, a characteristic of many outmigration counties. Administrative data based on business establishments indicate change in industry structures and jobs, with the disadvantages that self-employment is excluded (except for farmers) and that no distinction is made between part- and full-time jobs. Figure 6 presents industry structures for 1990 and 2006 defined by employment shares according to the three types of nonmetro counties: low-poverty outmigration, high-poverty outmigration, and other nonmetro counties.

Other nonmetro counties have been more dependent on manufacturing and less dependent on agriculture than outmigration counties over the last 20 years. Manufacturing hung strong during the rural population exodus of the 1950s and 1960s, and continued to shift to nonmetro areas through the 1990s, enabling some rural areas to maintain population despite shedding labor from farming. Since 2000, the contraction of manufacturing has been pervasive, but especially pronounced in the high-poverty outmigration counties (table 3). Manufacturing's continuing importance in low-poverty outmigration counties is not due to its own resilience but to the relative lack of growth in other sectors. The evolution of industrial structure between 1990 and 2006 (fig. 6) suggests a growing dissimilarity between outmigration counties over time.

By 2006, education and health services had become the largest industrial sector for all three types of nonmetro counties. These activities are often in the public sector or largely supported by public funds. The much larger employment share in high-poverty outmigration counties suggests a continued inability of the private sector to create jobs. In fact, the job shares of all other sectors—with the exception of government—are smallest in high-poverty outmigration counties. Farming remains the clear specialization of low-poverty outmigration counties relative to all other nonmetro counties.

Table 3
Change in number of nonmetro jobs, 1990-2006

| Sector | Other nonmetro counties | High outmigration | |
		Low poverty	High poverty
	----------------------Percent----------------------		
Farming	-7.32	-11.78	-16.93
Manufacturing	-16.55	-16.17	-39.01
Trade, transport, utilities	-1.81	-18.40	-18.16
Information/prof services	66.09	42.69	41.69
Education and health	62.26	38.69	38.61
Other services	54.89	33.11	41.53
Government	43.92	20.69	64.85
Total	28.70	12.45	9.81

Source: Unpublished Quarterly Census of Employment and Wages (BLS) and Regional Economic Information System (BEA) data.

Productivity gains in agriculture suggest further job losses, although the recent integration of agriculture into energy markets through biofuels may stem or reverse this trend in some areas. Despite attempts to develop value-added industries, outmigration counties have not been immune to declines in the manufacturing sector. And recreation, given the levels of landscape appeal in most outmigration counties, is unlikely to emerge as an economic base.

Figure 6a
Radar chart of economic structure for high-migration counties with high and low levels of poverty and all other nonmetro counties, 1990
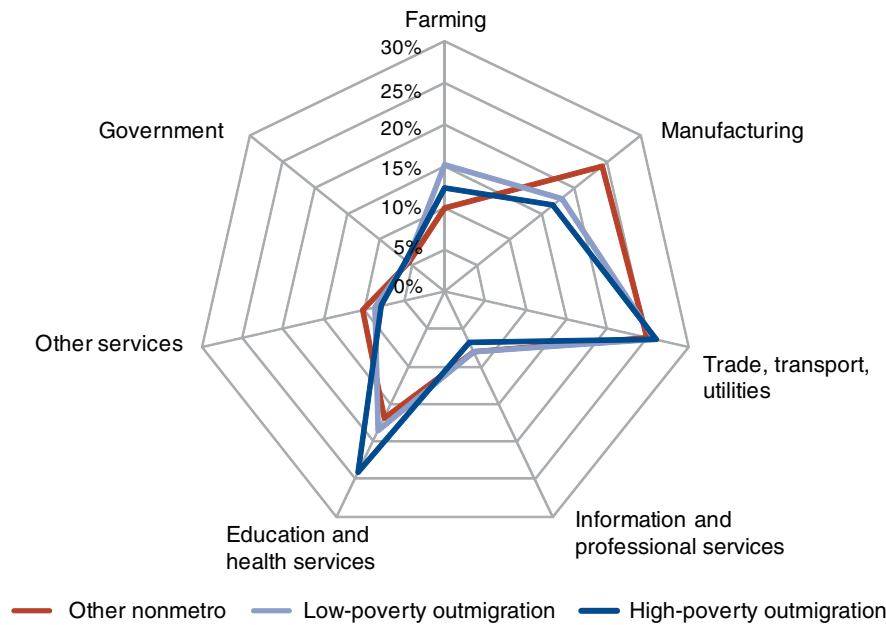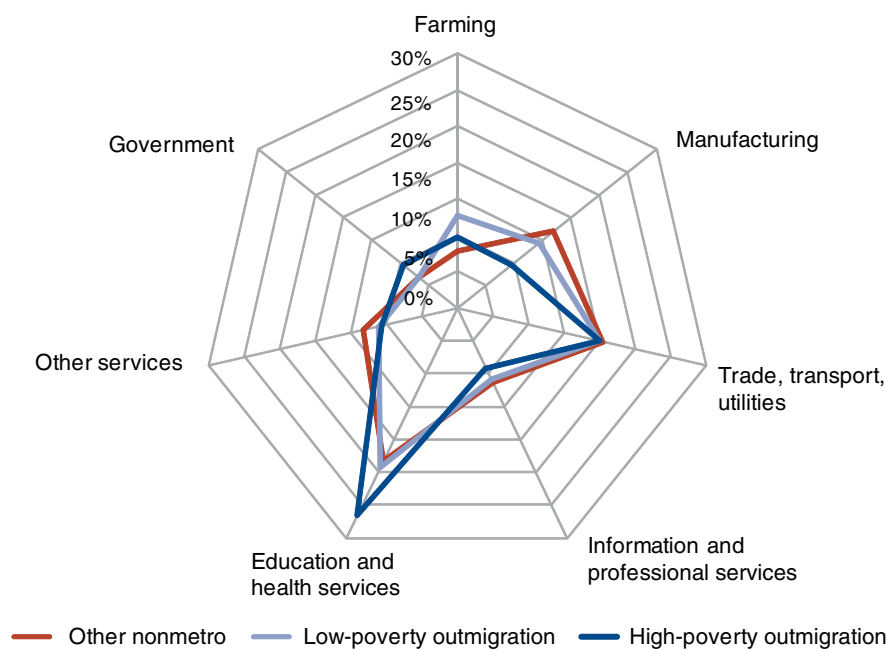

Figure 6b
Radar chart of economic structure for high-migration counties with high and low levels of poverty and all other nonmetro counties, 2006

Source: Unpublished Quarterly Census of Employment and Wages (BLS) and Regional Economic Information System (BEA).

Given the production sector declines and high outmigration, one would expect to see a decline in total jobs in nonmetro outmigration counties over 1990-2006. In fact, the total number of jobs grew 12.5 percent in low-poverty outmigration counties and 9.8 percent in high-poverty counties during this period (table 3). While this growth rate is less than half that experienced in other nonmetro counties (28.7 percent) over the same period, outmigration counties did experience job growth in the most dynamic sectors of the economy: professional, information, health, and educational services. This more than compensated for job losses in farming and manufacturing, as well as in trade, transport, and utilities. However, whereas manufacturing tends to offer full-time jobs, many of the emerging sectors are characterized by part-time jobs with lower wages.

Entrepreneurship and Creative Class

With the decline in rural manufacturing and the shift of many branch operations overseas, greater emphasis is being given to homegrown paths of development, particularly through boosting local business formation. New business formation may lead to growth, if there are untapped local opportunities and the new businesses are able to exploit them. But business formation itself does not ensure an effective exploitation of opportunities. Business start-ups may simply replicate ongoing businesses (resulting in an overabundance of hair salons, for instance) without adding anything new to the local economy (Van Stel and Storey, 2004; McGranahan et al., 2010).

Establishment start-ups occurred at about the same average rates over 1990-2006 in outmigration as in other nonmetro counties. Low-poverty outmigration counties actually had more than their share of counties in the top third ranked by start-up rates. But the net change in the number of business establishments between 1990 and 2008 varied sharply across county groups. Counties that had little loss or gain through net migration had an average of 26 percent more establishments in 2008 than they had in 1990. The low-poverty outmigration counties tended to maintain their establishment numbers, despite the outmigration. But even with comparable rates of establishment formation, high-poverty outmigration counties generally had substantial net losses in number of establishments over 1990-2008.

If the formation of business establishments is not in itself sufficient for growth, what conditions are conducive to sustained growth through establishment formation?

A recent study of homegrown paths to rural economic growth identified three qualities that, particularly when found together, enhance gains in establishments and jobs: creative class presence, entrepreneurial context, and outdoor amenities (McGranahan et al., 2010). The creative class thesis—that places need to attract people in creative occupations, such as engineers, architects, scientists, and artists—in order to compete in today's knowledge economy was developed by Florida (2002) with cities in mind, but it may be particularly relevant to rural areas. Rural areas lose much of their talent as young adults move to urban areas to further their training or pursue other goals. Rural areas need to attract talent to grow or even maintain their populations. They need to bring in new knowledge and skills. Research suggests that presence of the creative class talent in entrepreneurial settings reduces

the likelihood that new businesses are simply replications of existing businesses, resulting in greater net gains in establishments. Absent entrepreneurship, however, the creative class talent may not become directly involved in the local economy, staying within a local college or university, for instance. Outdoor amenities make it likely that this creative class-entrepreneurship dynamic can be sustained, by both drawing more creative class migrants and creating new business opportunities.

Outmigration counties, particularly those with high poverty rates, are much less likely than other nonmetro counties to be in the top third in creative class share of employment. While over 40 percent of the other nonmetro counties fall in the top third, this proportion drops to 22 percent for the low-poverty outmigration counties and only 8 percent for the high-poverty outmigration counties. Counties in the top third in both establishment birth rates and creative class—"creative-entrepreneurial" counties—are rarely outmigration counties.

Creative-entrepreneurial counties had considerably greater gain in establishments over 1990-2008 than other nonmetro counties (fig. 7). This was surprisingly true not only in the counties not experiencing high outmigration but also in the very few (20) low-poverty high outmigration counties characterized by both creative class presence and high establishment birth rates. These counties with gains in the number of establishments are, however, a particular group—in the West rather than the Midwest and with landscape scores in the top third rather than in the bottom third, as typifies the low-poverty outmigration counties. More generally, outmigration counties do not lack in the formation of new businesses, but tend to lack in creative class and attractive landscapes, conditions that lead to net gains in new businesses.

Figure 7
Creative-entrepreneurial counties have had greater gains in numbers of establishments than counties without this combination

Median gain in number of establishments,1990-2008, per 1,000 1990 jobs
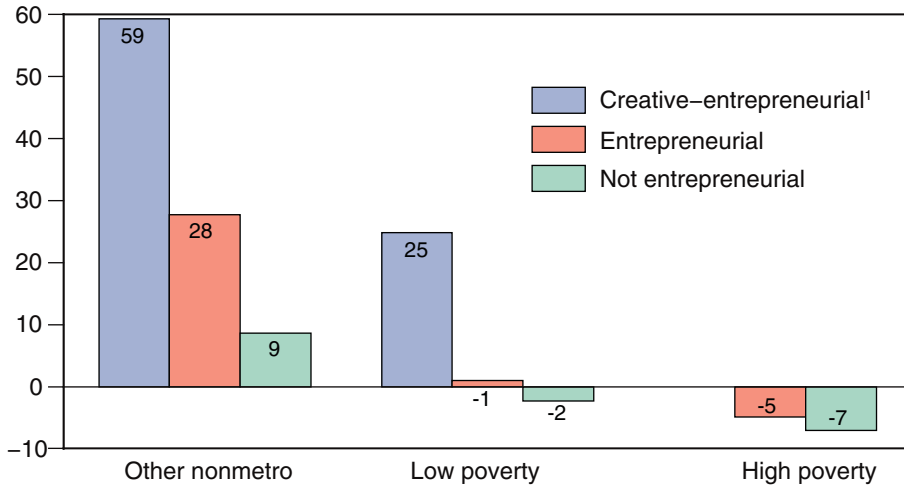
Note: Only 2 high-poverty outmigration counties were creative-entrepreneurial.
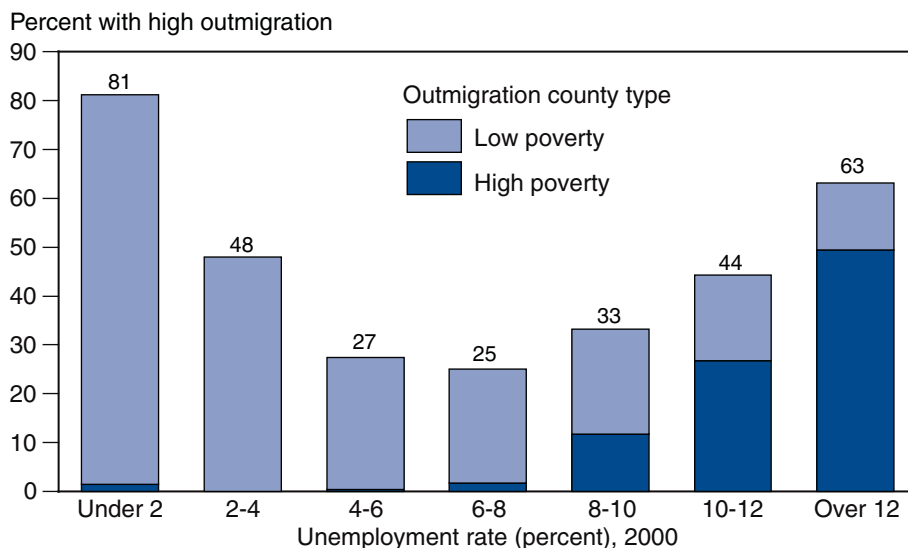[1]Counties in nonmetro top 1/3 in both creative class and start-ups.

Socioeconomic Conditions

High- and low-poverty outmigration counties have starkly different socio-economic conditions by several measures. In the high-poverty outmigration counties, over 40 percent of the working age population (ages 21-64) were not employed in 2000, 10 percentage points more than the working age population in other nonmetro counties. Unemployment rates among those ages 20-29 were over twice the rates in other nonmetro counties, and median household incomes were nearly 50 percent lower. Housing values were also relatively low, which reduced the cost of living, but, perhaps due to housing quality, this was not enough to entice retirees.[11]

In contrast, socioeconomic conditions in the low-poverty outmigration counties tended to exceed the conditions in the nonmetro counties with little or no outmigration. Employment rates were higher and relatively few people in their 20s considered themselves unemployed in 2000. Household incomes were nearly as high as in other nonmetro counties, while housing values were much lower (although not low enough to attract many retirees). Isserman et al. (2009) defined prosperous counties as those with below the national rates of poverty, unemployment, high school dropouts, and housing problems.[12] Nearly a third of the low-poverty outmigration counties are prosperous counties according to this indicator. Less than a fifth of other nonmetro counties were so classified.

The dichotomy is further highlighted by examining the relationship between unemployment and outmigration (fig. 8). For counties with unemployment rates of 6-8 percent or more, the expected economic relationship holds—the higher the unemployment, the more likely a county is to have high outmigration. Most of the counties with very high unemployment are also high-poverty outmigration counties.

[11]The racial/ethnic make-up of the high-poverty outmigration counties generally had little bearing on socio-economic conditions. The labor force participation rates of working-age adults were generally comparable whatever the composition. The major difference was a very high unemployment rate (27 percent) in predominately Native American counties for people age 20-29 in 2000.

[12]Isserman et al. (2009) followed the 2000 census in defining a housing problem as one or more of the following: incomplete plumbing, incomplete kitchen facilities, more than 1.01 occupants per room, and monthly housing costs over 30 percent of household income.

Figure 8
High outmigration counties are prevalent where unemployment is high—and where unemployment is low

Percent with high outmigration

Source: ERS, based on 2000 Census of Population SF3 files.

For counties with unemployment rates of 6-8 percent or less, however, the relationship is turned on its head: the lower the unemployment rate, the more likely a county is to have high outmigration. Low unemployment does not appear to misrepresent socioeconomic conditions: the majority of the counties with unemployment rates under 4 percent were classified as highly prosperous. No current labor market theory can explain how prosperity and very low unemployment leads to high outmigration. The causal direction is most likely the other way: high outmigration from these counties leads to low unemployment. Most of the counties with unemployment rates below 4 percent are in the bottom quarter of the landscape scale and many are remote and thinly settled. The prosperity, coupled with strong school systems and a culture of education, means that young adults have the means to leave and flourish elsewhere.[13]

[13]Statistical evidence for this line of reasoning is presented in binomial logistic regressions in appendix table 1. For the 1,164 nonmetro counties with under 6 percent unemployment in 2000, the bivariate results (equation 1) show that the higher the unemployment, the less likely a county is to be an outmigration county, which is consistent with figure 8. However, once high school education, agricultural and forestry employment, population density, and landscape score are taken into account statistically (equation 2), the expected positive relationship between unemployment and outmigration is obtained. As indicated by the relative size of the Wald statistics, the most influential measures in this analysis are population density and the landscape score.

Trends in Poverty and Unemployment

The analysis thus far has drawn largely on data from 2000, roughly the midpoint in the 20-year span considered in defining outmigration counties. The general assumption has been that the characteristics identified are long-term characteristics. This assumption is reasonable for most geographic, landscape, and human resource characteristics, but may be less likely to hold for poverty and unemployment, especially given the current recession. Fortunately, recent estimates of poverty and unemployment are available to examine how the recession affected outmigration and other nonmetro counties, at least through 2008.

In general, there appear to have been fairly universal gains in the 1990s, when poverty and unemployment rates fell in both high- and low-poverty outmigration counties and in other nonmetro counties as well (table 4). The strong national growth during this period likely benefited people in most counties. National growth was slow during 2000-08, although the effects of the current recession were not apparent until 2009.

Only the counties without high net outmigration showed a substantial increase in poverty from 1999 to 2008. The 2009 (2nd quarter) unemployment statistics indicate even more strongly that the outmigration counties were less hard-hit than other nonmetro counties—although unemployment rates were everywhere higher in 2009 than they had been 10 years earlier.

Part of the explanation appears to be that rural manufacturing has been particularly affected by the recession, and outmigration counties have relatively little manufacturing. Where outmigration counties had manufacturing, their unemployment rates did jump. For instance, ERS classified only 12 high-poverty outmigration counties as "manufacturing-dependent" in 2000. In these counties, 2nd quarter unemployment jumped from 9 percent in 1999 to 16 percent in 2009, much more than the average reported in table 4.[14]

[14]For more on the effect of the recent recession, see Parker et al. (2010).

Table 4
Poverty and unempoyment in outmigration counties (by poverty level) versus other nonmetro counties

County characteristics	Other nonmetro counties	Outmigration counties	
		Low poverty	High poverty
Average poverty rate[1]	------------------Percent-------------------		
1989	17.8	16.7	37.3
1999	15.0	14.0	31.7
2008	16.5	14.3	30.0
Average unemployment rate[2]			
1989	6.7	5.4	10.7
1999	5.3	4.8	9.4
2009	9.7	6.7	10.9

Note: All differences among county groups are statistically significant at the p< .001 level for all years, based on Wald statistic tests.
[1]ERS, based on Censuses of Population, 1990, 2000, and Bureau of the Census estimates, 2008.
[2]ERS, based on Bureau of Labor Statistics Local Area Unemployment files. Data are for 2nd quarter of each year.

Local Problems Facing Rural Manufacturers

The 1996 ERS Rural Manufacturing Survey demonstrates why manufacturers (and other employers) may avoid outmigration counties.[15] Funded in part by USDA's Rural Development mission area, this national survey was prompted by concern over rural manufacturing competitiveness amid globalized markets and technological change. As part of the survey, the manufacturers were asked if various factors associated with their location were problems inhibiting their competitiveness. The 21 factors included tended to focus on problems of access—to customers, equipment suppliers, financial institutions, and so forth. Somewhat surprisingly, few manufacturers, even ones located in remote areas, reported major problems of access. Instead, the factors most frequently cited tended to be related to human capital (McGranahan, 1998a).

The six factors most frequently cited as major problems by nonmetro manufacturers are listed in descending order in table 5. The local attribute most often reported to be a major problem in counties not classified as outmigration counties was the quality of available labor (35 percent), which far outweighed the two next most frequently reported problems: State and local taxes (23.2 percent) and environmental regulation (22.6 percent).[16]

The attractiveness of the area to managers and professionals was the local factor fourth most cited as a major problem by manufacturers in non-outmigration counties. This was followed by access to training courses and the quality of primary and secondary schools. These three items were more likely to be cited as major problems by manufacturers using advanced technologies and management practices.

Manufacturers' responses in outmigration counties were different than in other nonmetro counties, and suggest why these counties have attracted few manufacturers (or other employers). Manufacturers in the low-poverty outmigration counties were less likely than other manufacturers to report the quality of available labor as a major problem. And despite often being

[16]It should not be inferred that poor labor quality is in itself the major problem facing rural manufacturers. The responses reflect rather, difficulties with the quality available at the price that the manufacturers can or want to pay. Thus, manufacturers who paid higher wages and hired more high school graduates were less likely to report the quality of available labor as a major problem.

Table 5
Local factors most often cited by manufacturers as major problems in their ability to compete

Local factor	Other nonmetro counties	Outmigration counties	
		Low poverty	High poverty
	Percent reporting as a major problem		
Quality of available labor	35.4	**28.8**	30.1
State and local taxes	23.2	19.9	19.7
Environmental regulations	22.6	21.9	19.8
Attractiveness of area to managers and professionals	13.5	**24.9**	**28.0**
Access to training courses	9.7	7.8	**19.9**
Quality of local schools	9.5	8.0	**41.4**
Number of respondents	1,757	394	67

[1]Statistically significant differences (p<.05) from other nonmetro counties are in bold underline, based on Wald statistic tests.
Source: *ERS Rural Manufacturing Survey, 1996.*

relatively remote, manufacturers in these counties were not more likely than others to report access to training courses as a major problem. These responses are consistent with the relatively good school systems in these counties and the low dropout rates. However, the manufacturers in low-poverty outmigration counties were nearly twice as likely as manufacturers in other nonmetro counties to report the unattractiveness of the area to managers and professionals as a major problem. This was their second most often reported major problem. Part of the explanation appears to be the combination of thin settlement with low landscape amenities in many of these counties, but population loss itself may create an unattractive physical environment (such as empty commercial and residential buildings, public property with insufficient upkeep, and distant schools).[17]

For manufacturers in the high-poverty outmigration counties, human resource issues are paramount. For these manufacturers, the most frequently cited major problem with their location was the quality of local schools. Poor schools affect labor force skills, as access to training courses was reported to be a major problem more than twice as often as in other nonmetro counties. But it also apparently affects the attractiveness of the area to managers and professionals. Over 80 percent of the manufacturers in the high-poverty outmigration counties who reported the unattractiveness of the area to managers and professionals to be a major problem also reported local school quality as a major problem. The issue of attracting highly trained people likely extends beyond manufacturing to the attraction of the creative class in general.

[17]For an analysis of problems facing manufacturers in the Great Plains, the location of many low-poverty outmigration counties, see McGranahan, 1998b.

Conclusions

Nonmetro counties that lost over 10 percent of their population through net outmigration between 1988 and 2008 are a highly diverse group. Remoteness and a lack of landscape amenities are key to explaining high outmigration in most, but not all, cases. Many outmigration counties are found in Mississippi, eastern Kentucky, and other rural areas with long histories of poverty, which is less characteristic of counties in the Great Plains. From a policy perspective, the distinction between high-poverty and other outmigration counties is an important one, as these two types of outmigration counties face very different circumstances.

Outmigration counties with high poverty, identified here as having a poverty rate of at least 25 percent in 2000, conform to the idea that population loss through outmigration reflects economic distress. With the partial exception of Native American counties, these counties have low educational attainment, high unemployment, and poor housing conditions. They are a relatively small subset of outmigration counties and are often overlooked by researchers studying the causes and consequences of depopulation, perhaps because they are not already thinly settled. While outmigration from these high-poverty counties appears to be jobs-driven rather than amenity-driven, inadequate education and poor schools appear to be the central development issue in most of these counties, both for attracting jobs and attracting the people who create jobs.

The other set of outmigration counties, however, tends to show fewer signs of economic distress than nonmetro counties with little or no outmigration. Their residents have relatively high education, low unemployment, and better housing conditions than counties with little or no outmigration. The fact that traditional distress indicators used in rural development programs did not target many of the outmigration counties identified here was a key motivation in the establishment of the Northern Great Plains Regional Authority in 2002 and work on the New Homestead Act.

These counties tend to be relatively remote and thinly settled, which discourages manufacturers and other employers as well as potential residents. And they generally have few landscape amenities to draw families and retirees from elsewhere. People moving to rural areas are generally sacrificing income and access to services to improve their quality of life. For some, this may mean returning to family and friends. For others, however, it means access to the rural outdoors. Without a hometown or family connection, people generally are not going to be drawn to rural areas without interesting landscapes. And employers are less likely to go where they cannot attract skilled workers without paying high premiums. The outmigration from low-poverty counties appears to be more lifestyle-driven than jobs-driven.

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Glossary

Nonmetropolitan—Our classification of counties as "rural" for purposes of this analysis includes counties designated as nonmetropolitan (nonmetro) by the U.S. Office of Management and Budget in 2003 (based on data from the 2000 census). Nonmetro counties are defined as those counties lying outside urban cores of 50,000 people or more and their immediately adjacent commuting zones. For more detail on how nonmetro areas are defined, and how they differ from the U.S. Census Bureau's definition of rural, see the ERS briefing room, "Measuring Rurality: What Is Rural?" http://www.ers.usda.gov/Briefing/Rurality/WhatIsRural/.

Poverty rate—A household with an annual income less than the amount deemed sufficient to purchase basic needs of food, shelter, clothing, and other essential goods and services for its member(s) is classified as "poor." The poverty threshold is set by the Office of Management and Budget and varies by household size, constituency and, over time, with the cost-of-living index. In the 2000 census, information on income was collected for 1999. The threshold for a family of four, including two children, was $16,985. For further information on the definition of poverty, see http://www.census.gov/hhes/www/poverty/povdef.html.

Data Sources and Methods

High outmigration counties—those with 10 percent or higher population loss from net migration, July 1988-July 2008—were identifed using annual county estimates of net migration from the U.S. Census Bureau's Federal-State Cooperative Program for Population Estimates (http://www.census.gov/popest/overview.html). The net migration rate was calculated as the sum of net migration over the 20-year period divided by the county's estimated 1988 population. In this analysis, net migration includes both domestic migration and immigration.

The 1990-2000 cohort migration analysis comes from data prepared at the University of Wisconsin under a cooperative research agreement with the USDA's Economic Research Service. County-level, net migration estimates by 5-year age groups for 1990-2000 were tabulated using population data from the U.S. Census Bureau and vital statistics from the National Center for Health Statistics—population change not accounted for by births and deaths was assumed to result from net migration (Voss et al., 2004). Other data are from a variety of sources: the 2000 Census of Population, the Bureau of Labor's Local Area Unemployment System files, the 1950 Census of Population, the ERS Rural Manufacturing Survey, and three composite measures based on published journal articles—a scale of landscape amenities (McGranahan, 2008), a measure of creative class (McGranahan and Wojan, 2007), and a prosperity index (Isserman et al., 2009).

The statistical analysis in the report is based on asking whether either of the two types of outmigration counties—those with and without high poverty—differ from other nonmetro counties for a broad array of characteristics. We used the logistic regression program from SPSS to answer this question for each measure included in the study, testing how well each measure was able to distinguish the respective outmigration counties from other nonmetro counties. The denotations in table 2 of the measures most distinguishing the high- and low-poverty outmigration counties from other nonmetro counties are based on the size of the Wald statistics output as part of this program.

Appendix table 1

Binomial logistic regression of outmigration county status on selected measures, non-metro counties with 2000 unemployment rates under 6 percent (N=1,164)

County measures, 2000	Equation 1			Equation 2		
	B	Wald statistic	Sig.	B	Wald statistic	Sig.
Unemployment rate	-0.539	101.2	<.0001	0.629	37.48	<.0001
No high school degree (%, ages 25-64)				-0.074	27.63	<.0001
Agriculture and forestry employment (%)				0.060	8.14	0.0040
Population density ($\log_e$)				-1.142	77.91	<.0001
Landscape score				-75.08	157.25	<.0001
Intercept	1.713	57.487	<.0001	-2.712	30.752	<.0001
Nagelkerke R^2			0.13			0.67

Source: Measures are described in table 2.