

Rural America

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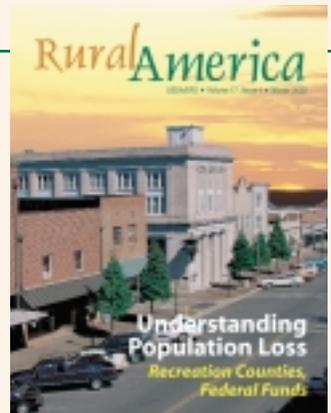
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***Agricultural Outlook*, *FoodReview*, and *Rural America* will continue publishing through December 2002.**

This is the final issue of *Rural America*, which will be replaced in February of 2003 with a magazine covering all of ERS's research areas. This issue begins with a new look at rural population loss by David A. McGranahan and Calvin L. Beale. The counties most likely to lose people in the 1990s had low population densities, few amenities, and were not near any metro centers—all characteristics that discourage development. The few counties with these characteristics that did not lose people benefited from unusual circumstances, such as industrial agriculture or casinos. Surprisingly, high-poverty counties were no more likely to lose people than were other counties.

Counties blessed with natural amenities, on the other hand, have been among the most rapidly growing. Kenneth M. Johnson and Calvin L. Beale have identified 330 nonmetro recreation counties, many of which score high in amenities. These counties have grown faster than most county types, largely from immigration. Most are in the mountain West or upper Great Lakes and can be classified according to their principal attraction, such as casinos, reservoir lakes, or ski resorts.

Two articles treat regional development efforts, an increasingly popular way of targeting rural development programs. Richard J. Reeder and Samuel D. Calhoun discuss the new Delta Regional Authority, created in 2000 to assist the Mississippi Delta counties in 8 States. This region made substantial progress in the 1990s but still lags the Nation in poverty, unemployment, and per capita income. The new Authority is expected to leverage project funding, emphasizing infrastructure and aid to distressed areas. Faqir S. Bagi, Reeder, and Calhoun studied Federal funding in the Appalachian Regional Commission (ARC) area, which encompasses parts of 13 States. Appalachia has made significant strides in recent decades but still suffers from high poverty and transportation problems. Central Appalachia is the poorest section and, therefore, receives large per capita income support payments. ARC is concentrating on improving highways to attract more industry.

Manufacturing employment has held up relatively well in rural areas, despite a long-running downward trend nationally. However, the skill level of food processing employees has dropped, as noted by Gerald Schluter and Chinkook Lee in their study of the skill needs of the U.S. processed food trade. The growth of overseas trade in meat and poultry has led to higher demand for low-skilled workers. Many of these new jobs have been in rural areas, but the wages and nature of the work make the jobs unattractive to local workers, necessitating immigrant and commuter workers.

Publicly supported water and sewer facilities can generate economic benefits well beyond the supply of water. Faqir Singh Bagi uses a study of Economic Development Administration projects to show how water system projects create and save jobs, increase private investment, and add to the local property tax base. The effects are greater in urban areas, but rural areas receive substantial benefits.

One Federal program that has assisted with a wide variety of rural development projects is the Resource Conservation and Development program (RC&D), which is explored by Dwight M. Gadsby. Established in the 1960s to counter economic decline, locally planned RC&D projects have grown strongly over the past decade and were given permanent status in the Farm Security and Rural Investment Act of 2002.

Interest in minority farmers has been increasing recently. Census of agriculture data can overlook minorities because of its focus on farm operators. Jess Gilbert, Spencer D. Wood, and Gwen Sharp have used USDA's 1999 Agricultural Economics and Land Ownership Survey to look at land ownership by Blacks, American Indians, Asians, and Hispanics, as well as Whites. Counting nonoperating land owners, especially Blacks, adds considerably to the number of minority people involved with agriculture. While few in number, these people make up an important component of their local communities.

Finally, Fred Gale examines how growing trade between and United States and China might affect rural areas in this country. Imports from China—often of goods that compete with rural American industries—have soared since the mid-1980s. On the other hand, prospects for agricultural exports to China are promising. Chinese competition will require adjustments in the rural economy.

In the Rural Updates section, John Cromartie reports on a significant reversal in rural migration. In 2000-2001, the number of people moving from nonmetro to metro counties exceeded the number moving from metro to nonmetro by more than 1 million for the first time since the 1980s. Rural areas had gained from migration during most of the 1990s, but an aging rural population and more rapid job growth in metro areas has caused a turnabout. The biggest changes occurred in the West and among college graduates.

Dean Jolliffe traces the decline in rural poverty, which reached its lowest recorded level of 13.4 percent in 2000. Poverty rates are highest among minorities and children, and in the West and South. In all regions, nonmetro poverty is higher than metro. Nonmetro earnings per job likewise improved in 2000, according to Linda M. Ghelfi, rising 0.7 percent. But nonmetro earnings also continue to lag metro. The rural-urban earnings gap widened in the 1990s and now stands at 33 percent. Because available poverty and earnings data only go through 2000, they do not yet record the effects of the recent recession.

Douglas E. Bowers

Understanding Rural Population Loss

David A. **McGranahan**
Calvin L. **Beale**

Strong national economic growth in the 1990s included much of the rural U.S., in sharp contrast with the previous decade. Poverty rates declined in 85 percent of nonmetro counties between 1989 and 1999. In the previous decade, only 35 percent of these counties had decreases in poverty. Nevertheless, over 1 in 4 nonmetro counties lost population in 1990-2000, often exceeding 5 percent. Many of these counties are agricultural and many have been losing population for decades, with no solution in sight.

This article identifies three characteristics of counties that were likely to lose population in 1990-2000: location away from metro areas, low population density, and a low level of natural amenities (as measured by climate, topography, and the presence of lakes and ponds). We argue that these qualities explain why many agricultural areas have been losing population. We then turn the question of population loss on its head, and ask why some of the counties with

Despite a widespread decline in rural poverty in the 1990s, a quarter of nonmetro counties lost population over the decade. Poverty rates were no higher in these counties than in counties without population loss. We identify remote (from metro areas), thinly settled counties as “frontier” counties, arguing that the lack of access to services and the small labor market sizes in these counties inhibits the immigration of people and businesses, particularly in the absence of compensating natural amenities. In two of every three low-amenity frontier counties, population loss exceeded 5 percent in 1990-2000. Most of these counties are farming-dependent, less because of their abundance of agriculture than because of their dearth of other economic activities. Some low-amenity frontier counties did gain population in the past decade. We look at these exceptions to see if there are rural development lessons to be learned.

these characteristics did not lose population in the 1990s. Industrial agriculture, casinos, prisons, and idiosyncratic events such as the creation of a lake helped some counties maintain their populations. In no case did small business entrepreneurship alone appear to be the critical factor.

Population Loss Is More Than a Question of Job Availability

Economic models of regional growth and decline suggest that areas of high poverty should also be areas of population loss. As opportunities decline in an area, poverty rates rise and people move to other areas in search of better opportunities. Outmigration subsequently reduces the poverty rate, such that poverty rates should ultimately equalize across areas.

But two facts about rural distress in the U.S. refute this model.

First, areas with poverty rates of over 20 percent and areas with population loss have usually had these conditions for decades. Second, these are quite distinct areas. High poverty is concentrated in the South and scattered across the Midwest, particularly where populations are largely Native American (fig. 1). Population loss, meanwhile, was most pronounced in the center of the country and in scattered areas of the Northeast and South. Rural counties with high poverty in 1990 were no more likely to have population loss in 1990-2000 than were other rural counties.

It is not difficult to explain why counties with high poverty do not always have population loss. High-poverty areas are almost inevitably areas where the rates of high school completion among young adults are relatively low. Over the

David A. McGranahan is a senior economist and Calvin L. Beale is a senior demographer in the Food and Rural Economics Division, Economics Research Service, USDA.

past 25 years, inflation-adjusted earnings have fallen nationally for workers lacking high school degrees. In part, this reflects an industrial shift. Jobs have declined in urban manufacturing, which has historically paid low-skill workers relatively well, but expanded in the low-paying services sector. Thus, rural workers lacking a high school degree can no longer expect to better their wages in urban areas and the motivation for outmigration is diminished. Rural low-education areas do have population

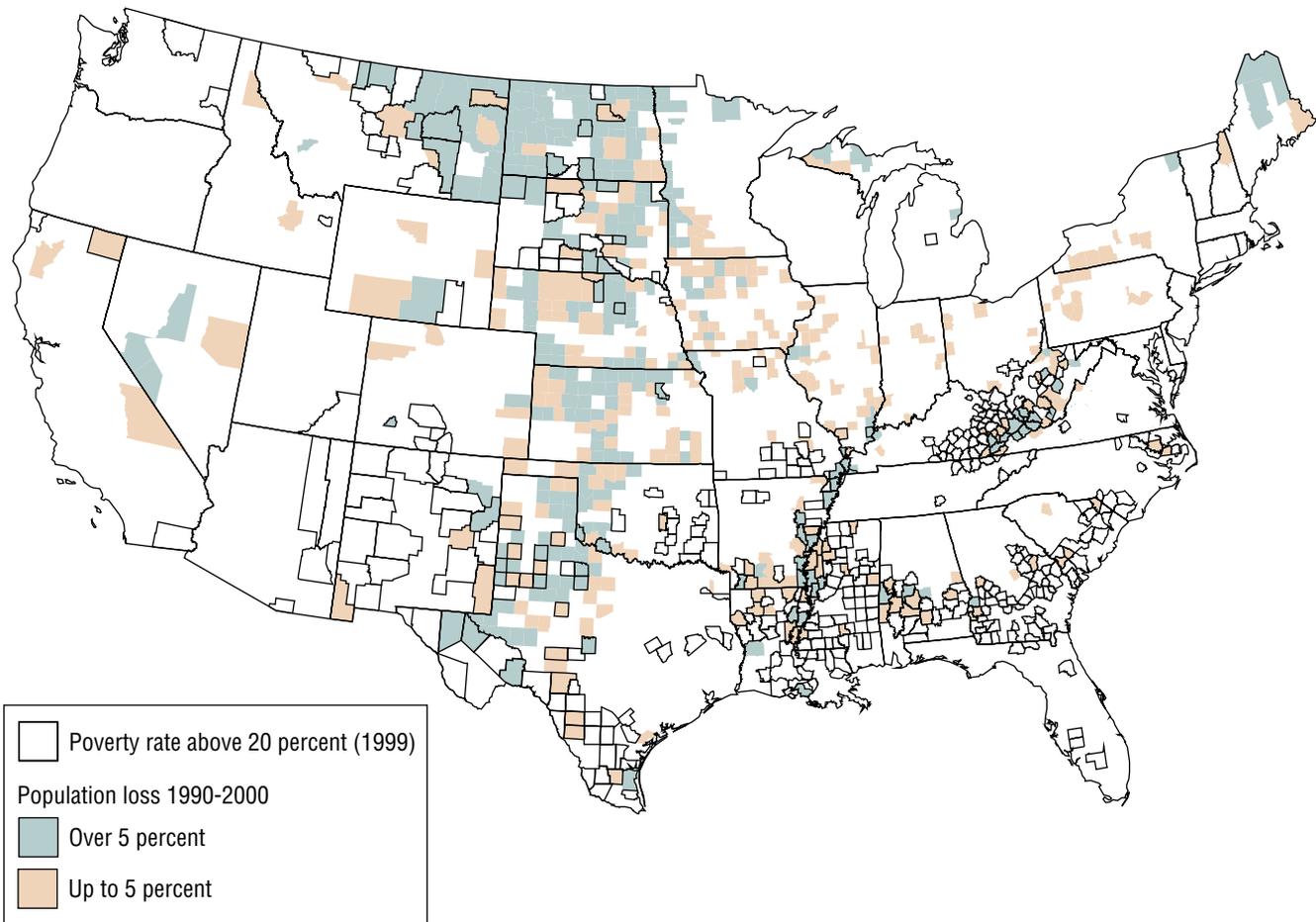
loss, but only when the poverty rates are extremely high.

Why population loss occurs in counties with low poverty is a less tractable problem. National surveys of residential preferences have consistently shown that, while most people prefer the size of place in which they currently reside, the second choice tends to be a “less dense” location (Brown et al.). This has led to an implicit assumption that population loss stems from a decline in economic opportunities in traditional rural industries

(Albrecht). Since many of the areas with population loss have an economic base dependent on agriculture, and agriculture employs fewer and fewer people, this assumption is not unreasonable.

But a recent survey of rural Nebraska raises questions as to whether a decline in economic opportunities in agriculture, mining, and forestry is the only or even major reason for population loss. When these residents were asked what type of place they would prefer, they tended to favor not their

Figure 1
Poverty and population loss in nonmetro counties
High poverty and population loss are unrelated



Sources: Censuses of Population, 1990 and 2000.

own type of setting but a more densely populated setting (Allen and Filkins). When people in a national survey report that they would prefer a less dense setting, they may be envisioning rural Vermont, not rural Nebraska.

Moreover, why have some areas remained agricultural while others have attracted manufacturing, recreation, and other industries? Agriculture in particular does not compete with most other economic activities. Many rural counties dependent on manufacturing, for instance, have just as much cropland as counties dependent on farming (where farming accounted for at least 20 percent of personal earnings in 1987-89—see Cook and Mizer for ERS's county economic classification). What distinguishes areas of population growth from areas of decline is not the absence of agriculture in the former as much as the lack of other industry in the latter.

Settlement Patterns and the Problem of Access

Although some people prefer a life of self-reliance, rural quality of life is enhanced for most people by ready access to services, including doctors, schools, stores, and restaurants. Access to services is not a problem for people living near metro areas. Except for people needing specialized services, residence in or near larger nonmetro towns is probably sufficient for most needs. But for people living in remote, very thinly settled areas, access to services can be a major problem. Not surprisingly, surveys of residential preferences indicate that, aside from current residence, the most frequently selected alternative is an open country setting within 30 miles of a major city (Brown et al.).

The problem of access to services has increased over time as health, education, and retail services have consolidated into larger units and people have come to expect greater specialization and choice. Moreover, with smaller families and more dual-earner households, households are wealthier and more reliant on services.

The problems associated with residence in remote, sparsely settled areas extend to employment. Low-wage jobs are much more prevalent in these areas than in more urban locations (Gibbs and Cromartie). Employers in low-density areas are likely to be smaller and less specialized than urban employers and therefore less likely to seek skilled workers. Moreover, manufacturers and others who may seek more highly skilled labor are likely to avoid very small labor markets where the pool of specialized skills is very small and where it is difficult to attract new employees.

To measure county remoteness and population sparseness, we have used a 4-category settlement scale for nonmetro counties: (1) adjacent to a metro area of 1 million or more people; (2) adjacent to a smaller metro area; (3) not adjacent, but with a density of over 10.1 people per square mile; (4) not adjacent, with a density of 10.1 or fewer people per square mile. The distinction between the first two categories stems from the finding that large metro areas generally have a greater effect on their immediate hinterlands than do small metro areas (Ghelfi and Parker).

Ghelfi and Parker distinguish among nonadjacent counties by size of largest place in the county. Others have used the size of the urban population. However, there are several reasons to expect that

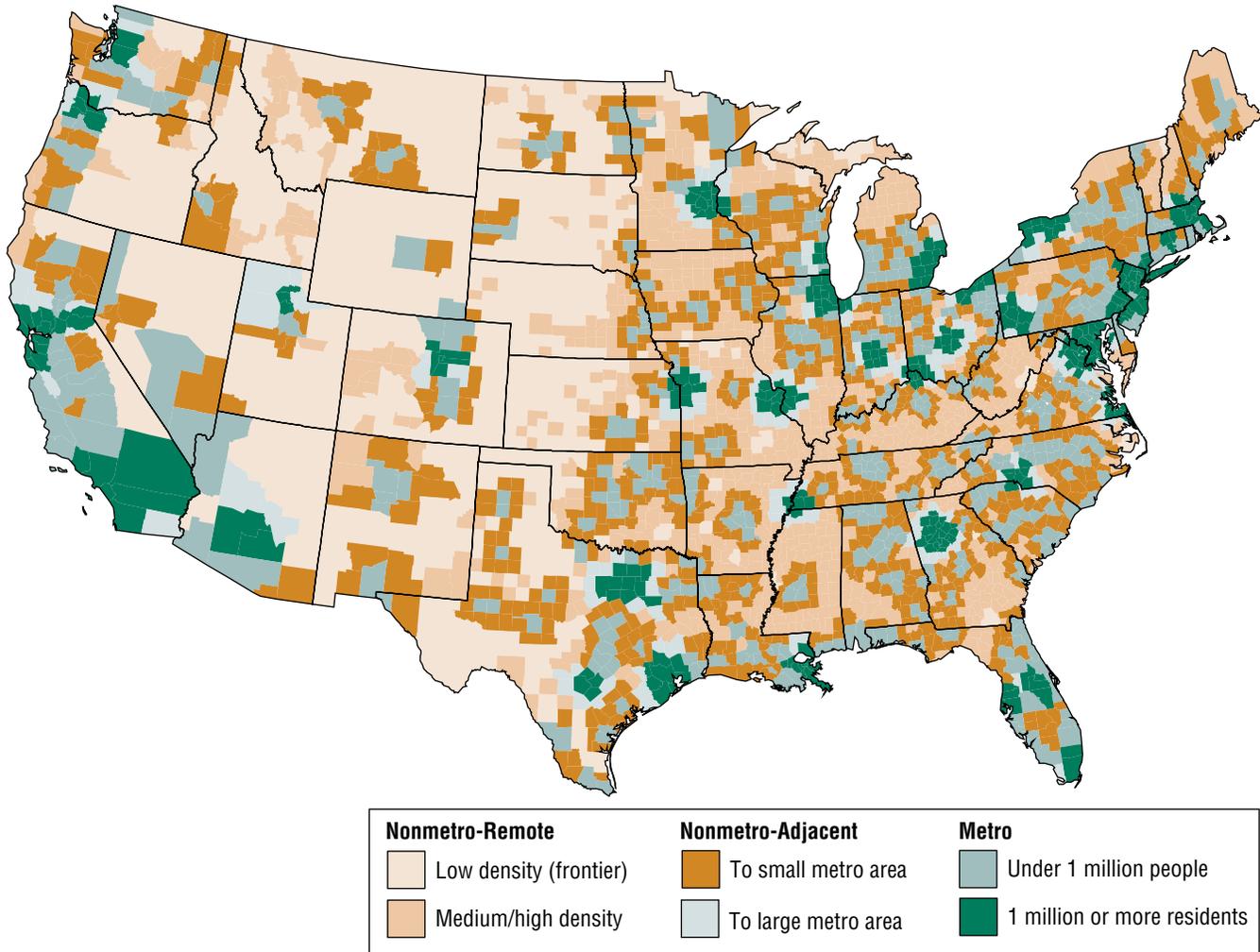
density may be more important than size of place. First, community boundaries are increasingly diffuse in rural areas. In what some are calling "rural sprawl," many people have moved from towns to open country areas even though their livelihood does not depend on agriculture, forestry, or any other resource-based activity. People often shop in one town, work in another, and live in neither. Second, service areas often extend beyond particular communities. Health services, schools, and other public sector activities often span several towns. Retailers such as Wal-Mart look to the population within shopping range rather than town size in choosing their locations. Finally, manufacturers and employers look to the local labor market area rather than any particular town when considering labor quality and availability. In this context, it is area population density rather than town size that constrains the number and types of services and jobs that are available to residents. The 10.1 persons-per-square-mile cutoff is the lowest density quartile of nonmetro counties. As shorthand, we henceforth refer to remote, low-density counties as "frontier counties" (category 4). The term "frontier" was originally used by the U.S. Census Bureau to refer to counties with under 2 persons per square mile (see Duncan).

A map of the settlement typology shows that, except for a few counties along Lake Superior and in some of the more mountainous regions, the eastern half of the U.S. has few frontier counties (fig. 2). In contrast, the Great Plains and Rocky Mountain areas in the center-West of the country are composed largely of this type of county. One characteristic of a

Figure 2

Settlement patterns, 1993

Frontier counties dominate the western half of the contiguous States



Sources: Censuses of Population, 1990 and 2000.

frontier county is that it is likely to be next to other frontier counties.

Figure 3 illustrates that rural county dependence on agriculture reflects less the presence of agriculture than the absence of other industries. Settlement has little bearing on the proportion of land in crops. An average of roughly a third of county land is in crops, no matter whether the county is adjacent to a large metro area or remote and low density. But frontier counties were much more likely than other counties to be “farming-dependent.” Nearly 60 percent

of the frontier counties had an agricultural economic base in 1989, compared with fewer than 20 percent of counties in the other settlement categories. Frontier counties are more likely to be farming-dependent because they rarely attract manufacturing-or, presumably, other employers seeking low-cost rural areas. Only 3 percent were “manufacturing-dependent,” compared with 23-30 percent of the other settlement categories.

Frontier counties were much more likely to lose population in the 1990s than were other counties

(fig. 4). Over half had fewer people in 2000 than 10 years earlier, and over a third had a population loss of over 5 percent. Thus, it is the counties with the fewest people that have been most likely to lose population, putting further strain on services in counties least able to bear it.

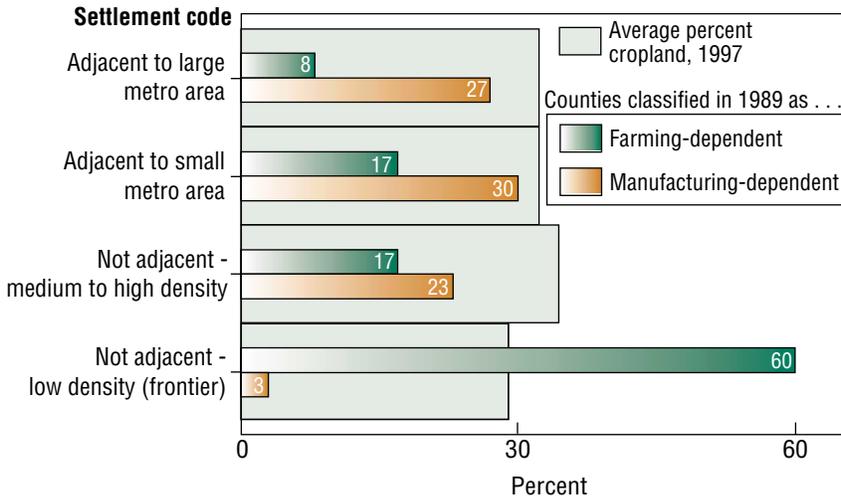
Natural Amenities

People move to or stay in rural areas not only to enjoy a slower paced, less congested, community-centered life, but also to enjoy the outdoors. Temperate climate, ponds

Figure 3

Cropland and economic type, by settlement code

Frontier counties have less cropland, but are more likely to be farming-dependent than other counties



Sources: 1997 Census of Agriculture (cropland); Cook and Mizer (farming- and manufacturing-dependent).

and lakes, and hills and mountains enhance this enjoyment. To measure natural amenities, we use a scale of natural amenities using six items: average January temperature, January days of sun, temperate summer, low July humidity, percent of county that is surface water, and topological variation—which ranged from flat to mountainous (McGranahan). The scale, composed by adding the standardized scores of each measure, is very simple, but nonetheless highly associated with a county’s change in population and employment over the past 25 years. Areas scoring highest on the scale tended to be in the Mountain West and Florida, while the lowest scoring areas were in the North Central region (fig. 5).

One of the problems facing areas with extensive farming is that the best cropland tends to be the lowest in natural amenities—where the land is flattest and least broken up by ponds and lakes, where the winters are wettest (although not necessarily coldest), and where the summers are hottest and most humid. In general, the lower a

county’s score on the natural amenities scale, the higher the proportion of land in crops and the less likely Johnson and Beale were to classify it as a recreation county (fig. 6).

Three of every four frontier counties with below-average natural amenities are classified as farm-dependent (fig. 7). Despite having

the same amount of cropland, relatively few of the other low-amenity nonmetro counties were classified as farm-dependent. They had enough other types of economic activity in 1987-89 so that the proportion of earnings from farming seldom exceeded the 20-percent threshold used to define farm-dependent counties.

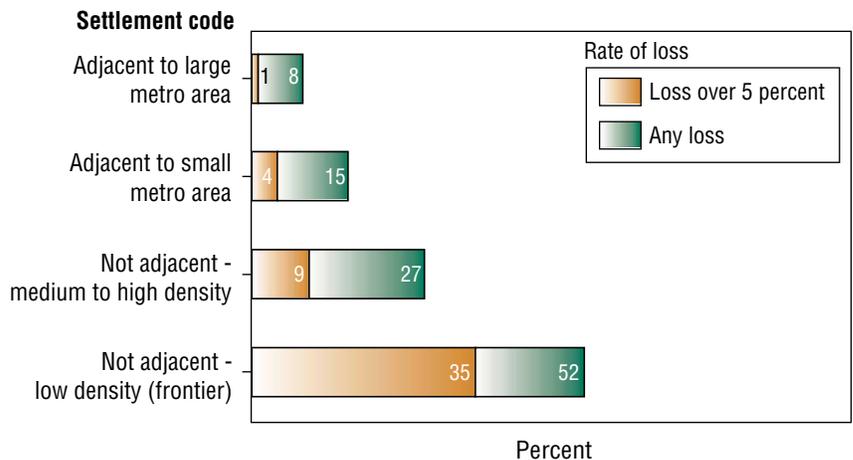
Population loss in the 1990s was strongly related to both natural amenities and frontier status. Nearly 70 percent of the frontier counties scoring very low in natural amenities lost at least 5 percent of their population between 1990 and 2000 (fig. 8). In contrast, none of the very high-amenity counties that were either adjacent to a metro area or had a density of over 10.1 persons per square mile lost 5 percent of their population.

Some of the loss in the very high-amenity frontier counties can be ascribed to mine closures. If mining-dependent counties are excluded from the analysis, the proportion of these counties with population loss in the 1990s drops

Figure 4

Proportion of nonmetro counties with population loss, 1990-2000, by settlement code

Over half the frontier counties lost population between 1990 and 2000

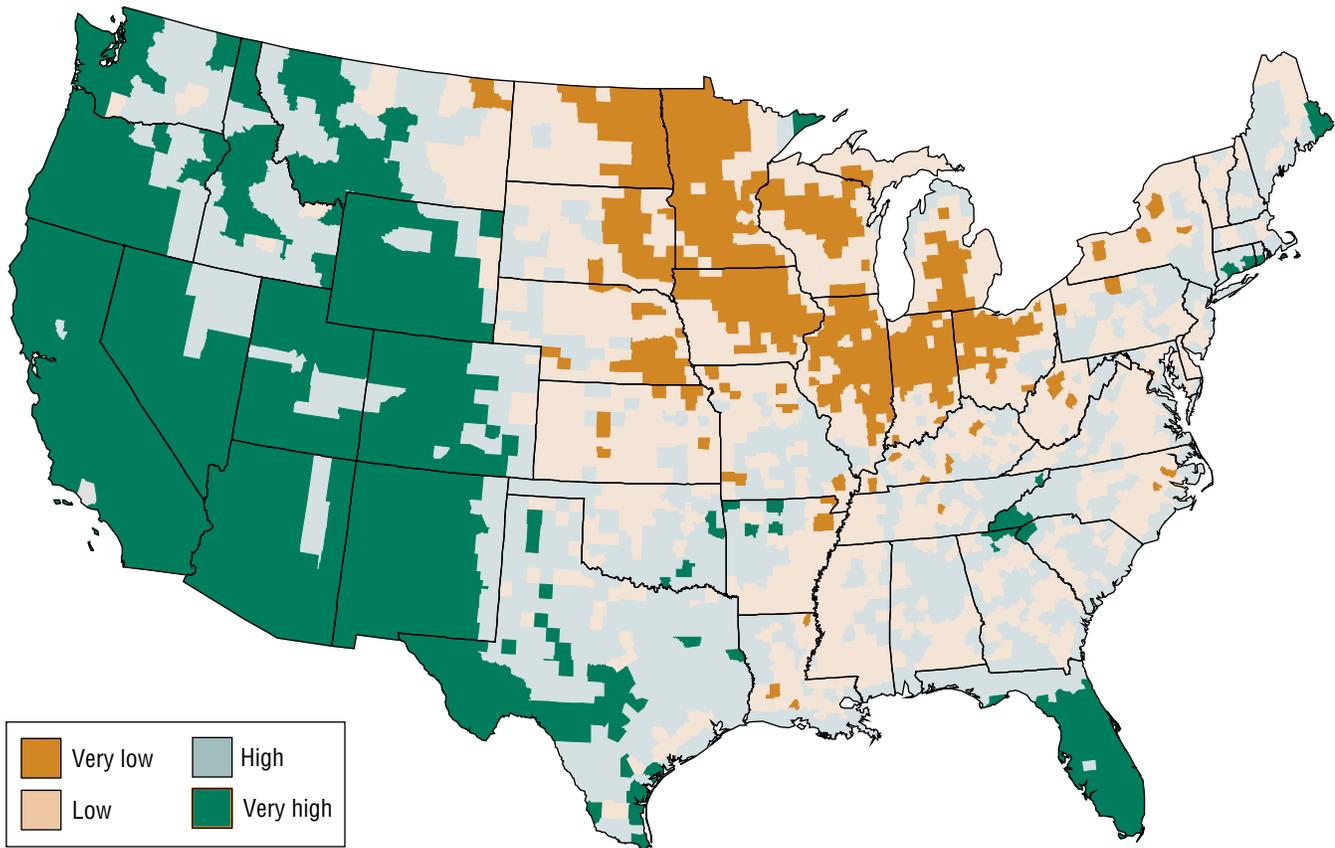


Source: U.S. Censuses of Population, 1990 and 2000.

Figure 5

Natural amenities scale

The North Central scores low in natural amenities, while the mountainous West scores high



Note: Low is within 1 standard deviation below the mean and High is up to 1 standard deviation above the mean. Other categories are more extreme.

from 20 percent to 14 percent. Similarly, the proportion with a population loss of 5 percent or more falls from 10 percent to 6 percent.

Even for farm-dependent counties, location matters. Frontier status and low natural amenities meant substantial population loss in 1990-2000 for over half of these counties (fig. 9). In contrast, only 4 percent of the farm-dependent counties above average in natural amenities and without frontier status incurred a loss of over 5 percent. Only 94, or 17 percent, of all farm-dependent counties are so situated, however.

Sources of Population Loss

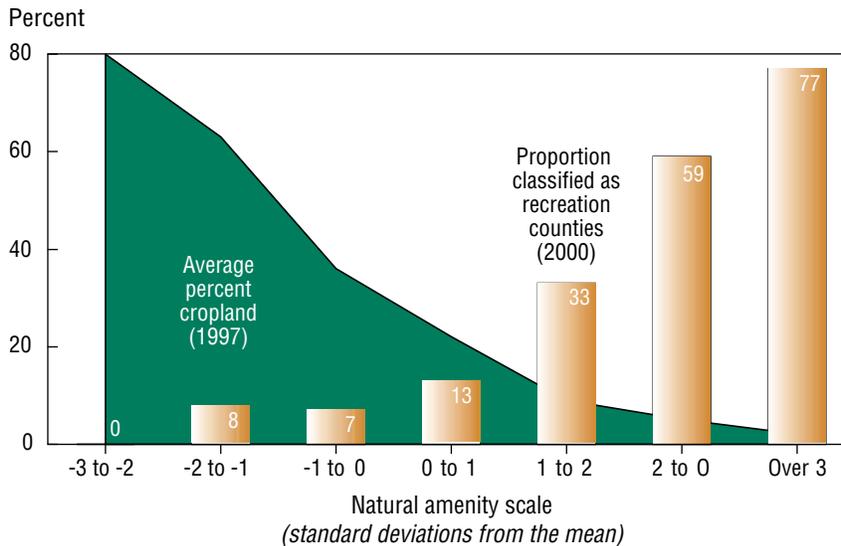
We have considered the association of population loss with several county characteristics, including high poverty, remoteness and sparse settlement, low natural amenities, and dependence on farming. Frontier counties in areas with few natural amenities were especially likely to lose population during the 1990s. One reason, we argue, is the quality of life afforded by these locations. Life in remote, thinly settled areas is not easy, and people who are considering moving to rural areas may choose frontier areas only if there are compensations such as natural amenities or family ties.

But economics also plays a role. As noted earlier, frontier counties, at least those without high amenities, have not attracted manufacturing or other activities. Labor markets are small in these areas and jobs tend to be low-pay. The average poverty rate in low-amenity frontier counties does not differ from the overall nonmetro average, but levels of schooling tend to be relatively high. Thus, although the poverty rates do not tend to be high, there may be a substantial gap between workforce qualifications and jobs available in many of these counties. Compounding the problem in farm-dependent areas

Figure 6

Land in crops and recreation counties, by level of natural amenities

Counties scoring low in natural amenities tend to have a lot of agriculture and not much recreation



Sources: 1997 Census of Agriculture (cropland); Johnson and Beale (recreation); and McGranahan (natural amenities).

is the slow growth or decline in agricultural jobs.

Finally, demographics may contribute to population loss in low-amenity frontier counties. Because of previous outmigration and declining birth rates, many rural counties have increasingly older populations, with the number of deaths now exceeding the number of births. Nonmetro counties where the population age 65 and over exceeded 20 percent of the total population in 1990 were more likely than other counties to lose population between 1990 and 2000.

Logistic regression was used to explore the relative importance of geography (remoteness, population density, natural amenities), natural resources base (mining-dependent, farm-dependent), socioeconomic measures (young adult high school completion, poverty rate), and demography (percent age 65 and over) in understanding which nonmetro counties lost population in 1990-2000 (see box, p.10). Each of these four factors contributes to

understanding where population loss occurred, with geography the most salient factor.

As the charts in this article have demonstrated, much of the

association between farm dependence and population loss is attributable to the geographic characteristics of farm counties. Mining counties, in contrast, lost population despite their relatively favorable geographic situation. Many of these counties are in high-amenity areas in the West, where population loss was otherwise relatively infrequent.

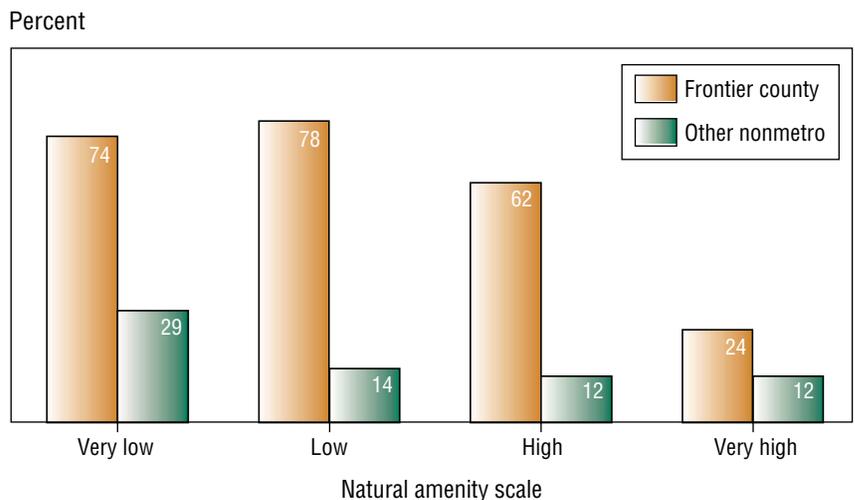
Some have expressed concern that promoting education in rural areas leads to outmigration and population loss. Areas with greater young adult high school completion rates than others did have a somewhat greater likelihood of population loss in 1990-2000. However, this appears to be entirely because these areas, many of them in the upper Midwest, were also areas low in natural amenities.

County poverty rates are highly related to young adult high school completion rates (the correlation coefficient between the two mea-

Figure 7

Proportion of counties classified as farm-dependent, by settlement type and natural amenities score

Dependence on farming is much higher for frontier counties than for other nonmetro counties, except in high-amenity counties

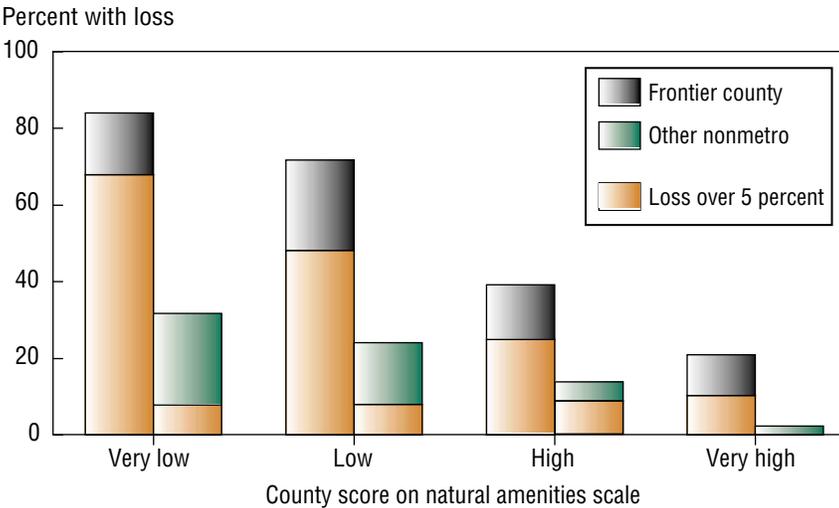


Note: Amenity scale categories "low" and "high" are within a standard deviation of the mean. Sources: Cook and Mizer (farm dependent); McGranahan (natural amenities).

Figure 8

Nonmetro county population loss, 1990-2000, by settlement type and natural amenities score

Two-thirds of the frontier counties with few natural amenities had high population loss in the 1990s



Note: Amenity scale categories "low" and "high" are within a standard deviation of the mean. Sources: McGranahan (natural amenities); U.S. Censuses of Population, 1990 and 2000 (population).

tures is -0.67 for nonmetro counties). As noted earlier, there was no overall relationship between poverty and population loss in 1990-2000. However, we created a measure of the difference between a county's poverty rate and the poverty rate predicted for the county based on its young adult high school completion rate. This measure was highly associated with population loss, indicating that the more a county's poverty rate exceeded the norm for counties with similar levels of young adult schooling, the greater the likelihood of population loss. While this is consistent with the economic model, the measure was much less predictive of population loss than were the geography measures.

Finally, the relationship between the proportion of elderly in the population in 1990 and subsequent population loss was strong in this analysis, stronger than the socioeconomic measure. However, it is not clear to what extent the

presence of a relatively elderly population creates conditions for population loss (such as an excess of

deaths over births) and to what extent it reflects conditions that produced population loss in the past and will continue to do so in future.

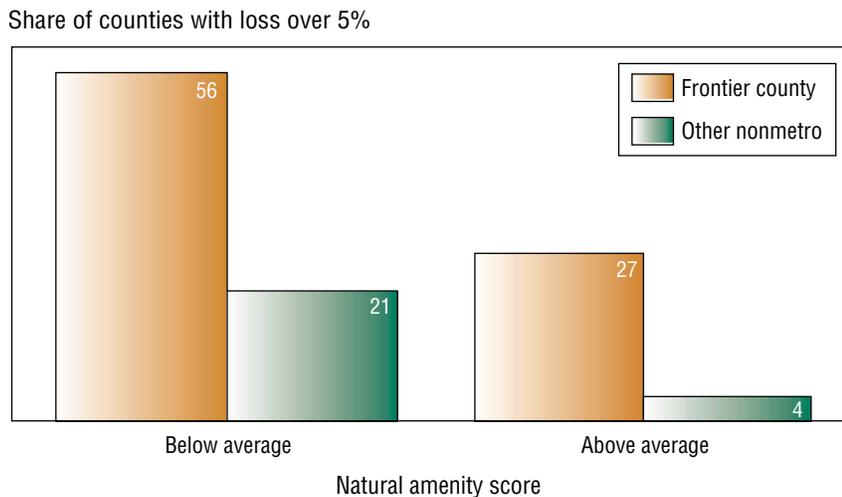
Why Some Low-Amenity Frontier Counties Gained Population

Counter to the prevailing trend, 56 (a quarter) of the low-amenity frontier counties gained population in the 1990s. For all but 12 of these counties, growth in the 1990s represented a turnaround from population loss in the 1980s. In fact, two out of every three of these counties lost over 5 percent of their population in 1980-90, so the turnaround represented a major shift. Are there lessons to be learned from these counties that might be applied to other low-amenity frontier counties? To answer this question, we examined various statistical sources and talked to many county extension agents.

Figure 9

Proportion of farm-dependent counties with high population loss, 1990-2000, by natural amenities and settlement type

Absent low amenities and frontier status, few farm-dependent counties had high population loss



Sources: Cook and Mizer (farm-dependent); McGranahan (natural amenities); U.S. Censuses of Population, 1990 and 2000 (population loss).

While rural development experts emphasize local initiative and entrepreneurship, and these factors may have contributed to growth in some areas, there are virtually no examples where growth in low-amenity frontier counties cannot be attributed to an external agent or new condition. Nine of the counties, mostly in North Dakota, have substantial Native American populations and during the 1990s, new casinos opened in eight of these counties. In four low-amenity frontier counties, new jails or prisons added to the population, both through new jobs and because inmates are counted as part of the population. New meatpacking plants and auxiliary operations such as feed lots were instrumental in 14 counties. More often than not, their recent population growth was Hispanic, and the non-Hispanic population continued to decline. In one county, locally developed industrial agriculture—a new large hog farm—resulted in a rise in the Hispanic population only. In two low-amenity frontier counties that gained population, the influence of industrial agriculture was indirect: new meatpacking operations in neighboring counties prompted the movement of non-Hispanics out of those counties and into the counties in question.

In 11 of the 56 counties, mostly in Minnesota and Wisconsin, lake- or river-based seasonal recreation and second-home development played an important role. These areas do not attract national attention, but serve people living in the region. They are forested, with very little agriculture. The natural amenities scale did not pick up on the appeal of areas with many scattered lakes and ponds but little overall water surface area.

Measures in Logistic Regression of County Population Loss, 1990-2000

Measures	Source
Economic base	
Farming-dependent county (yes/no)	Cook and Mizer
Mining-dependent county (yes/no)	Cook and Mizer
Socioeconomic measures	
Average poverty rate, 1989 and 1999	1990 and 2000 Censuses of Population
Percent of young adults (ages 25-44) with high school diploma (1990)	1990 Census of Population
Geography	
Population density and its square Nonadjacent (yes/no)	1990 Census of Population Gelfi and Parker
Natural amenities scale score	McGranahan
Demography	
Percent of population age 65 and over	1990 Census of Population

Another nine counties, on Interstates or within commuting distance of a regional city, have gained population through rural sprawl. Others are special cases, such as religious migration, the damming of a river to form a new lake, or the expansion of a manufacturing plant. Thus, except where second-home development and recreation is concerned, virtually all cases of population growth in low-amenity frontier counties involved some situation external to the county or the creation of a major new employer such as a casino or prison.

The jobs created in these counties tended to be low-skill jobs—in meatpacking/feedlots, prisons, or casinos. This is probably part of the reason that, in over a third of the counties that gained population, the growth was confined to either Hispanic or Native American populations, while the non-Hispanic White population declined.

This is not to say that growth based on local enterprise development involving well-paying jobs is impossible. Roseau County, Minnesota (population 16,000), was the birthplace of the snowmobile industry in 1954 and now has over 5,000 manufacturing jobs. But this type of growth is clearly a very rare event.

In general, an examination of the low-amenity frontier counties that gained population during the 1990s reinforces rather than weakens the finding that thinly populated areas are difficult to live or do business in, absent compensating natural amenities. In many cases, county growth could be attributed to either proximity to a city or natural amenities not captured by our scale. In some cases, simply having a small lake has been enough to stem or even reverse population decline. For almost all other cases, industrial agriculture, casinos, or prisons were responsible for the growth. These have limited applica-

bility to other areas. Industrial agriculture usually needs to be embedded in an area where corn or other feed grain can be raised, casinos are largely confined to Native American locations, and prisons, one hopes, are now less of a growth industry.

Summary and Conclusion

U.S. national prosperity in the 1990s did not extend to many of its rural areas. Poverty remained high in many rural (nonmetro) counties and roughly a quarter lost population over the decade. For about half of the counties losing population, the loss exceeded 5 percent.

Poor economic conditions are clearly not the central factor: rural counties with high poverty were no more likely to lose population in 1990-2000 than were other rural counties. An argument can be made that declining employment in agriculture and other resource-based industries is a major cause of rural population loss. Counties largely dependent on farming have been much more likely to lose population than other counties. But what distinguishes farm-dependent counties from other rural counties is less the presence of farming than the absence of nonfarm activities. Farm-dependent counties are more likely to be remote from metro areas, to have low population density, and to lack natural amenities. These characteristics, which discourage other types of development, account for much of the population loss in farm-dependent counties.

Low-amenity frontier counties are not the only ones to undergo high population loss in the 1990s. Some high-poverty counties along the Mississippi and in Appalachia lost population, as well as a few scattered counties in the North

where poverty rates are high, given the relatively high education levels. Also, some farm counties in western Iowa and southwestern Minnesota had high population loss. These farm counties all score low on the natural amenities scale, but either had enough residents to be above the low-density threshold used here or are adjacent to small metro areas.

The analysis presented here suggests that low-amenity frontier counties are facing difficult choices. Unless they can find a means to develop a recreation industry, they

must deal with either industrial agriculture or continued population loss. Either of the last two courses would put pressure on services, the first through the need to serve an immigrant population, and the second through further declines in the number of people served. While the Internet and other information technologies can help reduce the problems of isolation, it seems unlikely that the preference rural Nebraskans expressed for living in a more densely settled location will go away.^{RA}

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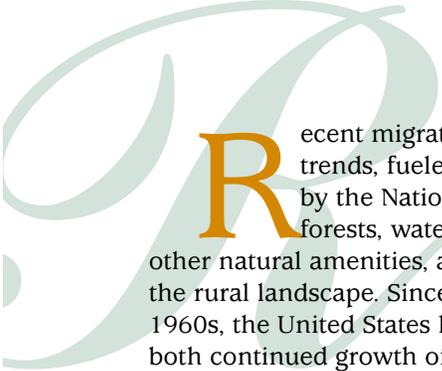
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Nonmetro Recreation Counties

Their Identification and Rapid Growth

Kenneth M. Johnson
Calvin L. Beale



Recent migration trends, fueled in part by the Nation's love of forests, water, and other natural amenities, are altering the rural landscape. Since the late 1960s, the United States has seen both continued growth of metro populations and renewed population increase in many nonmetro counties. There has been a move toward population deconcentration, reflected both in the tendency of settlement to sprawl outward from large, densely settled urban cores and in the recent rural demographic rebound.

One factor contributing to deconcentration is movement into areas rich in natural amenities and other recreational attractions. Recreational areas have long attracted large numbers of visitors. Recent data show that they are also attracting many permanent residents. Once vacationers discover

More than 80 percent of the Nation's 285 million people now reside in metropolitan areas. Many in this vast city and suburban population are attracted to the recreational opportunities and attractions of rural areas, such as beautiful scenery, lakes, mountains, forests, and resorts. For rural communities struggling to offset job losses from farming, mining, and manufacturing, capitalizing on the recreational appeal of an area fosters economic development, attracts new residents, and retains existing population. This article outlines a method to identify nonmetro counties with high recreation development. It then examines the linkage between such development and population change, and considers its implications for the future of rural and small-town America.

an area they like, many make return visits, eventually buy a second home there, and finally migrate to establish their primary residence in the area (Stewart and Stynes). Research has found that a substantial proportion of second home owners expect to retire to their second home within 10 years (Stynes et al., Johnson and Stewart).

Increased recreational activity, the appeal of second homes, and the influx of former urbanites into rural areas all create a demand for housing and for an expanded business, service and governmental infrastructure to support it. By increasing local employment and entrepreneurial opportunities, the flow of visitors and immigrants also encourages many current residents to remain, further bolstering the population. With the baby boom generation fast approaching an age

where leisure activities will increase and retirement migration will peak, the implications of recreational activities for future overall nonmetro migration and population growth are substantial. This article modifies and updates our earlier effort to identify recreational counties (Beale and Johnson), examines the linkages between recreational concentrations and population changes, and considers the implications of these for nonmetro America.

Based on the empirical and contextual analysis (see box, "How Recreation Counties Were Identified," p. 14), 329 nonmetro counties were classed as recreational (44 more than in our earlier work where somewhat different data and procedures were used). They comprise 14.6 percent of all nonmetro counties and have 15.6

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percent of the nonmetro population. The classification method identifies counties where the relative level of recreation-linked employment, income, and housing is high.

McGranahan created a natural amenity index ranking counties based on desirable physical attributes related to climate, topography, and presence of water (McGranahan). People interested in recreational activity often gravitate to areas with appealing natural fea-

tures, so there is considerable—although not predominant—overlap between our list and the counties ranked high in natural amenities. Of the recreation counties, 121 (or 37 percent) rank in the top quarter of McGranahan’s natural amenity list.

Recreation Counties Most Numerous in the Mountain West and Upper Great Lakes Areas

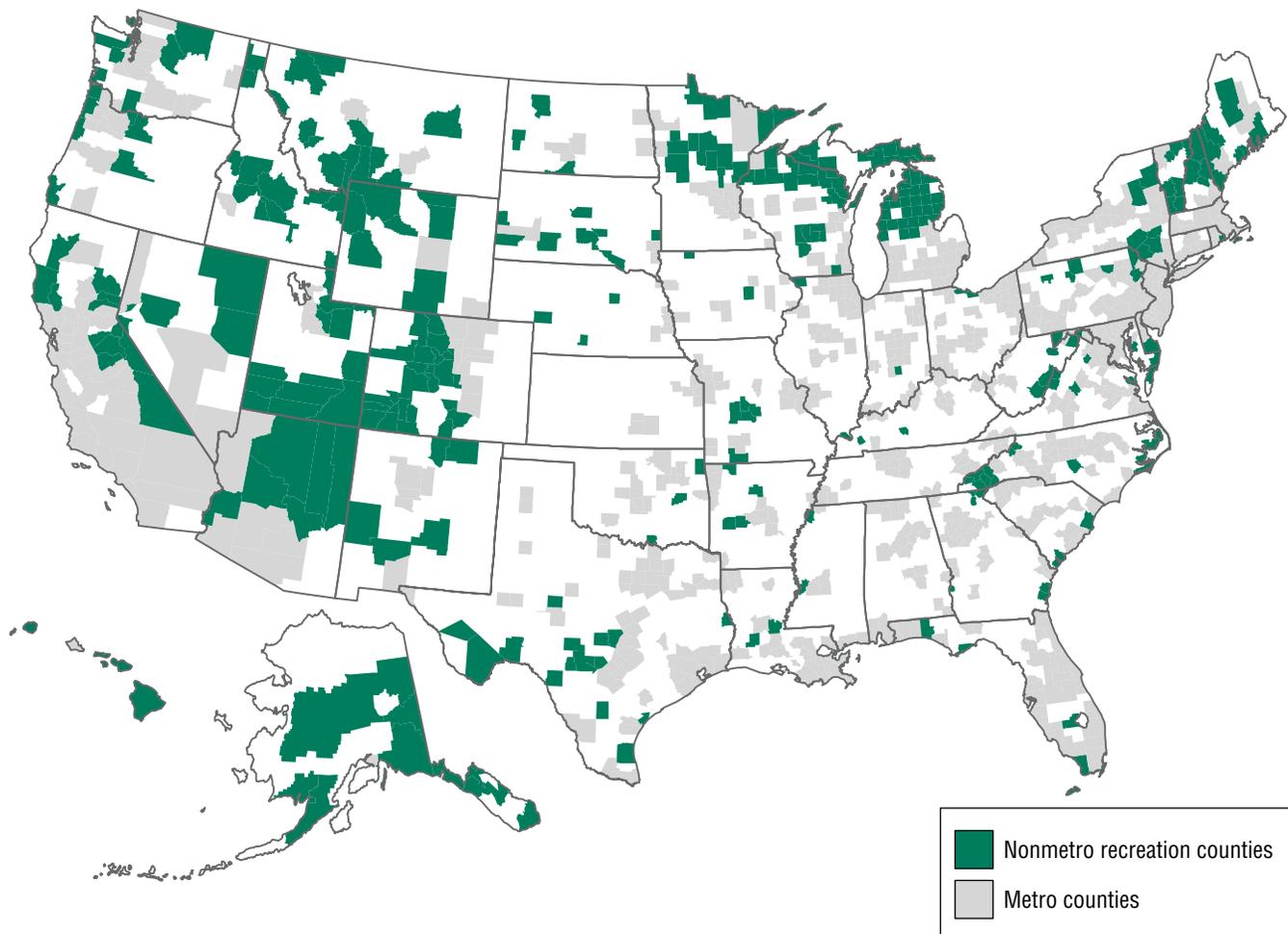
Counties with high economic dependence on recreation are in

45 States, but there are significant regional concentrations (fig. 1). The Upper Great Lakes and the Northeast have numerous lake-oriented counties that are second-home summer vacation areas of long standing, although they have added winter attractions such as snowmobile trails and skiing. In these counties, it is common for a third to half of all housing units to be seasonal or occasional-use places.

Figure 1

Nonmetro recreation counties

Most recreation counties are in the Mountain West, the Upper Great Lakes country, and New York-New England



Source: Calculated by the authors from various data of the Census Bureau and the Bureau of Economic Analysis.

How Recreation Counties Were Identified

The county or county equivalent is our unit of analysis. Counties have historically stable boundaries and are a basic unit for reporting social and economic data. We have done our identification for nonmetro counties only—those lying outside of the borders of the individual metro areas defined by the Office of Management and Budget, using the boundaries established in 1993 after the 1990 Census. In general, a metro area contains an urbanized area of 50,000 or more people, with borders extended out to county lines and including any other counties linked by substantial job commuting to the central county or counties. All other counties are nonmetro. Because metro reclassification after each census complicates efforts to compare data for nonmetro areas across time, a consistent 1993 metro delineation is used. (Metro and nonmetro boundaries based on the 2000 Census will not be available until mid-2003.) Of 3,140 U.S. counties and equivalents, 2,303 are nonmetro and 837 are metro.

A multistep selection procedure combining several empirical measures of recreational activity with a careful review of contextual material was used to identify recreation counties. These measures were: (1) wage and salary employment in entertainment and recreation, accommodations, eating and drinking places, and real estate as a percentage of all employment reported in the Census Bureau's County Business Patterns for 1999; (2) percentage of total personal income reported for these same categories by the Bureau of Economic Analysis; (3) percentage of housing units intended for seasonal or occasional use reported in the 2000 Census; and (4) per capita receipts from motels and hotels as reported in the 1997 Census of Business. The industry categories selected for use with the employment and income statistics as being indicative of recreational activity were chosen after inspection of data for a sample of counties of well-known, undisputed high recreational dependence (e.g., those containing such places as Aspen, Vail, Sun Valley, Nantucket, Bar Harbor, the Outer Banks, Key West, Branson, or Mackinac Island).

The three variables measuring employment, income, and seasonal housing were converted to z-scores and combined into a weighted index (weights of 0.3 were assigned to income and employment and 0.4 to seasonal housing) to reflect recreational activity. Counties with index scores of 0.67 or higher were regarded as potential recreation counties. Additional counties were considered to be recreation counties if their value was greater than 0 (the mean of the index) and they had at least \$400 per capita of hotel-motel receipts. Inclusion of such counties to the list added some comparatively large counties with a high volume of recreation activity but with urban centers big enough to dilute the percentage of direct recreational income and employment or the proportion of second homes (e.g., those containing Sedona, AZ; Coeur d'Alene, ID; Traverse City, MI; Southern Pines-Pinehurst, NC; or Newport, RI).

Counties were also accepted if at least 25 percent of their housing was seasonal, so long as the index exceeded the mean. Each potential candidate was individually appraised from printed and/or Internet sources and personal knowledge to determine or verify the nature of their recreational function. Fourteen counties that ostensibly qualified, but lacked any known recreational function, were deleted from the list either because they were very small in population with inadequate and misleading County Business Patterns coverage or because they reflected high travel activity without recreational purpose, i.e., overnight motel and eating place clusters on major highways.

Recreation counties are also scattered throughout the length of the Rocky Mountains, many best known for their national parks or ski resorts, but most include other features conducive to hiking, mountain biking, climbing, fishing, rafting, or just escaping summer heat and humidity. Upland areas of the South also include recreation counties offering many of the same activities as the West, often featur-

ing leisure use of the reservoirs that are the legacy of the dam-building era.

Alaska and Hawaii are also well represented, although very different in appeal. Hawaii's three recreation counties are all highly developed, thickly populated tropical resorts. In Alaska, where population is sparse, outdoors recreation and the novelty of subarctic location attract enough visitors to place 11 of the

States's county equivalents on our list. Aside from a few casino counties, there is a general dearth of recreation areas in the southern Great Plains, the Corn Belt, and the lower mid-South.

Recreation Counties Come in a Variety of Types

Recreation counties offer visitors and residents a variety of opportunities to pursue leisure

interests. Some of the counties are dominated by a single function. Others have more than one attraction, or different attractions in different seasons. Some of the variation between counties is determined by their geographic location or the physical attributes of the area. To illustrate the variety of recreational settings and types, we classified the counties into 11 types (table 1).

To many people, water and woods activities epitomize recreation and 91 (28 percent) of the recreation counties fit this description. Of these, 70 are in the Great Lakes States and 21 in the Northeast (table 1). Many have been second-home areas for decades. Although population gains in such counties are less than those for recreation counties overall, their growth rates well exceed those for nonmetro counties as a whole.

Migration accounts for virtually all of this growth because they have long attracted retirees as well as vacationers, resulting in an older population subject to high mortality.

But, one need not go to the Northwoods lakes to enjoy water and beaches. Thirty-eight counties on both coasts were typed as Coastal Ocean Resorts and an additional 27—located largely in the South—were classed as Reservoir Lake counties. Many counties in these two groups have temperate climates in addition to water access and attract retirees as well as tourists and second-home owners. This is reflected in the demographic data, which show migration gains during the 1990s (especially in the Reservoir counties) but little, if any, natural increase.

Mountainous terrain is the dominant feature in several other

recreational types. Twenty counties were so focused on skiing that we labeled them as Ski Resorts, although they usually have summer attractions as well. Another 18 counties were characterized as Other Mountain Areas with Skiing, where skiing is present but not regarded as dominant.

Twenty-one Casino counties are the most recent and unique additions to the recreational mix. They did not exist in the 1980s except for a few in Nevada. The gambling casinos have developed since Federal approval of Indian tribal casinos in 1987 (where consistent with State law), and by the decision of some States to permit non-Indian casinos in designated locations. Some of the casino counties lack any natural amenity base for recreation, in contrast to virtually all other recreation counties.

Population gains in these counties

Table 1

Population change, net migration, and natural increase for recreation county types, 1990-2000

Recreation counties come in a variety of types, but all experienced inmovement of people

Recreational subgroup	Population change			Net migration		Natural increase	
	Number of counties	Percent change	Percent growing	Percent change	Percent growing	Percent change	Percent growing
Midwest Lake & 2nd Home	70	15.7	93	14.8	96	0.8	51
Northeast Mtn, Lake, and 2nd Home	21	11.5	90	9.6	81	2.0	71
Coastal Ocean Resort	38	18.7	95	14.9	92	3.8	66
Reservoir Lake	27	26.0	89	27.6	89	-1.7	41
Ski Resort	20	34.3	95	26.9	95	7.4	90
Other Mountain (with ski)	17	23.6	100	17.9	94	5.5	76
West Mountain (exc. ski and Nat'l Park)	47	32.3	89	27.6	89	4.6	74
South Appalachian Mtn Resort	17	17.0	88	16.4	100	0.6	53
Casino	21	17.5	95	11.4	67	6.1	95
National Park	21	16.7	76	8.0	52	8.7	90
Miscellaneous	28	26.5	89	22.2	82	4.3	71
Total Recreation	327	20.2	91	16.9	87	3.3	68

Three Alaska counties excluded because of missing data prior to 2000.

Notes: Recreation types are mutually exclusive and reflect the primary recreation activity, though many support multiple leisure activities.

Percent change is aggregate change for all cases in category.

Source: Census 2000 PI-94, 1990 Census, and Federal-State Cooperative estimates.

Table 2

Population change, net migration and natural increase for recreation, nonmetro, and metro counties, 1970-2000*Population growth rates were consistently higher in recreation counties than elsewhere*

Years/counties	Number of cases	Initial pop. (1,000)	Population change			Net migration			Natural increase			
			Absolute change (1,000)	Percent change	Percent growing	Absolute change (1,000)	Percent change	Percent growing	Absolute change (1,000)	Percent change	Percent growing	
1970 to 1980												
Recreation	314	4,974	1,221	24.5	89.8	931	18.7	85.0	290	5.8	88.5	
All nonmetro	2,274	43,317	5,790	13.4	79.6	3,159	7.3	66.9	2,631	6.1	88.1	
Metro	834	158,884	17,146	10.8	88.6	5,948	3.7	73.4	11,198	7.0	97.8	
Total	3,108	202,229	22,937	11.3	82.0	9,107	4.5	68.7	13,830	6.8	90.7	
1980 to 1990:												
Recreation	327	6,442	813	12.6	73.4	431	6.7	58.4	382	5.9	87.7	
All nonmetro	2,303	49,520	1,296	2.6	45.1	-1,379	-2.8	27.4	2,675	5.4	89.4	
Metro	837	177,012	20,871	11.8	81.0	6,585	3.7	57.7	14,286	8.1	97.7	
Total	3,140	226,542	22,168	9.8	54.6	5,206	2.3	35.5	16,962	7.5	91.7	
1990 to 2000:												
Recreation	327	7,258	1,465	20.2	91.4	1,226	16.9	87.4	239	3.3	67.7	
All nonmetro	2,303	50,816	5,262	10.4	73.9	3,535	7.0	68.4	1,727	3.4	70.8	
Metropolitan	837	197,890	27,456	13.9	90.1	12,124	6.1	77.5	15,332	7.7	94.9	
Total	3,140	248,710	32,716	13.2	78.2	15,659	6.3	70.8	17,059	6.9	77.3	

Alaska and Hawaii excluded from 1970-1980 analysis due to missing data. Three Alaska counties excluded from 1980-2000 due to missing data prior to 2000.

Notes: 1993 metropolitan status used for all periods. Net migration is population change minus natural increase.

Source: Census 2000 PL-94 data, 1970-1990 Census data, and Federal-State Cooperative Population estimates.

were moderate compared with other recreation counties, but certainly substantial by national standards of nonmetro growth. There were 32 counties in other recreation types that also had casinos in their recreation mix, but not as the dominant attraction. In addition, a number of non-recreation counties have casinos whose impact was too small to create an exceptional presence of recreation-related employment and income. Altogether, we identified over 130 nonmetro counties outside of Nevada that now have casinos, representing a substantial new addition to the nonmetro employment mix.

National Parks are the principal attraction in 21 recreation counties. This county type is the only one among the recreation types in which net migration did not overwhelmingly dominate the population change. Although migration gains in National Park counties were well above the U.S. average, they were less than half that of all recreation counties. The rate of natural increase in the National Park counties was nearly three times that of recreation counties as a whole. But this is believed to derive largely from the disproportionate presence of American Indian, Alaskan Native, and Mormon communities in the park counties, rather than from any effect of the national parks themselves.

Finally, 28 counties in a Miscellaneous Recreation group have such attractions as historic towns, amusement parks, golfing, hunting, wind surfing, or performance centers, but are either unique or not numerous enough to treat as a separate type. These counties had significant net in-migration coupled with above-average natural increase from 1990 to 2000 (table 1).

All Types of Recreation Counties Had Net Inmovement of People

In the 1990s, nonmetro areas experienced a significant population rebound. Such growth was particularly rapid and widespread in recreation counties, where overall population increase was 20.2 per-

cent, compared with 10.4 percent in all nonmetro counties and 13.2 percent in the Nation as a whole (table 2). Most of the recreation county growth was fueled by net immigration of people (84 percent). The rate of migration gain in recreation counties was 2.5 times that in nonmetro counties generally. Such gains were very widespread, occurring in 87 percent of the recreation counties. These gains are likely the result of not only increased inmovement to these counties, but also reduced outmovement of native residents because of the greater economic opportunities provided by immigration.

The rate of natural increase in the recreation counties (i.e., growth from surplus of births over deaths) was slightly lower than elsewhere. Indeed, nearly a third of all recreation counties had more

deaths than births. This largely reflects the retirement of many people to these counties who eventually swell the death rate to the point that it exceeds the birth rate.

Although recreation counties have not been immune to events that influence the pace of demographic change in general, they consistently had population and net immigration gains that far exceeded those in other nonmetro counties during each of the last three decades (table 2). In the 1970s, the recreation counties led the remarkable nonmetro growth of that decade. In the 1980s, when nonmetro America as a whole had net outmigration during the long economic downturn of that period, recreation counties continued to attract migrants and had a more rapid growth rate than the national or metro populations.

It is deceptively simple to lump more than 2,300 diverse nonmetro counties into a single category and call it Rural America. To address this concern, USDA's Economic Research Service developed a typology of counties that groups nonmetro counties into a number of economic and policy-relevant types. Comparing the recreational counties to these ERS groupings provides additional insights into the linkages between demographic change and recreational activity.

In the 1990s, population growth rates in recreation counties exceeded those in all but two of the ERS county types (table 3). The exceptions were retirement-destination counties and those containing large Federal land holdings. The rapid population gain in counties with a high proportion of Federal land derives partly from

Table 3

Population change, net migration, and natural increase in nonmetro counties by type, 1990-2000

Retirement, Federal land, and recreation counties exceeded other nonmetro counties in growth

County type	Population change			Net migration		Natural increase	
	Number	Percent change	Percent growing	Percent change	Percent growing	Percent change	Percent growing
Retirement	190	28.4	100	25.9	99	2.5	59
Federal lands	269	22.3	90	16.4	83	5.9	83
Recreation	327	20.2	91	16.9	87	3.3	68
Manufacturing	506	9.5	87	6.1	76	3.4	86
Commuting	381	15.2	92	12.0	88	3.2	80
Government	243	11.5	85	5.2	74	6.3	77
Service	323	14.6	81	11.7	78	2.9	71
Nonspecialized	484	10.9	84	8.4	80	2.5	73
Transfer	81	8.5	75	6.5	69	1.9	60
Poverty	535	9.1	77	4.4	63	4.7	80
Mining	146	2.3	54	-1.5	44	3.8	81
Farming	556	6.6	49	3.9	49	2.7	53
Total nonmetro	2,303	10.3	74	6.9	68	3.4	71

Three Alaska counties excluded due to missing data prior to 2000.

Notes: All types except recreation defined as in Cook and Mizer, 1994 (14 previously metro counties excluded).

A county may be included in more than one type.

Percent change is aggregate change for all counties in category.

Source: Census 2000 PL-94 data, 1990 Census data, and Federal-State Cooperative population estimates.



Photo courtesy CORELDRAW Professional Photos.

the fact that they are mostly in the West, the most rapidly growing U.S. region. Retirement counties are defined as those with significant inmovement of older people in the 1980s, so it is not surprising that they would have an above-average rate of total population increase in the 1990s. But their overall growth of 28.4 percent from 1990 to 2000 is extraordinary. Retirement counties were the only ones with a larger rate of migration gain than recreation counties. More than half of the 190 retirement counties were also recreation counties, as areas with recreational opportunities often attract retirees.

In contrast, it is not surprising that farming counties had only moderate population growth in the 1990s (6.6 percent). Indeed, the surprise is that they grew at all. But growth in recreation counties was also well ahead of that in areas dependent on manufacturing, government work, trade and services,

or those with nonspecialized economies. Even counties with high rates of intercounty job commuting—many of which adjoin metro areas and are incipiently suburban—did not match recreation counties in the pace of population increase. In sum, the presence of exceptional recreation activity in rural counties is strongly linked to population growth.

Implications of Recreational Growth

Rural America was settled by people who built their lives and communities by extracting sustenance from bountiful natural resources. Originally it was the soil, forests, animals, and minerals that attracted settlement. Extractive industries based on these resources are now mature and consistently operate with fewer workers. But rural areas have other natural resources—bodies of water, mountains, valleys, and scenic

landscapes—that today attract millions of leisure visitors and many new residents, thus creating more jobs in the process. The fact that many recreation areas also are retirement destinations underscores the capacity of climate and scenic amenities to attract people for permanent residence.

The implications of continuing growth in recreational areas are not all positive, particularly because these locations contain many environmentally sensitive areas. Water bodies, shore lines, wetlands, forests, and wildlife are likely to experience more environmental stress as the volume of human activity grows, especially where the physical features and fauna themselves are the objects sought for use or appreciation by the visitors and new residents. Some recreation counties began to be used for leisure purposes on a small scale in the 19th century, but—along with newer ones—have grown at an

accelerating pace in recent decades as affluence and leisure increase in a nation fast approaching 300 million people. Some nonmetro recreation counties had such growth in the 1990s that they now have urbanized areas of over 50,000 people and will be reclassified as metropolitan in 2003 (e.g., Prescott, AZ; Coeur d'Alene, ID; Bend, OR).

The growth in many recreation areas has occurred near and within forests, aggravating fire control problems (as witnessed prominently in the West in the summer of 2002). The rapid growth also complicates agricultural operations, puts additional pressure on riparian areas, impairs air quality, and can diminish the very amenities that initially attracted people. Yet in an era when hundreds of rural and small-town communities need to obtain new sources of income to counter the decline of farm, mine, and timber jobs and the loss of factory work overseas, the rising urban demand for rural recreation has become essential to the continued vitality of many places.

Therefore, when attempting to understand conditions and trends in nonmetro America, it is necessary to determine which counties have developed high dependence on recreation activity. The process of specifying recreation counties is unavoidably somewhat arbitrary because recreation occurs to some degree nearly everywhere. There are counties not on our list that have well-known recreational features. And other researchers might

choose different procedures than we have. However, the consistently large population and migration gains evident over three varied decades in the counties we have delineated as recreational indicates the utility of our classification. As such, we believe it will be a useful tool for researchers and policy-makers concerned with the welfare and course of change in rural and small-town America. [RA](#)

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Federal Funding in the Delta

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As defined by the Lower Mississippi Delta Development Commission, the Delta extends from the Gulf of Mexico to the outskirts of St. Louis, including portions of Illinois, Missouri, Kentucky, Tennessee, Arkansas, Mississippi, and Louisiana. While it contains prosperous cities like New Orleans and Memphis, most of the region is rural and poor, and, despite some significant gains during the 1990s, the Delta remains one of the most impoverished regions in the country. Consequently, it has become a prime target of Federal economic development efforts in recent years, culminating in the creation of the new Delta Regional Authority (DRA)—a multi-State, Federal/State/local partnership aimed at revitalizing an area that includes the 7-State Delta region plus part of Alabama (fig. 1).

In this article, we discuss some of the problems the Delta faces and we examine the pattern of Federal funding in the Delta, with particular focus on economic development

Despite recent improvements, the Lower Mississippi Delta region—especially the rural Delta—faces many economic challenges. The Federal Government has spent large amounts of money on the region for basic income support. It has also invested in human resources in the region. However, the rural Delta has received less assistance from Federal community resource programs, which are important for economic and community development. The new Delta Regional Authority might bring the region more of such funding by helping localities plan and apply for assistance, and by leveraging public and private investment in economic development projects. If successful, this may actually save the Federal Government money over the long run on income support programs.

funding in the Delta's rural areas. We then discuss the newly created Delta Regional Authority (DRA) and how it might enhance development by changing the pattern of Federal spending in the region.

Rural Delta Faces Many Developmental Challenges

Many studies have documented the Delta's problems (see "For Further Reading," p. 30). To appreciate the challenges facing the Delta, we examined recent socioeconomic data for the Delta region (defined as the 219 counties originally part of the Lower Mississippi Delta region—excluding the 20 Alabama counties added to the DRA that are not contiguous with the Delta). This region contains about 10 million people and is disproportionately rural—4.2 million people live in the Delta's nonmetro areas. Thus, much of the challenge facing the DRA involves rural development (the words "rural" and

"nonmetro" are used interchangeably in this article).

Of the 219 counties within the Delta, 188 are rural (nonmetro), and the majority (119) of these are persistent-poverty counties (see "County Definitions" for more about the county types used in this article). Although the Delta has less than one-tenth of the Nation's nonmetro counties, it accounted for one-fourth of its 765 nonmetro persistent-poverty counties (as of 1990). The overall poverty rate for the region was 18.8 percent in 1999, compared with 12.4 percent nationwide (table 1). And despite the economic gains of the 1990s, the nonmetro Delta's poverty rate was still over 20 percent as of 1999, compared with 14.6 percent for nonmetro areas nationwide (fig. 2). (We used poverty data for 1999, the most recent available for local area estimates in the Delta. The article by Dean Jolliffe provides 2000 poverty estimates that are available

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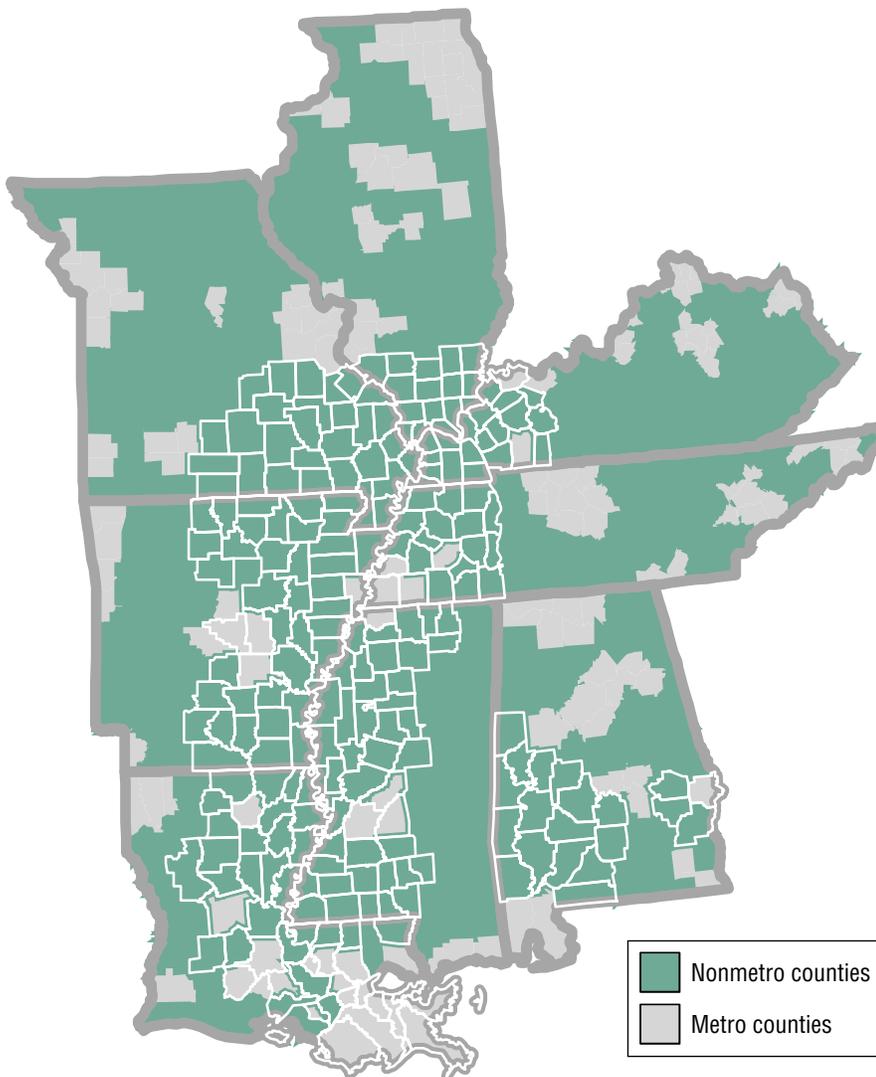
for metro and nonmetro areas nationwide.)

Part of the problem is due to underutilized resources, particularly labor. The 2000 unemployment rate in the Delta was 5.4 percent, compared with 4.0 percent nationwide. In the nonmetro Delta, unemployment was 6.4 percent, compared with 5.0 percent for nonmetro areas nationwide. The non-

County Definitions

Metropolitan, nonmetropolitan, urbanized, less urbanized, and totally rural counties are defined in Margaret A. Butler and Calvin L. Beale, *Rural-Urban Continuum Codes for Metro and Nonmetro Counties*, 1993, AGES 9428, U.S. Department of Agriculture, Economic Research Service, Sept. 1994. Economic and policy types of counties are defined in Peggy J. Cook and Karen L. Mizer, *The Revised ERS County Typology: An Overview*, RDRR-89, U.S. Department of Agriculture, Economic Research Service, Dec. 1994. Information about these definitions can also be found on the ERS web site: <http://www.ers.usda.gov/briefing/rurality/>.

Figure 1
Delta Regional Authority



Source: Economic Research Service.

metro Delta also had significantly higher unemployment rates than the metro Delta (fig. 3).

The Delta's high poverty rates also reflect family composition, with relatively high concentrations of the young (under 18 years old) and of families headed by a single female (table 2). The Delta also has a high concentration of Blacks—31 percent. All of these demographic characteristics are more pronounced in metro than nonmetro areas. Per capita income in the Delta (\$22,949 in 2000) is well below the U.S. average (\$29,469), with the nonmetro Delta scoring lowest (fig. 4).

Distress Varies Among Rural Areas in the Delta

These statistics mask significant local differences. Among the Delta's nonmetro counties, poverty is generally higher in the more rural parts of the region, and highest—26 percent—in the Delta's farming counties. In contrast, mining and manufacturing counties have relatively low poverty rates for the region—18 and 17 percent (table 1).

Unemployment also tends to be higher in rural than urban places, and farming counties again are at the high end on this distress indicator. However, mining and manufacturing counties also have relatively high unemployment, which tends

to be lowest in services- and government-dependent counties in the region.

Farming counties stand out in demographic conditions associated with high rates of poverty and unemployment, including higher percentages of population that are Black (34.7 percent), young (26.7 percent under 18), and in single female-headed families (9.5 percent) (table 2). Per capita income is also lowest in the Delta's farming counties and in its most rural counties, and highest in its most urban counties and services-dependent

counties. Even persistent-poverty counties, which score high on all three economic distress indicators, are not as distressed as the Delta's farming counties.

The hardship in the Delta's farming areas is understandable. Employment in farming has declined for many years, and the decline has been more rapid in the nonmetro Delta than in nonmetro areas nationwide (Majchrowicz). In addition, many, if not most, of the region's farmers have small farms, which provide meager incomes. Many of these places are relatively

isolated and lack economic diversity, providing few alternatives to those who remain.

Although some parts of the Delta have acquired manufacturing and service industries, which tend to reduce poverty rates, many of these jobs require low skills and pay low wages. This economic structure, along with an undereducated labor force, has provided few opportunities to generate significant wealth and economic development in the New Economy. Hence even these places, which tend to do better than farming areas, are more

Table 1

Socioeconomic indicators by type of nonmetro county

Despite improvements during the 1990s, the Delta still scores high on most measures of distress

County type	1999 poverty rate	1989-99 change, poverty rate	2000 unemployment rate	1990-2000 change, unemployment rate	1990-2000 employment growth	2000 per capita income	1990-2000 real change, per capita income
	Percent	Percentage points	Percent	Percentage points	Percent	Dollars	1996 constant dollars
United States	12.36	-0.75	4.01	-1.50	13.83	29,469	2,149
Metro	11.80	-0.28	3.78	-1.49	14.21	31,364	2,314
Nonmetro	14.61	-2.49	5.02	-1.51	12.19	21,858	1,309
Mississippi Delta	18.75	-4.01	5.37	-1.35	10.98	22,949	2,159
Metro	17.31	-3.04	4.51	-1.02	12.27	26,054	2,436
Nonmetro	20.38	-5.02	6.41	-1.71	9.41	19,526	1,807
By degree of urbanization:							
Urbanized	19.32	-3.36	5.53	-1.65	12.17	22,151	2,214
Less urbanized	20.51	-5.26	6.59	-1.74	8.78	19,245	1,721
Totally rural	21.30	-6.33	7.07	-1.59	7.86	17,125	1,699
By economic county type:							
Farming-dependent (36)	25.20	-8.42	7.97	-1.37	7.47	17,159	1,852
Mining-dependent (13)	18.15	-2.67	7.16	-1.12	2.47	20,103	637
Manufacturing-dependent (47)	17.39	-4.19	6.38	-1.23	7.23	20,175	1,813
Government-dependent (16)	22.04	-3.91	5.30	-2.51	16.21	20,161	1,949
Services-dependent (22)	20.75	-4.68	6.07	-1.89	12.55	20,946	2,320
Nonspecialized (54)	21.03	-5.52	6.32	-1.97	9.68	18,710	1,745
By policy county type:							
Commuting (36)	19.27	-6.08	6.53	-1.69	12.46	18,803	2,211
Persistent poverty (119)	24.37	-6.27	7.84	-0.71	6.88	18,190	1,570

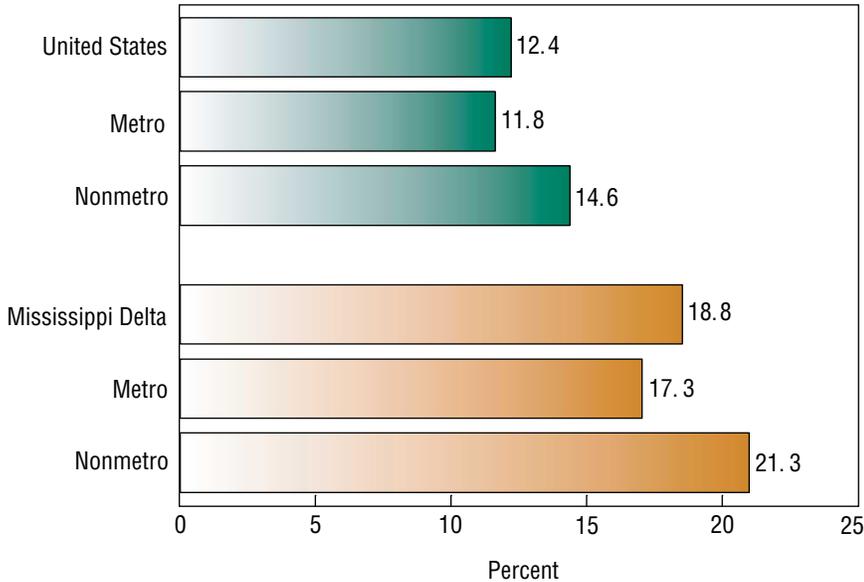
Note: Individual figures may not sum to total because of rounding.

Source: Calculated by ERS using data from the Bureau of the Census, Bureau of Labor Statistics, and Bureau of Economic Analysis.

Figure 2

Poverty rate, 1999

The Delta has significant poverty



Source: ERS computations, based on data from Bureau of the Census.

distressed than rural areas nationwide. In fact, despite the various degrees of distress within the region, all county types in the Delta were more economically distressed than nonmetro areas nationwide.

Conditions Improved in the 1990s

During the 1990s, the region's economy improved markedly (table 1). The Delta's poverty rate declined 4.0 percentage points, a more dramatic improvement than occurred nationwide. Its unemployment rate declined 1.4 percentage points, almost as much as occurred nationwide. The Delta's per capita income improved in real, inflation-adjusted dollars by more than in the Nation as a whole. The rural Delta saw even more dramatic improvements, with its poverty and unemployment rates dropping by more than in the Delta's urban and metro areas. The rural Delta's real per capita income grew less than in the urban portion

of the Delta, but more than in nonmetro areas nationwide.

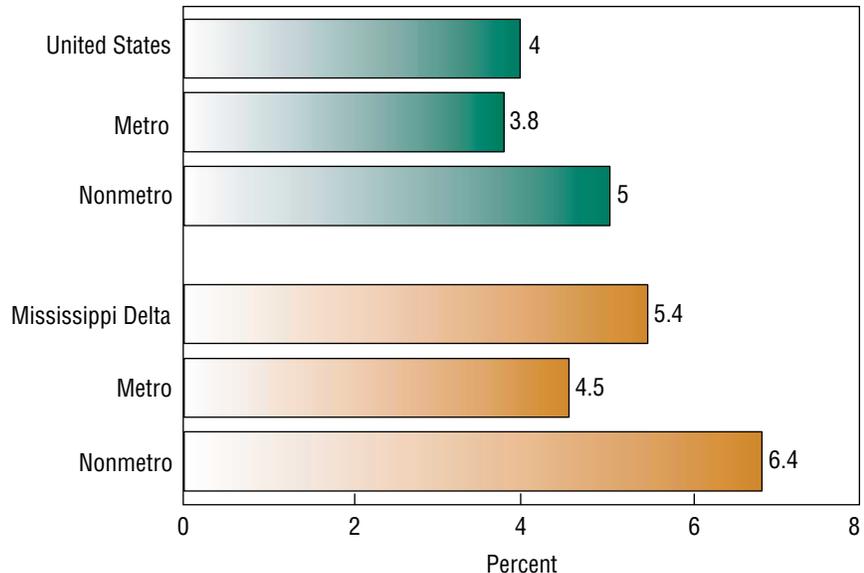
Employment in the Delta grew 11.0 percent from 1990 to 2000, and by 9.4 percent in the nonmetro Delta. While these employment growth rates were below the national average (13.8 percent), they were higher than the region's population growth (6.5 percent), which explains why the Delta's unemployment rate declined more than the national average.

Economic improvements in the Delta varied by type of nonmetro county. Although poverty declined for all county types examined, it declined most in farming and totally rural counties, and in persistent-poverty counties (from 30.6 percent in 1989 to 24.4 percent in 1999). The smallest declines in poverty were in mining and urbanized counties.

Figure 3

Unemployment rate, 2000

The Delta's unemployment rate is higher than average

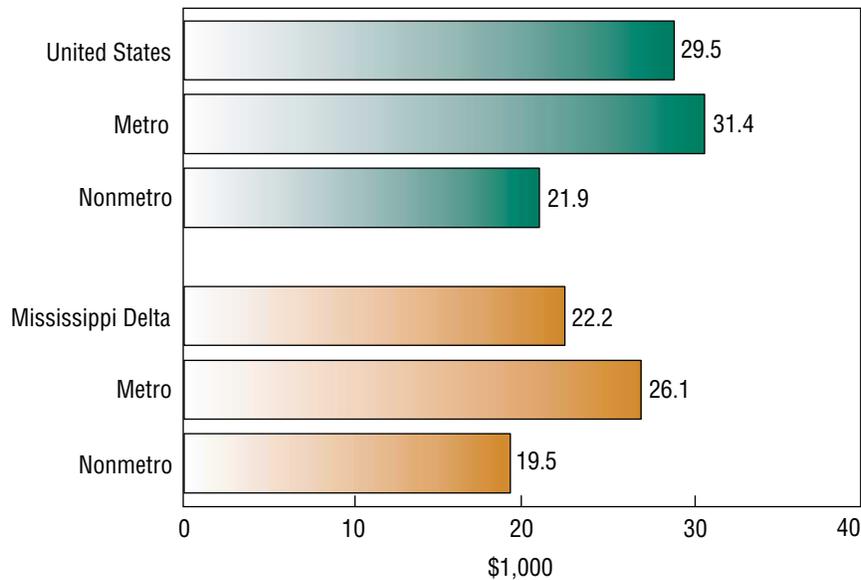


Source: ERS computations, based on data from Bureau of the Census.

Figure 4

Per capita income, 2000

Income levels are lower than average in the Delta



Source: ERS computations, based on data from Bureau of Economic Analysis.

Real per capita income grew in all types of nonmetro Delta counties we examined. Mining, poverty, and totally rural areas improved the least during the 1990s, while urbanized, commuting, and services-dependent areas improved the most.

Employment grew more rapidly in government- and services-dependent counties and in urbanized nonmetro areas than elsewhere in the nonmetro Delta in the 1990s. Unemployment rates declined the most in government and services-dependent areas and in nonspecialized areas, and the least in persistent-poverty areas. Some of this pattern may be explained by casino-based growth. Increased foreign competition in low-wage, low-skill industries may have dampened growth in mining, manufacturing, and farming counties. However, these places still experienced some employment growth.

The Delta's population grew by 6.5 percent during the 1990s (table 2). While substantial, this was only about half as fast as the Nation as a whole. The nonmetro Delta's population grew by 5.5 percent—about half the national average for nonmetro areas. However, population growth varied widely from place to place. Whereas farming and mining counties had relatively slow population growth rates, manufacturing and nonspecialized counties had relatively high rates.

Interestingly, while farming counties in the Delta grew slowly, totally rural counties (which include about half of the farming counties) grew relatively fast compared with more urbanized nonmetro counties in the region. A closer look at this seeming paradox reveals that farming counties made up only one-third (19) of the (58) totally rural counties in the Delta. About the same number (18) of economically nonspecialized coun-

ties were totally rural. These counties generally grew much faster than the farming counties. In addition, commuting counties, which also grew rapidly, made up 39 percent of the totally rural counties. Only 7 of the 23 commuting counties that were highly rural were farming counties. Thus, among totally rural counties in the Delta, the slow growth of farming counties was more than offset by the rapid growth of nonspecialized and commuting counties.

Totally rural counties and manufacturing counties both had higher-than-average population growth rates along with lower-than-average employment growth rates. The opposite pattern was true for urbanized nonmetro counties and government-dependent counties, whose employment growth rates were three to four times their population growth rates. Public service needs tend to be associated with population, while the tax base is more tied to employment. Hence, these contrasting population and employment growth patterns suggest that, even in these relatively good times, the tax base may be growing slower than public service needs in totally rural and manufacturing counties, an indication of rising fiscal stress for local governments. In contrast, fiscal conditions appear to have improved markedly in the more urbanized and government-dependent areas.

Federal Funds in the Delta

Given the extent and endurance of the problems facing the Delta, the Federal Government's role in addressing these problems is important. Is the Delta getting as much Federal funding as other parts of the country? What about the rural Delta and its persistently poor places? What form of assis-

tance is being provided to the region? And is it suited for encouraging economic development?

To help answer these questions, we examined county-level data for fiscal year 2000 from the U.S. Bureau of the Census—the Consolidated Federal Funds Reports (CFFR) data. These data provide information on the geographic distribution of each Federal program. After screening out programs that we deemed not accurate at the county level (about 10 percent of the total Federal funding), we aggregated the data to obtain per capita

funding amounts for various types of counties in the region—metro and nonmetro. To simplify the analysis, we examined totals for various program categories, defined by ERS as agriculture and natural resources, community resources, defense and space, human resources, income security, and national functions. We used the ERS county typologies to show how amounts for these functional categories varied among the different types of nonmetro counties. (For more information on the data sources/limitations, ERS definitions,

and typologies, see the Federal Funds briefing room on the ERS website: www.ers.usda.gov.)

Federal Funding in the Delta Is Higher Than the National Average . . .

The overall level of Federal funding in the Delta in fiscal year 2000 was \$6,451 per capita, about 13 percent more than the \$5,690 per capita for the U.S. as a whole (table 3). Moreover, the Delta's advantage in Federal Funding receipts held for both metro and nonmetro areas.

Table 2

Demographic indicators by type of nonmetro county, 2000

The Delta stands out on various demographic indicators associated with poverty and unemployment

County type	2000 population	1990-2000 population change	Percent under 18 years	Percent 65 and older	Percent Black	Percent female householder with own children
	<i>Number</i>		<i>Percent</i>			
United States	281,416,017	13.11	25.69	12.43	12.32	7.17
Metro	225,262,580	13.84	25.79	11.89	13.24	7.35
Nonmetro	56,153,437	10.31	25.26	14.60	8.60	6.45
Mississippi Delta	8,959,609	6.50	26.44	12.63	30.72	9.38
Metro	4,696,486	7.40	27.32	10.83	37.50	10.39
Nonmetro	4,263,123	5.52	25.46	14.61	23.25	8.28
By degree of urbanization:						
Urbanized	859,639	4.25	25.64	13.26	23.52	8.82
Less urbanized	2,789,600	5.48	25.56	14.80	23.49	8.36
Totally rural	613,884	7.54	24.74	15.61	21.81	7.15
By economic county type:						
Farming-dependent (36)	472,781	2.18	26.74	14.63	34.73	9.50
Mining-dependent (13)	316,254	1.99	25.06	15.11	10.97	6.89
Manufacturing-dependent (47)	1,091,945	7.54	25.27	14.78	21.47	7.66
Government-dependent (16)	434,886	4.88	24.03	12.24	27.17	8.63
Services-dependent (22)	688,004	4.15	25.97	14.94	22.69	8.78
Nonspecialized (54)	1,247,453	7.02	25.46	14.96	22.54	8.34
By policy county type:						
Commuting (36)	483,098	8.45	25.80	13.83	25.11	7.63
Persistent poverty (119)	2,456,013	3.41	26.34	14.06	32.77	9.54

Note: Individual figures may not sum to total because of rounding.
Source: Calculated by ERS using data from the Bureau of the Census.

Table 3

Per capita Federal funds by function, and by type of nonmetro county, fiscal year 2000*Federal funding varies by type of rural county in the Delta*

County type	All Federal funds	Agriculture and natural resources	Community resources	Defense and space	Human resources	Income security	National functions
<i>Dollars per person</i>							
United States	5,690	116	680	678	119	3,276	822
Metro	5,743	39	728	771	113	3,182	910
Nonmetro	5,481	427	486	303	143	3,656	444
Mississippi Delta	6,451	480	607	583	174	3,764	844
Metro	6,257	75	800	812	163	3,367	1,040
Nonmetro	6,601	908	448	174	187	4,181	704
By degree of urbanization:							
Urbanized	5,446	461	444	319	167	3,641	414
Less urbanized	6,632	1,096	446	117	192	4,312	469
Totally rural	6,201	676	463	234	188	4,340	299
By economic county type:							
Farming-dependent	7,550	1,971	549	148	226	4,408	248
Mining-dependent	6,508	300	290	64	123	4,082	1,648
Manufacturing-dependent	5,681	456	432	163	159	4,216	255
Government-dependent	5,794	290	501	639	197	3,529	638
Services-dependent	7,083	1,628	402	178	183	4,254	437
Nonspecialized	6,167	872	471	59	209	4,274	281
By policy county type:							
Commuting	4,633	330	399	181	227	3,255	242
Persistent poverty	6,785	1,174	489	142	232	4,346	402

Note: Individual figures may not sum to total because of rounding. National totals differ from those shown elsewhere due to adjustment for outlier of McCracken County, Kentucky.

Source: Calculated by ERS using Federal funds data from the Bureau of the Census.

Nationwide, nonmetro counties received less funding per capita than metro areas, but in the Delta the reverse was true. Nonmetro areas there benefited mainly with respect to agriculture/natural resource payments and income security payments. In other functions, with the exception of human resources, the nonmetro Delta received less Federal funding than metro Delta counties.

... But It Varies by Type of Nonmetro County

Federal funding in nonmetro Delta areas varied by degree of urbanization (table 3), with less

urbanized counties (those having urban populations from 2,500 to 19,999) receiving relatively high amounts (\$6,632), and urbanized counties (with urban populations of 20,000 and over) receiving less (\$5,446).

By economic type, funding was well above average in the Delta's farming-dependent (\$7,550) and services-dependent (\$7,083) counties, and well below average in the Delta's manufacturing-dependent (\$5,681) and government-dependent (\$5,794) counties.

Among the two policy types we examined, the Delta's persistent-poverty counties received \$6,785

per capita—slightly above average for nonmetro areas in the Delta. In contrast, commuting counties, which tend to be more prosperous, received only \$4,633 in per capita Federal funds. This finding might appear to suggest that the region's underdeveloped areas are getting enough Federal dollars. However, much of the money being distributed to the Delta's poor places is in the form of income security payments—Social Security, Medicare, Medicaid, welfare, food stamps, and unemployment benefits (table 3). These programs are helpful in treating the symptoms of poverty, but they do not foster local economic

development that might help poor communities combat poverty.

Similarly, agricultural and natural resources payments are well above average in the Delta's nonmetro areas, particularly in its farming, services, and poverty counties. Farm payments may help sustain farmers and their communities, but they are not meant to bring about economic diversification or enhance local capacity for nonfarm development, the main component of rural employment growth today.

To bring about long-term economic development, many experts believe that Federal assistance should help localities develop community and human resources required for economic growth. Community resources include local businesses, community facilities, housing, transportation, and environmental infrastructure. Human resources include education, training, and social services. Our analysis shows that Federal funding is below the national average in supporting the nonmetro Delta's community resources. In contrast, the nonmetro Delta appears to be slightly above average in human resource program receipts (table 3).

Nonmetro Delta Falls Short in Community Resources Assistance . . .

Metro areas generally receive much more funding for community resources than do nonmetro areas. This is particularly true in the Delta, where its metro areas received \$800 per capita from community resources programs, well above the metro average nationwide. However, the Delta's nonmetro areas received only \$448 per capita for community resources, 44 percent less than metro areas in the

Delta and 8 percent less than all nonmetro areas.

Most funding for community resources is housing assistance, mainly in the form of home mortgage insurance from the Department of Housing and Urban Development (HUD). This program, together with HUD's condominium mortgage program, accounts for over half of the \$458 per capita in housing assistance provided by the Federal government in fiscal year 2000. The Delta received less (\$351) than the national average from housing assistance. The nonmetro Delta received much less housing assistance (\$208). Housing assistance is one of the main areas where the rural Delta, like other rural areas, appears to come up short in Federal funds. But while housing assistance plays a role in economic development, its role is more to accommodate (or put the finishing touches on) development than to stimulate (or initiate) it.

Federal transportation funding (mainly of highway construction grants), on the other hand, plays an important and sometimes leading role in the development process. Nonmetro areas generally receive more transportation funds, per capita, than metro areas. However, this rural advantage is greater nationwide (28 percent) than in the Delta (5 percent).

The rural advantage in transportation funding per capita may be misleading. Much of Federal highway spending in rural areas is for interstate highways and other large roads that may serve more urban residents (driving from one city to another) than rural residents. Money spent constructing rural segments of these roads contributes to high per capita rural receipts, but it may not necessarily lead to high rural benefits. This limitation in

interpreting the data is particularly apparent when looking at the Delta's totally rural and farming areas (which also tend to include most of the Delta's poverty counties), which received particularly high amounts in transportation funding, per capita. These are not the sort of places one would expect to be well-served by the interstate highway system, though the roads go through many of these places.

The Delta received less of the "other" type of community resources assistance—community and regional development, infrastructure, and business assistance—than the U.S. overall: \$95 per capita versus \$110 (table 4). Both the metro and nonmetro Delta received less from these programs than their metro and nonmetro counterparts nationwide. Nonmetro areas as a whole received more money than metro areas, largely due to USDA's rural development programs such as business and industrial loans, water and waste disposal grants and loans, and rural electric and telephone loans. But in the Delta, the metro/nonmetro difference was smaller—only a \$16 rural advantage.

Totally rural counties in the Delta got more funding from community resources programs than did other counties in the nonmetro Delta, despite receiving substantially less from housing assistance. In contrast, urbanized nonmetro areas in the Delta received the most from housing assistance.

The Delta's farming counties received the most from community resources receipts, \$549 per capita, benefiting disproportionately from all three types of programs (housing, transportation, and other). Government-dependent counties were next in order of community resource receipts. Mining counties

Table 4

Community resources funding breakdown by type of nonmetro county, fiscal year 2000*The nonmetro Delta received less of this assistance than nonmetro areas nationwide*

County type	All community resources	Housing	Transportation	Other ¹
<i>Dollars per person</i>				
United States	680	458	112	110
Metro	728	518	106	104
Nonmetro	486	218	136	133
Mississippi Delta	607	381	131	95
Metro	800	582	130	88
Nonmetro	448	208	136	104
By degree of urbanization:				
Urbanized	444	294	87	63
Less urbanized	446	201	136	109
Totally rural	463	118	208	137
By economic county type:				
Farming-dependent (36)	549	237	164	148
Mining-dependent (13)	290	137	96	58
Manufacturing-dependent (47)	432	188	141	103
Government-dependent (16)	501	219	164	118
Services-dependent (22)	402	191	116	95
Nonspecialized (54)	471	237	135	100
By policy county type:				
Commuting (36)	399	132	141	126
Persistent poverty (119)	489	206	160	122

Note: Individual figures may not sum to total because of rounding. National totals differ from those shown elsewhere due to adjustment for outlier of McCracken County, Kentucky.

¹Other includes community and regional development, infrastructure, and business assistance programs.

Source: Calculated by ERS using Federal funds data from the Bureau of the Census.

were last in community resource program receipts, receiving only \$290 per capita.

Although poverty counties in the Delta received more in community resources funding than other nonmetro counties in the region, they received about the same amount from these programs as U.S. nonmetro areas in general. Relative to other places, they received more community

resources funding mainly from transportation (highway) programs. However, as noted previously, this can be misleading since these rural poverty areas tend to be highly rural, where Federal highway funding often benefits interstate and intercity travelers more than local residents. In contrast, the Delta's poverty counties received relatively small amounts of Federal funds

from housing and "other" community resource programs in fiscal year 2000.

... But Nets More Human Resources Assistance

Human resources programs, which include education, training, health, and social services, are important for poorly educated, high-poverty regions like the Delta, which must improve human capital sufficiently to attract higher paying jobs and thereby escape poverty. Unfortunately, the data on human resources programs are not very good. Many of these programs are State-administered, and Federal data are not county-specific. For this reason, we had to exclude some large human resources programs from our county-level analysis, such as day care payments to States, Workforce Investment Act payments, vocational education, and rehabilitation assistance.

Our county-level analysis covers many of the remaining human resources programs, including Federal aid to educationally deprived children (Title 1). The Delta received \$174 per capita in human resources funding, versus \$119 for the U.S. as a whole. This pattern held for both metro and nonmetro areas (table 3).

The Delta's farming counties and nonspecialized counties received the most human resource funding among economic types, mining and manufacturing counties the least. Interestingly, commuting counties got almost as much as poverty counties from these programs, suggesting that many nonmetro workers who commute to metro areas take advantage of these programs, while those who don't may benefit less.

New Delta Regional Authority Should Help

Legislation was passed in December 2000 to create the Delta Regional Authority (DRA). Patterned after the Appalachian Regional Commission (ARC), the DRA is a federally funded entity run by a committee of the Governors (or their representatives) from the eight participating States, and led by a federally appointed co-chair as well as a State co-chair. This committee analyzes problems in the region and assists projects that use Federal, State, and local funding to overcome these problems.

Like the ARC, the DRA uses both the top-down and bottom-up approaches. Its top-down multi-State commission can take advantage of economies of scale and scope of coverage in a large multi-State region. However, the DRA's policies are implemented at the local level by multicounty economic development districts—the same districts that work with the Economic Development Administration (EDA) to stimulate the economies of distressed localities nationwide. Such multicounty regional approaches avoid counterproductive, beggar-thy-neighbor strategies of individual cities and counties. Multicounty organizations also generally have more resources for planning and carrying out development policies than do most individual local governments—particularly in rural areas.

The DRA received \$40 million in appropriations to begin its work (\$20 million each for fiscal years 2001 and 2002). It is currently authorized through 2007. The Federal co-chair, Pete Johnson, was confirmed in September 2001. The Authority's first meeting was in November 2001. It will use EDA's

distress criteria to identify distressed counties, and it settled on a State allocation formula. The EDA distress criteria require meeting at least one of three conditions: high unemployment, low per capita income, or special need (such as difficulty adjusting to major plant closure, natural disaster, defense base closure, or outmigration). In its May 2002 meeting, the DRA approved a comprehensive action plan, and was expected to begin

Federal spending in the region has been significant in the past, but much of it is in the form of basic income support, which is important for helping people get by day-to-day but does little to bring about long-term economic development.

approving grants by the end of fiscal year 2002. While the DRA has a great deal of flexibility in how and where its funds are spent, at least half of the DRA's project funding must be used for infrastructure, and at least three-quarters must go to distressed counties or pockets of distress elsewhere in the Delta.

How Might the DRA Address the Delta's Continuing Problems?

There are many ways in which a large, comprehensive regional development authority like the DRA might help the region's development. For example, it can:

- Devise regional development plans and strategies;
- Create and administer programs providing assistance to the region;
- Work with and support multicounty local development districts;
- Provide information and technical assistance;
- Perform or contract out program evaluations; and
- Leverage money from other Federal and State programs, and from private and nonprofit sources.

The leveraging role is a key to the Authority's success. The appropriations given to the DRA are not very large compared with other Federal development programs. However, if enough DRA money is used to plan and apply for other kinds of Federal assistance, then the DRA can end up leveraging a lot more public and private investment in the region.

Conclusion

The Lower Mississippi Delta region, especially the rural Delta, faces many challenges, but recent economic progress in the region suggests that dramatic improvements can be made. Federal spending in the region has been significant in the past, but much of it is in the form of basic income support, which is important for helping people get by day-to-day but does little to bring about long-term economic development. The Federal Government has also been investing in human resources in the

region. This should facilitate development. However, we found that the rural Delta has been getting relatively low levels of assistance from Federal community resource programs. These community resource programs include housing, transportation, and other programs

important for economic and community development.

The new Delta Regional Authority may bring the region more of such funding by helping localities plan and apply for assistance, and by leveraging public and private investment in economic

development projects. If successful, the resulting long-term development should improve conditions in the region and reduce the region's reliance on income support programs, which would save the Federal Government a significant amount of money.^{RA}

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Federal Funding in Appalachia and Its Three Subregions

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Appalachia is characterized by high rates of poverty and unemployment, low per capita income, widespread school dropouts and low educational achievement, and significant physical isolation of its sparse population in the high rugged mountains (Appalachian Regional Commission, 1997 and 1998). The mountains raise transportation costs, which discourages some businesses from locating in the region. These problems have long handicapped economic development for Appalachia, but improvements have occurred over the last 30 years.

In 1960, every third person living in Appalachia was poor, compared with one in five for the Nation as a whole. By 1990, Appalachia's poverty rate had declined to half of that level, while the national poverty rate had decreased by 40 percent, and

Appalachia received more per capita Federal funds than the U.S. average, but this was only true for urban areas, where income support and payments for national functions were larger. Appalachia received lower per capita payments than the U.S. average in agriculture and natural resources, and in defense and space programs. It also received less in community resources and human resources—the programs that create jobs and economic growth. Central Appalachia, the most distressed area, received more per capita Federal funds than the entire Appalachian region.

Appalachia's per capita income had risen from two-thirds of the national average in 1960 to 84 percent by 1994 (Appalachian Regional Commission, 1997). A majority of Appalachian counties have achieved some economic progress, but about one-fourth have still not made any significant economic gains (Appalachian Regional Commission, 1998).

Appalachia has long looked to the Federal Government for assistance, and it has responded, creating unique institutions such as the Appalachian Regional Commission (ARC) and the Tennessee Valley Authority (TVA). However, the Federal Government has many other programs that are important for the region. Since Appalachia is not a homogeneous region, this article examines differences in Federal funding (fiscal year 2000) by various county types and subregions, then posits some effects of potential Federal policy changes.

Appalachia and Its Three Distinct Subregions

The legislation that established the Appalachian Regional Commission (ARC) described its area of about 200,000 square miles as running along the spine of the Appalachian Mountains from southern New York to northern Mississippi (fig. 1). (For a list of States and the number of counties that comprise Appalachia, see "Appalachia and Its Subregions," p. 34.)

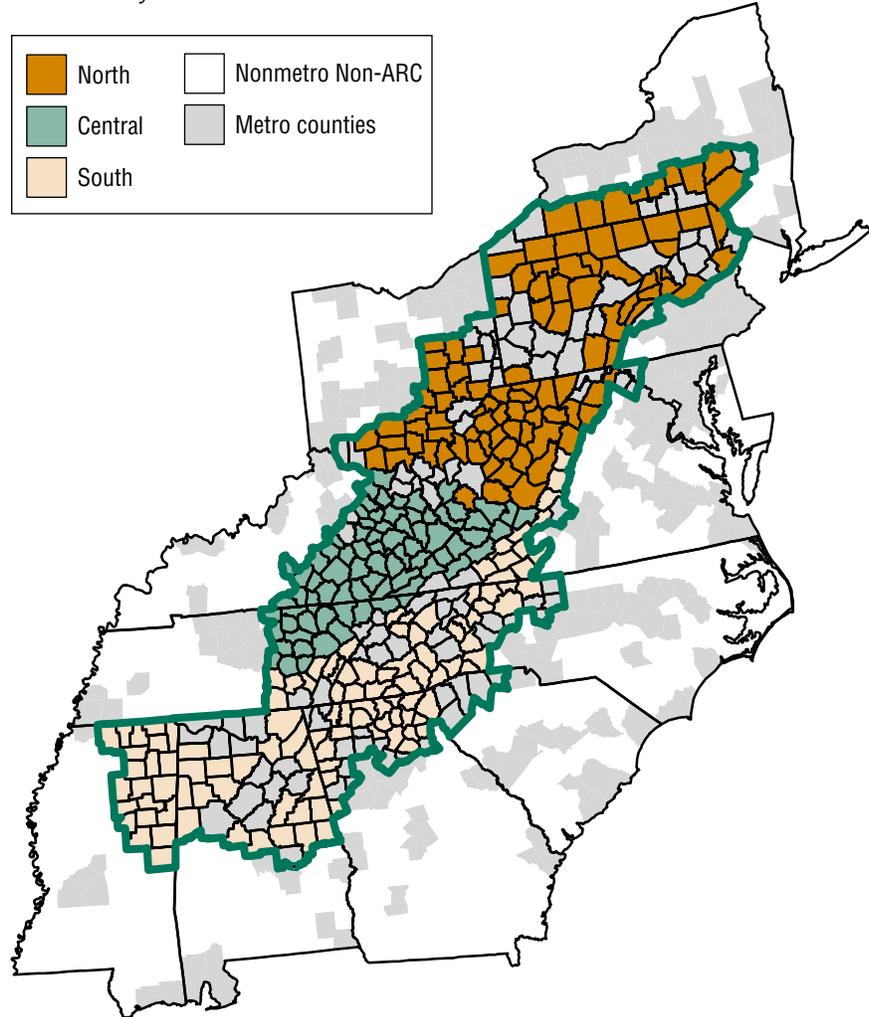
The northern, central, and southern subregions of Appalachia face different prospects and challenges, as do different types of counties. Almost one in three rural counties in the region are classified as distressed, according to the Appalachian Regional Commission, while only 17 percent of rural counties in the rest of the country are so categorized. Rural central Appalachia is particularly distressed, with the unemployment

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Figure 1

Counties in northern, central, and southern subregions of Appalachia

Appalachia is more rural than the rest of the country; central Appalachia is almost entirely rural



Note: Ninety one percent of the counties in central Appalachia are rural counties.
Source: ERS calculation using data from the Appalachian Regional Commission.

rate much higher than the national average, per capita personal income only two-thirds of the national average, and more than one in four persons living in poverty (Appalachian Regional Commission, 1998; Glasmeier and Fuelhart, 1999). The dropout rate there exceeds 40 percent, and in 61 of its 68 counties the dropout rate is above 50 percent. Because Central Appalachia is dominated

by high mountains and is less connected to the surrounding States, large highways, and interstates, rural counties there face special challenges such as inflated highway expenses.

The Appalachian Regional Commission (ARC) coordinates economic development in the entire region. The Tennessee Valley Authority (TVA) serves only the southern part of Appalachia.

Southern Appalachia thus benefits from both ARC and TVA activities. In addition, 13 States are included in northern, central, and southern Appalachia, and each State commits different levels of resources to its Appalachian counties. Because of this, we expect Federal funding to vary across these three subregions (see “Data and Definitions,” p. 36).

Funding Varies by Function

In fiscal year 2000, Appalachia received \$354 more per capita than the U.S. as a whole in total Federal funding (table 1). Rural Appalachian counties received \$65 (1 percent) less per capita Federal funds than the rural U.S. county average. But urban Appalachia received \$819 (14 percent) more per capita in Federal funds than the U.S. urban average.

Appalachia received less per capita funding for agricultural and natural resources, community resources, and defense/space functions than the entire Nation (see “Data and Definitions” for function categories). This Appalachian disadvantage held for both its rural and urban areas. Funding for human resources functions was similar for Appalachia and the U.S. and for Appalachia’s rural and urban counties. On the other hand, Appalachia (rural and urban) received higher amounts of Federal funding for income security programs and national functions.

Rural Appalachia is not a productive agricultural region due to its mountainous terrain, so it receives relatively little of such funding. However, rural Appalachia received \$568 per capita (16 percent) more for income security programs than did the rural United States. Urban Appalachia fared even better—\$1,069 per capita

(34 percent) more than the urban United States. Income security includes Federal payments for the retired, unemployed, and the poor. Appalachia's advantage here reflects its disproportionate share of retired, disabled, unemployed, and poor persons.

National functions include criminal justice and law enforcement, energy, higher education and research, and all remaining programs not covered under any other function (except insurance programs). For national functions, the Appalachian region received an average of \$43 per capita (5 percent) more than the United States as a whole (table 1).

Funding Varies Across County Types and Subregions

We used ERS's county typology, which covers only nonmetro counties, to examine funding differences by economic and policy type of county (Bagi, Reeder, and Calhoun).

Mining-dependent counties received the most Federal funding among economic types—\$826 (15 percent) per capita higher than for rural Appalachia as a whole. Government-dependent and manufacturing-dependent counties received the least (table 1).

Among policy county types (which are overlapping), persistent-poverty counties received per capi-

ta funding well above the average for rural Appalachia, and \$2 higher than that received by mining-dependent counties. (Many of Appalachia's mining-dependent counties are also persistent-poverty counties.) Retirement-destination and commuting counties received the lowest (\$4,607) and the second lowest (\$4,875) per capita funding (table 1), reflecting low receipts for income security programs and some other national functions.

In fiscal year 2000, central Appalachia received substantially higher per capita Federal funding than both other subregions (table 2).

Table 1

Per capita Federal funds by function and county type, fiscal year 2000

Rural Appalachia received less funding, per capita, than urban Appalachia and the Nation as a whole

County type	All Federal funds	Agriculture and natural resources	Community resources	Defense and space	Human resources	Income security	National functions
<i>Dollars per person</i>							
United States	5,690	116	680	678	119	3,276	822
Metro	5,743	39	728	771	113	3,182	910
Nonmetro	5,481	427	486	303	143	3,656	467
Appalachia	6,044	36	504	282	119	4,239	865
Metro	6,562	32	571	432	104	4,251	1,172
Nonmetro	5,416	40	423	99	138	4,224	491
By economic county type:							
Mining-dependent	6,242	26	402	74	177	4,932	629
Manufacturing-dependent	4,925	51	481	85	104	3,810	395
Government-dependent	5,199	74	391	90	168	3,972	504
Services-dependent	5,449	18	340	168	140	4,434	348
Nonspecialized	5,481	48	420	95	150	4,084	684
By policy county type:							
Retirement-destination	4,607	19	326	273	82	3,776	130
Federal lands	5,324	35	350	125	119	4,237	458
Commuting	4,875	57	348	64	131	3,929	347
Persistent poverty	6,244	41	381	105	217	4,934	565

Note: Individual figures may not sum to total because of rounding.

There were only three counties in Appalachia classified as farming-dependent, so this economic type was excluded from this table; transfer payment policy type was also excluded because of significant overlap with the poverty county type.

Source: Calculated by ERS using Federal funds data from the Bureau of the Census.

Appalachia and Its Subregions

The Appalachian region is defined following a modified version of the counties identified in Bogue and Beale. The region includes the entire State of West Virginia, and part of 11 other States (from north to south): New York, Pennsylvania, Ohio, Maryland, Virginia, Kentucky, Tennessee, North Carolina, Georgia, Alabama, and Mississippi. One county in Kentucky and two in Virginia were dropped from the list identified by Bogue and Beale because these counties are not under ARC's jurisdiction.

Appalachia is further subdivided into subregions. **Northern Appalachia** includes 2 counties in Maryland, 23 in Ohio, 37 in Pennsylvania, and 46 in West Virginia. Of these, 34 are metro (urban) and 74 nonmetro (rural) counties. In other words, almost one-third (32 percent) of counties in this region are urban counties, and thus this subregion is the most urbanized of all three subregions.

Central Appalachia includes 43 counties in Kentucky, 9 in Tennessee, 7 in Virginia, and 9 in West Virginia. Of these, only 6 (9 percent) counties are metro, and the remaining 62 are nonmetro (rural). Thus, Central Appalachia is more rural than the rest of Appalachia.

Southern Appalachia includes 10 counties in Georgia, 16 in North Carolina, 28 in Tennessee, and 16 in Virginia. Almost one out of every four (24 percent) counties in this subregion is urban (metro). So, while southern Appalachia is also predominantly rural, it is much more urbanized than central Appalachia.

Urban Central Appalachia Benefits Mainly from Defense/Space and National Functions

Two of the six urban counties in the Central Appalachian subregion stand out in defense and space receipts. One (Christian County, KY) has a military base with over 24,000 active military employees, receiving over \$600 million in salaries and wages in FY 2000. Since these military personnel live either on base or in the nearby communities, their spending and savings mostly remain in the area and thus provide a direct economic boost to the local economy.

The Department of Defense issued procurement contract awards worth over \$130 million in fiscal year 2000 for this county. If the procurement orders were filled by local businesses, then the salaries and wages received by

the workers engaged in the production and shipment of the procurement items would also be spent in the local economy, giving an additional boost to local businesses.

In fiscal year 2000, Federal agencies other than the Defense Department issued about \$1.7 billion in procurement awards to businesses located in Anderson County, TN, another urban county in Central Appalachia. These funds support employment for many more residents in this and the surrounding counties.

Rural Central Appalachia Received Highest Income Security Payments

Whereas urban counties in central Appalachia received very large amounts of Federal funds (\$7,097), per capita, from national function programs, the opposite was true for central Appalachia's rural counties.

These rural counties received the lowest per capita funding (\$416) for national functions of all the subregions (table 2). Actually, in central Appalachia, the rural residents received less than six cents for every dollar received by its urban residents from the national functions.

Rural central Appalachia benefited mainly from income security programs, receiving \$5,135 per capita, \$1,479 (41 percent) more than the rural U.S. average and \$911 (22 percent) more than the average amount received by all rural Appalachians. High income-security payments indicate the prevalence of retired, disabled, unemployed, and poor in rural central Appalachia.

South Appalachia Received Lowest Federal Funds

South Appalachia received \$739 (12 percent) less per capita in Federal funds for all functions than did Appalachia as a whole. Urban south Appalachia received \$820 (12 percent) less than did the average urban county in Appalachia, and rural south Appalachia received \$609 (11 percent) less than rural Appalachia as a whole (table 2). Southern Appalachia as a whole received lower funding for every function but agricultural and natural resources.

South Appalachia received lower per capita Federal funds from income security programs than did the other two subregions, partly because its proportion of retired, disabled, and poor persons is the lowest. Also, State governments in southern Appalachia provide lower per capita income security payments—since some of these programs involve matching Federal funds, this results in lower Federal payments.

North Appalachia Is Close to National Average in Federal Funds Receipts

While northern Appalachia received \$5,951 per capita in Federal funds, slightly above the national average, this is mainly due to its urban areas. Its urban areas received \$6,325 per capita while its rural areas received \$5,248 (table 2). Its metro areas receive more funds due to relatively high receipts from income security payments (\$4,445) and national functions (\$798). North Appalachia's rural areas received less from these two functions than did urban areas. However, rural north Appalachia received more from national functions than did rural areas in other regions (table 2).

Policy Implications

With the help of the Appalachian Regional Commission and increased funding from other Federal programs, the region has made significant progress over the past 30 years (Isserman and Rephann). But Appalachia still lags behind in economic development. Much remains to be done toward reducing unemployment and poverty and toward improving the quality and availability of infrastructure, communications, education, and job training.

Recent changes that might affect the Appalachian region include increased highway funding, tighter environmental regulations, electric and telecommunication deregulation, welfare reform,

and slower growth of domestic assistance programs. Possible impacts of changes in Federal policies and programs, as cited here, are general and may not be uniform across the three subregions.

Manufacturing is located in counties close to the outer boundary of Appalachia, along the roads and highways. Justifiably, the region's development policy and ARC's focus are on building and improving roads and highways. Therefore, the region would benefit from the \$2.5 billion in newly authorized funds for the Appalachian Highway System. In addition, there will be matching State and local funds. But it costs from \$11 million to \$20 million to build a 1-mile stretch of highway

Table 2

Per capita Federal funds by function and region, fiscal year 2000

Central Appalachia, both rural and urban, received the largest funding and South Appalachia the lowest funding, per capita, among the three subregions, and compared with all of Appalachia and the Nation

County type (# counties)	All Federal funds	Agriculture and natural resources	Community resources	Defense and space	Human resources	Income security	National functions
<i>Dollars per person</i>							
United States	5,690	116	680	678	119	3,276	822
Metro	5,743	39	728	771	113	3,182	910
Nonmetro	5,481	427	486	303	143	3,656	467
Appalachia (246)	6,044	36	504	282	119	4,239	865
Metro (57)	6,562	32	571	432	104	4,251	1,172
Nonmetro (189)	5,416	40	423	99	138	4,224	491
North Appalachia	5,951	26	546	276	109	4,270	724
Metro (34)	6,325	16	592	370	104	4,445	798
Nonmetro (74)	5,248	45	460	99	118	3,942	585
South Appalachia	5,305	56	467	81	102	3,754	845
Metro (17)	5,742	70	540	68	102	3,736	1,225
Nonmetro (53)	4,807	40	383	97	103	3,773	411
Central Appalachia	7,730	37	401	661	193	4,974	1,465
Metro (6)	15,455	56	413	3,655	128	4,105	7,097
Nonmetro (62)	6,292	33	399	103	206	5,135	416

Note: Individual figures may not sum to total because of rounding.

Source: Calculated by ERS using Federal funds data from the Bureau of the Census.

Data and Definitions

Federal funds data were obtained from the Consolidated Federal Funds Reports (CFFR) produced each year by the Department of Commerce, Bureau of the Census, Governments Division. The Bureau of the Census receives these data from various Federal departments and agencies, covering most Federal obligations, including expenditures and loans. The data for fiscal year 2000 covered 1,165 programs. But the data were not reliable at the county level for every Federal program. We excluded those Federal programs for which 25 percent or more of their funding went to State capitals, because the States may redistribute these funds to some or all counties in their States and Census data do not reveal the amount of this redistribution. We also excluded programs for which most or all of their funding is reported only at the State or National level. Therefore, most of the large block grant programs related to social services, employment, and training were excluded from our analysis. These exclusions understate the amount of Federal funding received, particularly for human resource programs. For fiscal year 2000, we determined that the data were reliable at the county level for 703 Federal programs. Our analysis is based on these programs, accounting for \$1.79 trillion, or about 92 percent of the total Federal funds reported by the Bureau of the Census.

Interpretations should be made with caution because Federal funds data are only as good as the information each agency supplies to the Census Bureau. In some cases, as with Medicaid, the data are based not on actual outlays that go to places, but on estimates based on other information, which may involve substantial errors. In other cases, like procurement, expenditures may be reported only at the location of prime contractors or primary subcontractors and ignore further subcontracting that disperses the impact of expenditures. For example, defense procurement, which we found primarily benefits metro areas and government-dependent nonmetro areas, may involve subcontracting that disperses the benefits broadly to some other nonmetro areas.

In table 1, we used ERS's six broad function categories for Federal programs:

- Agriculture and natural resources include agricultural assistance, agricultural research and services, forest and land management, and water/recreation resources.
- Community resources include business assistance, community facilities, community and regional development, environmental protection, housing, Native American programs, and transportation.
- Defense and space include aeronautics and space, defense contracts, and payroll/administration.
- Human resources include elementary and secondary education, food and nutrition, health services, social services, training, and employment.
- Income security includes medical and hospital benefits, public assistance and unemployment compensation, retirement, and disability—including Social Security.
- National functions include criminal justice and law enforcement, energy, higher education and research, and all other programs excluding insurance.

in Appalachia. Thus, depending on the topography, \$1 billion might help build only 125 to 225 miles of highway in this region, while there are about 200,000 square miles under the jurisdiction of the Appalachian Regional Commission. The impact of these additional

funds will therefore depend on how effectively the new construction of roads and highways can link together the existing transportation systems in the region.

More stringent environmental regulations proposed for air and water present challenges and

opportunities for the region. Topography makes building and operating water treatment plants very expensive, and many water treatment facilities already fail to meet existing environmental standards. Much of the region's population and industry are located near

rivers and lakes that must be kept clean, but this becomes a burden for some of the region's industries and communities. More stringent requirements for air pollution might pose additional problems for some places. Recent increases in Federal spending on environmental projects would help, but it is unclear whether they will be maintained long enough to meet local fiscal demands.

On the plus side, a cleaner environment might help many Appalachian communities to maintain the natural amenities that attract many tourists and residents to the area. Appalachia is surrounded by densely populated and prosperous regions whose residents can support a vast array of recreational facilities in the Appalachian region. Thus, tourism and recreational facilities may attract enough spending in the region to spur further economic activity.

The proposed electric deregulation is expected to create more uniform rates nationwide; hence, higher rates might be expected in those parts of Appalachia where rates are now artificially low. This may increase the cost of living and the cost of production for the region's businesses. Deregulation may also lead to the privatization of TVA's power plants, possibly resulting in reduced Federal funding in the region.

Major regulatory changes have already begun in telecommunications, which may help the region by expanding services to further reduce isolation in Appalachia. The universal service provisions of the Telecommunications Act of 1996 may be particularly beneficial to rural areas in the region by subsidizing telecommunications in high-cost areas, especially for schools,

libraries, and health care facilities. However, it is unclear at this time, what the local economic impact will be. While telecommunications might provide a boost to some industries, like clerical jobs, the region may not be able to attract much high-tech industry and the associated jobs.

Welfare reform significantly affects the region because of Appalachia's generally high rates of poverty and unemployment. It particularly affects distressed, high-poverty counties, where a relatively large share of the population may have to seek employment elsewhere. Increases in Federal training and employment assistance linked to welfare reform will help with the transition, and perhaps encourage more local development if firms respond favorably to labor force improvements.^{RA}

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Can Rural Employment Benefit From Changing Labor Skills in U.S. Processed Food Trade?

Gerald Schluter
Chinkook Lee

Every major farm bill since 1985 has included policies that emphasize increasing value-added American agricultural exports. At the same time, rural area planners have looked to international markets for new destinations for their resource-based products. The 1990s saw a gain in processed agricultural products trade and a gain in rural manufacturing employment. The gain in rural manufacturing was led by food processing (Drabenstott et al., Ghelfi), raising the possibility that the trade policy had borne fruit and the hopes of the rural planners may be realized.

But can increased demand for lower skilled workers in rural areas be linked to a changing international trade environment? For the recent expansion of meat trade, it can. Yet, some rural-based meat packers hired foreign workers to work in their packing plants (Broadway, MacDonald et al.), suggesting host rural areas did not have sufficient labor surplus to accommodate the rising employ-

In 1972, processed food exports used more skilled labor per unit of output than processed food imports. By 1992, this situation had reversed and the skill intensity of processed food trade had switched. Higher meat and poultry exports compared with other processed food trade could explain this switch in skill intensity. The growth in meat trade paralleled an urban-to-rural shift in the meat packing and poultry processing sectors. Because rural areas have a greater share of low-skilled workers in their labor force and have fewer employment opportunities for their workers, this may appear to be a win-win situation for rural areas. However, the jobs slaughtering livestock and processing meat often do not appeal to domestic rural workers. When sufficient domestic rural workers are not available, accommodating a larger share of commuter and migrant workers has challenged some rural communities that host meat processing plants.

ment opportunities. In this article, we explore the changes in the economic environment leading to this situation.

The first change of note is in the pattern of skilled and unskilled labor used in U.S. processed food trade. In 1972, processed food exports used a higher ratio of high-skilled labor to low-skilled labor per unit of output than did processed food imports. By 1992 (the most recent published input-output table available), this situation had reversed, as measured by skill intensity—the ratio of high-skilled to low-skilled labor per unit of exports to the ratio of high-skilled to low-skilled labor per unit of imports (Lee and Schluter).

In the absence of other factors, this switch toward low-skilled labor should benefit rural areas more than urban areas because food manufacturing (NAICS 311) is more

rural-based than most U.S. manufacturing (USDC, County Business Patterns). Also, the rural labor force tends to include a larger proportion of low-skilled workers. In this article, we assess the skill intensity of U.S. processed food trade in general and the meat trade in particular, to explore if meat trade is likely to appeal to those rural area planners looking to international markets for resource-based rural products.

How We Tell If Trade and the Demand for Low-Skilled Workers Are Linked?

The employment intensity of trade—a measure of the relative importance of employment in export production or import replacement—compares employment for producing exports with the employment needed if imports had been produced domestically. Differing sectoral trade balances

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and employment requirements can yield differing sectoral effects of net trade (exports less imports). As a share of total processed food employment, the net trade employment impacts in 1972 were negative (-39,000 of 1,768,000 workers), but small (-2.2 percent). Yet, the net effect of trade on employment in the industry was larger (in absolute terms) than the -0.2-percent (-139,800 of 84,586,400 workers) net trade effect on the whole U.S. economy.

Between 1972 and 1992, processed food exports grew faster than imports, although not enough to achieve a positive trade balance in processed food trade. The net trade effect on food processing employment fell from -2.2 to -1.0 percent (-17,400 of 1,671,900 workers), and the net trade effect on the U.S. economy rose from -0.2 to -0.5 percent (-627,300 of 121 million workers).

The skill intensity of trade analysis is measured similarly to employment intensity but with greater detail about the skill levels of the employees (Lee and Schluter). We conducted our analysis using the nine major occupational categories of U.S. workers as classified by the Bureau of Labor Statistics: (1) executive, administrative, and managerial; (2) professional; (3) technicians and related support; (4) sales occupations; (5) administrative support; (6) precision production, craft, and repair; (7) service occupations; (8) operators, fabricators, and laborers; and (9) farming, forestry, and fishing (BLS). We defined categories (1) through (3) as high-skilled and (4) through (9) as low-skilled to estimate the high-skilled and low-skilled labor demand for export production and import replacement.

The skill level of processed food workers has shifted along with net trade over time. For example, in 1972, high-skilled labor used in producing exports of processed food totaled just 11.9 percent of the 43,700 low-skilled workers (table 1). The comparable share for imports was lower, 10.8 percent. Thus, the processed food trade skill intensity ratio was 1.097 (0.119/0.108) in 1972. A skill intensity ratio greater than one indicates that, in 1972, the food processing industry exported products requiring a higher proportion of high-skilled workers than required by imported processed food products.

By 1992, the share of high-skilled labor was lower for processed food exports (0.103) than imports (0.106), with a resulting skill intensity ratio of 0.973. Thus, there was a reversal in skill intensity between 1972 and 1992 in processed food industry trade. In fact, of the broad industry groups (ex. other agricultural processing, nondurable manufacturing, durable manufacturing, forestry, and mining) analyzed by Lee and Schluter, processed food was the only group that reversed skill intensity between 1972 and 1992.

Meanwhile, employment in the food processing industry declined

Table 1

U.S. food processing, and trade-related employment by place and skill level, 1972 and 1992

Rural and low-skilled workers gained the most from processed food export growth

Item	Workers (1,000)		Workers (1,000)		Percent change
	1972	Percent	1992	Percent	
Total	84,590	100.0	121,000	100.0	43.0
Urban	71,230	84.2	102,610	84.6	44.1
Rural	13,360	15.8	18,390	15.4	37.7
High-skilled	18,020	21.3	28,830	23.8	60.0
Low-skilled	66,570	78.7	92,170	76.2	38.5
Food processing	1,768	100.0	1,672	100.0	-5.4
Urban	771	43.6	687	41.1	-10.9
Rural	997	56.4	985	58.9	-1.2
High-skilled	162	9.2	149	8.9	-8.0
Low-skilled	1,606	90.8	1,523	91.1	-5.2
Exports	48.9	100.0	99.6	100.0	
Urban	36.0	73.6	66.0	66.3	83.3
Rural	12.9	26.4	33.6	33.7	160.5
High-skilled	5.2	10.6	9.3	9.3	78.8
Low-skilled	43.7	89.4	90.3	90.7	106.6
Imports	87.9	100.0	117.0	100.0	
Urban	65.7	74.7	83.4	71.3	26.9
Rural	22.2	25.3	33.6	28.7	51.4
High-skilled	8.6	9.8	11.2	9.6	30.2
Low-skilled	79.3	90.2	105.8	90.4	33.4

Sources: Employment of total and food processing from BLS. Urban and rural shares are from County Business Patterns data (USDC). Employment for exports and imports estimated by authors.

Methodology

We calculate the factor content of international trade—the amounts of primary factors such as land, labor, capital, and human capital (or skilled labor) used in the production of a good or service for export or equivalent import replacement—using an input/output (I/O) model. In an open I/O system, we can calculate the output of each sector of the economy needed to support a particular year's level of trade. We estimate the factor usage (a factor being farmland, capital, high-skilled workers, low-skilled workers) in that year's trade by multiplying our estimates of average factor usage per million dollars of output with the estimates of the output of each sector of the economy needed to support a particular year's level of trade demand. Comparing factor usage for traded products provides the empirical basis for much of this study. For example, comparing employment (factor is labor) for producing exports with the estimated employment had imports been produced domestically provides a measure of the relative importance of employment in export production or import replacement - the employment intensity of trade. We use CBP shares (USDC, County Business Patterns) of a sector's national production to allocate the trade-related employment to urban or rural counties. The availability of compatible input-output tables determined our period of analysis.

5.4 percent during 1972-92, even as employment in the U.S. economy as a whole grew 43 percent (table 1). The loss of food processing jobs fell more heavily on urban than rural workers (10.9 percent vs. 1.2 percent) and on high-skilled than low-skilled workers (8 percent

vs. 5.2 percent). This is the reverse of the U.S. economy as a whole (table 1).

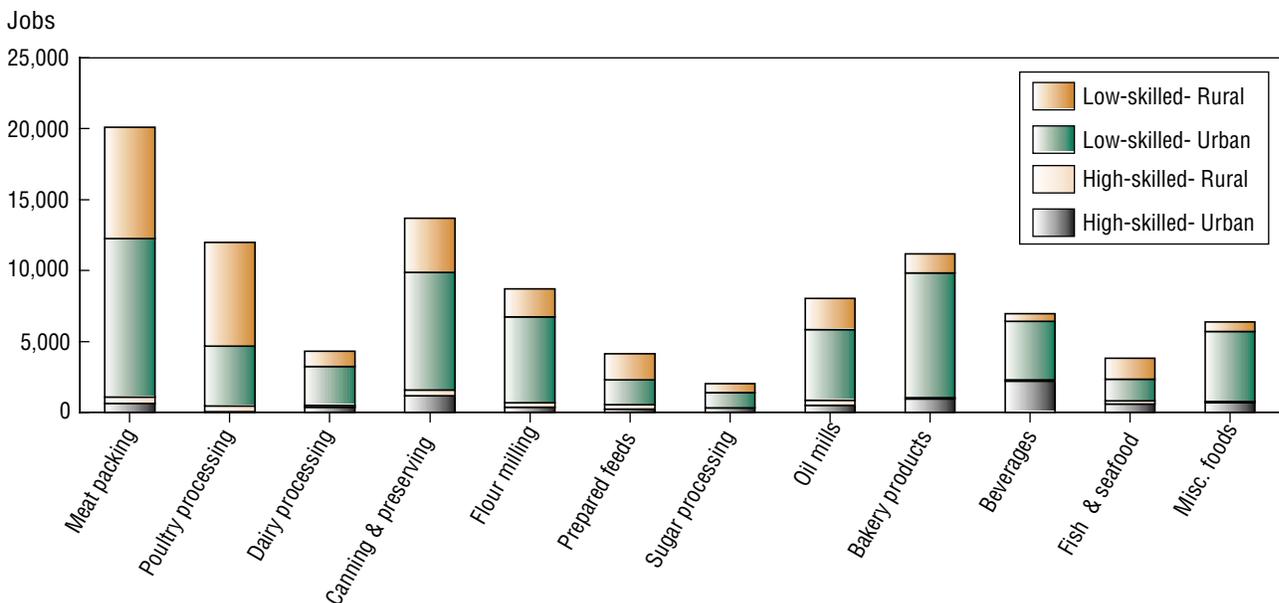
The low-skilled share of total U.S. employment declined from 78.7 percent (66.6 million out of 84.6 million total workers) in 1972 to 76.2 percent (92.2 million out of 121.0 million) in 1992 (table 1). In

food processing, however, the opposite occurred. Already employing a higher proportion of low-skilled workers than the economy-wide average in 1972, food processing employment dropped between 1972 and 1992, but high-skilled employment declined even more. As a result, the proportion of low-skilled workers in the sector rose.

Trade-Related Meat Packing and Poultry Processing Employment Has Become More Important

Export-related employment gained in 11 of 12 food processing subsectors from 1972 to 1992, led by poultry processing's 510-percent increase (table 2). Export-related rural employment gained substantially for most of the 12 subsectors (fig. 1). Import-related employment increased as well (except for sugar processing), but the increase in export-related employment was larger.

Figure 1
Export-related food processing employment, 1992
Meat processing jobs dominate export-related food processing employment



Source: Input-output analysis of traded food products.

Table 2

Changes in trade-related employment in food processing, 1972-92*Export-related meat packing and poultry processing employment grew fastest*

Item	Meat packing	Poultry processing	Dairy processing	Canning & preserving	Flour milling	Prepared feeds	Sugar processing	Oil mills	Bakery products	Fish & sea-food	Misc. foods	Total	
<i>Change in jobs</i>													
Exports	13,400	10,200	100	7,199	1,601	2,100	1,000	-1,000	8,400	2,600	100	5,000	50,700
Urban	6,857	3,713	4	4,792	777	945	568	-1,145	7,179	2,341	-439	4,359	29,951
Rural	6,543	6,487	96	2,407	824	1,155	432	145	1,221	259	539	641	20,749
High-skilled	800	600	0	700	200	300	0	-100	600	400	0	600	4,100
Urban	425	218	-8	466	89	135	-6	-132	512	357	-59	525	2,522
Rural	375	382	8	234	111	165	6	32	88	43	59	75	1,578
Low-skilled	12,600	9,600	100	6,499	1,401	1,800	1,000	-900	7,800	2,200	100	4,400	46,600
Urban	6,432	3,495	12	4,326	688	810	574	-1,013	6,667	1,984	-380	3,834	27,429
Rural	6,168	6,105	88	2,173	713	990	426	113	1,133	216	480	566	19,171
Imports	3,100	1,900	100	9,100	1,500	600	-13,300	1,200	7,700	9,200	4,200	3,800	29,100
Urban	-758	682	4	6,034	1,013	207	-9,177	644	6,392	8,347	1,119	3,229	17,736
Rural	3,858	1,218	96	3,066	487	393	-4,123	556	1,308	853	3,081	571	11,364
High-skilled	200	0	0	900	200	200	-1,400	100	500	1,000	500	400	2,600
Urban	-20	-1	-8	599	134	87	-966	40	408	908	149	338	1,668
Rural	220	1	8	301	66	113	-434	60	92	92	351	62	932
Low-skilled	2,900	1,900	100	8,200	1,300	400	-11,900	1,100	7,200	8,200	3,700	3,400	26,500
Urban	-738	683	12	5,435	879	120	-8,211	604	5,984	7,439	970	2,891	16,068
Rural	3,638	1,217	88	2,765	421	280	-3,689	496	1,216	761	2,730	509	10,432

Source: Calculated by USDA's Economic Research Service from USDC-BEA's interindustry and County Business Patterns data and USDL-BLS employment data.

Two sectors—meat packing (NAICS 311611-3) and poultry processing (NAICS 311615)—accounted for nearly half of the growth in export-related food processing employment over the 20-year period. Total export-related employment in the meat packing and poultry processing sectors increased 271.3 percent, from 8,700 jobs in 1972 to 32,300 in 1992 (table 3). Export-related rural employment increased 437 percent, versus an urban employment increase of 185 percent. Import-related employment in the two sectors increased only 27.6 percent (from 18,100 jobs to 23,100).

Processed food trade shifted from exports using more high-skilled workers per unit than imports in 1972 to exports using fewer high-skilled workers per unit than imports in 1992. Without the meat packing and poultry processing sectors, there would have been no sectorwide switch in skill intensity of trade. With these two sectors, food processing's skill intensity of trade fell from 1.097 in 1972 to 0.973 in 1992. While U.S. food processing employment fell between 1972 and 1992, employment related to meat exports more than tripled. In 1972, the skill requirements for meat production

for trade were already more skewed toward low-skilled labor than was food processing in general, and this grew slightly more pronounced in the next 20 years. With the shift of meat production from urban to rural areas during 1972-92, rural areas became the primary host of this shift in skills.

How Did This Jump in Trade-Related Meat Processing Employment Happen?

Changes in the level of meat and poultry trade alone account for the reversal of skill intensity in total food processing from 1972 to 1992. In other words, the shift in skill

Table 3

Changes in meat packing and poultry processing trade-related employment, 1972-92

Rural and low-skilled workers gained the most from meat export growth

Item	1972		1992		Percent change
	Workers	Share	Workers	Share	
Exports	8,700	100	32,300	100	271.3
Urban	5,719	65.7	16,289	50.4	184.8
Rural	2,981	34.3	16,011	49.6	437.1
High skilled	400	4.6	1,800	5.6	350
Low-skilled	8,300	95.4	30,500	94.4	267.5
Imports	18,100	100	23,100	100	27.6
Urban	12,973	71.7	12,897	55.8	-0.6
Rural	5,127	28.3	10,203	44.2	99.0
High-skilled	1,000	5.5	1,200	5.2	2.0
Low-skilled	17,100	94.5	21,900	94.8	28.1

Source: Calculated by USDA's Economic Research Service from USDC-BEA's interindustry and County Business Patterns data and USDL-BLS employment data.

intensity in the processed food trade was not so much a shift in skills required for food processing production as it was a change in product mix to a larger share for exported meats. Because meat packing and poultry processing use a larger proportion of low-skill workers than food processors in general, the average skill intensity fell.

As with most economic changes, the increase in meat trade was not an isolated event resulting from one change in the economic or policy environment. In fact, the economic pressures that fostered more U.S. meat trade fall under three categories: (1) pressures that affected the cost of production, (2) pressures that affected the demand for the product, and (3) pressures resulting from public policy.

Because of the United States' abundant and productive cropland and the resultant abundant supply of livestock feed, the U.S. should have long had a competitive advantage in international meat trade.

However, the recent consolidation of meat processing (NAICS 31161) firms into larger businesses with larger processing plants enabled underlying cropland/feed availability forces to be more fully realized. This allowed meat processing costs to drop and the average costs of industry marketing, research, and development to be spread over larger production complexes, lowering the per-unit cost of production (MacDonald et al.). Low-skilled labor became complementary to the technology used on the processing lines as the size of the processing plants increased. Ollinger et al. estimated that a 1-percent increase in meat processing output at constant factor prices is associated with less than a 1-percent increase in total cost—0.901 for poultry, 0.953 for cattle, and 0.926 for hogs. That is, average costs fall as output increases, and more so for poultry than beef and pork.

Consequently, far fewer meat-packers now slaughter livestock than 20 years ago, but their plants

are much larger. In 1997, the top four firms handled nearly 80 percent of all steer and heifer slaughter, versus 36 percent just two decades earlier. In addition to the effects of consolidation, changes in slaughter plant technology may have created scale economies, altered the mix of slaughter plant products, and changed the location and operation practices of cattle and hog production.

Industry consolidation has also been accompanied by important changes in labor relations. Between 1980 and 1987, union membership in the meat products industry fell from 46 percent to 21 percent, and has remained low (MacDonald et al.). The decline in unionization paralleled the routinization of packing plant tasks and a drop in real wages of 40-50 percent between 1972 and 1992. These forces combined to make employment in meat processing less attractive to domestic low-skilled workers. And slaughterhouses have always been risky places to work. Consequently, many immigrant workers operate slaughter and fabrication lines.

Growing meat exports reinforced the cost-lowering effects of consolidation by allowing processing plants to operate nearer to capacity and thereby more fully realize their economies of size. The U.S. meat trade has also been helped by technological innovations in transportation, which have facilitated trade in chilled fresh and frozen products and extended the shelf life of higher quality meat produced from abundant U.S. grain.

Consumer preference and growing incomes in other countries, like Japan and Korea, increased demand for U.S. meat products. These countries are importing a rising share of their meat consumption as import barriers

ers fall. Japan has dismantled its quota system for beef imports and reduced its tariffs since 1995. South Korea opened its beef market with an import quota in 1988, and has raised the quota level several times since.

Meat exports have been further facilitated by regional trade agreements (NAFTA, MERCOSUR) and multinational trade liberalization. In addition to policy changes facilitating trade, active efforts by the U.S. government to establish and maintain disease-free status has opened or preserved some overseas markets for U.S. meats.

Opportunities and Challenges for Rural America

Since 1972, industry consolidation and economies of scale in meat processing have lowered the industry's cost of production. Consumer preferences for high quality meats and rising consumer incomes in customer nations have expanded potential meat export markets, as have bilateral and regional trade agreements. This growth in meat trade paralleled a shift of the meat packing and poultry processing sectors from urban to rural locations. Because, on balance, rural areas have a greater share of low-skilled workers in their labor force and have fewer employment opportunities for their workers, this may appear to be a win-win situation for rural areas. Meat processing seemed to be just what was needed for rural areas—more rural jobs related to a growing industry enjoying growing trade.

However, while more jobs are available, they are predominantly low-skill jobs. Although rural areas have a greater share of low-skilled workers in their labor force, the jobs slaughtering livestock and processing the meat often do not

appeal to rural domestic workers. Accommodating a larger share of commuter and migrant workers has challenged some rural communities that have meat processing plants.

Have rural areas benefited from the reduced skills required of labor in U.S. processed food trade? It depends on one's point of view. A rural community that adds a new meat processing plant certainly adds to its economic base. Consumer spending and opportunities for businesses supporting the new

plant will grow. If the number of available workers in the community is inadequate to support the plant's employment needs, commuter and migrant workers will supplement the local labor force. Commuter workers will bring additional traffic and lessen the potential benefits from higher consumer spending. Migrant workers may introduce strains on the community educational system and housing. Some community members will like the changes. Some will not. ^{RA}

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Economic Impact of Water/Sewer Facilities on Rural and Urban Communities

Faqir S. Bagi

Rural water/sewer facilities generate private investment and public funds, and increase the property tax base. But the average urban water/sewer facility, which costs only about one-third more than the average rural facility, creates about twice the amount of permanent jobs, induces three times more private investment, leverages twice as much in public funds, and adds three times more to the local property tax base. This difference may be due to greater aggregate infrastructure in urban than in small rural communities.



Water and sewer facilities are built mainly to provide safe drinking water, to treat sewage to meet wastewater standards, and to reduce related health risks. Some communities are compelled to build new systems or expand/improve existing ones to meet new regulations. However, many communities invest in water/sewer facilities to encourage economic growth by facilitating the expansion of existing businesses as well as attracting new ones.

Some conceptual studies argue that communities with water/sewer facilities operating near capacity (and vulnerable to overflow of raw sewage) can stimulate economic development by investing in water/sewer facilities and creating excess capacity for future growth (Rowley et al.). The literature on firm location decisions by businesses shows that water/sewer facilities are among the factors that influence such decisions, but they are not one of the most critical factors.

However, such studies do not inquire whether these businesses would have located in communities where there were no or inadequate water/sewer facilities. Moreover, such plant location studies do not convey or estimate the economic impact of water/sewer or other infrastructure on local communities. Some studies have estimated the impact of aggregate infrastructure on economic growth at the national or State level, over time (Gramlich), but not the impacts of water/sewer infrastructure at the community level.

This article makes use of data from one of the local impact studies conducted for the Economic Development Administration (EDA), focusing on rural and urban impacts of water and sewer projects specifically aimed at stimulating economic development in host communities. Data are from water/sewer projects built or expanded in 1989 and 1990, and which received final payments from the EDA during fiscal year 1990 (see “Data and Collection

Methods,” p. 48). Such information can help in identifying the direct and indirect business beneficiaries of such investment and in estimating their economic contribution to rural and urban host communities of these EDA-funded projects.

Characteristics of Host Communities

The Economic Development Administration provides grants subsidizing the cost of completing a water/sewer project. These grants are awarded only to economically depressed rural and urban areas (see “Data and Collection Methods”). Of the 87 water/sewer projects included in the study, 54 were located in rural and 33 in urban communities across 30 States. Eight water/sewer projects were in North Carolina, 7 in Texas, 6 each in West Virginia and Indiana, and 5 each in Pennsylvania, Michigan, Arkansas, and California (table 1).

In 1986/87, the local unemployment rate was 10 percent for all 87 communities and the share

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Table 1

Geographic distribution of water/sewer projects studied

The 87 projects were spread across 30 States, and 15 projects were studied in detail

State	Number of projects
Alabama	4*
Arkansas	5*
Arizona	1*
California	5*
Georgia	2
Idaho	3*
Illinois	2
Indiana	6*
Iowa	1
Kansas	1*
Kentucky	3
Michigan	5
Minnesota	2
Missouri	1
Montana	1
Nevada	1
New Jersey	1*
New York	3
North Carolina	8
Ohio	2
Oklahoma	2
Oregon	1*
Pennsylvania	5*
South Carolina	4*
South Dakota	1
Texas	7*
Virginia	2*
Washington	1*
West Virginia	6*
Wisconsin	1

*One community host to a water/sewer project in each of these States was paid a personal visit to collect detailed data about the economic impact of the water/sewer projects, and to verify the information being collected by the local authorities. Seven of these communities were rural and eight urban.

Source: Calculated by ERS, from U.S. Department of Commerce, EDA, *Public Works Program: Performance Evaluation*, May 1997.

of population below the poverty level was 20 percent (table 2). Per capita income in 1986/87 was \$7,440 for all 87 communities, \$7,088 for the rural communities, and \$8,017 for the urban commu-

nities, or about 40 percent below national and State per capita income.

Direct and Indirect Business Beneficiaries

Water/sewer projects, like all other infrastructure projects funded by EDA, are built for specific or potential firms and businesses. These businesses are called the direct beneficiaries, and their economic impact on the community is called the direct effect of water/sewer projects. Once a water/sewer project is built, it also benefits existing businesses and helps in attracting new businesses to the community. These businesses, called the indirect beneficiaries, may include: (1) primary and secondary suppliers to the direct beneficiary businesses, (2) businesses that tap into the new water and sewer lines and grow around these lines, (3) new startups or relocating businesses that make use of the excess capacity of new water/sewer facilities, and (4) retail stores and service businesses that arise in response to increasing prosperity of beneficiary businesses and rising family incomes.

Industrial and manufacturing firms are most frequently the direct beneficiaries of new water/sewer facilities (table 3). For example, a large potato chip factory in Pennsylvania had 506 jobs before the water/sewer project and 950 after the completion of the project. A major beef packing plant in Kansas had 1,300 jobs before the project and 2,700 after. Other direct beneficiaries include a major chicken processing plant, a farm produce processing plant, industrial parks, shopping centers, and commercial/office buildings. Businesses that indirectly benefited from water/sewer projects include retail stores and service industries, restaurants, housing subdivisions, automobile dealerships, motels, and service stations (table 3).

Economic Impacts of Projects' Beneficiaries

Water/sewer projects can save and/or create jobs, spur private-sector investment, attract government funds, and enlarge the property tax base. The 87 water/sewer projects studied, on average, created 16 full-time-equivalent construction jobs. Direct beneficiaries

Table 2

Characteristics of communities participating in water/sewer projects

Unemployment and poverty rates were similar in rural and urban communities, but rural communities had lower incomes and minority populations

Characteristic	All 87 projects	54 rural projects	33 urban projects
Unemployment rate, 1986/87	10.5	10.7	10.1
Population below poverty level (percent), 1986/87	20.3	20.1	20.7
Minority population (percent), 1990	19.7	15.3	26.8
Per capita income, 1986/87 dollars	7,440	7,088	8,017
Community population, 1990	36,189	13,415	73,456

Source: Calculated by ERS, from U.S. Department of Commerce, Economic Development Administration, *Public Works Program: Project Evaluation*, May 1997.

(businesses) saved, on average, 212 permanent jobs, created 402 new permanent jobs, made private investments of \$17.8 million, leveraged \$2.1 million of public funds, and added \$17.0 million to the local property tax base. Indirect beneficiaries saved, on average, 31 permanent jobs, created 172 new

permanent jobs, attracted \$3.34 million in private-sector investment, leveraged \$905,000 of public funds, and added \$3.0 million to the local property tax base. This enlarged property tax base, at a mere 1-percent tax rate, would yield \$200,000 in annual property tax to the community (table 4).

Rural Versus Urban Effects

On average, construction costs were higher (1.3 times) for urban than rural water/sewer projects, but so were the average economic benefits to businesses. For example, urban businesses directly benefiting from water/sewer projects saved 1.3 times more permanent jobs, created 1.9 times more permanent jobs, made 2.8 times more private investment, leveraged 2.5 times more public funds, and added 2.9 times more to the property tax base than similar businesses in rural communities (table 4). Both rural and urban businesses indirectly benefiting from the projects created substantial employment, private investment, public funds, and property taxes both in rural and urban communities. However, most urban projects have substantially larger impacts than rural projects.

Investment in Water/Sewer Facilities Pays Large Dividends

Total construction cost per water/sewer project was \$1,418,738 nationally in 1990. About \$582,000 (41 percent) came from EDA grants, over \$700,000 (49.6 percent) came from the applicants (primarily local governments), and over \$133,000 (9.4 percent) came from other Federal agencies, and State and county governments (table 4). Every dollar spent in constructing an average water/sewer project generated almost \$15 of private investment, leveraged \$2 of public funds, and added \$14 to the local property tax base (table 5). Since local communities paid only about half of the construction cost, the return on their investment would be twice as large as shown here.

Table 3

Businesses directly and indirectly affected by water/sewer projects studied in detail*

Most water/sewer projects' direct beneficiaries were industrial and manufacturing firms; most indirect beneficiaries were retail stores and service industries

Type of business	Number of businesses affected	
	Directly	Indirectly
Warehouse buildings		2
Shopping centers	2	1
Potato chip factory	1	
Restaurants	3	12
Deli-type stores		2
Nursing home		1
Funeral homes		2
Mobile home dealerships		1
Condominiums		1
Housing subdivision developments		6
Power generating plants	1	
Major chicken processing plant	1	
Major beef processing plant	1	
Industrial and manufacturing firms	11	3
Industrial parks	3	2
Automobile dealerships		7
Motels		4
Cinemas		1
Bookstores		3
Business/office buildings	2	
Saloons/taverns	1	1
Full-service RV parks		1
Flea markets		3
Railroad park		1
Construction and electrical firms	2	1
Office furniture warehouses	1	
Farm-produce processing plants	1	
Service stations		4
Prisons	1	
Retail stores and service industries		91
Tourism promoting facility		1
Golf course		1
Government offices		3

*Out of 87 water/sewer projects, 15 were personally visited onsite by the research team, and they identified businesses that were direct beneficiaries and indirect beneficiaries in each of these 15 communities. Seven of these communities were rural and eight were urban.

Source: Calculated by ERS from U.S. Department of Commerce, EDA, *Public Works Project: Performance Evaluation*, May 1997.

Table 4

Economic impact per water/sewer project, urban versus rural host*Urban water/sewer projects have two to three times larger economic effects than rural projects*

Economic impact	All 87 projects	54 rural projects	33 urban projects	Urban to rural ratio
	<i>1990 dollars, per project</i>			<i>Ratio</i>
Construction/completion cost per project:				
EDA's grant funds	582,083	519,843	683,931	1.32
Applicant's funds	703,410	575,896	912,068	1.58
Funds from other sources	133,245	164,339	82,364	0.50
Total construction costs	1,418,738	1,260,078	1,678,363	1.33
Economic impact per water/sewer project				
Private investment directly induced	17,800,000	10,514,100	29,794,600	2.83
Private investment indirectly induced	3,340,000	1,459,560	6,429,750	4.41
Total private investment induced	21,140,000	11,973,660	36,224,350	3.03
Public investment directly related to projects	2,097,249	1,332,917	3,347,971	2.51
Public investment indirectly related to projects	905,270	784,415	1,103,031	1.41
Total public investment induced	3,002,519	2,117,332	4,451,002	2.10
Total private and public investment induced	24,142,519	14,090,992	40,675,352	2.89
Property tax base increased directly by projects	17,000,000	10,341,200	29,845,300	2.89
Property tax base increased indirectly by projects	3,000,000	1,300,000	6,250,000	4.81
Total increase in property tax base	20,000,000	11,641,200	36,095,300	3.10
	<i>Number of jobs</i>			
Employment impact per water/sewer project:				
Construction jobs directly created	16	15	18	1.20
Permanent jobs directly saved by the projects	212	189	249	1.32
Permanent jobs indirectly saved by the projects	31	37	20	0.54
Total permanent jobs saved by the projects	243	226	269	1.19
Permanent jobs directly created by the projects	402	304	562	1.85
Permanent jobs indirectly created by the projects	172	87	159	1.83
Total permanent jobs created	574	391	721	1.84
Total permanent jobs saved and created	817	617	990	1.60

Source: Adapted by ERS, from U.S. Department of Commerce, EDA, *Public Works Program: Performance Evaluation*, May 1997.

In addition, water/sewer projects help teach communities to plan, prepare applications, obtain grants, manage construction projects, work with government agencies at every level, and negotiate with existing and relocating businesses. This helps them

succeed in further endeavors. Three communities (out of 15) that were studied in detail were in the process, during the personal visits by the research team, of building more ambitious infrastructure projects than the water/sewer projects already completed. Another com-

munity had applied for an EDA grant for an additional sewer line needed to expand its already fully occupied industrial park. Another community was ready for mixed development on a 100-acre tract of land, and two more had set up committees to search for additional

suitable land for further development. In one small community, 200 people showed up at the dedication ceremony of the new sewage treatment plant.

Some small rural communities might depend primarily on agriculture, forestry, or mining. Small rural towns or urban areas with only one or two main industries are vulnerable to economic downturns in those industries or sectors. Water/sewer systems, by facilitating the growth of a wide mix of local

businesses, can diversify the local economy, as evident in all 15 communities investigated in detail (table 3).

Increasing and expanding business activity will at least maintain and likely increase values of local properties, including private homes, the largest investment for most families. That helps people to build equity and engenders prosperity. Growing business activity and rising local incomes also add to the local property tax base, sales tax

revenues, and even local/county income tax revenues. And of course, water and sewer facilities are critical for meeting safe drinking water needs and clean water regulations.

Conclusion

Rural and urban water/sewer projects both generate much greater economic benefits than their total construction cost. In fact, the 87 water/sewer projects analyzed in this study had been operating only 6-7 years, and it is possible that the magnitude of the economic impact will continue to grow far into the future.

Rural water/sewer facilities save and create permanent jobs, generate private investment, leverage additional government funds, and increase the property tax base. But the average urban water/sewer facility generates two to three times the economic impacts of rural facilities. There are several likely reasons for this. First, due to the small size and remoteness of rural communities, a rural project may cost more to build than the same size project in urban areas. If construction costs were similar for both rural and urban water/sewer projects the relative difference in economic impacts may narrow or even disappear. Second, the general infrastructure—easy access to highways, railroads, and airports, primary and secondary suppliers, input and output markets, skilled labor, community services, community facilities and amenities, cultural activities, libraries, and good schools—is likely to be more abundant in urban than rural areas.

Data and Collection Methods

The Economic Development Administration (EDA) funds public works projects in communities where levels of unemployment and percentages of the population below the poverty level are 40 percent higher than State and national averages, and per capita income is typically 40 percent lower. The projects are located in either very rural or dense urban areas, with the vast majority in rural communities. Projects were usually built for a specific beneficiary (business) or with a likely beneficiary in mind.

The Economic Development Administration collected data, through contractors, from November 1996 through March 1997, from 203 projects, for which EDA had made its last payment during FY 1990. These projects had 6 years to get established and create a measurable economic impact on host communities.

The research team (including researchers from Rutgers University, New Jersey Institute of Technology, Columbia University, Princeton University, National Association of Regional Councils, and University of Cincinnati) developed a questionnaire, and contacted via phone or mail all 203 recipients of EDA grants. The grant recipients were asked to get local economic development officers, tax assessors, and owners of local businesses involved in order to gather the most knowledge about the impact of EDA-funded projects. The research design consisted of identifying every local business that had directly or indirectly benefited from the EDA-funded project, and then counting how many jobs were saved and created, how much private investment had been made, how much additional government funds had been leveraged, and how much the property tax base had been increased by each business identified to be directly or indirectly benefiting from the EDA-funded project.

All those responsible for collecting such information were trained at 13 different locations around the Nation. Out of 203 projects, 60 were selected for onsite visits by research team members. On these personal visits, researchers checked the data being collected by the EDA grant recipients. Eighty-seven projects were water/sewer projects, and 15 of those received onsite visits.

Table 5

Average economic impact to average construction cost ratios, and costs* per job

Both rural and urban water/sewer projects, on average, generate private investment, leverage public funds, and increase the property tax base many times more than the average construction cost

Economic impact/cost	All 87 projects	54 rural projects	33 urban projects
	<i>Ratio</i>		
Direct private investment to construction cost ratio	12.5	8.3	17.8
Indirect private investment to construction cost ratio	2.4	1.2	0.7
Direct and indirect private investment to construction cost ratio	14.9	9.5	21.6
Direct public investment to construction cost ratio	1.5	1.1	2.0
Indirect public investment to construction cost ratio	0.6	0.6	0.7
Direct and indirect public investment to construction cost ratio	2.1	1.7	2.7
Total private and public investment to construction cost ratio	17.0	11.2	24.2
Direct and indirect increase in property tax base	14.1	9.2	21.5
	<i>1990 dollars</i>		
Cost per permanent job saved	5,838	5,576	6,239
Cost per additional permanent job created	2,472	3,223	2,328
Cost per permanent job saved or created	1,737	2,042	1,695
Cost per construction job	88,671	84,005	93,242

*Construction cost here includes EDA grants, applicant's funds, and amounts contributed by local, county, and State governments.
Source: Calculated by ERS from U.S. Department of Commerce, EDA, *Public Works Program: Performance Evaluation*, May 1997.

However, EDA funds water/sewer and other infrastructure projects in economically distressed areas, and it requires applicants to document the expected extent of economic development that the project will generate. Therefore, the economic impacts generated by the projects analyzed in this article may not be duplicated in communities that build water/sewer facilities exclusively to provide safe drinking water and meet wastewater regulations. Such projects may or may not generate economic impacts beyond construction jobs and construction material sales in the community.^{RA}

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Resource Conservation and Development Program Reaches a Milestone

Dwight M. Gadsby

The Resource Conservation and Development (RC&D) program is designed to expand economic opportunities in rural areas within a defined geographic area by encouraging and stimulating the growth of local income and employment amid a healthy and sustainable environment. While administered nationally by USDA's Natural Resources Conservation Service (NRCS), RC&D areas are locally initiated by interested citizens. Sponsored activities promote the orderly conservation and wise use of natural resources and are determined by citizen volunteers and locally selected civic leaders, who coordinate with public agencies and private interest /civic groups. Through a nationwide competitive process, local citizens formally apply for USDA designation as an "area."

RC&D areas (368 as of August 2002) are located in all 50 States, the Caribbean, and the Pacific Basin. Areas average about 7 counties, and their boundaries occasionally cross State lines to better address shared natural resource and economic needs. A total of

The Resource Conservation and Development (RC&D) program has grown both in number of areas covered and in funding since its inception in 1964. In 2002, RC&D received permanent authorization. The RC&D program's success springs from the individual initiative granted to and shown by local RC&D volunteer councils, whose decisions for their communities have upheld economic advancement and the conservation of natural resources.

2,164 U.S. counties are included in RC&D areas, representing 85 percent of all U.S. counties and more than 77 percent of the U.S. population. RC&D areas have grown substantially from the first 10 authorized pilot areas in FY 1964 (table 1). Twenty areas were added in January 2002, though the total is limited to 450 by the Agriculture and Food Act of 1981.

2002 Farm Bill Enhances Environmental Management

The Farm Security and Rural Investment Act of 2002 (Farm Bill, PL 107-171) provided for the RC&D program's permanent authorization. This authorization validates the RC&D program's contributions to regional, citizen-based conservation and development, and its growing importance to the rural and suburban countryside. The 2002 Farm Bill redefined local leadership councils and acknowledged the participation of Native American tribes. Permanent authorization allows local volunteers to proceed with greater assurance that

resources will be provided and also makes it easier for RC&D to attract outside funding. A program evaluation of RC&D (with a report) is due to the U.S. House and Senate by 2005 regarding progress and future needs for program support. The program was funded for \$48 million in FY 2002, an increase of over 10 percent from the previous year's budget.

In a larger sense, the 2002 Farm Bill represents the single most significant commitment of resources toward conservation on private lands in the Nation's history (see <http://www.ers.usda.gov/features/farmbill/>). The legislation responds to a broad range of emerging challenges faced by farmers and ranchers, including soil erosion, preservation of wetlands and of wildlife habitat, and farmland protection. Private landowners can benefit from a variety of voluntary assistance, including cost sharing, land rental, incentive payments, and technical assistance for using conservation practices. The Farm Bill emphasizes the conservation of

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working lands, ensuring that farmland remains both healthy and productive. The RC&D program, with its broad geographic coverage, will play a significant role in meeting the conservation objectives of the 2002 Farm Bill.

Pilot Program Laid a Solid Foundation

The RC&D program began as a pilot program (1964) with the passage of the Food and Agriculture Act of 1962. The RC&D program was one of a number of farm and rural development programs started in the 1960s to confront the problems of rural America. U.S. agriculture at the beginning of the 1960s was in turmoil. More than half of the counties in the Nation lost population in the 1950s and these counties were predominantly rural, with 6.7 million people moving from rural to urban areas in that decade. Farmers were leaving agriculture and small-town storefronts were being boarded up. USDA planners saw these trends and believed that long-term programs were needed to stimulate and diversify growth in rural areas and to help buffer them against losses to community leadership capacity, rural services, and economic infrastructure.

With RC&D, Federal and State planners were able to draw upon ideas from farm programs of the 1930s, such as the Agricultural Adjustment Acts and the Bankhead-Jones Farm Tenant Act. This earlier legislation had helped provide the tools that restored the purchasing power of farmers and landowners through cost-sharing, loans, and other sources of support. These tools, planners felt, might be used to engage currently underused rural resources of land, labor, and capital. New infusions of capital and

technical assistance could be targeted to generate new income and employment, which could have a positive economic impact on these rural economies. Still, RC&D

program framers needed economic knowledge about the effects of public investments on rural resources. For this, they came to the newly created Economic

Table 1
RC&D program annual appropriations, and number of designated councils, FY 1964-2002

RC&D has experienced renewed growth since 1990

Fiscal year	Appropriations (\$ million)	Councils	Councils added/year
1964	1.5	10	10
1965	1.8	10	0
1966	4.3	20	10
1967	4.7	40	20
1968	6.2	49	9
1969	6.4	53	4
1970	10.8	66	13
1971	14.9	96	30
1972	20.9	119	23
1973	26.6	229	0
1974	17.2	143	24
1975	20.3	153	10
1976	37.5	163	10
1977	30.7	173	10
1978	31.9	173	0
1979	25.4	179	6
1980	32.0	185	6
1981	34.0	189	4
1982	26.5	189	0
1983	30.7	189	0
1984	26.0	189	0
1985	26.3	189	0
1986	25.0	189	0
1987	25.0	189	0
1988	25.1	189	0
1989	25.1	189	0
1990	27.3	194	5
1991	29.9	209	15
1992	32.5	236	27
1993	32.5	250	14
1994	32.9	277	27
1995	32.8	277	0
1996	29.0	289	12
1997	29.4	290	1
1998	34.4	315	25
1999	35.0	315	0
2000	35.2	315	0
2001	42.0	348	33
2002	48.0	368	20

Source: NRCS.

RC&D Pilot Areas

	Acres
Upper Willamette, OR	2,925,890
Northern Rio Grande, NM	2,880,113
West Central, MN	2,404,320
Idaho-Washington, ID-WA	2,243,703
Pri-Ru-Ta, WI	2,028,000
Penn Soil, PA	1,518,080
Charles Mix-Bon Homme, SD	1,068,440
Lincoln Hill, IN	1,005,440
White River, VT	635,200
Gwinnett, GA	279,688
Total	16,353,674

Source: Natural Resources Conservation Service.

Research Service and asked for data on feasibility and economic impact studies.

ERS research, combined with work from the land-grant colleges, demonstrated how particular enterprises could help raise farm income and employment. ERS studies from that time ranged from economic feasibility studies of second-home developments to input-output analyses of rural recreation enterprises and their local impacts. A good deal of economic information was provided by the research community and applied to practical problems in the RC&D areas.

The first phase of RC&D's pilot program began in February 1964, with a sample of 10 widely dispersed areas (see box), covering more than 16 million acres. The pilot areas were largely agricultural-based and had problems with low income, declining population bases, deteriorating infrastructure, and few economic prospects.

These pilot areas began with an operating concept concentrating on locally initiated and sponsored activities. The purpose of these activities was to expand economic opportunities for the people of an

area through the orderly conservation, improvement, development, and wise use of their natural resources. An area with particular resource problems representative of conditions in other areas—for example, the recent closing of a local lumber mill or a mine—would be a strong candidate for selection as a pilot.

Councils Ensure Local Initiative

The RC&D councils, as noted earlier, are composed of local unpaid volunteers selected to help carry out activities that increase the conservation of natural resources, support economic development, and enhance the environment and living standards in local communities. Typically, nearly half of the council members are already locally elected officials such as mayors, judges, or commissioners.

The councils set priorities, carry out the planning process (including public participation) for all projects, and ensure that local and State requirements are met, plans approved and accomplishments monitored. In effect, the councils are recognized by the Secretary of Agriculture to carry out

the development mission and implement the program at the local level. A recent news release from the Agriculture Secretary's office noted that "The focus on local direction and control has made RC&D one of the most successful rural development programs of the Federal Government (June 3, 2002)."

Each of the RC&D councils develops an approved Area Plan that catalogues an area's resources (based upon a sound economic inventory) and sets expectations for development. The area must be delimited in terms of a reasonably functional economic base as well as its fit into a regional economy.

As noted, RC&D areas start with an expression of interest and need by local individuals, associations, and businesses in a particular area. The motives for applying can be economic, environmental, or socially based. Typical sponsors are municipal, county, and State government, tribal councils, conservation districts, civic groups, or others seeking a regional structure to share knowledge and organizational resources. An application for a proposed RC&D area would typically include several counties and would be submitted to the USDA's Natural Resources Conservation Service (NRCS).

NRCS has responsibility for administering the RC&D program, with technical assistance from other USDA agencies. These include the Farm Service Agency (FSA), Food and Nutrition Service (FNS), Agricultural Research Service (ARS), Agricultural Marketing Service (AMS), Forest Service (FS), Economic Research Service (ERS), Cooperative State Research, Education and Extension Service (CSREES), and the Rural Development mission area.

After a formal review by the above USDA agencies, NRCS presents the Secretary of Agriculture with a list of recommended applications to be designated as new RC&D areas. Upon an area's acceptance, a local council obtains a special guarantee for USDA assistance as long as an area's plan is maintained and local leadership is sustained. Upon approval of a council's plan, and under a charter of incorporation from the State, the council then directs that the plan be put into operation at the local level with the overall assistance of a USDA employee, selected as the coordinator for the area.

RC&D Funds a Variety of Projects

Council members direct and use funding from a number of sources, including Federal, State, and local governments, as well as private sources. Funding includes appropriations, grants, loans, and cost-sharing funds. Activities funded include the construction/repair of community infrastructure such as local public water supply, farm irrigation, fire control, and transportation projects, as well as wildlife management, health, and welfare activities.

Some current projects show the broad scope of the program:

- Clinch-Powell Enterprise Community (an activity of the Clinch-Powell RC&D area) in Tennessee spearheaded an effort to develop a federally designated Empowerment Zone and in less than a year secured \$11 million for needed activities in their area plan, involving the expansion of a wide number of community services and education grants.

- Chariton Valley RC&D in south-central Iowa is adapting a CRP biomass harvesting method based on a successful joint USDA-Department of Energy effort, providing an innovative blend of conservation and rural development.
- Fish River Lakes Water Quality Association (St. John Aroostook Area) in Maine helped revive the economic and aesthetic value of Long Lake through volunteer work and by securing Federal funding.
- The Montana RC&D Association Affordable Housing Project helped provide assistance and support to first-time home buyers in sparsely populated zones through volunteer efforts and technical assistance.
- In Ohio, RC&D-supported Federal, State, and local groups are promoting a project to market wetlands for profit through the use of irrigation development for crops and wildlife habitat enhancement.
- The Glacial Hills Area in Kansas helped local entrepreneurs design and develop micro-enterprises of fewer than five employees by locating capital and providing technical assistance.

More detailed project descriptions can be found on the National Association of Resource Conservation & Development Councils website: <http://www.rcdnet.org/>.

Some RC&D Achievements

NRCS reports that more than 20,000 unpaid volunteers are serving on or working with RC&D councils. In an average year, RC&D volunteers donate nearly 80,000 days to the program. NRCS estimates that nearly 40,000 projects have been completed in the nearly 40 years since the program began.

Most of the completed projects have been accomplished through the ability of local councils to secure financial assistance from a variety of public and private sources. In 2001, RC&D helped improve an estimated 5,000 miles of streams and over 880,000 acres of wildlife habitat, establishing large tracts of permanent vegetative cover.

Progress in economic development associated with the RC&D program has been equally impressive. In fiscal year 2001 alone, NRCS estimates that 500 new businesses were created and 1,800 expanded. It is also estimated that 283,000 people learned a new job skill and nearly 780,000 economically and socially disadvantaged people were served. The National Association of Resource Conservation and Development Councils has estimated that investments in RC&D leverage a 5-to-1 dollar return to local economies.

Challenges, Problems, and Opportunities

The near-doubling of RC&D areas in the last 10 years has brought some problems and raised issues, among them:

- Accurate and timely economic information has become increasingly important in program management. Requests for up-to-date information on such subjects as income and employment and the distribution of that information to local areas has helped RC&D promote economic development at the local level.
- Congressional authority limits the number of new RC&D areas at 450. Many program managers believe that a new national strategy should be defined for the RC&D program once the current one is completed with the activation of all 450 areas.
- Along with a program cap, there has been a growing awareness of the need to redefine the process of integrating new urbanizing counties into the current program structure. This problem is complicated by the need to maintain links to a rapidly changing agricultural industry, which has many natural ties to the RC&D program.

- The national RC&D leadership is exploring the country's new entrepreneurial spirit. RC&D goals are to enhance the economic capacity of their areas, rural communities, and businesses. In order to achieve these goals, the RC&D information base must be expanded through technology, knowledge, and management resources. This makes the amassing of more capital and specialized resources a prime challenge. Technology and education might help accumulate capital, and RC&D leaders

are increasingly aware of the world market and its demand for the goods and services that are produced by many RC&D areas.

- Finally, RC&D leaders must continue to nurture effective working relationships with USDA agencies and other State and local partners. This has been, and remains, fundamental in integrating economic, cultural, and ethnic differences into an overall program strategy.^{RA}

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Who Owns the Land?

Agricultural Land Ownership by Race/Ethnicity

Jess Gilbert
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Ownership and control of land strongly affects many aspects of rural life, especially in the poorest regions of the country. Land ownership in minority communities is particularly important since it is often one of the few (and largest) forms of wealth. Beyond economics, land ownership contributes substantially to civic activities and political participation. Land is also culturally significant to minority groups like American Indians, Hispanics, and Blacks. Yet some argue that they are losing ownership and control of land at much faster rates than Whites. In recent years, USDA has been sued for racial discrimination in Federal farm programs. For these reasons among others, good

Of all private U.S. agricultural land, Whites account for 96 percent of the owners, 97 percent of the value, and 98 percent of the acres. Nonetheless, four minority groups (Blacks, American Indians, Asians, and Hispanics) own over 25 million acres of agricultural land, valued at over \$44 billion, which has wide-ranging consequences for the social, economic, cultural, and political life of minority communities in rural America. This article presents the most recent national data available on the racial and ethnic dimensions of agricultural land ownership in the United States, based largely on USDA's Agricultural Economics and Land Ownership Survey of 1999.

landownership data are essential for better rural development practice as well as improved agricultural policymaking.

In this article, we present the most recent and thorough national data on the racial/ethnic dimensions of agricultural land ownership in the United States, based largely on USDA's Agricultural Economics and Land Ownership Survey of 1999 (AELOS). Of all private U.S. agricultural land, Whites account for 96 percent of the owners, 97 percent of the value, and 98 percent of the acres. Nonetheless, four minority groups (Blacks, American Indians, Asians, and Hispanics) own over 25 million acres of agricultural land, with a value of over \$44 billion: Blacks possess 7.8 million acres (\$14.4 billion), American Indians 3.4 million private acres (\$5.3 billion), and Hispanics nearly 13 million acres (\$18 billion). The large acreage and high value have significant social, economic, cultural, and political consequences for minority communities in rural America.

Blacks

For a century after the end of slavery, Black farmers tended to be tenants rather than owners. Since the early 1970s, activists and scholars have warned that the rural Black community was in danger of losing its entire land base. Land ownership by Black farmers peaked in 1910 at 16-19 million acres, according to the Census of Agriculture. However, the 1997 census reports that Black farmers owned only 1.5 million acres. This drastic decline contrasts sharply with an increase in acres owned by White farmers. Thus, the most surprising finding in the 1999 AELOS is that—despite many decades of land loss—Blacks own 7.8 million acres (table 1).

This estimate has not been available to other researchers because these data appeared only last year, and previous national studies have not counted minority land owners as thoroughly as AELOS. Analysts instead have used the much smaller Census of Agriculture figure (1.5 million

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Table 1

All private agricultural land owners, acres owned, and value of land and buildings, by race and ethnicity, 1999*Minorities own only a small part of the U.S. agricultural land base*

Group	Land owners		Acres		Average acres ¹	Value (\$1,000)	Percent ¹
	Number	Percent ¹	(1,000)	Percent ¹			
United States	3,412,080	--	932,495	--	273	1,283,853,124	--
White	3,218,751	96.2	856,051	98.1	266	1,156,977,076	96.8
Black	68,056	2.0	7,754	0.9	114	14,366,319	1.2
American Indian	23,266	0.7	3,398	0.4	146	5,271,769	0.4
Asian	8,158	0.2	964	0.1	118	6,860,824	0.6
Other	27,290	0.8	4,640	0.5	170	11,753,114	1.0
Hispanic ²	47,223	1.4	12,888	1.4	273	18,209,871	1.4

¹Racial percentages are calculated based on the racial totals for all owners and all owner acres (3,345,521 and 872,807,000). The U.S. total is greater than the sum of the races because it includes corporate and other non-individual owners that do not have racial characteristics, plus some individuals who did not answer or did not receive a racial identifier. This also applies to average acres per owner.

²Hispanic percentages are calculated based on the U.S. totals for all owners and all owner acres (3,412,080 and 932,495,000).

Source: Table 68, 1999 Agricultural Economics and Land Ownership Survey.

acres). In another major discrepancy, the Census shows fewer than 19,000 Black farmers while AELOS counts 68,000 Black agricultural land owners. These seeming contradictions, however, are due largely to intentional differences between

the two sources: The Census of Agriculture studies farmers whereas the AELOS studies agricultural land owners (see box, "Many Agricultural Land Owners Are Not Farmers," pp. 58-59).

According to the AELOS, only one-third of Black-owned acres are operated by the owner (table 2), with most Blacks renting their land to others (mainly Whites). In fact, 61 percent of Black owners in 1999

Table 2

Owner-operators, non-operator owners, and acres owned, by race and ethnicity, 1999*Most agricultural land owners, other than Blacks, are owner-operators*

Group	Owner-operators ¹					Non-operator owners ¹				
	Number	Percent ²	Acres (1,000)	Percent ²	Average acres ²	Number	Percent ²	Acres (1,000)	Percent ²	Average acres ²
United States	1,966,715	58	542,890	58	276	1,445,365	42	389,605	42	270
White	1,892,676	59	533,642	62	282	1,326,075	41	322,410	38	243
Black	29,241	43	2,502	32	86	38,815	57	5,252	68	135
American Indian	17,479	75	2,615	77	150	5,787	25	783	23	135
Asian	6,116	75	655	68	107	2,042	25	309	32	151
Other	21,203	78	3,475	75	164	6,087	22	1,165	25	191
Hispanic ³	33,834	72	10,160	79	300	13,389	28	2,728	21	204

¹Percentages for owner-operators and non-operator owners are calculated row-wise based on the total number of owners and acres in each racial/ethnic category.

²Racial percentages are calculated based on the racial totals for all owners and all owner acres (3,345,521 and 872,807,000). The U.S. total is greater than the sum of the races because it includes corporate and other non-individual owners that do not have racial characteristics, plus some individuals who did not answer or did not receive a racial identifier. This also applies to average acres per owner.

³Hispanic percentages are calculated based on the U.S. totals for all owners and all owner acres (3,412,080 and 932,495,000).

Source: Table 68, 1999 Agricultural Economics and Land Ownership Survey.

were landlords, leasing 4.7 million acres for over \$216 million in rent (table 3). Of all the racial groups, Blacks own the smallest average acreage (114 acres per owner).

Black agricultural land owners are highly concentrated in the South, from east Texas through the Black Belt up into Virginia. Their land use patterns are similar to those for the region as a whole: crops and woodland, with relatively little land in pasture (table 4). Blacks' representation in the Conservation Reserve Program is higher than that of other minorities but lower than Whites' (table 5).



Photo courtesy USDA/ERS.

American Indians

Historically, of course, American Indians had access to practically all the land in the present-day United States. White settlers and the Federal Government subsequently dispossessed them of most of the land. Between the Allotment Act of 1887 and the Indian Reorganization Act of 1934, American Indians lost an additional 90 million acres. Before discussing

current American Indian ownership, it is important to note that AELOS contains data only on *private* Indian land, excluding reservation land that is held by the tribe or otherwise administered communally. Thus, AELOS captures only a small amount of the total agricultural land of American Indians. For instance, the 1997

Census of Agriculture reports that only 2 million acres are held privately by American Indians, while 46 million additional acres are on reservations.

AELOS reports over 3 million acres of private agricultural land held by 23,266 Indian owners, with an average of 146 acres per owner (table 1). Unlike Blacks, these

Table 3

Private agricultural landlords and acres leased to others, by race and ethnicity, 1999

Nearly half of all land owners are landlords (less for most minorities)

Group	Landlords		Acres leased		Average acres per landlord ³	Total rent received (\$1,000)
	Number	Percent ¹	(1,000)	Percent ²		
United States	1,638,033	48	394,336	42	241	17,379,889
White	1,505,648	47	321,711	38	214	14,492,197
Black	41,377	61	4,668	60	113	216,262
American Indian	6,487	28	726	21	112	27,384
Asian	2,634	32	378	39	144	42,648
Other	6,584	24	1,476	32	224	91,267
Hispanic	14,616	31	2,997	23	205	156,100

¹Landlords as percent of all owners.

²Leased acres as percent of all owned acres.

³U.S. average is higher than race-specific averages because U.S. figures include corporate and other non-individual owners that do not have racial characteristics, plus some individuals who did not answer or did not receive a racial identifier.

Source: Table 98, 1999 Agricultural Economics and Land Ownership Survey.

Many Agricultural Land Owners Are Not Farmers

Comparing the AELOS and the Census of Agriculture

The 1999 Agricultural Economics and Land Ownership Survey (AELOS) was a follow-on survey to the 1997 Census of Agriculture. The sample size included 37,182 farmers and 67,178 private landlords. The response rate was 71 percent for farmers and 51 percent for landlords. Data for nonresponding landlords was taken from the reports of farmers who rent from them. It is important to note that the AELOS focuses on agricultural (farm and ranch) land only. For more information on research methods, see Appendix A of AELOS (USDA, 2001).

There are no ideal data sources on land ownership in the United States—other than in the 3,000-plus county courthouses throughout the Nation. Every 5 years, the census of agriculture reports on “land in farms,” which accounts for roughly half of all private land in the U.S. The Census offers the most comprehensive data on farms and farmers, including the land they operate. Yet it is a poor source of information on agricultural land ownership; it covers land owners only when they are also “farm operators” (farmers). Other landlords and nonoperator owners are intentionally excluded from the census of agriculture.

The crucial distinction is between farmers and agricultural land owners. A farmer may rent rather than own land, and an agricultural land owner may not operate a farm. The census of agriculture studies farmers, not land owners. Land owners, though, are exactly the focus of the 1999 AELOS. It reveals much more than the Census about the ownership of agricultural land. For example, the 1997 Census of Agriculture says that 16,560 Black farmers own 1.5 million acres, whereas the 1999 AELOS shows 68,000 Black agricultural land owners with over 7.7 million acres. This discrepancy has broad implications.

Researchers who work on these issues know that census of agriculture data are problematic. For one thing, small farmers are more likely to be missed by the census, and minority farmers tend to be small-scale. The 1997 Census of Agriculture (the first conducted by the U.S. Department of Agriculture instead of the Department of Commerce) made special efforts to include more minority farmers, and seems to have produced results.

Another problem is the census handling of American Indians. The 1997 Census of Agriculture (tables 17, 19, and appendix B) reports that 18,495 Indian farmers operate 52 million acres, for an average Indian farm size of 2,812 acres—almost seven times the average size for all U.S. farms. (See footnote to box table.) This measure is highly unlikely; it results from the Census’s counting each reservation as a single farm. The 46 million acres on Indian reservations is included (and constitutes the vast majority) in the total for Indian agricultural land. Thus, it is difficult to

Indian land owners tend to be farm operators and rent their land to others less often (table 2). Private Indian agricultural land is worth over \$5 billion, and leased land earned over \$27 million in rent in 1999 (table 3). American Indian land owners are generally concentrated in the West and Southwest. They tend to specialize in pasture (49 percent of all acres), with some land in crops (39 percent) and less in woodland (8 percent) (table 4). Pastureland’s prevalence is probably due to the concentration of

Indian farmers and ranchers in arid and semi-arid regions, which are generally more suitable for livestock grazing than for growing crops. Very few Indian owners, and even fewer of their acres, are enrolled in the Conservation Reserve Program, which again may reflect their concentration in regions dominated by rangeland (table 5).

To supplement the AELOS data on private Indian ownership, we used an Intertribal Agricultural Council report based on Bureau

of Indian Affairs data from 1990 (McKean et al.). The BIA counted over 18 million acres of agricultural land on reservations, owned by 29,500 individual Indian farmers or ranchers. Most of these farmers (63 percent) raised livestock, mainly cattle. A more recent report from USDA says that the BIA “manages 55 million acres in trust for Indian tribes and individuals”: 2 million acres of cropland, 36 million in pasture and range, 11 million in forest land, and 6 million other acres (Vesterby and Krupa, p. 24). As with

compare census of agriculture data on Indians with data on other groups, for whom individually held land is the dominant type of ownership.

Finally, the AELOS shows many more owner-operators for all racial/ethnic groups (except Asians) than does the 1997 Census of Agriculture. AELOS estimates of acres owned by owner-operators are closer to the census figures, but still considerably higher for Blacks (see table).

Comparison of 1997 Census of Agriculture and 1999 AELOS on owner-operators, by race and ethnicity

Major data sources disagree

Group	Census of Agriculture				AELOS			
	Owner-operators		Acres owned		Owner-operators		Acres owned	
	Number	Percent	(1,000)	Percent	Number	Percent	(1,000)	Percent
United States	1,720,730		553,705		1,966,715		542,890	
White	1,679,861	97.6	501,683	90.6	1,892,676	96.2	533,642	98.3
Black	16,560	1.0	1,499	0.3	29,241	1.5	2,502	0.5
American Indian	9,406 ¹	0.5	48,043	8.7	17,479	0.9	2,615	0.5
Asian	6,502	0.4	786	0.1	6,116	0.3	655	0.1
Other	8,401	0.5	1,694	0.3	21,203	1.1	3,475	0.6
Hispanic	24,365	1.4	10,462	1.9	33,834	1.7	10,160	1.9

¹The number of American Indian owner-operators is not reported in the 1997 Census of Agriculture. It is between the 9,406 owner-operators reported in Table 17 and the 18,495 Indian farmers reported in Appendix B, Table A. The total number of Indian owner-operators is certainly closer to 18,495. Furthermore, the Census of Agriculture count of the acres operated by Indian owner-operators includes reservation land, which is excluded from the AELOS.

Sources: Tables 16, 17, 46, and Appendix B, 1997 Census of Agriculture—United States Data, and Table 68, 1999 Agricultural Economics and Land Ownership Survey.

Blacks, different data sources report different amounts of land ownership for American Indians (see box, “Many Agricultural Land Owners Are Not Farmers”).

Asians

Asians (and Pacific Islanders) make up the smallest of the racial groups in the AELOS. Some 8,158 Asians own slightly less than a million acres, with an average of 118 acres per owner (table 1). Owner-operators control over two-thirds of this land, with the remainder held

by landlords who do not farm (table 2). However, 39 percent of all Asian-owned acres are rented out, indicating that some owner-operators are also landlords (table 3). The total value of agricultural rent collected by Asian landlords is almost \$43 million. Asian-owned land is highly concentrated in crops (76 percent of all acres), and 90 percent of Asian owners have some cropland (table 4). Only a small percentage of Asian acreage is in pasture, woodland, or the Conservation Reserve Program

(table 5). Asian owners are concentrated in California and Hawaii, areas that specialize in high-value crop production such as orchards and specialty crops.

Hispanics

The AELOS also gathers data on Hispanic-owned agricultural land. Individuals in this ethnic category are included in the AELOS racial categories, but are also reported separately as being “of Spanish origin.” Thus, because Hispanics are already counted in the racial cate-

gories, data on these owners are not strictly comparable to the data by race.

The AELOS reports 47,000 Hispanic owners of agricultural land, with almost 13 million acres (table 1). Over 70 percent of these owners operate the land themselves (table 2). They have larger average holdings (273 acres per owner) than any racial group, including Whites. Hispanics leased out almost 3 million acres, for \$156 million in rent (table 3). Over 60 percent of Hispanic-owned agricultural land is in pasture, and 28 percent in crops

(table 4). As with American Indians, this is likely due to their concentration in the Southwest, where livestock operations predominate. Only about 5 percent of Hispanic owners participate in the Conservation Reserve Program (about half the rate for Whites), and less than 3 percent of Hispanic-owned land is in the CRP (table 5).

Racial/Ethnic Comparisons

Among agricultural land owners, the most striking finding is that minorities are truly in the minority. Less than 4 percent of all owners

are non-White. They hold only 2 percent of all private agricultural land and control just 3 percent of its value. Still, the absolute numbers for minority land owners (25 million acres worth \$44 billion) indicate agricultural land as a tremendous resource for these groups, who tend to reside in particularly poor regions of rural America.

Individual minority groups vary significantly—in tenure status (operator or landlord), value of land, rents received, and land uses. Compared with other races

Table 4

Land use by agricultural land owners and acres, by race and ethnicity, 1999¹

Agricultural land use varies across groups

Group	Cropland					Pastureland				
	Owners		Acres		Average acres	Owners		Acres		Average acres
	Number	Percent	1,000	Percent		Number	Percent	1,000	Percent	
United States	2,710,174	79	434,162	47	160	1,870,355	55	379,579	41	203
White	2,567,497	80	394,792	46	154	1,785,108	55	351,783	41	197
Black	48,916	72	3,772	49	77	28,421	42	2,169	28	76
American Indian	14,437	62	1,309	39	91	16,980	73	1,671	49	98
Asian	7,367	90	733	76	99	1,221	15	76	8	62
Other	14,921	55	1,689	36	113	17,390	64	2,400	52	138
Hispanic	29,619	63	3,632	28	123	27,992	59	8,055	63	288
Group	Woodland					Other				
	Owners		Acres		Average acres	Owners		Acres		Average acres
	Number	Percent	1,000	Percent		Number	Percent	1,000	Percent	
United States	1,210,005	35	73,016	8	60	2,215,992	65	45,738	5	21
White	1,149,038	36	68,396	8	60	2,101,328	65	41,080	5	20
Black	28,938	43	1,244	16	43	41,923	62	569	7	14
American Indian	7,525	32	267	8	35	17,366	75	151	4	9
Asian	1,739	21	105	11	60	3,726	46	50	5	13
Other	4,740	17	250	5	53	19,650	72	300	6	15
Hispanic	8,978	19	678	5	76	29,967	63	524	4	17

¹Owners usually own land in multiple land-use categories, but any given acre is devoted to only one land use. Therefore, if one sums all owners in the land-use categories, they will be higher than the total number of owners, whereas the summed land-use acres equal the total number of acres.

Source: Table 74, 1999 Agricultural Economics and Land Ownership Survey.

Table 5

Conservation Reserve Program (CRP) participation of agricultural land owners and acres by race and ethnicity, 1999
Minority land owners use CRP less than Whites

Group	All owners	Acres (1,000)	CRP land				
			Owners		Acres		Average acres ¹
			Number	Percent	(1,000)	Percent	
United States	3,412,080	932,495	320,323	9.4	39,759	4.3	124
White	3,218,751	856,051	308,052	9.6	37,936	4.4	123
Black	68,056	7,754	4,789	7.0	363	4.7	76
American Indian	23,266	3,398	537	2.3	52	1.5	97
Asian	8,158	964	252	3.1	39	4.0	155
Other	27,290	4,640	578	2.1	38	0.8	66
Hispanic	47,223	12,888	2,295	4.9	349	2.7	152

¹Average acres in CRP for those participating in the program. U.S. average is higher than race-specific averages because U.S. figures include corporate and other non-individual owners that do not have racial characteristics, plus some individuals who did not answer or did not receive a racial identifier.

Source: Table 74, 1999 Agricultural Economics and Land Ownership Survey.

(including Whites), a large proportion of Blacks are nonoperator owners, who own two-thirds of all Black-held agricultural land. The other racial minorities are above the national averages (58 percent) for both owner-operators and the acres they own.

Moreover, agricultural land use patterns differ among racial/ethnic groups. Blacks have above-average percentages of woodland and below-average pastureland, with the largest proportion of their land in crops. American Indian and Hispanic owners use most of their agricultural land as pasture, whereas Asians have hardly any pastureland and a large majority of their land in crops, especially high-value ones. These land use patterns reflect the regionalization of U.S. agriculture and the concentration of racial/ethnic populations.

Conclusion

This article only begins to document minority land ownership. Largely due to data sources, it has several serious limitations. First, it

covers privately held land, thus excluding the major resource base of American Indians: reservations. Second, it presents only national data; State-level information (much less county-level) is not available from the AELOS by racial groups. Third, it is cross-sectional, dealing with ownership at only one point in time (1999).

Trend data—ownership changes over time—are essential for both agricultural policymakers and practitioners of land-based community development. Activists and analysts need more accurate information on land ownership. In minority communities, this can be an especially pressing concern since some are not reaping the full value of their property, and others are in danger of losing their land base altogether. Several improvements would strengthen our knowledge of land ownership:

- The AELOS could be conducted every 5 (rather than 10) years as a regular follow-on survey to the Census of Agriculture.

- Racial characteristics could be reported at the State level, not just the national level.
- The Census of Agriculture could break down the tenure category of “part owner” by owned and rented land by race (cf. tables 17 and 46 in the 1997 Census).
- USDA could support a voluntary registry of minority land owners (following recommendation 28 of USDA’s 1997 Civil Rights Action Team Report).
- American Indian farmers and land could be better counted. Reservations, for instance, are not single farms, as the Census of Agriculture now classifies them.

Many believe, and research has shown, that land ownership is of tremendous economic, cultural, and political value to rural communities (e.g., Salamon, Couto, LaDuke, Mitchell). Major private

foundations, as well as the Federal Government, are also convinced. They have invested millions of dollars in research and community development activities that bolster land ownership. The 25 million acres that the 1999 AELOS reports for minority owners, worth over \$44 billion, are only a small fraction of the amount and value of all U.S. private agricultural land. However, it is a major form of wealth in minority rural America, much as homeownership—a top policy priority—is throughout the Nation.

This currently existing asset base, in some of the poorest areas of the country, could be further utilized in community development efforts. Access to land means that rural communities have more options in addressing rural housing needs. Minority land ownership is being used to develop youth training programs in many rural areas. Small producers and land owners have created opportunities for value-added agriculture (e.g., truck crop operations and farmers' markets). Additionally, of course, land owners have greater financial possibilities. Land often serves as collateral for college educations and entrepreneurial ventures. These are just some of the ways that land ownership is crucially important to rural minority communities. This social asset base is too often overlooked by race/ethnic scholars, agricultural policymakers, and sometimes even rural development practitioners in the communities themselves. ^{RA}

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How Does Growing U.S.-China Trade Affect Rural America?

Fred Gale

China's trade with the United States has boomed since the 1980s. China exports a number of products such as apparel, furniture, and plastics that compete with products manufactured in rural America. However, many of China's most important exports, like footwear and toys, are not widely produced in rural America. China's exports of products like footwear and toys benefit rural U.S. consumers by keeping prices low. China's growing economy is creating market opportunities for rural U.S. producers of oilseeds, grain, meat, machinery, and equipment.

As trade barriers fall around the world, businesses and communities in rural America cannot afford to ignore new developments beyond U.S. borders. The growth of trade with China is one such trend that could have important implications for U.S. farms and rural businesses. Many businesses fear China's plentiful, cheap labor resources that make the country a potential low-cost competitor. At the same time, businesses in the United States and Europe also view China's vast population as a potentially huge market for consumer products.

What are rural Americans to make of China's expanded role in world trade? This article provides some facts about China that will help rural Americans understand this new competitor and customer and what its expanded role in world trade means for the U.S. rural economy.

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China's Booming Trade

China's membership in the World Trade Organization, effective in December 2001, is the culmination of a series of liberalizations China has undertaken since the 1980s. China's trade with the United States has mushroomed since it emerged from a three-decade experiment with central planning, self-sufficiency, and isolation in the 1980s. U.S. imports and exports to China were each about \$3.8 billion in 1985. By 2001, U.S. exports to China had risen to \$19.2 billion and U.S. imports from China had reached \$102.3 billion (fig. 1).

China-U.S. trade has become important to both countries. China is an important source of inexpensive manufactured goods for the United States. Receipts from those goods have been an important source of income and foreign exchange for China. In 2001, China was the United States' fourth largest source of imports (following Canada, Mexico, and Japan). The United States is China's largest export market, accounting for

about a fifth of its exports. While exports in the other direction—from the United States to China—are much smaller, China is also among the top ten export markets for the United States.

Rural America's Competitor

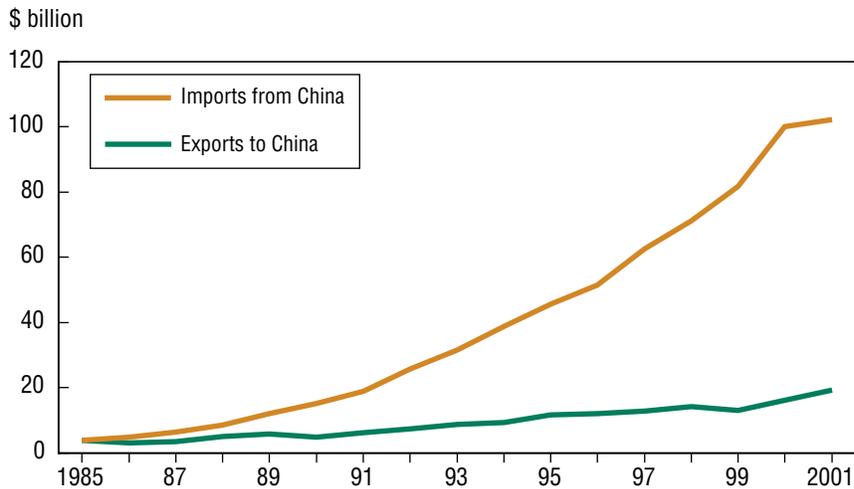
The pattern of trade between the United States and China reflects the complementarity between the two countries and their differing stages of development. The United States is a highly developed, consumption-oriented nation with high labor costs and abundant natural resources. It imports low-cost, mass-produced items for consumption. China is at an earlier stage of development with abundant, inexpensive labor, and scarce natural resources. China demands specialized machinery and intermediate products for its rapidly expanding and modernizing manufacturing sector.

Some of China's most competitive products are also manufactured in the rural United States. For example, apparel, furniture, house-

Figure 1

U.S. trade with China, 1985-2001

Imports from China have grown dramatically



Source: U.S. Bureau of the Census.

hold appliances, and plastics are among China's leading exports to the United States and are also large nonmetro employers (table 1). These are mainly labor-intensive products that are produced in large batches of identical products, a type of manufacturing that has traditionally been a mainstay of the U.S. rural economy.

China has a significant advantage over the rural United States in the manufacture of labor-intensive items. Rural China has a vast underemployed labor force willing to work at wages below \$5 per day. In 2000, the average salary in Chinese manufacturing was a little more than \$1,000 per year. Fringe benefits for workers in many of China's export-oriented manufacturing plants are minimal. Chinese manufacturers also tend to face more lax environmental regulation and enforcement than do U.S. firms, giving Chinese exporters another competitive edge in lower cleanup and environmental compliance costs. A U.S. Bureau of the Census survey of pollution

abatement capital expenditures for 1992-94 showed that U.S. manufacturers spent roughly \$8 billion per

year (about 7 percent of their capital expenditures) to control pollution costs.

Many of China's leading exports to the United States are no longer produced in significant quantities in rural America. For example, in 1997 the nonmetro United States had only one establishment in the toy manufacturing industry, six establishments in sporting goods manufacturing, and eight establishments in footwear manufacturing. Some of the industries (e.g., footwear and apparel) that are now growing in China migrated from northern U.S. cities to lower-cost rural U.S. locations during the mid-20th century to gain access to abundant labor and land. Production of footwear, apparel, toys, and sporting goods (included in "miscellaneous manufacturing") shifted to Taiwan and Hong Kong in

A U.S.-China Statistical Comparison

China has a population 4.5 times that of the United States, but its economy is a little more than one-tenth the size of the U.S. economy. Salaries and productivity per person are much lower in China. China has a large rural population, but it has less farmland than the United States. U.S. exports are about three times the value of China's.

China and the United States—a statistical comparison, 2000

Item	Unit	China	United States
Population	Million	1,266	282
Rural share of population	Percent	68	23
Population density	Persons per km ²	134	30
Gross domestic product	Billion dollars	1,081	9,873
GDP per capita	Dollars	854	35,010
Average annual manufacturing earnings	Dollars	1,181	42,862
Gross value of crop and livestock output	Billion dollars	257	194
Cropland area	Million acres	321	430
Cropland per agricultural worker	Acres	1	140
Exports	Billion dollars	249	780
Imports	Billion dollars	225	1,217

Source: China Statistical Abstract 2001, and 2001 Statistical Abstract of the United States.

Table 1

Industries with largest China imports and exports in 2001, U.S. nonmetro establishments and employment*Some industries affected by trade with China have a strong rural presence*

Sector	NAICS ¹	Export/import value, 2001	U.S. nonmetro establishments in industry	U.S. nonmetro employment in industry ²
		\$ Million	Number	Number
Imports from China:				
Miscellaneous manufactures ³	3399	16,489	74	5,000 ⁴
Footwear	3162	9,633	8	5,500
Computer equipment	3341	8,173	9	21,250
Apparel	3152	7,219	472	93,000
Audio and video equipment	3343	6,305	1	750
Semiconductors and electronic components	3344	5,383	39	20,500
Household furniture and cabinets	3371	4,037	562	49,000
Household appliances	3352	3,764	26	37,500
Communications equipment	3342	3,128	21	7,250
Electric lighting equipment	3351	2,964	17	11,000
Other leather products	3169	2,322	0	0
Plastics	3261	2,187	642	83,900
Other fabricated metal products	3329	2,037	108	40,000
Commercial and service industry machinery	3333	1,915	7	4,300
Electrical equipment and components	3359	1,528	46	21,000
Exports to China:				
Aerospace products and parts	3364	2,609	23	9,750
Semiconductors and electronic components	3344	1,682	39	20,500
Computer equipment	3341	1,574	9	21,250
Waste and scrap	9100	1,103	NA	NA
Oilseeds and grains	1111	1,037	460,000	NA
Navigational, measuring, and control instruments	3345	996	20	7,750
Communications equipment	3342	809	21	7,250
General purpose machinery	3339	789	120	33,400
Resin, synthetic rubber, artificial fibers	3252	771	32	24,240
Basic chemicals	3251	598	42	19,250
Meat products	3116	526	362	196,000
Pesticides, fertilizers, agricultural chemicals	3253	463	10	5,500
Pulp, paper, and paperboard	3221	429	97	80,000
Industrial machinery	3332	348	38	5,400

Table shows exports, imports, number of nonmetro establishments and estimated nonmetro employment for the top 15 4-digit NAICS industries.

NA = not available.

¹North American Industrial Classification System code.

²Estimated from 1997 Census of Manufactures data.

³Primarily dolls, toys, games, sporting/athletic goods, and manufactured products not elsewhere specified.

⁴Includes only dolls, toys, games, and sporting/athletic goods.

Source: U.S. Bureau of the Census.

earlier decades, and these products are now among mainland China's leading exports (table 1). The growth of mass-produced imports from China might be seen as a continuation of this "filtering down" process as industries seek

lower-cost locations to satisfy consumer demand for low-cost goods.

U.S. business leaders may react to growing U.S.-China trade by calling for import quotas and other trade barriers to stave off Chinese competition. The spectre of

employment losses is often raised to justify such protection. Between 1992 and 2000, U.S. textile and apparel employment fell 32 percent (over 500,000 jobs). However, Chinese manufacturers are also experiencing just as much, if not

more, overseas competition. For example, apparel makers in China are under great pressure to modernize and cut costs as they compete with even lower cost producers in South Asia and Latin America. In 2000 and 2001, the Chinese textile sector underwent a massive consolidation to reduce excess capacity and retire outdated equipment. Between 1995 and 1999, employment in China's textile sector was cut by nearly 50 percent (over 3 million jobs), and there were riots at several shuttered textile mills (Dai).

Chinese manufacturers also have problems with low labor productivity stemming from high worker turnover and low skill levels. U.S. employers often complain about high worker turnover, but Chinese export-oriented factories may have even higher turnover. Many Chinese factory workers are migrants from rural areas where few people reach high school. They often stay on the job for a year or less before returning home or jumping to another job, accumulating few job-specific skills. They are often required to work long shifts and endure poor living conditions. Thus, while labor in China costs much less than in the United States, productivity and product quality are much lower as well (Gale and Dai).

Benefits for Consumers

Rural America's 56 million consumers benefit substantially from the availability of low-priced imported products. China's growing production and exports of many consumer items—including footwear, garments, electronics, and household appliances—has cut prices of many items. China accounts for over half of U.S. footwear imports, 25 percent of

home electronics imports, and 15 percent of apparel imports. Some observers identify China's growing manufacturing capacity as a factor leading to global deflation (Leggett and Wonacott). Rural households and other consumers benefit from lower prices for consumer products. Rural households tend to have lower incomes than their urban counterparts, so rural consumers may be especially receptive to low-priced imports from China. The rapid growth in rural communities of discount stores stocked with a wide variety of products sourced in China is consistent with this notion.

Consider the potential savings on footwear purchases as an example. China's exports likely keep U.S. footwear prices down by increasing the supply of low-priced footwear. In 2000, U.S. footwear production was valued at \$3.8 billion, while footwear imports were \$10.5 billion. These figures suggest that about 70 percent of U.S. footwear was imported. Census Bureau foreign trade figures show that 56 percent of U.S. footwear imports came from China. Thus, these figures suggest that Chinese imports account for about 40 percent of the U.S. market. It is likely that the large presence of Chinese imports reduces shoe prices paid by U.S. consumers. The savings to rural consumers could be substantial since calculations based on Bureau of Labor Statistics data on consumer expenditures suggest that rural spending on footwear totaled \$3.6 billion in 2000. If the availability of Chinese imports reduces prices by just 1 percent, savings to rural consumers would be \$36 million. Savings to rural consumers could also be substantial for other industries where competition from Chinese imports has likely kept

prices from rising: apparel (rural expenditures of \$18.5 billion), household electronics (rural expenditures of \$8.1 billion) and small household appliances (rural expenditures of \$800 million).

China's Agricultural Imports Should Grow

China's imports from the United States are primarily aircraft, electronic components, industrial equipment, intermediate products, and some farm products that cannot be efficiently grown in China. Its manufactured imports tend to be high-tech, specialized products manufactured in shorter production runs for industrial customers. Aircraft, electronics, and instruments production in the United States tends to be concentrated in urban areas, although with a significant nonmetro presence (table 1).

Agriculture remains a strong suit of rural America. China is also a leading agricultural producer, accounting for nearly half of world pork production, over 40 percent of the world's vegetables and eggs, a third of tobacco and rice, and about a fifth of the world's corn, cotton, wheat, and poultry production. However, China has slightly less cropland than the United States to feed a population that is 4.5 times larger (see box, "A China-U.S. Statistical Comparison"). It also has severe problems with depletion of water resources in major production areas, desertification, overgrazing, and water pollution from chemical runoff. Thus, it seems logical that China will need to import agricultural products to feed its large, increasingly wealthy population. Indeed, agriculture is the one major sector where the United States has a trade surplus with China.

In 2001, China's imports of soybeans exceeded \$1 billion. China imports soybeans to make cooking oil and high-protein animal feed, two products for which Chinese demand is growing rapidly. Soybean production is not very profitable for Chinese farmers, so rising demand has been met by imports. China also imports wheat from the United States in most years (wheat imports were unusually low in 2001), and corn imports are likely to rise in future years to feed growing livestock herds. Meat products are another leading Chinese import, with purchases from the United States exceeding \$500 million in 2001. China's agricultural imports have wide impacts on the U.S. rural economy. The United States has 460,000 farms growing primarily oilseeds and grains, and meat products manufacturing employs about 200,000 people in nonmetro areas.

With food consumption growing and limited potential for increased Chinese production, it seems likely that China will eventually import even more corn, oilseeds, cotton, and meat products, bringing significant benefits to rural America (Lohmar and others). However, import growth may be slow until China's rural economy is stabilized. Concerns about low farm incomes and stability in China's own rural economy have kept its leaders from fully opening its markets to imports. China's leadership also prefers to maintain a degree of self-sufficiency in food production for strategic reasons. China's leadership is now trying to liberalize agricultural markets and comply with WTO commitments to open its market to imports and cease export subsidies while trying to keep low rural incomes from slipping further (Gale, April 2002).

What About the China Market?

China's vast population has long tantalized business leaders with visions of a huge consumer market. Does that market hold promise for rural businesses?

China's imports from the United States are primarily aircraft, electronic components, industrial equipment, intermediate products, and some farm products that cannot be efficiently grown in China. Its manufactured imports tend to be high-tech, specialized products manufactured in shorter production runs for industrial customers.

China's imports of consumer goods are minimal. While China has the world's largest population of 1.3 billion, the income and consumption levels of most are still quite low. About 70 percent of the population is rural, with average annual living expenditures in 2001 of just \$336, according to China's National Bureau of Statistics. There is, however, a growing segment of households in major cities such as Beijing and Shanghai (average expenditures of \$1,300) with significant disposable income. Urban

China may be on the cusp of a consumption boom similar to that seen in the United States in the 1950s. Private ownership of homes and automobiles is growing dramatically, as is patronage of supermarkets and restaurants, advertising, and spending on education, leisure, and travel.

Most of this new consumption is being sourced locally in China, including products sold by U.S. and other multinational chains. However, the growth in consumption is likely to provide opportunities for exporters in rural America. Imported American apples, oranges, nuts, and some processed foods can be found on many supermarket shelves in China. The growing presence of U.S. retail and food-service chains may improve access to marketing channels and help nurture tastes for products from rural America. Cities and individuals are planting grass and flowers in parks, on road sides, and in median strips, creating demand for seeds and technical know-how.

Specialized equipment, machinery, and instruments will probably continue to be one of China's strongest markets for manufactured products from rural America. Processing plants and factories are rapidly upgrading their facilities to meet international standards, which often means investing in foreign machinery and equipment. Increased attention to food safety, sanitary, and other standards is raising demand for laboratory and testing equipment. Agricultural machinery and equipment are also in demand.

Carving New Niches

In a world of falling trade barriers, lightning-fast communication, and shrinking transportation costs, the emergence of countries like China means adjustments are in store for rural America. Competition with China and other low-cost competitors is moving the U.S.

rural economy away from its role as a source of cheap labor and mass-produced goods. Creative leaders in business and government will have to carve out new niches for rural America to fill, taking advantage of the skill, flexibility, and locational advantages of their communities. ^{RA}

For Further Reading . . .

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1978



1984



1992



2000

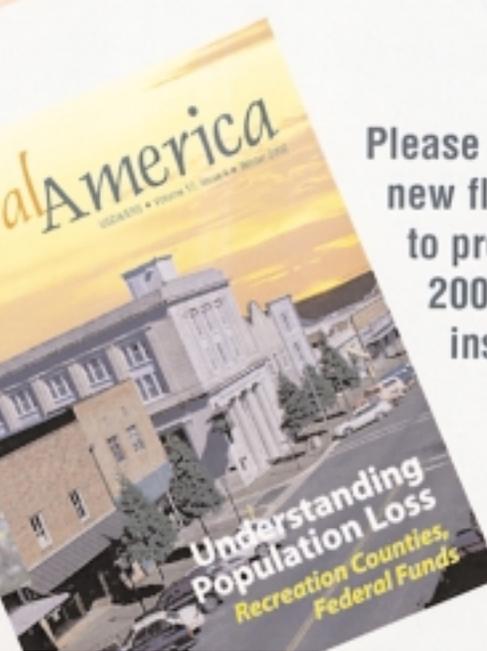
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Rural America

After more than 17 years of continuous publication, *Rural America* (formerly *Rural Development Perspectives*), closes out its run with this issue.

The executive editor and staff wish to thank our subscribers, readers, and contributors—authors, editors, typesetters, designers, and printers.

Please watch for ERS' new flagship magazine, to premiere in February 2003! Details on the inside back cover.



Nonmetro Migration Continues Downward Trend

John Cromartie

The number of people moving into nonmetro areas reached its lowest point in 6 years during 2000-2001, marking an end to the 1990s rural population rebound. At the same time, the number of nonmetro outmigrants jumped to over 2.6 million, according to the latest data from the March 2001 Current Population Survey (CPS). The combined effects of far fewer in-migrants and many more outmigrants led to a net out-migration of more than 1 million, the first significant nonmetro population loss from net migration since the 1980s. A gradual shift in migration patterns away from nonmetro areas has been underway since 1996, when the population grew by 350,000 through net in-migration, but the downturn between 1999-2000 and 2000-2001 was sharper than in previous years.

The shift from net migration gain to loss is part of an overall slump in nonmetro mobility rates. Not only are fewer people moving in from metro areas, but fewer nonmetro residents are moving at all. On average, 15 percent of non-metro persons changed residence

in the previous year during 1996-98, with 9 percent making local moves within the same county (table 1). The average annual mobility rate dropped to 13 percent during 1999-2001, while the rate for local moves dropped to 7 percent. Local residential change slowed within all age groups, but the drop in longer-distance moves from metro to nonmetro areas occurred only among younger residents, ages 1-39, who move much more often than those 40 or older.

The slowdown in nonmetro population growth from migration reflects both changing economic

conditions and the aging of the population. The sustained period of economic prosperity during the 1990s, while quite beneficial to many parts of rural America, created more jobs and reduced unemployment more in metro areas. As job-seeking opportunities grew in metro areas, fewer workers just entering the labor market or seeking career advancement moved to or within nonmetro areas. At the same time, members of the large baby-boom generation are gradually aging out of young adulthood into middle age when mobility is less frequent. Fifteen percent of nonmetro

Table 1
Average annual percentage of nonmetro residents who moved, by age, 1996-98 and 1999-01
Overall nonmetro mobility decreased among all age groups

	All ages	1-19	20-29	30-39	40-64	65 and older
1996-98						
Total mobility	15.2	18.7	32.4	17.2	8.9	4.0
Moved within same county	8.8	11.3	18.9	9.8	4.7	2.3
Moved between nonmetro counties	2.5	3.1	5.2	2.9	1.5	0.7
Moved in from metro county	3.7	4.1	7.6	4.4	2.5	1.0
Moved in from abroad	0.2	0.2	0.7	0.1	0.1	0.0
1999-01						
Total mobility	13.2	15.9	29.8	15.4	8.1	3.6
Moved within same county	7.3	9.5	16.5	8.8	4.0	1.8
Moved between nonmetro counties	2.3	2.6	5.4	2.6	1.4	0.8
Moved in from metro county	3.4	3.6	7.3	3.9	2.5	1.0
Moved in from abroad	0.2	0.2	0.5	0.2	0.1	0.0

Source: Calculated by ERS using data from Current Population Survey.

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residents age 30-39 moved in the previous year during 1999-2001, compared with only 8 percent of those age 40-64 (table 1).

Geographical mobility at any level—local, regional, or national—is always an important determinant of rural development prospects. Most changes in the relative size and composition of rural communities occur because of migration, rather than differences in birth and death rates. Over several years, an annual mobility rate averaging 13 percent substantially changes the location and characteristics of the population, affecting economic opportunity and the availability of public services in rural areas. In periods of rising outmigration, an increasing number of rural communities across the country lose population altogether, experience downtown business closures, and are forced either to spend more per capita providing services such as health care and transportation or to cut back on the services they provide.

In addition to those moving in from metro areas, about 100,000 immigrants moved directly to nonmetro areas from foreign countries each year since 1995, according to CPS estimates. The actual level of immigration to rural areas is probably higher due to difficulties in tracking undocumented workers. Even with an accurate count, nonmetro immigration would still not have added enough population to offset the domestic migration loss during 2000-2001. In addition, immigration is more regionally and locally concentrated, favoring nonmetro areas in Florida, Texas, Arizona, and specific counties in other States.

About the Data

These migration statistics are from the Current Population Survey (CPS), conducted monthly by the U.S. Census Bureau for the U.S. Department of Labor. CPS derives estimates based on a national sample of about 60,000 households that are representative of the U.S. civilian, noninstitutional population. The sample is large enough to provide information on the demographic and economic characteristics of the nonmetro population at the national and regional level, but not generally at State or local levels. The March CPS contains a supplemental question asking respondents where they were living a year prior to the survey. Metro and nonmetro migration statistics are derived by comparing past to current residence. This article uses 6 years of March CPS data, 1996-2001, the only years with consistent, up-to-date metro and nonmetro residence classifications available. Prior to 1996, the CPS used a metro-nonmetro definition based on 1980 rather than 1990 census data.

Mobility rates shown in table 1 are the percentage of current nonmetro residents who moved in the previous year, averaged over two 3-year periods. Nonmetro net migration rates shown in figures 1 and 2 represent the annual percentage change in population occurring because of differences in migration flows. They are calculated by dividing the number of immigrants minus the number of outmigrants by the population at the beginning of the year. Three-year, moving averages are shown rather than single-year estimates to minimize the effect of short-term fluctuations. Net migration is the small difference between two much larger migration streams—immigration and outmigration—that are known to fluctuate annually. In addition, estimates from the CPS can fluctuate even when actual net migration is stable, due to sampling and non-sampling error. Therefore, the interpretation of nonmetro migration presented here emphasizes trends rather than specific point-in-time estimates.

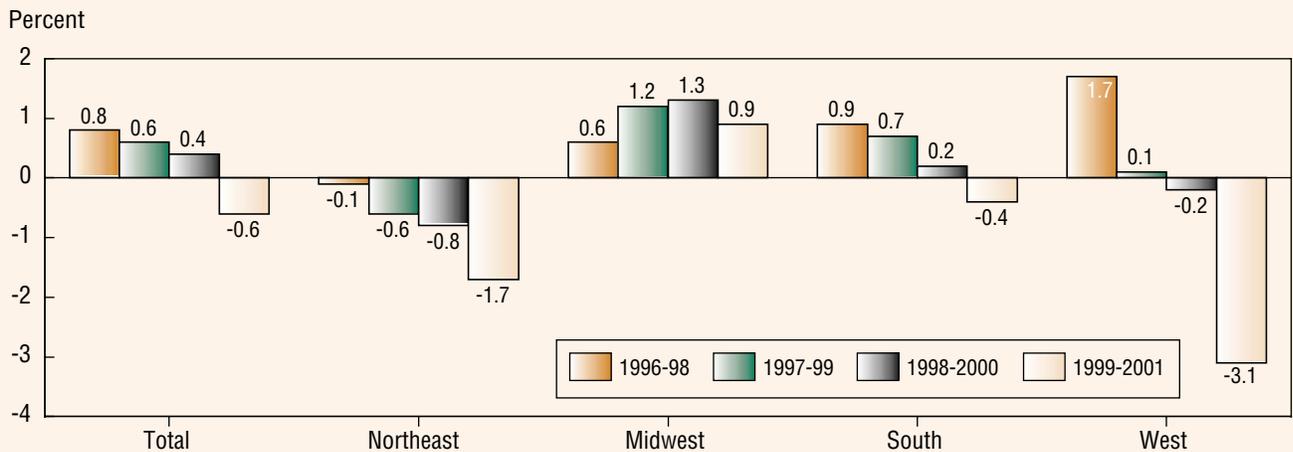
Nonmetro West and South Losing Migrants

The Current Population Survey provides 6 years of consistent data showing the flows into and out of nonmetro areas (see “About the Data”). Comparing 3-year moving averages from 1996-98 through 1999-01 shows downturns in nonmetro migration in most regions of the country (fig. 1). Population growth from net migration remained positive only in the Midwest. While the South and West were attracting migrants in record numbers during most of the 1990s, the Midwest saw slower growth. During 1999-2001, however, the Midwest nonmetro population

grew by almost 1 percent per year through migration while all other regions showed net outmigration.

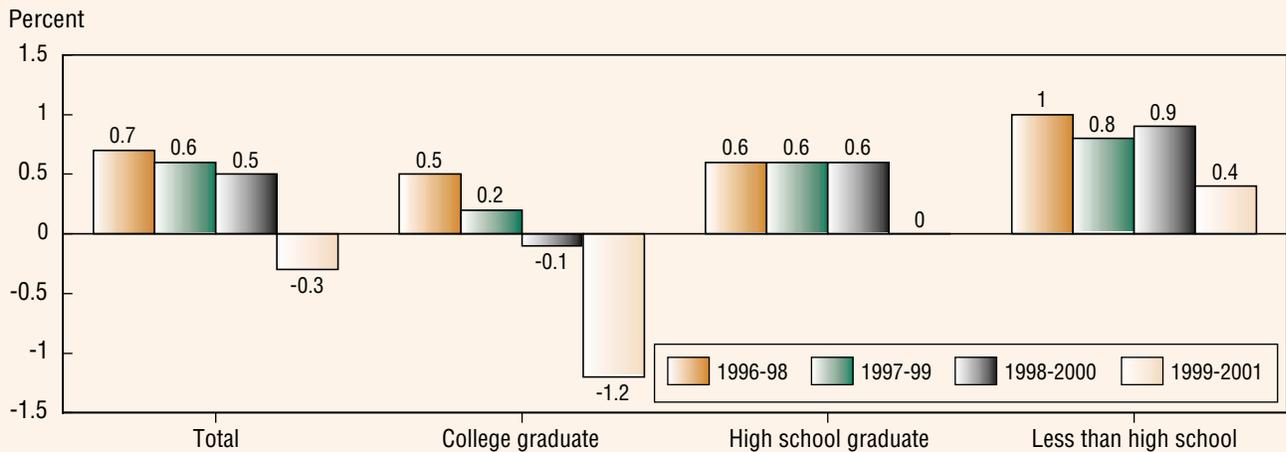
Much of the continued growth in the Midwest may be attributed to the outward expansion of the region’s highly urbanized population into adjacent nonmetro counties. Bedroom communities in some farming areas are expanding to such an extent that many current nonmetro counties will be reclassified as metro based on the 2000 census. Other nonmetro growth in the Midwest is associated with success in attracting high-tech manufacturing and service industries, or with migrants seeking new homes in high-amenity areas, such as in

Figure 1
Nonmetro net migration rates by region, 1996-2001
Nonmetro Midwest maintains growth from net migration



Source: Calculated by ERS using data from the March Current Population Survey.

Figure 2
Nonmetro net migration rates by education, ages 25 and older, 1996-2001
Population loss from net outmigration highest among college grads



Source: Calculated by ERS using data from the March Current Population Survey.

the northern Great Lakes region. The Northeast, also highly urbanized, has not been able to attract migrants or retain current residents within rural sections. Some growth probably continues in scenic areas and around the edge of large cities, but not enough to offset losses due to declines in the region's rural manufacturing base and related service industries.

The preference for high-amenity rural settings, combined with a downturn in the California economy, spurred growth to record levels in the nonmetro West during the early 1990s. As late as 1996-98, the West easily led other regions in net migration gains (fig. 1). With a strong economic recovery in California and in metro areas throughout the West, fewer rural migrants were expected during the

second half of the 1990s. However, the emergence of net outmigration in both the nonmetro West and South during 1999-2001 is surprising given the continuing allure of natural amenities throughout the Sun Belt and the continuing spillover of metro areas into nonmetro territory. The greater fluctuation in migration rates in the West is due in part to the smaller population base compared with the South.

Nonmetro Outmigration Highest Among College Graduates

Outmigration dampens future population growth because it is highly concentrated among young adults, who quite often leave rural areas just as they are beginning to raise families. This pattern holds for all types of nonmetro areas, even for those rich in natural amenities with a tourist or recreation-based economy. Such places attract older families and retirees with high levels of discretionary income, but often do not provide enough good jobs to support those just entering the labor force with high education and other marketable skills.

For those 25 years or older, the largest decline in nonmetro net migration occurred among college graduates (fig. 2). The average annual migration rate during 1999-01 fell to levels approaching the “brain drain” of the 1980s, when outmigration among this group reached 2 percent per year. Such high losses are quite unexpected, because technological advances and other rural restructuring trends, especially in manufacturing, increased rural opportunities for the well educated.

Nonmetro net migration also dropped substantially in 1999-01 for high school graduates, and

remained positive only among people without a high school degree (fig. 2). Less-educated workers face a narrower range of options in today’s technology-driven, urban job markets and are likely to remain in places where low-skill work is more available. The correlation between higher education levels and higher outmigration, a persistent hindrance to economic development prospects in many parts of rural America, has become more pronounced and widespread during this most recent period of increased rural outmigration.^{RA}

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Rural Poverty at Record Low in 2000

Dean Jolliffe

The poverty rate in nonmetro areas was 13.4 percent in 2000, lowest since poverty rates were first officially recorded in the early 1960s. The only other time when the nonmetro poverty rate was less than 14 percent was during the 3 years from 1977 to 1979 (fig. 1). Approximately 6.9 million nonmetro residents were poor in 2000, down 0.5 million from 1999 (see “How Is Poverty Defined?” on p. 77).

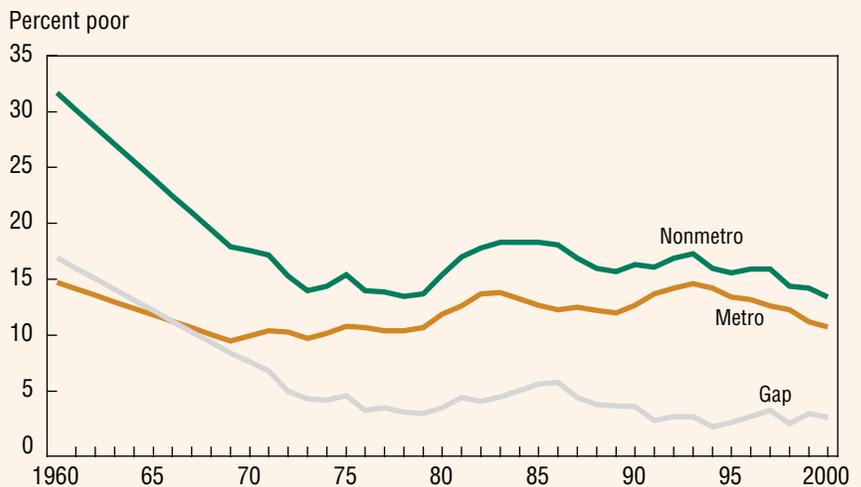
The improvement in nonmetro poverty was largely due to the longest recorded economic expansion ever in the United States. Between 1993 and 2000, the economy grew by 4 percent per year, almost 50 percent higher than the average growth rate of 2.7 percent during the 20 years prior to 1993. The economic expansion of the 1990s also resulted in record rates of job creation and the lowest rate of unemployment in over 30 years. The national unemployment rate was less than 5 percent for 41 consecutive months up to November 2000.

Growth alone does not necessarily reduce poverty, but the growth of the 1990s seems to have been shared with the poor. Between 1993 and 1998, real income of the richest 20 percent grew by 14.2 percent while real income of the poorest 20 percent grew by 15 percent.

Still, nonmetro poverty continues to be significantly higher than metro poverty. In 2000, the metro poverty rate stood at 10.8 percent, the lowest since 1979. While the incidence of nonmetro poverty is higher than metro poverty in all regions, the difference is much larger in the South and in the West.

The nonmetro West posted the highest rate in 2000 at 15.9 percent (versus 11.4 percent in metro West). In the South, respective rates were 15.6 and 11.6 percent. In the Midwest and Northeast, the difference between nonmetro and metro poverty rates was less than a percentage point (fig. 2).

Figure 1
Poverty rates by residence, 1960-2000
Nonmetro poverty hit a record low in 2000



Note: Metro status of some counties changed in 1984 and 1994. Metro and nonmetro rates are imputed for 1960-1968, 1970, and 1984.

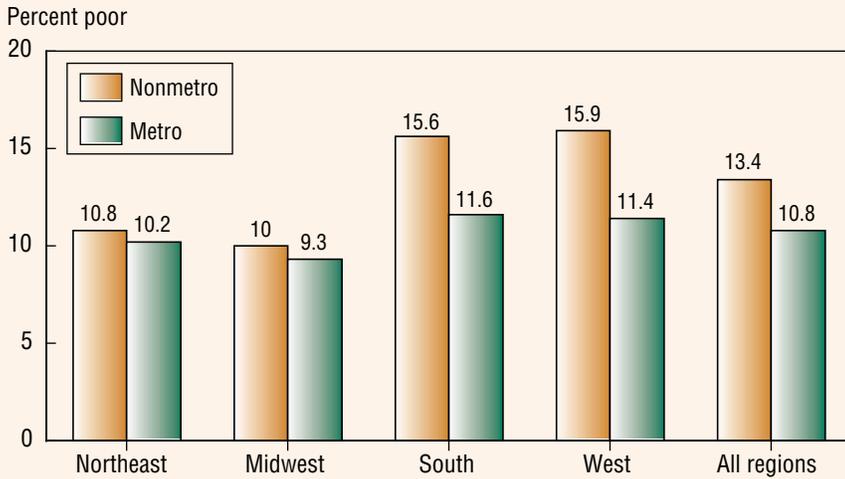
Source: Prepared by the Economic Research Service using data from the U.S. Census Bureau's Current Population Survey, March Supplement.

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Figure 2

Poverty rates by residence, 2000

Metro-nonmetro differences are largest in the South and West



Source: Prepared by the Economic Research Service using data from the U.S. Census Bureau's Current Population Survey, March Supplement.

The similarity in nonmetro poverty rates between the South and the West is a recent outcome. In the late 1980s and early 1990s, nonmetro poverty in the West was significantly lower than in the South. In 1992, the nonmetro poverty rate for the West was closer to the rates of the Midwest and Northeast than to the rate in the South. (The nonmetro poverty rate for the West in 1992 was 14.4 percent, compared with 14 percent in the Midwest and 20.4 percent in the South.) After 1992, the nonmetro poverty rate for the West increased while the rate for the South fell, until the two converged in 2000 (fig. 3).

Poverty rates by race reveal large differences. Non-Hispanic Blacks had the highest incidence of nonmetro poverty (28 percent), with nonmetro Hispanics just

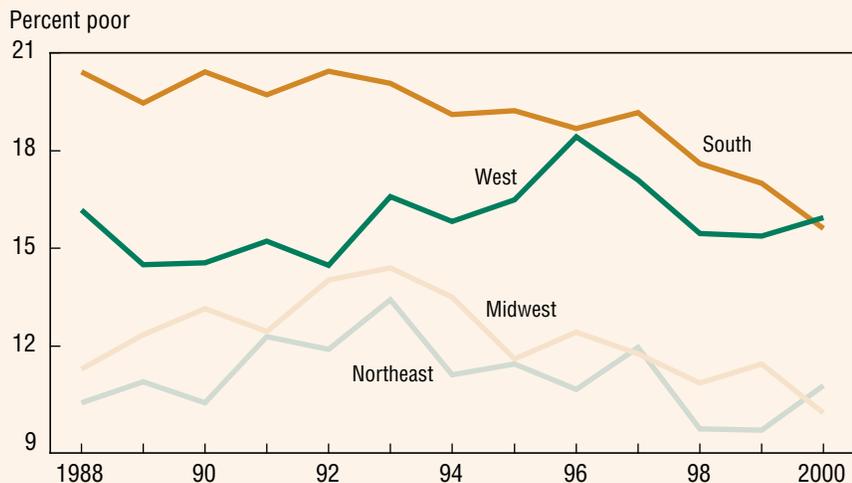
behind (27 percent in 2000). Both rates were greater than twice the rate for Non-Hispanic Whites. The high rate of poverty for Hispanics is particularly noteworthy as their share of the nonmetro population increased from less than 3 percent in 1990 to 5.5 percent by 2000. All races suffered higher poverty rates in nonmetro than in metro regions (fig. 4).

Female-headed, nonmetro families experienced widespread poverty in 2000—more than one out of every three persons who lives in a nonmetro family headed by a woman is poor. Single women living in nonmetro areas have a poverty rate of 29 percent. Nonmetro families headed by a male, without a female adult present, are often poor too (fig. 5). Only households with both husband and wife present have poverty rates lower than the national average. Again, regardless of family

Figure 3

Nonmetro poverty rates by region, 1988-2000

Nonmetro South and West converged over the 1990s

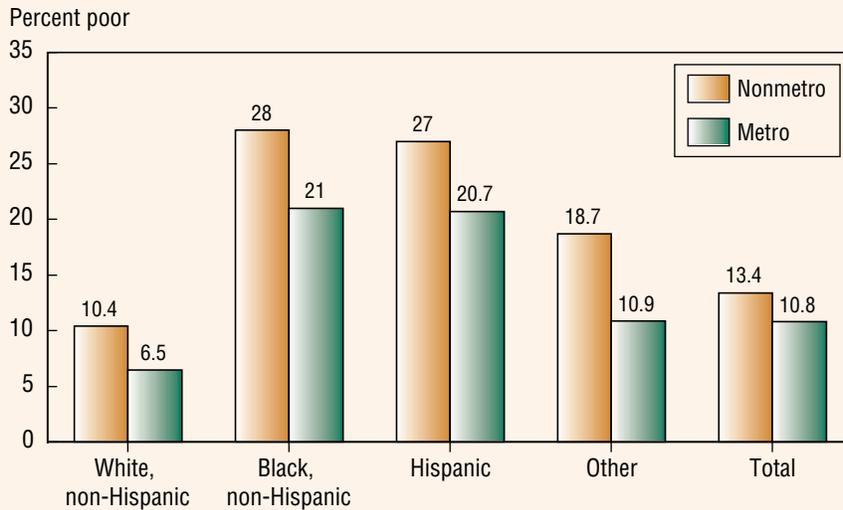


Source: Prepared by the Economic Research Service using data from the U.S. Census Bureau's Current Population Survey, March Supplement.

Figure 4

Poverty rates by race and ethnicity, 2000

Hispanics and Blacks have the highest rates of nonmetro poverty



Source: Prepared by the Economic Research Service using data from the U.S. Census Bureau's Current Population Survey, March Supplement.

Higher rates of child poverty in both metro and nonmetro areas have persisted for more than a decade despite significant declines in the rates over time. Over 1988 - 2000, the nonmetro child poverty rate has been at least 7 percentage points higher than the nonmetro poverty rate for nonelderly adults. The poverty situation for nonmetro older persons over the same 13 years has vacillated. The nonmetro senior poverty rate was significantly higher than the rate for nonelderly adults during the late 1980s and early 1990s, before converging in the mid- and late 1990s, then reversing in 2000 (fig. 6).^{RA}

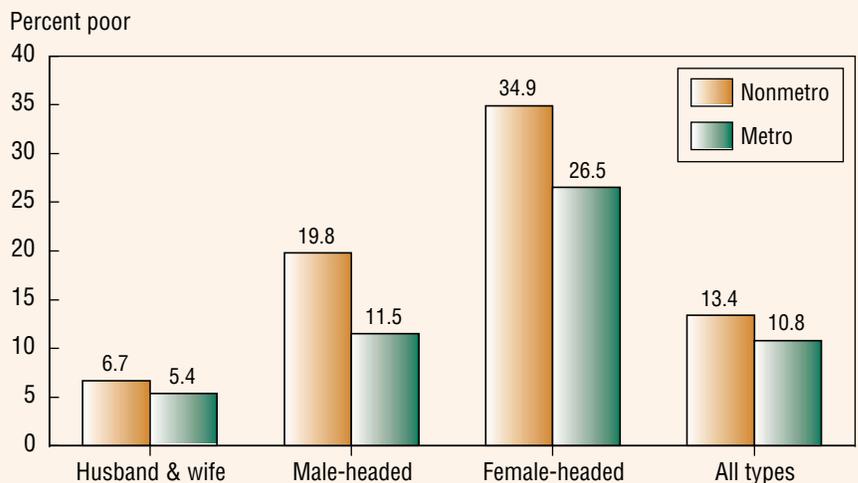
type, nonmetro poverty rates are much higher than metro rates.

Children (age 0-17) continue to have the highest poverty rate of any age group. The child poverty rate in nonmetro areas was 19 percent in 2000, compared with 15 percent in metro areas. In contrast, the poverty rate for older persons (65 and older) was 13 percent in nonmetro areas and 9 percent in metro regions. Similarly, adults (age 18-64) had much lower poverty rates than children, with 9 percent of all adults in poverty.

Figure 5

Poverty rates by family type, 2000

More than one-third of persons in female-headed, nonmetro families are poor

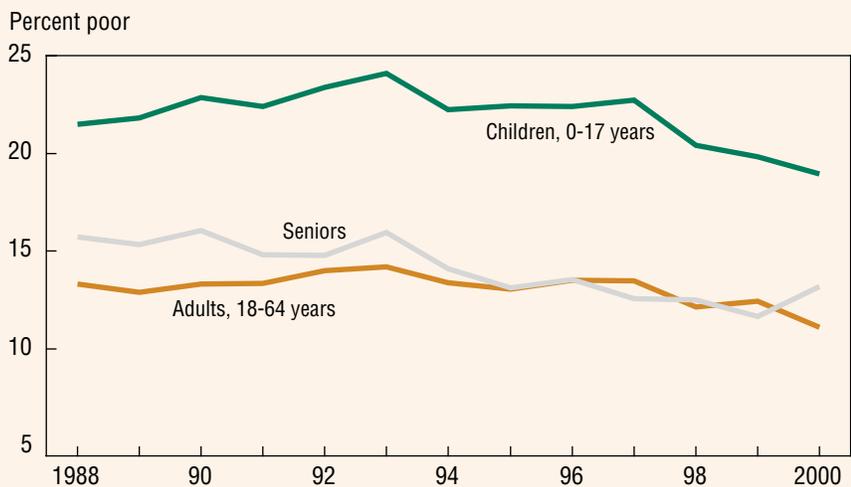


Source: Prepared by the Economic Research Service using data from the U.S. Census Bureau's Current Population Survey, March Supplement.

How Is Poverty Defined?

Any individual with total income less than an amount deemed to be sufficient to purchase basic needs of food, shelter, clothing, and other essential goods and services is classified as poor. The amount of income necessary to purchase these basic needs is the poverty line or threshold and is set by the Office of Management and Budget (OMB). The 2000 poverty line for an individual under 65 years of age is \$8,959. The poverty line for a two-person household with one child and one nonelderly adult is \$11,869. For a household with two adults and three children the poverty line is \$20,550. Income includes cash income (pretax income and cash welfare assistance), but excludes in-kind welfare assistance, such as food stamps and Medicare. The poverty line changes over time to correct for inflation, and it is also adjusted to reflect differences in household composition and size. Adjustments for household composition are intended to address the concern that children and adults consume different types and quantities of basic goods and services. Adjustments for household size are intended to address the concern that some basic goods can be shared within a household and therefore the per-person cost of purchasing basic needs declines with each additional person.

Figure 6
Nonmetro poverty rates by age, 1988-2000
Nonmetro child poverty has declined, but is still much worse than for other age groups



Source: Prepared by the Economic Research Service using data from the U.S. Census Bureau's Current Population Survey, March Supplement.

Rural Earnings Up in 2000, But Much Less Than Urban Earnings

Linda M. Ghelfi

Regional Differences

In all regions, real earnings per nonfarm job increased in both metro and nonmetro areas during 1999-2000, with metro growth far outpacing nonmetro growth (fig. 2). Among nonmetro regions, growth was highest in New England (1.7 percent) followed by the Rocky Mountain and Southwest regions. Compared with their annual earnings growth rates during the 1990s, the Great Lakes and Southeast nonmetro regions had slower growth in 1999-2000 (table 1). In 2000, nonmetro earnings per job were highest in New England and lowest in the Plains, with a difference of \$4,028 per job. That difference among nonmetro regions is small when compared with the differences between metro and non-

metro earnings. Gaps between metro and nonmetro average regional earnings are in the \$8,000 (Southeast) to \$16,500 (Midwest) range.

Urban Influence Differences

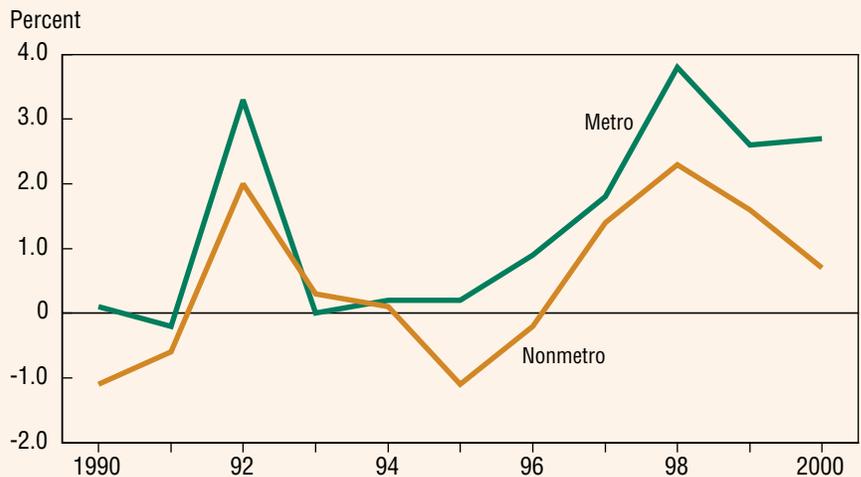
Counties with the highest earnings per job are the core counties of large metro areas, followed by small metro counties and then the fringe counties of large metro areas (table 1 and see box, p. 83). Among nonmetro counties, those with their own cities and adjacent to large and small metro areas have higher earnings than their adjacent counterparts without cities and all the nonadjacent groups. The earnings premiums accruing to jobs in metro and nonmetro counties containing cities suggests they have

Real earnings per rural nonfarm job rose 0.7 percent during 2000, from \$25,813 in 1999 to \$25,987 in 2000. Urban earnings increased at a much faster pace (2.7 percent), rising from \$37,824 in 1999 to \$38,850 in 2000. Annually during the 1990s, real rural earnings fell more often than urban earnings, and when rural earnings grew, they grew more slowly than urban earnings in all but 1993 (fig. 1). Consequently, the rural-urban earnings gap widened. Rural earnings fell from 74 to 67 percent of urban earnings between 1989 and 2000 (table 1).

Rural areas differ in the level of earnings per job and change in earnings over time. Differences in the size of the local labor market, adjacency to larger labor markets, and the mix of industries in the local labor market are among the factors affecting local earnings. How earnings per nonfarm job differ among rural areas can be seen by BEA region and urban influence.

Figure 1

Annual change in real earnings per nonfarm job, 1990-2000
Nonmetro earnings grew more slowly or fell further than metro earnings during the 1990s, except in 1993



Source: Calculated by ERS using data from the Bureau of Economic Analysis.

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Table 1

Real earnings per nonfarm job, by BEA region and urban influence, selected years

Item	Earnings per nonfarm job			Annual change	
	1989	1999	2000	1989-2000	1999-2000
	----- 2000 dollars -----			----- Percent -----	
United States	31,937	35,799	36,698	1.3	2.5
Nonmetro	24,666	25,813	25,987	0.5	0.7
Metro	33,383	37,824	38,850	1.4	2.7
	----- Percent -----				
Nonmetro earnings relative to metro	73.9	68.2	66.9	NA	NA
	----- 2000 dollars -----				
Nonmetro areas by BEA region:					
New England	27,347	27,763	28,222	0.3	1.7
Mideast	26,710	27,813	28,078	0.5	1.0
Great Lakes	25,496	26,906	26,928	0.5	0.1
Plains	22,554	24,015	24,194	0.6	0.7
Southeast	24,213	25,630	25,742	0.6	0.4
Southwest	23,537	24,224	24,533	0.4	1.3
Rocky Mountain	23,872	24,799	25,138	0.5	1.4
Far West	27,459	27,791	27,954	0.2	0.6
All areas by urban influence:					
Metro:					
Large core	35,998	41,969	43,424	1.7	3.5
Large fringe	27,049	29,518	30,006	0.9	1.7
Small	29,503	31,979	32,340	0.8	1.1
Nonmetro:					
Adjacent to large metro, with own city	26,396	28,039	28,280	0.6	0.9
Adjacent to large metro, no own city	23,781	24,910	25,150	0.5	1.0
Adjacent to small metro, with own city	26,334	27,764	27,975	0.6	0.8
Adjacent to small metro, no own city	23,531	24,585	24,702	0.4	0.5
Not adjacent, with own city	25,384	26,642	26,802	0.5	0.6
Not adjacent, with own town	23,571	24,467	24,647	0.4	0.7
Not adjacent, totally rural	21,803	22,245	22,384	0.2	0.6

Source: Calculated by ERS using data from the Bureau of Economic Analysis and the chain-type price index for personal consumption expenditures to adjust earlier years' earnings to 2000 dollars.

more competitive labor markets. Adjacency to a metro area may elevate wages in order to retain workers who have the option to commute to jobs in the metro area.

Differences in Industrial Mix

The nonmetro economy depends more on manufacturing and government for jobs, while the metro economy depends more on services and finance, insurance,

and real estate (table 2).¹ Metro jobs average higher earnings in all industries, with smaller gaps between metro and nonmetro jobs

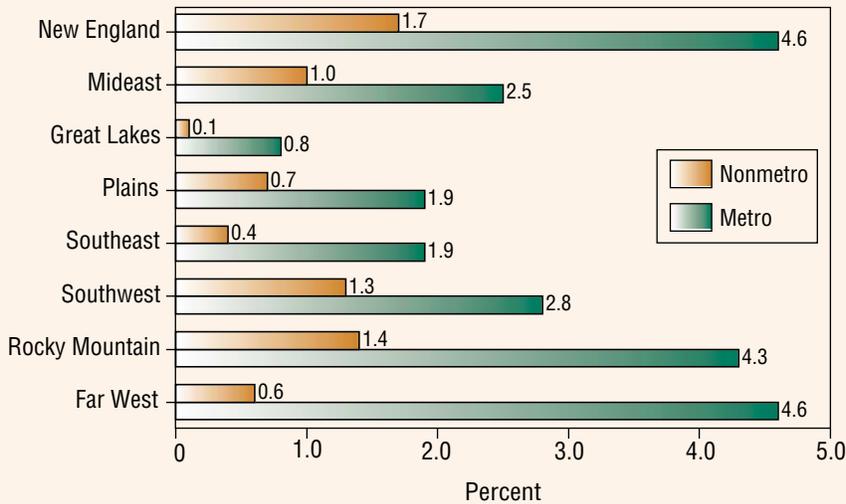
¹Suppression of earnings and jobs data in some counties by the Bureau of Economic Analysis to protect employer privacy eliminates only 2.5 percent of nonmetro jobs and 0.5 percent of metro jobs from industry analysis. The suppression is concentrated in agricultural services, forestry, fishing, and other; and mining industries, which account for low shares of both metro and nonmetro jobs. Therefore, earnings per job in those small industries should be viewed as less reliable estimates than those of the other industries.

with lower average earnings (agricultural services, forestry, fishing, and other; and retail trade). The metro-nonmetro gap is widest in finance, insurance, and real estate. Nonmetro jobs in this industry are more often part time and in lower paying administrative support and clerical occupations, while metro jobs are more often full time and in higher paying executive and technical occupations.

Figure 2

Change in real earnings per nonfarm job by BEA region, 1999-2000

Metro earnings growth was at least twice as fast as nonmetro growth in all BEA regions



Source: Calculated by ERS using data from the Bureau of Economic Analysis.

County-Level Differences

About 800 nonmetro counties (35 percent) averaged lower earnings in 2000 than in 1999. Over half of them (412 counties) had earnings decline by 1 percent or more (fig. 3). Counties with earnings growth are divided into four groups of roughly 370 each. Earnings growth in the top three groups more than compensated for the loss and slow-growth groups, resulting in the overall nonmetro growth rate of 0.7 percent.

Figure 4 shows nonmetro counties grouped by quintiles of earnings per nonfarm job in 2000. The lowest quintile, 458 counties with earnings less than \$20,598 per job, is concentrated in the center of the country. Counties with lower average earnings tend to have higher shares of workers who do not hold full-time, full-year jobs. Lower earnings from part-year or part-time

Table 2

Earnings per nonfarm job, by industry, 2000

Industry	Earnings per job		Nonmetro/ metro earnings ratio	Share of all jobs	
	Nonmetro	Metro		Nonmetro	Metro
	----- Dollars -----		----- Percent -----		
Agricultural services, forestry, fishing, and other ¹	15,301	19,636	77.9	1.3	0.9
Mining	47,046	80,418	58.5	.9	.3
Construction	27,536	40,150	68.6	6.2	5.7
Manufacturing	35,250	54,597	64.6	15.5	10.7
Transportation and public utilities	38,945	52,067	74.8	4.2	5.1
Wholesale trade	31,624	52,213	60.6	3.2	4.9
Retail trade	15,428	20,222	76.3	17.9	16.4
Finance, insurance, and real estate	19,403	45,949	42.2	5.5	8.7
Services	21,215	35,266	60.2	25.9	33.5
Government and government enterprises ²	33,084	43,726	75.7	16.9	13.2
Industry suppressed ³	NA	NA	NA	2.5	.5

¹Other is employees of foreign embassies working in the United States.

²Government enterprises are government agencies that cover a substantial portion of their operating costs by selling goods and services to the public and that maintain their own separate accounts--for example, the U.S. Postal Service.

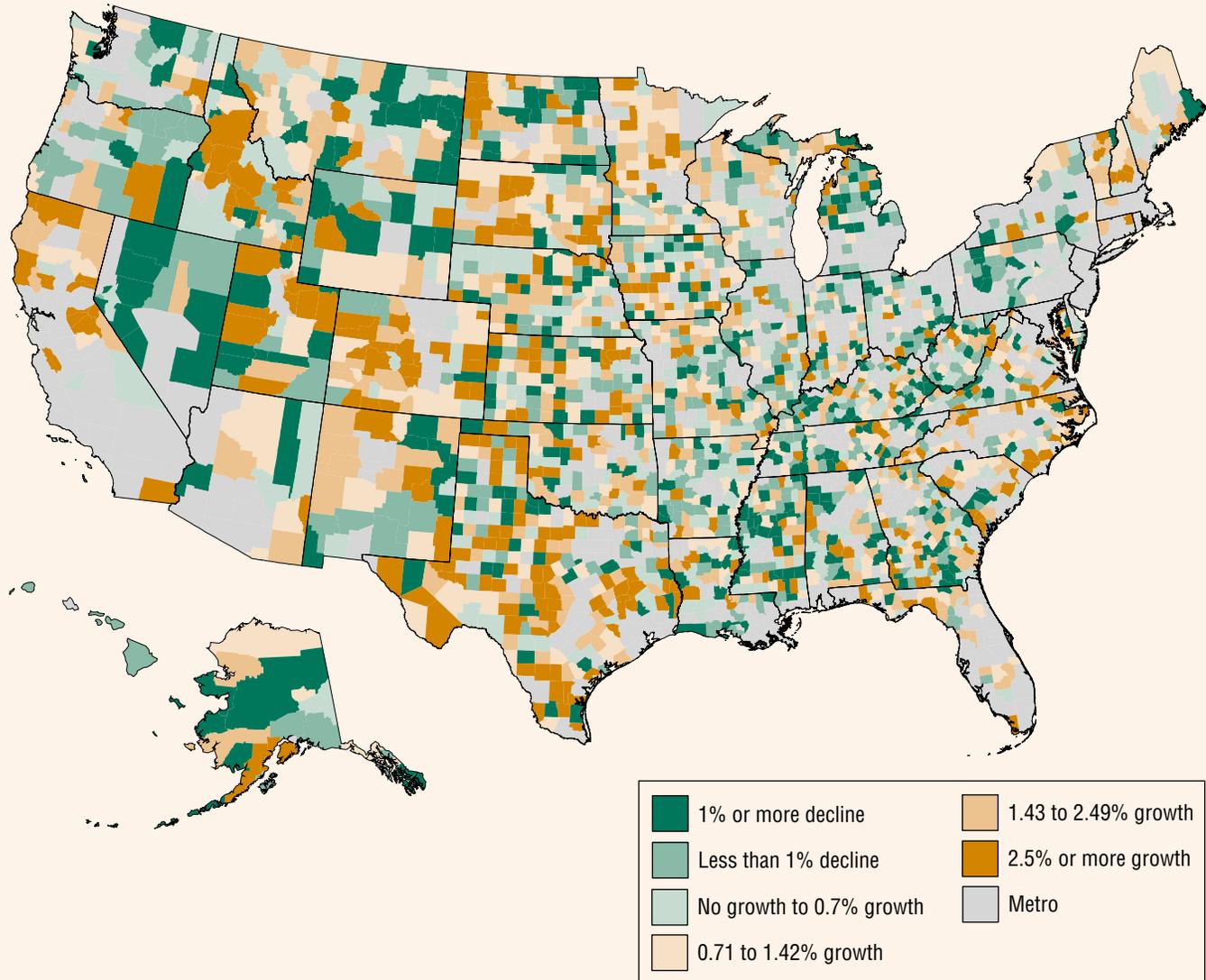
³The Bureau of Economic Analysis suppresses earnings and/or number of jobs in an industry in a county when the amount is low or a single employer accounts for all or a high proportion of the jobs and/or earnings. If either the earnings or the jobs in an industry were suppressed, that county was not included in the calculation of that industry's earnings per job.

Source: Calculated by ERS using data from the Bureau of Economic Analysis.

Figure 3

Change in nonmetro real earnings per nonfarm job, 1999-2000

Counties with lower earnings in 2000 than 1999 are sprinkled across the country



Source: Calculated by ERS using data from the Bureau of Economic Analysis.

jobs partially explain the distribution of counties across the five quintiles of earning per job.

Comparing figures 3 and 4 shows that earnings growth did not favor either high- or low-earnings

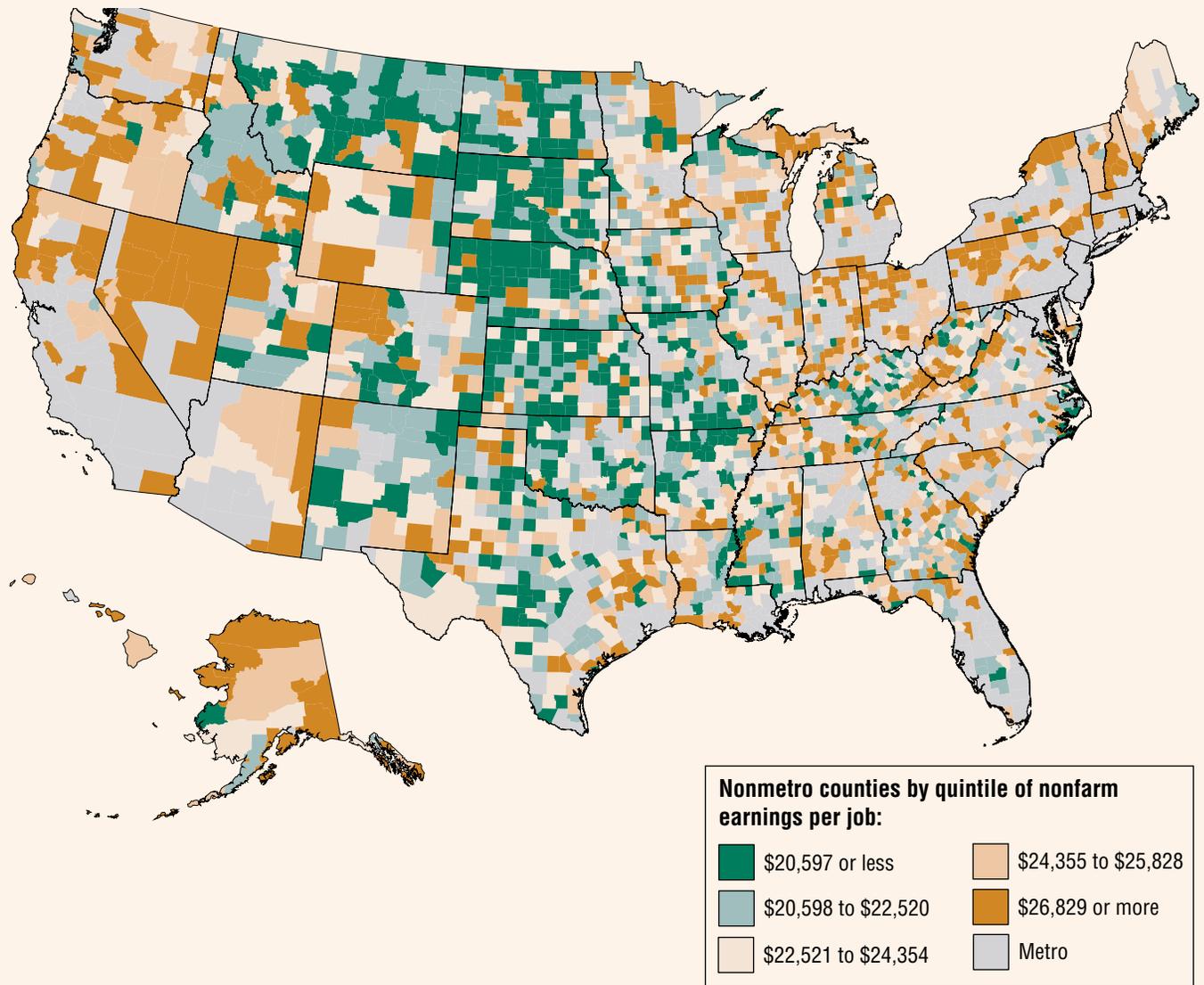
counties. Growth and decline are sprinkled across nonmetro counties of all earnings levels. Local events that affect the industrial distribution of jobs, the full-time versus part-time distribution of jobs, the

earnings of entrepreneurs, or the responsiveness of wage rates to inflation are factors in determining whether real earnings go up or down from year to year in a county.^{RA}

Figure 4

Nonmetro earnings per nonfarm job, 2000

Part-time and/or part-year jobs partially explain counties' lower average earnings in the Plains and Mountain States



Note: Nonmetro counties were ranked from lowest to highest earnings per job and then divided into five equal groups (quintiles).
Source: Calculated by ERS using data from the Bureau of Economic Analysis.

How Categories of Urban Influence Are Defined

Metro:

Large core = counties containing the core cities of large metro areas of 1 million or more residents

Large fringe = other counties in large metro areas

Small = counties in small metro areas with fewer than 1 million residents

Nonmetro:

Adjacent to large metro, with own city = counties adjacent to large metro areas and that have their own cities of at least 10,000 residents

Adjacent to large metro, no own city = counties adjacent to large metro areas that have no cities of at least 10,000 residents

Adjacent to small metro, with own city = counties adjacent to small metro areas and that have their own cities of at least 10,000 residents

Adjacent to small metro, no own city = counties adjacent to small metro areas that have no cities of at least 10,000 residents

Not adjacent, with own city = counties that are not adjacent to a metro area and have their own cities of at least 10,000 residents

Not adjacent, with own town = counties that are not adjacent to a metro area and have their own towns of 2,500-9,999 residents

Not adjacent, totally rural = counties that are not adjacent to a metro area and have no place with at least 2,500 residents.

Rural America's Predecessors

As *Rural America* comes to an end, it is interesting to note that this ERS magazine was not the only one to bear that title. The first *Rural America* appeared in 1925 as the magazine of the American Country Life Association. This group had been founded to carry on the ideals of the Country Life Commission (1907-09), which aimed to bring urban standards of living and efficiency to rural areas. Though small in circulation, that *Rural America* attracted some prominent contributors—including Calvin Coolidge, Franklin D. Roosevelt, Grant Wood, and Robert Frost—who wrote about such diverse topics as cooperatives, rural planning, and the arts. The magazine ended in 1941, during the waning days of the Association. Another *ruralamerica* was published for a few years beginning in 1975 by a Washington-based organization of the same name and was “dedicated to speaking up for rural and small-town citizens” (*ruralamerica*, Feb. 1980). Our own *Rural America*, of course, commenced as *Rural Development Perspectives* in 1978. Starting as an occasional publication of ERS, it began regular publication in 1985 and received its present name in 2000.

1925 2000

A New Magazine From ERS *To Look Forward To . . .*

RuralAmerica ceases publication with this issue, but we want to assure our readers that they will be more than compensated by the launch of a completely new, far-reaching magazine with a web counterpart. The new magazine will faithfully cover the range of topics that *RuralAmerica* readers have become accustomed to—rural housing, income, education, population, business development, infrastructure, etc.—but these articles will now reside within a larger and more dynamic context.

In short, the new magazine will cover every mission pursued by USDA—a competitive agricultural system; a safe food supply; a healthy, well-nourished population; harmony between agriculture and the environment; and an enhanced quality of life for rural Americans. It will be published more often (5 times/year) than *RuralAmerica*, and its content will better mirror current events and anticipate legislative and other developments. In addition, its web presence will be updated throughout the publication cycle to supplement the printed findings and to house more interactive data.

As always, we encourage *RuralAmerica* readers to consult the ERS website (www.ers.usda.gov) for a wealth of relevant material, organized by topic (ex. rural amenities and urbanization) and more indepth "briefing rooms" (ex. Rural Transportation). Your current subscription will carry you into the new magazine's era. At the end of your allotted issues, you'll be invited to subscribe to our new magazine at a special introductory rate. Please continue on with the *RuralAmerica* staff as we, much like itself, join up with the larger fabric.
