

Changing Data Needs in Contemporary Rural Research

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Contemporary rural research in the United States is a product both of very different economic and social conditions than existed a generation ago, and an increasingly sophisticated and accessible set of methods and data with which to study these conditions. A certain degree of context is needed to understand why the rural research agenda has been shaped in its current form. First and foremost among these are a convergence in rural and urban economies over the last 40 years. As is true in the Nation as a whole, rural employment today is dominated in most places by the service sector rather than by agriculture, mining, and manufacturing. Likewise, key measures of well being in rural and urban areas have become more similar. Rural poverty rates have fallen by half, to under 15 percent (2005). The rural poverty rate still exceeds the urban rate, but only by 3 percentage points. Similarly, the rural unemployment rate was 5.4 percent in 2005, only slightly higher than the urban unemployment rate of 5 percent. Finally, rural America, on average, has seen population growth rather than loss in 2000-2005; more people have moved in from urban areas in this decade than were lost through out-migration.

Second, the sources of economic growth in rural areas have changed as conditions converged with those in the Nation as a whole. Changes in international and regional markets have altered the geographic distribution of economic activity. Globalization of markets has created new opportunities for agricultural exports while at the same time putting some types of rural manufacturing under severe competitive pressure. The shift in auto manufacturing out of the Midwest to the South has diminished opportunities in the rural Midwest while increasing opportunities for auto supply and related businesses located elsewhere. Meanwhile, the growth of Federal programs such as Medicare and Medicaid have been a boon to the rural health

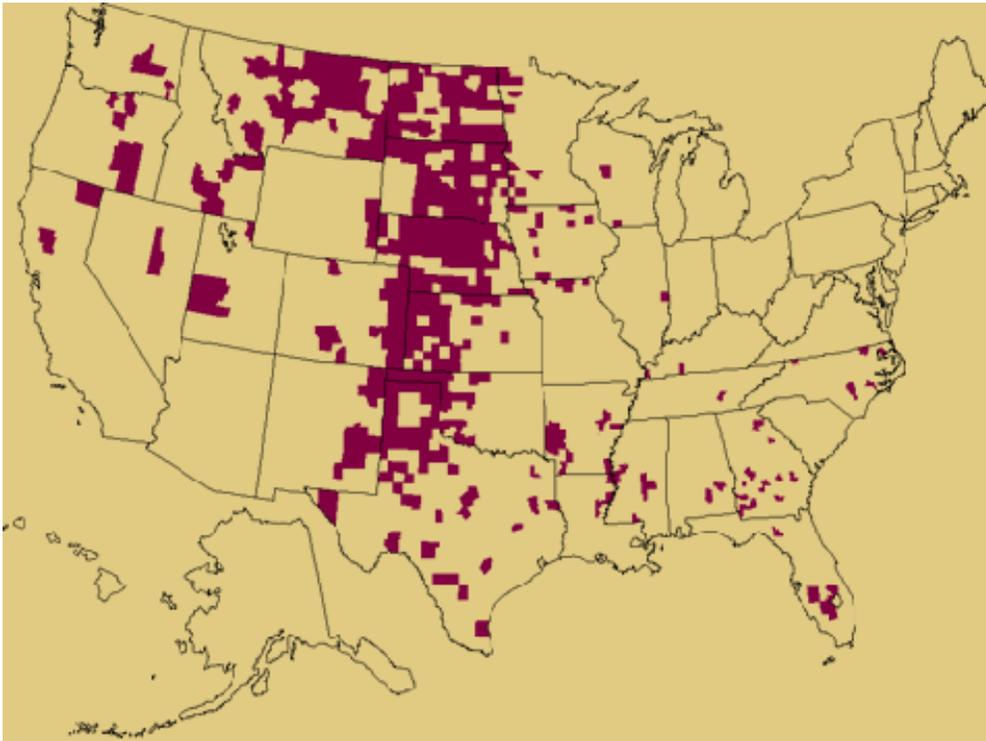
industry. The health sector accounted for 11 percent of rural employment earnings in 2004, second only to manufacturing (24 percent), and far more than farming (5.3 percent).

The role of natural resources has also shifted. Natural resources once simply meant rich soil, timberland, and mineral deposits. While cropland has remained fairly constant over time, technological change, farm consolidation, and the expansion of manufacturing, recreation, and other activities have reduced rural dependence on agriculture. Today, farm dependence remains largely confined to the Great Plains, much of it too thinly settled to attract manufacturing and too poorly endowed with natural amenities to attract tourism, recreation, or retirees. In today's rural economy, much economic growth has come to depend on natural resources in the form of mountains, lakes, and forested areas, magnets for tourists and seasonal residents. Recreation and retirement areas have been by far the fastest growing rural areas over at least the past 25 years.

In the past, rural human resources were valued for their low cost and reliability than their skills and knowledge. Many manufacturing branch plants that moved to the rural South during the 1960s and 1970s moved to areas with very low education levels. This is much less the case today. With the globalization of markets in recent years, many with rural manufacturing plants have shifted production overseas where labor is less expensive. Remaining manufacturers have tended to adopt new technologies requiring more highly skilled labor. High school diplomas and community college training have become necessary for work in many manufacturing establishments.

As the demand for a better-educated workforce has risen in the rural U.S., so has supply. In 1970, over half the rural population aged 25 and over had not completed high school. In 2000, the proportion had been reduced to under a quarter. Where education levels remain low, economic development is a challenge.

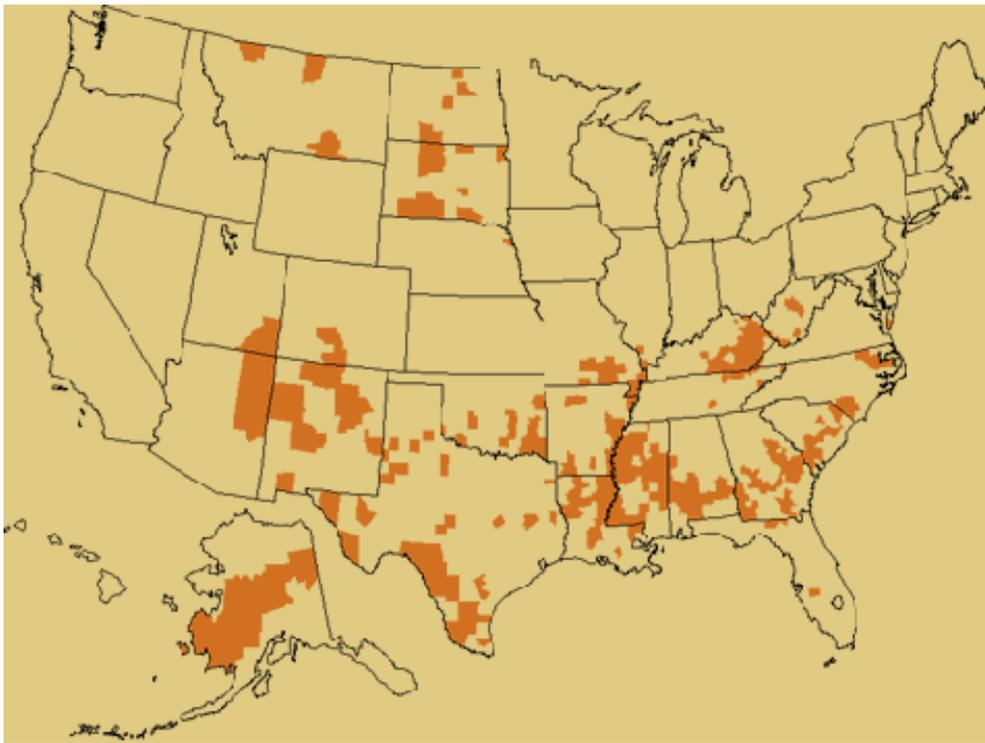
Farming dependent counties



Source: ERS county typology, 2004.

Despite these trends, rural America remains a collage of people and places—a diverse mix of races, ethnic groups, businesses, institutions, and landscapes. Today, no one industry dominates the rural economy, no statement about improvements and gaps in well-being applies to all rural people, and no single pattern of population decline or growth exists for all rural areas. While recreation has long benefited areas rich in scenic amenities, for instance, there has been relatively little recreationally based economic growth in the Corn Belt and Great Plains. Education levels remain far lower in the Southeast and Southwest than in other rural regions. Population change also remains highly uneven, for while rural areas as a whole gained population through in-migration in 2000-2005, half of rural counties lost population during this period.

Persistent poverty counties



Source: ERS county typology, 2004.

The nature and extent of poverty in the rural U.S. is an exemplar of this diversity. While overall rural poverty rates are near their historic lows, there were 422 rural counties with poverty rates exceeding 20 percent in 1999. Virtually all of them reflect historic geographical concentrations of minority (Black, Native American, Hispanic) or Southern Highlands populations. While low education characterizes many of these counties, each type has its signature poverty-related characteristics. Thus, counties with high proportions of Blacks tend to have high proportions of female-headed families. English proficiency is low in Hispanic poverty counties. Employment disability is exceptionally high in the Southern Highlands poverty counties. In poverty counties with high proportions of Native Americans, employment,

particularly year-round employment for men, has been low. The diversity within high-poverty areas means that there is no single recipe for prosperity.

Changing social and economic conditions has challenged rural research both within the Economic Research Service and in the broader research community to ask new questions about the sources and consequences of economic growth. In some cases our mandate has been aided by the development of new surveys and other data sources; in others we have had to be more creative with the data at hand has responded to changing economic and social conditions. What follows is a brief discussion of some of the salient rural research issues and data needs.

Entrepreneurship:

The smokestack chasing rural development strategies of a generation ago have become less relevant in an economy where knowledge-based activities and flexibility are essential ingredients, creativity and innovation. One ingredient for community economic dynamism is local entrepreneurship, by which I mean the propensity for self-employment and small business formation. Places with many small businesses are the most likely to form new businesses, and new businesses are often a means to growth. Rural entrepreneurs have gained renown in the design of bicycles, snowmobiles, windows and other products. Many of the new ethanol plants are the products of farmer-entrepreneurs.

Currently research is underway to understand the importance of locally grown firms for overall economic development. Job growth is a part of the equation, but perhaps even more critical is the quality of the jobs that entrepreneurs create, and their contribution to total local output. One of the most interesting recent findings is that firm deaths, as well as births, are associated with local economic growth—that is, rather than look just at successful startups, we

should be examining more closely the full lifecycle of establishments. ERS is acquiring the means to conduct some of these analyses through data on aggregate births, deaths and continuity of firms annually at the county level. Data sets such as this that combine a longitudinal aspect with the appropriate geocoding allowing researchers to place entrepreneurial activity within the community context represent a next generation of research activity.

Attracting returnees and new talent:

But, focusing on new businesses alone is not always a means to economic growth and vitality. In the past, when we have thought about economic growth, we considered strategies that help existing rural businesses or bring new businesses to rural areas. In this new paradigm, these strategies are not irrelevant, but their success in a dynamic, global knowledge-based economy depends on the additional ability to attract pools of skilled and creative talent to rural communities.

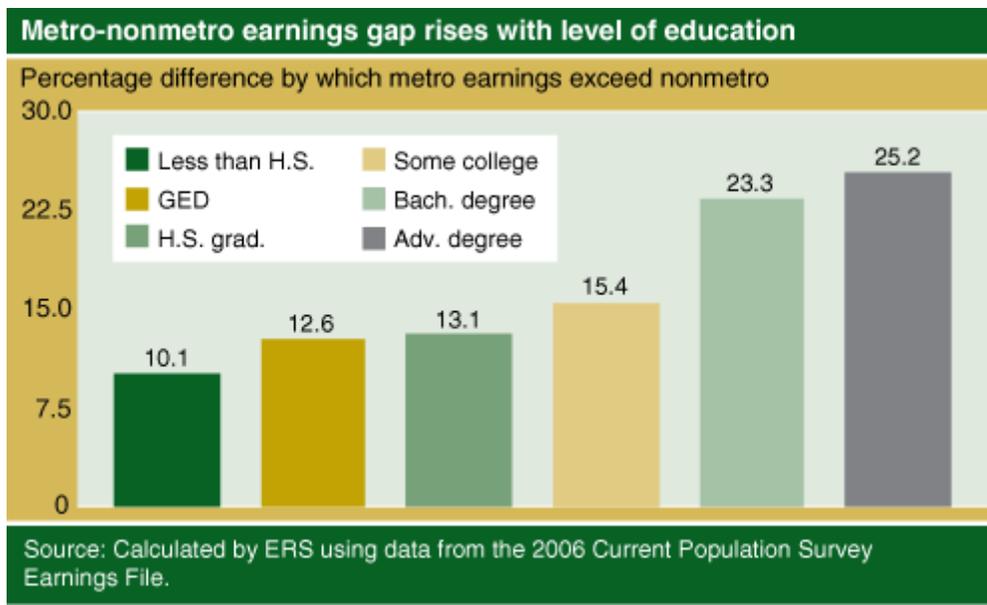
Since the turn of the 20th century, as technological advances outstripped the demand for farm labor, many rural communities have found themselves struggling to retain the population base needed to support public and commercial services and to provide local employers with a sufficient pool of labor. Although the traditional response to this challenge was to attempt to find ways of retaining youth, today we have a much better understanding of the advantages of focusing on bringing migrants back to rural communities after they have begun their careers and often their families. This life cycle approach opens a new range of questions about the interaction between individual decision making and community characteristics in shaping migration patterns and their consequences for economic development. What distinguishes the behavior of workers who have left rural communities and who return at a later time from those

who do not? How do returnees fit into the social and economic milieu of rural communities? How do they augment the leadership capacity of their hometowns? Many of these questions can be addressed with existing secondary data, cleverly used, but migration is by nature a dynamic adjustment to changing circumstances,

While useful to think about attracting migrants in general, we're now beginning to understand the importance of creative talent, or what urban economist Richard Florida has called, "the creative class," for local dynamism. He defines creative talent as people in occupations such as artists, engineers, architects, entrepreneurs, scientists, and others whose work generally requires relatively high levels of creativity. He argues that this creativity is the central source of growth in today's high-tech, knowledge-based economy. Urban areas most able to attract creative talent are likely to have the highest rates of innovation and the fastest rates of economic growth.

Although the creative talent thesis was developed with major metropolitan areas in mind, it seems particularly relevant to rural areas. High-tech firms and major research and development (R&D) activities are not typically located in rural areas, but talent and new ideas are needed throughout the economy—in the adoption of new production and information technologies and in the creation of new types of products and new marketing strategies.

Current research is investigating whether talented people alone are sufficient for local growth and vitality, or whether additional aspects of entrepreneurship are necessary. For instance, a local university may generate few local benefits if its professors confine themselves to campus activities and graduates move away. Recent ERS research revealed that a combination of entrepreneurship with creative talent sparked local job growth in the 1990s. Less clear is how this combination affects income growth per job, or whether growth attributable to an



influx of creative talent in a single community has measurable spillover effects similar to those that have been observed as a result of technological change. The secondary data needed to explore these issues exist in abundance, but are often difficult to link effectively for analysis. For instance, to chart the growth of the rural creative workforce we need information on detailed occupations and their associated skill sets over time. Periodic large-scale changes in the occupation and skill classification systems produced by Federal agencies preclude the use of conventional data bridges across years that would consistent occupation and skill measurement.

Rural Quality of Life

This local growth dynamic will only work, however, where rural areas are able to attract migrants, particularly those with creative talent. Given that rural earnings tend to be lower than urban earnings, especially for those with a college degree, rural quality of life is an essential part of that attraction. The chief advantage that rural areas have over urban areas is access to the

outdoors. Thus, natural amenities—pleasant landscapes, lakes, hills and mountains—are important not only for recreational development but for attracting a skilled labor force.

Social or cultural amenities may be important as well. For example, an ERS survey of rural manufacturers found that poor school quality was the largest obstacle to attracting managers and professionals in the rural Mississippi Delta. A key unknown is whether the benefits of investing additional public monies into elementary and high schools in these areas would stimulate local growth in the long run due to the heavy outmigration of youth and the lack of complementary amenities for the high-skilled workers most likely to find good schools appealing.

Existing secondary data is helpful for revealed preferences approaches to analyzing these questions, but does not ask the kinds of questions that would allow us to observe directly how migrant preferences are translated into location decisions. More importantly, both migration and human capital development by their very natures called for dynamic observation in order to identify long-run adjustments and outputs. For many purposes, the longitudinal data currently available offer relatively small rural samples, especially so when one considers that schooling and migration take place predominately during a narrow band of time in the life course.

Access to urban-style commerce, cultural amenities and public services, as well as natural amenities, increase the quality of life in rural communities, and would be expected to attract the creative class and other high-skill workers. Such amenities and services, however, are often not captured in Federal data; where they are, the lack of geocoded data may prevent researchers from identifying proximity to residents. Many rural households, for example, take advantage of retail and entertainment opportunities in nearby counties, although an analysis that relied solely on county identification rather than (say) distance would seriously underestimate access.

New ways of thinking about poverty:

Despite progress in expanding employment and educational opportunities in many parts of the rural U.S., the persistence of high rates of poverty in over 400 rural counties points to the need to further study why economic development lags in these areas. Creating the conditions for bringing in creative talent, bringing back returnees, or encouraging entrepreneurial activity is especially problematic. As noted above, high poverty and low educational attainment are closely linked. But it is unclear to what extent improvements in education ameliorate poverty rather than encourage a further outflow of human capital. Understanding how local economic growth combined with human capital investments in both formal schooling and “soft-skill” training could work to reduce poverty is a fairly recent focus of research. A second unsolved conundrum is the tendency for poverty to concentrate in, rather than disperse from, areas of persistent poverty. ERS researchers in the 1990s documented the immigration of poor people to high poverty counties. The Census county-county migration flow data, crosstabulated by poverty status, are a rich source of information on the volume and direction of migration. But the limited number of crosstabulations available and the lack of longitudinal data mean that we are equally limited in our ability to uncover the correlates of migration among the poor.

A distinctly different line of research is concerned with measuring the impact of low income on reduced consumption, access to services, and wealth creation. In rural areas these consequences are heightened by the relative lack of social services and additional work barriers, including less available public transportation and childcare. How do assets allow households to withstand income volatility and stay out of poverty? What role do work supports such as childcare and transportation play in reducing poverty? The lack of variables on standard county-

level data sets that proxy detailed income and services hampers our ability to address these questions adequately.

The demographic effects of retirement

Members of the baby boom cohort, now 42-61 years old, are approaching a period in their lives when moves to rural destinations increase. Together with rapid gains from aging-in-place, net migration of baby boomers will have significant economic impacts on rural and small town America. Increasing population growth among older Americans will alter the age structure of rural communities in diverse ways. Recent ERS research shows that the approaching wave of baby boom migration will reinforce long-term geographic patterns of growth and decline in most of rural America, but also cause new retirement destinations to emerge.

The effects of baby boomer migration on rural development are mixed. Population growth broadens the tax base, increases the demand for goods and services, and creates jobs, especially if new residents bring accumulated wealth and non-earnings income with them. But new populations are often difficult to integrate, bring different views, require new government services, and change land use patterns. These questions require broadening the data currently employed to study aging in rural America to include retail, service, and institutional access, as well as better information on non-employment activities through time use and other surveys.

Summary of Data Needs

While the research programs I've outlined often call for very different kinds of information to be collected, they share a number of requirements that might serve as a guide to structuring future data collection efforts. I'll focus on three aspects of survey design and data

development that would be particularly helpful in answering the questions now being posed in rural economic research.

Expanding data collection beyond demographics and labor markets. The traditional emphasis on demographic and labor market trends in rural research are mirrored by the ready availability of population, employment, and income measures in Federal secondary data. As research is developed to understand the new realities taking shape in the rural U.S., we find ourselves working harder to identify appropriate variables for our models. For example, we have reasonably good information on employers in local areas, but not such good information on broadband availability or cultural institutions. The obstacle is less that these data exist than that they are often not in usable form, or are inaccessible to researchers (or only accessible under highly restrictive conditions). Many indicators of quality of life fall into this category of uncollected or inaccessible data, which meant that some interesting research just didn't take place.

Longitudinal structure. Many rural research issues are studied fruitfully through an analysis of individual, household, and firm behavior, that is, through microdata rather than spatial aggregates. Microlevel behavioral analyses provide the basis for understanding the mechanisms for aggregate outcomes, whether this is decision making about labor market participation, migration, or business start-ups. Moreover, these individual decisions typically occur over time in response to changing economic and policy stimuli. Cross-sectional data on household and firms often leave us guessing about the adjustment process, with models prone to misspecification and possibly faulty measurements of association. Investments in longitudinal

data collection, while high at the beginning, offer a way to reduce these risks and to measure the relationship between stimulus and outcome with greater precision. This approach is particularly important in rural research where aggregate relationships may mask the distinctive rural context for decision making.

Related to the need for longitudinal microdata is an analogous need for annual data on small areas. Rural economic analysis in the U.S. relies heavily on annual series on income, employment, and population produced by various Federal agencies. One of the most promising recent developments in this regard is the implementation of the American Community Survey and its potential to provide much more detailed intercensal information about small areas, either county or small groups of counties, on an annual basis. But the key to the usefulness of these data is correct classification of multicounty aggregates so that nonmetro areas can be isolated and examined separately from metro areas.

Enhanced geocoding. Rural analysis almost by definition requires sensitivity to the spatial aspects of data. Our ability to map events and outcomes and to apply the rich set of spatial econometrics tools we now have at our disposal still depends on access to the location of respondents. Too often we face a tradeoff of geographic detail for other demographic and job-related available information. In the U.S., for example, two of our richest sources of data on individuals, the monthly Current Population Survey and the public use microsample of the decennial Census of Population, identify nonmetro respondents but at geographic levels too coarse to apply local area economic indicators. County and sub-county information is available for a much more limited set of variables. While confidentiality is understandably a concern, our

ability to inform regional and national policy appropriately is dependent on our ability to link microlevel behavior to a larger spatial context.

Research on the new engines of rural economic growth will require expanded use of GIS-based analysis to link households and firms with cultural and environmental indicators. We know that an area rich in natural amenities tends to be attractive to migrants, but we may also discover that relative access to such amenities matters as well, in much the same way as access to shopping or cultural venues. Geo-linking these data points allows us to create more flexible models of household and firm behavior and to relax the strong assumptions about proximity that dominated past rural research.

Conclusions

Rural areas face many of the same challenges as cities and suburbs. Continuing economic transformation throughout the U.S. has brought about service-oriented industrial structure with higher human capital requirements than ever before, a greater degree of racial and ethnic diversity, and increasing demands on public services. Both areas also share the need to find new ways to attract the skills and talents that help drive contemporary growth.

The enormous geographic diversity in demographic and economic conditions, however, argues against a common set of policy approaches to these challenges. Rural areas as a whole remain distinctive for their low population density and lower access to the services and institutions found in urban centers. Their ability to attract entrepreneurs and other high-skill residents will be more dependent on advantages of natural resources and amenities. Likewise, their ability to solve the problems of low employment and income requires overcoming the

higher per unit cost of service provision and often sparser employment opportunities found in many rural communities.

The same rural characteristics of low density and limited access also create unique challenges for data collection and analysis. Federal data sources, for example, often provide a sample size sufficient to study individual large cities and thus allow researchers to hold constant key contextual variables. The geographic extent necessary to garner similar samples in rural areas would typically incorporate highly diverse economic and social environments, rendering contextual control difficult if not impossible. Similarly, the already-small sample sizes of longitudinal data sets in the U.S. make rural economic analysis impractical in many cases.

If the challenges of rural research provide a single fundamental lesson, it is that space still matters in understanding the complex interrelationships that drive the contemporary economy. Techniques and innovations that make geographic coding and linking easier, including advances in GIS technology, promise at least a partial solution to the need to understand better how rural people and firms respond to their natural and socioeconomic environments.