# WHY SOME RURAL COMMUNITIES PROSPER
# WHILE OTHERS DO NOT

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**Summary:** The language of decline and disadvantage dominates discussions of rural America. Rural poverty, rural distress, rural population loss, and rural competitive disadvantages receive ample attention in the popular press and the scholarly literature. This research focuses instead on rural prosperity, something so overlooked and unknown that many might think it an oxymoron. In fact, more than 300 rural counties and 200 mixed rural counties are more prosperous than the nation as a whole. Each has lower unemployment rates, lower poverty rates, lower school dropout rates, and better housing conditions than the nation. This research seeks to understand why. The diverse theories considered focus on location, the economy, urban-rural linkages, highways and airports, human and social capital, diversity and homogeneity, knowledge and creativity, and climate and topography. Some of the statistical results support empirically what many rural people believe to be true: religious groups and other identities that bind people together can really matter. Some findings are more conventional. Rural communities with relatively more people with some college education are more likely to prosper, as are communities with vigorous, competitive, private economies. Others contradict conventional thought. Geographical factors that are impossible or expensive to change, including climate and distances to cities and major airports, are relatively unimportant in distinguishing between prosperous and other rural places. Rural development thinking that focuses on prosperity, instead of the usual focus on growth, provides different answers and insights. Prosperity is a useful, new lens through which to consider the rural condition and rural policy.

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**Introduction**

The language of decline and disadvantage dominates discussions of rural America. In the popular press and the scholarly literature, typical foci are rural poverty, rural distress, rural population loss, rural competitive disadvantage, and urban encroachment on rural land and rural values. Similarly, political discussions focus on entitlements and interest groups, with agricultural subsidies resented, criticized, and lampooned, further reinforcing the notion of rural helplessness and an inability to compete in a global economy.

This paper focuses instead on rural prosperity, something so overlooked and unknown that many may consider it to be an oxymoron. Yet, rural prosperity exists. Hundreds of rural places are more prosperous than the nation as a whole; they have lower unemployment rates, lower poverty rates, lower school dropout rates, better housing conditions, and above average outcomes on many other indicators. Minnesota Public Radio's famous Lake Wobegon, where everything is above average, exists not only in Minnesota but in many other states.

What can we learn from these prosperous rural counties that might help additional rural areas prosper? Do our theories and hunches, many of which were developed in urban and regional contexts, stand up to data scrutiny and statistical tests in the rural context? After defining rural and prosperity and reviewing some statistics on the prosperity of rural America, this paper turns to the question of why some rural communities prosper while others do not. It examines empirically numerous theories and explanations, using t-tests of the differences between mean values for prosperous counties and others and multivariate spatial econometric analysis to identify how prosperous rural countries are different.

**Defining Rural and Prosperous**

To study rural prosperity requires careful definition of the words, rural and prosperity. Poorly chosen definitions obscure and distort what is rural, and poorly conceived measures of prosperity hide much of the human condition. Rural is not synonymous with non-metropolitan, despite the long standing practice of equating the two by influential organizations and scholars (USDA 2005; National Association of Counties 2006; Housing Assistance Council 2005; Johnson 2006; Porter et al. 2004; Partridge 2007). In fact, the majority of rural folks live in metropolitan counties. Thus, to study rural prosperity or rural poverty by focusing on non-metropolitan counties means to ignore over half the object of the study, or 30 million rural people.

The federal government has two statistical systems relevant to understanding rural and urban America. They are discussed in detail in Isserman (2005) and in even greater detail in various issues of the *Federal Register*. The U.S. Bureau of the Census divides the nation into urban areas and rural areas based on the population density of census blocks. A density of at least 500 people per square mile is one criterion for census blocks to be included in an urban area. If the total population of contiguous qualified census blocks reaches at least 2,500, they form an urban area. The urban areas with 50,000 or more residents are designated urbanized areas, and the ones with 2,500 to 49,999 are urban clusters. Everything else is a rural area. Figure 1 shows the urban and rural areas for the nation. The rural areas house 20% of the U.S. population on 97% of the land. The largest urbanized areas, the 38 with 1 million or more population, house 42% of the population on 1% of the land. Table 1 shows the complete distribution.



Figure 1. The urban and rural areas of the United States, 2000

| U.S. Bureau of the Census, Urban-Rural Category | Population | Square Miles | Density | No. of Urban Areas | % of Pop. | % of Area |
|---|---|---|---|---|---|---|
| Rural | 58,700,918 | 3,443,567 | 17 | -- | 20.9% | 97.4% |
| Urban | 222,720,988 | 92,711 | 2,402 | 3,616 | 79.1% | 2.6% |
| > million | 116,880,478 | 33,757 | 3,462 | 37 | 41.5% | 1.0% |
| 500,001 to 1,000,000 | 23,374,417 | 10,355 | 2,257 | 34 | 8.3% | 0.3% |
| 250,001 to 500,000 | 18,164,583 | 9,206 | 1,973 | 55 | 6.5% | 0.3% |
| 100,001 to 250,000 | 20,569,464 | 11,067 | 1,859 | 132 | 7.3% | 0.3% |
| 50,001 to 100,000 | 13,650,824 | 7,797 | 1,751 | 197 | 4.9% | 0.2% |
| 25,001 to 50,000 | 8,540,187 | 5,419 | 1,576 | 245 | 3.0% | 0.2% |
| 10,001 to 25,000 | 10,382,934 | 7,033 | 1,476 | 677 | 3.7% | 0.2% |
| 2,501 to 10,000 | 11,158,101 | 8,078 | 1,381 | 2,239 | 4.0% | 0.2% |
| Nation | 281,421,906 | 3,536,278 | 80 | | | |

Table 1. U.S. population distribution by urban area size group and rural, 2000

Given these official definitions of urban and rural, why have federal agencies and researchers gravitated toward the county based metropolitan and non-metropolitan system of the Office of Management and Budget (OMB)? The reason is simple. Key economic and demographic data are not available for urban and rural areas, only counties. The OMB system starts with the Census urban areas. If a county contains all or part of an urbanized area, it is a core county of a metropolitan area. Contiguous counties are added to the metropolitan area if either 25% or more of the employed residents of the county commutes to the core counties to work or 25% or more of the county's work force lives in the core counties. Thus, the 30 million rural residents are included in metropolitan areas because they live in rural areas within core counties or the contiguous, commuting counties. The same system defines micropolitan areas using urban clusters of 10,000 to 49,999 residents to define core counties. Counties not included in a metropolitan or micropolitan area are defined officially as Outside Core Based Areas.

OMB points out that "The general concept of a metropolitan or micropolitan statistical area is that of a core area containing a substantial population nucleus, together with adjacent communities having a high degree of social and economic integration with that core." In other words, the rural residents of metropolitan and micropolitan areas are integrated with urban areas because their county either includes an urban nucleus or has substantial commuting to or from a county with an urban nucleus. In addition to the 30 million rural residents within metropolitan areas, there are 14 million rural residents within micropolitan areas and another 15 million rural

residents outside those core based areas. Thus, the practice of treating non-metropolitan as synonymous with rural, that is, micropolitan or outside core based areas as rural, includes 29 million rural residents and excludes 30 million.

Identifying rural counties with the OMB system that focuses on urban-rural integration among counties makes little sense when studying rural communities. Instead, counties should classified by their rural-urban character to identify those that are rural. In a system for doing so described in Isserman (2005), counties are rural, urban, mixed rural, or mixed urban depending on the distribution of their population between urban and rural areas and their overall population density. In brief, rural counties have 90% of their population in rural areas or have no urban area with a population of 10,000 or more, as well as a population density fewer than 500 people per square mile. At the other extreme, urban counties have 90% of their population in urban areas, either 50,000 or more residents or 90% of their population in an urbanized area, and a population density of at least 500 people per square mile. Mixed counties qualify as neither urban nor rural, and mixed rural counties have a population density of less than 320 people per square mile, whereas mixed urban counties have 320 or more people per square mile.

Combining the rural-urban character classification with the OMB rural-urban integration system yields seven major categories that consider both rural character and rural-urban integration. Table 2 shows the distribution of the U.S. population among them. Rural counties house 36% of the nation's rural population, mixed rural counties 49%, mixed urban counties 10%, and urban counties 5%. Rural people range from a political majority to a small minority in their home counties. Most have access to jobs in urban areas, living in mixed counties and micropolitan or metropolitan areas, but one-quarter lives in rural non-core counties, which have the least urban-rural integration.

| Type | OMB | n of Cos. | Population | % U.S. Pop | % U.S. Area | Den-sity | Rural Population | % U.S. Rural | % Co. Rural |
|------|-----|-----------|------------|------------|-------------|----------|------------------|--------------|-------------|
| Rural | Non-core | 1371 | 19,842,259 | 7% | 54% | 10 | 14,953,176 | 25% | 75% |
| Rural | Micro | 115 | 1,533,007 | 1% | 2% | 21 | 1,190,748 | 2% | 78% |
| Rural | Metro | 304 | 6,589,186 | 2% | 5% | 36 | 5,134,419 | 9% | 78% |
| Mixed Rural | Micro | 555 | 27,291,697 | 10% | 18% | 42 | 12,706,423 | 22% | 47% |
| Mixed Rural | Metro | 467 | 59,132,936 | 21% | 15% | 109 | 15,971,278 | 27% | 27% |
| Mixed Urban | Metro | 146 | 40,333,682 | 14% | 3% | 442 | 6,018,827 | 10% | 15% |
| Urban | Metro | 172 | 126,524,136 | 45% | 2% | 1,556 | 3,052,200 | 5% | 2% |

Table 2. Population by county category, 2000

Prosperity also needs careful definition. Federal agencies have a long history of defining the other extreme, distressed counties, hardship counties, persistent poverty counties, and lagging counties, to establish eligibility requirements for programs. The Appalachian Regional Commission defines distress in terms of poverty, unemployment, and per capita market income, the Economic Development Administration uses unemployment and per capita income, and the U.S. Department of Housing and Urban Development ranks distressed community applications on poverty, unemployment, and low-income households, dropping the income criterion for rural communities.

Prosperity is defined here with a broader set of measures than typically used for distress. It includes education and housing as well as poverty and unemployment. The community's ability to keep its children in school through high school and the housing conditions its residents face seem to be uncontroversial, reasonable indicators of a community's prosperity. The four measures, the poverty rate, unemployment rate, high school dropout rate, and housing problem rate, are frequent targets of public policy.

Their definitions all are based on official categories in the long form of the decennial census of 2000. The poverty rate is the number of persons whose income is below poverty level in 1999 divided by the number whose poverty status is determined (which is everyone except institutionalized people, people in military group quarters, people in college dormitories, and unrelated individuals under 15 years old).[1] The unemployment rate is the number of unemployed divided by the civilian labor force, that is, the sum of employed and unemployed civilians aged 16 and over.[2] The dropout rate is the number of teenagers, 16 to 19, not enrolled in school and not high school graduates divided by the population aged 16 to 19.[3] The housing problems rate is the percentage of households having one or more of four housing conditions combined by the Census Bureau into a single indicator: (1) lacking complete plumbing facilities, (2) lacking

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[1] The poverty rate is calculated from Table P87, which reports poverty status by age. Poverty status depends on total family income relative to poverty thresholds based on family size and composition (and the whole family has the same poverty status) or on a person's own income relative to his or her poverty threshold when a person is not living with anyone related by birth, marriage, or adoption.
[2] The unemployment rate is calculated from Table P43, sex by employment status for the population 16 years and over. All civilians 16 years old and over were classified as unemployed if they were (1) neither "at work" nor "with a job but not at work" during the full week immediately preceding the date the questionnaire was completed, (2) looking for work during the last 4 weeks, and (3) available to start a job. Certain others on temporary layoff from a job were included, too.
[3] The high school dropout rate is calculated from Table P38, which reports on the armed forces status, school enrollment, educational attainment, and employment status for the population 16 to 19 years old.

complete kitchen facilities, (3) having 1.01 or more occupants per room, and (4) paying selected monthly owner costs or gross rent greater than 30% of household income.[4]

Per capita income, although a common program variable, is not included as a prosperity measure here because nationwide comparisons of county incomes are of limited value without any measures of relative costs of living. The poverty rate shares that problem because the same poverty thresholds apply nationwide, and they are not adjusted for any regional, state, local, or urban-rural variations in the cost of living. Poverty captures a dimension of the income distribution, making inclusion of two similarly flawed variables less compelling or urgent, and it focuses on households in the community that do least well in income terms. A community is not prospering, no matter how high its per capita income, if its poverty rate is high.

Growth and prosperity are not the same, although growth is often confounded with prosperity and is a more common focus of local economic development initiatives. Schultz (2004, p. xiii) is explicit; to qualify as prosperous a rural community "has to have experienced growth in population or employment from 1990 to 2000 and have per capita income growing at more than 2 percent per year from 1989 to 1999." This study rejects that approach. It does not build into the definition of prosperity a bias in favor of growth or against it. What matters is the outcome. A growing community can have high unemployment rates, high poverty rates, crowded and expensive housing, and difficulty getting and keeping children enrolled in schools. Growth does not guarantee the prosperity of a community's residents or their community.

Prosperity is defined here relative to the nation. Prosperous counties have lower poverty rates, lower unemployment rates, lower high school dropout rates, and lower rates of housing problems than the nation as a whole. Thus, to qualify as prosperous, a county must do better than the nation on all four criteria. Figure 2 shows whether counties do better than the nation on all four, three, two, one, or none of the prosperity criteria. The prosperous ones are shown as "4" on the map.

Prosperity has a strong regional dimension. The Northeast and Midwest stand out as doing relatively well, a rare occurrence in a nation used to looking at maps that for several decades have emphasize Sunbelt growth and Rustbelt decline. At the other extreme, regions that stand out in maps that focus on distress and poverty also stand out here. Among them, roughly

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[4] The housing measure is calculated from Table HCT28, which includes the number of housing units with no selected physical and financial conditions.

from west to east, are Alaska, the Four Corners, Pine Ridge, and other parts of Indian Country, the Central Valley of California, counties along the Mexican border, the Lower Mississippi Delta, the Black Belt, and Central Appalachia.
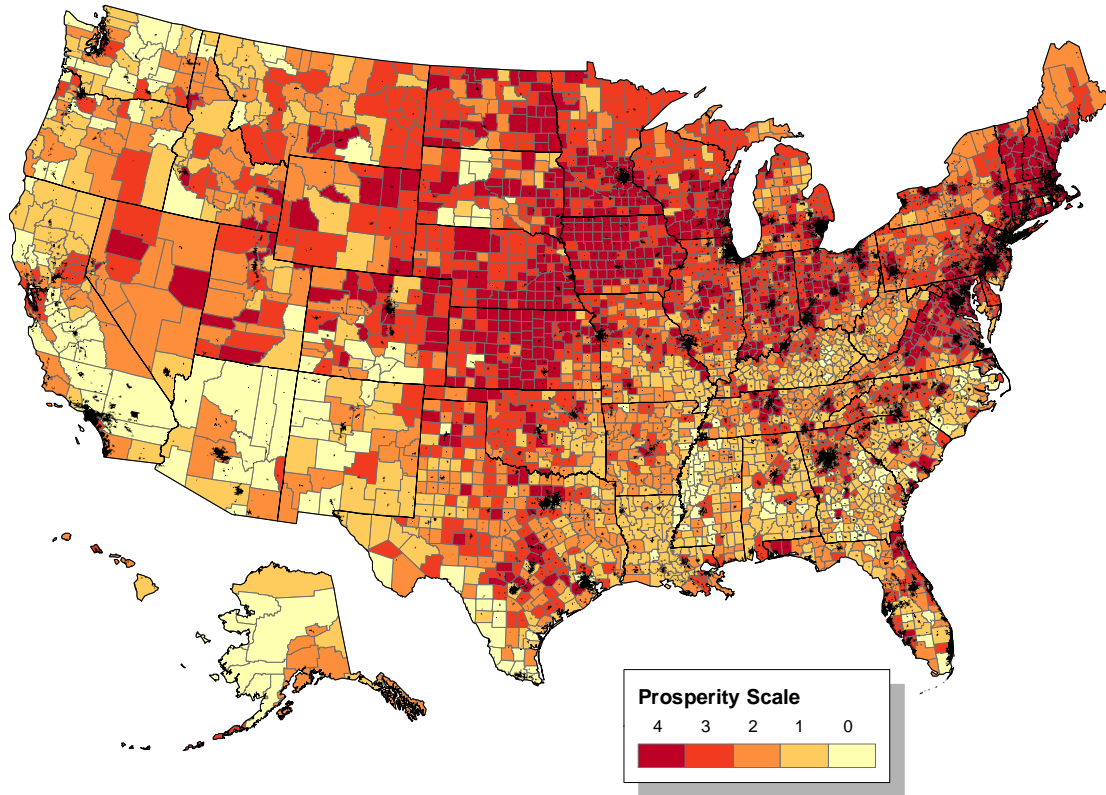


Figure 2. Number of prosperity measures at or better than the national level, 2000

**The Extent of Rural Prosperity**

There are more than 400 prosperous rural counties, and the likelihood of a rural county being prosperous increases with the integration of rural counties into micropolitan and metropolitan areas. Whereas 21% of rural non-core counties, 289 out of 1,371, are prosperous, 29% of rural micropolitan counties and 38% of rural metropolitan counties are prosperous (Table 3). Poverty is the most difficult prosperity criterion for rural counties to pass, and the housing conditions criterion is passed most frequently. Mixed rural counties, where almost half the nation's rural population lives, have lower prosperity rates than rural counties, if one compares rural micropolitan with mixed rural micropolitan and rural metropolitan with mixed rural metropolitan. Among metropolitan counties, urban counties have a lower prosperity rate than

rural or mixed rural counties, but the highest prosperity rate, 47%, belongs to mixed urban counties.

| Type | OMB | n | Pros-perous | Pros. % | Number of Counties Meeting Criterion | | | |
|------|-----|---|-------------|---------|---------|---------|---------|---------|
| | | | | | Poverty | Unempl. | Dropout | Housing |
| Rural | Non-core | 1371 | 289 | 21% | 459 | 744 | 797 | 1207 |
| Rural | Micro | 115 | 33 | 29% | 43 | 68 | 70 | 108 |
| Rural | Metro | 304 | 115 | 38% | 177 | 225 | 173 | 278 |
| Mixed Rural | Micro | 555 | 127 | 23% | 234 | 265 | 296 | 455 |
| Mixed Rural | Metro | 467 | 143 | 31% | 280 | 297 | 272 | 372 |
| Mixed Urban | Metro | 146 | 68 | 47% | 115 | 107 | 98 | 123 |
| Urban | Metro | 172 | 48 | 28% | 111 | 111 | 100 | 93 |

Table 3, Prosperity by county category, 2000

Although all county categories include rural areas (Table 2), this paper will focus on the rural non-core counties. Since the goal is to gain understanding as to why rural *communities* prosper and we must use counties as the unit of analysis, the rural counties are the best proxy for rural communities. By definition, their population is at least 90% in rural areas and/or any urban area has fewer than 10,000 residents. By restricting the analysis to only rural non-core counties, we have rural spatial units whose residents have limited interaction with the larger urban areas at the core of metropolitan or micropolitan areas, giving us a purer analysis of the rural community itself. In short, the operational definition of the rural communities in the paper's title is 1,371 counties, some of which have small towns or villages and whose population chiefly lives in rural areas outside those small urban areas. The operational definition could have been extended to include mixed rural counties; after all, almost half the nation's rural population lives there. Those counties, however, also include urban areas with more than 10,000 residents, and the rural residents are a minority there, making suspect any claim that the findings for mixed rural counties represent rural communities.

Rural non-core counties are widely distributed across the nation (Figure 3). They are found in 46 states; only Connecticut, Rhode Island, New Jersey, and Delaware have none. Twenty-six states have 20 or more rural non-core counties. As the map shows, rural counties are absent near large cities and scarce in the West. Some large western counties have vast rural areas but also an urban area that makes the whole county metropolitan or micropolitan.
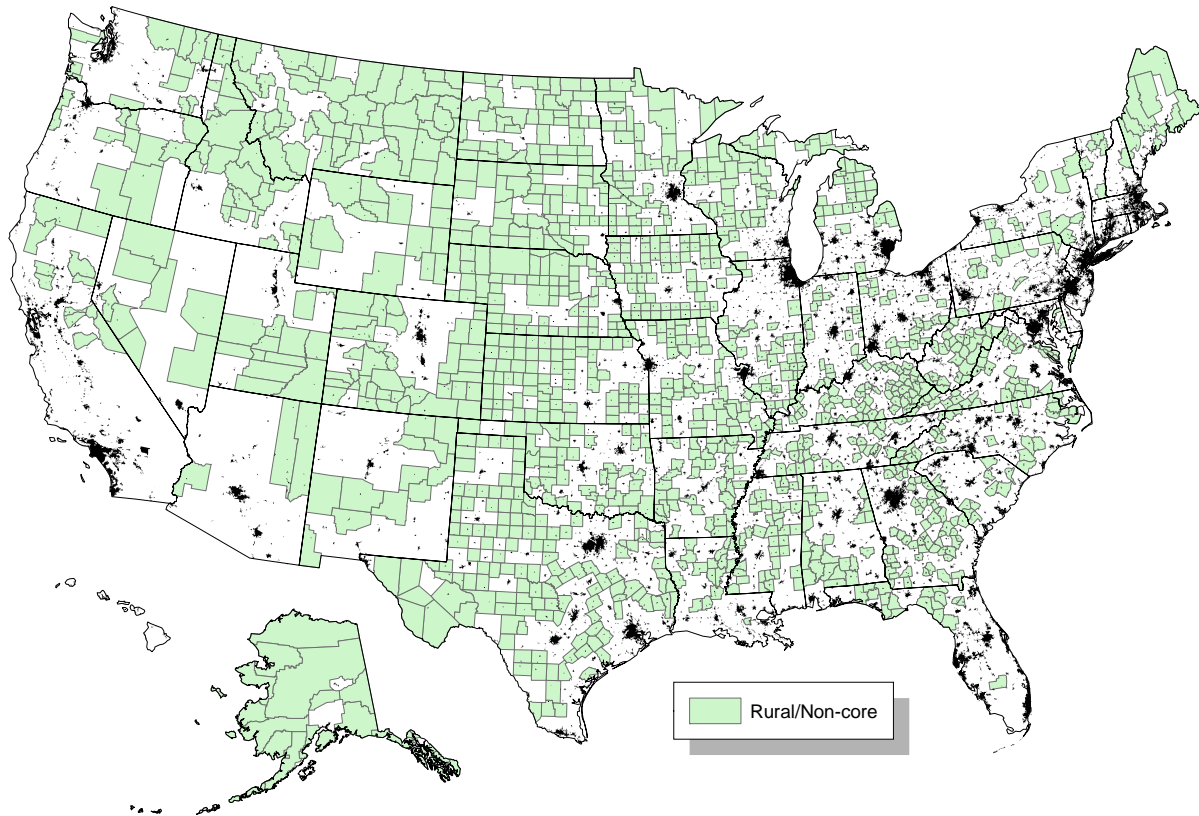
Figure 3. Rural non-core counties and urban areas, 2000

Rural non-core counties can be divided into two groups, those that are prosperous and others, that is, those that do better than the nation on all four prosperity criteria and those that do not, or into five groups, that is, the prosperous ones and those that do better than the nation on three, two, one, or none of the four prosperity criteria. Calculating mean values for the prosperity measures for each group gives a quick overview and reveals that all conditions worsen as fewer criteria are met. The high school dropout rate, for example, averages 5% in the prosperous counties but 15% in the counties meeting no prosperity criterion. The dropout rate increases monotonically as the number of criteria met declines, and the other prosperity measures follow the same pattern (Table 4). The mean rates of the prosperous counties differ significantly at the 90% confidence level from the means for all the other county groups for every variable.[5]

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[5] The t-tests were conducted by averaging across all rural, non-core counties in each group meeting a given number of prosperity indicators. The statistical significance of the differences between these averages was assessed using either the pooled variances of the two groups or the Satterthwaite variance. The Satterthwaite variance was used if an F-test of equal variance in the two groups was rejected at the 5% level. Values are reported in Table 4 and subsequent tables only when the p-value of the difference between each group and p4h=4 is statistically significant at the 10% level.

| Variable | Prosperous | Others | Number of Criteria Satisfied | | | |
|---|---|---|---|---|---|---|
| | | | **3** | **2** | **1** | **0** |
| Households with at least one housing condition | 19% | 25% | 22% | 25% | 27% | 37% |
| High school dropout rate | 5% | 11% | 7% | 11% | 14% | 15% |
| Poverty rate | 9% | 18% | 14% | 16% | 21% | 28% |
| Unemployment rate | 3.5% | 6.7% | 4.5% | 6.4% | 8.5% | 11.0% |
| Number of counties | 289 | 1082 | 349 | 364 | 276 | 93 |

Table 4. Comparison of prosperous and other rural non-core counties, prosperity measures, 2000

**Correlates of Prosperity**

We turn now to key questions: Can we generalize across the diverse universe of rural counties outside metropolitan and micropolitan areas to identify ways that prosperous rural counties differ from ones that are not? Can we gain insights into correlates of prosperity that have rural development policy implications? Does the statistical evidence support the theories and beliefs that underlie federal, state, and local policies for rural development? These questions become one in terms of research design. Are there significant differences between prosperous counties and others in the mean value of variables related to rural development theories and policies?

This section analyzes the numbers using data tables similar to Table 4. Each table contains the mean value for a group of related variables, e.g., transportation linkages or social capital. If no value appears in a cell, as is often the case, the mean value is not significantly different from the mean value for the prosperous counties at the 90% level. The blank cells focus our attention on the differences that are statistically significant. The variables are grouped into categories, with the discussion proceeding in the following order: geography, economy, human and social capital, and demography.

Geography

We consider geography and location in four ways here: the location of a county relative to urban areas, the presence and growth of employment opportunities near by, the availability of airports and highways to connect the county to other places, and the climate, topography, and other natural conditions. Surprisingly, the empirical findings suggest geography and location have relatively little correlation with prosperity. Using a very different definition of prosperous rural towns or "agurbs," Schultz (2004, p. 135) reached a similar conclusion, "I was surprised to find that 52 of the 100 top agurbs are more than 25 miles from the nearest interstate."

Many observers argue that rural areas do well because of urban areas and other opportunities nearby (Barkley, Henry, and Bao 1996; Henry, Barkley, and Bao 1997; Henry et al. 1999; Partridge 2007). Table 5 summarizes the empirical results for 12 variables that measure links to urban areas. Population of the largest urban area, urban percent of the county population, and population density measure conditions within the county. The distances to urban areas of various sizes refer to urban areas outside the county, because by definition rural non-core counties have no urban areas of 10,000 or more, and the distances are from the county centroid to the urban area centroid. Two variables measure whether the county is adjacent to a metropolitan or micropolitan area. Since counties are added to metropolitan or micropolitan areas based on commuting to core counties, an adjacent non-core county might be linked to the core, too, just less so than the 25% commuting thresholds necessary for inclusion.

| Variable | Prosperous | Others | Number of Criteria Satisfied | | | |
| --- | --- | --- | --- | --- | --- | --- |
| | | | 3 | 2 | 1 | 0 |
| Population of largest urban area | 2,791 | | | 3,243 | | 3,681 |
| Urban percent of county population | 20 | | | 23 | | 26 |
| Population density | 21 | 25 | | 28 | 30 | |
| Distance to urban area, >= 10k | 36 | 41 | 45 | | | 62 |
| Distance to urban area, >= 20k | 47 | 55 | 59 | | | 73 |
| Distance to urban area, >= 50k | 71 | | 80 | | 60 | |
| Distance to urban area, >= 100k | 87 | | 102 | | 74 | 111 |
| Distance to urban area, >= 250k | 128 | 152 | 163 | | | 240 |
| Distance to urban area, >= 500k | 147 | 177 | 178 | 169 | | 278 |
| Distance to urban area, >= 1 mil | 179 | 218 | 218 | 207 | | 324 |
| Adjacent to metropolitan area | 43% | 49% | | 50% | 55% | |
| Adjacent to metro- or micropolitan | 80% | | 72% | | | 70% |

Table 5. Distances to urban areas and urbanization, rural non-core counties, 2000

Although all the cells in Table 4 had numbers, indicating that the difference between the mean value for the prosperous group and other groups are statistically significant at the 90% level, and those means changed monotonically with the number of prosperity criterion satisfied, many cells in Table 5 are empty. Thus, there is often no significant difference from the prosperous county mean. Urbanization within the county seems to matter little. If anything, the prosperous counties have smaller urban areas, less urbanization, and less density, but the differences are only sometimes significant. The prosperous counties are on average closer to urban areas with 250,000 or more residents, and the particularly large differences compared to the counties meeting no criteria are intriguing, but there is an Alaska effect in that result. Alaska

has numerous counties that satisfy no prosperity criteria, and its largest urban area, Anchorage, has only 226,000 people. The prosperous counties on average are closer to urban areas of 10,000 or 20,000 and more, too, but differences of five and eight miles do not seem meaningful determinants of prosperity. Fewer prosperous counties are adjacent to metropolitan areas, 43% versus 49%, implying that metropolitan adjacency is not the cause of rural non-core prosperity. Including micropolitan and metropolitan areas, the prosperous counties reach 80% adjacency, significantly higher than two groups but not significantly different from all other counties.

Employment opportunities and growth nearby are other important geographical dimensions, but there are few significant differences between the prosperous counties and others (Table 6). A somewhat higher percentage of the employed residents of prosperous counties work within their home county, and county residents account for a somewhat higher percentage of a prosperous county's workforce. Taken together, these two facts suggest that the prosperous counties depend less on neighboring counties for jobs or workers. Nonetheless, they are not free-standing economies. They average 90 jobs per 100 employed residents, not statistically different from other counties, 27% of their employed residents work elsewhere, and 20% of the jobs in the prosperous counties are filled by residents of other counties.

| | | | Number of Criteria Satisfied | | | |
| Variable | Prosperous | Others | 3 | 2 | 1 | 0 |
|---|---|---|---|---|---|---|
| Employment within 30 miles | 3,632 | | | | | 2,205 |
| Employment change within 30 miles | 525 | | | | | 353 |
| Employment within 45 miles | 13,444 | | | | | 8,114 |
| Employment change within 45 miles | 1,914 | | | | | 1,341 |
| Employment within 60 miles | 30,503 | | | | | |
| Employment change within 60 miles | 4,853 | | | | | |
| Jobs relative to employed residents | 0.90 | | | | 0.87 | |
| Employed residents working in county | 73% | 70% | | 69% | 67% | |
| County's workforce living in the county | 80% | 79% | | 79% | 77% | 78% |

Table 6. Regional employment context and commuting, rural non-core counties, 2000

The diffusion of growth to rural areas from nearby counties depends on whether those counties are urban, mixed, or rural (Feser and Isserman 2006), but nearby population or employment growth in urban and mixed urban counties does not differentiate prosperous counties from others (Table 7). Prosperous rural counties do average more employment growth in nearby rural and mixed rural counties but less population growth. Nearby is defined as no more than 60 miles between the county centroids, an approximation of commuting areas.

| Variable | Prosperous | Others | Number of Criteria Satisfied | | | |
|---|---|---|---|---|---|---|
| | | | 3 | 2 | 1 | 0 |
| *Population growth within 60 miles (%)* | | | | | | |
| Rural counties | 4.1 | 8.6 | 6.7 | 9.9 | 9.2 | 8.6 |
| Mixed rural counties | 9.5 | 10.8 | | 11.4 | 11.4 | 13.5 |
| Mixed urban counties | 3.5 | | | | | |
| Urban counties | 2.2 | | | | | |
| *Employment growth within 60 miles (%)* | | | | | | |
| Rural counties | 28.0 | 23.5 | 25.8 | 23.2 | 21.1 | 22.5 |
| Mixed rural counties | 28.1 | 25.7 | 23.9 | | | |
| Mixed urban counties | 6.1 | | | 9.6 | | 3.5 |
| Urban counties | 4.5 | | | | | |

Table 7. Nearby growth by county character, rural non-core counties, 2000

The construction of highways to improve access to markets and jobs is widely touted as an economic development tool (Rephann and Isserman 1994; Isserman and Rephann 1995; Chandra and Thompson 2000). Prosperous counties are not distinguished from other counties by their highway access. Only one-quarter of the prosperous counties have nine or more miles of interstate highway, and almost half have a primary highway and are adjacent to a county on the interstate system (Table 8). Three-quarters of the prosperous counties are on the interstate system or adjacent with a primary highway, but three other groups are more connected, 72% versus 77% to 84%, with the most connected group being the counties that meet no prosperity criterion.

| Variable | Prosperous | Others | Number of Criteria Satisfied | | | |
|---|---|---|---|---|---|---|
| | | | 3 | 2 | 1 | 0 |
| Interstate, >9 miles in county | 24% | | | | | |
| Interstate or adjacent with primary | 72% | | | 77% | 79% | 84% |
| Adjacent with primary | 48% | | | | | |
| Distance to any commercial airport | 45 | 50 | 53 | 48 | 49 | 52 |
| Distance to small primary airport | 53 | | 60 | | | |
| Distance to medium primary airport | 75 | | 83 | 66 | 66 | |
| Distance to large primary airport | 80 | | 90 | 73 | 73 | |
| Distance to small hub airport | 111 | | 141 | | 96 | |
| Distance to med hub airport | 154 | 166 | 186 | | | 184 |
| Distance to large hub airport | 203 | 228 | 228 | | | 350 |

Table 8. Airports and highways, rural non-core counties, 2000

Frequent and direct airline service is often mentioned as important in business location decisions and economic development (Brueckner 2003). The prosperous counties are closer to a commercial airport, but differences of three to seven miles, although statistically significant, are unlikely to be meaningful for rural development. The Federal Aviation Administration (FAA)

classifies airports based on the number of passenger boardings, and commercial service airports must have only 2,500 revenue passenger boardings per year, whether or not in scheduled service. Primary airports have at least 10,000 boardings, small hubs about 350,000, medium hubs about 2 million, and large hubs about 7 million.[6] The calculated distances are to the nearest airport with at least the number of boardings that define a category; thus, distance to a commercial airport is actually to a primary airport or hub if it is the closest airport to the county. No clear relationship is evident between primary or hub airports and prosperity. A few statistically significant mean differences exist, but other groups of counties sometimes average closer to airports than the prosperous counties (Table 8).

Studies find a positive relationship between amenities and growth (McGranahan 1999; Deller et al. 2001), but again prosperity seems to be another matter. The Economic Research Service (ERS) of the U.S. Department of Agriculture combined elements of the physical environment, including climate, water, and topography, into an amenity index (McGranahan 1999). Prosperous counties rate lower on the composite scale, largely because of colder January temperatures, flatter topography, and less water area (Table 9).

| Variable | Prosperous | Others | Number of Criteria Satisfied | | | |
|---|---|---|---|---|---|---|
| | | | 3 | 2 | 1 | 0 |
| Amenity composite scale | -1.37 | 0.25 | -0.16 | 0.43 | 0.38 | 0.80 |
| January sunshine hours | 160 | 154 | | 152 | 149 | |
| January temperature | 22 | 33 | 28 | 34 | 38 | 38 |
| July humidity | 53 | | 49 | | 58 | |
| July temperature | 74.1 | 76.0 | 74.8 | 76.0 | 77.3 | 76.9 |
| Topography, 21 point scale | 7.5 | 9.8 | 9.0 | 10.2 | 10.3 | 9.4 |
| Water percent of county area | 2.0% | 3.4% | 3.9% | | 3.8% | |
| Water percent of county area, log | 3.79 | 4.15 | | 4.21 | 4.32 | 4.14 |
| Recreation county | 12% | 17% | | 18% | | |
| Retirement county | 9% | 16% | 15% | 15% | 18% | 16% |

Table 9. Amenities, rural non-core counties, 2000

Another, indirect way of considering amenities and physical geography is through ERS's designation of certain counties as recreation and retirement counties (Beale and Johnson 1998; Johnson and Beale 2002). Relatively few prosperous counties are recreation counties, 12%

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[6] The airport data from the Federal Aviation Administration's Air Carrier Activity Information System (ACAIS) database are found at http://www.faa.gov/airports_airtraffic/airports/planning_capacity/passenger_allcargo_stats/. Hubs are designated by the FAA annually based upon the number of boardings at each airport. Large hubs have 1% or more of all boardings nationally (which equaled about 7 million in 2000), medium hubs have at least 0.25% (about 2 million in 2000) and small hubs have at least 0.05% (about 350,000). Airport distances were calculated between each county's centroid and the airport coordinates provided by the FAA.

compared to 17%, but the mean difference is significant for only one of the four other county categories (Table 9). Likewise, relatively few prosperous counties are retirement counties, but here the differences are significant for every county category. In short, the often recommended rural development strategy of attracting recreation visitors and retirees has not yet resulted in prosperous counties, whether because of the places selected by visitors and retirees, the consequences of their arrival, or both. Hills and mountains, one of the five major topography types, might be appealing for retirement and recreation, but these counties have the lowest prosperity percentage, chiefly because of high poverty and unemployment (Table 10). The Plains have more than three times the prosperity rate, 28% versus 9%.

| Topography | n | Pros-perous | Percent of Counties Meeting Criterion | | | | |
|---|---|---|---|---|---|---|---|
| | | | Pros-perous | Poverty | Unemploy-ment | DropOut | Housing |
| Plains | 608 | 170 | 28% | 39% | 59% | 57% | 90% |
| Open Hills and Mountains | 328 | 68 | 21% | 32% | 58% | 58% | 92% |
| Tablelands | 99 | 17 | 17% | 22% | 72% | 69% | 97% |
| Plains with Hills or Mountains | 97 | 14 | 14% | 36% | 53% | 65% | 90% |
| Hills and Mountains | 217 | 20 | 9% | 24% | 34% | 53% | 77% |

Table 10. Topography, rural non-core counties, 2000

The weak findings for these geography and location variables are encouraging in an important sense for rural development. Factors like temperature, distances to cities, and employment in the nearby region are beyond the control of local rural development actions. Highways and airports can be a policy instrument, but they are expensive and require intergovernmental coordination and participation. That geography, location, and access only have limited effects on local prosperity is encouraging. Geography is not destiny. Unchangeable factors do not determine prosperity.

Economy

The prosperous counties have a more vigorous private sector, with more jobs per capita and higher per capita market income, that is, income minus transfer payments (Table 11). The numbers support the policy view that, if jobs are plentiful, other problems will disappear. Surprisingly, prosperous counties have fewer resource based, value added manufacturing jobs, a sector often touted as a rural development strategy because it entails local processing of agricultural, lumbering, fishing, mining, and other products (U.S. Department of Commerce 2004). In contrast, footloose manufacturing industries, those not tied to local resource inputs and,

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consequently, having more location choices, have monotonically declining numbers of jobs as the number of prosperity criteria declines. Federal civilian and state and local government are smaller in the prosperous counties than in the counties meeting no prosperity criterion, but otherwise there are no significant differences among the county categories as regards government. The prosperous counties have more private sector jobs, not more government jobs.

| Variable (employment per 1,000 people) | Prosperous | Others | Number of Criteria Satisfied | | | |
|---|---|---|---|---|---|---|
| | | | 3 | 2 | 1 | 0 |
| Total private non-farm | 285.1 | 221.3 | 230.8 | 232.0 | 208.1 | 182.7 |
| State and local government | 78.0 | | | | | 88.0 |
| Health care | 44.9 | 34.0 | 36.6 | 34.6 | 31.3 | 29.8 |
| Retail trade | 44.2 | 36.0 | 37.7 | 37.1 | 34.0 | 31.4 |
| Foot loose manufacturing | 43.5 | 22.6 | 25.3 | 24.4 | 20.8 | 11.3 |
| Accommodation, food services | 26.0 | 22.0 | 23.4 | | 20.3 | 16.3 |
| Valued added resource mfg | 18.8 | 25.3 | | 28.8 | 25.8 | 29.1 |
| Wholesale trade | 17.6 | 9.7 | 12.6 | 8.8 | 7.8 | 7.6 |
| Construction | 16.1 | 12.1 | 12.7 | 13.3 | 10.8 | 8.9 |
| Finance | 12.0 | 8.2 | 10.0 | 8.2 | 6.9 | 5.9 |
| Transportation | 9.3 | 6.8 | 6.7 | 7.6 | 6.3 | 5.6 |
| Federal civilian | 7.7 | | | | | 10.4 |
| Professional services | 7.0 | 4.5 | 5.1 | 4.8 | 3.9 | 3.3 |
| Administration | 6.2 | | | | | 3.7 |
| Information | 5.4 | 3.7 | 4.3 | 3.9 | 3.1 | 2.5 |
| Education | 4.9 | 2.8 | 2.5 | 2.4 | 3.3 | |
| Military | 4.8 | | | | 4.3 | |
| Arts, entertainment | 4.3 | | 2.9 | | | 2.4 |
| Mining | 3.9 | | | 5.7 | | |
| Utilities | 3.7 | | | 2.6 | | 2.4 |
| Real estate | 2.3 | | | | 1.7 | |
| Fishery, forestry, ag services | 1.0 | 2.7 | 1.5 | 2.8 | 3.7 | 3.1 |
| Management | 1.0 | | | | | 0.5 |
| Per capita market income | $19,549 | $15,664 | $17,416 | $16,215 | $13,742 | $12,639 |

Table 11. Non-farm employment and market income of rural non-core counties, 2000

The farm sector is also more active in the prosperous counties, by any of several measures (Table 12). On a per capita basis, prosperous counties have more farms, more family farms, and more farm employment (proprietors and employees combined). Prosperous counties also receive more government payments to farming, averaging $1906 per capita. Drabenstott (2005) concluded that farm payments "appear to be linked with subpar economic and population growth." Not so for prosperity. The findings for prosperity again differ sharply from previous research focused on growth.

| Variable | Prosperous | Others | Number of Criteria Satisfied | | | |
|---|---|---|---|---|---|---|
| | | | 3 | 2 | 1 | 0 |
| Farm employment per 1,000 population | 91 | 69 | 101 | 64 | 43 | 48 |
| Farm population per 1,000 population | 109 | 67 | | 61 | 40 | 38 |
| Family farms per 1,000 population | 66 | 47 | | 44 | 31 | 27 |
| Govt. payments to farming per capita | $1,906 | $867 | $1,554 | $651 | $372 | $607 |

Table 12. The farm sector, rural non-core counties, 2000

Farming varies greatly across the nation in many ways, and they correlate with prosperity. The Farm Resource Regions developed by ERS summarize the variation (USDA 2000). ERS "identified where areas with similar types of farms intersected with areas of similar physiographic, soil, and climate traits" and assigned counties to nine regions (Alaska and Hawaii not included). The nine regions vary greatly in prosperity rates: 50% of the rural non-core counties in the Heartland Region are prosperous but only 1% in the Mississippi Portal (Table 13). The Heartland region, with its cash grain and cattle farms, has the most farms, highest value of production, and most cropland, roughly a quarter of the nation. It includes the entire states of Illinois, Indiana, and Iowa and parts of six adjacent states. The Mississippi Portal has about 5% of the nation's farms, production value, and cropland, with cotton, rice, poultry, and hog farms. It runs along the Mississippi river and contains parts of Tennessee, Arkansas, Mississippi, and Louisiana and has "higher proportions of both small and larger farms than elsewhere."

| Farm Resource Region | n | Prosperous | Percent of Counties Meeting Criterion | | | | |
|---|---|---|---|---|---|---|---|
| | | | Prosperous | Poverty | Unemployment | Dropout | Housing |
| Heartland | 224 | 112 | 50% | 65% | 80% | 68% | 100% |
| Prairie Gateway | 237 | 72 | 30% | 38% | 82% | 73% | 97% |
| Northern Crescent | 124 | 37 | 30% | 68% | 40% | 81% | 97% |
| Northern Great Plains | 141 | 35 | 25% | 33% | 72% | 77% | 92% |
| Basin and Range | 111 | 12 | 11% | 36% | 38% | 68% | 64% |
| Fruitful Rim | 81 | 5 | 6% | 14% | 36% | 44% | 65% |
| Southern Seaboard | 173 | 8 | 5% | 9% | 38% | 28% | 83% |
| Eastern Uplands | 186 | 7 | 4% | 9% | 34% | 41% | 96% |
| Mississippi Portal | 72 | 1 | 1% | 1% | 26% | 25% | 76% |

Table 13. Prosperity by farm resource region, rural non-core counties, 2000.

The prosperous rural counties have more diverse economies. The advantage of a diverse local economy is a shibboleth of economic development thought, despite recent debates over whether industrial concentrations in a single industry offer stronger competitive advantages than diverse industrial agglomerations (Conroy 1975; Jackson 1984; Simon 1988; Smith and Gibson

1988; Glaeser et al. 1992; Malizia and Ke 1993; Hunt and Sheesley 1994; Lande 1994; Harrison, Kelley, and Gant 1996; Quigley 1998). The Herfindahl index is a popular measure of industrial diversification. The summed square of each industry's proportion of the economy, the index has a maximum value of one when all employment is in one industry. A lower index indicates a more diverse economy, and prosperous rural counties average lower Herfindahl indexes, whether the whole economy, the private sector, or only private non-farm employment is considered[7] (Table 14). Thus, employment in prosperous counties is distributed more evenly among more industries.

| Herfindahl and Gini Measures | Prosperous | Others | Number of Criteria Satisfied | | | |
|---|---|---|---|---|---|---|
| | | | 3 | 2 | 1 | 0 |
| *Herfindahl indexes of industrial diversity* | | | | | | |
| Private non-farm employment, 4-digit | 0.058 | 0.070 | 0.072 | 0.068 | | 0.090 |
| Farming added | 0.112 | 0.129 | 0.167 | | 0.092 | |
| Farming and government added | 0.103 | 0.125 | 0.142 | 0.116 | | 0.147 |
| *Gini coefficient of income distribution* | | | | | | |
| Household income | 0.41 | 0.45 | 0.43 | 0.45 | 0.46 | 0.48 |

Table 14. Measures of industrial diversity and income distribution, rural non-core counties, 2000

Income distribution has also attracted considerable attention as a determinant and consequence of economic development. Duncan (1999), with case studies of three communities, brings to life how inequality can shape institutions and opportunities in rural America. Recent empirical findings include counties more reliant on farming had above average levels of family income inequality in 1990 (Levernier, Partridge, and Rickman 1998); farm structure's effect on income inequality diminished from 1990 to 2000 and is weakest in farm dependent counties, which have higher shares of county income from farming (Brasier, McLaughlin, and Smith 2005); and states with more income inequality experience greater subsequent economic growth (Partridge 1997, 2005).

The prosperous counties have less income inequality than the other county groups. To examine the relationship between prosperity and income distribution, we calculated Gini coefficients for household income distribution of all U.S. counties. The Gini coefficient is a standard method for studying income distribution or, more generally, comparing any two

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[7] We measured the Herfindahl index using 4-digit employment data from the Census Bureau's *County Business Patterns,* overcoming its extensive data suppression using methods described in Isserman and Westervelt (2006). *County Business Patterns* covers private non-farm employment only, but the *Regional Economic Information System* of the Bureau of Economic Analysis (BEA) of the U.S. Department of Commerce allows adding farming and federal civilian, military, and state and local government as four additional industries.

distributions. It ranges from zero to one, with lower values meaning income is more evenly distributed among households.[8] The results are unambiguous: The more prosperity criteria met, the more even the income distribution, and all the group differences are statistically significant (Table 14).

<u>Human and Social Capital</u>

Prosperous rural counties keep their kids in school; by definition, their high school dropout rates are below the national average. Not surprisingly, the residents of prosperous counties have higher education levels themselves. The differences are both statistically significant and meaningful compared to all other county groups for every educational level from high school graduation through the bachelor's degree (Table 15). In prosperous rural counties, 83% of adults 25 or older are high school graduates compared to 73% in the other rural non-core counties and only 66% in those counties meeting none of the prosperity criteria. The associate, two-year college degree is often chosen as the target educational attainment in rural development strategies through community colleges. The prosperous counties average 22% with an associate's degree, while other counties average 18% and those meeting one or no criterion 16%. Although community colleges might be emphasized in policy discussions, rural non-core counties average 4% of adults with master's degrees, 4.4% in prosperous counties, 4.2% in other counties, and 4.1% in counties meeting no prosperity criterion.

Rural development discussions often focus on the drain brain, young adults who leave rural areas for college and do not return. The educational attainment statistics discussed thus far cover all residents aged 25 and older, some of whom received their education decades ago. Focusing on the population 25-34 gives a more up to date picture of educational attainment and the young adults who stay, return, or move into rural non-core counties. The educational attainment percentages of the 25-34 year olds are higher than those of all residents 25 years or older.

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[8] The Gini coefficient is ideally measured with data for households, but the Census Bureau releases only information on the number of households in sixteen income groups, the combined total household income of the fifteen groups below $200,000 income, and the total income of the one group above $200,000. This information permits calculating the Gini coefficient with a trapezoidal estimation (Heshmati 2004, eq. 2). The estimate is most accurate when representing each income group with its average income (Seiver 1979), but average income can only be computed for the group $200,000 and above. Therefore, we used the midpoint of each group as the starting point for the other fifteen groups and then adjusted these midpoints by a constant proportion so that the total income in the county equaled that the total county income reported by the Census Bureau.

|  | | | Number of Criteria Satisfied | | | |
| **Variable** Per 1,000 population aged 25+ or 25-34 | **Prosperous** | **Others** | **3** | **2** | **1** | **0** |
|---|---|---|---|---|---|---|
| High school graduate or more | 827 | 733 | 785 | 736 | 687 | 661 |
| Some college, less than one year | 444 | 375 | 419 | 374 | 332 | 346 |
| One or more years of college | 360 | 304 | 340 | 303 | 267 | 282 |
| Associate's degree or more | 221 | 180 | 204 | 181 | 156 | 163 |
| Bachelor's degree or more | 156 | 131 | 147 | 132 | 111 | 120 |
| Master's degree or more | 44 | 42 | | | 38 | 41 |
| Professional school degree | 14 | 12 | | 13 | 11 | 12 |
| Doctorate degree | 3.2 | | | | 2.6 | |
| Females 25-34 with high school degree | 919 | 840 | 880 | 839 | 813 | 769 |
| Females 25-34 with some college | 633 | 497 | 562 | 491 | 447 | 429 |
| Females 25-34 with college degree | 224 | 162 | 195 | 160 | 135 | 130 |
| Males 25-34 with high school degree | 890 | 784 | 836 | 784 | 747 | 705 |
| Males 25-34 with some college | 525 | 388 | 461 | 380 | 329 | 326 |
| Males 25-34 with college degree | 170 | 118 | 149 | 117 | 90 | 94 |
| Male-female high school gap | -29 | -55 | -44 | -56 | -66 | -64 |

Table 15. Educational attainment, rural non-core counties, 2000

The prosperous counties have more educated younger cohorts compared to other counties, too. For example, in the prosperous counties 63% of females and 53% of males aged 24-34 have some college education compared to 50% and 39% in all other counties (Table 15). For every education level, females aged 25-34 have higher attainment than males. The gender gap starts in high school. Defined as the male minus the female attainment, the high school gap is -2.9 percentage points in the prosperous counties and -5.5 percentage points in all other counties. For some college, males lag females by more than 10 percentage points in every county type.

Knowledge workers and the creative class have become relatively recent foci of economic development discussions (Markusen 2000; Florida 2002a, 2002b, 2003, 2005a, 2005b; Henderson and Abraham 2005). Proponents of these theories argue that relatively high proportions of the work force in certain occupations bode well for a place's future through innovation, information, and knowledge. A small offshoot of this literature argues that the presence of a gay community offers similar benefits and signals another competitive advantage, a tolerant community. There are fewer, not more, same sex partner households in prosperous counties, but the numbers provide some support for the creative class and knowledge occupation theories with respect to rural prosperity (Table 16). Creative class occupations account for 21.4%

of jobs in prosperous counties and 20.8% in others, but the difference is larger for knowledge occupations, 30% versus 27%.

| | | | Number of Criteria Satisfied | | | |
| Variable | Prosperous | Others | 3 | 2 | 1 | 0 |
|---|---|---|---|---|---|---|
| Creative class as percent of occupations | 21.4% | 20.8% | 20.8% | 20.8% | 20.4% | |
| Super-creative class as percent | 8.7% | | | | | 10.4% |
| Knowledge occupations as percent | 29.9% | 27.3% | | 26.6% | 24.6% | 27.2% |
| Households with same sex partners per 1,000 households | 3.1 | 4.4 | 3.7 | 4.5 | 4.7 | 5.5 |

Table 16. Creative class and knowledge workers, rural non-core counties, 2000

Prosperous counties have more social capital on several measures (Table 17). In determining that counties with more social capital had more per capita income growth, Rupasingha, Goetz, and Freshwater (2000) measured social capital as the "density of associational activity" and added the number of establishments in each county that are bowling centers, public golf courses, membership sports and recreation clubs, civic and social associations, religious organizations, labor organizations, business associations, professional organizations, or political associations." Gathering places such as eating and drinking places and golf courses and country clubs are often considered, too, and counties with more such organizations and places have richer social networks and more social capital as a result of these interactions (Putnam 1993, 1995, 2000; Flora 1995; Helliwell and Putnam 1995; Ladd 1996; Knack and Keefer 1997). Adding together the bowling centers, food service and drinking places, golf courses and country clubs, and religious, grant making, and civic organizations reported in *County Business Patterns*, prosperous counties have 4.4 such social capital establishments per 1,000 residents compared to 3.2 in other counties; this social capital measure decreases monotonically, reaching about half the prosperous county rate in counties that meet no prosperity criterion.

Prosperous counties have relatively more adherents to civically engaged religions, more proprietor income, more family farms, and more small manufacturing establishments, too (Table 17). Defined by Tolbert, Lyson, and Irwin (1998), civically engaged religions are as those whose adherents report an above average number of voluntary "affiliations with groups such as fraternal organizations, service clubs, labor unions, sports clubs or teams, hobby or garden clubs, and professional and trade organizations;" this affiliations measure was used by Putnam (1995) to

argue that social capital is declining.[9] Tolbert, Lyson, and Irwin (1998) also considered family farms, manufacturing establishments with fewer than 20 employees, and "third places," such as small food stores, cafes, drugstores, and barbershops, as indicators of local capitalism. Proprietor income is often used as an indicator of entrepreneurship (Low, Henderson, and Weiler 2005).

| Variable<br>Per 1,000 residents except if income | Prosperous | Others | Number of Criteria Satisfied | | | |
|---|---|---|---|---|---|---|
| | | | 3 | 2 | 1 | 0 |
| Total social capital establishments | 4.4 | 3.2 | 3.9 | 3.3 | 2.6 | 2.3 |
| Bowling centers | 0.07 | 0.03 | 0.06 | 0.02 | 0.02 | 0.02 |
| Food service and drinking places | 2.2 | 1.7 | | 1.8 | 1.3 | 1.2 |
| Golf courses and country clubs | 0.16 | 0.08 | 0.11 | 0.09 | 0.06 | 0.05 |
| Religious, grant making, civic organizations | 2.0 | 1.4 | 1.6 | 1.4 | 1.2 | 1.0 |
| Adherents to socially engaged religions | 379 | 197 | 272 | 188 | 143 | 117 |
| Proprietor income per capita | $2,826 | $2,090 | $2,514 | $2,227 | $1,587 | $1,457 |
| Family farms | | 66 | 47 | 44 | 31 | 27 |
| Small mfg establishments | 0.97 | 0.72 | 0.81 | 0.77 | 0.66 | 0.41 |

Table 17. Social capital, rural non-core counties, 2000

Demography

Population growth and rural prosperity do not proceed hand in hand. Prosperous counties average slower growth, 2% from 1990 to 2000 compared to 7% for other counties (Table 18). The counties that met no prosperity criterion grew fastest of all, 11%. The higher growth rates do not stem from smaller initial populations. The prosperous counties have the lowest average population.

Other indicators support the notion that prosperous counties are less likely to be undergoing demographic change. Smaller shares of the population are foreign born, foreign born who arrived in the nation during the past decade, or recent in-migrants from elsewhere in the U.S. (Table 18). Also, the elderly share of the population is larger, 19% versus 16% for all other counties and 12% for those meeting no prosperity criterion.

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[9] We updated the number of adherents to civically engaged denominations in each county using a 2000 survey of congregations of 149 religious bodies conducted by Glenmary Research Center (2002) and the civically engaged religions identified by Tolbert, Lyson, and Irwin (1998). Those religions are African Methodist Episcopal Zion, American Baptist, Church of Christ, Congregational Christian, Disciples of Christ, Episcopal, Jewish, Latter-Day Saints, Lutheran, Methodist, National Baptist Convention, Presbyterian, and Unitarian. The survey is incomplete, with, among others, 14 non-participating religious bodies that have more than 100,000 members each. Also 39 counties have more adherents than residents. The documentation provides a full discussion.

| | | | Number of Criteria Satisfied | | | |
|---|---|---|---|---|---|---|
| **Variable** | **Prosperous** | **Others** | **3** | **2** | **1** | **0** |
| Population, 2000 | 12,950 | 14,880 | | 15,441 | 17,321 | 16,192 |
| Population change, 1990-2000 | 2% | 7% | 5% | 9% | 8% | 11% |
| Elderly percent of population | 19% | 16% | 18% | 16% | 15% | 12% |
| Foreign born % of population | 1.7% | 2.5% | 2.4% | 2.7% | | 3.9% |
| Foreign born since 1990 % | 0.7% | 1.1% | 1.0% | 1.1% | | 1.8% |
| Net migration, age 30-39, 1995-2000 | 2.2% | | | | | -0.5% |
| In-migrants, 1995-2000, as % pop | 17.9% | 19.0% | 19.9% | 19.6% | | |

Table 18. Demographic change, rural non-core counties, 2000

Just as the literature probed the competitive advantages of specialization in a particular industry versus an agglomeration of interlinked industries, it has been examining ethnic and cultural diversity versus homogeneity (Knack and Keefer 1997; Collier 2001; Rudasingha, Goetz, and Freshwater 2002, 2006; Ottaviano and Peri 2006). Population diversity can bring new ideas, synergies, and competitive advantages, but a more homogeneous population can mean shared values, established social networks, and supportive institutions. Although prosperous counties have more diverse economies, they have a more homogeneous population, averaging 34% of the population claiming a single ancestry compared to 19% in other counties and 10% in those meeting no criterion (Table 19). What that common ancestry might be varies among counties; the results only show that a higher proportion of the population of a prosperous county shares the most commonly claimed ancestry in the county.

| | | | Number of Criteria Satisfied | | | |
|---|---|---|---|---|---|---|
| **Variable**<br>Per 1000 population | **Prosperous** | **Others** | **3** | **2** | **1** | **0** |
| Asian American | 4 | | | | | |
| American Indian | 10 | 45 | 20 | 28 | 57 | 171 |
| Black | 11 | 91 | 30 | 65 | 154 | 235 |
| Dutch or German ancestry | 355 | 182 | 262 | 178 | 121 | 83 |
| Hispanic | 23 | 64 | 56 | 67 | 51 | 123 |
| Maximum proportion with one ancestry | 343 | 187 | 258 | 181 | 135 | 96 |
| White | 967 | 842 | 929 | 883 | 773 | 559 |

Table 19. Race and ethnicity, rural non-core counties, 2000

Some literature and lore praise the innovation and skills of rural agricultural communities of Dutch or German ancestry (Salamon 1992). People claiming those ancestries are twice as common in prosperous counties, 36% versus 18% in all other counties, and 8% in counties meeting no criterion.

Prosperous rural counties have relatively few Hispanic, black, or American Indian residents. The prosperous counties average 2.3% Hispanic, 1.1% black, and 1.0% American Indian, but the counties that meet no prosperity criterion average 12% Hispanic, 24% black, and 17% American Indian (Table 19). The white share of the population is 96.7% in prosperous counties on average and declines monotonically to 55.9% in the counties that meet no criterion.

Race and Region

Race is much more fundamental to understanding rural prosperity than the mean differences suggest. Among the 260 rural non-core counties whose black residents constitute 10% or more of their populations, only six are prosperous. Only one of the 98 counties is prosperous where American Indians are 10% or more of the population. Similarly, among the 181 rural non-core counties in which Hispanics are 10% or more of the population, only 17 are prosperous. Examined in another way, 8% of the prosperous counties have at least one minority concentration, that is, American Indian, Asian American, Black, or Hispanic residents amounting to 10% of the population, but 45% of the other counties have a minority concentration and 86% of the counties meeting no prosperity criterion have a minority concentration. White residents are at least 90% of the population in all but 14 of the 289 prosperous rural non-core counties.

The regional divide of rural prosperity is as sharp as the racial divide. The Southeast, Southwest, and Far West have only 29 prosperous rural non-core counties out of 661, or 4%, whereas almost half the rural counties in the Plains are prosperous (Table 20). The most difficult prosperity criterion in the Southeast and Southwest is poverty; only 8% of their counties having lower poverty rates than the nation. Poverty is the most difficult criterion in the Plains, too, but 57% meet the criterion. Unemployment is the most difficult in the Far West, Mideast, and Great Lakes, but again the numbers vary, 10% attainment in the Far West and 47% in the Great Lakes.

| BEA Region | n | Prosperous | Percent of Counties Meeting Criterion | | | | |
| | | | Prosperous | Poverty | Unemployment | Dropout | Housing |
|---|---|---|---|---|---|---|---|
| Plains | 386 | 183 | 47% | 57% | 81% | 77% | 97% |
| New England | 18 | 7 | 39% | 61% | 61% | 100% | 83% |
| Great Lakes | 144 | 42 | 29% | 66% | 47% | 64% | 100% |
| Rocky Mountain | 135 | 24 | 18% | 36% | 59% | 67% | 77% |
| Mideast | 27 | 4 | 15% | 48% | 33% | 74% | 96% |
| Southwest | 191 | 10 | 5% | 8% | 57% | 55% | 92% |
| Southeast | 403 | 18 | 4% | 8% | 37% | 32% | 85% |
| Far West | 67 | 1 | 1% | 36% | 10% | 69% | 36% |

Table 20. Region and prosperity, rural non-core counties, 2000

A reasonable hypothesis is that the regional differences merely reflect racial ones. Reality is not so simple. Removing all counties in which at least one minority group, American Indian, Asian American, black, or Hispanic, is at least 10% of the population, increases the proportion of prosperous counties in every region but New England (which has no qualifying minority counties) but leaves the regional rank ordering unchanged (Table 21). The Plains has 176 prosperous counties out of 135 without a minority concentration, 51%, but only 7 prosperous counties out of 41 with a minority concentration, 17%. The Southeast, Southwest, and Far West do relatively poorly for counties with or without minority concentrations. Each has 4% or fewer prosperous counties with minority concentrations and 3% to 10% prosperous counties without minority concentrations. In all, 24 of the 514 counties with minority concentrations are prosperous, 5%, compared to 265 of the 857 counties without a minority concentration, or 31%.

| | | | Percent of Counties Meeting Criterion | | | | |
|---|---|---|---|---|---|---|---|
| BEA Region | n | Prosperous | Prosperous | Poverty | Unemployment | Dropout | Housing |
| Counties with at least one minority population of 10% | | | | | | | |
| Plains | 41 | 7 | 17% | 27% | 41% | 37% | 76% |
| Rocky Mountain | 37 | 4 | 11% | 19% | 46% | 38% | 62% |
| Southwest | 161 | 7 | 4% | 7% | 53% | 53% | 91% |
| Southeast | 224 | 6 | 3% | 4% | 31% | 23% | 76% |
| Far West | 37 | 0 | 0% | 38% | 3% | 57% | 24% |
| Great Lakes | 12 | 0 | 0% | 42% | 8% | 33% | 100% |
| Mideast | 2 | 0 | 0% | 50% | 100% | 50% | 100% |
| Counties without a minority population of at least 10% | | | | | | | |
| Plains | 345 | 176 | 51% | 61% | 86% | 82% | 100% |
| New England | 18 | 7 | 39% | 61% | 61% | 100% | 83% |
| Great Lakes | 132 | 42 | 32% | 68% | 50% | 67% | 100% |
| Rocky Mountain | 98 | 20 | 20% | 43% | 64% | 78% | 83% |
| Mideast | 25 | 4 | 16% | 48% | 28% | 76% | 96% |
| Southwest | 30 | 3 | 10% | 13% | 77% | 70% | 100% |
| Southeast | 179 | 12 | 7% | 12% | 44% | 42% | 96% |
| Far West | 30 | 1 | 3% | 33% | 20% | 83% | 50% |

Table 21. Region and prosperity by minority concentrations, rural non-core counties, 2000

Both region and race matter. Rural counties with minority concentrations are less likely to be prosperous within every region of the nation. Rural counties in the South and Far West are less likely to be prosperous whether or not they have minority concentrations. There are prosperous rural counties in every region and with each minority concentration, but the chances are less than 1 in 20 that a rural county with a minority concentration is prosperous.

**Toward a Comprehensive Picture**

The analysis thus far suggests that prosperous rural non-core counties have a robust mix of private sector industries, educated populations, strong social capital, stable population sizes, and relatively homogenous populations in terms of ethnic ancestry. They rarely have concentrations of American Indian, black, or Hispanic populations. Some popular explanatory factors or theories do not appear to account for which rural counties prosper, such as the role of the creative class, transportation infrastructure (including airports and highways), proximity to urban areas, and amenities. When mean differences on various measures of such factors are statistically significant, the actual differences are often inconsequential in a practical sense.

Yet, it is possible that the strength and relative importance of potential influences on rural prosperity would be different if considered jointly in a multivariate framework. There are also the confounding factors of region, race, and ethnicity. To what extent are some of the statistical findings thus far merely reflections of the regional and racial distribution of prosperity as opposed to determinants of prosperity? Ethnicity and ancestry illustrate the dilemma. For reasons not immediately clear, the Census Bureau ancestry data seem to have tabulations only for "non-Hispanic and nonrace groups."[10] Thus, the strong statistical results for the variable of maximum percentage claiming the same ancestry apparently refers to the non-Hispanic white population; the results might be made stronger by the regional distributions of rural American Indian, black, and Hispanic populations and the likelihood that the counties in which they live are not prosperous. The multivariate analysis attempts to disentangle these factors.

One option is to model the influence of various factors on prosperity using limited dependent variable regression techniques, where prosperity is a dichotomous measure indicating "prosperous" or "other." Instead, to simplify both the analysis and the interpretation, we elect to use an ordinary least squares regression approach with an index of rural prosperity as the dependent variable. Modeling prosperity as a continuous variable eliminates the need to consider alternative definitions of prosperous and other based on the four prosperity criteria and avoids throwing out information about the extent to which counties exceed or lag the national averages.

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[10] The Census documentation states, "The question was intended to provide data for groups that were not included in the Hispanic origin and race questions. Official Hispanic origin data come from long-form questionnaire Item 5, and official race data come from long-form questionnaire Item 6. Therefore, although data on all groups are collected, the ancestry data shown in these tabulations are for non-Hispanic and nonrace groups. Hispanic and race groups are included in the "Other groups" category for the ancestry tables in these tabulations. … For example, since Mexican is shown in the Hispanic origin tables, it is not shown in the ancestry tables. Likewise, since Korean is shown in the race tables, it is not shown in the ancestry tables."

We constructed the index as the sum of the difference of the county's rate from the national rate of poverty (POVR), unemployment (UR), high school dropouts (DOR), and housing problems (HPROB):

$$PROSP_i = (POVR_{US} - POVR_i) + (UR_{US} - UR_i) + (DOR_{US} - DOR_i) + (HPROB_{US} - HPROB_i)$$

where the subscript $i$ indexes the county and $US$ the national value. All data are from the year 2000. A county at the national average on all four rates takes a value of zero. The index is higher for relatively prosperous counties—those with poverty, unemployment, dropout, or housing problem rates below the national average—and lower for relatively less prosperous counties. For 1,371 non-core rural counties, the index ranges from -148.3 to 48.8, with a mean of 3.1, median of 4.9, and standard deviation of 17.6.

We specified the multivariate model in an ad hoc procedure that utilized a stepwise algorithm to select variables. This procedure selects variables that lower the Akaike Information Criterion (AIC), a measure that reward goodness of fit but penalizes the number of covariates. A model that minimizes the AIC should have high explanatory power (i.e. a high R-square) using a relatively small number of variables. The stepwise algorithm begins with no variables and adds or subtracts the single variable in each step that causes the biggest decrease in the AIC. The final model is one where no single addition or subtraction can decrease the AIC. Because the algorithm proceeds stepwise, the resulting model is a local optimum that depends upon the initial model. Experimentation with various starting models suggests that the local optima are similar.

Spatial lags may be an important explanatory variable because missing covariates are often similar in neighboring counties. The addition of a spatial lag (an average of the prosperity index of neighboring counties) can reduce bias in the estimation of the coefficients of the model. Multivariate spatial models require a weights matrix to specify how the prosperity indexes of a county's neighbors are averaged. One of the most common types of weights matrix averages all counties that are adjacent to a given county. Since rural, non-core counties are scattered throughout the country and are not always adjacent to one another, construction of such an adjacency matrix is difficult, but tractable. We used county centroids to construct Thiessen Polygons that divide the country into shapes, where the area within the shape is closer to that centroid than to any other centroid. Our weights matrix averages the prosperity index in all neighbors whose Thiessen Polygon is adjacent at a line or point. Since Alaska and Hawaii are far from their neighbors, we excluded those states from this analysis.

The stepwise algorithm uses OLS to estimate models. When a spatial lag of the dependent variable is included in the model, OLS is biased due to the endogeneity of the lag, but the speed of OLS allows the stepwise algorithm to be tractable. The bias caused by using OLS is small and acceptable due to the ad hoc nature of our model specification. After the exploratory phase with the OLS models, we calculated final models with maximum likelihood estimation, which is unbiased with a spatial lag of the dependent variable.

After specifying the model via the stepwise algorithm, we analyzed the correlations of the included variables. Because highly correlated variables suffer from multicollinearity, they may obfuscate the coefficient estimations. Therefore, when any pair of the included variables had a correlation of 0.75 or more, we removed one of the two variables from consideration as a possible covariate and reran the stepwise algorithm. After the algorithm produced a model without high correlation among variables, we estimated it removing all variables with a p-value above 0.10 until all covariates had coefficients with p-values below that threshold.

The resulting model is the result of an exploratory specification search, and assumptions underlying the statistical properties of hypothesis testing are violated. We adopted this strategy because our goal is to gain a better understanding of the correlates of prosperity and the strength of their association more than to test specific theories. Also, since we are analyzing a population rather than a sample, hypothesis tests are less important.

After choosing the variables for inclusion in the model, we ran an OLS regression of the model without the spatial lag in order to conduct specification tests for spatial models. During the variable selection stage, the spatial lag is easily the first variable chosen for inclusion and continues to have a large effect on the AIC throughout the process suggesting that the spatial lag model is appropriate. Lagrange multiplier (LM) tests of the null hypothesis of a nonspatial model against an alternative of a spatial lag model supported this contention. [11]

We made the final estimate of the spatial model by maximum likelihood estimation, which is unbiased with the presence of a spatial lag. Table 22 summarizes the results. The last column presents standardized estimates that result from the transformation of all non-binary variables to a z-score. They can be interpreted as the change in the prosperity index, in standard

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[11] The LM lag test produced a test statistic of 49.189 and the robust LM lag test had a statistic of 14.541, both of which convincingly reject the nonspatial model with p-values of zero. The LM error test was 47.863 and the robust LM error test was 13.215, both with p-values of zero, which also suggests that a spatial error model could be appropriate. Specifications with larger number of covariates, however, resulted in error tests that did not reject the null hypothesis.

deviations, by a one standard deviation increase of the explanatory variable or when the binary variable equals one. This transformation enables an easier comparison of the magnitude of the coefficients since all variables have the same scale.

The most important variable in terms of the standardized estimates is the proportion of the population aged 25 or above who graduated high school. Education is linked positively and strongly to rural prosperity. The second and third most important variables reflect the legacy of the nation's racial history and policies. The percentages of the population that are American Indian or Black are linked negatively and strongly to rural prosperity, even when all the other county factors are considered.

Table 22 groups the findings in the same order as the earlier discussion beginning with geography and ending with regions, and it sorts variables within each group by the absolute value of their standardized estimates. Some highlights for each group are discussed here, pointing out links to rural development policy that are worth exploring. All variables are per 1000 residents unless specifically identified as percents, per capita, binary variables such as hills and mountains, retirement county, or a region, or units such as the Gini coefficient, sunshine days, miles, or population density.

The most powerful geographic variable is hills and mountains, the most rugged topography, which has a negative relationship with prosperity, as does open hills and mountains, the second most rugged. Among the counties classified as hills and mountains, the ones with the lowest prosperity indexes are chiefly in Appalachia and several western states. The western counties all have American Indian or Hispanic concentrations, serving as a reminder of the nature of multivariate analysis. Topography is capturing a dimension of the link to prosperity not captured by the other variables. The results for density, miles to an urban area of 20,000, and percent of the county population in rural areas suggest that there are prosperity benefits to being more rural, i.e. sparsely settled and farther from a city. Higher levels of population density are associated with less prosperity, while greater distance to urban areas with a population of 20,000 and greater percent of rural residents are linked to greater prosperity. The only climate variable is unsurprising; more sunshine days are positively related to prosperity.

Table 22. Maximum Likelihood Estimation, Multivariate Spatial Model of Prosperity

| Variable | Parameter Estimate | Standard Error | p Value | Standardized Estimate | |
|---|---|---|---|---|---|
| Intercept | -34.835 | 5.850 | 0 | -0.088 | *** |
| Spatial Lag Coefficient | 0.167 | 0.024 | 0 | 0.167 | *** |
| *Geography* | | | | | |
| Hills and mountains | -2.869 | 0.719 | 0 | -0.169 | *** |
| January sunshine hours | 0.034 | 0.008 | 0 | 0.066 | *** |
| Population density | -0.041 | 0.012 | 0 | -0.063 | *** |
| Open hills and mountains | -0.966 | 0.496 | 0.051 | -0.057 | * |
| Miles to urban area of 20k | 0.028 | 0.009 | 0.002 | 0.045 | *** |
| Rural population (%) | 0.026 | 0.011 | 0.020 | 0.033 | ** |
| *Economy* | | | | | |
| Gini coefficient, income distribution | -66.975 | 7.753 | 0 | -0.150 | *** |
| Foot loose manufacturing | 0.044 | 0.007 | 0 | 0.095 | *** |
| Mining | 0.120 | 0.018 | 0 | 0.084 | *** |
| Total private non-farm | 0.012 | 0.004 | 0.002 | 0.073 | *** |
| Valued added resource mfg | 0.035 | 0.008 | 0 | 0.065 | *** |
| Herfindahl index, CBP 4-digit | -18.046 | 3.971 | 0 | -0.062 | *** |
| Farming | 0.018 | 0.007 | 0.018 | 0.061 | ** |
| Government payments to farming per capita ($) | 0.001 | 0 | 0.001 | 0.058 | *** |
| State and local government | 0.024 | 0.007 | 0 | 0.057 | *** |
| Military | 0.331 | 0.101 | 0.001 | 0.047 | *** |
| Wholesale trade | 0.063 | 0.023 | 0.007 | 0.035 | *** |
| Federal civilian | 0.038 | 0.017 | 0.024 | 0.029 | ** |
| Transportation | 0.046 | 0.026 | 0.069 | 0.021 | * |
| *Human and Social Capital* | | | | | |
| HS Graduate or More (25+) | 0.084 | 0.005 | 0 | 0.451 | *** |
| Jobs relative to employed residents | -14.381 | 1.993 | 0 | -0.150 | *** |
| Knowledge occupations (%) | -0.372 | 0.085 | 0 | -0.133 | *** |
| County workforce living in county (%) | -0.124 | 0.029 | 0 | -0.068 | *** |
| Age 25-44 with college degree | 0.015 | 0.006 | 0.015 | 0.049 | ** |
| Male-female high school gap | -0.011 | 0.003 | 0 | -0.046 | *** |
| Adherents to engaged religions | 0.004 | 0.002 | 0.010 | 0.042 | *** |
| Creative class occupations (%) | 0.188 | 0.106 | 0.076 | 0.038 | * |
| Small mfg establishments | -0.855 | 0.431 | 0.047 | -0.025 | ** |
| Households of same sex partners | -0.135 | 0.075 | 0.069 | -0.021 | * |
| *Demography* | | | | | |
| American Indian (%) | -0.051 | 0.003 | 0 | -0.279 | *** |
| Black (%) | -0.025 | 0.002 | 0 | -0.217 | *** |
| Elderly (%) | 0.675 | 0.070 | 0 | 0.158 | *** |
| Maximum single ancestry (%) | 0.017 | 0.003 | 0 | 0.125 | *** |
| Retirement county | -1.824 | 0.613 | 0.003 | -0.107 | *** |
| Foreign-born (%) | -0.267 | 0.078 | 0.001 | -0.051 | *** |

| Variable | Parameter Estimate | Standard Error | p Value | Standardized Estimate | |
|---|---|---|---|---|---|
| *Regional controls* | | | | | |
| Southwest BEA | 6.526 | 1.028 | 0 | 0.383 | *** |
| Southeast BEA | 5.792 | 0.998 | 0 | 0.340 | *** |
| Basin and Range ERS | -3.035 | 0.890 | 0.001 | -0.178 | *** |
| Eastern Uplands ERS | 2.571 | 0.917 | 0.005 | 0.151 | *** |
| Mississippi Portal ERS | 2.502 | 1.169 | 0.032 | 0.147 | ** |
| Plains BEA | -2.439 | 0.706 | 0.001 | -0.143 | *** |
| Southern Seaboard ERS | 2.068 | 0.951 | 0.030 | 0.121 | ** |
| | | n | 1348 | | |
| | | Adjusted R-square | 0.844 | | |
| | | F statistic | 166.6 | | |

Statistically, the most important economic variable is the Gini coefficient of income distribution. Higher levels of income inequality are linked to less prosperity. All the employment variables have positive coefficients, showing again a link between employment opportunity and prosperity. Footloose manufacturing has the strongest link, suggesting that areas that can create or recruit jobs that could be located elsewhere are more likely to be prosperous. Value-added resource based manufacturing, which had a negative relationship to prosperity, is positively linked once other factors are considered in the multivariate analysis.

In a nutshell, prosperous counties have jobs. The parameter estimates suggest that different kinds of jobs have different effects on prosperity. On average every private, non-farm job per 1,000 residents is associated with an increase of 0.012 in the prosperity index plus another 0.044 if the job is in footloose manufacturing or 0.120 if it is in mining. Thus, an increase or decrease of 150 mining jobs in a county with 15,000 residents implies a gain or loss of 1.3 percentage points in the prosperity index. Farm employment has a 0.018 coefficient, state and local government, 0.024, and federal civilian employment 0.038, with military employment having the strongest link of all at 0.331. The military finding suggests more research into the location and role of military bases in rural non-core counties could be worthwhile. The result for the Herfindahl index echoes the calls for diverse economies; more specialization and a higher index are associated with less prosperity.

Education dominates the human and social capital outcomes. In addition to high school graduation of the county's residents, 25-44 year olds with college degrees are positively linked to prosperity. Also, the male-female high school completion gap of 25-34 year olds is negatively

associated with prosperity; the more women completing high school relative to men, the more prosperous the county. The meaning of this variable is somewhat unclear. At one time, girls were not educated to the extent that boys were, and the gap reflected a developmental stage in women's education and equality. Today, the average gap reflects men dropping out of school while women persist.

Having controlled for education, the percentage of jobs that are in knowledge occupations is negatively associated with prosperity while the percentage in the creative class (a subset of the knowledge occupations) is positively linked. The finding for the knowledge occupations is surprising, in part because those management, professional, and technical occupations usually require high school, if not college, educations. Education matters, however, in far more occupations than those dubbed the knowledge occupations, and the combined results suggest the possibility that a rural community is less likely to be prosperous, given its education levels, if it is top heavy in management, professional, and technical occupations.

Another puzzle that merits further exploration is the relationships among commuting, jobs, and rural prosperity. The number of jobs relative to employed residents has a negative association with prosperity, when other variables are considered including jobs per capita. The percentage of the county's workforce that lives in the county is also negatively linked to prosperity. Thus, more jobs per capita and more in-commuting, but fewer jobs relative to employed residents, are associated with more prosperity. The combined picture is one of various forces counteracting each other in ways that are not obvious.

The strongest of the social capital variables is the adherents to civically engaged religions, with a positive effect. Two other social capital variables enter negatively, small manufacturing establishments and households with same sex partners. They are dwarfed by the population with the same ancestry, which is discussed under demographic variables.

Several of the demographic variables have very strong relationships with prosperity, beginning with American Indian and black population percentages, but also including the elderly and same ancestry percentages. The percentage of the population claiming a single ancestry has a positive relationship to prosperity, as was the case in the analysis of means. It complements the American Indian and black variables in part because of the way the Census Bureau defined it to measure ancestry of the white, non-Hispanic populations. That the percentage elderly is positively associated with prosperity contradicts the common view of declining rural places

whose populations are aging in place. Controlling for the percentage elderly and other factors, being an ERS-identified retirement county is negatively associated with prosperity. The foreign-born percent enters the equation negatively, consistent with accounts of poverty, seasonal unemployment, school dropout rates, and poor housing conditions in counties with migrant farm workers and other immigrants with limited educations. Conspicuous by its absence is the Hispanic variable, which suggests that, unlike the black and American Indian cases, the multivariate equation captures the factors that make counties with Hispanic concentrations less likely to be prosperous.

The relationship of the regional variables to prosperity is more difficult to interpret. They may be capturing differences in the effects of variables across regions or the effects of factors not considered in the equation. One way to interpret the regional results is that, after considering everything else in the equation, the Southeast and Southwest regions have a positive association with prosperity, and the Plains has a negative relationship. These results are the opposite of what the simple data tabulations show (Table 20) and reflect the *ceteris paribus,* or everything else considered nature, of multivariate regression. Likewise, the farm resource regions with the three lowest prosperity rates (Table 13) entered the equation with positive signs, while a more prosperous farm resource region entered with a negative sign.

Summarizing the results into a general portrait, a prosperous non-core rural county has higher education levels, more private sector jobs, a more diverse economy, more sunshine, more farming, more farm payments, more elderly, more adherents to civically engaged religions, more people with the same ancestry, more equal income distribution, and fewer residents who are not white.

**Conclusion**

Rural prosperity exists. It is a part of the rural landscape that merits policy acknowledgement and response. Some argue that rural development policy is only about ameliorating wretched conditions in the most distressed of rural places ("farmland and backwoods areas that were isolated and poor, struggling to keep their heads above water," in the words of the *Washington Post,* April 16, 2007). That argument should be rejected. Decades ago Congress decided that urban development policy is not only about the worst off—the Bronx, Miami, Los Angeles, New Orleans, Baltimore, St. Louis, El Paso, and Philadelphia, among urban counties today. Federal funds for urban development go to all cities as a matter of

entitlement. Restricting rural development funding to persistently poor, declining places is outmoded thinking with a strong urban bias. Most rural people live in growing places (Isserman 2007), and rural growth and prosperity, not only decline and poverty, are legitimate, important dimensions of rural development policy.

Prosperity is a valuable lens through which to view rural development. Its definition here has direct policy implications: reducing poverty and unemployment and improving educational attainment and housing condition. None of these goals is new; all are well established federal program areas. The exploratory research conducted here suggests or confirms some ways these programs might be designed to foster rural prosperity.

Jobs, education, and income distribution are strong, intertwined correlates of rural prosperity. The link between income equality and prosperity suggests the importance of building a larger middle class through upward mobility to reduce household income inequality. Jobs and education translate into higher household incomes. Likewise, business development and loan programs foster the creation of a stronger middle class. The findings suggest that private sector jobs are particularly important and that some sectors have larger effects than others, but economic diversity is worth pursuing. Thus, industry cluster strategies make more sense if they do not focus on expanding a single industry, but seek to support the establishment and growth of multiple specializations. Educational attainment, more than any other variable, differentiates prosperous from other rural places. Fortunately, the high school dropout rate can be monitored annually to evaluate the effectiveness of rural development programs designed to help communities keep their kids in school.

The strong empirical findings for rural places with American Indian and black populations are forceful reminders that the U.S. has not overcome the legacies of its original racial policies. None of the other variables, and the rural development theories they represent, can explain the dearth of prosperous places with American Indian or black populations. This result argues against "color-blind" rural development policy that ignores race; conditions are worse in those rural communities than other factors predict. Although rural communities with Hispanic concentrations also are less likely to be prosperous, there is no negative Hispanic effect after the other variables are considered. A possible explanation is that the rural location pattern of Hispanic Americans is more market driven, newer, and more natural than the American Indian and black location patterns, which still reflect reservation and slavery policies.

The relatively weak findings for geographical factors that are impossible or expensive to change, including climate and distances to cities and major airports, are encouraging. They suggest that geography is not a general excuse for redlining out large areas of rural America. That argument, based on population growth prospects, does not seem relevant to rural prosperity. Only hills and mountains seem to be a geographical handicap for rural prosperity (yet 20 prosperous rural counties have that topography).

The findings on social capital are intriguing. Flawed as the measures are because they systematically under-represent people who are not white, the statistical links of common ancestry and civically engaged religions to rural prosperity suggest that programs designed with an understanding of the sociology of rural development are more likely to succeed. The findings call out for more detailed statistical analysis and for more evidence, examples, and ground truth to explain how the process suggested by the findings works. For now, the results support empirically what many rural people believe to be true: religious groups and other identities that bind people together and promote constructive action can really matter.

The positive link between farm payments and prosperity has two important implications. First, because others have found a negative association between farm payments and growth, it demonstrates again how rural development thinking focused on prosperity rather than growth may provide different policy ideas. Second, like other findings, it raises questions of cause and effect. By raising local incomes, farm payments can affect all four prosperity measures. On the other hand, higher farm payments might be the result of more social capital in the form of rent-seeking organizations that are politically successful (Rupasingha, Goetz, and Freshwater 2000, 2002, 2006).

The research here sought to determine whether there were any generalizations regarding why some places prosper and others do not. As such, it focused on the numbers, on averages. Another approach focuses on the effects of social systems and institutions in specific communities (see Duncan 1999). A third focuses on local action and keys to success: "But that prosperity does not happen on its own. It happens through solid and visionary leadership, having a "Can-Do" attitude and exhibiting a willingness to take risks. It happens through knowing what your town's strengths and resources are and how to leverage those strengths and resources. It happens through building a brand for your town, a concept that often prompts quizzical looks, yet one that successful small towns have embraced" (Schultz 2004, p. xiii)."

Combining the approaches and focusing on real places, changes over time, and how the factors identified in this study play themselves out would be valuable continuations of this research. The exceptional cases are of particular interest. For example, Plymouth, Sioux, and Carroll counties in Iowa; Putnam, Wyandot, and Paulding in Ohio; and Hancock in Illinois have the highest prosperity index scores among all rural non-core counties with more than 20,000 residents; each beats the nation by more than 25 percentage points, and Plymouth, Putnam, and Sioux do so by 32 percentage points. Why? Moody County, South Dakota, is the lone prosperous county with an American Indian concentration. The nine prosperous rural counties with more than 10,000 population and a minority concentration are King George, Madison, and Northumberland, Virginia; Giles, Tennessee, Simpson, Kentucky; Fayette and Gillespie, Texas; Watonwan, Minnesota; and Delta, Colorado. The five counties in Virginia, Tennessee, and Kentucky are 11%-27% black, and the four in Texas, Minnesota, and Colorado are 11%-16% Hispanic. The prosperous counties in the hills and mountains with more than 10,000 residents are Alleghany, Virginia; Lincoln, Wyoming; Perry and Ste. Genevieve, Missouri; Grand and Routt, Colorado; Fannin, Georgia; Carroll, New Hampshire; Oxford, Maine; Tillamook, Oregon; and Chaffee, Colorado. Research into these exceptional cases and others that standout in terms of rural development theories and the findings of this study will shed more light on why some rural counties prosper and others do not.

Policies to grow and diversify the local economy, encourage and help students complete school, make available local college options, nurture a middle class, and build on local social capital are consistent with the statistical findings of this report. So are stronger efforts aimed at the rural places with minority concentrations, of which only 1 in 20 are prosperous.

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