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The Association Between Natural Amenities, Rural Population Growth, and Long-Term Residents' Economic Well-Being*

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Abstract

Population growth in rural areas characterized by high levels of natural amenities has recently received substantial research attention. A noted concern with amenity-driven rural population growth is its potential to raise local costs-of-living while yielding only low-wage service sector employment for long-term residents. The work presented here empirically models long-term rural residents' economic well-being, making use of longitudinal data from the Panel Study of Income Dynamics. In general, the results suggest that long-term rural families residing in high-growth amenity and recreation areas tend to have higher annual incomes than do their counterparts in non-growth amenity/recreation areas, regardless of the sex, race, or age of the family head. However, higher costs-of-living in these areas supplant any relative gains in income. As such, these analyses provide empirical evidence of patterns inferred by earlier anecdotal evidence and case studies.

Rural areas characterized by high levels of natural amenities continue to experience relatively greater population growth than areas lacking desirable natural contexts (e.g., Johnson and Beale 1994; McGranahan 1999). Such growth has both positive and negative consequences. On the positive side, population influx may increase local tax bases and spur economic development (e.g., Deller et al. 2001; Green 2001; Power and Barrett 2001). A noted concern with amenity related growth, however, is that the rural development responding to such forces can lead to economic hardship for long-term residents. For example, increasing demand for housing in high amenity rural regions yields increases in the cost of living, with long-term residents employed in traditional industries unable to move into new sectors of employment growth (e.g., services, retail trade). Still, examinations of the economic implications of rural, amenity-related population growth tend mostly to be anecdotal (e.g., Ring 1995; Williams 1998), based upon case studies (e.g., Bergstrom et al. 1990; Howe, McMahon, and Propst 1997), or modeled with aggregate data (e.g., Deller et al. 2001; Henderson and McDaniel 1998; McGranahan 1999).

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These analyses specifically address the shortcomings of earlier research through empirical multivariate modeling, with a nationally representative secondary dataset, of the economic well-being of long-term residents in rural, high amenity and growth counties. The results suggest the importance of examining amenity-related migration and the impact on economic well-being for long-term residents. Additionally, the results address important policy questions and highlight significant new directions for future research.

Background

Rural demographic change often yields, or represents, important shifts in economic structure, local culture and policy, and environmental context (Johnson 1999; Shumway and Otterstrom 2001). This research focuses on the economic well-being of long-term residents of areas characterized by natural amenities and rural population growth. In doing so, this research examines how rural demographic change impacts non-migrants in a given environmental context. We first review recent work describing rural population redistribution, with a focus on natural amenities, demographic change, and their impact on long-term rural residents. Following, we examine descriptive work on rural economic conditions, as well as research specifically examining the economic impacts of amenity-related growth.

Rural Population Change, Focus on Natural Amenities

During the 1990s, rural areas experienced net in-migration representing a significant rebound as compared to the decade prior (Fulton, Fuguitt, and Gibson 1997). From April, 1990 to April, 2000, the population of nonmetropolitan counties grew by 5.3 million, or 10.3 percent, compared with only 2.7 percent during the 1980–1990 period (USDA 2000). Still, both decades were characterized by less demographic change than occurred during the 1970s when a “non-metropolitan rebound” ensued, an historically unique period in which rural areas experienced population gains relative to their metropolitan counterparts (e.g., Johnson 1999).

Contemporary research suggests that environmental amenities such as climate, topography, and water area are strongly associated with rural population change (e.g., Deller et al. 2001). Indeed, during 1970–1996, rural counties that were ranked low on an “amenities index” comprised of these positive environmental attributes experienced 1 percent average population change, as compared to 120 percent among counties ranked high on the index (McGranahan 1999). Beale and Johnson (1998) have also suggested that natural amenities serve as “pull” factors inducing in-migration of permanent or seasonal residents, while English et al. (2000) suggest that counties with higher levels of tourism are characterized by high natural amenity levels as well. Additional studies have found associations between population change and natural amenities either nationwide or regionally-specific (e.g., Nord and Cromartie 1997; Rudzitis 1999). Finally, Elliott (1997) also reports evidence of population deconcentration, 1965 through 1990, where larger metropolitan areas lost population as technological developments and rising personal affluence allowed an increasing number of households and firms to act upon residential preferences for smaller places offering quality-of-life benefits.

In McGranahan’s analysis (1999), several natural amenity measures (i.e., climate and topography) were related to population growth, even with other important correlates (i.e., economic composition, poverty, urban proximity) held constant. Of course, it must be noted that the concept of natural amenities is multi-faceted and can be reflected by empirical measures other than climate and topography. Additional relevant dimensions could include, for instance, the broader stock of natural resources, as well as opportunities for recreational activities (Deller et al. 2001; Goe and Green 2002).

Rural Economic Change, Focus on Natural Amenity Regions

As argued by Vias (1999:14), “jobs follow people” to many rural amenity regions. Power (1996) and Rudzitis (1999), among others (e.g., Deller et al. 2001; Kusmin 1994), have also noted the importance of environmental context within rural economic restructuring and, thereby, within rural economic opportunity (or lack thereof). More specifically, recent rural economic diversification (much like population growth) has favored areas with scenic amenities, such as the rural Rocky Mountain West, the North Lake Country (Wisconsin and Minnesota), and the West coast (McGranahan 1999). Other growth areas include portions of the eastern seaboard, areas nearby prosperous metropolitan areas, and east Texas and Florida (Drabenstott and Smith 1995).

Henderson and McDaniel (1998) specifically ask, “do scenic amenities foster economic growth in rural areas?”¹ They find that in the early 1990s, extensively scenic counties in the Midwest and along the Rocky Mountain front range added jobs at an average annual rate of 3 percent, compared with 1.7 for moderately scenic counties, and 1.4 for other rural counties. Real per capita income grew 1.2 percent annually for extensively scenic counties, compared with 0.4 percent for moderately scenic counties, and 0.1 percent for other rural counties. The reasons underlying these disparities were the rapid growth of the tourism industry and in-migration of retired persons. Shumway and colleagues (Shumway 1997; Shumway and Davis 1996) also find that retirees bring income and jobs to rural areas through the development of service and retail trade centers.

Rudzitis’ work, with a focus on the rural West, further implies that amenities attract highly skilled, highly mobile labor representing entrepreneurs, those willing to accept a lower paycheck for quality of life benefits, and individuals who can conduct their business remotely through the use of modern communications services (Rudzitis 1999; see also Deller et al. 2001). Indeed, such patterns are demonstrated in the aggregate as both employment and population growth have been higher in non-metropolitan counties with high levels of amenities (McGranahan 1999).

Rural Demographic and Economic Change, Implications for Non-Migrants

These shifts in rural demographics and economic opportunities yield other fundamental changes as well. Increased consumer demand for residence in high amenity rural regions yields potential negative outcomes for long-term rural residents, including concomitant cost-of-living increases, higher infrastructure costs, and altered public finances (Johnson 1999; Heimlich and Anderson 2001). Given cost-of-living increases (the “Aspenization” phenomenon [DeLeon 1996]), long-term residents, many engaged in traditional resource extraction, may find it increasingly difficult to afford their rural life. Some evidence suggests a decline in dependence in resource extraction has been replaced with economic diversification in, for example, many rural Western regions (Power and Barrett 2001). The analyses presented herein are designed to examine the implications of these patterns on long-term rural residents.

Also, population growth often brings traffic congestion, landscape change, and environmental degradation, as well as other quality of life impacts for long-term residents (Heimlich and Anderson 2001; Starrs and Wright 1995). Finally, new migrants to high amenity rural regions have been characterized as holding different perspectives on environmental issues such as land and resource management (e.g., Jones et al. 2003; Smith

¹Henderson and McDaniel (1998) identify scenic counties as those able to attract tourists. Counties with more than one scenic-based business are defined as extensively scenic, and those with one such business moderately scenic.

and Krannich 2000). As such, the influx of new migrants may also disrupt traditional political and religious constituencies (Arrington, Fox, and May 1976; DeLeon 1996).

Taking these changes in combination, as communities transition around them, long-term residents may find themselves engaged in “culture clash” (Smith and Krannich 2000), unable to “cash in” on shifting local employment opportunities and hampered by rising costs of living. Anecdotal evidence suggests that faced with high in-migration, some long-term residents leave, but others stay (e.g., Hodge 1981; Lichtenstein 2004; Sheck 2000). Our analytical focus is on those who have stayed, with examination of the meaning of these demographic and economic changes for their economic well-being. Specifically, we ask: *How does rural demographic change in areas characterized by high levels of natural amenities affect the economic well-being of long-term resident families?*

Data

We examine family economic well-being among long-term residents of rural counties using ten waves of data (1990–2001) from the Panel Study of Income Dynamics (PSID). The PSID is conducted at the Survey Research Center, Institute for Social Research, University of Michigan and is a longitudinal study of a representative sample of U.S. individuals (men, women, and children) and the family units in which they reside. The sample size has grown from 4,800 families (roughly 18,000 individuals) in the first survey year, 1968, to more than 7,000 families by the year 2001 survey (see Hill 1992 for more detail).

Contextual-Level Variables

The PSID is one of few studies that measures characteristics of economic well-being over many points in time, while also allowing access to geocodes under special contract. For our purposes, we merged family-level data with three aspects of the counties in which the study families reside: (1) characteristics related to natural amenities; (2) identification as a recreation area; and (3) population change 1970–1995. Classification of the level of natural amenities was based on USDA Economic Research Service (ERS) data reflecting six indicators of climate, topography, and water area that reflect environmental qualities that research suggests enhance an area’s attractiveness (McGranahan 1999). A composite scale is incorporated with the measure ranging from 1 “low amenity” to 7 “high amenity.” As with other work in this area, we identify counties with amenity scores greater than or equal to six (2+ standard deviations from the population mean) on the amenity scale as “high amenity” areas (McGranahan 1999).

The second contextual characteristic identifies rural recreation areas. We incorporate indicators developed by Johnson and Beale (1998, 2002) which make use of four county characteristics to identify recreational areas: (1) wage and salary employment in entertainment and recreation, accommodations, eating and drinking places, and real estate as a percentage of all employment reported in the Census Bureau’s County Business Patterns for 1999; (2) percentage of total personal income reported for these same categories by the Bureau of Economic Analysis for 1999; (3) percentage of housing units intended for seasonal or occasional use reported in the 2000 Census; and (4) per capita receipts from motels and hotels as reported in the 1997 Census of Business. The three variables measuring employment, income, and seasonal housing were standardized and summed, and counties with index scores of 0.67 or higher were regarded as potential recreation counties. Additional counties were considered to be recreation counties if their value was greater than 0 (the mean of the index) and they had at least \$400 per capita of hotel-motel receipts. Johnson and Beale (2002) individually appraised each potential recreation county to determine and verify the nature of their recreational function and confirm their recreational status. There are 329 recreation counties identified in the United States, with 121 (37

percent) ranking in the top quarter of McGranahan's natural amenity scale (Johnson and Beale 2002).

Given that this study's focus is on long-term residents of high amenity and/or recreation counties that also experienced relatively high levels of population influx, our third contextual characteristic represents population change at the county-level, 1970–1995. Using this time period allows identification of amenity and recreation areas that experienced more substantial influx during the non-metropolitan rebound of the 1970s as well as those with more modest rural gains of the 1990s. In addition, this range represents a variety of macro economic conditions, particularly important since national economic trends affect rural areas more during recessionary times. We identify counties with at least 30 percent growth over this 15-year period as “high growth.” Our focus counties are thus categorized as high-growth counties considered to be either high amenity or recreation counties (*High Growth Amenity Recreation* or “HGAR” as used in the presentation of results). Although the majority of HGAR counties are in the Western region ($n = 20$), there is substantial regional variation (mid-Atlantic = 4; Northeast = 3; Midwest = 11; South = 8; Southwest = 2).² In total, roughly 9 percent of our sample resided in HGAR counties during the study years.

Family Characteristics

For the purposes of this study, our sample is limited to families residing in a rural non-metropolitan county as defined by the USDA's Economic Research Service's Urban Influence Classification (see Table 1). In addition, we consider only long-term residents of these counties, defined as a family unit resident in the same rural county for at least 10 years or one that has moved only within the same rural labor market.³ As such, if a PSID family moved into a rural county (from outside the county's associated labor market area) during the study period, they are not represented within our data as they are not identified as long-term rural residents. Further, for those PSID families residing in rural counties at the study period's start, but who migrated away from the labor market area within the study window, their family income for the years resident in the rural county are incorporated in our study. In total, we examine the family income of 1,828 families characterized as long-term residents of rural counties during our 10-year study period. On average, information on families was collected five times ($s.d.=3.4$) with a minimum of one observation and a maximum of ten (see Table 2).

Our dependent variable is economic well-being, which we operationalize using annual family income. This variable is the sum of the taxable income of head and spouse, transfer income of head and spouse, taxable income and transfer income of other family unit members, and social security income. Across years, mean annual family incomes range from \$27,350 in 1990 to \$47,120 in 2001. All multivariate statistical models control for several important family-level characteristics, including householder age, sex, race, and education. Controlling for these characteristics is important since each is related to the economic outcome of primary interest. With regard to race, given limitations on sample sizes for other racial and ethnic groups, we limit our sample to families headed by non-Hispanic Whites and non-Hispanic Blacks. While the bulk of social scientists concerned with race differences

²We examined the utility of incorporating regional dummy variables in the multivariate models. They provided little explanatory power while not substantially altering our associations of primary interest and, as such, the models presented herein do not incorporate regional indicators.

³Delineation of rural labor markets has been undertaken by the USDA's Economic Research Service, with boundaries based upon the 1990 Census journey-to-work data. Labor market areas are based on population settlement patterns and commuting patterns (see <http://www.rupri.org/policyres/context/rlm.html> for additional detail). By defining our “long-term residents” as such, we identify households and individuals who resided in their rural region of residence either before the “non-metropolitan rebound” of the 1970s or migrated to the community during that rebound. We extend the geographic boundaries of long-term residents to the labor market area because our focus upon economic well-being is strongly tied to local opportunity and wage structures.

in economic well-being focus on urban settings (e.g., Wilson 1996; Massey and Denton 1993), it is important to control for racial characteristics of our study householders because racial variation in economic well-being is also pronounced in rural areas. Indeed, racial factors play important roles in shaping rural households' economic experience through difficulties related to differential access to important resources and differential exposure to known risks (e.g., Murry et al. 2002; Hargraves 2002).

We also control for educational attainment with a dummy variable differentiating householders with high school degrees or higher from those who have never completed high school.⁴ Here the key distinction will be those families with a head over the age of 65 years, where 13 percent of rural individuals are under poverty line. This contrasts with only 9 percent of all adults age 18–64 under the poverty line. Indeed, non-poor rural elders are much more likely than their metropolitan counterparts to become poor, even controlling for race, education, marital status, age, and other important individual characteristics (McLaughlin and Jensen 1993, 1995). Family structure is also important: Non-metropolitan female-headed households have lower family incomes and higher rates of poverty than those in metro areas (Lichter and Jensen 2001; Weber et al. 2002). It is suggested that non-metropolitan single mothers may have higher barriers to welfare receipt and lower economic returns from livelihood strategies than their metropolitan counterparts (Brown and Lichter 2004).

Statistical Methods

We evaluate the longitudinal relationship between county-level characteristics related to amenities, recreation, population growth, and family economic well-being using growth curve modeling (Verbeke and Molenberghs 2000). An extension of mixed modeling techniques, growth curve models can be used to describe temporal change in observations, and these methods are particularly useful if there are unbalanced observations per analytical unit (Snijders and Bosker 1999). In our case, the parameter estimates capture dependence among repeated observations, therefore allowing modeling of change across time for particular families as related to family and county-level characteristics. As for interpretation, two estimates are key: 1) the intercept represents, for our purposes, mean annual family income at the first time of observation (time = 0), while 2) the growth parameter describes the extent to which each group (as represented by the variable under consideration) departs, on average, from its initial level of family income over the subsequent data collection waves.

Statistically, this model can be expressed as a multi-level model described in equations 1–3 (see Raudenbush and Bryk 2002:160–203 for a detailed discussion of these modeling techniques):

$$y_{it} = \pi_{0i} + \pi_{1i}a_{it} + e_{it} \quad (1)$$

$$\pi_{0i} = \beta_{00} + \sum_{h=1}^{H_0} \beta_{0h}X_{hi} + u_{0i} \quad (2)$$

⁴Preliminary analyses suggested this was the most appropriate categorization for family head educational level.

$$\pi_{1i} = \beta_{10} + \sum_{h=1}^{H_1} \beta_{1h} X_{hi} + u_{1i} \quad (3)$$

According to this parameterization (equation 1), y_{it} , the observed value of annual income for the i th family on the t th measurement occasion (or survey year) is a function of an initial value (π_{0i}) and a rate of change (π_{1i}) plus random error (e_{it}). The value β_{00} (equation 2) provides an estimate for the initial average annual income, and the parameter estimates for β_{0h} capture offsets from (i.e., effects on) this average annual income associated with the h th family-level (e.g., family size, age, race, sex, and education) and county-level (e.g., HGAR and median home value) covariate. The residual term specified in equation 2 (u_{0i}) captures error in annual income for the i th family and is assumed to be independently and normally distributed with a mean of 0 and a variance of σ_{0i}^2 . Likewise, the average growth in annual income (π_{1i}) is estimated with β_{10} (equation 3). Further, β_{1h} describe the effects of the h th covariate on the rate of growth in annual income. The second residual term (u_{1i}), captures error in the growth of income for the i th family, and it is also assumed to be independently and normally distributed with a mean of 0 and a variance of σ_{1i}^2 . An unstructured covariance matrix for level-2 error is specified in all models. Accordingly, we also capture the covariance between the random intercept (u_{0i}) and the random slope (u_{1i}) with a covariance parameter estimate (σ_{u_0, u_1}). After controlling for the sources of variability across these nested levels, the observations are independent and standard errors are adjusted for the dependence between observations from the same family over time (see Verbeke and Molenberghs 2000 for a more detailed discussion). We use SAS 8.2 PROC MIXED to estimate all growth curve models (Littell et al. 1996).

Results

Table 3 presents descriptive statistics. For clarity, the data presented in Table 3 represent family characteristics for PSID respondents in 2001 (our final study year). Recall that families are not necessarily represented in the dataset in each year (i.e., they migrate out of the study area), and after examination of variation across time, the presentation of 2001 data was deemed representative of annual figures across the study period. In 2001, the annual income of families in HGAR counties was roughly \$9,000 more than families in non-HGAR counties ($p < 0.352$). However, as highlighted in the literature review, the magnitude of this difference is only properly understood relative to local cost of living. According to the estimates in Table 3, median 2001 home value in HGAR counties (\$136,480) was nearly double the median housing value in non-HGAR counties (\$75,795). In short, this implies that the socioeconomic advantages afforded families of HGAR counties may be offset by higher costs of living.

To better understand how rural families' socioeconomic status may be affected by HGAR residence, we present two sets of growth model estimates in Table 4. These models are especially useful because they allow consideration of other factors (both family- and county-level) related to economic well-being, while also allowing estimation of two important family-level parameters: (1) baseline economic well-being and (2) change in economic well-being over time. In the language of multilevel growth models, these values are, respectively, the intercept and slope for growth parameter. Importantly, we present estimates both *before* and *after* adjustment for cost-of-living as reflected by county median housing value.

With regard to the intercept, the value reflects annual family income at the first time of observation (time = 0). According to the results, families residing in HGAR counties had significantly higher levels of socioeconomic well-being relative to those in non-HGAR

counties ($b = 3.50$). This suggests an average difference in family income of \$3,500 between HGAR and non-HGAR county families, controlling for family size as well as the age, sex, education, and race of the family head. Although representing substantially less than the descriptive statistics suggesting nearly \$9,000 in difference across families, the relative variation remains statistically significant at the $p < 0.10$ level.

With regard to the control variables, male-headed families ($b = 13.48, p < 0.01$), non-Hispanic White families ($b = 9.10, p < 0.01$), and families in which the head had at least a high school education ($b = -9.94, p < 0.01$, for non-high school educated) fared better than their female, non-Hispanic Black, and less-educated counterparts.

The growth parameter describes the extent to which each group, on average, departs from its initial level of socioeconomic well-being over the subsequent data collection waves. The estimates provided in the “income growth” columns allow direct consideration of our primary research question: *Is population growth in high amenity rural areas associated with increased economic well-being among long-term families of these areas, particularly as contrasted with long-term families of rural areas lacking these characteristics?* These estimates suggest that although HGAR families had relatively higher initial levels of annual income, their annual incomes did not increase at a faster rate than families within other areas ($b = 0.53, p < 0.17$).

As for the control variables, male headed-families ($b = .82, p < 0.01$) had greater income growth than their female-headed counterparts. In addition, the incomes of families headed by less-educated adults were initially lower than incomes of families headed by those with at least a high school education, and they improved at a much lower rate over successive years as well ($b = -0.78, p < 0.01$).

As suggested by anecdotal and case study evidence, cost of living differences are critically important in considering impacts of population growth in high amenity rural regions. As such, our second model includes median housing value (year specific) in respondent families’ counties. According to these estimates, when considering the elevated cost of living within HGAR counties, HGAR families no longer have higher incomes relative to their non-HGAR county counterparts. Indeed, differential baseline and growth estimates (although not statistically significant) considering housing values indicate that HGAR county residents have initially lower relative incomes ($b = -4.04, n.s.$), and their incomes increased at a slower rate than their non-HGAR counterparts ($b = -.15, n.s.$).

To further explore these findings, we generated interactive models in which all family characteristics (i.e., family size and head’s sex, race, age, and education) were interacted with HGAR status, with the results revealing statistically significant estimates for male-headed families and those with less-educated heads (results not shown). The estimates indicate that income growth in HGAR counties is especially indicative of families headed by individuals with less than high school education ($b = 2.02, p < 0.05$), as well as families headed by women ($b = -1.68, p < 0.10$ for male-headed households). These results may suggest that socio-economically disadvantaged families are those most able to realize income gains as a result of local, amenity-related economic diversification.

Discussion

These analyses were motivated by a desire to begin filling a gap in the academic literature on the economic impacts of high population growth in rural amenity and recreation regions. Concern has been expressed that economic development responding to such forces yields economically deleterious conditions, such as low-wage service sector employment, with such employment simply being insufficient to meet the economic needs of local residents.

To explore these processes, we undertake empirical multivariate modeling of an economic outcome making use of a nationally representative secondary dataset. We focus upon long-term rural residents who have stayed in the face of demographic, economic, and cultural changes. The work was designed to supplement case studies and aggregate explorations of these associations (e.g., Bergstrom et al. 1990; Henderson and McDaniel 1998).

Our results provide some answers, but they also yield additional questions and important directions for future research. We make use of the Panel Study of Income Dynamics to model yearly income with a focus on long-term residents in rural areas characterized by varying levels of natural amenities and population growth.

In general, long-term rural families residing in high growth amenity and recreation areas tend to have higher family incomes than do their counterparts in non-growth amenity/recreation areas, this is true regardless of family size or the sex, race, or age of the family head. These results might suggest important economic benefits for long-term residents of rural growth areas. However, in an empirical sense, our models suggest that, on average, the income “gains” of residence in high amenity/growth regions are subsumed by cost-of-living variation as reflected by county-level median housing costs.

Interestingly, however, some subsets of the population continue to experience relative “gains” derived from living in high growth regions. Specifically, although characterized by substantially lower incomes in general, families headed by women or by less-educated individuals in high amenity/growth regions gain more than their counterparts in non-amenity/growth areas. Such may provide evidence of the increase in low-skill sector employment opportunities more readily available in growth regions. Certainly aggregate data on employment bear this out. That said, it is unlikely that these low-wage employment opportunities offer a viable livelihood in the face of the rising local costs of living often associated with natural amenity-driven population growth (e.g., Graves 1980; Ring 1995).

When situated within the larger rural sociological literature, these findings offer family-level empirical evidence of two suggested trends. First, although macro-level research often suggests the centrality of “Lone Eagles” and wealthy retirees in fueling rural economic change, Beyers and Nelson (2000) argue that the persistence of traditional economic sectors is often overlooked. They contend that sectors associated with the “Old West are alive and well” (Beyers and Nelson 2000:465). Our results support this by suggesting that long-term residents of rural amenity and growth areas tend to experience fairly stable, even slightly increasing, family incomes over the study period. In exploration of the occupational makeup of this group, it is apparent that traditional sector employment (e.g., agriculture, ranching) remains important in providing relatively stable levels of income to a substantial proportion of long-term rural residents. That said, their overall economic well-being may decline resultant of cost-of-living increases, not to mention the potential for “culture clash” resultant of migrant influx (e.g., Smith and Krannich 2000).

Second, as related to the larger literature, our findings also provide family-level indication that socioeconomically disadvantaged long-term residents (e.g., female-headed families, less educated family heads) appear to find relatively more economic opportunity in amenity growth counties as compared to counties without such growth. Several studies have indicated the importance of niche manufacturing in economic diversification of rural areas (e.g., Beyers and Nelson 2000; Winders 2000). Our results may reflect the ability of some long-term residents to “cash in” on increased low-skill employment. This can also be related to Vias’ (1999:14) contention that “jobs follow people” to many rural amenity regions, although it appears the new jobs attract primarily those long-term residents already at the

low end of the socioeconomic spectrum. Further, the issue remains that their overall economic well-being is not necessarily better as a result of local cost-of-living variation.

Next steps in this examination include a focus on transitions with regard to occupational prestige, and the development of various occupational sectors, resultant of demographic shifts in rural natural amenity/recreation regions. Such an exploration will provide us with a more thorough understanding of the economic forces and trends affecting socioeconomic well-being of long-term rural residents.

In sum, this research indicates that long-term resident families living in high-growth counties characterized by high natural or recreational amenities have higher annual incomes than their rural counterparts in non-growth, non-amenity/recreational counties. Whereas anecdotal research on rural amenity in-migration indicates both positive and negative economic effects, no work to date has examined this association at the national level. As such, this research begins to address this shortcoming by demonstrating a positive association with regard to one economic dimension (annual income) of long-term resident families located in high-growth, natural amenity rich, rural areas, although this positive association is clearly offset by higher local costs-of-living.

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Table 1

Urban Influence Codes, USDA Economic Research Service

Metropolitan Counties
1 Counties in large metropolitan areas of 1 million or more residents
2 Counties in small metropolitan areas of less than 1 million residents
Nonmetropolitan Counties
Adjacent to a large metro area and
3 Contains all or part of its own city of 10,000 or more residents
4 Does not contain any part of a city of 10,000 or more residents
Adjacent to a small metro area and
5 Contains all or part of its own city of 10,000 or more residents
6 Does not contain any part of a city of 10,000 or more residents
Not adjacent to a metro area and
7 Contains all or part of its own city of 10,000 or more residents
8 Contains all or part of its own town of 2,500 to 9,999 residents
9 Totally rural, does not contain any part of a town of 2,500 or more residents

Table 2

Number of Observations Per Family, Long-Term Rural Residents

Number of Observations	Number of Families
1	374
2	254
3	173
4	125
5	180
6	82
7	151
8	63
9	54
10	372

Source: 1990–2001 Panel Study of Income Dynamics.

Table 3

Descriptive Profile of PSID Data, Long-Term Rural Resident Families, 2001

	HGAR ^I	Non-HGAR ^I	sig.
County Characteristics			
Median Housing Value	\$136,480	\$75,795	$p < 0.00$
Family Characteristics			
Annual income	\$54,769	\$45,877	$p < 0.04$
Sex			
Female	26.50	29.10	
Male	73.50	70.90	$p < 0.53$
Race			
Non-Hispanic White	91.20	89.90	
Non-Hispanic Black	8.80	10.10	$p < 0.66$
Age			
<65	69.10	75.30	
65+	30.90	24.70	$p < 0.13$
Education			
Less than High School	22.90	26.10	
High School or Beyond	77.10	73.90	$p < 0.43$
Total	102	845	

^I HGAR = Resident in High Growth Amenity and/or Recreation County.

Parameter Estimates from Growth Curve Models of Economic Well-being for Long-Term Families, Rural PSID Respondents, 1990–2001

Table 4

	No Cost-of-Living Adjustment		Cost-of-Living Adjustment	
	Baseline Income	Income Growth	Baseline Income	Income Growth
County Characteristics				
High Growth Amenity and/or Recreation				
No (ref)				
Yes	3.50* (2.12)	0.53 (0.39)	-4.04 (2.62)	-0.15 (0.50)
Cost of Living				
Median Housing Value				
			0.18* (0.04)	0.01 (0.01)
Family Characteristics				
Family Size	2.41*** (0.46)	0.18* (0.10)	2.47*** (0.45)	0.19* (0.10)
Sex (of head)				
Female (ref)	—	—	—	—
Male	13.48*** (1.49)	0.82*** (0.32)	14.06*** (1.48)	0.78** (0.32)
Race (of head)				
Non-Hispanic Black (ref)	—	—	—	—
Non-Hispanic White	9.10*** (1.86)	0.80** (0.39)	8.85*** (1.85)	0.68* (0.39)
Age (of head)				
<65 years (ref)	—	—	—	—
65+ years	-2.22 (1.45)	-0.47* (0.28)	-1.75 (1.45)	-0.54* (0.28)
Education (of head)				
High School or Beyond (ref)	—	—	—	—
Less than High School	-9.94*** (1.41)	-0.78*** (0.28)	-9.38*** (1.41)	-0.76*** (0.28)
Residual Variance Components				
Intercept	391.69*** (23.63)		380.07*** (23.18)	
Slope	4.90*** (0.74)		4.96*** (0.75)	
Covariance	4.56 (3.09)		3.82 (3.06)	
Observation level	523.24*** (9.23)		523.09*** (9.27)	

Note: Cell entries represent parameter estimates and standard errors (in parentheses).

 $p < 0.01$;
 **
 $p < 0.05$;
 *
 $p < 0.10$.

All data obtained from the Panel Study of Income Dynamics (Nfamilies = 1828; Nobservations = 9060).