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Population Growth in High-Amenity Rural Areas: Does It Bring Socioeconomic Status Benefits for Long-Term Residents?

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ABSTRACT:

Objectives. A widely noted concern with amenity-driven rural population growth is its potential to yield only low-wage-service sector employment for long-term residents, while raising local costs-of-living. This research examines change in socioeconomic status during the 1990s for long-term residents of high-amenity, high-growth rural counties in the U.S. *Methods.* Using longitudinal data from the Panel Study of Income Dynamics, in combination with county-level information, we estimate growth curve models to examine the extent to which the socioeconomic status of long-term residents is associated with amenity-related in-migration. *Results.* We find that, on average, residents in high-growth, amenity-rich rural areas have higher income growth over time and higher levels of initial occupational prestige compared to those from other rural areas, but socioeconomic gains are primarily for individuals with low baseline prestige. *Conclusions.* The socioeconomic gains made by long-term residents of high-growth, amenity-rich, rural areas associated with net in-migration may be limited to individuals with low initial prestige and growth may be due to low-skill service sector jobs.

In recent years, rural areas characterized by natural amenities have experienced population growth at substantially higher rates than non-amenity regions (Graves, 1983; Johnson and Beale, 1994; Johnson, 1999; McGranahan 1999; Roback, 1988; Rosen, 1979). Beginning in the 1990s, net migration outpaced natural increases and became an underlying cause of rural population gains (Fulton, Fuguitt, and Gibson, 1997). Research suggests that migrants to amenity regions are drawn to favorable climates, attractive scenery, and various recreational opportunities (Deller et al., 2001). While the economic and demographic dimensions of these trends are fairly well documented, the *implications* of such growth have been less rigorously explored. There are theoretical reasons to believe that population growth could either benefit or harm the social and economic well-being of long-term residents. With a few exceptions (e.g., Hunter, Boardman, and Saint Onge, 2005; Reeder and Brown, 2005), nationwide, empirical studies exploring these impacts are sparse, as most existing research is based on small samples or case studies (Bergstrom et al., 1990; Howe, McMahon, and Propst, 1997; McKean et al. 2005; Williams, 1998). Our research seeks to build on our knowledge of the implications of rural growth for long-term residents by determining the change in socioeconomic status (SES) experienced by these residents, as compared with long-term residents of other rural regions. Such an understanding is important because growth and change continue to typify many amenity-rich rural regions across the U.S.

Theoretical and empirical examinations of amenity-related migration tend to focus on regional migration trends while often ignoring the specific impacts on long-term residents (see Garber-Yonts, 2004 for a useful review of amenity-related migration theories). Typically, anecdotal and empirical studies that address the impact of migration

have dichotomized the effects of amenity driven population growth into either positive or negative explanations for long-term residents, that we call *collective advancement* and *antipodal privilege*, respectively.

First, collective advancement models anticipate that both in-migrants and long-term residents will benefit from amenity-related in-migration (Johnson, 1999; Rudzitis, 1999; Shumway, 1997; Shumway and Otterstrom, 2001). According to Johnson (1999), population growth creates additional jobs in construction and increased demand for employees in retail and commercial services (see also Rudzitis, 1999; Shumway, 1997; Shumway and Davis, 1996; Vias, 1999). Compared to less desirable areas, scenic rural areas add jobs at higher rates and residents of these areas experience higher growth in real per capita income (Henderson and McDaniel, 1998). Also, research suggests that recreational development may transform relatively stagnant economies through in-migration of younger workers related to a proliferation of new goods and services and economic diversification (Reeder and Brown 2005).

Alternatively, an antipodal privilege perspective posits that long-term rural residents and new migrants occupy qualitatively different social locations. Thus, in-migrants may experience a privileged position within a changing economy. Often, new migrants to rural regions do not follow traditional economic theories of migration, have higher incomes, more education, occupations that are non-traditional by rural standards, and are not seeking socioeconomic gains (Rudzitis, 1999; Shumway, 1997; Shumway and Davis, 1996). Established professionals and seasonal service workers are thereby able to exploit current living costs and a changing economy at the expense to long-term residents. Population-related shifts in the local economy may actually harm long-term

residents who cannot adjust to changing employment options or increases in cost of living (Johnson, 1999; Heimlich and Anderson, 2001). In addition, even increasing economic opportunities do not guarantee improved economic conditions because some forms of amenity-related development tend to yield primarily low-wage service and/or seasonal positions while failing to stimulate or maintain development in high-wage and/or traditional regional sectors (McKean et al., 2005; Vias 1999), and in-migrants may have larger per-capita incomes that support service-based economies (Shumway and Otterstrom, 2001) which are likely to negatively impact the socioeconomic status of long-term residents.

From this perspective, new migrants benefit while long-term rural residents are placed at a disadvantage given the increases in cost of living, changing social milieu, and changing economies (Heimlich and Anderson, 2001; Johnson, 1999; Ring, 1995; Smith and Krannich, 2000; Williams, 1998). For example, Hunter, Boardman, and Saint Onge (2005), show that long-term residents in high growth, high amenity regions experience higher levels of income growth when compared to their low amenity counterparts. However, these gains are offset by the higher costs of living. In this sense, communities are not experiencing collective advancement with the influx of migrants and specific subpopulations are potentially gaining economic advantage at the economic expense of others (Gibson, 1993; Reeder and Brown, 2005).

Further, aggregate rises in *income* associated with rural population growth do not necessarily reflect increasing SES in a broad sense; greater incomes may result from increased participation in low prestige and/or low wage service-sector employment, although increases in wages or employment opportunities may trail cost of living

increases. Gains in income for the area may not reflect improved SES for all residents. Thus, there remains a question about the impact of growth on other aspects of SES. We focus on shifts in occupational prestige to further explore collective advancement and antipodal privilege explanations. We include occupational prestige as a component of SES to determine the impact of amenity-related migration. Whereas incomes vary significantly within occupations, occupational prestige only shifts as the result of a job change and is therefore a particularly useful measure of socioeconomic position.

To explore the association between population growth and improvements in socioeconomic status for long-term residents, we ask two research questions:

- (1) Do residents of rural, high-growth amenity and/or recreational counties have higher levels of income and/or occupational prestige than residents in rural counties without these characteristics?
- (2) Are long-term residents of rural, high-growth amenity and/or recreational counties able to translate amenities and growth into higher incomes and/or higher prestige over time?

DATA

We examine occupational status of the heads of families within rural counties using ten waves of data (1990-2001) from the Panel Study of Income Dynamics (PSID).¹ The PSID is conducted at the Survey Research Center, Institute for Social Research, at the 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 (see Hill, 1992, for more detail).

County Level Variables

This research makes use of family-level data nested within county-level data. The county-level data include information outside of the PSID and include (1) natural amenities, (2) identification as a recreation area, and (3) population change 1970-1995. To identify “rural” counties we use the USDA’s Economic Research Service’s Urban Influence Classification which takes into account adjacency to metropolitan areas and the size of the largest city within nonmetropolitan areas (Ghelfi and Parker, 1997). Rural areas are defined as nonmetropolitan areas that either are *not* adjacent to metropolitan areas or are adjacent to a small metropolitan area but do not contain any part of a city of 10,000 residents.

Classification of the level of natural amenities is based on USDA Economic Research Service (ERS) data reflecting climate, topography, and water surface area, all characteristics that enhance an area’s attractiveness (McGranahan, 1999). We follow the method used by McGranahan (1999) and use a scale ranging from 1 (“low-amenity”) to 7 (“high-amenity”). We identify 28 counties with amenity scores greater than or equal to 6 (2 or more standard deviations from the population mean) as “high-amenity” areas.

To identify rural recreation areas, we use the classification scheme developed by Johnson and Beale (1998, 2002) based on four indicators: (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. We identified 329 recreation counties, of which 121 (37 percent) also rank in the top quarter on McGranahan's natural amenity scale (Johnson and Beale, 2002).

Our third contextual characteristic is population change at the county level, 1970-1995. This time period incorporates the nonmetropolitan rebound of the 1970s, as well as the more modest rural gains of the 1990s (Johnson, 1999). We identify counties with at least 30 percent growth over this period as "high-growth."²

We use these three contextual characteristics to focus on the differences between rural families residing in high-growth counties that are also high-amenity and/or recreation counties (High-growth Amenity Recreation or "HGAR") and those rural residents who are *not* in HGAR counties. While the majority of HGAR counties are located in the West (n=16), there is substantial regional variation (Northeast =4; Midwest = 9; South =9). In total, an average of 10.2 percent of our sample resided in HGAR counties during the study years.

Family Characteristics

We define the heads of family units who have been living in the same rural county for 10 years, or at least the same rural labor market, as long-term residents. PSID families that moved into a rural county outside the county's associated labor market area during the study period are not included as long-term rural residents in our analysis. This time frame captures individuals and families who either resided in their rural region of

residence before the “non-metropolitan rebound” of the 1970s or migrated to the community during that rebound. We use the labor market area because our focus upon occupational prestige is strongly tied to local opportunity and wage structures. In total, we examine the occupational prestige of 1,372 families in rural counties during the 10-year study period. Due to migration out of the rural labor market, on average, information on families was collected an average of 4 times (min=1; max=10).

Dependent Variables: Family Income and Occupational Prestige Score

We use two measures of SES. The first is the annual family income. This 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 \$37,771 in 1990 to \$39,270 in 2001.

The second dependent variable is an occupational prestige score developed by Nakao and Treas (1992), which is based on the family head’s occupational code. The PSID uses occupational codes based on the U.S. Census, with classifications created by responses to questions regarding type of work, activities undertaken, and job title. The U.S. Census categorizes occupations into 12 major groups: professional, technical, and kindred workers; managers and administrators; sales workers; clerical and kindred workers; craftsmen and kindred workers; operatives; transport equipment operatives; laborers; farmers and farm managers; farm laborers and farm foremen; service workers; and private household workers (U.S. Census, 1982).

The prestige scale developed by Nakao and Treas (1992), is created from the Census Occupation scores and the 1989 NORC General Social Survey, in which respondents rated occupational titles in terms of their perceived social standings on the bases of power, worth, and status. These rankings were then tested for reliability and then combined to create a set of prestige scores (see Nakao and Treas, 1992, for a detailed discussion). These scores range from 0 to 100, and have variations within the 12 subcategories of occupations.³ Research suggests that occupational prestige is highly reliable across time (Hauser, 1982; Nakao and Treas, 1994), countries (Treiman, 1977), gender (Bose and Rossi, 1983), and race (Siegel, 1970). As examples of occupational prestige scores, the mean values within each broad category are as follows: farming, forest, and fishing occupations 35.57; extractive occupations 39.53; construction trades 39.28; and service occupations 34.95. There are also a range of values within subcategories. For example, values in the subcategory of “Construction Trade” range from 28.92 for a carpenter’s apprentice, to 31.36 for a tile setter, to 54.33 for a construction foreman. Within our sample, prestige ranges from 11.44 to 89.96, with a median value of 24.05; 75 percent of the sample individuals fall below an occupational prestige score of fifty-one.

Holding a job is one of the most important adult roles and occupation is arguably one of the most accurate indicators of social status (Hauser and Warren, 1997). Occupational prestige includes information about education and income, but may also indirectly measure a job’s physical demands, environmental conditions, and exposure to stress, social power, and/or control. Lifestyle and consumption patterns are also related to occupational prestige. More generally, research suggests that occupational prestige is a

reasonably accurate measure of socio-economic status, particularly when controls are included for income and education (Hauser and Warren, 1997). Further, occupational prestige is less prone than other SES indicators to measurement issues such as volatility and cohort effects (Hauser and Warren, 1997; Williams and Collins, 1995; Krieger and Fee, 1994). Most important to our present purposes, an examination of occupational prestige over time can represent upward or downward social mobility through changes over a career trajectory.

Control Variables

Several control variables are included in our models. We include education as a control for occupational selectivity, coded as a categorical variable differentiating family heads with high school degrees, college level education, and those who have never completed high school.

Our sample did not include individuals who were 65 years or older because post-retirement jobs may not indicate career prestige (Ruhm, 1990). We do, however, control for age by including the measure as both a continuous variable and a quadratic term. Age is important because occupations have specific age distributions influenced by task demands, nature of promotion, changing technologies, etc. (Kaufman and Spilerman, 1982). We assume that prestige will increase through prime working years, and then reach a limit owing to decline in growth opportunities, phased retirement, or postcareer occupations.

As for other control variables, race is strongly associated with occupational attainment, yet due to small sample sizes for some groups we limit this study to non-

Hispanic whites and non-Hispanic blacks. For a number of socially relevant reasons race influences access to economic resources that are important in pursuing occupational gains (Murry et al., 2002; Hargraves, 2002). As another control, adjacency to a metropolitan area is included according to the 1993 ERS Rural-Urban Continuum Code⁴ to control for the influence of metropolitan areas. Also included are ERS typologies of industry-dependence, including: farming, manufacturing, service, mining, and retirement destination.⁵ These typologies are based on labor and proprietors' earnings by place of work within rural counties (Cook and Mizer, 1994) and control for county level industrial composition. Finally, family size, median age of the county, and median household value are also included as controls, with household value reflecting cost of living differences across study counties.

METHODS

We evaluate the association between family and county-level characteristics and change in the socioeconomic well-being of families using growth curve modeling (Singer and Willett, 2003). This technique is particularly useful to describe temporal change in occupational status because of the unbalanced number of observations per family (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. The intercept represents the average socioeconomic status at the first time of observation (time = 0). The growth parameters describe the extent to which each group (as represented by the

variable under consideration) departs, on average, from its initial level of socioeconomic status over the subsequent data collection waves.

This multilevel model for growth is explained through the following equations:

$$y_{ij} = \pi_{0i} + \pi_{1i}X_{ji} + \varepsilon_{ji} \quad (1)$$

$$\pi_{0i} = \gamma_{00} + \sum_{h=1}^{H_0} \gamma_{0h}Z_{hi} + \zeta_{0i} \quad (2)$$

$$\pi_{1i} = \gamma_{10} + \sum_{h=1}^{H_1} \gamma_{1h}Z_{hi} + \zeta_{1i} \quad (3)$$

Equation 1 shows that the observed value of socioeconomic status (y_{ji}) for the i th family at time j (or observation number) is a linear function of an initial value of status (π_{0i}) and a rate of change (π_{1i}) plus an error term (ε_{ji}). The value γ_{00} (equation 2) provides an estimate for the initial average socioeconomic status, and the parameter estimates for γ_{0h} capture the effects of the family and county-level covariates on this average. The residual term specified in equation 2 (ζ_{0i}) captures the error for the i th family. This error term is assumed to be independently and normally distributed, with a mean of 0 and a variance of σ_{0i}^2 . The average growth in socioeconomic status (π_{1i}) is estimated with γ_{10} (equation 3) and γ_{1h} describes the effects of the h th covariate on the rate of growth. The second residual term ζ_{1i} , captures error in the growth of socioeconomic status for the i th family, and it is also assumed to be independently and normally distributed, with a mean of 0 and variance σ_{1i}^2 . The covariance between the random intercept (u_{0i}) and the random slope (u_{1i}) with a covariance parameter estimate (σ_{u_0,u_1}). We use SAS 8.2 to estimate all growth curve models (Littell et. al, 1996).

RESULTS

(Table 1 here)

(Table 2 here)

Table 1 presents descriptive statistics for all variables by HGAR status. Overall, HGAR residents earned an average yearly income that was \$3,737 more than their non-HGAR counterparts ($p < .02$) but residents of these areas did not differ in their average occupational prestige ($p < .15$). Differences in important individual and county-level characteristics across HGAR and non-HGAR areas are dealt with in the multivariate parameter estimates presented in Table 2 (Model 1). Once these differences are accounted for, the income differences among HGAR and non-HGAR residents are no longer statistically significant ($b = 2.67$, n.s.). To examine the possibility that incomes for residents of these communities may rise because of changes in the occupational composition of HGAR areas, a similar model is estimated using occupational prestige as the dependent variable (Table 2, Model 2). Although, HGAR residents initially report higher levels of occupational prestige compared to their non-HGAR counterparts ($b = 2.71$, $p < .05$) there is no corresponding increase in prestige ($b = -.25$, n.s.) as seen with income.⁶

During this time, manufacturing dependent counties witnessed significant declines in average yearly income ($b = -1.03$, $p < .05$) compared to counties with more divergent employment profiles. But, these same declines were not evident on occupational prestige ($b = -.16$, n.s.) suggesting that the composition of jobs in manufacturing dependent areas did not change over time, rather the relative income that

workers in these fields could demand either decreased or stagnated. Interestingly, areas designated as retirement destinations not only had initially high levels of occupational prestige, but they also witnessed increases in occupational prestige over this time ($b = .82, p < .05$).

(Table 3 here)

Although occupational prestige increases similarly for HGAR compared to non-HGAR residents, it is also possible that the income returns associated with HGAR residence are more pronounced among those with greater levels of average occupational prestige. To evaluate this possibility we perform separate analyses for those from the highest and lowest decile of occupational prestige in our sample. These results are important because they suggest that the socioeconomic returns among HGAR residents are primarily among those with the lowest levels of occupational prestige ($b = 1.95, p < .05$). Further, among those with relatively high occupational prestige, there is no significant difference in baseline income or change in income over time among HGAR and non-HGAR residents.

DISCUSSION

Many rural regions in the U.S., particularly those with natural amenities are experiencing high population growth. Previous work has described shifts in occupational opportunities or costs of living and changing social milieus in these areas (Ring, 1995; Williams, 1998; Smith and Krannich, 2000), but nationwide empirical research has thus far been limited. with some research suggesting that while long-term residents of rural growth areas experience rising incomes, these gains are in connection with rising costs of living which often disadvantage long-term residents (Hunter, Boardman, and Saint Onge,

2005). We extend and expand upon these analyses by focusing on shifts in SES including both family income and occupational prestige.

The results of this study reveal that income was generally similar for families in HGAR and non-HGAR counties during our study period. Table 3 presents similar results with regard to income gains as revealed by Hunter et al. (2005). For higher status individuals, HGAR areas do not show significant returns in income. The current study extends this earlier work through a focus on particular sub-populations. Specifically, because of age restrictions in the present research, our sample is younger than that of Hunter et al. (2005) and is therefore more likely to show the importance of low-wage occupations in the HGAR models for income. We find that for a specific sub-population (individuals with low status occupations), HGAR areas have advantages to non-HGAR areas as HGAR residents exhibit increases in income over time, even with the inclusion of cost of living controls. We also expand on this earlier work by including occupational prestige into the assessment of SES because income gains may not necessarily reflect status improvement, per se. Rather, such gains may be resultant of increased participation in low prestige and/or low wage service sector employment.

Our results reveal that occupational prestige is higher for families in high-amenity, rural growth regions than for comparable families in areas with fewer amenities and less growth. This relationship holds even after controlling for a variety of factors associated with occupational attainment. Importantly, occupational prestige does not change over time for residents of either growth or non growth regions, suggesting that long-term residents are not experiencing high social mobility with the influx of amenity migration.

Relatively static prestige may indicate several things. As indicated, incomes may simply be increasing within the same occupational positions, which may be a result of cost of living increases associated with high-growth or merely a result of seniority and time-dependent wage increases that are not fully captured in these models. If family income is increasing more slowly than cost of living, HGAR residents who are exposed to higher median household values are increasingly disadvantaged. It is more likely that low-occupational-prestige residents are the ones who are benefiting from in-migration by working in low-skill service-sector jobs associated with amenity-related growth. First, the results show that living in service dependent counties positively impacts income and does not have an effect on prestige. This suggests that income gains may be occurring for low prestige workers. Second, the impact of HGAR on income only appears to impact low status residents. Therefore, while long-term residents appear to be making socioeconomic gains, this is only true for income and for select populations. Long-term rural residents with higher levels of prestige may simply find it difficult to move into new types of occupational positions and gain occupational prestige. In the meantime, the influx of new rural residents may lead to culture clashes, increases in cost of living, environmental degradation, traffic congestion, and/or overall decreases in quality of life (Smith and Krannich, 2000), which negatively impact long-term rural residents of HGAR areas.

The results in this study further explain collective advancement and antipodal privilege explanations of amenity-related growth. While some long-term residents are gaining in income, very few are advancing in occupational prestige. The gains that appear are limited to individuals with low occupational prestige, suggesting that in-migration into high-amenity, recreation areas create new low-wage, service sector jobs. This is

consistent with research demonstrating an economic restructuring in high growth regions from manufacturing to service-based economies (Frey, 1993; Frey and Speare, 1992).

Rural population gains in high-amenity areas have many consequences for long-term residents of these communities. This net in migration potentially impacts long-term residents through land-use management and demands (McCool and Kruger, 2001), cultural and sociodemographic differences (Alm and Witt, 1996; Graber 1974; Smith and Krannich, 2000), and changing economies and SES (Frey, 1993; Frey and Speare, 1992; Hunter et al. 2005). These results emphasize an antipodal privilege position, such that long-term residents and new residents occupy different social positions that place them at odds with one another. While the influx brings increased income for those in low positions, these individuals are not likely to experience higher occupational prestige or social mobility. Thus, while gains occur in income for a small segment of the population, there does not appear to be an increase in overall SES for most long-term residents.

Given the continued redistribution of population toward amenity-rich rural regions, empirical examination of such implications takes on tremendous policy importance. As shown, plans should be made to accommodate the socioeconomic changes that will affect long-term residents. Amenity-related growth does not always benefit the socioeconomic status of long-term residents, and residents and planners should take such long-term implications of an amenity-related boom into serious consideration when making growth related planning decisions.

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Table 1. Descriptives of PSID data, Long-term Rural Residents, 1990-2001

	<u>TOTAL</u>	<u>HGAR</u>	<u>Non-HGAR</u>	<u>Sig.</u>
Mean Annual Family Income	\$39,426.83 (34880.40)	\$42,771.68 (34784.52)	\$39,036.73 (34874.38)	p<0.15
Mean Occupational Prestige	33.84 (18.64)	32.65 (19.14)	33.98 (18.57)	p<0.02
County Characteristics				
<i>Cost of Living</i>				
Median Housing Value	\$61,429 (22571.39)	\$104,313 (27717.00)	\$55,965 (15881.00)	p<0.01
Median Age	34.51 (3.63)	34.26 (4.08)	34.65 (3.57)	p<0.11
% Adjacent to Metropolitan Area	49.27	38.56	50.52	p<0.01
<i>ERS Typology</i>				
% Farming Dependent	11.07	11.16	11.06	p<0.95
% Manufacturing Dependent	26.85	16.94	28.04	p<0.01
% Services Dependent	11.58	5.88	12.27	p<0.01
% Mining Dependent	5.17	4.25	5.28	p<0.32
% Retirement Destination	7.05	10.32	6.66	p<0.01
Family Characteristics				
Mean Family Size	2.65 (1.34)	2.90 (1.45)	2.63 (1.32)	p<0.01
<i>Sex (of head)</i>				
% Female	22.94	15.18	23.85	p<0.01
% Male	77.06	84.82	76.15	
<i>Race (of head)</i>				
% Non-Hispanic White	93.36	92.38	93.48	p<0.34
% Non-Hispanic Black	6.64	7.62	6.52	
Mean Age (of head)	43.47 (12.14)	43.69 (12.30)	43.43 (12.12)	p<0.66
<i>Education (of head)</i>				
% Less than High School	21.70	21.28	21.74	p<0.33
% High School	58.40	61.10	58.09	
% College	19.9	17.62	20.17	
Total	4844	494	4350	

HGAR=Resident in High Growth Amenity and or Recreation County

Significance is between HGAR and non-HGAR

Table 2. Parameter Estimates from Longitudinal Growth Curve Models for Total Family Income and Occupational Prestige for Long-Term Rural Residents, 1990-2001.

	Baseline Family Income	Income Growth	Baseline Occupational Prestige	Prestige Growth
	<i>Model 1</i>		<i>Model 2</i>	
County Characteristics				
<i>Intercept</i>	43.58*** (0.89)	2.12*** (0.23)	34.17*** (0.53)	0.21* (0.10)
<i>High Growth Amenity and/or Recreation</i>				
No (ref)				
Yes	2.67 (2.60)	1.58* (0.69)	2.71* 1.53	-0.25 (0.29)
<i>Cost of Living</i>				
Median Housing Value	-0.00 (0.00)	-0.00* (0.00)	-0.00 (0.00)	-0.00 (0.00)
<i>Median Age</i>	-0.19 (0.21)	0.00 (0.05)	-0.56*** (0.12)	0.00 (0.02)
<i>Adjacency to Metropolitan Area</i>				
No (ref)				
Yes	4.59*** (1.38)	0.61 (0.05)	2.26** (0.74)	0.19 (0.16)
<i>ERS Typology</i>				
Non-Specialized (ref)				
Farming Dependent	1.04 (2.29)	-0.68 (0.62)	4.93*** (1.20)	-0.01 (0.27)
Manufacturing Dependent	2.46 (1.52)	-1.03* (0.41)	1.94* (0.83)	-0.16 (0.18)
Services Dependent	5.36** (2.16)	-0.04 (0.57)	-1.54 (1.14)	-0.42 (0.24)
Mining Dependent	6.17* (3.13)	0.24 (0.78)	10.79*** (1.77)	0.19 (0.35)
Retirement Destination	4.88 (2.75)	-0.16 (0.76)	9.38*** (1.51)	0.82* (0.34)
Family Characteristics				
<i>Family Size</i>	2.28*** (0.45)	0.18 (0.13)	-0.78*** (0.22)	-0.06 (0.06)
<i>Sex (of head)</i>				
Female (ref)				
Male	14.98*** (1.55)	0.80 (0.45)	-4.34*** (0.82)	0.20 (0.21)
<i>Race (of head)</i>				
Non-Hispanic Black (ref)				
Non-Hispanic White	13.46*** (0.30)	1.02 (0.65)	4.87*** (1.11)	-0.02 (0.30)
<i>Age (of head)</i>				
Age	0.30*** (0.05)	0.05** (0.02)	0.06* (0.03)	0.08 (0.05)
Age ²	-0.03*** (0.00)	-0.00*** (0.00)	-0.01*** (0.00)	-0.00 (0.00)
<i>Education (of head)</i>				
High School or Beyond (ref)				
Less than High School	-7.98*** (1.51)	-0.27 (0.44)	-3.89*** (0.77)	0.24 (0.20)
College	10.18*** (1.53)	1.10** (0.41)	18.21*** (0.77)	0.13 (0.17)
Residual Variance Components				
<i>Intercept</i>	250.64*** (18.74)		137.12*** (7.45)	
<i>Slope</i>	4.46*** (0.97)		0.97*** (0.18)	
<i>Covariance</i>	19.96*** (3.22)		1.82 (0.97)	
<i>Observation level</i>	625.22*** (15.49)		84.98*** (2.34)	
<i>-2 Log Likelihood</i>				
Empty Model	48365.7		35394.6	
Full Model	45190.7		33043.7	

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

*** p<0.01, ** p<0.001, * p<0.05

All data obtained from the Panel Study of Income Dynamics (N_{families}=1372; N_{observations}=4259).

Table 3. Parameter Estimates from Longitudinal Growth Curve Models for Family Income for Upper and Lower 10% of Occupational Prestige Distribution

	<u>Intercept</u>	<u>Growth</u>
Lowest decile	-3.25	1.95*
[-2LL _{empty} 10057.1]	(3.56)	(1.02)
[-2LL _{Full} 9246.3]		
Highest decile	4.76	0.4
[-2LL _{empty} 10057.1]	(7.29)	(1.75)
[-2LL _{Full} 2966.5]		

Models control for all family and county characteristics in Table 2

*** p<0.01, ** p<0.05, * p<0.10

All data obtained from the Panel Study of Income Dynamics.

¹ The PSID uses the label “head of household” to indicate the family’s primary income earner. We use “head of family” throughout this manuscript to reinforce that we are referring to a family unit.

² Overall growth for all nonmetropolitan counties from 1990 to 2000 was 10.3% (Johnson and Beale, 2002)

³ An increase in occupational prestige is not an intuitive interpretation, with clear-cut distinctions by one-unit changes.

⁴ Nonmetropolitan areas are drawn from counties with a 6 or higher on the ERS Rural-Urban Continuum Scale. Adjacent counties have scores of a 6 or 8 while non-adjacent score either a 7 or 9 on the continuum scale.

1993 Rural-Urban Continuum Codes

Metro counties:

- 0 Central counties of metro areas of 1 million population or more
- 1 Fringe counties of metro areas of 1 million population or more
- 2 Counties in metro areas of 250,000 to 1 million population
- 3 Counties in metro areas of fewer than 250,000 population

Nonmetro counties:

- 4 Urban population of 20,000 or more, adjacent to a metro area
- 5 Urban population of 20,000 or more, not adjacent to a metro area
- 6 Urban population of 2,500 to 19,999, adjacent to a metro area
- 7 Urban population of 2,500 to 19,999, not adjacent to a metro area
- 8 Completely rural or fewer than 2,500 urban population, adjacent to a metro area
- 9 Completely rural or fewer than 2,500 urban population, not adjacent to a metro area

Source: Margaret A. Butler, Rural-Urban Continuum Codes for Metro and Nonmetro Counties, AGES 9028, U.S. Department of Agriculture, April 1990.

⁵ The reference category in the ERS county level codes are a combination of non-specialized and government dependent counties. The large percentage of nonmetro counties falls under the non-specialized categories which do not meet the dependence threshold for any of the other industries. Federal/state government dependent refers to 15% or more of average annual labor derived from the Federal and State government. Additionally, we alternatively examined the percentage change in manufacturing change over time to address changing rural labor markets. This inclusion did not meet our model requirements and was dropped for parsimony.

⁶ To further examine this association an additional model was estimated with Income as the dependent variable in which occupational prestige was included as a predictor of the intercept and growth in income. The inclusion of this variable did not change the coefficients presented in Model 1 of Table 2.