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# Going Away to College and Wider Urban Job Opportunities Take Highly Educated Youth Away From Rural Areas

*Rural high school graduates are less likely to graduate from college than are urban graduates, mostly because they are less likely to attend college in the first place. Less access to colleges and fewer well-educated adults in the local population account for much of the rural-urban difference. Half of all rural college attendees leave home and do not return by age 25. Those that do return are drawn largely by home ties and intervening life choices rather than by local job opportunities.*

**T**HE average educational attainment of rural residents has risen steadily over the past three decades, with nearly 7 of every 10 rural adults 25 and older holding at least a high school diploma by 1990. The education gap between the rural and urban populations also narrowed because urban increases were not as large as rural. However, rural college graduation rates have risen more slowly than urban rates. The rural 2-percentage-point rise in college graduation during the 1980's (from 11 to 13 percent) compares with a 5-percentage-point rise in the urban rate (from 18 to 23 percent). If these rates of increase persist through the 1990's, urban dwellers will be twice as likely to hold college degrees by 2000, a gap not seen since World War II.

The growing rural-urban disparity in college-educated adults reflects a similar disparity in employment opportunities commensurate with the skills of well-educated workers during the 1980's. College-educated urbanites who might otherwise choose to live in rural locales often face poor job prospects there, and many rural residents are not able to remain or return after college.

Looking at the education completed by adults 25 and older at their current place of residence does not show how education decisions and migration work together to shape rural and urban trends in educational attainment.

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The overall statistics also do not show the effect of migration on the ability of rural areas to keep or attract highly educated young adults. The National Longitudinal Survey of Youth (NLSY) tracks the education and location of young adults, however. See Data and Methods, p. 44, for a description of the NLSY.

Data from the NLSY indicate that rural high school graduates continue to be less likely to graduate from college than are their urban counterparts, mostly because they are less likely to attend in the first place. Local job opportunities and local access to colleges, along with personal characteristics, affect both the college decisions of rural students and their choice of residence after college. Rural and urban residents face fundamentally different levels of skill and knowledge demands in the workplace, as well as different access to higher education. Rural residents are less likely to have a local college or to live within easy reach of one. Rural high school graduates who do attend college go to less expensive and less academically selective schools, although their fields of study are much like those of their urban counterparts. Rural areas lose well over half of their college graduates to urban areas, but do get some urban college graduates in return. Home ties and intervening life choices appear to be more important factors in the average rural graduate's decision whether to return to a rural area, while labor market conditions appear to more strongly influence the average urban graduate.

## Rural Youth Are Much Less Likely to Graduate from College than Urban Youth

College graduation rates among young adults in rural areas reflect a succession of decisions. The college graduate must first acquire a high school diploma, then decide to attend college, and then complete a program of study. If the college is away from home, the graduate must decide whether to return; if the college is local, he or she must decide whether to leave after graduation. These decisions are determined by personal attributes and preferences as well as by family, labor market, and societal forces.

Understanding why rural young adults have lower college graduation rates, then, requires looking at urban-rural differences at each schooling transition decision. Rural and urban young people are equally likely to graduate from high school, with about 85 percent of each group acquiring diplomas or GED's (table 1). Differences emerge at the point of college attendance; 65 percent of urban high school graduates reported attending college, compared with 56 percent of rural respondents. This gap essentially disappears at the next level. Among college attendees, urban and rural students are equally likely to finish their college programs, with rural students slightly ahead of urban in completing any degree (including 2-year programs) and urban students slightly ahead of rural students in completing 4-year degrees.

These patterns are consistent for men, women, and Whites. Within each of these groups, rural and urban students are equally likely to be high school graduates, but rural students are significantly less likely to attend col-

lege. Among those who attend, graduation rates are virtually identical.

Blacks, whose attainment rates at all stages fall well below those of Whites, stray from this pattern. Rural Blacks' college attendance rate is much lower than their urban counterparts' rate, but rural Black attendees complete a college program, whether 2-year or 4-year, much more often than urban Black attendees. Lower family incomes, lower parental educational attainment, and, for many, poorer home areas, undoubtedly provide fewer resources and less motivation for rural Blacks to go to college.

Being rural and Black overwhelmingly means being southern (just over 90 percent of nonmetro Blacks lived in the South in 1990). Therefore, region may explain a portion of the disparity between rural Blacks and other groups. Comparisons among Blacks, all Whites, and southern Whites help reveal the regional effect on attainment. Rural southern Whites graduate from high school at a rate similar to that of urban Blacks, that is, more frequently than rural Blacks but less frequently than urban Whites. At this level of education, being in the rural South and being Black appear to be equally disadvantageous. But, college attendance and graduation rates are indistinguishable for rural southern and all Whites, while both rural and urban Blacks are much less likely than Whites to attend or graduate. Region, then, figures prominently in high school, but not college, attainment, while race figures in both.

### Explaining the College Attendance Gap

Since the "sticking point" appears primarily to be college attendance, it seems reasonable to ask why rural youth

Table 1  
**Educational attainment rates for young adults by gender, race, and region, 1982-89**  
*Lower college attendance rates for rural young adults explain most of the urban-rural college graduation gap*

Education attained	Total		Men		Women		Blacks		Whites		Southern Whites	
	Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban
Percent												
Graduated from high school	85	86	83	84	86	87	75	78	86	87	79	84
Went on to college	56	65	54	64	58	66	47	62	57	66	56	69
Graduated from a 2- or 4-year program	53	52	54	53	52	51	43	34	54	55	54	55
Graduated from a 4-year program	39	41	42	43	37	39	33	22	40	44	44	43

Note: Young adults were ages 14-21 in 1978. The reported percentages are based on the number of young adults who attained the preceding education level.

Source: Calculated by ERS using data from the National Longitudinal Survey of Youth.

are less likely to attend college. In an age when information and geographic mobility are less costly than ever before, one could assume that rural youth see the financial, social, and personal advantages of college education in much the same way as urban youth. Paasch and Swaim found that about two-thirds of rural high school seniors aspire to professional jobs and at least some college education, only a slightly smaller share than of urban seniors (see pages 24-34). Hence, differences in rural and urban attendance rates should mostly reflect differences in high school academic preparation and income. Earlier in this issue, Teixeira and Greenberg, pp. 17-23, demonstrate that while rural and urban high school students score about equally well on tests of math, reading, and science ability, rural schools are less likely to offer advanced courses critical to adequate college preparation.

The longstanding gap between rural and urban incomes may be the most powerful constraint on college attendance. During the 1980's, median rural family income averaged about 75 percent of the urban median, according to census figures. Among young people who attended college, the NLSY sample indicates that the median family income of rural students was 87 percent of urban students' family income (table 2). The difference between the two income estimates arises from higher-than-average family incomes among rural college attendees.

Rural students can close the income gap either by attending less expensive colleges or by obtaining larger amounts of financial aid than urban students. The median tuition faced by rural students is over \$400 (36 percent) lower

Table 2

**Financial resources and obligations of college attendees**

*Lower family income may cause rural students to attend less expensive colleges and seek loans and grants more often than urban students*

Item	Unit	Rural	Urban
Median family income	Dollars	30,045	34,500
Students receiving loans	Percent	33.1	27.0
Median amount received	Dollars	2,500	2,500
Students receiving grants	Percent	48.6	37.8
Median amount received	Dollars	1,400	1,500
Median annual tuition <sup>1</sup>	do.	747	1,174

<sup>1</sup>Includes students who attended either 2-year or 4-year colleges. These statistics are based on tuition rates for the 1980-81 school year, about the middle of the period when most respondents were attending college. The comparable figures for the 1990-91 school year are \$1,800 for rural and \$2,552 for urban students.

Source: Calculated by ERS using data from the National Longitudinal Survey of Youth, the Current Population Survey, and the Higher Education General Information Survey.

than tuition for urban students, suggesting that they do select less expensive colleges (table 2). While their tuition is lower, larger shares of rural than urban students obtain loans and grants. Among those receiving financial assistance, both rural and urban loans average \$2,500, and grants to rural students average only \$100 less than those to urban students. The greater use of these strategies among rural students suggests that their decision to attend is more sensitive to loan and grant availability, as well as to the geographic availability of affordable colleges.

**Low Access to Colleges and Few Highly Educated Role Models Dampen Rural Attendance**

Rural students face clear disadvantages regarding college information and access. About half of all rural high school students live in counties with no college, compared with 11 percent of urban students (table 3). Rural areas also have few highly educated workers to illustrate the value of attending college or high-skill jobs to reward a college degree. About 80 percent of rural (versus 21 percent of urban) students live in counties in which less than 15 percent of the resident labor force hold a bachelor's or higher degree (table 3).

Along with geographic limitations, family and social environments, the chief sources of "social capital," affect the choice to attend college. These forces can create positive or negative images of college life, make the transition to a college environment easy or hard, and reinforce or weaken the desire to maintain socioeconomic status at or above that of the previous generation. Social capital also contributes to students' performance on college entrance exams, to their perceptions of college opportunities, and to their decisions regarding whether or when to marry and have children.

Table 3

**Share of students living in counties with colleges or college-educated workforce**

*About half of all rural high school students live in counties with no college; Few rural areas match the education levels of most urban areas.*

County characteristic	Rural	Urban
	Percentage of respondents	
No college	49.1	10.6
One or more 2- or 4-year colleges	50.9	89.4
One or more 4-year colleges	28.9	82.0
Less than 15 percent of local workforce has a 4-year college degree	79.8	21.0

Source: Calculated by ERS using data from the National Longitudinal Survey of Youth

## Which Conditions Have the Strongest Effects on College Attendance?

Lower rural college attendance rates, then, appear to result from a combination of individual, family, and local area factors. Logistic regression identifies the force of each characteristic on college attendance, holding all other factors constant (table 4). Values greater than 1.0 indicate that the variable is associated with an increased likelihood of attendance. Values less than 1.0 indicate a decreased likelihood. See Data and Methods, p. 44, for a description of the logistic regression technique and an explanation of odds ratios.

In the first equation, individual and family characteristics are controlled to test possible sources of rural-urban differences. Students with higher grade point averages in early high school, who graduate at younger ages, or who have college-educated parents are more likely to attend college (table 4). Students who had children while in high school are less likely to attend. Family poverty status at

Table 4

### Tests for rural-urban differences in college attendance

*The effects of a rural origin are greatly reduced when college access and local education levels are accounted for*

	Individual and family characteristics	Plus region and 2- or 4-year college in county
Multiplicative effect on the odds-ratio		
Grades	1.952***	1.988***
Black	1.412***	1.327**
Male	1.082	1.092
HS graduation age	0.765***	0.766***
Father's education	4.840***	4.602***
Mother's education	3.257***	3.205***
From female-headed family	1.354**	1.341**
Got married in HS	1.006	1.007
Had child in HS	0.607***	0.617***
From poor family	0.984	0.969
Rural residence	0.775**	0.977
Midwest	NA	0.903
South	NA	1.190
West	NA	1.226*
Percent of labor force with college education	NA	3.985*
2- or 4-year college in county	NA	1.279***

NA = not applicable.

\* = significant at 0.10 level.

\*\* = significant at 0.05 level.

\*\*\* = significant at 0.01 level.

Source: Calculated by ERS using data from the National Longitudinal Survey of Youth

the time of the initial interview is not significantly related to college attendance, probably an indication of its inadequacy as a proxy for the income level at which college attendance starts to become affordable. Blacks are more likely to attend college than are Whites once grade point, income, and family characteristics are controlled, as are children from female-headed households (compared with children from other households). Students from Black and female-headed families appear to more highly value the status mobility that a college degree engenders. Despite the power of individual and family factors, rural residence continued to strongly and negatively influence college attendance.

The second equation incorporates regional, local workforce, and college access effects. The presence of either a 2- or 4-year college encourages attendance and renders rural residence insignificant. This finding suggests that poor access to colleges accounts for much of the lower attendance rate among rural high school graduates.

The higher the share of college-educated workers in the local workforce, the more likely students are to attend college. The social and economic environment indicated by a large college-educated population may provide supplemental social capital, especially to those students whose families provide low social capital levels. As expected, the effect of area education levels on the probability of attending college depends in large part on high school achievement and family education levels. For students with high GPA's and highly educated families, local levels make little difference, nor does rural residence (table 5). For students with average grades and non-college educated parents, ruralness and local education levels matter—the probability of attending college for urban students is 5 points higher in high-education than in low-education areas. For rural students, the difference is 6 percentage points. Similarly, rural residence reduces the likelihood of college attendance by 4 to 5 points, depending on area education levels.

Whether the various familial, social, economic, and environmental characteristics have different effects on college attendance by rural students can be tested by looking at rural students alone (table 6). The rural-only model generally confirms the results of the rural-urban models. Most variables significantly associated with college attendance in the first set of models are significant in the rural-only model as well. I also added urban proximity—adjacency to a metro area—as a measure of access. Adjacency to a metro area has a strongly positive effect on attendance; it may capture both college access and exposure to relatively high-skill labor markets.

Differences between the models emerge as well, however. Neither presence of a local college nor labor force educa-

Table 5

**Probability of college attendance given selected characteristics***Urban and rural students who excel in school and live in high-education environments are equally likely to attend college.*

Parents' education and students' GPA	Share of area workforce that is college educated	Probability of attending college:	
		Urban	Rural
	Percent	Ratio	
College/3.5	20	0.98	0.98
College/3.5	10	.98	.97
No college/2.5	20	.66	.62
No college/2.5	10	.61	.56

Note: Probabilities are calculated for a nonpoor white male westerner in a 2-parent household and a non-college town. Probabilities will vary slightly if a different set of characteristics is assumed.

Source: Calculated by ERS using data from the National Longitudinal Survey of Youth

Table 6

**Factors affecting the likelihood of rural students attending college***Proximity to a metro area increases the chances of attending college*

Item	Multiplicative effect on odds ratio
Grades	2.068***
Black	1.329
Male	0.880
HS graduation age	0.987
Father's education	6.870***
Mother's education	3.568***
From female-headed family	1.445
Got married in HS	0.909
Had child in HS	0.372***
From poor family	0.872
Midwest	3.980***
South	3.695***
West	4.017***
In county adjacent to a metro county	1.566***
Percent of labor force that is college educated	1.239
2- or 4-year college in home county	2.146

\* = significant at 10-percent level.

\*\* = significant at 05-percent level.

\*\*\* = significant at 1-percent level.

Source: Calculated by ERS using data from the National Longitudinal Survey of Youth

tion levels significantly influences attendance within rural areas. Regional differences also appear among rural students, in contrast with negligible region effects for the combined sample. These last results, however, should be interpreted with caution. Rural students in all other regions of the country are shown to be more likely to attend college than students in the Northeast, a finding that is difficult to corroborate with other research.

**Similarities in Rural and Urban College Careers**

Rural-urban differences in income, academic preparation, and access suggest that the type and location of colleges chosen will also differ. Unsurprisingly, since most students attend schools within 50 miles of home, urban students are much more likely to attend colleges in urban locations than are rural students (table 7). Although only 20 percent of all colleges are located in rural areas, 53 percent of rural students attend rural colleges, pointing to the strong hold of "home," or at least of familiarity.

Rural students are also significantly more likely to attend public colleges. Several factors may contribute to their disproportionate representation. On average, public colleges in rural areas are more numerous and have larger enrollments than private colleges, both in absolute terms and relative to the public/private ratio in urban areas. Rural students are less able to afford the higher tuition that private colleges typically charge. Finally, public colleges are less likely to require advanced high school coursework, which is often lacking in rural schools. Rural students are half as likely as urban students to attend or graduate from more competitive schools. Of the 335 schools classified as "most," "highly," or "very" competitive in the 1995 edition of Barron's Profiles of American Colleges, only 61 are rural. Combined with lower SAT scores, lower access to advanced preparatory courses, and lower family income, location also limits rural students' ability to attend the more competitive schools.

**Migration and Local Human Capital Change**

College attendance was a primary motivation of rural young people's outmigration during the 1980's, and the loss was not fully compensated by immigration of urban young people (table 8). Rural counties experienced a net loss of 16 percent of their young population. About 35 percent of rural young people left their counties for urban areas and did not return by age 25, while a number of

urban young people equivalent to 19 percent of rural young people moved in. About 15 percent of rural young people moved between rural counties, having no effect on the overall rural loss of young people, but undoubtedly leaving some rural counties with fewer young people. Movement varies widely by educational attainment. The overall rural net loss rose from 11 percent of high school dropouts and graduates, to 15 percent of nongraduating college attendees, to 30 percent of graduates with 4 or more years of college.

Migration differences by education clearly change the educational composition of the rural population. Dropouts and high school graduates comprise a much larger share of young people who stayed in rural areas than of those lost to urban areas. At the other end of the educational spectrum, 4-year college graduates are only 10 percent of stayers but 35 percent of those lost to urban

Table 7  
**College characteristics and selected fields of study by metro status**  
*Rural students are more likely to attend rural, public, and less competitive colleges.*

Item	Attendees		Graduates <sup>1</sup>	
	Rural	Urban	Rural	Urban
	Percent			
Type of college:				
Urban	46.7	88.4	54.1	85.6
Public	82.3	74.2	81.8	60.5
In-state	83.0	79.5	81.7	70.7
More competitive <sup>2</sup>	7.1	15.0	14.9	33.6

<sup>1</sup>Bachelor's degree or higher.

<sup>2</sup>Includes "most," "highly," and "very" competitive schools defined in *Barron's Profile of American Colleges*, 1995.

Source: Calculated by the author using data from the 1991 National Longitudinal Survey of Youth.

Table 8  
**Rural in- and outmigration rates by education**

*Rural-to-urban migration rates for 4-year or more college graduates were twice that of dropouts, and their share of rural net losses was three times as large*

Item	Total	Dropout	High school graduate	College attendee	College graduate	Bachelor's or higher degree <sup>1</sup>
	Percent					
Out to urban areas	35	29	26	35	53	58
In from urban areas	19	18	15	20	26	28
Within rural areas	15	16	13	15	15	16
Net change	-16	-11	-11	-15	-27	-30
Share of total loss	NA	10	25	22	43	35
Share of stayers	NA	17	45	22	16	10

<sup>1</sup>Subset of all college graduates who include those obtaining 2-year, associates degrees.  
Source: Calculated by ERS using data from the National Longitudinal Survey of Youth.

areas. The outmigration of young people from rural areas, then, significantly reduces overall human capital levels.

Most college attendees, about 75 percent, do move to a different county to attend school. Retaining graduates who have stayed at home and recapturing those that have left present two separate problems for local areas. Graduates away from home experience more intervening opportunities, and may have weaker ties to home. Graduates who attend local colleges may do so because of stronger attachments to the local area, as well as to minimize housing and/or food expenses. Hence, they may be more willing to stay after graduation.

About 25 percent of rural students stay in their home county to attend college and 16 percent are still there by age 25 (table 9). Of the 75 percent who left to go to college, about a third returned home by age 25. As a result, the rural counties kept or regained 40 percent of their native college attendees. If the definition of "home" is expanded to the local commuting zone rather than the county, the proportion who stay or return increases to 49 percent. (See Data and Methods, p. 34, for a definition of commuting zones.)

Migration undertaken by rural students to attend college is not necessarily detrimental to the home area. True, young people often must move to attend the college of their choice, a process that weakens the links between person and homeplace and may ultimately separate people with newly-acquired human capital from their origins. Rural counties could benefit from losing a large percentage of their young people to outside colleges, however, if social ties and local economic opportunities are strong enough to bring the college educated and their skills back after graduation.

## Causes and Consequences of Return Migration

Return migrants make up about 31 percent of the pool of college graduates in rural areas, less than immigrants from other counties (49 percent), and more than stayers (20 percent). Return migrants are a useful group for studying area attributes that attract college graduates. Like college-educated stayers, most leavers have attachments to home, whether in the form of ties to family and friends, assets such as "the old homestead," or past employers. But like nonnatives, they possess information about economic

opportunities in other areas, at least the one in which they went to school, and may have formed attachments to other places, particularly through marriage.

Controlling attachments and economic conditions simultaneously allows us to determine whether either set of factors is primarily responsible for lower rural than urban return rates, and whether specific factors in the return decision vary for rural- and urban-raised graduates (table 10). Because of survey limitations, the estimated models

Table 9

### Patterns of college and post-college mobility for rural attendees

Two-thirds of rural students who attend college locally remain in the area after graduation; two-thirds of those who leave do not come back

	County		Commuting zone	
	College	After college	College	After college
	Percent		Percent	
Home	25	Home 16 Away 9	40	Home 29 Away 11
Away	75	Home 24 Away 51	60	Home 20 Away 40
Returners/stayers		40	Returners/stayers	49
Leavers		60	Leavers	51

Source: Calculated by using data from the 1991 National Longitudinal Survey of Youth.

Table 10

### Factors associated with post-college return migration

Rural graduates are as likely to return home as urban graduates, once distance, region, and labor market conditions are accounted for

Variable	Personal characteristics	Plus home county characteristics	Rural attendees	Urban attendees
	Multiplicative effect on odds-ratios			
Female	1.408***	1.421***	2.078**	1.277*
From poor family	0.776	0.814	1.303	0.693
From female-headed family	1.726***	2.328***	3.112**	2.171***
Married/had child	1.633	2.166**	3.161**	1.568
Rural residence	0.494***	0.900	NA	NA
Distance to home	NA	0.706***	0.607**	0.712***
Home earnings	NA	1.093***	1.087	1.105***
Home job growth	NA	1.018***	1.018	1.020***
Home in Midwest	NA	1.137	1.240	1.068
Home in South	NA	0.985	0.810	1.050
Home in West	NA	0.543**	0.071	0.640

\* = significant at 10-percent level.

\*\* = significant at 5-percent level.

\*\*\* = significant at 1-percent level.

Source:: Calculated by the author using data from the 1991 National Longitudinal Survey of Youth.



cannot capture some important effects, such as past employment, friendship networks, and detailed labor market characteristics.

The first model tests only the effects of rural residence and attachments on the probability of returning to the home county by age 25. Attachments are measured by whether the respondent is female, whether the origin family was poor, whether the origin family was headed by a single woman, and whether the respondent was married or had a child during his/her college career. Women are more likely to be cast in caretaking roles, and poor or single parents are more likely to require their children's assistance. Marriage and having children while away from home have potentially ambiguous effects. They signal the graduate's intention to "settle down" (and home may be viewed more positively in that context). However, they also introduce a spouse's set of attachments into the equation.

As it turns out, the negative effect of rural residence on returning home is independent of attachment measures, of which only two, being female and having a single mother, are significant. When distance from home (which captures both attachment and intervening opportunities) and labor market characteristics are added, the significance of rural residence disappears. High earnings and rapid job growth in the home county appear to be strong draws for native graduates. Distance between home and college acts as a significant barrier to return. The effects of home region are unimpressive except for western home counties. Since distance is controlled (an otherwise likely source of western uniqueness), the significant and negative effect of growing up in the West confirms other stud-

ies that have found unusually high levels of population "turnover" in the West.

When rural and urban returnees are analyzed separately, the results of the two estimations generally agree. Attachment variables appear to play a larger role for rural graduates, while labor market conditions are more important factors for urban graduates. The positive effects of being female and of getting married or having a child on returning are much stronger for rural-raised graduates, perhaps reflecting rural-urban differences in attitudes toward the role of extended families, or the intervening effects of spouses. As is true for the combined sample estimation, greater home-college distance discourages return for both urban and rural college graduates, with the effect being slightly stronger for rural graduates.

While home ties and intervening life choices appear to predict rural college graduates' residential decision, one should be careful not to underestimate the importance of the labor market based on this analysis alone. The statistical insignificance of these variables may be deceptive, since the smaller rural sample size makes significance at a given level more difficult to attain. Similar odds-ratios in the rural and urban models, for example, point to small sample size rather than weak labor market effects.

Do stronger labor market effects for urban-raised graduates translate into better employment outcomes for them than for rural-raised graduates? The answer depends, in part, on where they go after college (table 11). Comparing rural and urban graduates and ignoring post-college residence, urban graduates have higher employment rates and higher earnings, and are slightly more likely to work in higher status occupations than are rural graduates.

Table 11

**Employment characteristics of 25-year-old college graduates**

*Rural natives in urban areas earn less than urban natives there by age 25—but their job status is slightly higher*

Characteristics at age 25	Location at age 14		Location at age 14/location at age 25			
	Rural	Urban	Rural/rural	Rural/urban	Urban/rural	Urban/urban
	Dollars					
Median family income	25,050	27,240	24,525	25,585	21,615	27,800
	Percent					
Employment status:						
Employed	81.7	84.6	75.0	87.8	78.7	85.0
In school	6.4	6.4	6.5	6.2	8.4	6.3
Other	12.9	9.0	18.5	6.0	13.9	8.7
Occupation:						
Managerial/administrative	9.3	11.6	4.4	13.2	11.0	11.7
Professional	31.7	32.0	26.5	36.0	34.4	31.7
Technical	4.8	7.0	5.4	4.3	8.2	6.9
Other	54.2	49.4	63.8	46.6	46.4	49.7

Source: Calculated by ERS using data from the 1991 National Longitudinal Survey of Youth.

When broken down by pre-college and post-college residence, labor market outcomes differ substantially. Rural graduates who live in urban areas after college are more likely to be employed and work in managerial, administrative, or professional occupations than are those who stayed in or returned to rural areas or than urban graduates in either rural or urban areas. However, the average earnings of rural graduates in urban areas are lower than the earnings of urban-urban graduates. Rural students who stayed in or returned to rural areas have the lowest employment rates and are much less likely to be found in white-collar occupations, reflecting the smaller demand for such workers by rural firms.

In general, post-college residence appears to be a critical predictor of labor market success, suggesting that rural graduates "overcome" their origins. The return migration models, however, show that personal factors constrain market outcomes. The pull of family ties, for example, may induce rural graduates to accept lower returns on their education, in effect lowering the economic value of their college degrees to return home.

### Conclusion

Lower college attendance has been shown to be the single most important component of lower rural college completion rates. Rural students, on average, are less likely to have individual and family traits associated with attendance. Thus rural-urban differences in completion rates largely reflect the geographic distribution of these traits. Yet environmental forces also operate on the individual's aspirations. Local education levels are associated with an individual's decision to attend college. A more highly educated population may foster a better education system and create a social environment that supports scholastic achievement and an economic environment that monetarily rewards it.

Rural college graduates are more likely to attend rural and public colleges and universities, and only half as likely to finish at selective institutions. While these choices have possible career repercussions, post-college plans appear to play a larger role in the economic well-being of rural graduates. Rural graduates who leave the countryside fare quite well compared with urban graduates in terms of employment and occupational status. Furthermore, whatever their college choice, graduates who live in rural areas after college, regardless of pre-college residence, fare worse financially than urban dwellers.

These findings help explain why rural counties recapture only 70 percent of the equivalent number of their college-bound youth by age 25, reinforcing the cycle of low education levels and low college attendance rates in rural areas. Still, over half of the rural college-educated population at this age are natives. Coming from rural areas, natives are more likely to attend rural schools and hence to stay in the local area after college. Moreover, the pull of home acts as a counterweight to the tug of better urban job prospects. The "home-grown" supply of highly educated labor, then, forms an essential part of the rural skills mix.

### For Further Reading . . .

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## Data and Methods

The National Longitudinal Survey of Youth, a project of the Center for Human Resource Research at Ohio State University, has been conducted annually since 1979. Its 12,686 original respondents ranged from ages 14 to 21 in 1978, so that the youngest of the 8 age cohorts was 26 by 1990. Blacks and those in poverty are sampled in disproportionately large numbers to allow reasonably detailed analyses of these groups. Weights are provided for each respondent so that a national random sample of youth can be approximated.

Regardless of their ages at the time of interview, respondents were asked for their county of residence at age 14. Respondents for whom residence identification was possible at ages 14 and 25, equaled about 9,000. (Information for most of the military sample at age 25 was missing, since the majority were not followed after 1984.) Not all questions concerning college choice and family background are available in all years for all respondents. Partial samples were analyzed where appropriate.

The terms "rural" and "urban" refer to nonmetro and metro counties as designated by the Office of Management and Budget in 1993. Where analysis is performed on the commuting zone rather than the county, the commuting zones are groups of counties within which workers commute to jobs more than they do to counties outside their zone. The zones were developed by Killian and Tolbert (see "For Further Reading").

### Definitions

Respondents are considered high school graduates if the highest grade completed was 16 or more years or the highest degree awarded by 1990 was a high school diploma or GED.

Respondents are considered college attendants if they answered that they had attended college at some point and they were high school graduates.

Respondents are considered college graduates if they are college attendants and the highest degree awarded by 1990 was at least an associate's degree.

### Logistic Regression Analysis

The models are estimated with logistic regression, an appropriate method when the dependent variable, in this case college attendance or returning to home county, takes only two possible values (yes or no).

The estimated coefficients in a logit model are a little more difficult to interpret than are the more familiar standard regression coefficients. The key to interpretation is to think in terms of the effect of an independent variable on the odds ratio of the event happening, where the odds ratio is defined as the ratio of the probability the event happens to the probability of it not happening. Consider dropout rates. If a student has a 30 percent chance of attending college, the corresponding odds ratio is 30 percent divided by 70 percent, or 0.429. The effect of an increase in an independent variable can be expressed as its multiplicative effect on the odds ratio. Suppose we consider a second high school graduate who is the same in every respect except that he lives in a county without a college. If the logit coefficient indicates a multiplicative effect of 1.0, then living in that type of county has no effect on the chances of going on to college. A multiplicative effect greater than 1.0 indicates increased chances of going to college and an effect less than 1.0 indicates decreased chances.