Journal of Agribusiness 37, 2 (Fall 2019)

Leaving for Education

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In the United States, rural economic development has been hindered due to a rural "brain drain": the disproportionate outmigration of educated young adults from non-metropolitan areas. This outflow has been of particular concern because it may negatively impact labor markets and economic vitality of non-metropolitan areas. Theoretically, migration is typically viewed in an economic framework as a decision driven by differences in the present value of lifetime earnings in the location of origin and that in other regions, net of moving costs. Typically, studies focusing on education find that educated individuals are more likely to migrate, but are unable to establish whether individuals migrate because they can find higher returns to education elsewhere or whether they move in search of educational opportunities and do not come back. In this paper, we find that education increases the propensity to migrate, but the decision is, to a large extent, explained by searching for educational opportunities.

***Key words**:* Access to Higher Education, Migration, Rural Brain Drain

Why do young people leave rural areas? Do they leave primarily for higher wages and opportunities? Maybe. Perhaps it is a prior choice related to leaving for education that motivates young people to leave a rural area, rarely to return. More specifically, due to a lack of desirable higher education options, it may be that young people are leaving rural areas because of the "education desert" they face. We have examined migration data in the United States and suggest that a key to the economic revitalization of rural America resides in higher education opportunities. This paper lays out some of our findings regarding rural-to-urban migration and the implications for an economic rural development strategy focused on providing better higher education opportunities.

The historical migration of people from rural areas of the United States to more urban settings continues in contemporary times. Data from the U.S. Department of Agriculture (USDA) Economic Research Service (ERS) have shown that, between 1995 and 2000 alone, over 5.5 million people (11% of the U.S. non-metropolitan population) moved to an urban area (Marré, 2009). In addition, over a third of non-metro counties lost at least 10% of their population through net outmigration over 1988 to 2008 (McGranahan, Cromartie, and Wojan, 2010). The decline in population reached its lowest level in 2011-12 when 62,000 people migrated away from rural America (USDA, ERS, 2018). While there was a slight increase in the rural population in 2016 (33,000), this may be due to the "graying of rural areas" where retirees migrate in while rural areas lose new labor force

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entrants, as well as exurban migration where professionals locate to rural areas to take advantage of natural amenities using remote work technology.

The impact of these migration trends on rural areas is particularly acute when young adults move from the country to the city in search of opportunities (and then do not return). In the United States, disproportionate outmigration of educated young adults from non-metropolitan areas (also referred to as "the rural brain drain") has been of particular concern because this flow has a negative impact on labor markets and economic vitality of non-metropolitan areas. In a 2015 U.S. Census Bureau report drawing from the 2007-2009 and 2010-2012 American Community Survey three-year estimates, Benetsky, Burd and Rapino (2015) note that "migration in the U.S. is largely driven by young adults and the children that accompany them." They show that, while in the time period analyzed, 18- to 24-year-olds made up about 24% of the total U.S. population, this age group accounted for 43% of all movers. Their analysis indicated that 18- to 24-year-olds are more likely to move to areas with universities, while movements of 25- to 29-year-olds may be job driven. Thus, young adults first decide to leave for education, and then for work. In their summary, the authors note that "for the 18- to 24-year-old group, metro areas with a college or university appeared to be a magnet for this group. In fact, regardless of the size of the metropolitan area, metros with institutions of higher education had a large proportion of in-movers" (Benetsky, Burd, and Rapino, 2015).

Economists (and others) of course have amassed a large literature on migration patterns, particularly surrounding the brain drain phenomena (both in the United States as well as worldwide where the movement of educated young people from rural to urban areas, or through emigration, has vast consequences in low-income and developing countries). Theoretically, migration is typically viewed in an economic framework as a decision driven by differences in the present value of lifetime earnings in the location of origin compared to other regions, net of moving costs (e.g. Sjaastad, 1962; Todaro, 1969). This framework implies that the main driver of the exodus of educated rural youth is higher wages in urban areas. In fact, past studies find that higher expected wages do, in part, explain why rural young adults move to urban or other non-metro areas (e.g. Mills and Hazarika, 2001). Leaving a rural area has also been shown to be associated with less time spent in poverty and shorter unemployment spells, and increased wages and overall income (e.g. Wenk and Hardesty, 1993; Glaeser and Maré 2001). In general, models that view migration as a result of general skill-level-specific expected earnings differentials across regions have treated education as given at the point in time when the migration decision is made.

This view seems at odds with basic statistics from U.S. high school graduates who do not live in the same county where they attended high school. Domina (2006) finds that this non-metro "brain drain" is, indeed, substantial in the United States. Gibbs and Cromartie (1994) show that 55% of persons aged 20-24 who completed at least one year of college left rural areas by 1990. Further, those who end up with some post-secondary education are more likely to remain migrants (those who go to college and return to the county of origin after college are not considered migrants). This suggests that, in many

cases, the migration and education decision are made jointly. Individuals may choose to reside in market areas different than their region of origin because returns on education investments are higher, but they may also choose to migrate towards more educational opportunities or obtain education in order to fulfill migration aspirations. In this setting, the migration decision would respond to both relative returns to education across areas and relative access to a higher education as well. No study we are aware of focuses on the access to higher education as the primary driver of rural-to-urban migration, particularly among young adults. So we decided to look at data to examine the role of higher education access in rural population migration and the implications suggested for economic development.

The primary source of data we examined is the National Longitudinal Survey of Youth (1997) (NLSY97). The survey annually interviews a nationally representative sample of over 8,166 youth who were ages 12 to 16 in December 1996. The 1997 survey collects rich information on family background, household wellbeing, youth location, schooling up to that point, and demographic characteristics. Additionally, schooling choices, employment, and earnings are elicited each year thereafter. So, the 8,166 youths who began the survey in 1997 were interviewed annually from then to 2007. We modeled the decision of young people to migrate following Mills and Hazarika (2001). We account for access to higher education by including distances to the nearest two- and four-year colleges for each county of residence when respondents are 17 years of age or younger. We suggest that initial migration may be triggered by a search for educational opportunities and subsequent improved earnings. We control for educational attainment via the number of years of schooling completed and control for attendance at a two- or four-year college (regardless of how many years one spent in college) separately. Typically, studies accounting for education find that educated individuals are more likely to migrate, but are unable to establish whether individuals migrate because they can find higher returns to education elsewhere or whether they move in search of educational opportunities and do not come back. We find that education increases the propensity to migrate, but the decision is, to a large extent, explained by searching for educational opportunities.

In our empirical examination, we first estimated wage equations for migrants and non-migrants using Heckman selection models that explicitly account for migration. These are identified by including distance to the nearest college in the migration equation but not the wage equation. While distance to the nearest college affects the propensity to migrate, it is uncorrelated with the unobserved determinants of wages. This identification strategy has been used in several previous studies to estimate wage equations with endogenous education decisions (e.g. Constantine, 1995; Mykerezi and Mills, 2008).

To examine the data, we started with logistic regressions of migration, with migrants being defined as individuals who were not in their county of origin as of the last survey year in which their location was observed (ages 23-28). We controlled for the number of years of education completed as of the last survey, and for whether students started college at a two- or four-year college (relative to individuals who don't go to a postsecondary institution). Once the college they start in is controlled for, the coefficient on education dropped significantly. Attending a two- or four-year college increases the propensity to migrate. So the rural brain drain likely begins before wages are realized, but

when education choices are made. It is also worth noting that distance to public, four-year colleges increases the propensity to migrate. Individuals of high ability are also more likely to migrate, regardless of educational attainment and access to education, perhaps in search of higher returns to cognitive skills.

When we looked at different types of counties of origin, distance from the nearest four-year college was still associated with a higher propensity to migrate. Education is positively associated with migration to urban areas but not to non-metro areas---more education lowers the propensity to migrate to a non-metro area (only significant for the non-metro youth). This is indicative of the rural brain drain issue; while young adults do not uniformly flow to urban areas, educated young adults appear to do so.

We also found that returns to education are higher for migrants than non-migrants and returns to education are lower for non-metro youth. The estimated return to an additional year of schooling is 7% for the average youth in the nation who chooses to migrate, but only 4% for those who do not move. Returns among non-metro youth appear surprisingly low. There is only a 1.6% estimated return for migrants and virtually no return for non-metro youth who do not migrate. Individuals with more education of any origin tend to migrate more. This is a known result and it is generally interpreted in reference to a search model where a wider search increases the return to education, so more educated people have more to gain by conducting a wider job search. Our research suggests that the explanation may be much simpler; to a large extent, youth go to college and fail to make it back.

We also controlled for continuous education measures and added indicators of where one starts college (two- or four-year school). Starting at any type of college (relative to no college) is highly significant and positive, but the coefficient on the richer measure of years of education is reduced to 50 to 30% of the original coefficient. The importance of higher education access is further reflected in the fact that distance from the nearest four-year college when the youth is 17 or younger predicts migration.

Multivariate logit models that distinguish non-metro migration to another non-metro area as opposed to a metro area uncover some trends that also point to the brain drain. Education and cognitive ability are positively associated with non-metro migration to a metro area but show either a zero effect or even a negative association with migration to another non-metro area. Finally, consistent with previous literature, returns to education are higher upon migration and this expected earnings differential does predict migration as in Mills and Hazarika (2001).

What policy options are open to rural areas to deal with the “education desert” issue in an effort to stem youth migration? Anne Kim, in a 2018 piece in Inside Higher Ed, notes that nearly 41 million adults live 25 miles or more from the nearest college or university, or in places where a single two-year college is nearby. Kim (2018) outlines what some states are doing to create “higher education centers” or “virtual colleges” that serve primarily rural educational deserts. Pennsylvania, Virginia, and Maryland are using both technology and some physical “mini campuses” to serve the needs of students more directly in rural areas.

One obstacle to programs that rely on higher education as an economic development tool in rural areas is the increasingly hostile view that conservative Americans (located disproportionately in rural areas) express toward colleges and universities. While a majority of Americans continue to believe that colleges and universities have a positive effect on the county, conservatives express increasingly negative views. Nearly 6 in 10 Republicans and Republican-leaning independents say that colleges and universities have a negative effect on the country, according to the Pew Research Center (2017). The Pew survey notes that conservative attitudes about the effect of colleges and universities have changed dramatically over the past two years. The change among conservatives since 2015 seems to center on the perceived "liberal bias" of college and university faculty, as well as free speech controversies on campuses. Surveys have not addressed whether this concern is focused on more elite schools rather than local higher education institutions. On the other hand, this obstacle may be mitigated by the positive economic impacts that colleges and universities have on regional economies (Drucker and Goldstein, 2007; Siegfried, Sanderson, and McHenry, 2007).

Yet, while much attention has been devoted to the impact of wages and employment, we believe that, at least for young adults, educational opportunities may instigate sizable migration that resembles migration in response to employment opportunities in magnitude. Policies that extend educational opportunities to remote areas coupled with enhanced economic opportunity may help retain some of the rural talent. If rural areas are to counter the "brain drain," then providing higher educational opportunities may alleviate the fact that young people are leaving for education. From a community development perspective, providing incentives and means for more young adults to stay and settle down in rural areas can benefit everyone in the community, including the local agricultural industry and new, non-agricultural industries, both of which benefit from the availability of a highly skilled and educated labor pool.

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