

Attracting the Highly Educated: The Role of Nature vs. Publicly Nurtured Amenities

Abstract

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The importance of a highly educated workforce for the long term economic development of a region has long been recognized (see, for example, Barro, 1991, Levine and Renelt, 1992, and Glaeser, 2005). Among the cohort of the highly educated workforce, those holding an advanced degree in a science and engineering (S&E) field have a particularly significant impact on productivity and economic growth (Romer, 1990). These workers are integral to the creation and diffusion of knowledge and the development of new products and processes, both in the private and academic sector.

Despite the unique role of advanced S&E workers as an engine of economic growth, to date we know relatively little about the factors that influence the location decisions of these highly mobile workers. A 2002 Report from the National Science Foundation indicates that over 59% of new U.S. Ph.D. recipients in S&E fields migrate to a different state upon receiving their doctorate. While previous studies have explored the factors influencing the migration and location preferences of the general population of college educated individuals, to date there have been no attempts to model the location decisions of this important cohort of workers. Given the distinctive composition, employment opportunities, and high mobility of advanced S&E workers, however, their migration decision process is likely to differ from that of all individuals with an undergraduate degree.

Our analysis focuses exclusively on the location choices and amenity preferences of new S&E doctorates. Primary data for the study come from the Survey of Earned Doctorates, administered by Science Resources Statistics, National Science Foundation. The empirical model includes approximately 23,000 new Ph.D.s with definite plans for post-graduation employment in the U.S. from the period 1997-1999. We employ a discrete choice random utility model of migration to estimate how city attributes influence Ph.D.s location choice, as well as their willingness to tradeoff private consumption for improved amenity quality. The models consider the role of expected private consumption (salary less housing expenditures), geographic distance from the Ph.D. granting institution, and 28 city-level attributes on the migration decision. The characteristics of cities that we consider include natural amenities, such as local climate, and publicly nurtured amenities such as air quality or cultural opportunities. In addition, we consider the role of the number of utility patents, higher education institutions, and proportion of highly educated individuals already located in a metropolitan area.

The results suggest that natural amenities have a relatively greater influence on Ph.D. location choice than publicly-provided amenities. An implication is that policymakers have only a limited ability to retain or attract these workers to their region through public investment in the quality of amenities. The level innovation in a city, as measured by the number of patents and the proportion of highly educated individuals in the metropolitan area play a significant role in location choice. In addition, we observe heterogeneity in the factors that influence Ph.D. location decisions. For instance, Ph.D.s with children more heavily weight violent crime rates in their location decisions as compared to those without children.

References

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