

Keys to the City

One look at a city dweller's grocery bill makes it clear that nearly everything costs more in a metropolitan area. Because of this, wages are higher, too. Yet firms opt for city locations despite the relatively high labor costs. In fact, metro areas account for nearly 85 percent of the Nation's jobs, as well as almost 80 percent of the U.S. population. In his article "Three Keys to the City" (*Business Review*, Federal Reserve Bank of Philadelphia, third quarter 2011), economist Gerald Carlino explores why businesses continue to operate in cities when moving elsewhere could significantly lower operating costs.

Carlino analyzes the latest efforts to measure each of the sources of city productivity, which he calls the three "keys to the city"—resources, the economies of agglomeration, and sorting. He focuses his analysis on agglomeration economies, which are the benefits firms receive from locating near each other, and sorting; natural resources (such as the presence of a port or raw materials) continue to decrease in economic importance as transportation improves, technology progresses, and as more manufacturing jobs are replaced with jobs in service-related industries.

Historically, economists relied on agglomeration economies to explain how the high concentrations of people and jobs in cities led to efficiency gains and cost savings for firms. Businesses set up shop in emerging U.S. cities during the eighteenth and nineteenth centuries to be close to suppliers, workers, and customers. With advances in technology and transportation, proximity is no

longer required for success. However, Carlino stresses that agglomeration economies still help account for increased productivity: "If agglomeration economies are important, they will make workers in large cities more productive than workers in small cities and rural areas." The article focuses on two main types of agglomeration economies: business agglomeration economies, which increase the productivity of firms and workers, and consumer agglomeration economies, which improve the quality of leisure activities. Recent estimates of business and consumer agglomeration economies suggest that a doubling of city size increases productivity by about 3 to 4 percent.

Cities attract a disproportionate share of highly skilled workers. A talented, flexible workforce makes it easier for entrepreneurs to start new businesses and for existing businesses to find better matches for job openings. Carlino found that a skilled work force (as measured by the percent of the adult population with a college degree) was by far the most powerful determinant of innovative activity: a 10-percent increase in the proportion of the adult population that graduated from college is associated with an almost 9-percent increase in patents per capita. He suggests that highly skilled workers are better able to articulate and communicate ideas to others and to adapt to new technologies; together these lead to increased knowledge exchange among workers.

The author reasons that a city must be able to attract the best workers possible to ensure prosperity and growth. Cities do this by offering higher wages as well as more activities for its inhabitants. In Carlino's study, a doubling of the population

in a metropolitan statistical area led to a 3-to-6-percent increase in average wages. Characteristics that attract tourists—such as scenic views, architectural beauty, and cultural or recreational opportunities—are the same ones that attract workers to cities. In a study the author conducted in the 1990s, the 10-year population growth rate was 2.2 percentage points higher and the concomitant job growth was 2.6 percentage points higher in a city with twice the level of leisure tourists as another city. Carlino suggests, therefore, that consumer agglomeration economies can serve as an indicator of future growth for cities.

Effects of parents' education on child's schooling

It is well documented that the children of parents with more schooling tend to attain higher levels of education than children of parents with less education. The more difficult problem for researchers is establishing the *causal* relationship between the education levels of parents and their children. In other words, *why* do children of more educated parents end up with more education? The answer to this question has important policy implications because of the large role education plays in labor market outcomes. The issue also raises the ancient "nature versus nurture" question. Do parents with more education tend to have children with more ability to do well in school (nature)? Or do more educated parents have greater access to resources and possess attitudes and values that are supportive of higher educational attainment and therefore can provide their children with better environments in which to

study (nurture)? Empirical studies examining this issue have reached different conclusions.

In a recent article entitled “The Causal Effects of Parents’ Schooling on Children’s Schooling: A Comparison of Estimation Methods” published by the American Economic Association in its September 2011 issue of the *Journal of Economic Literature*, Helena Holmlund, Mikael Lindahl, and Erik Plug conduct a rigorous comparison of the various methods used by researchers in their attempts to solve this perplexing problem. The authors also try to explain why the existing studies have reached such different and often conflicting conclusions. They contend that explaining these differences is crucial to answering the question of why parents with more education tend to have children who attain higher levels of education. The study’s basic conclusion is that the differences can be attributed largely to varying methods of estimation, particularly in the areas of selection, “identification strategies,” and the assumptions underlying the studies’ models. A second and related factor that helps explain the different findings involves differences in the data used in the earlier studies.

Holmlund and her coauthors begin with a review of the existing literature, grouping the various studies into three categories based on three different identification strategies. The first approach deals with identical twins and differences in their educational levels. The second deals with adoptees and relies on the assumption that no genetic connection

exists between adoptees and their adoptive parents. The third identification strategy employs the method of instrumental variables (IV), a statistical technique used to estimate causal relationships when controlled experiments are not possible. The authors assemble, group, and critique the existing literature on intergenerational schooling effects as they attempt to explain the discrepancies in conclusions from one study to another. To test the efficacy of the methods used in the previous studies, they suggest applying all three identification strategies to one data set. The authors use Swedish administrative records because these data include the requisite information for each of the three strategies, which allows the authors to compare the different methods using data from the same country and the same cohorts.

The authors also look closely at the earlier studies’ estimation techniques, the specifications of their models and explanatory variables, and the selection of control variables used in their models. They find little variation in the estimation techniques—nearly all use some form of least squares and regression analysis—but they discover some interesting differences in the choice of control variables in the studies. In particular, the studies vary in whether to include a control variable for spousal education, a choice that can have substantial effects on outcomes. The authors assert that controlling for spousal education is important, for example, when the focus is on the intergenerational effects of increasing the

mothers’ education levels, but it is less important when the primary interest is in the children’s level of education. At this point, according to the authors, it remains unclear whether the mother’s schooling, the father’s schooling, or the combined schooling of both parents is the dominant factor determining the child’s own educational attainment. The evidence does, however, suggest that education itself is at least partly responsible for the intergenerational link—parents with more education get children with more education *because* the former have more education. That is, regardless of the economic benefits that are likely to accrue to parents with more schooling, parents tend to transfer education to their children.

Holmlund, Lindahl, and Plug find that, despite the methodological problems inherent in many of the tools and techniques used to establish the causal relationship between parents’ education levels and those of their children, the studies have been successful in the sense that they provide many new insights into the process by which parents transmit education to their children. Although some studies suggest that inherited abilities (nature) play the more substantial role in the educational link between parents and children, the available evidence shows that environmental factors (nurture) play an important part as well. Holmlund, Lindahl, and Plug suggest further research be conducted about causal relationships in order for positive changes to be made in future educational and labor market outcomes. □