

Human Capital and Higher Education: How Does Our Region Fare?

BY TIMOTHY SCHILLER

The number of people with a college education in a given state or region varies across the nation. States in the Third Federal Reserve District (Pennsylvania, New Jersey, and Delaware) compare favorably with the nation on measures of college education, and the three states as a whole are close to the national average. Despite its average ranking in educational attainment, the area is a premier location for colleges and universities. In this article, Tim Schiller evaluates the region's standing with respect to college education by reviewing data on individual and social returns to education, looking at college education as a stimulant to local economic growth, and comparing the tri-state area with the nation as a source of and a destination for college graduates.

Human capital refers to the technical skills and knowledge acquired by workers. Education is an investment in human capital, that is, in the skills and knowledge that produce a return to the individual in the form of higher earnings. Education also has social returns or spillovers. The presence of educated workers in a region enhances the earnings of those who, regardless

of their own educational level, work with or near educated workers. This is especially true for spillovers from college-educated workers. Research shows that having large numbers of college graduates in a region increases that region's economic growth and that spillovers (also called externalities) are an important factor in generating more rapid growth. Aware of this connection, educators, state and local governments, and businesses around the country are making efforts to increase the educational attainment of their local work forces, especially the number of college graduates.

The number of people in a region who have a college education varies significantly across the nation. Parts of the three-state region (Pennsylvania,

New Jersey, and Delaware) compare favorably with the nation on measures of college education, and the three states as a whole are close to the national average. In spite of its average ranking in the nation, the region is one of the premier locations for college education. The area's colleges and universities are important sources of college-educated workers for the nation and the world. In evaluating the region's standing with respect to college education, we must consider its important role as a producer of college graduates as well as its role as a user of college-educated workers.

To help with this evaluation, I will review what we know about individual and social returns to education, look at college education as a stimulant to local economic growth, and compare our region to the nation as a source of, as well as a destination for, college graduates.

EDUCATION: AN INVESTMENT IN HUMAN CAPITAL

Education represents an investment in the knowledge and skills that increase people's ability to earn. The cost consists of the direct outlays for education as well as the opportunity cost of forgone income during the time spent acquiring the education. The return is the increase in earnings that results. Economists have measured the return to education over many years and found that it increases steadily for each level of education attained.¹ Data from the U.S. Bureau of Labor

¹ See the articles by Jacob Mincer; Gary Becker; and James Heckman, Lance Lochner, and Petra Todd.



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charge at www.philadelphiafed.org/econ/br/.

TABLE 1**Unemployment and Earnings of Workers 25 Years and Older (2006)**

Education	Unemployment Rate Percent	Median Weekly Earnings Dollars
Doctoral Degree	1.4	1,441
Professional Degree	1.1	1,474
Master's Degree	1.7	1,140
Bachelor's Degree	2.3	962
Associate's Degree	3.0	721
Some College, No Degree	3.9	674
High School Graduate	4.3	595
Less Than High School Diploma	6.8	419

Source: Bureau of Labor Statistics

Statistics show that earnings rise and unemployment declines for each higher level of education (Table 1).

The economic importance of education has been growing. Even as the number of college graduates in the labor force has increased, the wage gap between these workers and those with less education has widened. The increased wage reflects an increase in demand that has been greater than the increase in supply. Firms have been investing in new technologies that require more workers with the education and skills to use them, and more and more of the nation's economic growth has been originating in sectors with high demand for skilled workers.² The investment in new technology could reflect firms' desire to take advantage of the increase in the supply of college-educated workers. Or it could be a result of the development of new

² See the article by Keith Sill.

general-purpose technologies, such as advances in computers and telecommunications, that either require or are most productively used by educated workers. In either case, the increasing premium for college-educated workers in the face of rising supply indicates that the growth in demand for college-educated workers has exceeded the growth in supply.

EDUCATION SPILLOVERS AND REGIONAL ECONOMIC PERFORMANCE

In addition to providing a return to the individual, investment in education results in spillovers that benefit others who work with or near individuals who have made the investment. Spillovers provide the economic justification for public subsidies for education and motivate community interest in improving the educational attainment of the population.³ Since

³ See the article by Robert Topel.

spillovers appear more likely to stem from college-educated workers than from those with less education, much of the economic research on spillovers has focused on the extent of college education among the population under study.⁴

Social interaction is the primary way in which spillovers occur, whether by chance or by plan. This interaction is most likely to lead to productive spillovers if it occurs in a work context. This context can be provided in a metropolitan area with a high concentration of firms in the same industry, and it can also be provided in an area with a diversity of industries.⁵ In the first case, employees from different firms in the same industry can exchange ideas about new products and production methods more readily because of

⁴ See the article by Susana Iranzo and Giovanni Peri.

⁵ See the article by Gerald Carlino.

the dense concentration of employees who work in the same industry. In the second case, the diversity of industries allows ideas developed in one industry to be more widely disseminated to other industries, where the new ideas, perhaps with some modifications, can also be productively applied. In both cases, exchanges of information about productivity-enhancing possibilities are more likely in areas with greater population size, density, and industrial variety.

Innovation, spillovers, and improved productivity are more likely in metropolitan areas with large concentrations of workers with higher education. Empirical research supports this insight, demonstrating that earnings, which are based on productivity, are greater in metropolitan areas that have greater concentrations of college graduates. Research by Enrico Moretti estimates that a one-percentage-point increase in the supply of college graduates in a metropolitan area raises wages for workers in that area: 1.9 percent for high school dropouts, 1.6 percent for high school graduates, and 0.4 percent for college graduates.⁶ Furthermore, research by Edward Glaeser and David Maré finds that growth in earnings appears to be more rapid in urban areas; an initial wage increase of about 7 percent when workers first move from rural to urban areas rises to an urban-rural difference of about 10 percent in three to five years.

By making workers more productive, education enables faster earnings growth for the educated individual. Additionally, various research studies

⁶ The increase in wages for college graduates is the net effect of two offsetting factors: spillovers, which raise wages, and the increase in supply of college graduates, which tends to reduce wages. The small positive net result indicates that the spillover effect slightly overcomes the supply effect.

have revealed that areas with concentrations of educated residents are more likely to have faster growth in population, employment, and productivity than areas where college-educated residents are less concentrated.⁷ Of course, college graduates are likely to relocate to obtain employment early in their careers; therefore, rapidly growing areas

Pennsylvania ranks high among all states in the U.S. in the number of colleges and universities and in the number of degrees awarded, both absolutely and when adjusted for total state population.

are likely to attract them. Thus, there is a certain counterbalance between influences: Concentrations of college graduates influence growth, and growth influences the concentration of college graduates. I discuss this in more detail later when I talk about local area efforts to increase the college-educated shares of their populations.

RAISING THE LEVEL OF EDUCATIONAL ATTAINMENT IN A REGION

As we have seen, college education is beneficial to the individual who possesses it. It also has spillover benefits for co-workers and residents of a region where large numbers of college graduates work and live. What are some of the factors that affect the educational attainment of an area's population? At first glance, it would seem that an area that produces a large

⁷ See the articles by Curtis Simon and Clark Nardinelli; Edward Glaeser, Jose Scheinkman, and Andrei Schleifer; James Rauch; and Christopher Wheeler.

number of college graduates would have a greater percentage of population with bachelor's degrees or higher.

The production of college graduates is notably evident in the Pennsylvania-New Jersey-Delaware region. A large number of colleges and universities produce large numbers of college graduates, although there is variation

among the three states. Pennsylvania ranks high among all states in the U.S. in the number of colleges and universities and in the number of degrees awarded, both absolutely and when adjusted for total state population. New Jersey ranks somewhat above average on both measures absolutely, but below average when adjusted for total state population. Delaware ranks below average on both measures absolutely; however, when the measures are adjusted for total state population, the percentage moves above average in the number of degrees awarded but not in the number of institutions. (See Tables 2 and 3 for state data and rankings.)

Pennsylvania and Delaware "produce" more college graduates than they "consume," and New Jersey "produces" fewer graduates. That is, the total number of freshmen enrolled in Pennsylvania and Delaware is greater than the number of college freshmen among those states' population. (Pennsylvania and Delaware bring in some students from out of state.) The total number of freshmen enrolled in New Jersey is lower than the number of col-

TABLE 2

Four-Year Colleges and Universities Relative to Total Population (2005)

State	Institutions per 1,000 Population	State	Institutions per 1,000 Population
Vermont	0.0353	South Carolina	0.0092
District of Columbia	0.0272	Virginia	0.0091
South Dakota	0.0232	Alaska	0.0090
North Dakota	0.0188	Illinois	0.0088
Nebraska	0.0154	Total	0.0087
New Hampshire	0.0153	Wisconsin	0.0087
Iowa	0.0152	Arkansas	0.0086
Massachusetts	0.0152	Connecticut	0.0083
Maine	0.0151	Alabama	0.0081
Missouri	0.0145	North Carolina	0.0076
Minnesota	0.0131	Georgia	0.0074
West Virginia	0.0127	<i>Delaware</i>	0.0071
<i>Pennsylvania</i>	0.0120	Idaho	0.0070
Kansas	0.0117	Utah	0.0069
New York	0.0115	Mississippi	0.0068
Rhode Island	0.0112	Michigan	0.0068
Tennessee	0.0111	Maryland	0.0068
New Mexico	0.0109	Arizona	0.0067
Oregon	0.0107	Louisiana	0.0066
Oklahoma	0.0107	Washington	0.0065
Montana	0.0107	California	0.0064
Hawaii	0.0102	Florida	0.0062
Indiana	0.0099	Nevada	0.0054
Kentucky	0.0096	Texas	0.0048
Colorado	0.0094	<i>New Jersey</i>	0.0044
Ohio	0.0093	Wyoming	0.0039

Source: National Center for Education Statistics and Census Bureau

lege freshmen in the state's population. (On net, New Jersey residents go out of state for their college education.) The percentage breakdown is: Delaware enrolls about 20 percent more freshmen in total; Pennsylvania enrolls 10 percent more; and New Jersey enrolls

about 30 percent less.⁸

The region's production of college graduates is concentrated in certain metropolitan areas, such as Philadel-

⁸ See the reference to the U.S. National Center for Education Statistics.

phia, State College, and Princeton, which is in the Trenton metropolitan area. These centers of education export their output to the rest of the world and, in this respect, are similar to some other well-known educational centers in the nation, such as Raleigh-

TABLE 3

Bachelor’s and Higher Degrees Awarded Relative to Total Population (2005)

State	Degrees per 1,000 Population	State	Degrees per 1,000 Population
District of Columbia	38.69	Ohio	7.22
Massachusetts	12.56	Oklahoma	7.19
Rhode Island	11.39	West Virginia	7.14
Vermont	11.07	Virginia	7.10
Utah	10.45	Montana	6.99
North Dakota	10.42	Oregon	6.77
Nebraska	9.83	Louisiana	6.76
Missouri	9.57	Idaho	6.45
New York	9.53	Maine	6.36
<i>Delaware</i>	9.30	Kentucky	6.24
Iowa	9.26	Washington	6.23
<i>Pennsylvania</i>	9.02	North Carolina	6.23
Minnesota	8.64	Tennessee	6.18
New Hampshire	8.56	Hawaii	6.00
Arizona	8.54	California	5.99
Kansas	8.40	South Carolina	5.90
Illinois	8.40	New Mexico	5.77
Colorado	8.20	Georgia	5.72
South Dakota	8.10	Texas	5.67
Indiana	8.10	Mississippi	5.66
Michigan	7.77	Florida	5.43
Connecticut	7.74	<i>New Jersey</i>	5.43
Wisconsin	7.57	Arkansas	5.32
Alabama	7.30	Wyoming	4.57
Total	7.25	Nevada	3.29
Maryland	7.23	Alaska	3.17

Source: National Center for Education Statistics and Census Bureau

Durham and Boston. Like these other areas, the centers of higher education in the region do not obtain all of their “raw material” locally, nor do they “consume” all of their “finished products” locally. For example, Pennsylvania imports a significant portion of

the raw material for producing college graduates — it has the second highest number of enrolled college freshmen from out of state — and the college graduates, the “finished products,” are re-exported. Delaware also re-exports college graduates, but a much smaller

number than Pennsylvania.

As the data described earlier demonstrate, Pennsylvania produces a large number of college graduates. Because Pennsylvania supplies workers with undergraduate and advanced degrees for the nation and many foreign

countries, it is not surprising that it does not retain a large share of them. Indeed, only four of the top 10 states ranked by degrees awarded (adjusted for total population) also rank among the top 10 states in the percentage of population with a bachelor's degree or higher. This fact suggests that there is not a strong relationship between the number of degrees awarded in a state and the proportion of the state's population holding degrees. Empirical research supports this impression. One statistical estimate indicates that the percentage increase in a state's college-educated population will be only about one-third of the percentage increase in its production of college graduates in the long run.⁹ Obviously, merely producing college graduates in a state does not guarantee that they will remain there.

ATTRACTING GRADUATES: AMENITIES AND JOBS

If producing college graduates in a state does not result in a commensurate increase in college graduates among that state's population, we need to look beyond the supply side to find ways to increase the number of college graduates in a state or a metropolitan area's population and labor force.

If we look beyond the supply side, what do we observe on the demand side? The importance of the demand side can be clearly seen within our region in the contrast between New Jersey and Pennsylvania. New Jersey is the leading state in providing college freshmen to other states, but the high percentage of college graduates among its population indicates that New Jersey attracts college graduates even if many of them have been educated outside the state.

⁹ See the article by John Bound, Jeffrey Groen, Gabor Kezdi, and Sarah Turner.

States and metropolitan areas seeking to increase their college-educated populations need to consider two major aspects of the demand side: the amenity aspect, which relates to which features of an area are attractive to college graduates, and the economic aspect, which relates to which areas have high demand for college-educated workers. The amenities most promi-

Large metropolitan areas are more likely than small ones to possess the amenities and economic prospects that attract college graduates.

nently highlighted by survey research and analyses of population movements are those associated with cultural and recreational opportunities and warm, dry climates.¹⁰ The economic aspect is related to job opportunities and salaries.

Various studies around the country have identified specific examples of these two aspects that are important to college graduates. A survey of Philadelphia-area college graduates discovered that the availability and affordability of housing are features of the area that are important to graduates who remain here; geographic location, job opportunities, recreation, and climate are features that are important to graduates who leave the area.¹¹ These results match those of surveys conducted in other states and metropolitan areas.¹² They are also consistent with research on college graduates' interstate

¹⁰ See the article by Richard Florida.

¹¹ See the reference to the Knowledge Industry Partnership.

¹² See the publication by Carnegie Mellon University.

moves, which reveals that they tend to leave states that have low employment growth, high unemployment, or low pay and move to states that score higher on one or more of these measures, with net migration to the South Atlantic and Mountain states.¹³

Large metropolitan areas are more likely than small ones to possess the amenities and economic prospects

that attract college graduates. Data for metropolitan areas indicate that the percentage of the population with a bachelor's degree or higher is greater in large metropolitan areas throughout the nation than it is in small areas. This is true for the three-state region. Four of the 21 metropolitan areas that are wholly or partially in the region have above-average percentages of population with a bachelor's degree or higher. Two of these are among the largest: the New York metropolitan area, which includes northern New Jersey, and the Philadelphia metropolitan area (Table 4). These two metropolitan areas are economically diverse, and many firms that need college-educated workers are located there. The other two areas, which are the highest ranked by this measure among areas in the three-state region, are State College, PA, and Trenton, NJ. In both of these areas, colleges and universities make up a large portion of the employment base, and the large share of faculty and students among the areas' populations boosts

¹³ See the article by Yolanda Kodrzycki.

TABLE 4**Percent of Population 25 Years and Older with a Bachelor's Degree or Higher (2005)**

Metropolitan Area	Percent
State College, PA	40.2
Trenton-Ewing, NJ	37.7
New York-Northern New Jersey-Long Island, NY-NJ-PA	34.8
Philadelphia-Camden-Wilmington, PA-NJ-DE-MD	31.7
Total U.S. Metropolitan Area Population	30.1
Harrisburg-Carlisle, PA	28.1
Pittsburgh, PA	27.1
Ocean City, NJ	26.3
Allentown-Bethlehem-Easton, PA-NJ	25.0
Erie, PA	24.2
Atlantic City, NJ	23.9
Lancaster, PA	23.0
Reading, PA	21.4
Scranton-Wilkes-Barre, PA	20.9
York-Hanover, PA	19.2
Lebanon, PA	18.9
Johnstown, PA	17.9
Dover, DE	17.6
Youngstown-Warren-Boardman, OH-PA	17.3
Williamsport, PA	16.9
Altoona, PA	15.8
Vineland-Millville-Bridgeton, NJ	15.7

Source: Census Bureau

their percentage of college-educated residents. "College town" metropolitan areas rank high among all areas in the region by percentage of the population with a bachelor's degree, as such towns do throughout the nation.

The high proportion of college graduates in the New York-Northern New Jersey metropolitan area clearly drives up the statewide proportion,

demonstrating the influence of both the amenity and economic aspects of demand. (The availability of some amenities, especially cultural ones, not only results from the concentration of college graduates but fosters such concentrations as well, because concentrations of college graduates constitute a large market for cultural amenities, which, in turn, attracts providers of

such amenities.) The area provides cultural and recreational amenities, and its concentrations of industries with large and growing needs for college-educated workers provide the economic aspect, serving as sources of demand for college graduates.

The Philadelphia metropolitan area serves a similar role at the other end of New Jersey and for southeastern Pennsylvania. In fact, the Philadelphia area has the high percentage of college graduates that is typical of large metropolitan areas (Table 5). But it does not figure as prominently in the statewide picture in Pennsylvania as the New Jersey portions of the New York-Northern New Jersey and the Philadelphia metropolitan areas do in New Jersey. Consequently, the statewide percentage in Pennsylvania is near the national average, while the New Jersey statewide percentage is above it.

If we examine the demand for college graduates as indicated by employment growth, the data indicate that job growth for occupations that typically require a college education has been slower in Pennsylvania than in the nation for several years, while it has been faster in New Jersey.¹⁴ These occupations are those in management, business and finance operations, computers and mathematics, architecture and engineering, sciences, community and social service, legal, education, arts and media, and health care. Obviously, many of these occupations are more in demand in urban areas than in rural areas. New Jersey, being more densely urbanized than Pennsylvania, will therefore have a greater base of demand for these occupations, but the difference in growth rates is striking. From 1999 (when current occupational definitions were established) until

¹⁴ See the 2007b reference to the U.S. Bureau of Labor Statistics.

TABLE 5**Percent of Population 25 Years and Older with a Bachelor's Degree or Higher (2005)
Ten Largest Metropolitan Areas**

Metropolitan Area	Percent
Washington-Arlington-Alexandria, DC-VA-MD-WV	45.9
New York-Northern New Jersey-Long Island, NY-NJ-PA	34.8
Atlanta-Sandy Springs-Marietta, GA	34.3
Chicago-Naperville-Joliet, IL-IN-WI	32.1
Philadelphia-Camden-Wilmington, PA-NJ-DE-MD	31.7
Total U.S. Metropolitan Area Population	30.1
Dallas-Ft. Worth-Arlington, TX	30.0
Los Angeles-Long Beach-Santa Ana, CA	29.4
Houston-Sugar Land-Baytown, TX	27.8
Miami-Ft. Lauderdale-Miami Beach, FL	27.5
Detroit-Warren-Livonia, MI	26.4

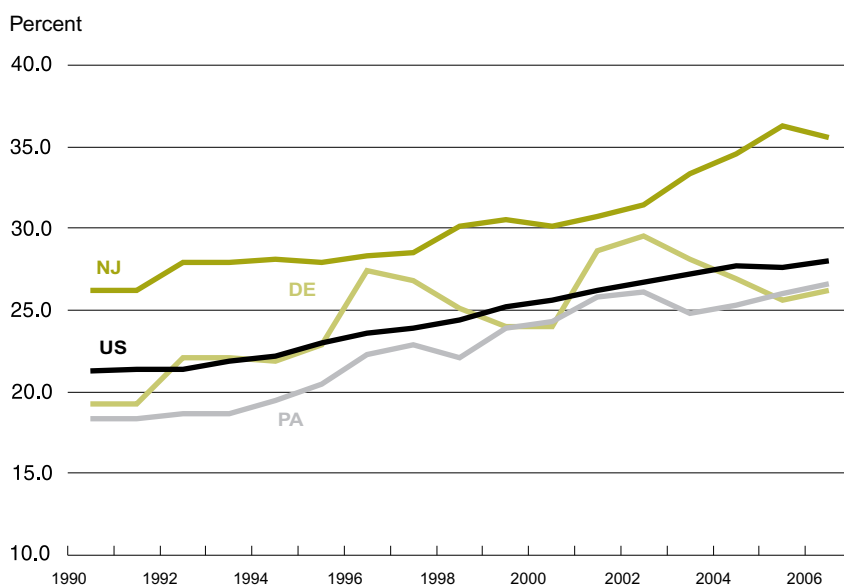
Source: Census Bureau

2006, employment in these occupations increased 13 percent in New Jersey compared with 4 percent in Pennsylvania (the national increase was 6 percent).¹⁵ Although Pennsylvania produces large numbers of college graduates, slow job growth for college graduates in the state reflects, at least in part, a relatively weaker demand for them. New Jersey's demand for college graduates brings them into the state (for the first time or as returning residents) even if they did not receive their college education there.

REGIONAL EFFORTS TO BOOST THE COLLEGE-EDUCATED POPULATION

The gap between a college graduate's income and the income of someone who hasn't completed college has been increasing, and the percentage of the population with a bachelor's degree or higher has been rising for many years throughout the country. In the past decade and a half, educational attainment, by this measure, has increased somewhat more in Pennsylvania and New Jersey than in the nation, but it has slipped slightly in Delaware (see the Figure). Despite the general increase in the proportion of the population with a college education, there is still a great deal of variation in this measure around the nation (Table 6). Consequently, regional variations in educational attainment are increasingly influencing regional variations in income.

The positive impact of an educated population on regional income and economic growth is well known to governments, businesses, and civic groups around the country, and they are making efforts to attract and retain college students and graduates. This is not an easy task, since recent college

FIGURE**Percent of Population 25 Years and Older with Bachelor's Degree or Higher**

Source: Census Bureau

¹⁵ Data on occupational employment for Delaware are not complete for these years.

TABLE 6**Percent of Population 25 years and Older with a Bachelor's Degree or Higher (Ranked in 2006)**

State	2006	2000	1990	State	2006	2000	1990
District of Columbia	49.1	38.3	33.3	New Mexico	26.7	23.6	20.4
Massachusetts	40.4	32.7	27.2	<i>Pennsylvania</i>	26.6	24.3	17.9
Colorado	36.4	34.6	27.0	<i>Delaware</i>	26.2	24.0	21.4
Connecticut	36.0	31.6	27.2	Michigan	26.1	23.0	17.3
Maryland	35.7	32.3	26.5	North Carolina	25.6	23.2	17.4
<i>New Jersey</i>	35.6	30.1	24.8	Texas	25.5	23.9	20.4
Vermont	34.0	28.8	24.3	South Dakota	25.3	25.7	17.2
Minnesota	33.5	31.2	21.9	Idaho	25.1	20.0	17.7
Hawaii	32.3	26.3	22.9	Montana	25.1	23.8	19.8
New York	32.2	28.7	23.1	Iowa	24.7	25.5	16.9
New Hampshire	32.1	30.1	24.3	Wisconsin	24.6	23.8	17.7
Virginia	32.1	31.9	24.5	Arizona	24.5	24.6	20.3
Kansas	31.6	27.3	21.1	Missouri	24.3	26.2	17.8
Washington	31.4	28.6	22.9	Ohio	23.3	24.6	17.0
Illinois	31.2	27.1	21.1	Oklahoma	22.9	22.5	17.8
Rhode Island	30.9	26.4	21.3	South Carolina	22.6	19.0	16.6
California	29.8	27.5	23.4	Tennessee	22.0	22.0	15.9
North Dakota	28.7	22.6	18.0	Indiana	21.9	17.1	15.6
Oregon	28.3	27.2	20.6	Louisiana	21.2	22.5	16.1
Georgia	28.1	23.1	19.3	Mississippi	21.1	18.7	14.8
U.S.	28.0	25.6	20.3	Alabama	20.8	20.4	15.6
Alaska	27.7	28.1	23.0	Nevada	20.8	19.3	15.3
Florida	27.2	22.8	18.3	Wyoming	20.8	20.6	18.8
Nebraska	27.2	24.6	19.0	Kentucky	20.2	20.5	13.6
Utah	27.0	26.4	22.2	Arkansas	19.0	18.4	13.4
Maine	26.9	24.1	18.8	West Virginia	15.9	15.3	12.3

Source: Census Bureau

graduates are among the most mobile sectors of the population. States and cities are using a variety of methods to increase enrollment at colleges and universities in their areas and to retain graduates.¹⁶ These methods include scholarships, marketing efforts, and internships, among others. Programs at the state and local levels around the nation as well as in the region foster internships, collaboration between colleges and industry, and new business formation focused on college graduates.¹⁷ The Philadelphia Knowledge Industry Partnership is spearheading efforts in the Philadelphia region, and there are programs in other large cities in the District.

It is important for regional efforts aimed at increasing the number of college-educated workers to concentrate on the economic aspect of the demand side by encouraging job growth focused on industries and occupations that use college graduates. This is clearly evident in our region: New Jersey ranks high in college graduates, attracting them from out-of-state colleges as its highly educated labor force grows. Demographic studies and surveys both

¹⁶ See the article by George Smith.

¹⁷ See the references to the Pennsylvania Economy League and the Knowledge Industry Partnership.

show that job opportunities are powerful determinants of college graduates' location decisions, especially for those more inclined to move from one area to another; so it makes sense to focus efforts to attract college graduates on this factor.


Programs that succeed in attracting and retaining college graduates can benefit the regions that undertake them. But promoters of such programs must keep in mind that some areas, such as those in the regions mentioned earlier, are — and are likely to remain — exporters of college graduates, with the associated relatively low retention rate. Nevertheless, colleges and universities that send a relatively large share of their graduates elsewhere still provide several important benefits to the local economy.¹⁸ The college itself is a source of employment. Both students and faculty raise the educational attainment level of the local population (demonstrated in our region by the high percentage of college-educated residents in the State College, PA, and Trenton, NJ areas). The area can also serve as a source of supply of college-educated workers for local employers, even if most graduates go elsewhere.

But it is perhaps more appropriate to view these areas as export centers,

¹⁸ See the reference to the Federal Reserve Bank of Atlanta.

rather than local sources of supply and, in turn, to view the region in which they are located as an import destination. If we view the situation in this way, raising the percentage of the college-educated population in the region would best be accomplished by raising demand for college graduates — primarily by stimulating growth of jobs requiring a college education (or higher), not by raising supply through efforts narrowly aimed at retaining or attracting college graduates.

CONCLUSION

Education is an investment in human capital that pays individual and social dividends. The percentage of an area's population that has a bachelor's degree or higher is positively associated with the area's total income and growth. Recognizing this, civic leaders in many areas of the country, including our region, are making efforts to attract and retain college graduates. Research shows that employment opportunities are a key element for successful attraction and retention efforts. Thus, programs to boost the college-educated population should not be narrowly focused on the education sector but should include broader efforts to boost employment growth, especially for occupations and industries that require workers with bachelor's degrees and higher. 

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