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Center for Business and Economic Research

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10-2015

# Education Pays Everywhere!

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## Repository Citation

Bollinger, Christopher R., "Education Pays Everywhere!" (2015). *Issue Brief on Topics Affecting Kentucky's Economy*. 18.  
[https://uknowledge.uky.edu/cber\\_issuebriefs/18](https://uknowledge.uky.edu/cber_issuebriefs/18)

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# CENTER FOR BUSINESS AND ECONOMIC RESEARCH

## ISSUE BRIEF

on topics affecting Kentucky's economy

October 2015

### Education Pays Everywhere!

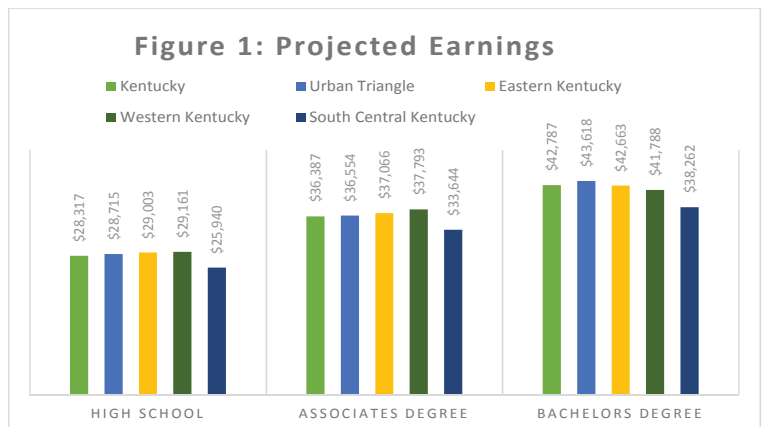
By Christopher R. Bollinger (crboll@uky.edu)\*

Economists and other researchers have long demonstrated the relationship between education and earnings. In this brief, we focus on the relationship between educational attainment and earnings in the state of Kentucky. Our results, in many ways, are unsurprising, as the old ad campaign said, "Education Pays." What may be surprising is that we demonstrate that education pays not only in the big cities of Lexington and Louisville, but also in the more rural parts of the state, such as eastern Kentucky and western Kentucky.

The American Community Survey (ACS) for the years 2009-2013 is the source of our data. We use statistical methods designed to isolate the impact of education on earnings from the many other known factors such as age and gender which affect earnings as well. Overall, we find that residents of Kentucky who have an Associate's degree earn approximately 29% more than Kentuckians with a high school diploma. The average high school graduate in the state earns \$28,317 a year. That 29% premium for an Associate's degree represents \$8,070 per year in their paycheck or a total annual income of \$36,387. Kentuckians who hold a Bachelor's degree earn 51% more than their friends with only a high school diploma. This translates into \$14,470 additional income every year, or total earnings of \$42,787.

Many Kentuckians worry that these premiums are only achievable if they leave home and move to the metropolitan areas of the state. Our data allow us to examine this question by focusing on smaller regions. We focus on four different regions: the Urban Triangle, Western Kentucky, Eastern Kentucky, and South Central Kentucky.\*\*

In Figure 1, we present the overall state results, as well as the results for people living in each of these four regions (all projections are presented in Table 1 at the end of the document). Over half of the state's population lives and works in the Urban Triangle. For individuals residing in this area, an Associate's degree pays 27% more than a high school diploma and a Bachelor's pays 52% more than a high school diploma. What may be surprising to learn is that individuals



who live outside the urban areas (combining Eastern, Western and South Central), gain 29% higher wages with an Associate's degree compared to those with only a high school education. Similarly, a Bachelor's degree leads to an average 46% higher earnings than their high school educated counterparts.

\*This research was funded by the Council on Postsecondary Education (CPE) to study the relationship between education and outcomes such as income, employment levels, health, public assistance use, and crime.

\*\*The Urban Triangle includes the Louisville, Lexington, and greater Cincinnati metropolitan areas and surrounding counties. Eastern Kentucky includes Bath, Bell, Boyd, Bracken, Breathitt, Carter, Clay, Fleming, Floyd, Greenup, Harlan, Jackson, Johnson, Knott, Knox, Laurel, Lawrence, Lee, Leslie, Letcher, Lewis, Magoffin, Martin, Mason, Menifee, Montgomery, Morgan, Owsley, Perry, Pike, Robertson, Rockcastle, Rowan, Whitley, and Wolfe counties. Western Kentucky includes Ballard, Caldwell, Calloway, Carlisle, Christian, Crittenden, Daviess, Fulton, Graves, Hancock, Henderson, Hickman, Hopkins, Livingston, Lyon, Marshall, McCracken, McLean, Muhlenberg, Ohio, Todd, Trigg, Union, and Webster counties. South Central Kentucky includes Adair, Allen, Barren, Breckinridge, Butler, Casey, Clinton, Cumberland, Edmonson, Grayson, Green, Hart, Larue, Logan, Marion, McCreary, Metcalfe, Monroe, Nelson, Pulaski, Russell, Simpson, Taylor, Warren, Washington, and Wayne counties.

Kentuckians earn 29% more with an Associate's degree and 51% more with a Bachelor's degree.

A BA in Eastern or Western Kentucky pays approximately \$12,000 more per year.

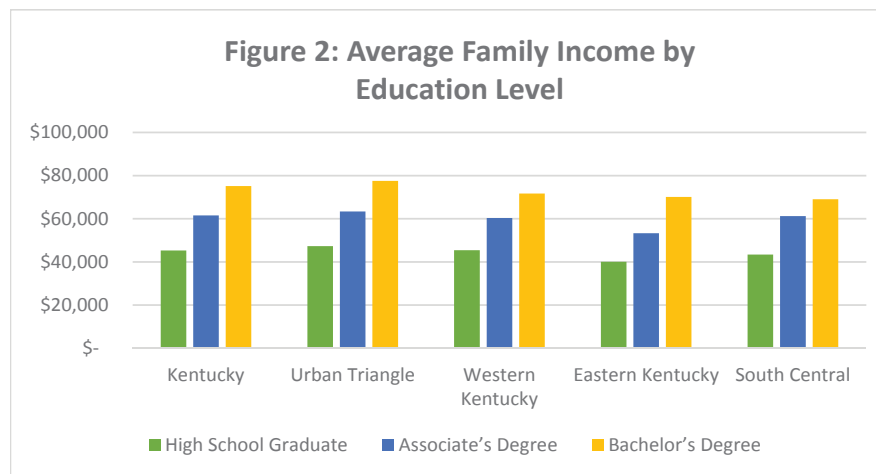


There is some variation across the four regions, with salary estimates for college graduates being the highest in Eastern Kentucky and the lowest in Western Kentucky. But even in Western, where a Bachelor’s degree returns 43% higher earnings, this translates into \$12,000 higher earnings every year or \$41,788 in annual income.

If Kentucky were to increase the number of individuals with an Associate’s or Bachelor’s degree by 1%, this translates into a 0.5% increase in per capita earnings or a shift from \$33,723 to \$33,949 per year. If Kentucky education levels were equivalent to the U.S. levels, per capita earnings would be 3.5% higher. This translates into a \$1,100 per year increase in per capita income, on average. This shift would move Kentucky from 47th to 43rd in per capita earnings compared to other states.

*Family earnings increase by 56% for college graduates versus high school diploma holders.*

In Figure 1, we focus on individual earnings and only for those between the ages of 21 and 64. In order to see the larger picture, Figure 2 examines how family income is affected by the education level of the head of the household. The



results are striking. A family where the head of the household has an Associate’s degree has 29% higher total income than a family where the householder is a high school graduate. Even more striking, earning a Bachelor’s degree leads to a 56% higher family income than the family headed by a high school graduate. As we saw in the comparison of labor market earnings, this comparison is quite similar across all the regions. Most striking is the difference that

an education makes to family in Eastern Kentucky. As we explore in “Want a Job? Get a College Degree,” this is largely due to participation in the labor market.

While individuals may have experiences that differ from these averages, the overwhelming evidence is that education leads to higher incomes, both through earnings and other avenues. Individuals and families with higher education fare much better through our state, whether it be the Urban Triangle, the beautiful hills of Eastern Kentucky, or the rich plains of Western Kentucky.

**Table 1: Average Individual Earnings Projection by Level of Education**

	High School Graduate	Associates Degree		Bachelors Degree	
	Annual Earnings	Average Earnings Projection	% Increase Compared to High School	Average Earnings Projection	% Increase Compared to High School
Kentucky	\$28,317	\$36,387	29%	\$42,787	51%
Urban Triangle	\$28,715	\$36,554	27%	\$43,618	52%
Eastern Kentucky	\$29,003	\$37,066	28%	\$42,663	47%
Western Kentucky	\$29,161	\$37,793	30%	\$41,788	43%
South Central Kentucky	\$25,940	\$33,644	30%	\$38,262	48%