



# CENTER FOR BUSINESS AND ECONOMIC RESEARCH

## ISSUE BRIEF

on topics affecting Kentucky's economy

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### How to Raise State Revenue without Raising Taxes

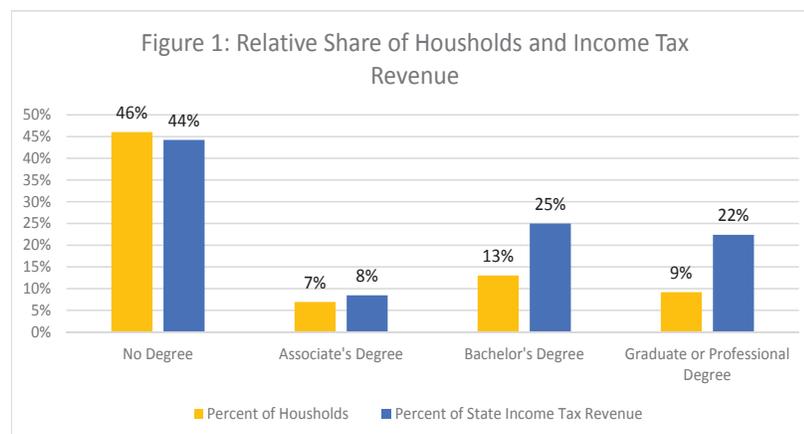
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*Tax revenues would increase by up to \$500 million per year if Kentucky education levels were increased to meet national averages.*

A positive relationship exists between educational attainment and earnings, which has been well established in the literature through multiple studies. This, in turn, influences the revenues generated for the state of Kentucky through the personal income tax. We predict even the modest change of increasing Associate's and Bachelor's degree holders by 1% would increase revenue by \$37 million. Kentucky loses between \$300 million and \$500 million in state tax revenues every year because our educational attainment is lower than the national average.

We use data from the American Community Survey (ACS) and the TAXSIM program, provided by the National Bureau of Economic Research (NBER), to estimate the amount that households in Kentucky pay in state income tax. We focus only on state income tax. Our estimates are for tax year 2011, the last year for which data and simulation modules are available. While our estimates are based on a simulation, but are quite comparable to the actual revenue of 2011.

Figure 1 presents a summary of our overall estimates for the state. We present the share of household and the share of state income tax revenues paid by those households.



Families headed by someone without any type of college degree contribute about 44% of total personal income tax revenues while making up 46% of total households. In contrast, families headed by someone with an Associate's degree contribute about 8.5% of the personal income tax revenues, while making up only 6.9% of all households.

Most importantly, families headed by a person with a Bachelor's degree make up only 13% of households, but contribute 25% of the total state income tax revenue. The 9% of families headed by someone with graduate or professional degrees contribute 22% of total state income tax revenue.

Using these data, we've estimated the difference in taxes paid across the levels of educational attainment. We control for family structure and other demographic characteristics known to be associated with earnings. Thus, our results and our simulation here isolate the impact of education. A simple simulation is to ask what would happen if 1% of the households moved from being headed by high school graduate to being headed by a person with an Associate's degree. Using our projections, we estimate that total state income tax revenues would rise by 0.2%.

\*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.

*Families headed by an individual with a Bachelor's degree comprise only 13% of the Kentucky population but contribute 25% of the total state income tax revenues.*



*Increasing the number of income earners with a college degree could potentially increase state tax revenues by \$37 million (1%) each year.*

In 2013-14 tax year, that would amount to an additional \$6.9 million in tax revenues. Similarly, moving that group to have a Bachelor’s degree would increase state income tax revenues by 0.8%, amounting to over \$30 million in additional revenues. Doing both would increase the revenues by over \$37 million.

We use our simulation to compare Kentucky educational attainment to the rest of the country. We ask the following question: how much additional revenue would be generated if the education distribution in Kentucky was similar to the education distribution in the U.S. as a whole? The simulation suggests that this change would generate between 9.9% and 14.3% more in state income tax revenues. This shift translates into revenue ranging between \$370 million and \$534 million.

One might be concerned, however, that these individuals who obtain higher education would end up worse off after taxes. This assumption does not reflect reality. A complete analysis of how education impact income and earnings can be found in our “Education Pays” Brief.

**Table 1: Average Family Income Earnings Projection by Level of Education**

	High School Graduate	Associate's Degree		Bachelor's 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%

*Shifting from having a high school diploma to an Associate’s degree amounts to an additional \$8,000 per year in income or a 29% increase.*

Total household income increases quite substantially when the head of the household moves from holding only a high school diploma to holding either type of postsecondary degree examined in the model. For example, gaining an Associate’s degree increases average household income by \$8,070. Our predictions suggest that these individuals would only have to pay an additional \$346 in state income taxes, leading to a net gain of \$7,724 per year in income. Similarly, a household moving from a high school diploma household to a Bachelor’s degree householder, would pay somewhere between \$1,560. The net gain, after taxes would be over \$12,900 when Federal income taxes are included, the Associate’s degree holder still nets an additional \$6,770 per year, while the Bachelor’s degree holder nets \$10,500.

Increasing education in the state of Kentucky will not only improve the financial well-being of our citizens, but it will help our state government to balance the budget as well.