

The image shows three young men in a workshop setting, focused on working on a complex mechanical assembly. They are all wearing safety glasses. The man on the left is wearing a green zip-up jacket over a blue shirt. The man in the middle is wearing a blue t-shirt. The man on the right is wearing a dark blue shirt. They are gathered around a piece of machinery that consists of a metal frame with various components, including wires, connectors, and what appears to be a motor or actuator. The background is a blurred industrial or workshop environment.

PART II: ECONOMIC BENEFITS OF POSTSECONDARY CREDENTIALS IN TENNESSEE'S COUNTIES

INCREMENTAL EARNINGS AND REVENUES UPON DRIVE TO 55 ACHIEVEMENT

Authored by¹



CENTER FOR ECONOMIC RESEARCH IN
TENNESSEE (CERT)
Tennessee Department of Economic and
Community Development
312 Rosa L. Parks Avenue
Nashville, Tennessee 37243
Phone: (615) 741-1888
TNECD.com



BOYD CENTER FOR BUSINESS &
ECONOMIC RESEARCH

THE BOYD CENTER FOR BUSINESS & ECONOMIC
RESEARCH
Haslam College of Business
The University of Tennessee
716 Stokely Management Center
Knoxville, Tennessee 37996
Phone: (865) 974-5441
cber.haslam.utk.edu

© May 2, 2016

¹Report prepared by William Fox, Director, the Boyd Center; Lawrence Kessler, Research Assistant Professor, the Boyd Center; Sally Haar, Director, CERT; and Katherine Scott, Statistical Research Specialist, CERT.



TABLE OF CONTENTS

PART II: ECONOMIC BENEFITS OF POSTSECONDARY CREDENTIALS IN TENNESSEE'S COUNTIES

Incremental Earnings and Revenues upon Drive to 55 Achievement

3 INTRODUCTION

4 ADDITIONAL CERTIFICATE OR DEGREE HOLDERS BY COUNTY

Figure 1: Estimated Percent of Population Age 25 to 64 with a Certificate or Degree in 2015

5 ADDITIONAL INCOME (EARNINGS + FRINGE BENEFITS)

Table 1: Additional Income to Tennessee Workers by County

INTRODUCTION

A recent report by the Center for Economic Research in Tennessee (CERT) and the Boyd Center for Business and Economic Research projected the number of additional certificates and postsecondary degrees that Tennessee’s population must earn to reach the Drive to 55 goal by 2025,² and projected increases in income and tax revenues that such growth could generate.

The Boyd Center and CERT previously estimated 528,630 additional certificate- or degree-holders will work in Tennessee upon achievement of 55 percent postsecondary attainment in 2025. These workers are projected to earn \$9.33 billion annually more in income than that which would have been generated without the targeted growth in postsecondary credentials, and generate an additional \$764.4 million in state and local tax revenue each year.

This report expands on our previous analysis by using forecasts³ of the share of higher educational attainment growth needed in each county for Tennessee as a whole to reach the Drive to 55 goal in 2025. Assuming the attainment goals are met, the analysis projects the additional income to workers living in each county. The economic value of postsecondary education within the state of Tennessee is seen in both higher earning potential for county residents and higher tax revenues for state and local governments. Achieving increased educational attainment levels in Tennessee counties is vital to preparing a region’s workforce for future employer demands.⁴

WORKERS ARE PROJECTED TO EARN \$9.33 BILLION ANNUALLY MORE IN INCOME THAN THAT WHICH WOULD HAVE BEEN GENERATED WITHOUT THE TARGETED GROWTH IN POSTSECONDARY CREDENTIALS.

Drive to 55 successes are already evident. The college-going rate for the class beginning in the fall of 2015 is 62.5 percent—an unprecedented 4.5 percentage point increase from the fall of 2014.⁵ Tennessee has become the leading state in the nation for high school seniors completing the FAFSA, with 68 percent of the 2015 class submitting the form.⁶ Additionally, first-time freshmen enrollment at public institutions in Tennessee increased by 10.1 percent between the fall of 2014 and fall of 2015.⁷ Tennessee ranks as the #1 state for “Education:

²The goal of the Drive to 55 program is to have 55 percent of Tennessee’s working age population equipped with a college degree or certificate by 2025.

³County forecasts of growth needed for the state to reach 55 percent attainment were provided by the Tennessee Higher Education Commission (THEC).

⁴A recent CERT report highlights the importance of increasing the educational attainment of a community’s workforce. Communities and businesses will experience automation of job tasks, retirements of the baby boomer cohort, among other disruptive trends in our future; education can prepare a workforce to manage and align with such trends.

⁵Tennessee Higher Education Commission (THEC)

⁶Ibid

⁷Ibid

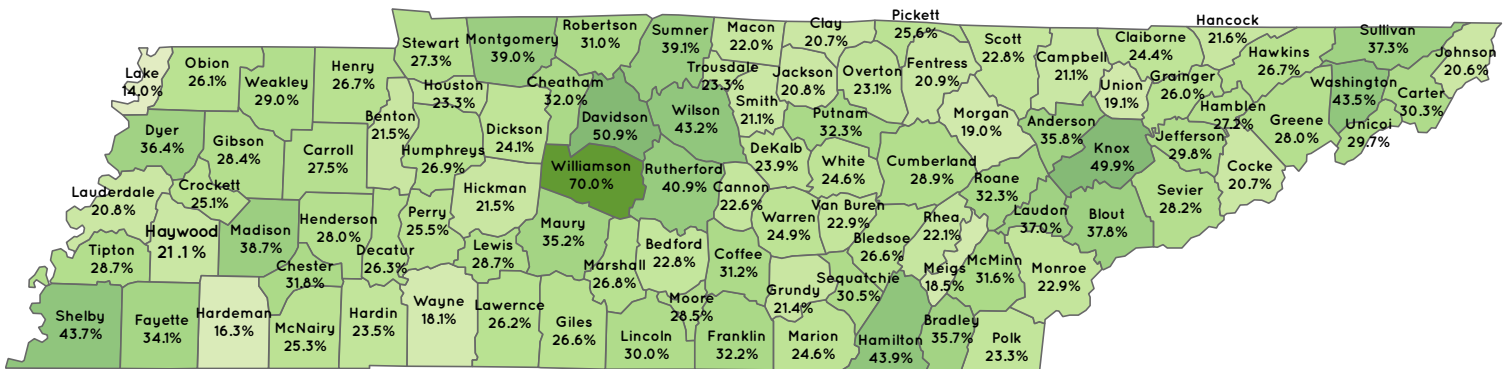
Tech Skills Leaders” according to *Business Facilities* magazine’s 11th Annual State Rankings Report. Last year, Tennessee ranked #1 in the “Education: Race to the Top Leader” category.

THE COLLEGE-GOING RATE FOR THE CLASS BEGINNING IN THE FALL 2015 IS 62.5 PERCENT— AN UNPRECEDENTED 4.5 PERCENTAGE POINT INCREASE FROM THE FALL OF 2014.

ADDITIONAL CERTIFICATE OR DEGREE HOLDERS BY COUNTY

As of 2015, an estimated 1,337,581 Tennesseans age 25 to 64 have a postsecondary certificate or associates, bachelor’s, graduate or professional degree. This represents 38.7 percent of the state’s working-age population.⁸ Educational attainment in Tennessee’s counties varies widely, as indicated in Figure 1.

FIGURE 1: ESTIMATED PERCENT OF POPULATION AGE 25 TO 64 WITH A CERTIFICATE OR DEGREE IN 2015



In total, an estimated 1,984,268 Tennesseans age 25 to 64 will need to hold a postsecondary credential in 2025 for the state to reach the 55 percent postsecondary attainment goal. This translates to 646,687 net new credential-holders over the next 10 years. Table 1 provides a forecast of the number of additional certificates and degrees needed in each county for Tennessee as a whole to reach the 55 percent attainment goal.⁹

⁸County estimates are based on U.S. Census Bureau population and educational attainment levels of the population age 25 to 64, the Boyd Center’s estimation of postsecondary certificates, and the Boyd Center’s 2015 population forecasts for age 25 to 64. Focusing on the highest level of educational attainment avoids double-counting individuals who have received more than one credential.

⁹The county attainment goals are adapted from THEC.

County estimates are based on each county's current education level and do not assume that every county reaches 55 percent educational attainment. Every county sees significant advantages to a better-educated labor force. For example, we project that Sevier County would need to increase its educational attainment level from 28.2 percent in 2015 to 46.6 percent in 2025, representing an additional 11,511 certificate or degree holders. In comparison, Knox County would need 43,877 new certificate or degree holders, which would take the county from 49.9 percent of the working-age population in 2015 to 65.2 percent in 2025. Table 1 shows that both counties would see large increases in annual earnings and income if they were able to reach these county-specific targets.

646,687 NET NEW CREDENTIAL-HOLDERS ARE PROJECTED OVER THE NEXT 10 YEARS.

Not all of the additional certificate and degree holders will enter Tennessee's workforce. In Tennessee, approximately 78.4 percent of certificate and associate's degree holders and approximately 85.4 percent of those with bachelor's or professional degrees in Tennessee can be expected to be in the labor force.¹⁰ Therefore, an estimated 528,630 new graduates will be working in Tennessee in 2025. Using county-specific labor force participation rates, Table 1 also presents a projection of the number of new graduates working in each county by 2025.

ADDITIONAL INCOME (EARNINGS + FRINGE BENEFITS)

Postsecondary education will boost income for Tennesseans. On average, a high-school graduate in Tennessee could earn \$5,941 more per year with a certificate or an associate's degree, \$18,860 more per year with a Bachelor's degree, and \$30,949 more per year with a graduate or professional degree in 2015.¹¹ Using county-specific earning levels, we project additional earnings to residents of Tennessee's counties, above levels that would have been generated without the forecasted growth in individuals with a postsecondary education. We assume that fringe benefits such as health and dental insurance would add another 22.5 percent to these additional earnings.¹²

528,630 NEW GRADUATES WILL BE WORKING IN TENNESSEE IN 2025.

¹⁰Labor force participation rates by educational attainment for each county's population age 25 to 64 are from the U.S. Census Bureau, 2014 5-year American Community Survey.

¹¹Median earnings by county are from the U.S. Census Bureau's 2014 5-year American Community Survey and are adjusted to 2015 dollars using the Employment Cost Index.

¹²U.S. Bureau of Economic Analysis data from the second quarter of 2015 suggest that fringe benefits equal 22.5 percent of wage and salary earnings.

Table 1 demonstrates that the 528,630 net new certificate- and degree-holders working in Tennessee in 2025 will make a total of \$7.62 billion annually in additional earnings and \$1.71 billion in additional fringe benefits for a total of \$9.33 billion in annual additional income, all reported in 2015 dollars.¹⁵ Furthermore, we estimate that each county stands to benefit from the Drive to 55 initiative; however based on their current and expected education levels some counties will see larger gains than others. For example, if Hancock County increases its educational attainment rate from 21.6 percent in 2015 to 36.6 percent in 2025, we estimate that total income to workers living in Hancock County would grow by \$2.4 million annually, or about \$360 per resident. By comparison, if Shelby County increases its education rate from 43.7 percent to 60.3 percent, income in Shelby County would grow by almost \$1.4 billion per year or somewhat more than \$1,400 per resident. The educational level that is attained ultimately determines the extent of income growth in each county and for each worker.

EACH COUNTY STANDS TO BENEFIT FROM THE DRIVE TO 55 INITIATIVE.

TABLE 1: ADDITIONAL INCOME TO TENNESSEE WORKERS BY COUNTY

County	Number of Additional Degree Holders Needed by 2025	Number of Additional Degree Holders Working by 2025	Total Additional Earnings to Workers (in millions)	Additional Fringe Benefits (in millions)	Total Additional Income (in millions)
Anderson	6,023	4,761	\$65.3	\$14.7	\$80.0
Bedford	5,072	4,150	\$54.3	\$12.2	\$66.5
Benton	1,157	887	\$9.7	\$2.2	\$11.8
Bledsoe	774	529	\$5.9	\$1.3	\$7.3
Blount	11,580	9,341	\$120.0	\$27.0	\$146.9
Bradley	9,739	8,067	\$105.6	\$23.7	\$129.4
Campbell	3,207	2,357	\$31.3	\$7.0	\$38.3
Cannon	1,474	1,216	\$14.4	\$3.2	\$17.6
Carroll	1,852	1,486	\$14.1	\$3.2	\$17.3
Carter	4,393	3,374	\$26.5	\$6.0	\$32.5
Cheatham	4,232	3,609	\$41.7	\$9.4	\$51.0
Chester	1,638	1,327	\$16.1	\$3.6	\$19.8
Claiborne	3,267	2,525	\$33.0	\$7.4	\$40.5
Clay	607	476	\$5.6	\$1.3	\$6.9
Cocke	3,253	2,457	\$29.5	\$6.6	\$36.1
Coffee	4,907	3,991	\$58.2	\$13.1	\$71.3
Crockett	1,041	876	\$9.9	\$2.2	\$12.1
Cumberland	4,771	3,398	\$30.6	\$6.9	\$37.5
Davidson	53,815	46,097	\$705.3	\$158.5	\$863.8
Decatur	891	738	\$6.7	\$1.5	\$8.2

¹⁵Additional income represents income above what would have been made with only a high school degree.

County	Number of Additional Degree Holders Needed by 2025	Number of Additional Degree Holders Working by 2025	Total Additional Earnings to Workers (in millions)	Additional Fringe Benefits (in millions)	Total Additional Income (in millions)
DeKalb	1,584	1,284	\$15.3	\$3.4	\$18.7
Dickson	5,950	4,760	\$66.2	\$14.9	\$81.1
Dyer	2,191	1,799	\$23.9	\$5.4	\$29.3
Fayette	4,766	3,885	\$63.9	\$14.4	\$78.2
Fentress	1,591	1,239	\$18.3	\$4.1	\$22.4
Franklin	2,998	2,413	\$33.5	\$7.5	\$41.0
Gibson	4,338	3,557	\$47.0	\$10.6	\$57.5
Giles	2,218	1,783	\$17.9	\$4.0	\$22.0
Grainger	1,583	1,258	\$14.9	\$3.3	\$18.2
Greene	6,398	5,050	\$52.7	\$11.8	\$64.5
Grundy	775	579	\$6.5	\$1.5	\$8.0
Hamblen	6,270	5,050	\$57.3	\$12.9	\$70.1
Hamilton	30,780	25,534	\$403.6	\$90.7	\$494.3
Hancock	399	285	\$1.9	\$0.4	\$2.4
Hardeman	2,848	2,171	\$24.9	\$5.6	\$30.5
Hardin	1,809	1,334	\$14.6	\$3.3	\$17.9
Hawkins	5,000	3,959	\$59.2	\$13.3	\$72.5
Haywood	1,093	830	\$7.8	\$1.8	\$9.6
Henderson	2,374	1,921	\$31.3	\$7.0	\$38.4
Henry	2,190	1,729	\$16.7	\$3.8	\$20.5
Hickman	2,709	2,084	\$31.3	\$7.0	\$38.4
Houston	607	462	\$5.7	\$1.3	\$7.0
Humphreys	1,199	921	\$12.8	\$2.9	\$15.7
Jackson	1,018	794	\$7.5	\$1.7	\$9.2
Jefferson	4,387	3,530	\$45.9	\$10.3	\$56.2
Johnson	1,882	1,458	\$13.6	\$3.1	\$16.7
Knox	43,877	36,821	\$575.2	\$129.3	\$704.5
Lake	1,002	603	\$9.7	\$2.2	\$11.9
Lauderdale	2,762	2,129	\$23.8	\$5.3	\$29.1
Lawrence	3,058	2,443	\$26.6	\$6.0	\$32.6
Lewis	796	635	\$6.2	\$1.4	\$7.6
Lincoln	2,621	2,082	\$20.4	\$4.6	\$25.0
Loudon	4,423	3,444	\$55.5	\$12.5	\$68.0
Macon	2,192	1,730	\$17.3	\$3.9	\$21.2
Madison	8,256	5,855	\$78.2	\$17.6	\$95.8
Marion	2,354	1,899	\$21.3	\$4.8	\$26.1
Marshall	2,991	2,419	\$31.9	\$7.2	\$39.0
Maury	7,338	5,970	\$71.3	\$16.0	\$87.4
McMinn	3,795	3,166	\$36.8	\$8.3	\$45.0
McNairy	1,945	1,589	\$22.0	\$5.0	\$27.0

County	Number of Additional Degree Holders Needed by 2025	Number of Additional Degree Holders Working by 2025	Total Additional Earnings to Workers (in millions)	Additional Fringe Benefits (in millions)	Total Additional Income (in millions)
Meigs	1,109	814	\$11.3	\$2.5	\$13.9
Monroe	4,232	3,313	\$41.9	\$9.4	\$51.3
Montgomery	27,700	22,502	\$308.5	\$69.3	\$377.9
Moore	554	472	\$6.0	\$1.3	\$7.3
Morgan	2,410	1,613	\$21.6	\$4.9	\$26.5
Obion	2,045	1,564	\$21.3	\$4.8	\$26.1
Overton	2,032	1,579	\$16.6	\$3.7	\$20.4
Perry	585	415	\$6.8	\$1.5	\$8.4
Pickett	421	357	\$9.1	\$2.1	\$11.2
Polk	1,480	1,052	\$8.8	\$2.0	\$10.8
Putnam	8,905	6,960	\$98.7	\$22.2	\$120.8
Rhea	2,985	2,434	\$21.2	\$4.8	\$26.0
Roane	4,170	3,203	\$53.2	\$12.0	\$65.2
Robertson	7,923	6,769	\$85.3	\$19.2	\$104.4
Rutherford	56,150	47,773	\$513.3	\$115.4	\$628.7
Scott	2,046	1,718	\$14.3	\$3.2	\$17.5
Sequatchie	1,337	1,097	\$15.9	\$3.6	\$19.4
Sevier	11,511	9,332	\$117.8	\$26.5	\$144.2
Shelby	77,091	64,663	\$1,132.1	\$254.5	\$1,386.5
Smith	2,046	1,610	\$11.4	\$2.6	\$14.0
Stewart	1,100	832	\$11.3	\$2.5	\$13.8
Sullivan	9,833	7,850	\$114.0	\$25.6	\$139.6
Sumner	20,868	17,389	\$215.1	\$48.3	\$263.4
Tipton	8,078	6,860	\$99.1	\$22.3	\$121.4
Trousdale	861	712	\$2.0	\$0.5	\$2.5
Unicoi	1,072	872	\$13.7	\$3.1	\$16.8
Union	1,696	1,245	\$17.3	\$3.9	\$21.1
Van Buren	328	249	\$3.7	\$0.8	\$4.5
Warren	3,146	2,312	\$30.1	\$6.8	\$36.8
Washington	14,324	11,361	\$160.2	\$36.0	\$196.2
Wayne	1,976	1,539	\$18.3	\$4.1	\$22.4
Weakley	3,415	2,722	\$20.3	\$4.6	\$24.9
White	2,265	1,818	\$20.1	\$4.5	\$24.6
Williamson	33,905	27,579	\$657.8	\$147.9	\$805.7
Wilson	17,024	13,937	\$245.3	\$55.1	\$300.4
TN State Total	646,687	528,630	\$7,617.7	\$1,712.2	\$9,330.0

Sources: Calculations based on data from the U.S. Bureau of Economic Analysis, U.S. Census Bureau and the Tennessee Higher Education Commission (THEC).