

The Value of College in Tennessee

Celeste K. Carruthers
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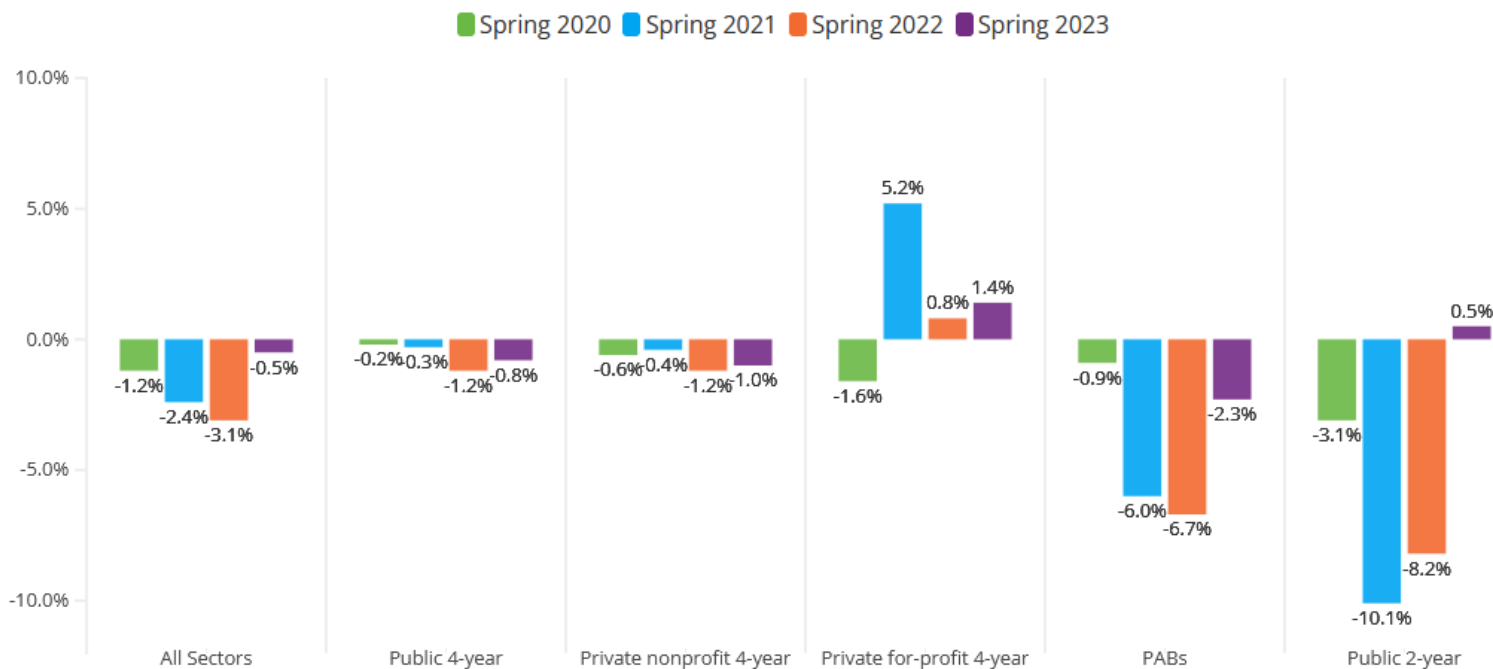


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Nationwide, 1.09 million fewer students are enrolled in college than before the pandemic

Percent Change in Enrollment from Previous Year by Institutional Sector: 2019 to 2023

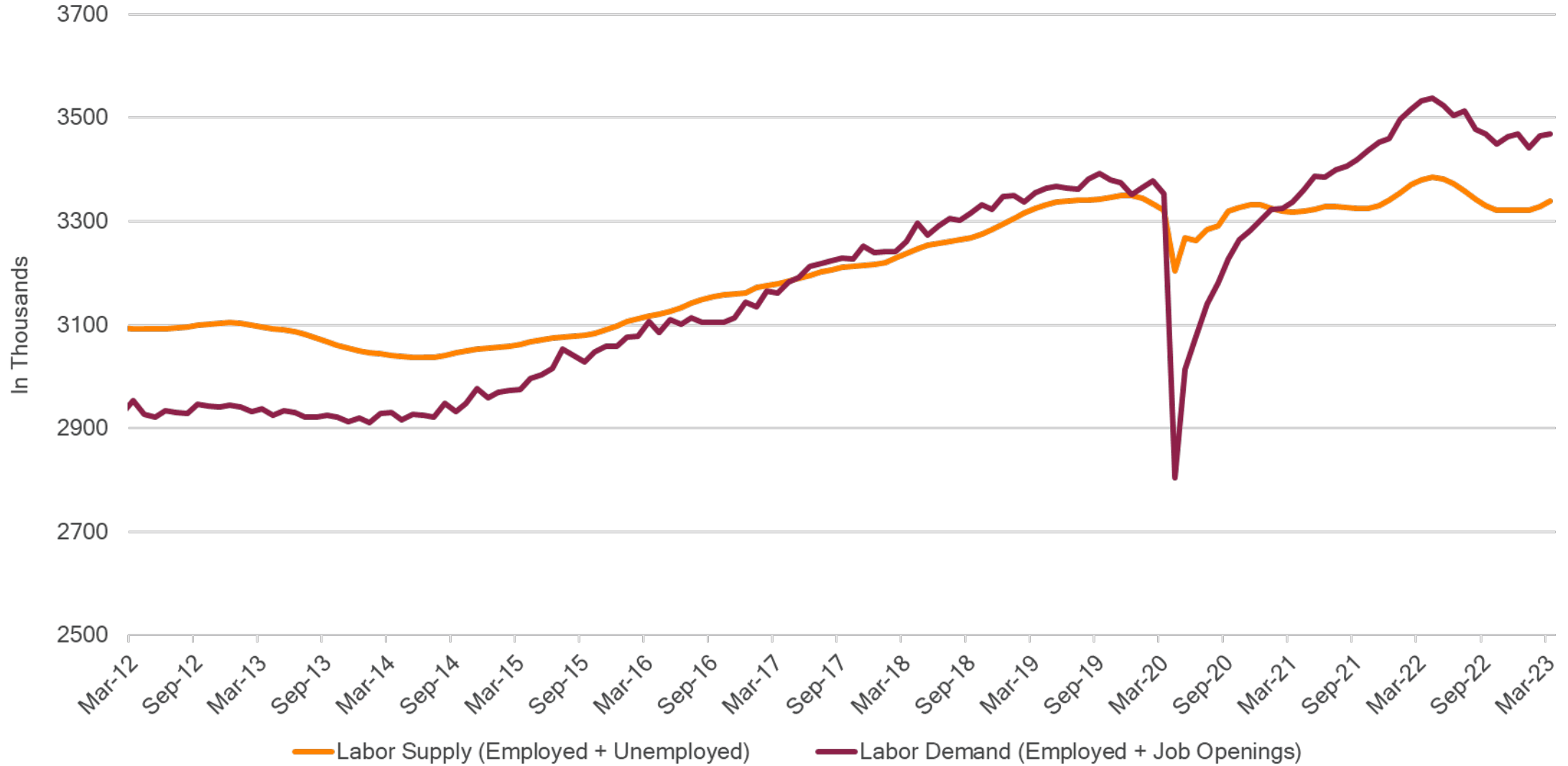


- Steep 2020 and 2021 drops in postsecondary enrollment driven by two-year schools.
- Potential turnaround in 2022.
- See more: National Student Clearinghouse, “Current Term Enrollment Estimates,” May 2023

Why did college enrollment fall?

- Interruptions - pandemic-fueled hurdles to enrolling in college
 - Widespread online and hybrid learning
 - Health risks from in-person learning
 - Inconsistent child care
- Disruptions - also attributed to the pandemic, but may be longer lasting
 - Worker shortages
 - Rising (nominal) wages for high school graduates
- Transformation - ongoing pre-pandemic changes in expected cost and payoff of college
 - Changing sentiment about the cost and value of higher education
 - Structural resets to education requirements
 - An aging US
 - Labor-saving automation
 - Local, state, and federal policy around college affordability

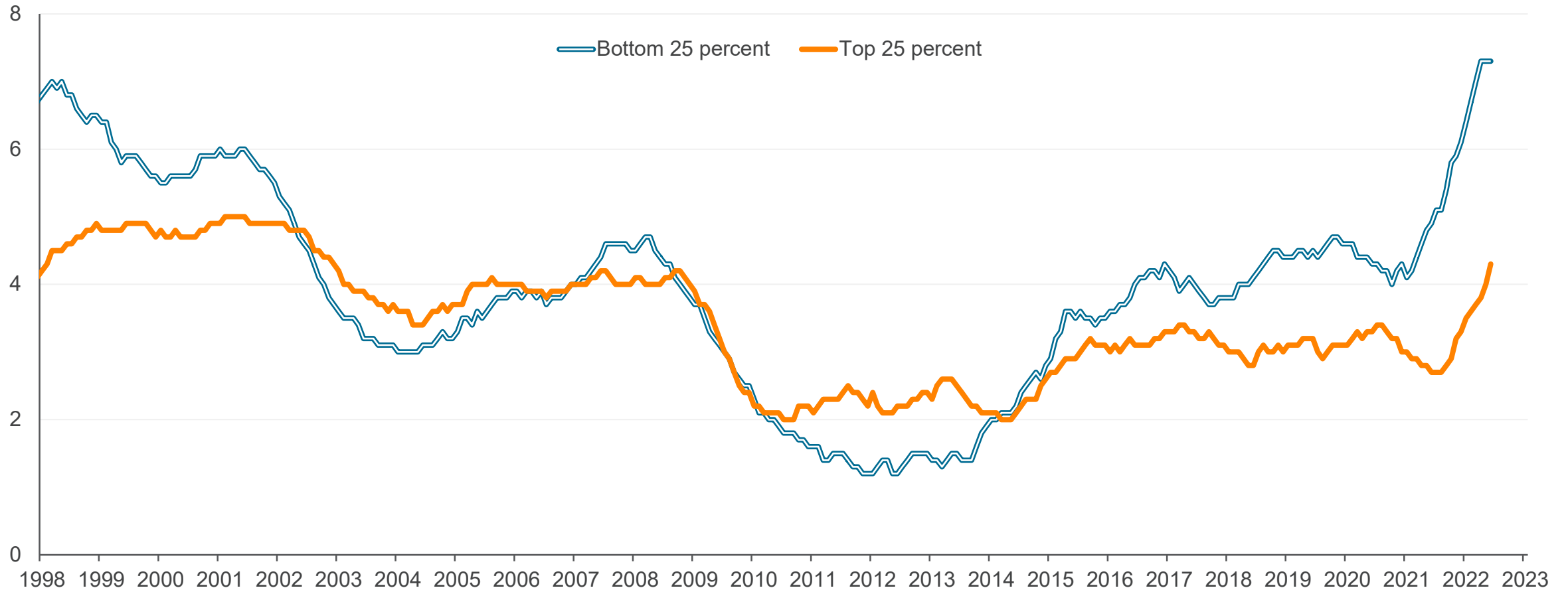
Tennessee labor demand and labor supply



Source: BLS

Wages are growing faster for lower wage workers

(Percent Annual Wage Growth)



Source: Atlanta Fed, BLS

The value of college

Previous findings

- 18-22% returns to college for students at the margin (Zimmerman, 2014; Mountjoy, 2021).
- Pre-pandemic national estimates
 - 4 in 5 jobs earnings \$45K+ by age 45 go to workers with a college education (Georgetown).
 - College “pays off” on average (Abel & Deitz, 2014 & 2019; Itzkowitz, 2020).
 - Much less so for students who do not complete degrees (Cooper, 2021; Webber, 2018).
- Carruthers et al. (2023): High estimated average returns to college in the post-pandemic U.S.
 - 14.5% internal rate of return for a BA/BS, 9.5% for an AA/AS, 6.4% for college credit but no degree.

Open questions

- Post-pandemic return to college for Tennesseans
- Estimated returns for Tennesseans by gender, race, ethnicity, metro area, and (for BA/BS recipients) degree field
- Previewed here and forthcoming in a UTK Boyd Center report
 - Look here for slides and report: <https://haslam.utk.edu/boyd-center/education/>
 - Caveat: Estimates are descriptive.

Data and methods

- Census Bureau's American Community Survey, 2011-2021
- Limited to
 - 18-64 year-olds
 - Either working or looking for work
 - Not enrolled in school

- Estimates of
 - Lifetime earnings by educational attainment, gender, broad race/ethnicity group, city, and degree field
 - Internal rates of return on the college investment

2021 Tennessee labor force characteristics, by educational attainment

	All TN 18-64 year-olds in the labor force and not attending school	Did not finish HS (6.7%)	HS diploma or GED (30.9%)	Some college, No degree (20.8%)	Associate's degree (8.2%)	Bachelor's degree (21.8%)	Graduate or professional degree (11.7%)
Female (%)	46.7	33.7	40.4	46.3	57.3	50.8	56.8
Black (%)	15.9	15.5	18.8	20.4	14.2	11.0	10.7
Native American (%)	0.2	0.7	0.2	0.2	0.2	0.1	0.1
Multiple Races (%)	5.8	14.0	5.5	5.6	5.4	4.7	5.0
Hispanic (%)	5.7	26.2	6.0	3.8	3.0	3.0	3.4

Notes: Authors' calculations using the 2021 American Community Survey, limited to 18-64 year-olds.

Women are under-represented in the state labor force, but over-represented among workers with college degrees.

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Non-white and Hispanic workers are over-represented among workers who did not finish high school, completed no more than a high school diploma/GED, or enrolled in college but did not complete an associate's or higher degree.

2021 Tennessee labor force characteristics, by educational attainment

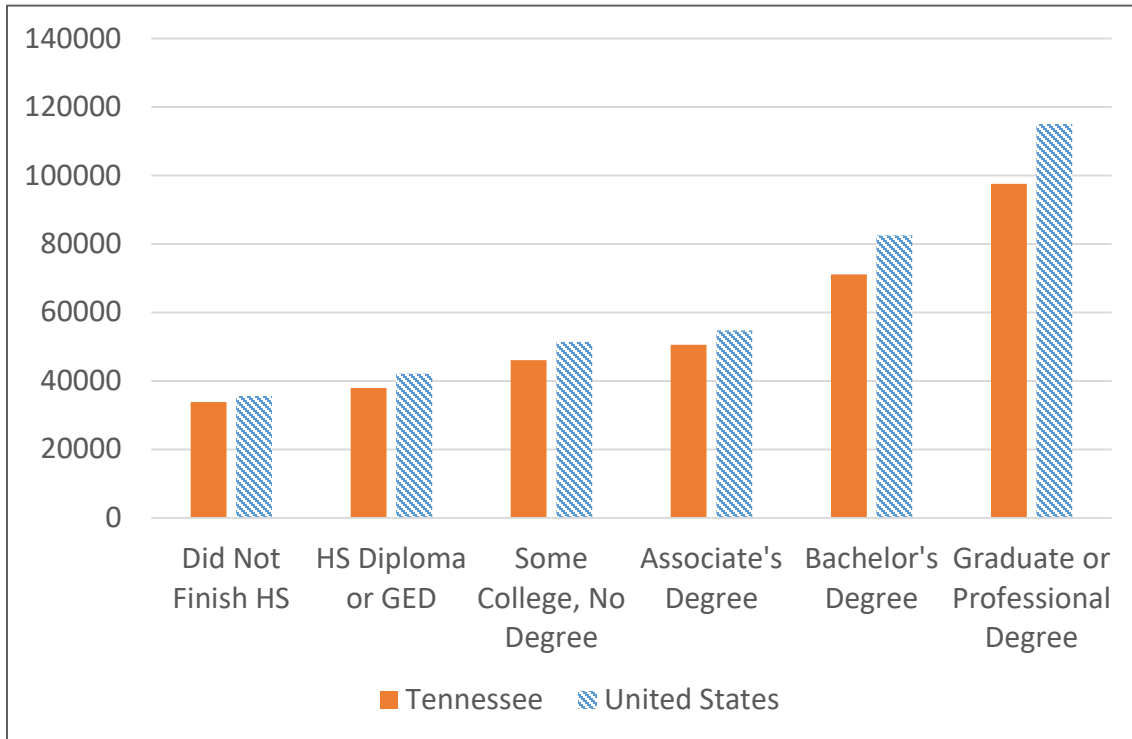
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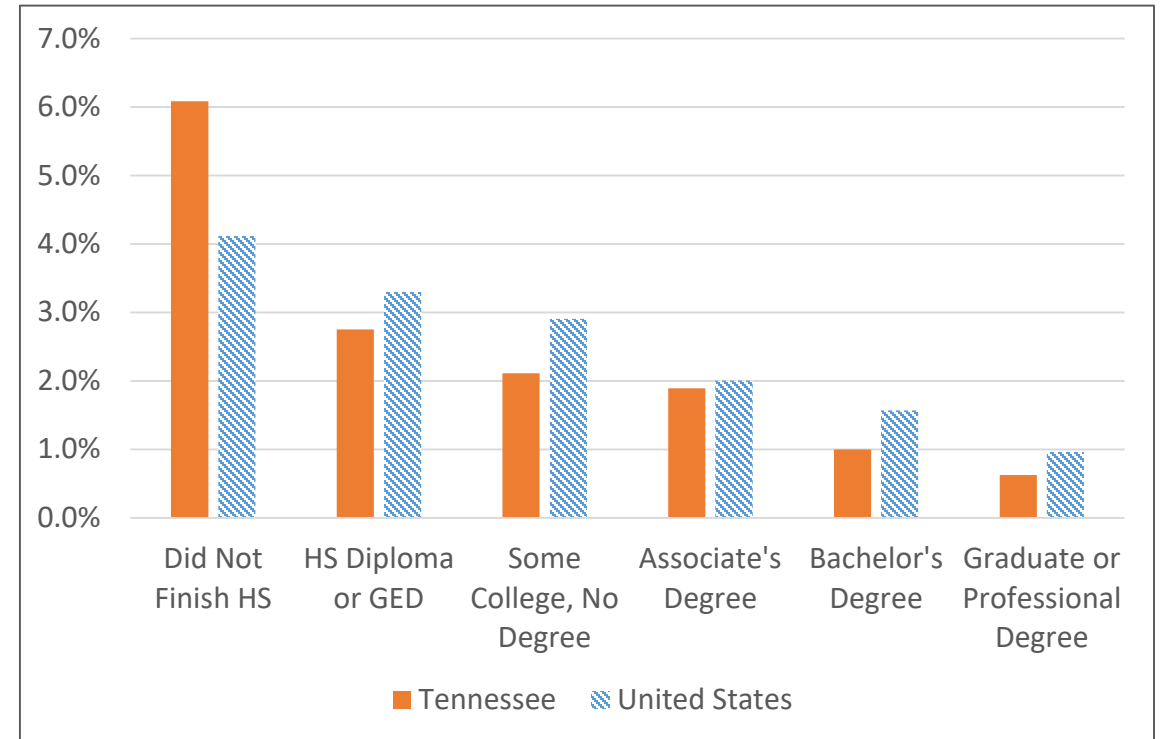
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Income rises and unemployment falls with a college education

Annual Salary and Wages (2021\$)



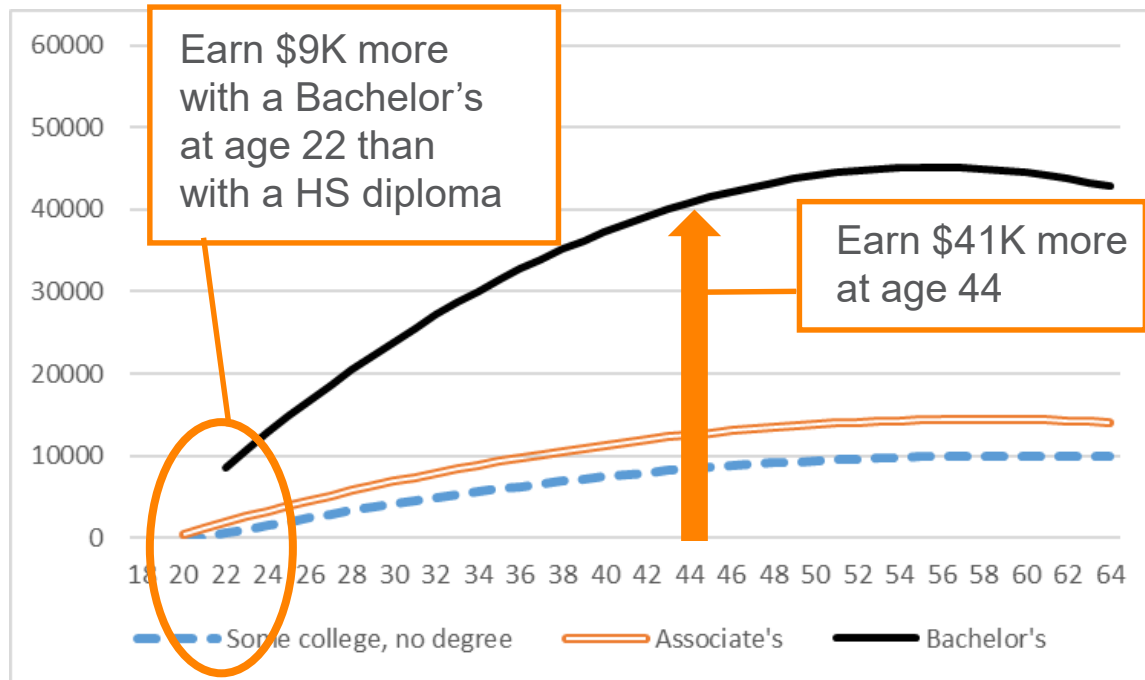
Unemployment (%)



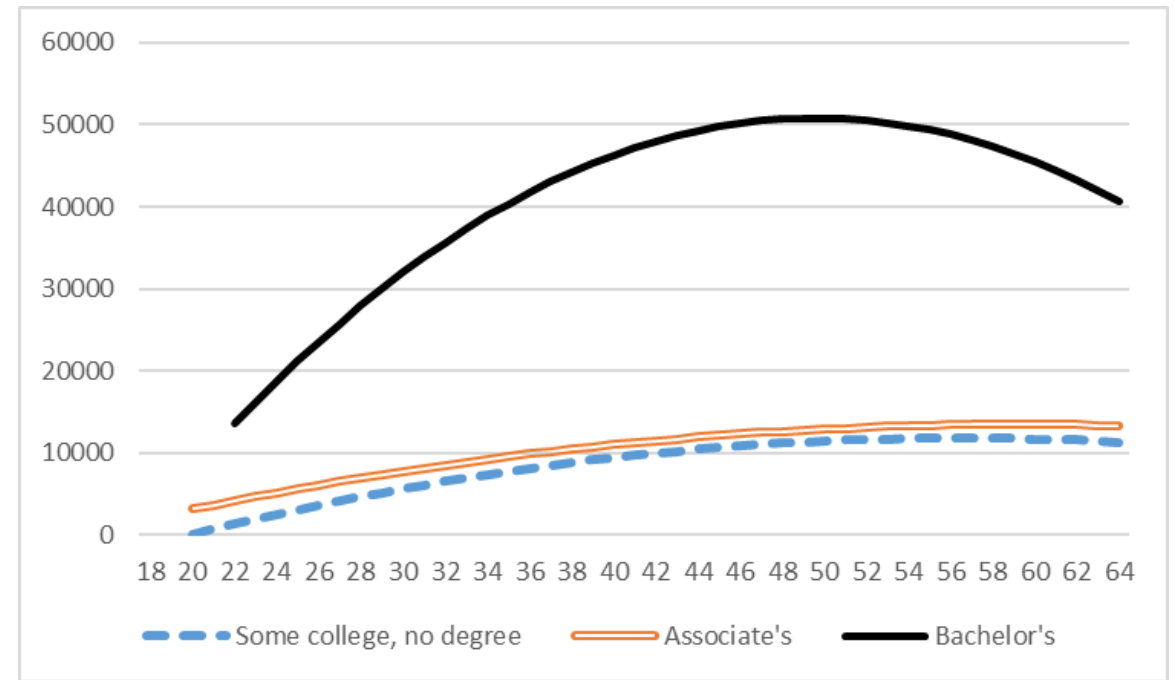
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College educated workers earn more than HS educated workers, and the gap grows through midcareer

Tennessee

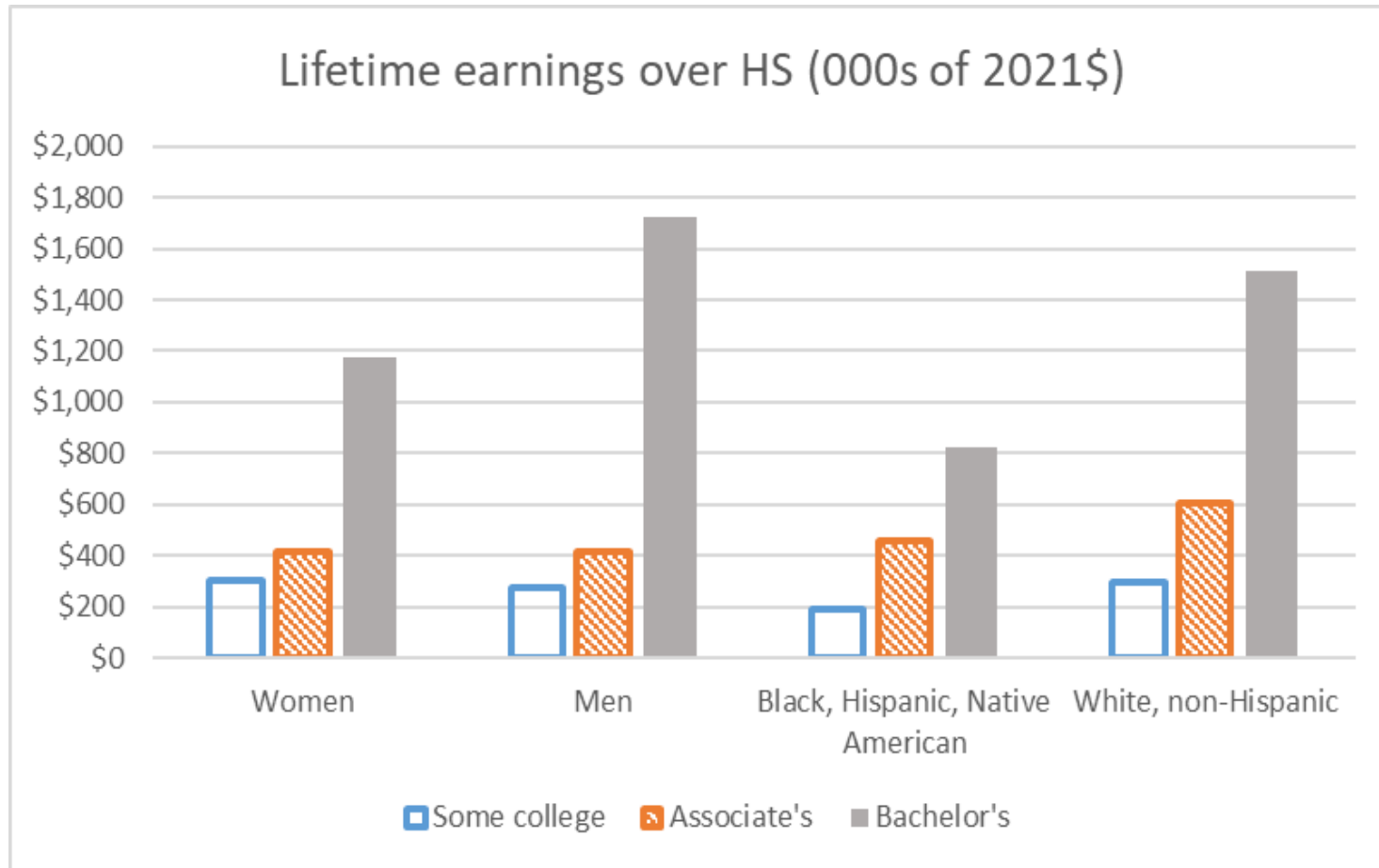


United States



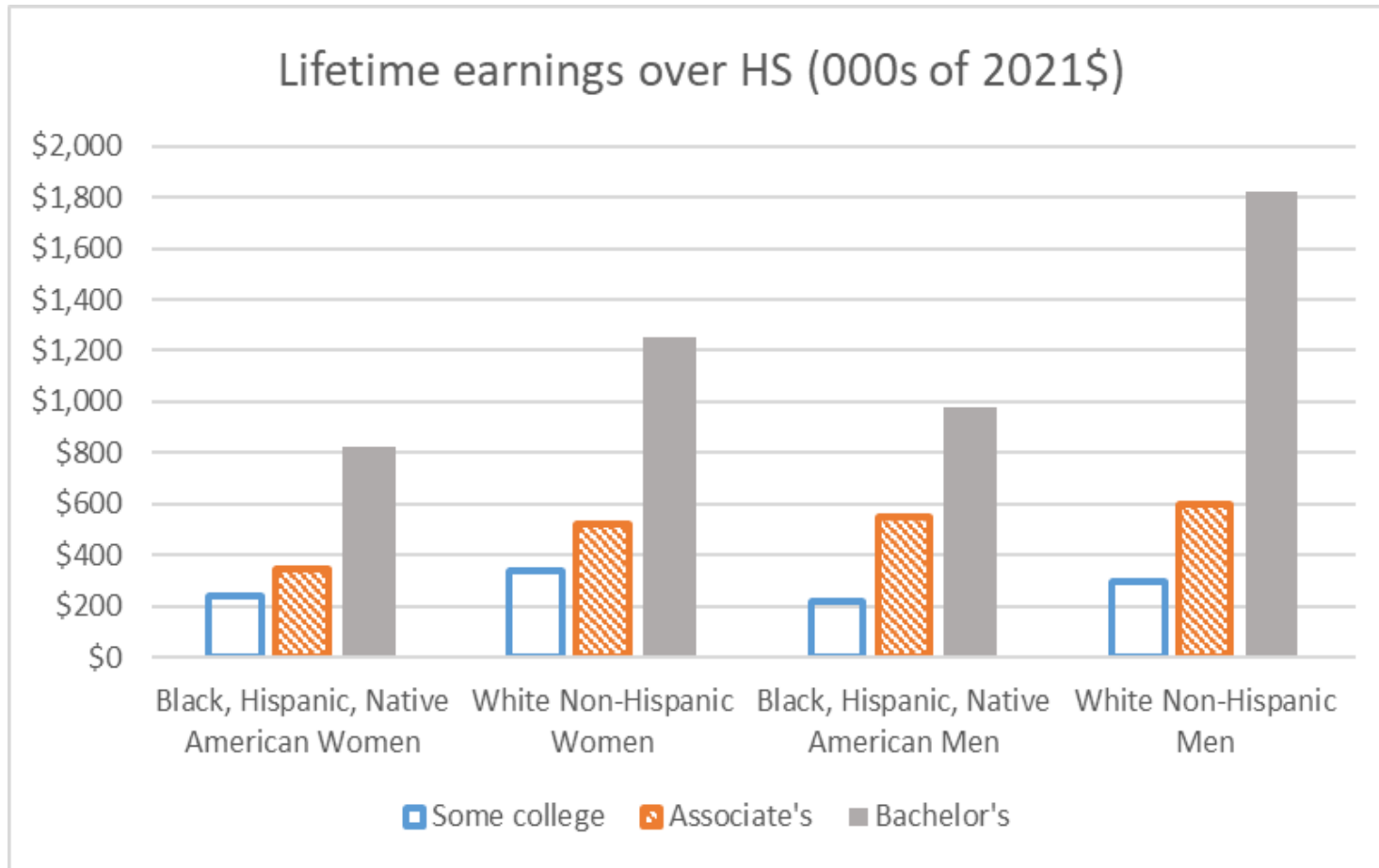
Notes: Authors' calculations using the 2011-2021 American Community Survey, limited to 18-64 year-olds working full-time in the previous year.

Tennessee lifetime earnings over HS by education, gender, and race/ethnicity



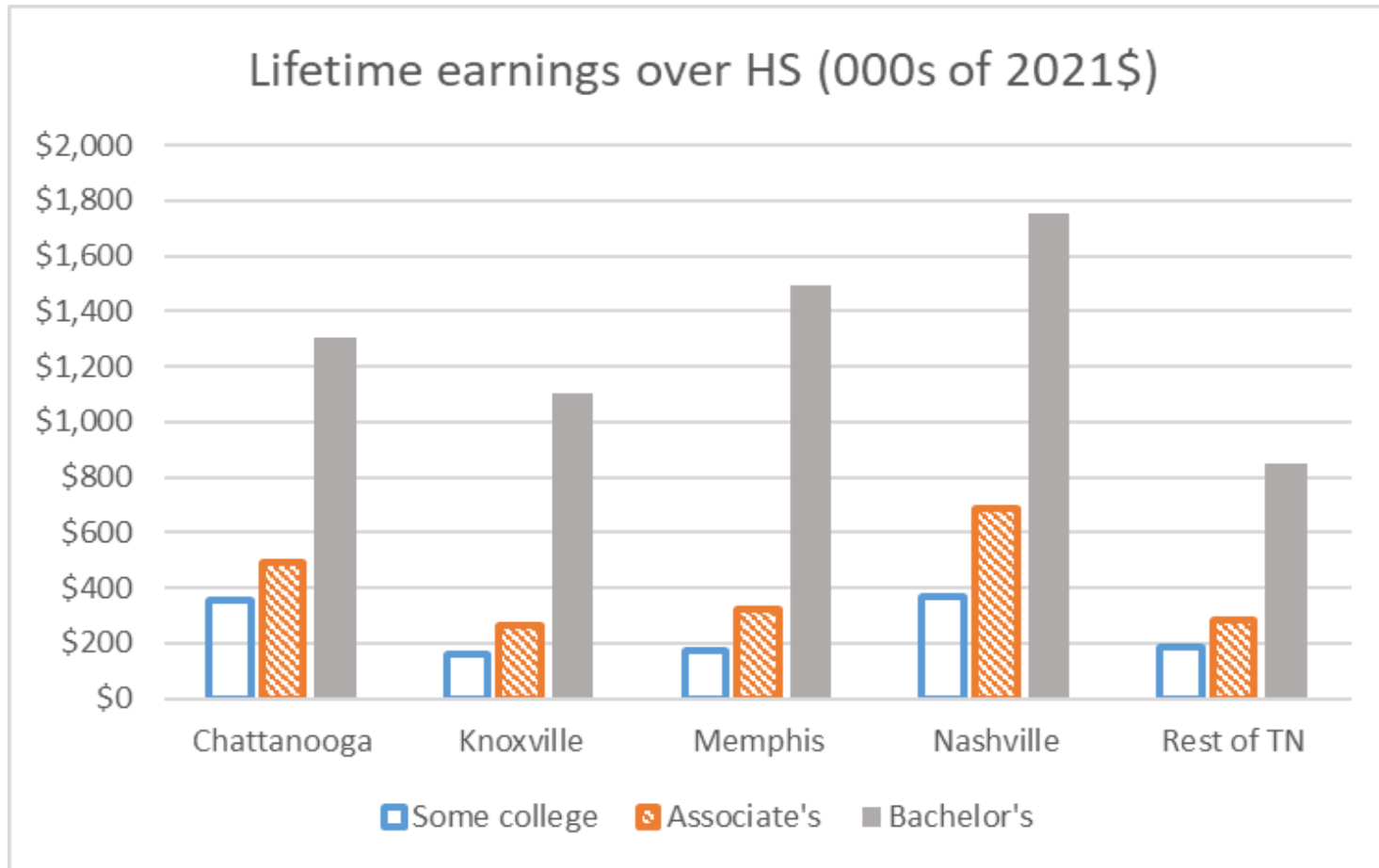
- On average, Tennesseans with Bachelor's degrees earn \$1.4 million more than high school graduates over their career.
 - Only \$826K more if Black, Hispanic, or Native American
- The lifetime earnings premium is \$417K for an AA/AS and \$258K for some college without a degree.

Tennessee lifetime earnings over HS by education, and gender/race/ethnicity intersection



- White, non-Hispanic men with a Bachelor's degree earn \$1.8 million more than white, non-Hispanic men who did not attend college.
- The gap is smaller for women and non-white workers; for example, \$822K for Black, Hispanic, and Native American women.
- The lifetime income premium with an Associate's degree is \$344K – 598K and \$217K – 337K with some college.

Tennessee lifetime earnings over HS by education and metro/non-metro area



- Nashville has the largest income gap between college-educated and HS-educated workers.
 - \$1.8M difference between workers with a Bachelor's degree and workers without college in the city
 - \$689K difference with an Associate's
- The educational income gap is smaller outside of the four largest cities.

The rate of return to a college degree is high in the US and TN

Estimated Internal Rate of Return to a College Education, 2011-2021

	United States	Tennessee
Some College, No Degree	9%	7%
Associate's Degree	13%	11%
Bachelor's Degree	16%	14%

Notes: Author's calculations using American Community Survey, 2011-2021. The internal rate of return is the return that would make someone financially indifferent between investing time and tuition/fees in a college education versus going straight to work after high school.

Lifetime earnings with HS are 9% lower in TN than nationwide, but earnings with a BA/BS are 12% lower.

- Financial benefits of investing in college: the value of additional lifetime earnings (in present value, 2021\$) with different levels of a college education.
- The college investment is valued at the U.S. average net price of college for 2-4 years plus 2-4 years of income that students could have earned if they did not go to college.
- For comparison, the long-term average real return to stocks is about 7%.

Returns to college degrees in TN are high across gender and race/ethnicity

Estimated Internal Rate of Return to a College Education in Tennessee by Demographic Subgroup, 2011-2021

	Black, Hispanic, and Native American Women	White, non- Hispanic Women	Black, Hispanic, and Native American Men	White, non- Hispanic Men
Some College, No Degree	9%	11%	8%	7%
Associate's Degree	12%	19%	18%	12%
Bachelor's Degree	12%	16%	12%	13%

Notes: Author's calculations using American Community Survey, 2011-2021.

Black, Hispanic, and Native American women also have low earnings without college, but a somewhat smaller college income premium than white women.

For white non-Hispanic women, low earnings without college (especially at younger ages) lead to higher estimated returns to college

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A bachelor's degree adds relatively more to lifetime income for white, non-Hispanic workers than for Black, Hispanic, or Native American workers.

2021 characteristics of Bachelor's degree holders in Tennessee, by broad degree field

	Business (28.2%)	Education (7.4%)	Engineering (39.4%)	Arts, Humanities, Sciences and Communication, and Other Fields (25.1%)
Salary and Wage Income	83,401	47,714	72,709	61,636
Female (%)	41.4	79.3	44.7	51.9
Black (%)	11.0	10.5	9.9	14.2
Native American (%)	0.1	0.2	0.1	0.1
Multiple Races (%)	4.4	4.7	5.1	4.1
Hispanic (%)	3.3	1.3	3.3	2.4

Notes: 2021 American Community Survey, limited to 18-64 year-olds in the labor force, not attending school, working full-time. Salary and wage income are in inflation-adjusted 2021 dollars.

Business, Science, and Engineering majors earn the most, on average.

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Women are under-represented in higher-earning fields.

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Black, Hispanic, Native American, and multiple-race workers with bachelor's degrees are more evenly represented across higher-earning and lower-earning fields than women.

Business, Science, and Engineering degrees correspond with higher earnings and returns to college

Lifetime Earnings Over HS and Rate of Return for Bachelor's Degree Holders, by Degree Field

	Lifetime Earnings Over HS (000s of 2021\$)	Estimated Rate of Return to College
Business	\$1,855	17%
Education	\$368	7%
Science & engineering	\$1,493	14%
Arts & other fields	\$1,043	13%

Notes: Author's calculations using the 2011-2021 American Community Survey

Looking ahead: Factors that will shape the value of college for Tennesseans in the future

- Cost of college
- Student loan financing
- In-migration and aging
 - See interactive Boyd Center projections [here](#).
- Sustained higher labor market demand
 - See Boyd Center forecasts and much more in the [Economic Report to the Governor](#).
- Changes to entry-level education requirements
- Technology, automation

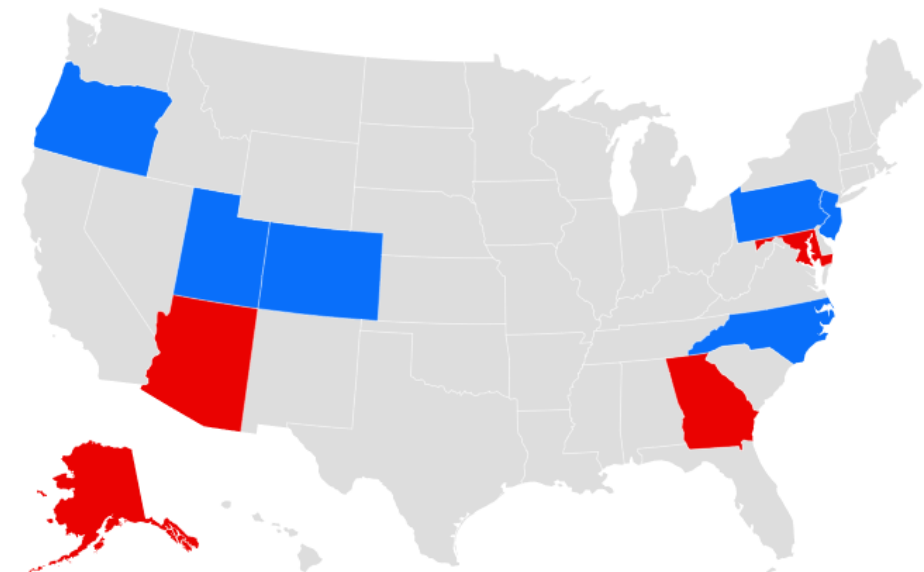
A college degree may become less of a requirement for higher paying jobs

- Ten states recently revised entry-level education requirements for state jobs.
- Similar changes by prominent private sector employers: Google, Apple, IBM, BofA, and more.
- Carruthers et al. (2023) find little movement in % HS-educated workers in college-level jobs, but this could change.

States that have eliminated degree requirements in the civil service

Governors of both parties have taken such actions

■ Democrat ■ Republican



Map: Ethan Dodd/Insider • Source: State websites

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Thank you

carruthers@utk.edu

<https://haslam.utk.edu/boyd-center/education/>



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