

An Update on the Economy and the Value of Higher Education

Dr. Don Bruce, Director
August 2023



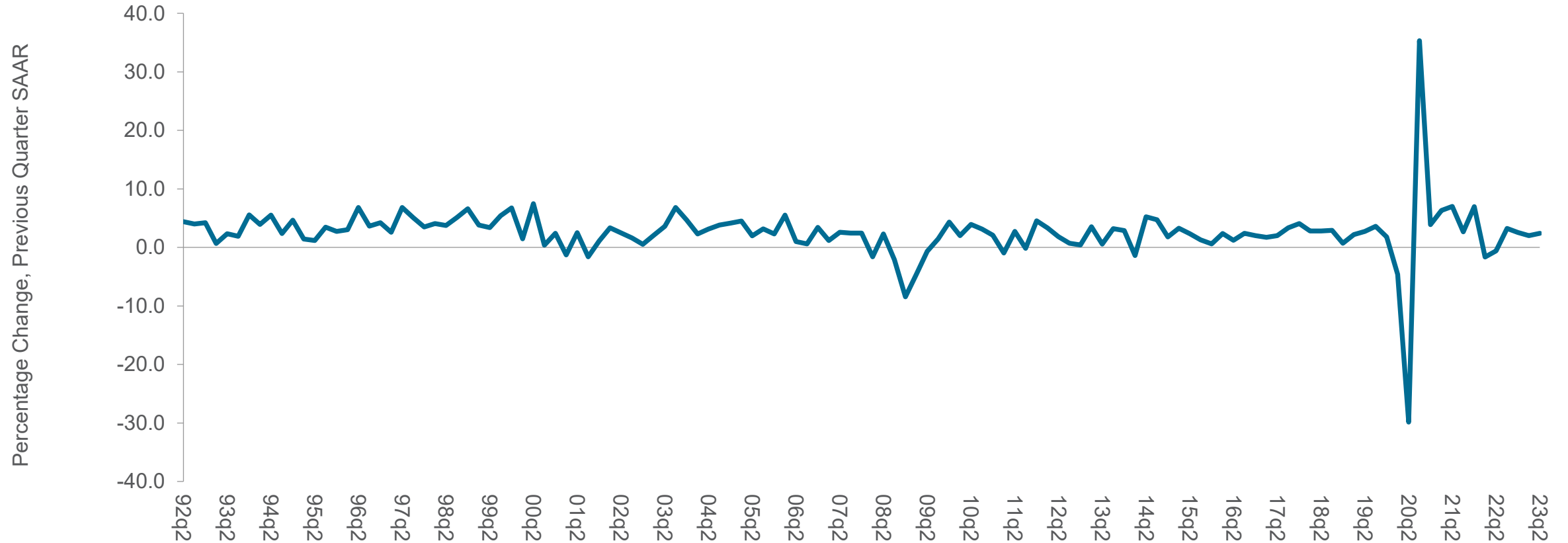
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The National Economy Remains Strong

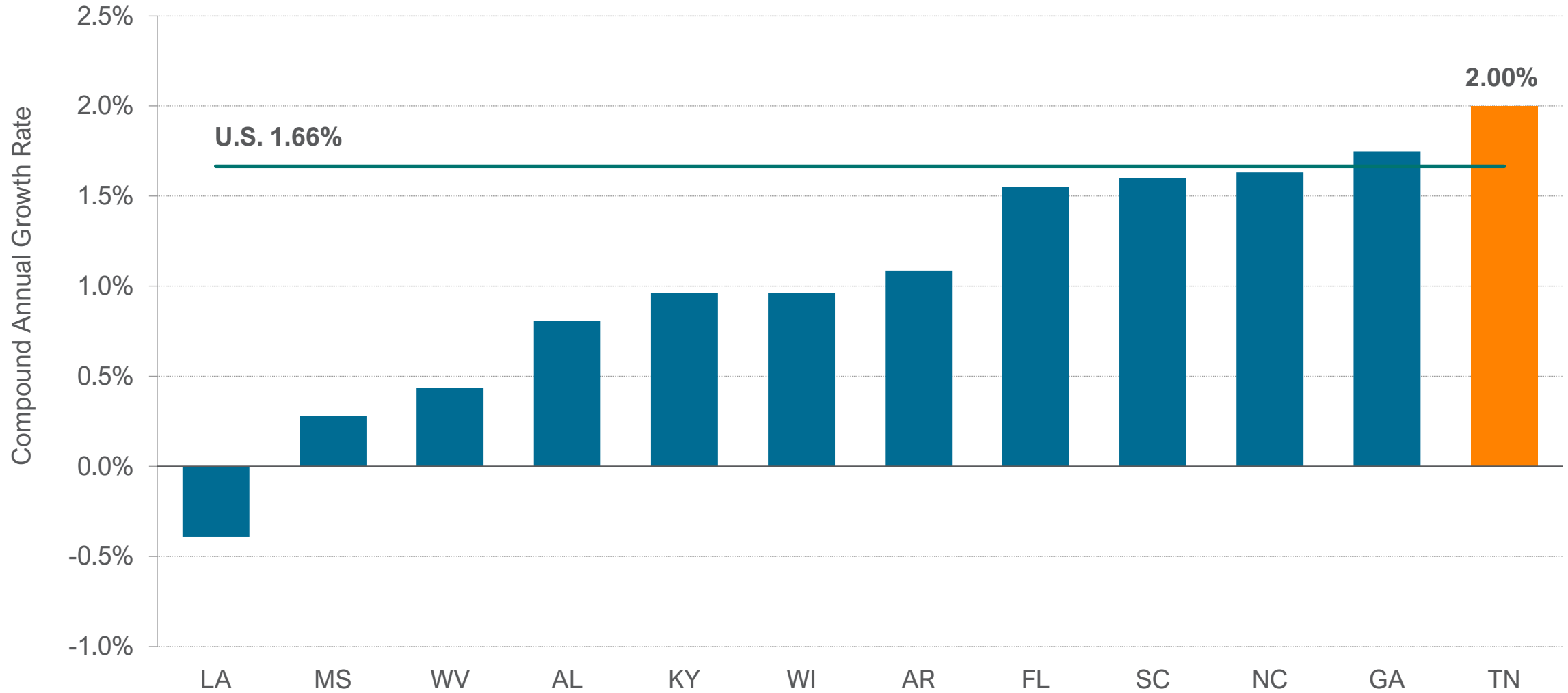
Real GDP Growth Rates Remain Positive



Source: BEA

Tennessee Is Helping to Lead the Nation

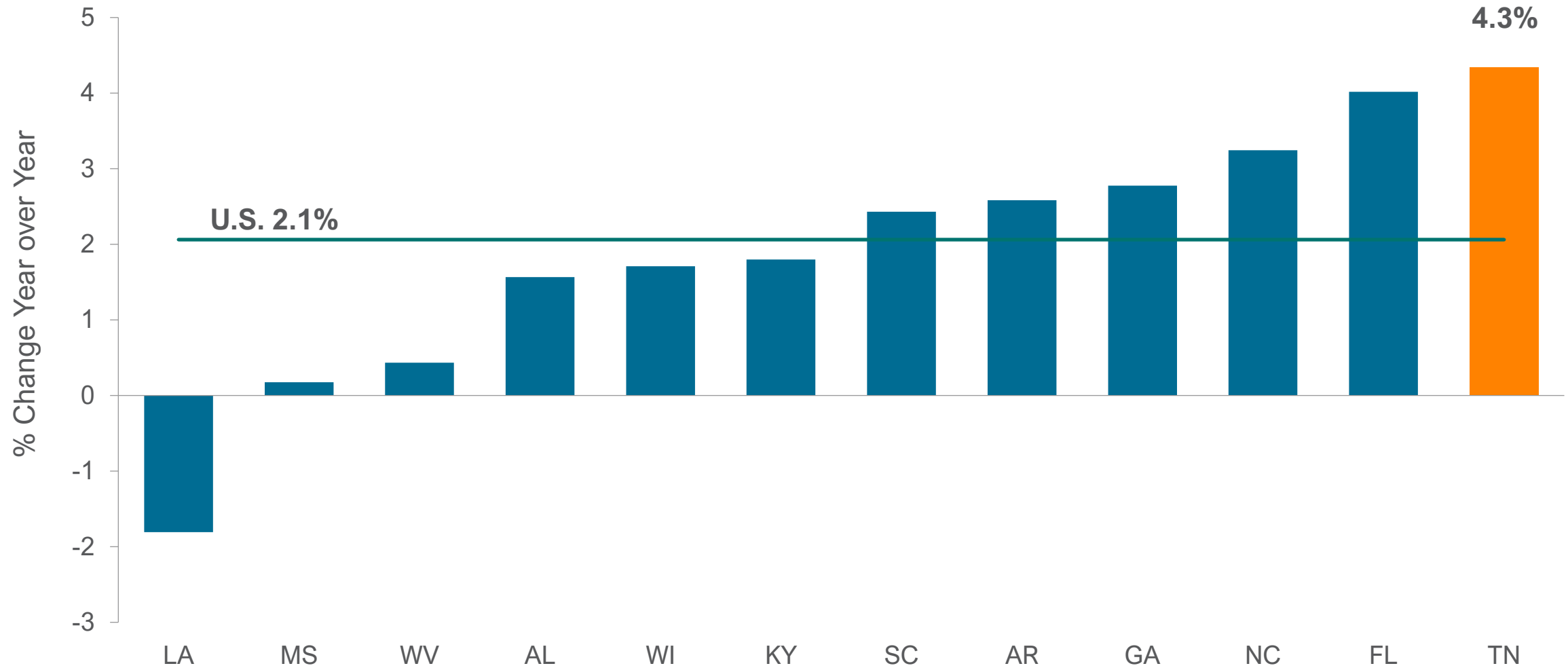
State GDP Growth Rates, 2007 to 2022



Source: BEA

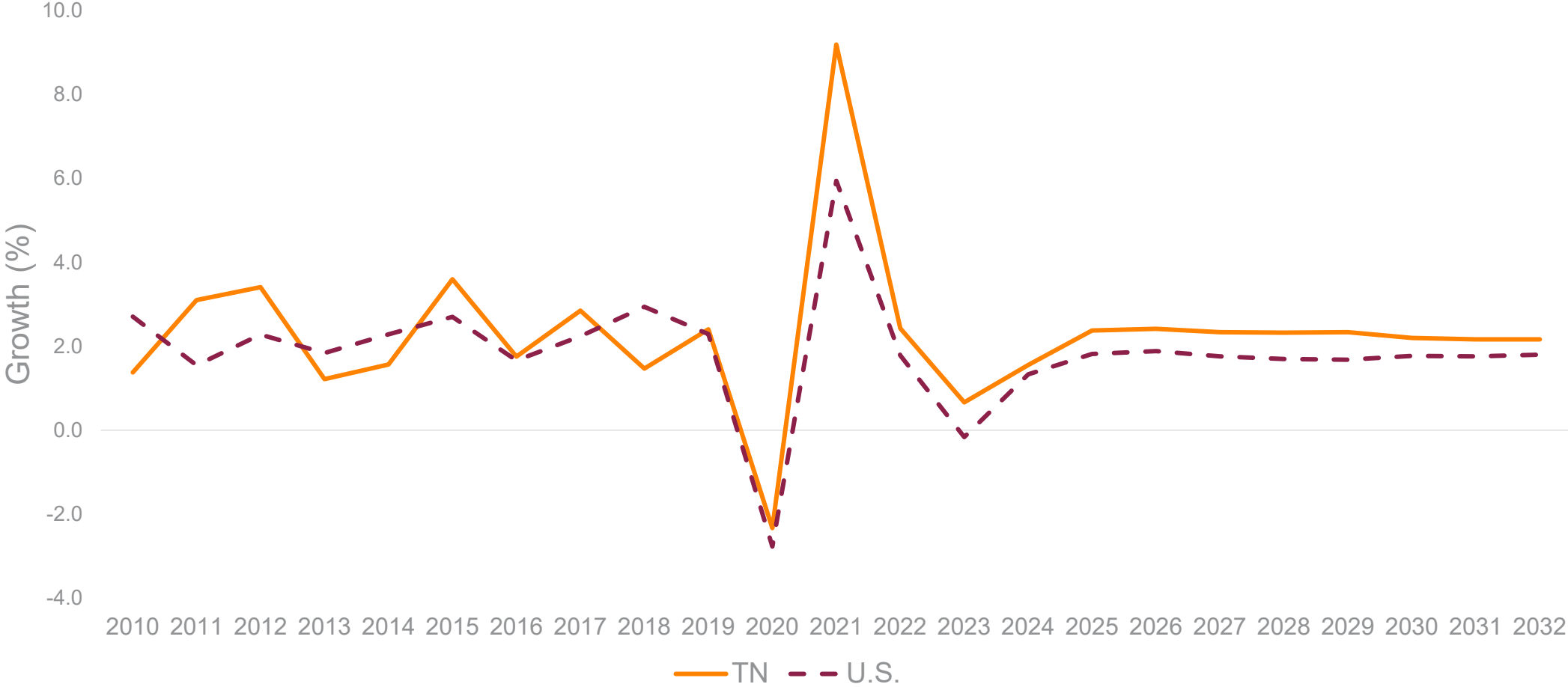
TN Grew More than Twice as Fast as the US Last Year

Real GDP Growth, 2022



Source: BEA

Boyd Center Forecast: More of the Same



Source: BEA & ERG

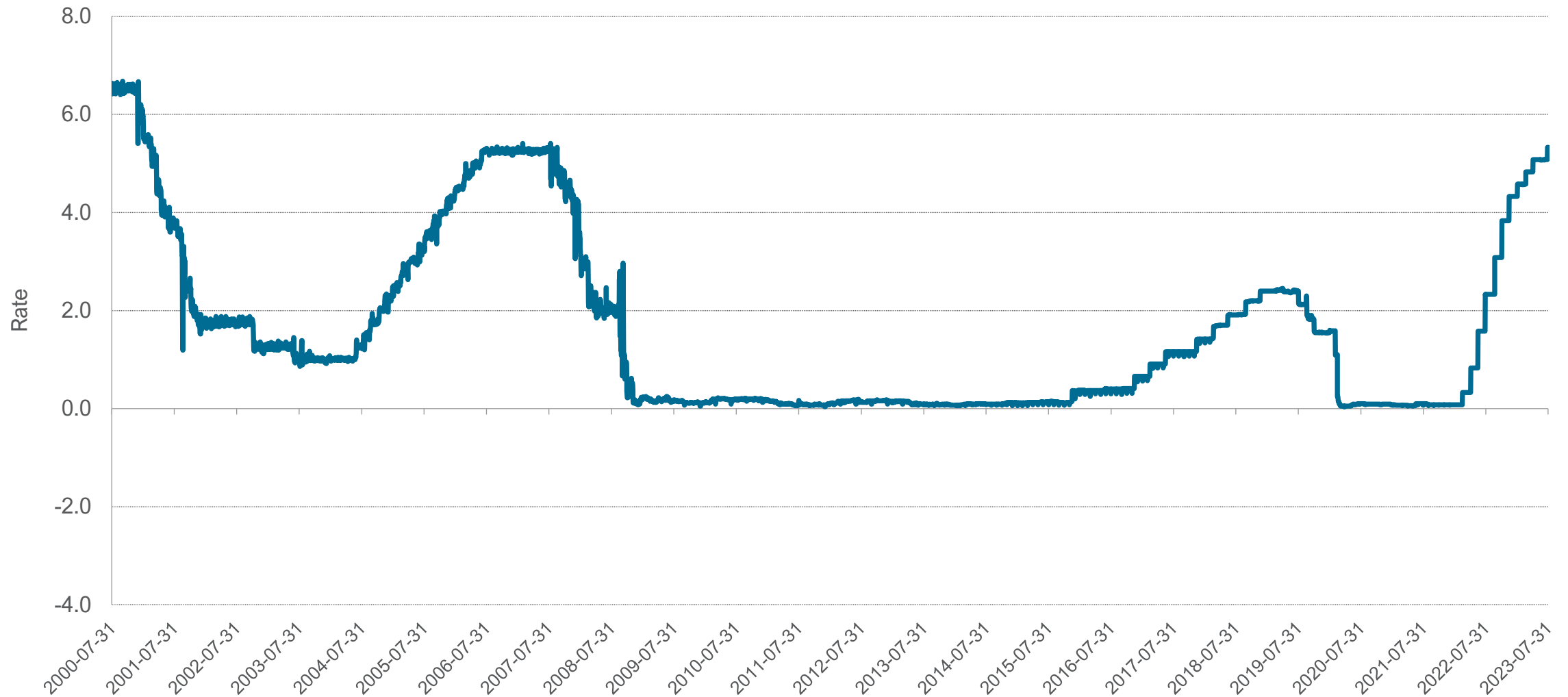
The Gorilla in the Room: Inflation

U.S. Consumer Price Index Growth Rate



Source: BLS

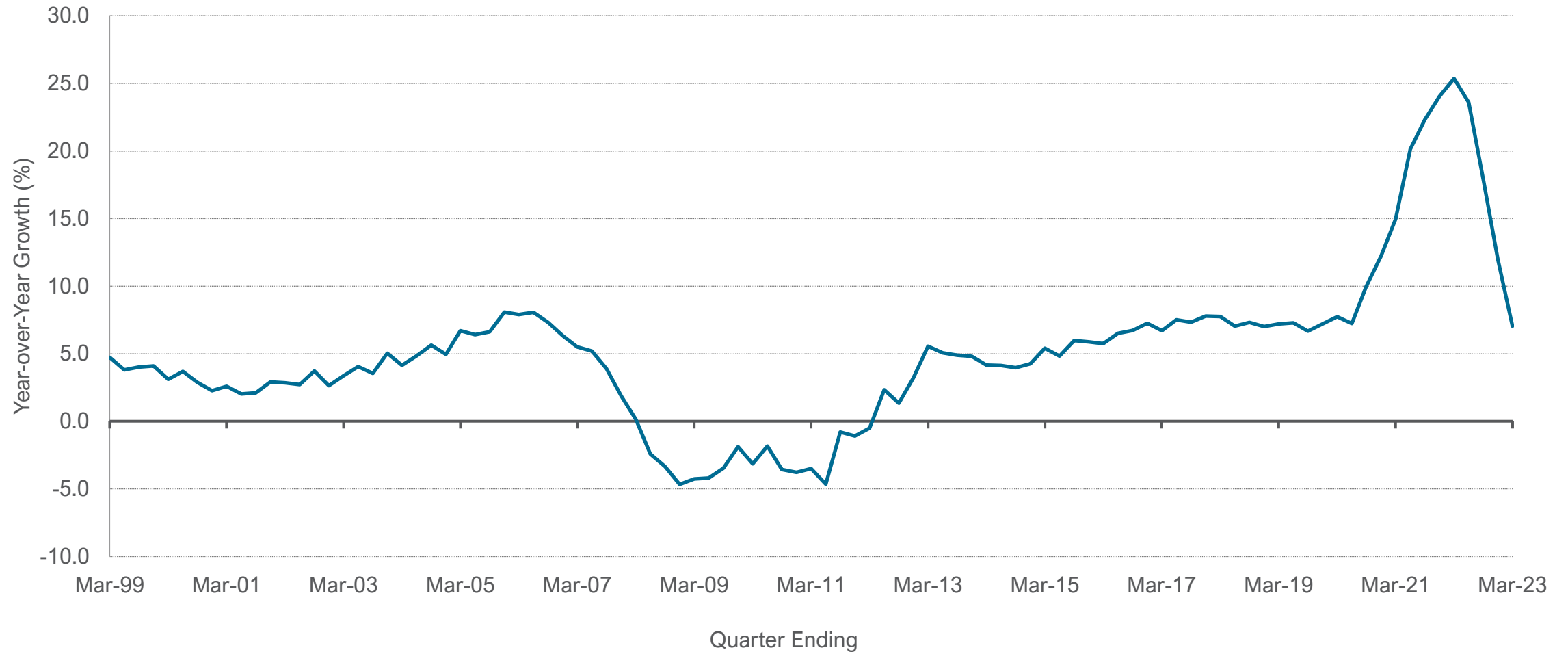
The Fed Continues to Increase Interest Rates



Source: Board of Governors of the Federal Reserve System (US)

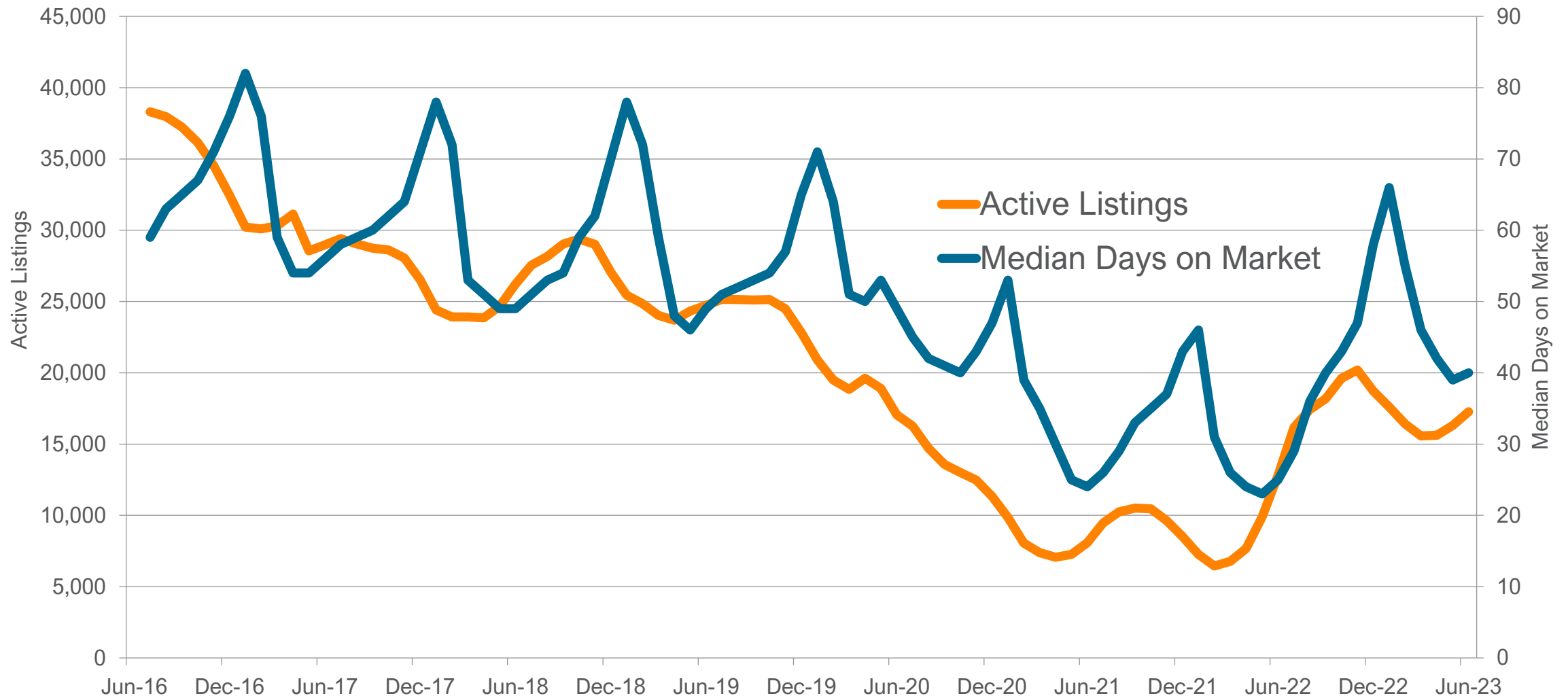
Tennessee House Price Index

(Seasonally Adjusted, Purchase-Only Index)



Source: Federal Housing Finance Agency

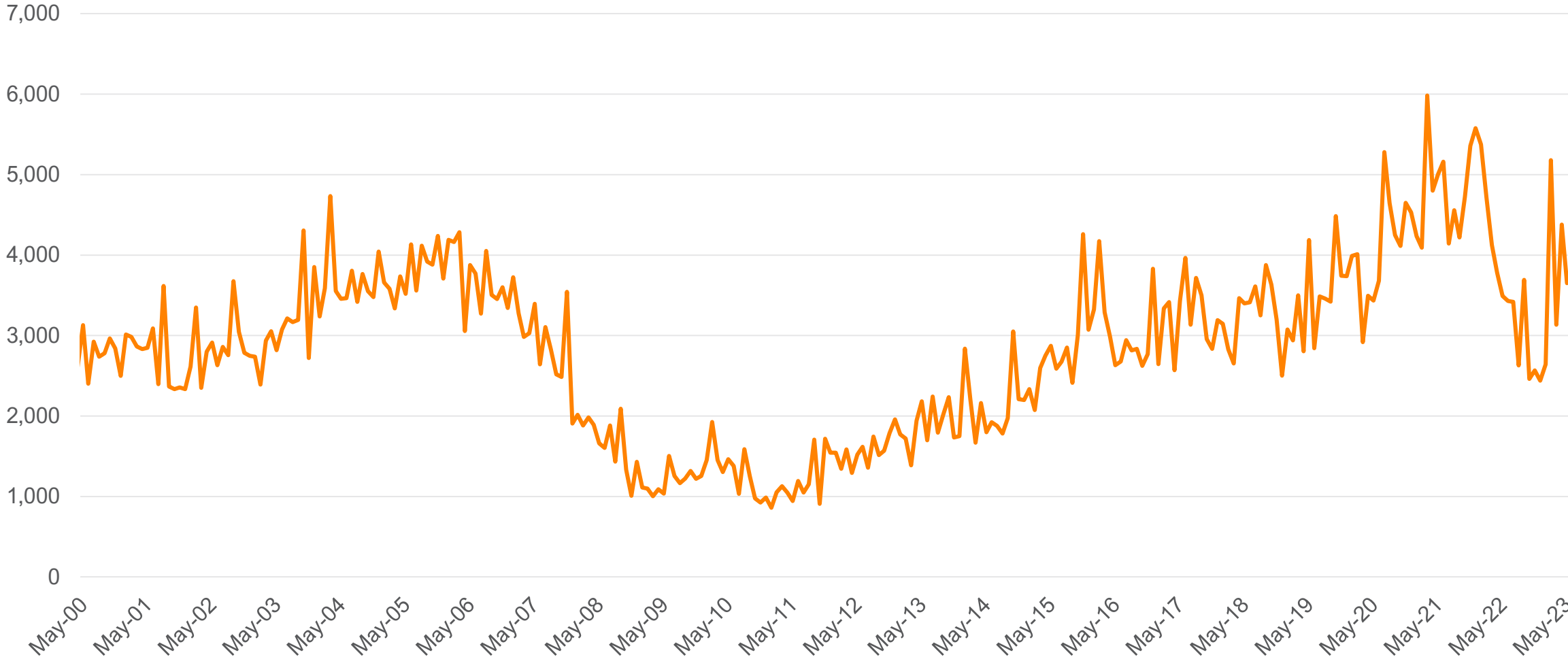
Tennessee's Housing Market is Slowly Returning to Normal



Source: Realtor.com

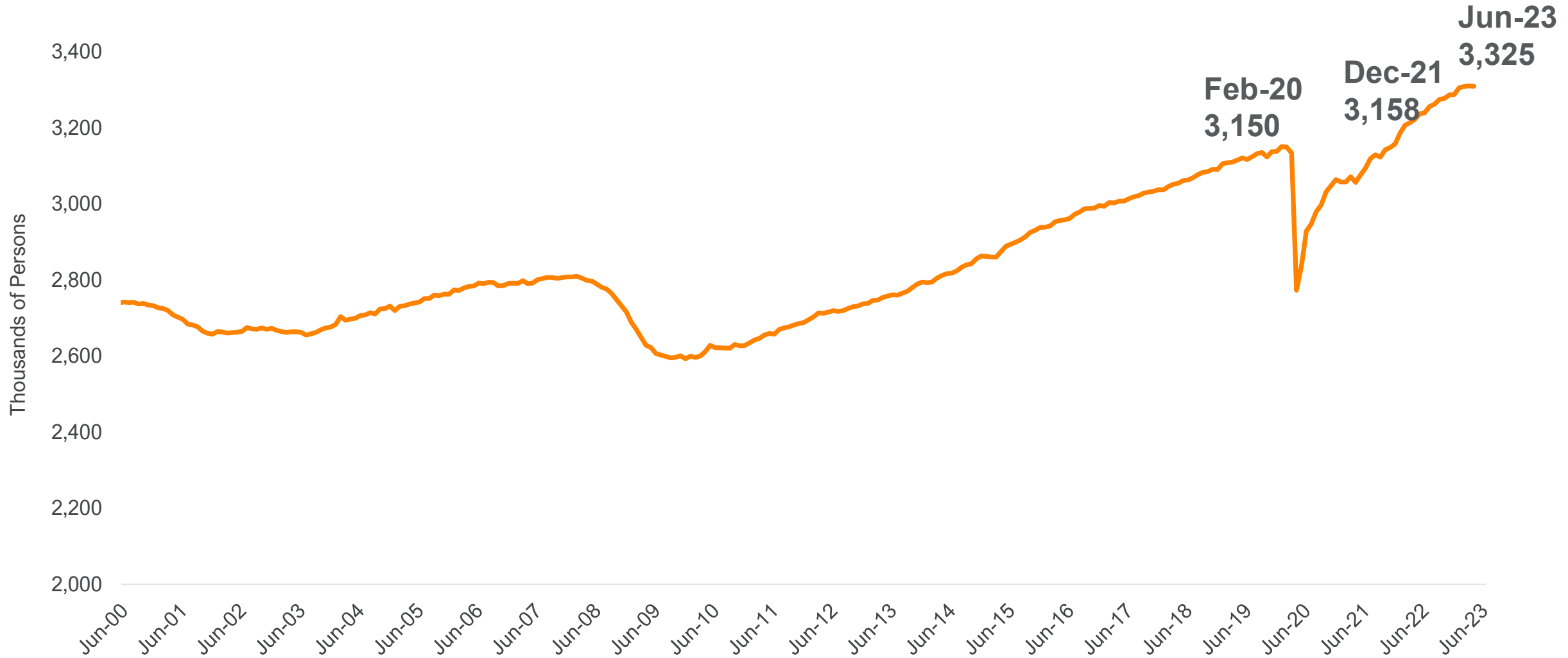
New TN Building Permits for Private Housing Units

Monthly, Seasonally Adjusted



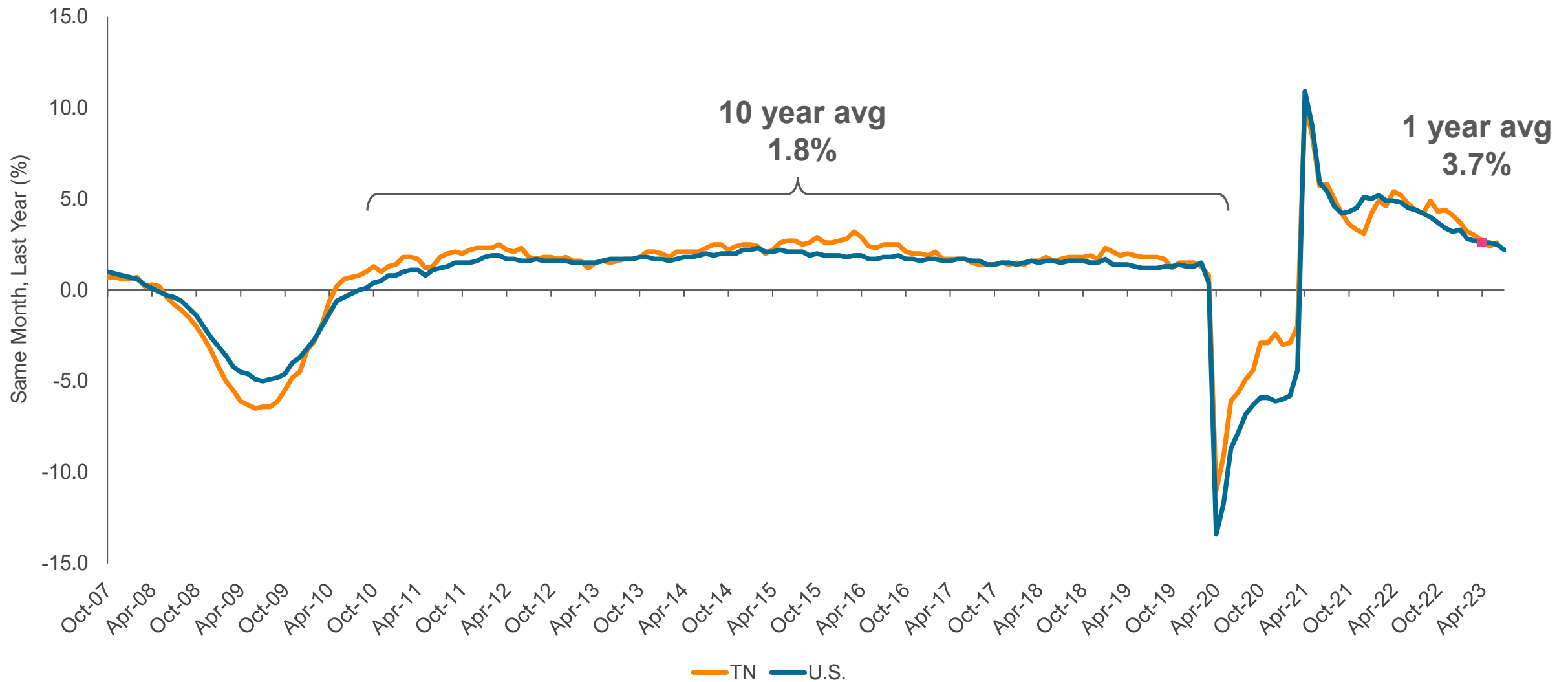
Source: Census

Tennessee Employment has Fully Recovered from the Pandemic



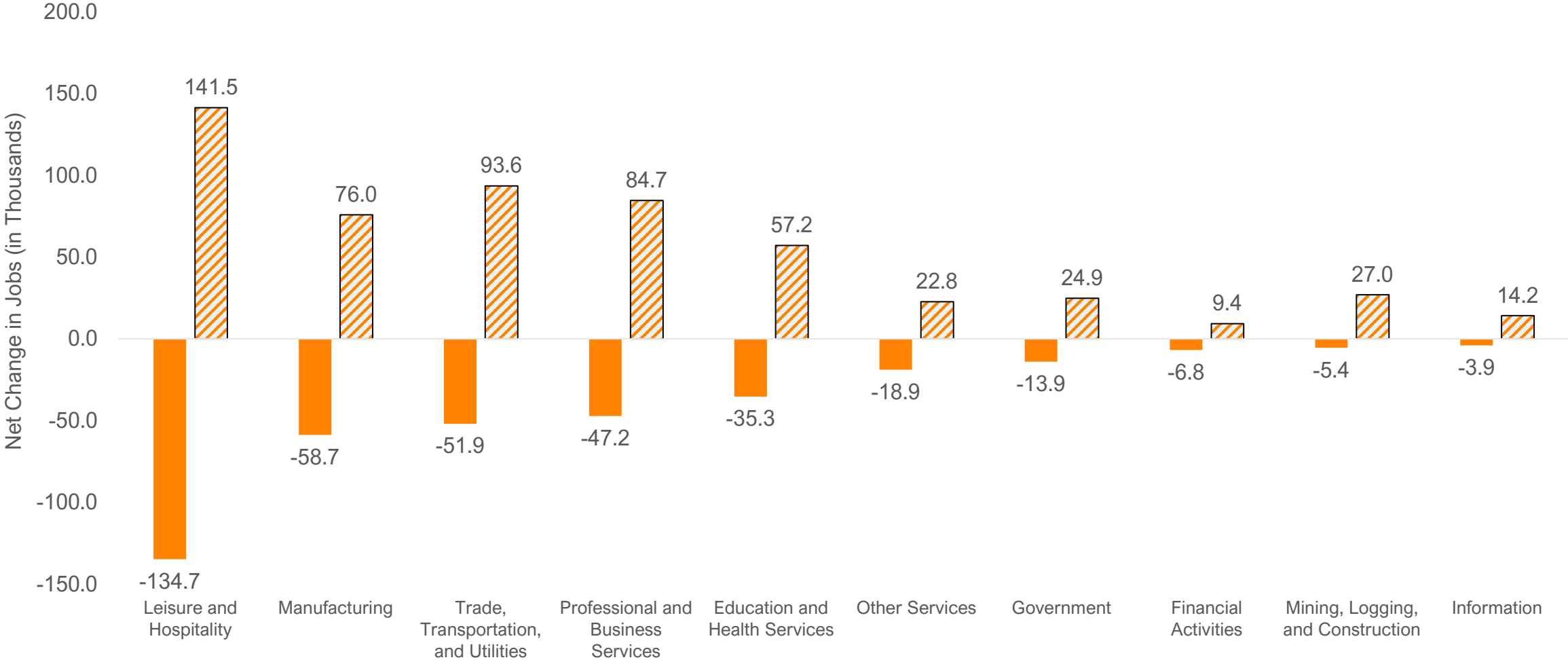
Source: Bureau of Labor Statistics

TN and the U.S. Continue to See Strong Job Growth



Source: Bureau of Labor Statistics

Employment in All Tennessee Sectors Has Fully Recovered

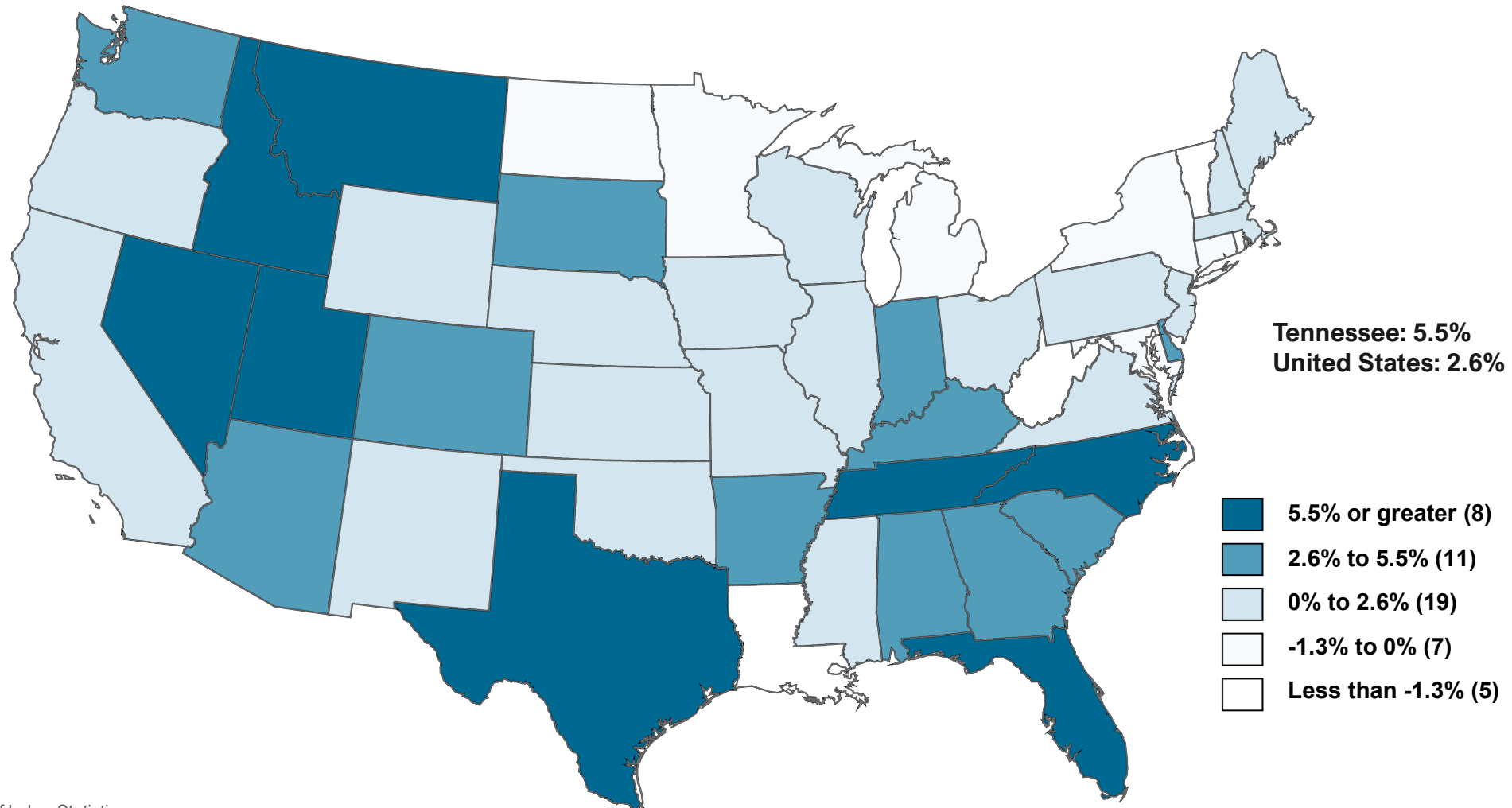


Source: Bureau of Labor Statistics

■ Feb. 20 to April 20 ▨ April 20 to June 23

State Employment Growth Across the Nation

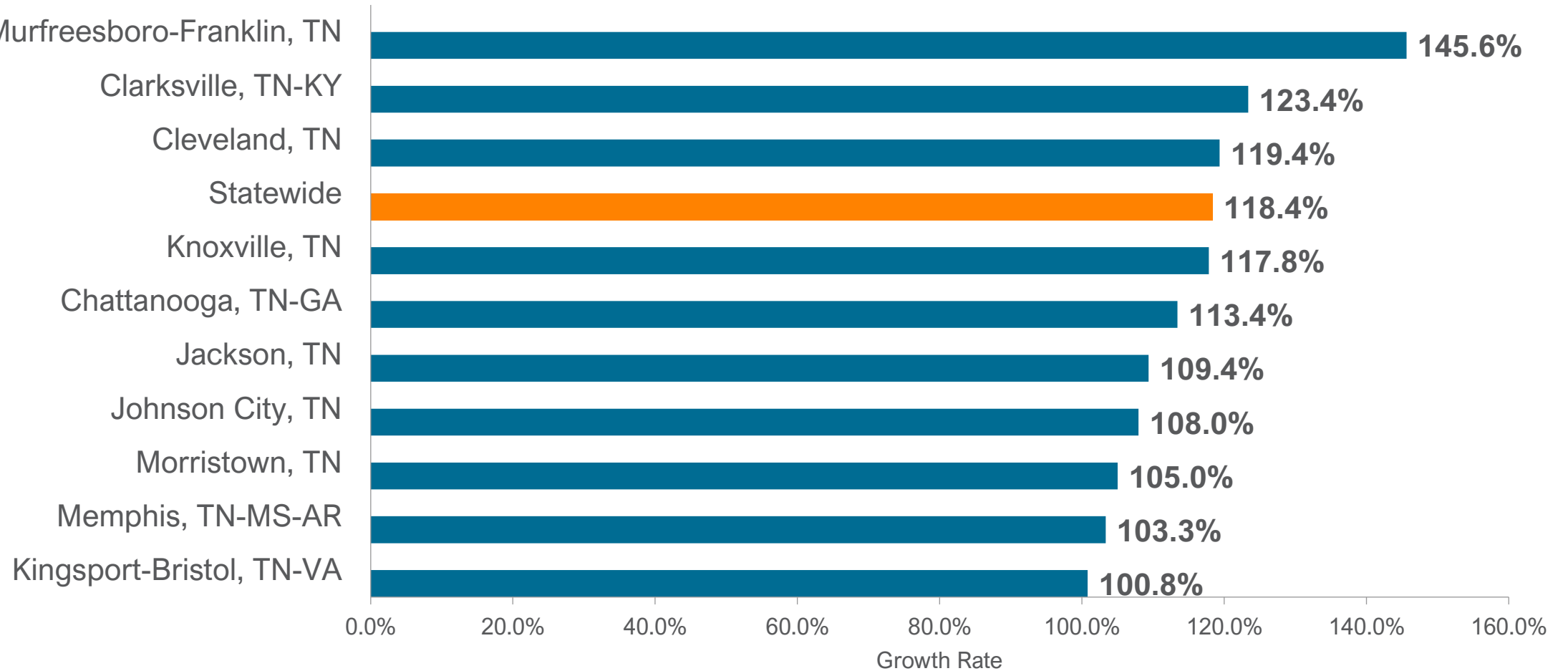
Nonfarm Employment Growth, February 2020 versus June 2023



Source: Bureau of Labor Statistics

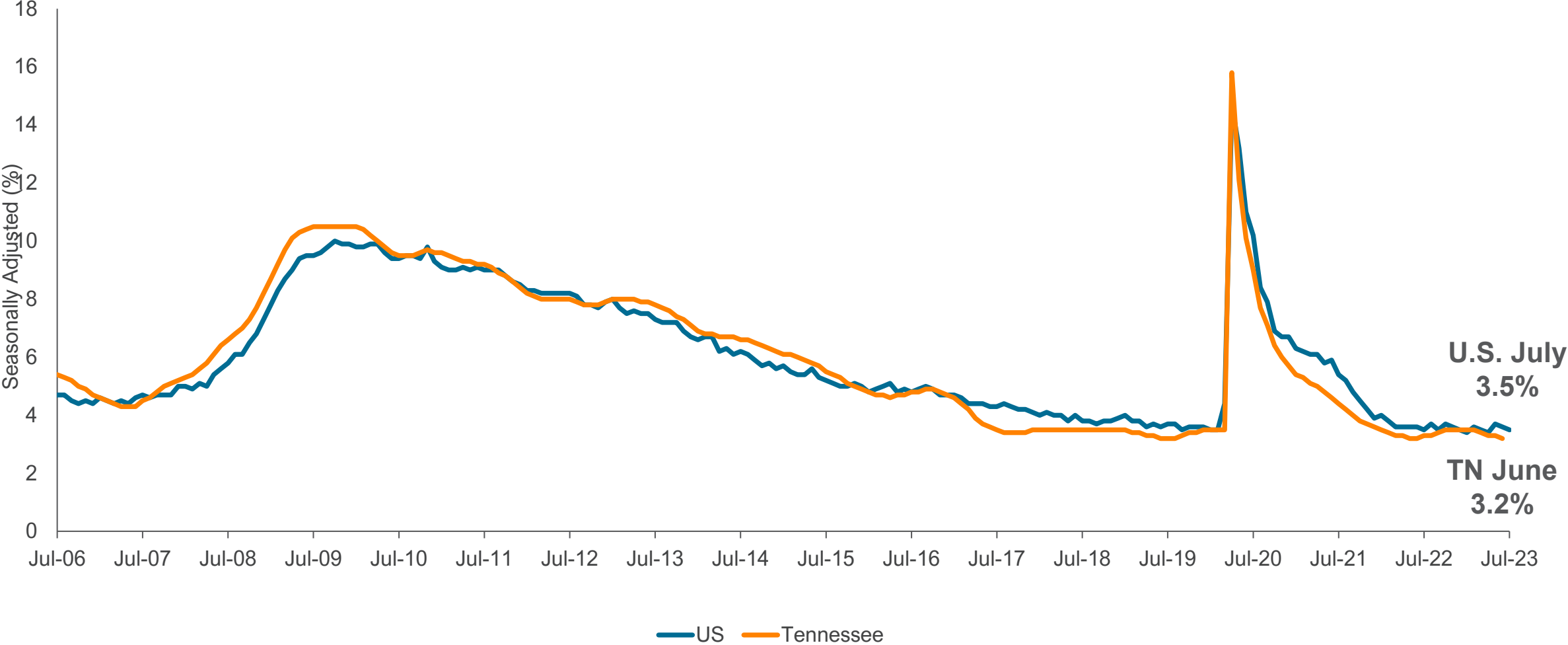
Long Term Employment Growth Differs Dramatically Across Tennessee

(Growth Since Great Recession)



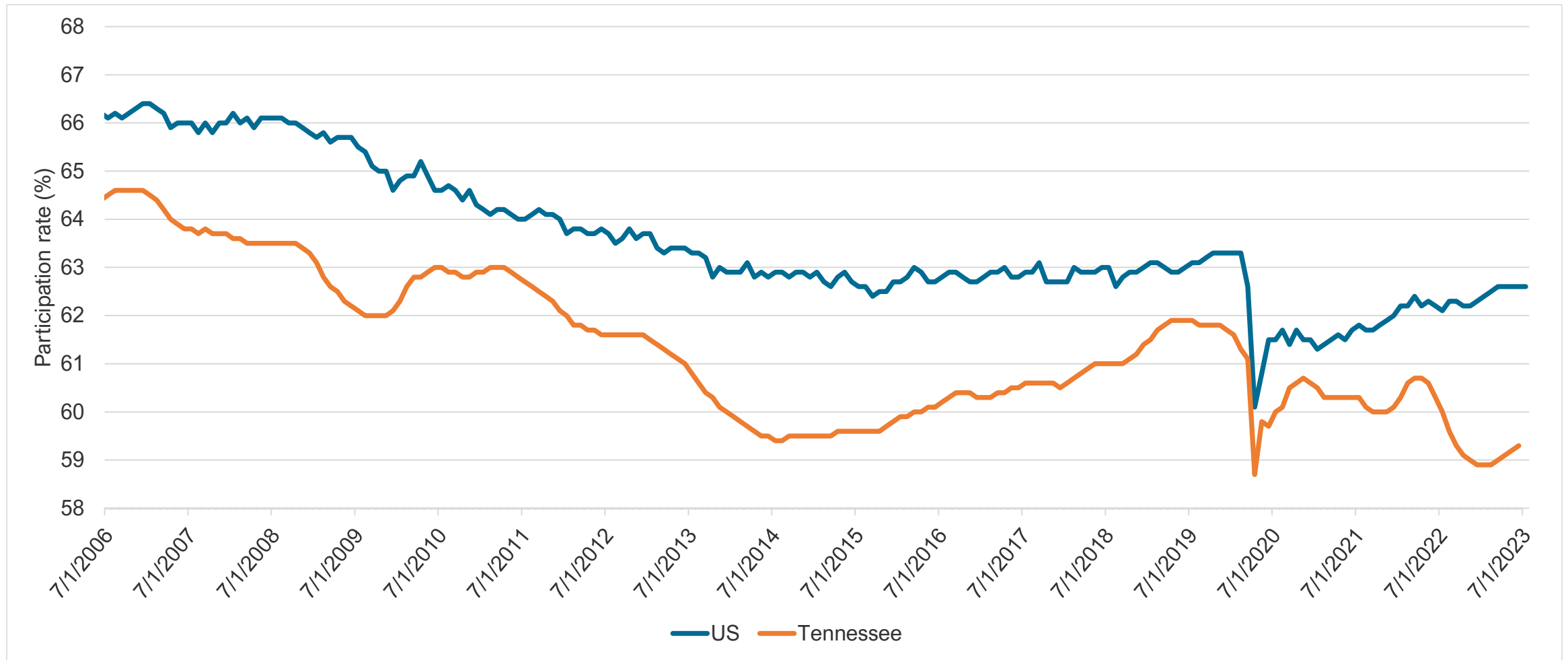
Source: Bureau of Labor Statistics

Unemployment Rates Remain Very Low



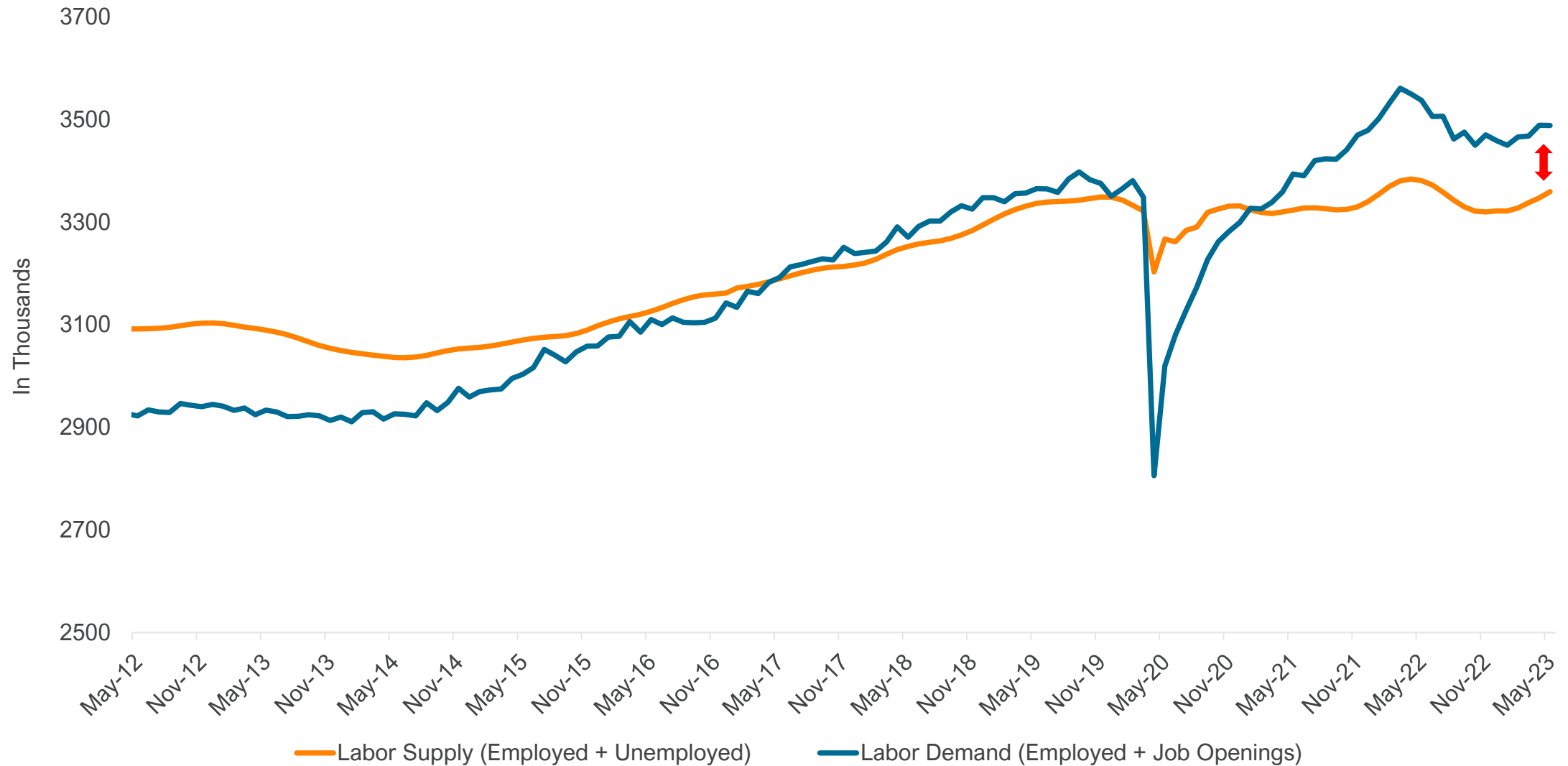
Source: Bureau of Labor Statistics

Labor Force Participation is Still Depressed



Source: Bureau of Labor Statistics

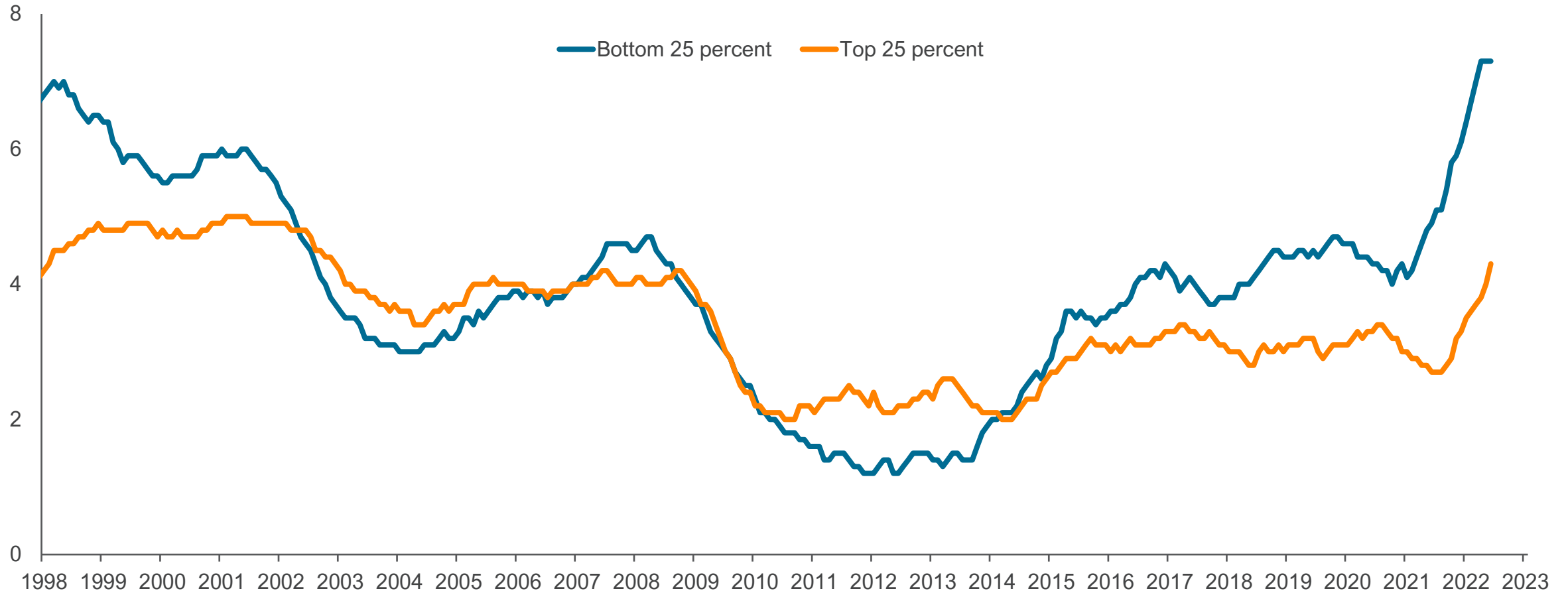
The Worker Shortage in Tennessee is Very Real



Source: Bureau of Labor Statistics

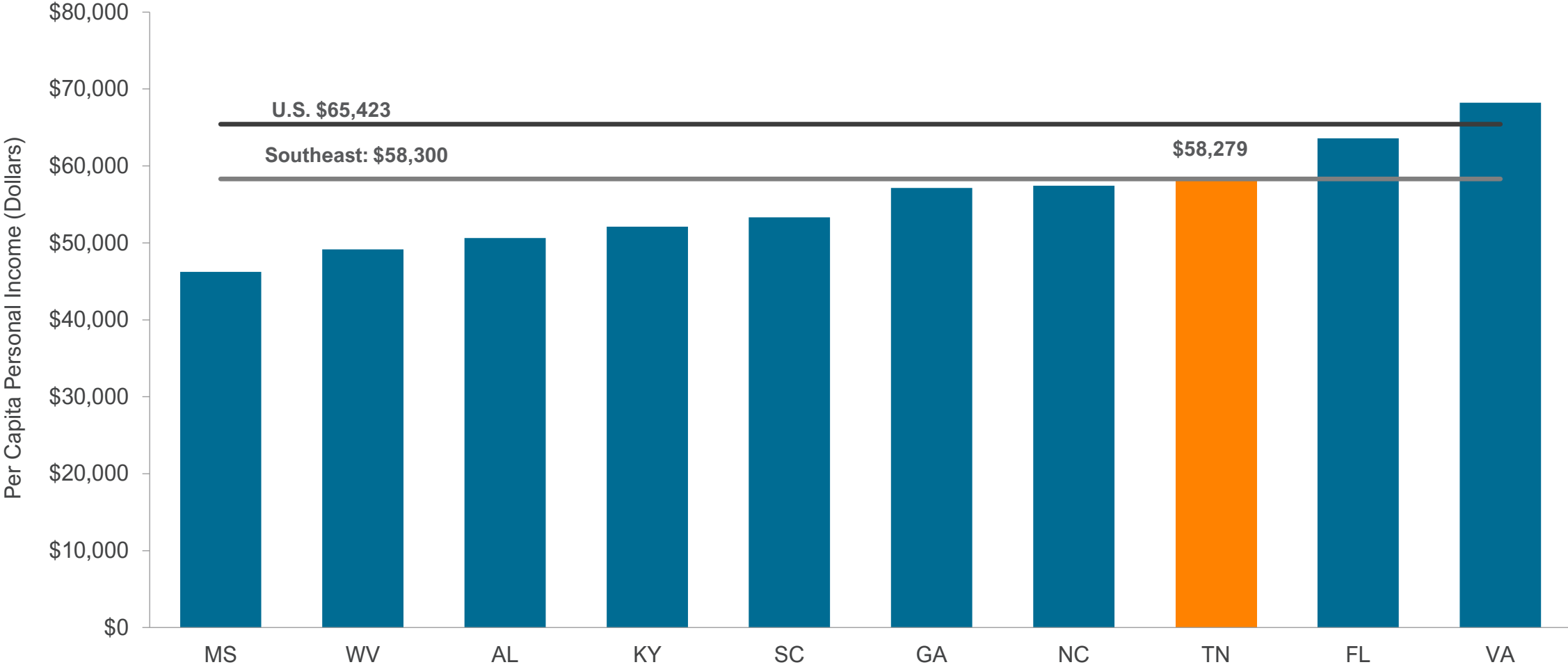
Wages are Growing Much Faster among the Lower Wage Part of the Market

(Percent Annual Wage Growth)



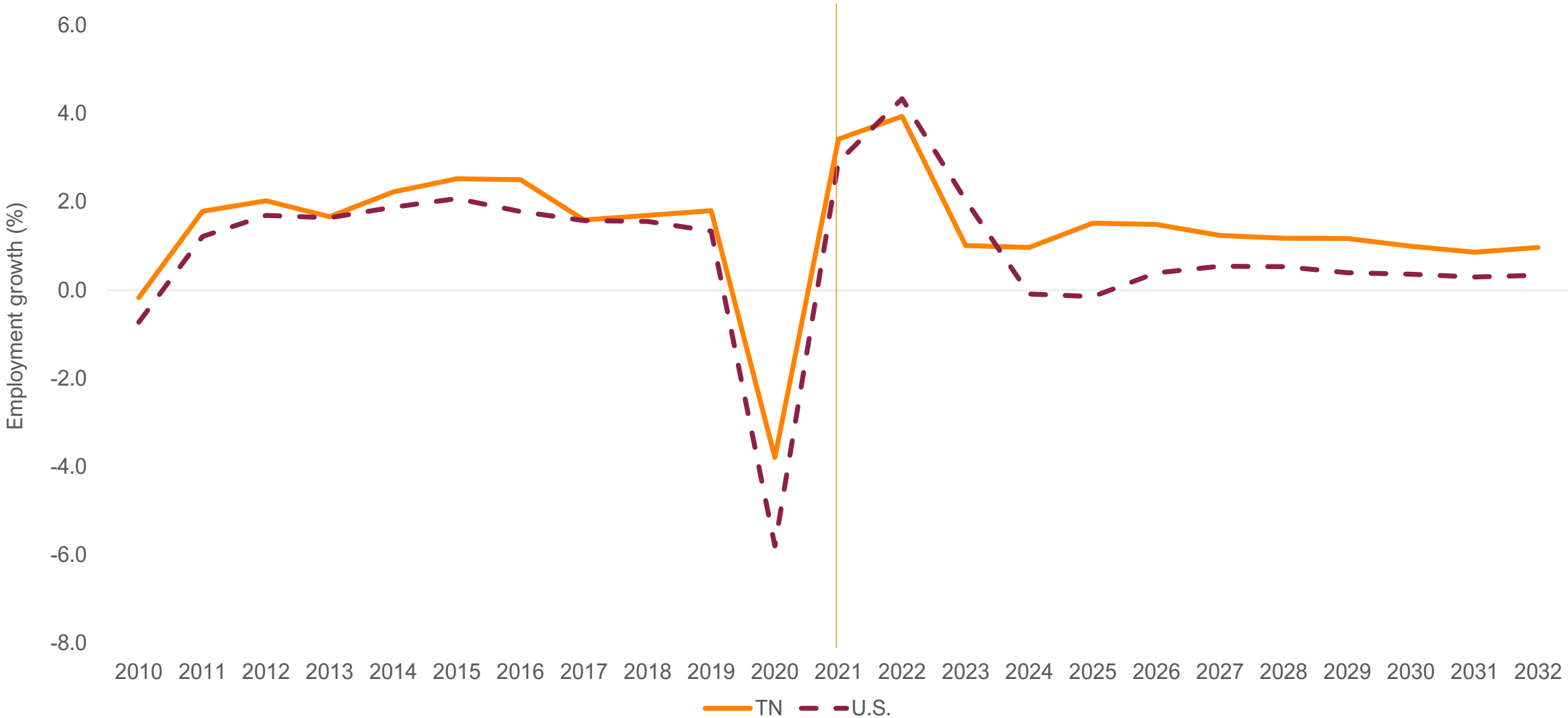
Source: Atlanta Fed, Bureau of Labor Statistics

Per Capita Personal Income, 2022



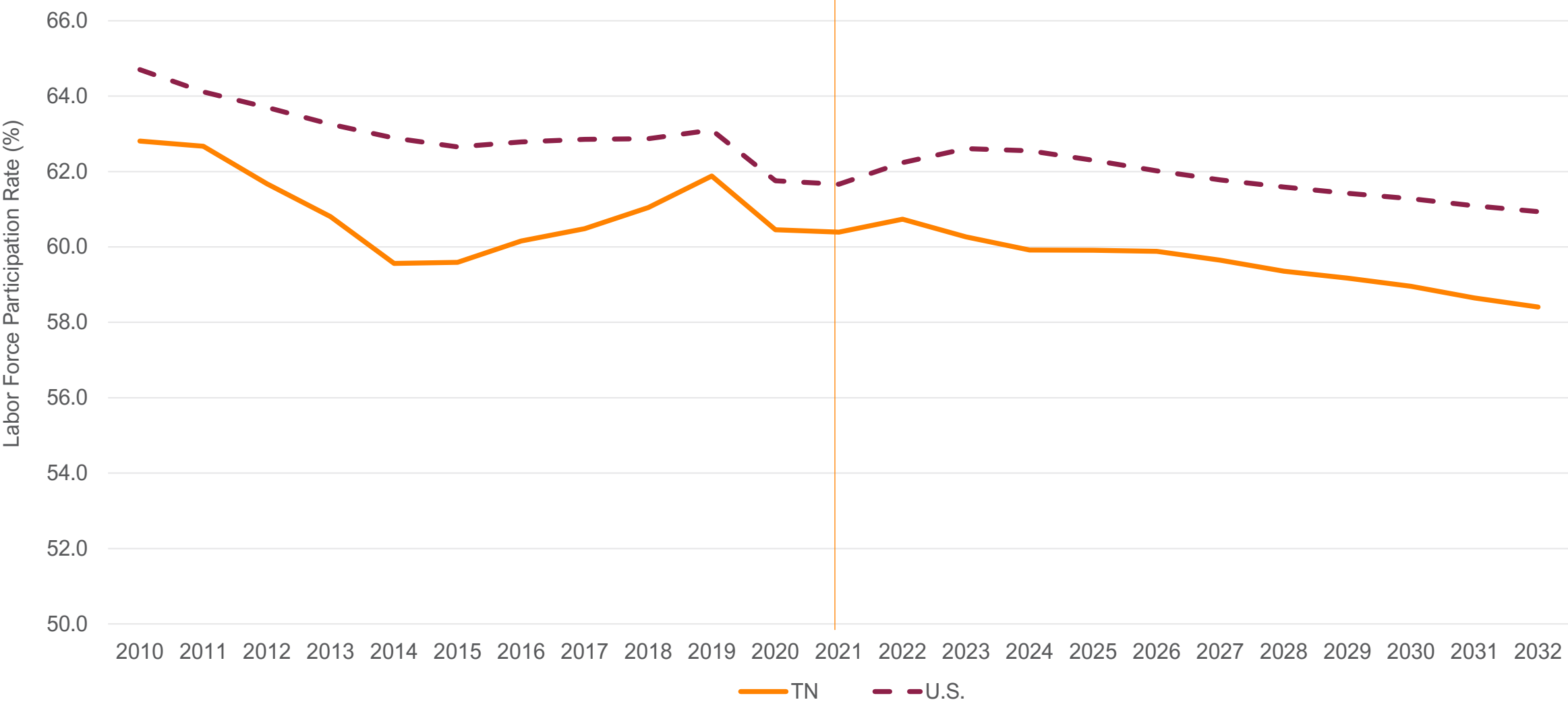
Source: Bureau of Economic Analysis

Long-Run Employment Forecast, TN and the U.S.



Sources: Bureau of Labor Statistics, IHS Markit, and Boyd CBER UT

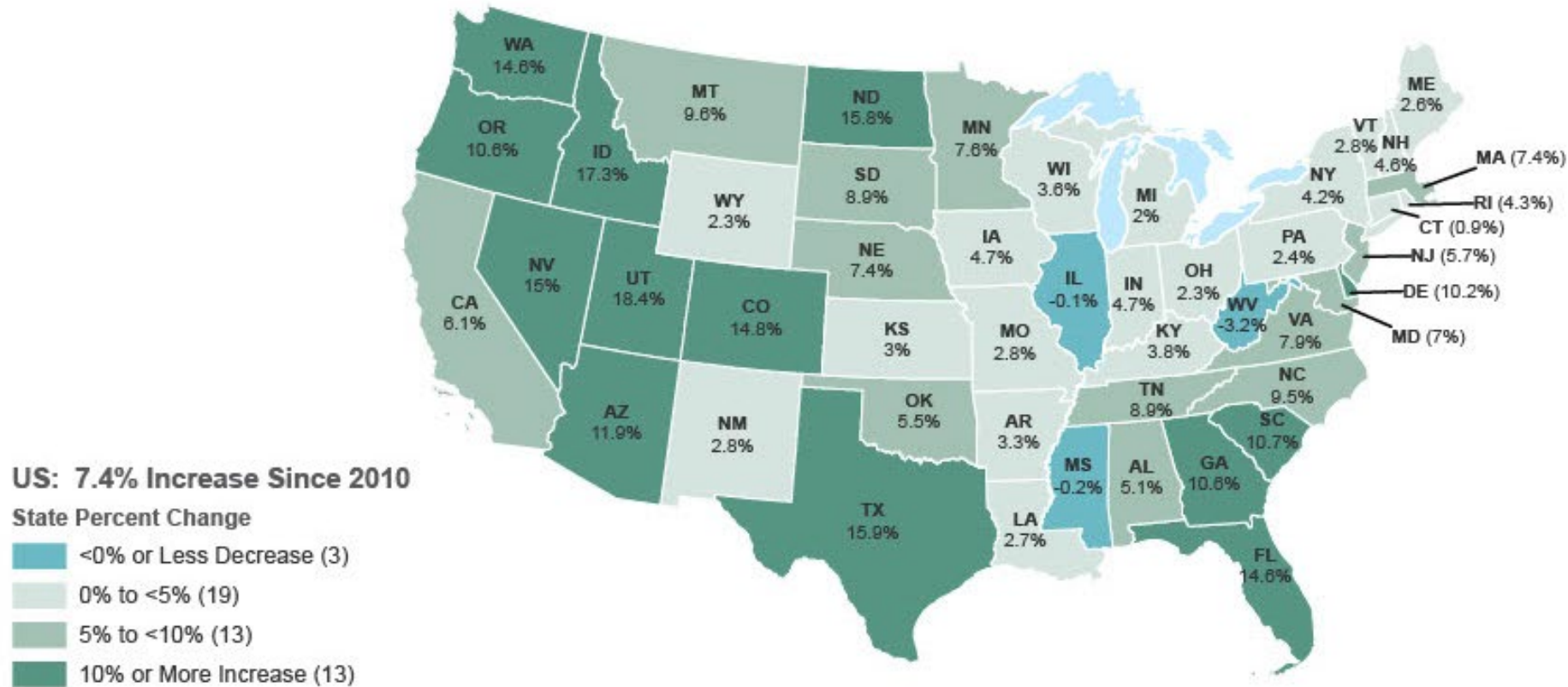
Labor Force Participation is Projected to Trend Downward



Sources: Bureau of Labor Statistics, IHS Markit, Boyd CBER UT

Tennessee's Population Growth is Faster than the National Average

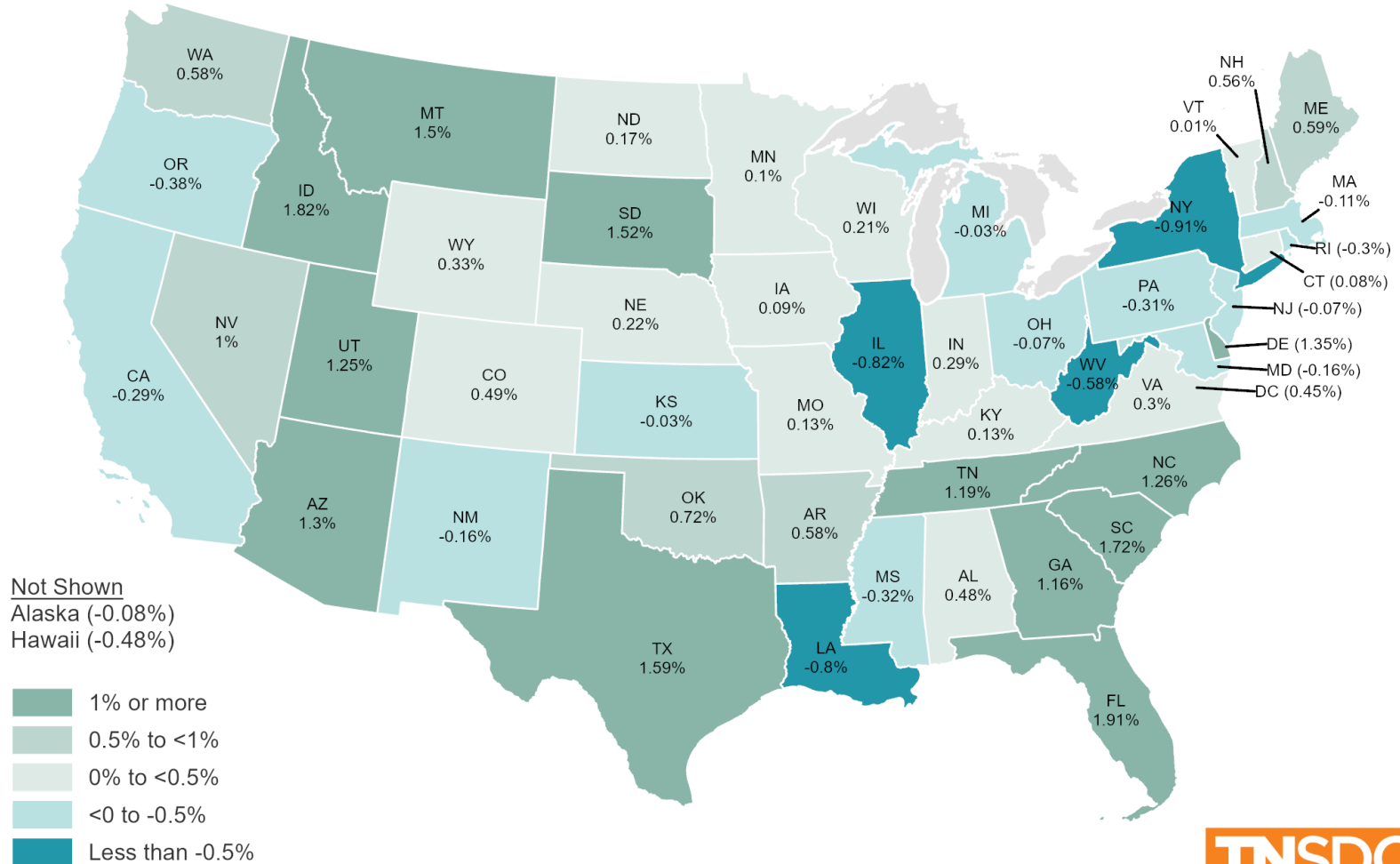
2020 Census: Percent Change in Resident Population (2010-2020)



Map: Tennessee State Data Center, University of Tennessee, Knoxville. Source: Resident Population of the 50 States (Table 2), US Census Bureau, 2010 and 2020. Note: Resident population excludes counts of overseas U.S. military and federal civilian employees (and their dependents living with them).

Tennessee has Continued to See Strong Population Growth

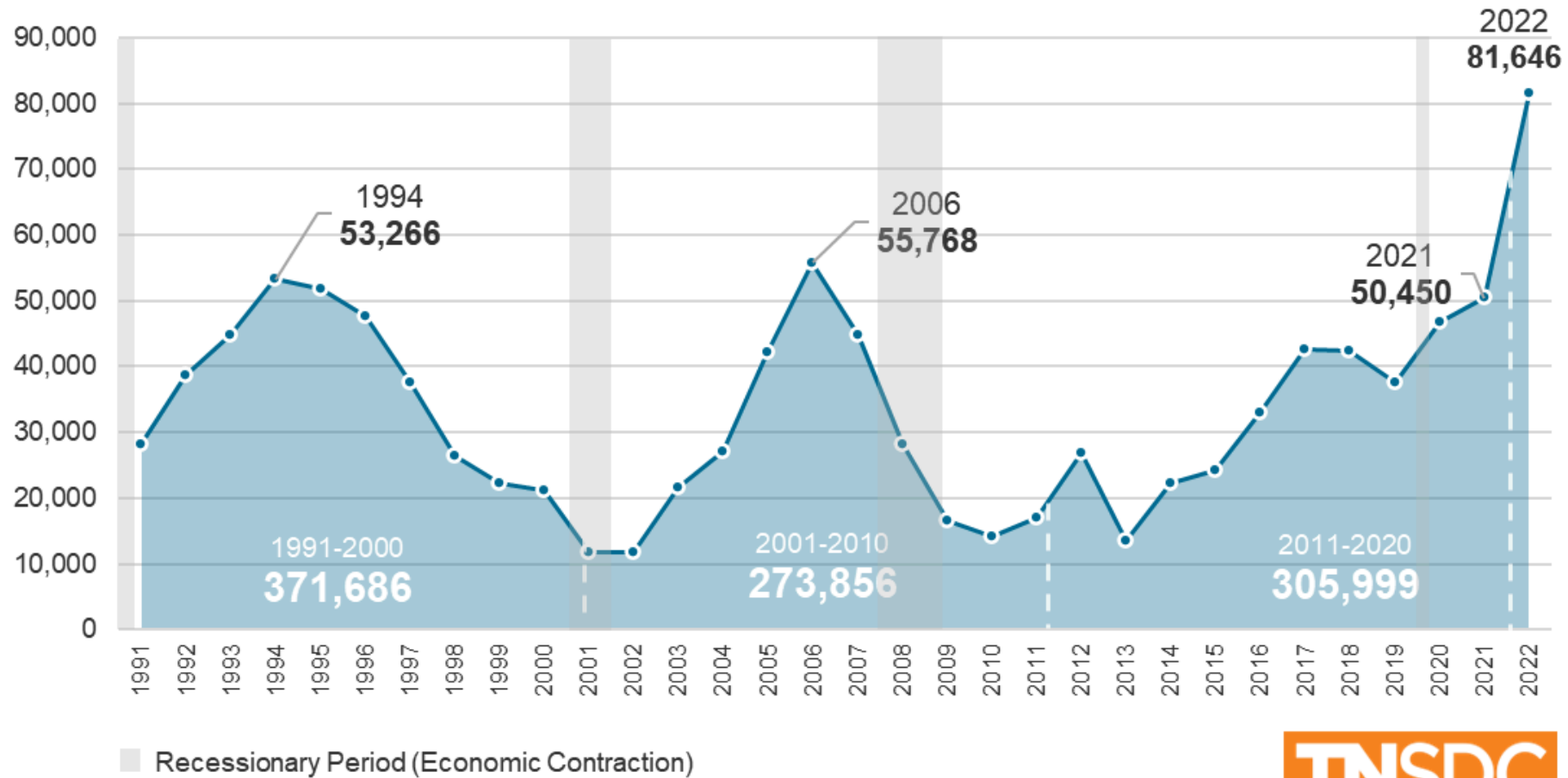
2021 to 2022 Percent Population Change



Source: Vintage 2022 Population Estimates, U.S. Census Bureau

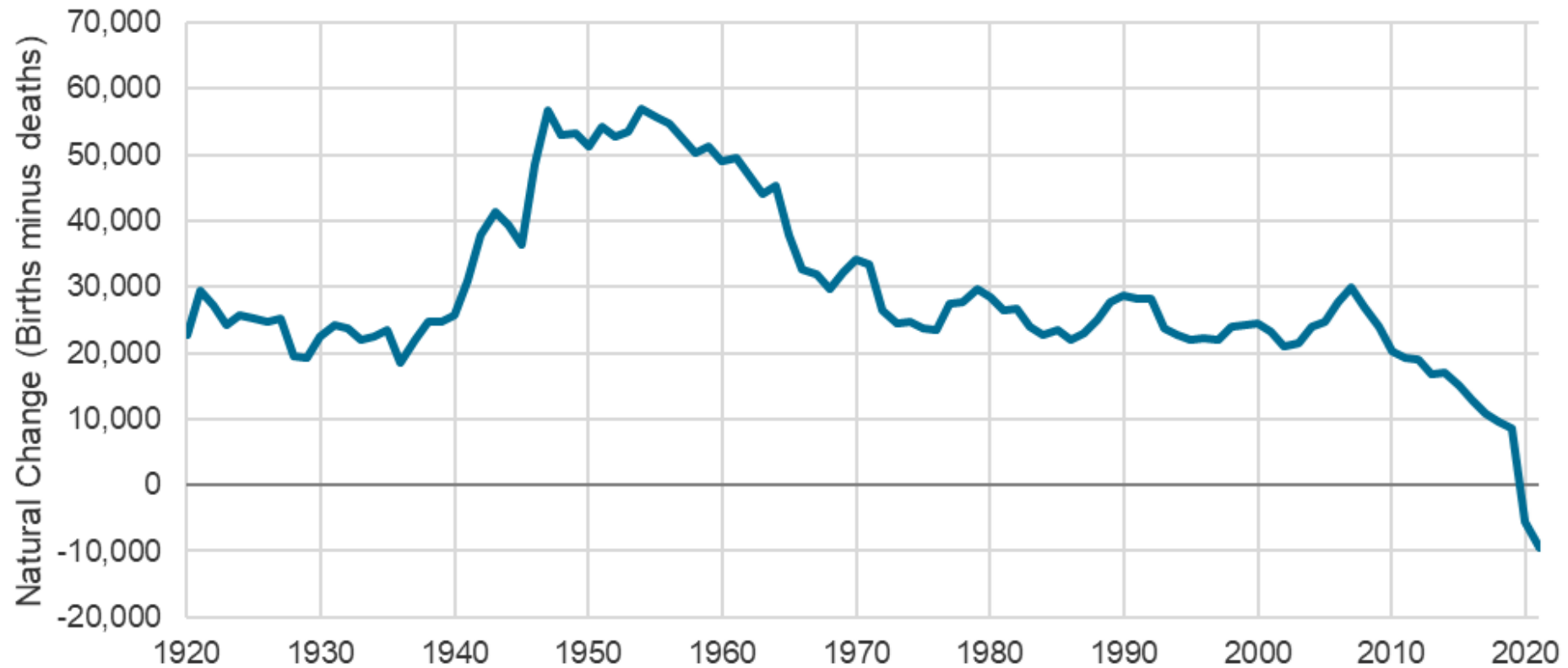


Net Migration Has Risen in Tennessee



Source: U.S. Census Bureau, National Bureau of Economic Research

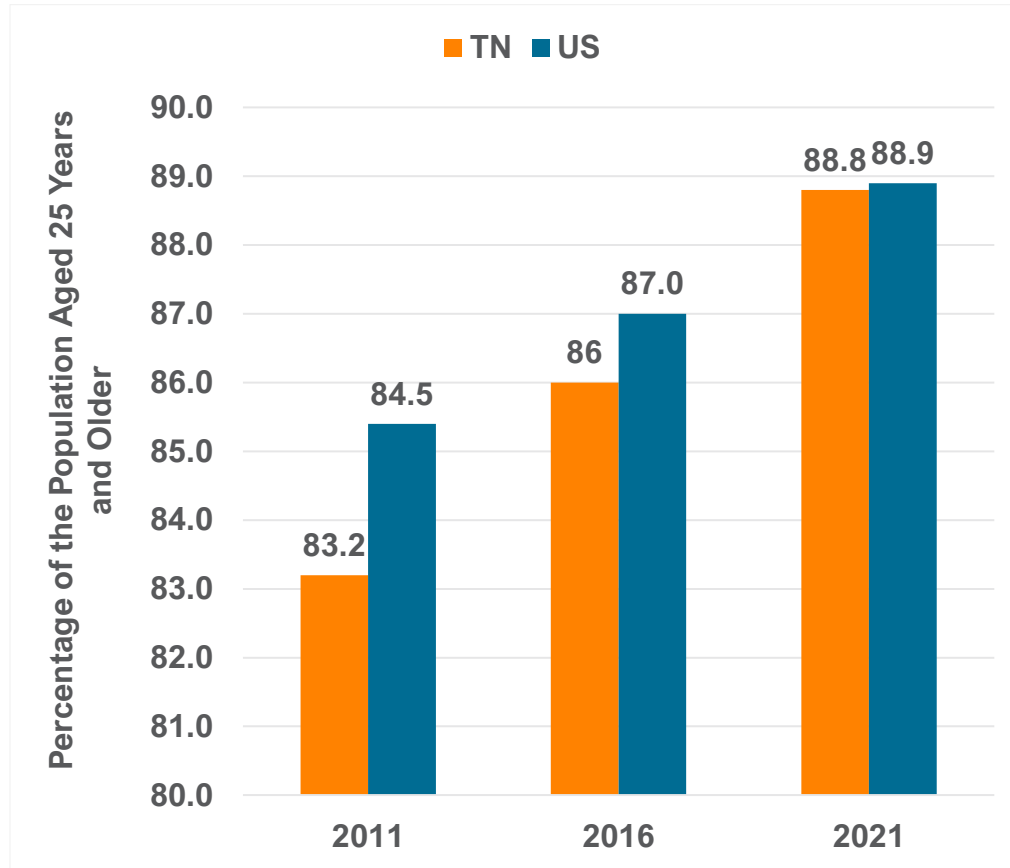
In-Migration is Offsetting Declines in Natural Population Growth



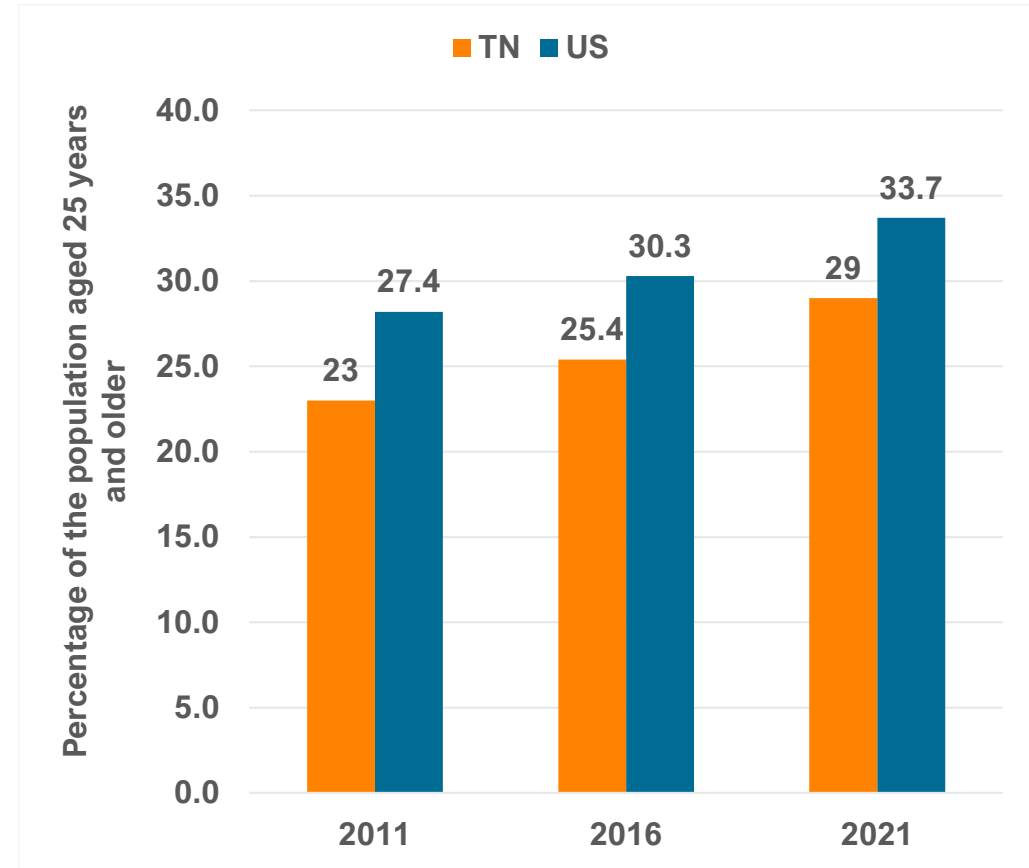
Source Tennessee Department of Health, Vital Statistics Bulletins

Tennessee Has Lower Educational Attainment (but catching up)

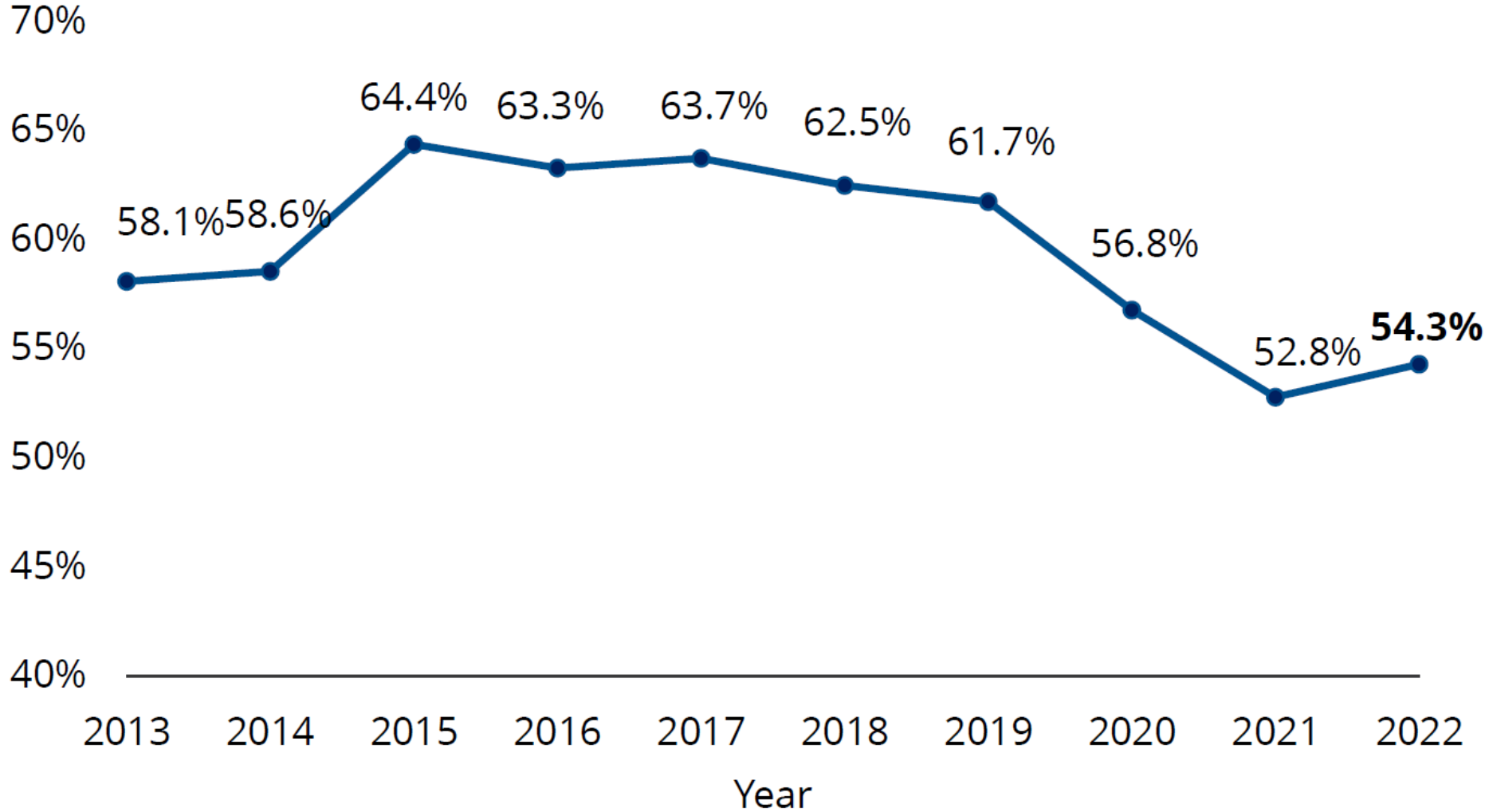
High School Graduates or Higher



Bachelor's Degree or Higher



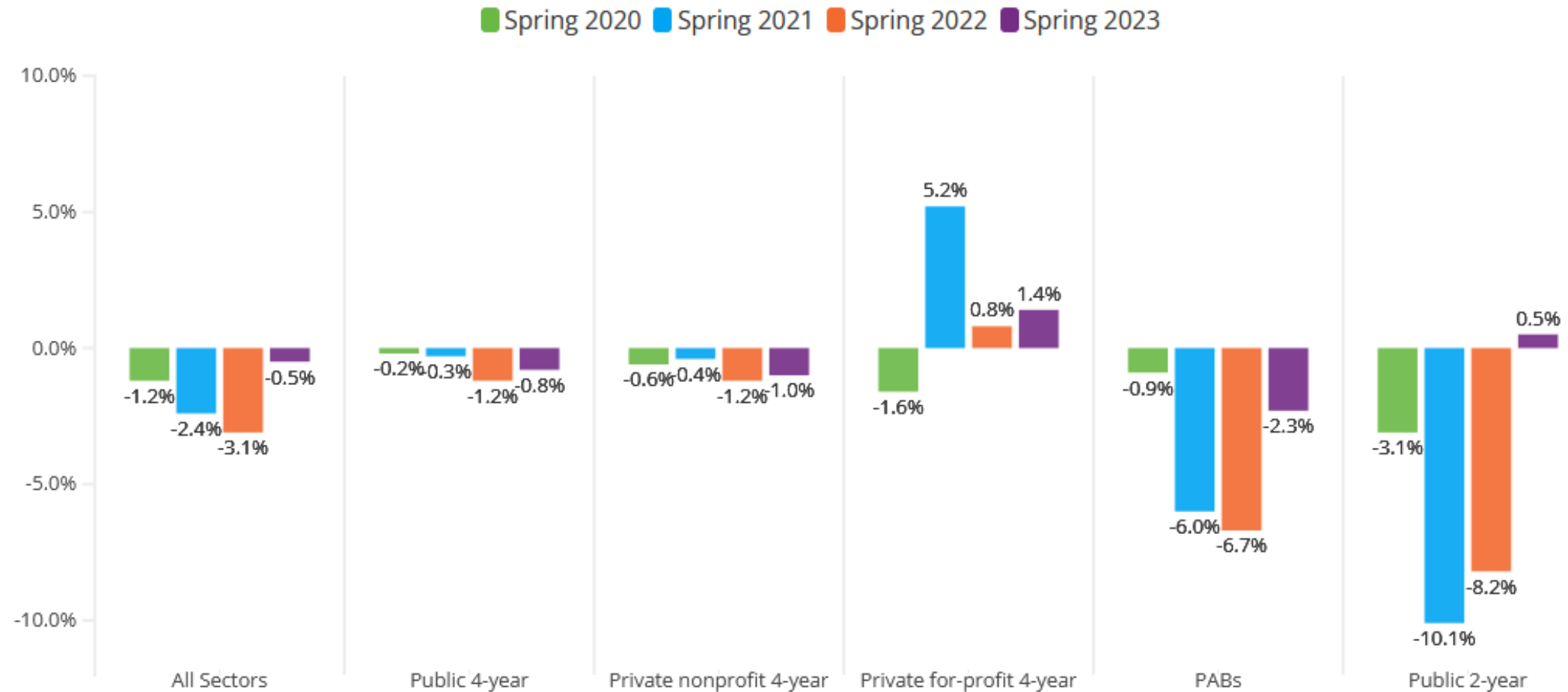
Fewer Tennesseans are Going to College (12th Grade College-Going Rate)



Source: THEC/TSAC College-Going Report

Nationwide, 1.09 Million Fewer Students are Enrolled in College than Before the Pandemic (National Student Clearinghouse, May 2023)

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



Why Did College Enrollment Fall?

- **Interruptions** - pandemic-fueled hurdles to enrolling in college
 - Aversion to online/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 and/or job-based training
 - Labor-saving automation
 - Aging US population
 - Local, state, and federal policy around college affordability

Tennessee is Growing High School-Level Jobs, but Growing College-Level Jobs Faster

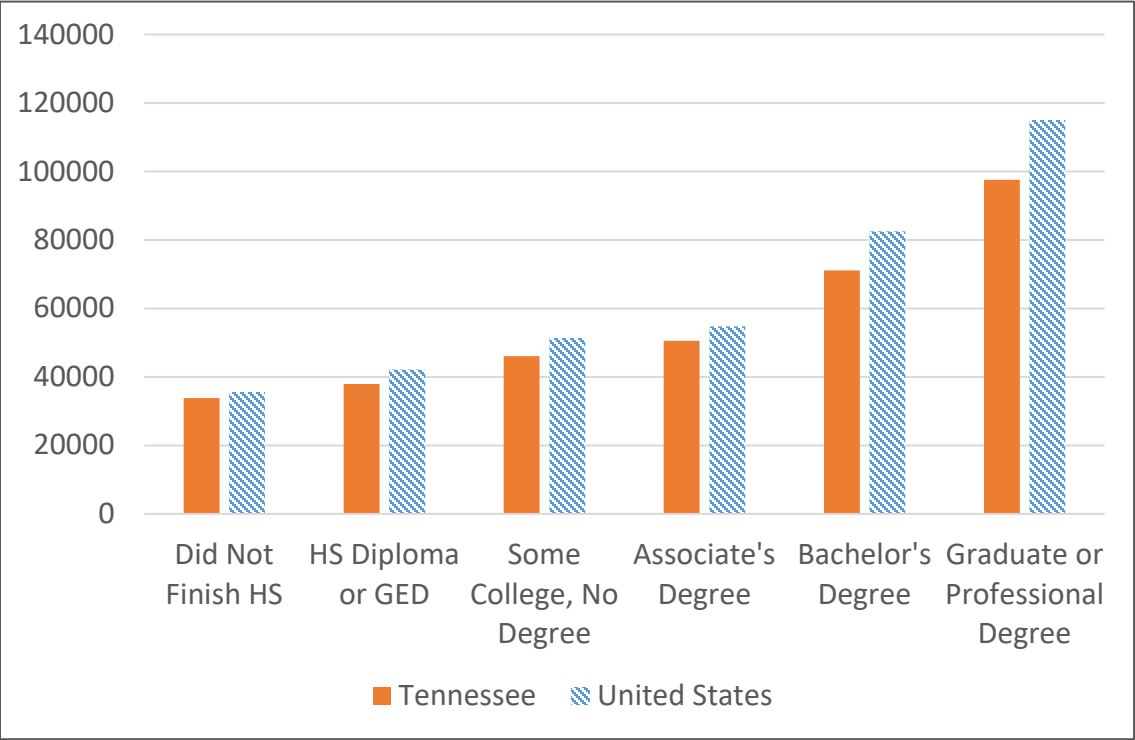
Tennessee Job Growth by Typical Entry-Level Education

Typical Entry-Level Education	Tennessee		
	High School	Up to Associate's	Bachelor's-Plus
2015/16 - 2018/19 Growth	2.3%	5.4%	10.1%
2018/19 - 2021 Growth	-2.0%	0.3%	7.0%
2015/16 - 2021 Growth	0.2%	5.7%	17.7%

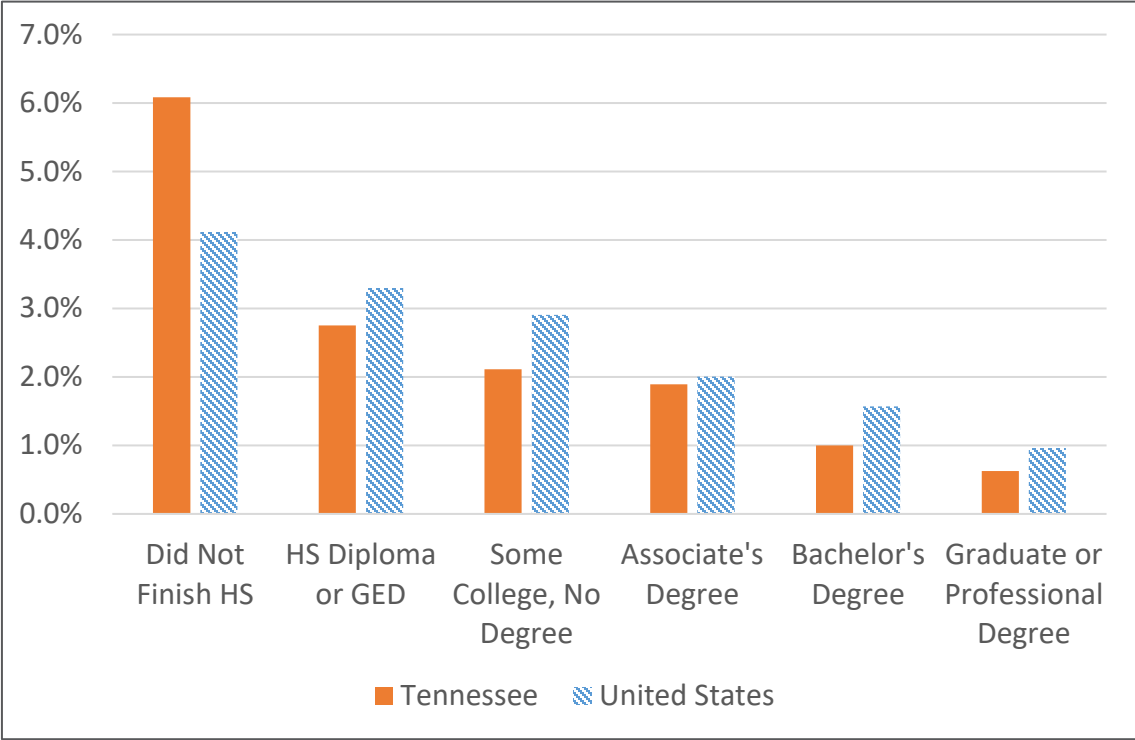
Source: Aggregations of BLS OEWS, matched to 2019 typical entry-level education by detailed occupation code. OEWS data omit self-employed workers, farm workers, owners, and household workers.

Income Rises and Unemployment Falls with a College Education

Annual Salary and Wages (2021\$)



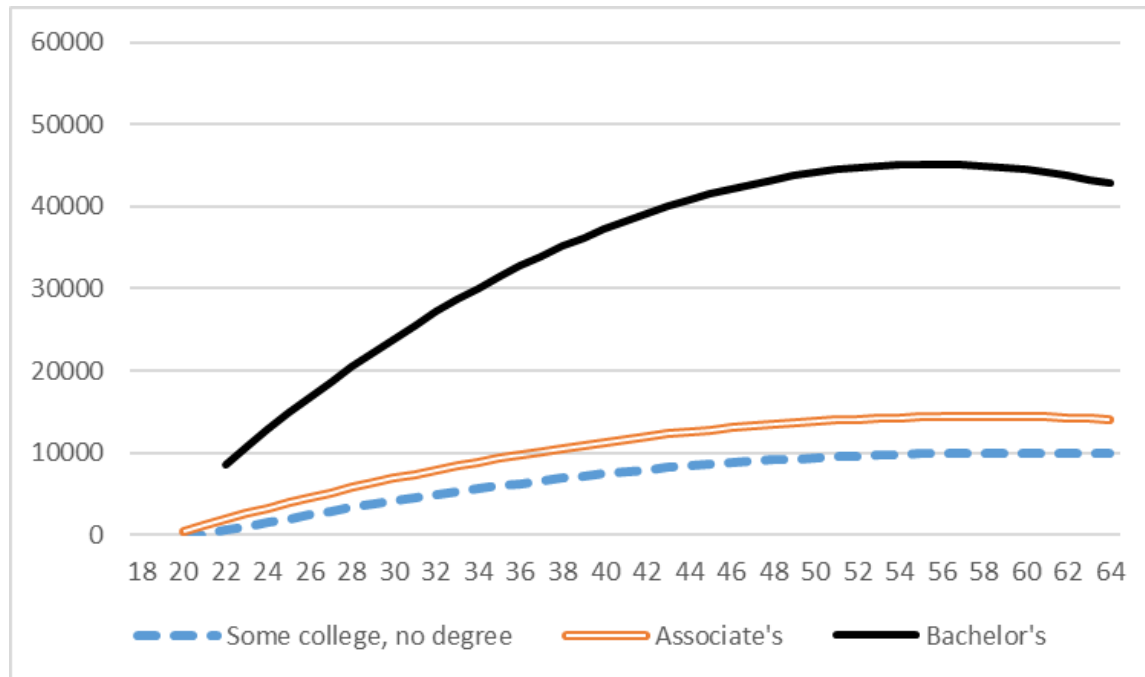
Unemployment (%)



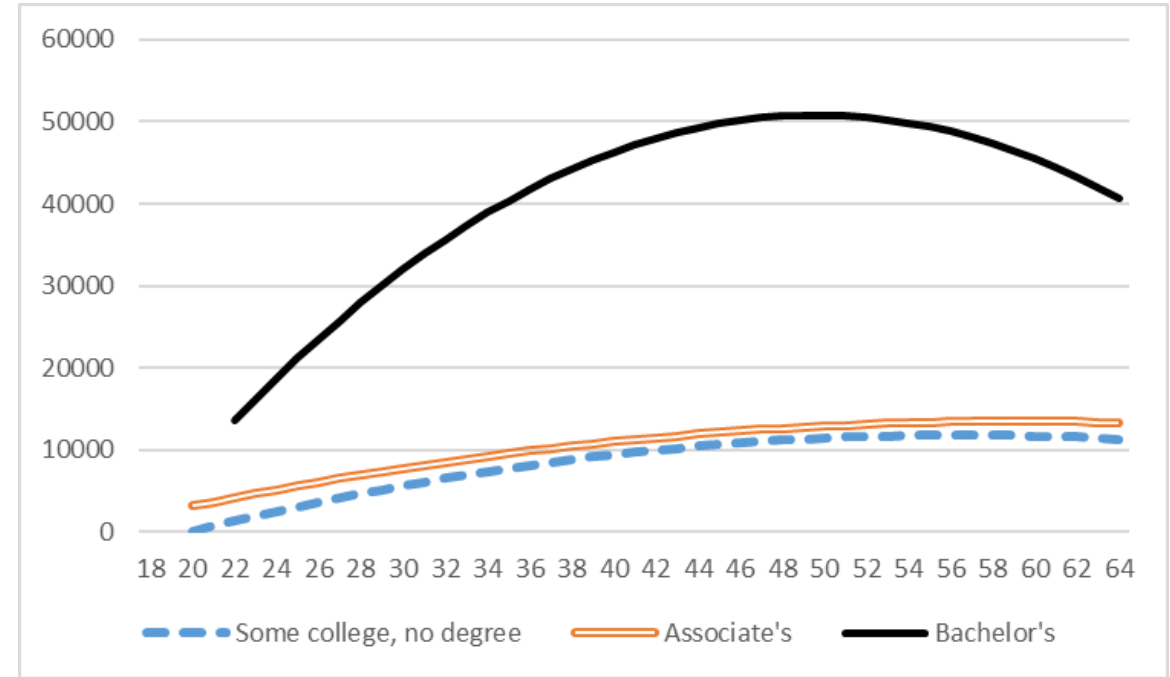
Notes: Carruthers (2023) using the 2021 American Community Survey, limited to 18-64 year-olds working full-time in the previous year.

College Educated Workers Earn More than HS Educated Workers, and the Gap Grows Through Midcareer

Tennessee



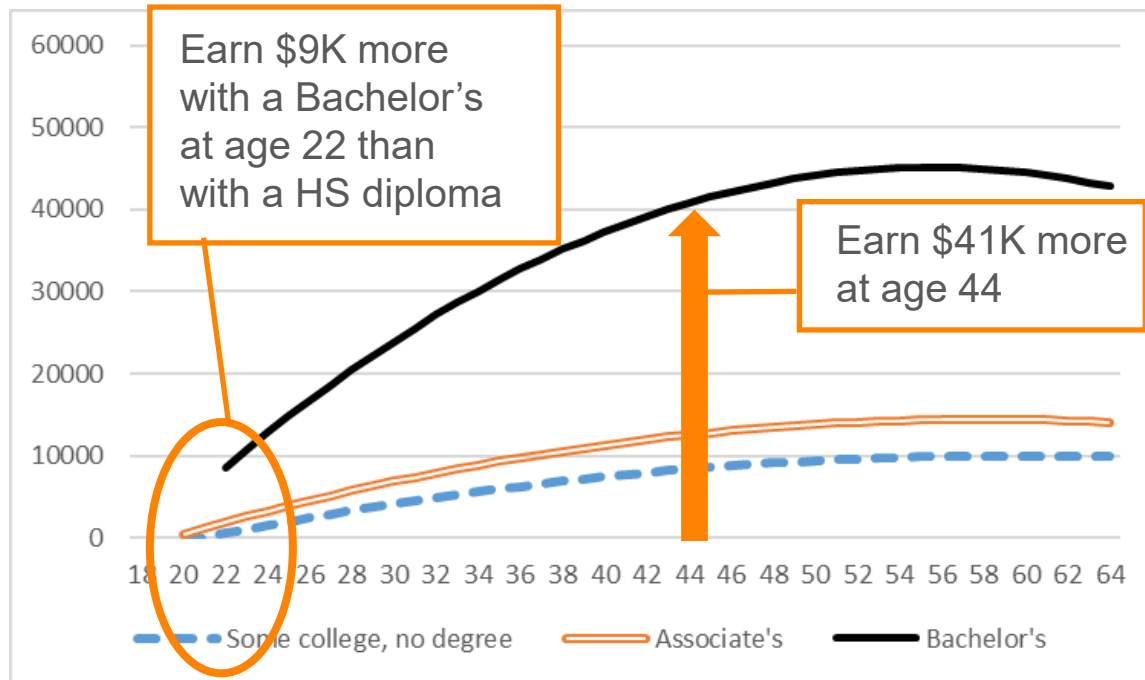
United States



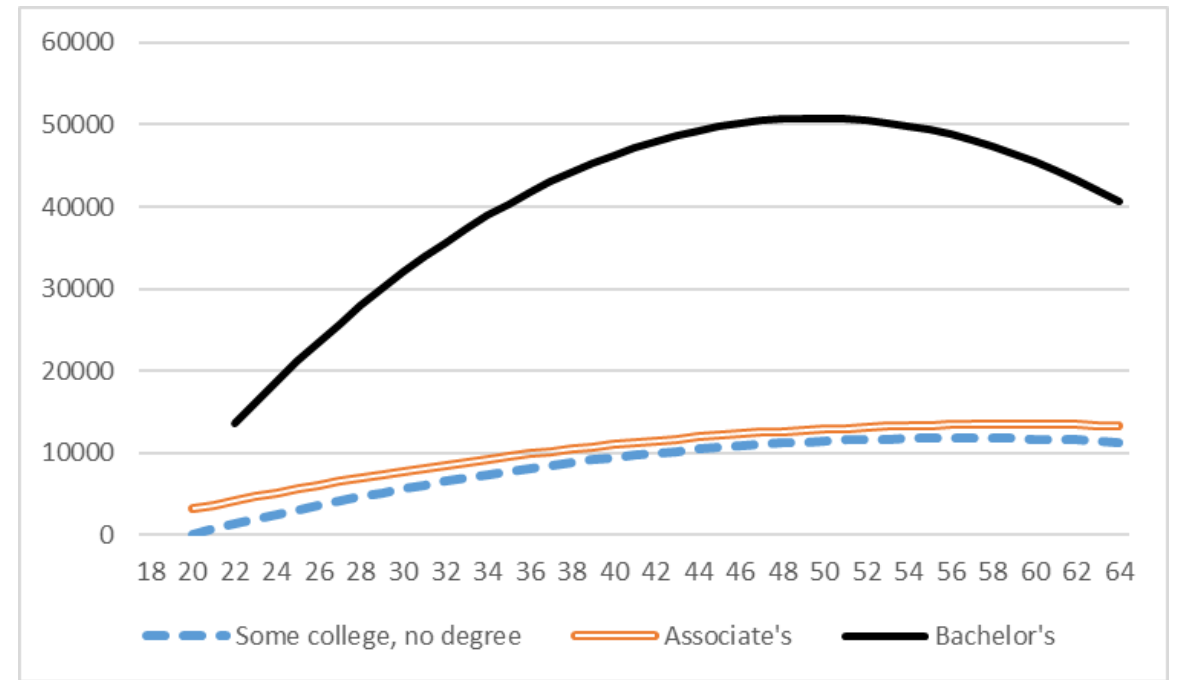
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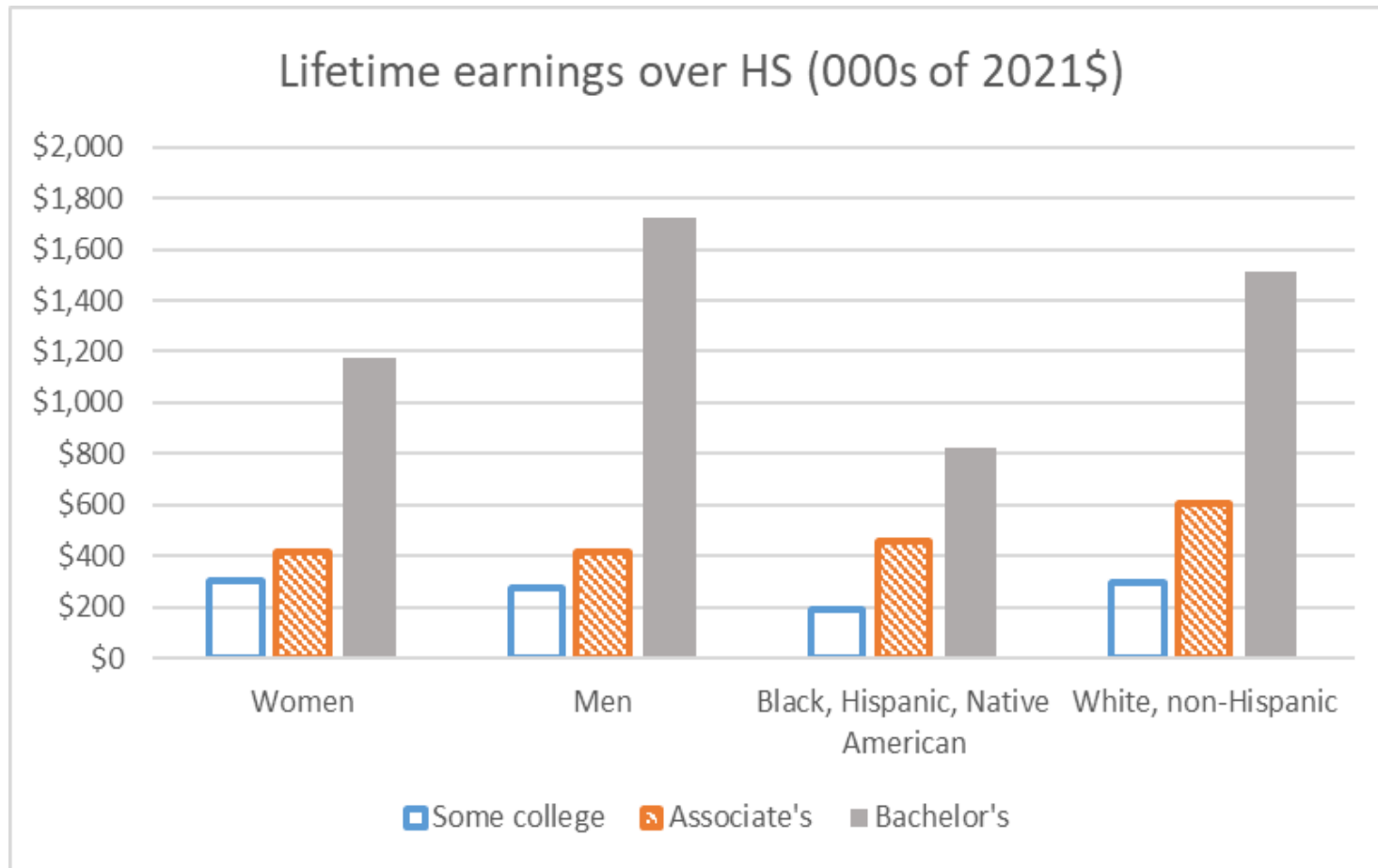


United States



Notes: Carruthers (2023) 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



- Average lifetime earnings premium over high school:
 - **BA: \$1.4 million**
 - Only \$826K more if Black, Hispanic, or Native American
 - **AA/AS: \$417,000**
 - **Some college without a degree: \$258,000**

Notes: Carruthers (2023) using the 2011-2021 American Community Survey, limited to 18-64 year-olds working full-time in the previous year.

The Rate of Return to a College Degree is High

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: Carruthers (2023) 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.

Returns to College 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: Carruthers (2023) using American Community Survey, 2011-2021.

Looking Ahead: Factors that will Shape the Value of College for Tennesseans in the Future

- Costs of College
 - Tuition and fees
 - Housing costs
 - Student loan financing programs and regulations
- Population Dynamics
 - In-migration
 - Population aging
- Labor Market Dynamics
 - Sustained higher labor demand
 - Changes to entry-level education requirements
 - Technology and automation
- Shifting Attitudes about Education and Work

Questions?

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