

TENNESSEE'S POST-PANDEMIC LABOR FORCE RECOVERY

December 2024

Prepared by

Celeste K. Carruthers

*William F. Fox Distinguished Professor
Boyd Center for Business and Economic Research*

Matthew C. Harris

*Boyd Distinguished Associate Professor
Michael J. Stahl PEMBA Faculty Research Fellow
Boyd Center for Business and Economic Research*

December 18, 2024



BOYD CENTER FOR BUSINESS &
ECONOMIC RESEARCH

Boyd Center for Business & Economic Research
Haslam College of Business
The University of Tennessee
2280 Sutherland Ave, Suite 228
Knoxville, Tennessee 37919
Phone: (865) 974-5441
<http://haslam.utk.edu/boyd-center>

For the past several years, one of the most important economic issues facing our state has been the recovery of the labor market after the COVID-19 pandemic. The short but intense recession that followed the onset of the pandemic resulted in an unprecedented number of unemployment claims: 981,414 in 2020, a 628% increase from 134,818 in 2019. At the same time, there was a sharp decrease in the number of Tennesseans who viewed themselves as part of the labor force. Individuals considered part of the labor force are those who are working, on temporary leave, or unemployed but looking for work. The state's labor force participation rate has been declining for many years, from 67.6% in mid-1996 to 61.7% in January 2020, according to the U.S. Bureau of Labor Statistics Current Population Survey. After the onset of the pandemic, labor force participation decreased sharply, to 58.7% by April 2020. In this brief, we review the extent to which Tennessee has rebounded to pre-pandemic levels of labor force participation.

This brief was motivated, at least partially, by the fact that the primary data sources used to track labor force participation yield diverging pictures of how Tennessee's labor market is trending. While the Current Population Survey contends that labor force participation is well below pre-pandemic levels, data from the U.S. Census Bureau's American Community Survey indicate that labor force participation is *above* pre-pandemic levels. In this report, we describe the key differences in the purpose and features of these surveys and examine why they may report differing pictures of where Tennessee's labor market currently stands.

While different sources of data on this question come to mixed conclusions, on balance, the evidence suggests that Tennessee's population is working or willing to work at least as much as they were before the 2020 pandemic and recession. This holds true in each region of the state, in both metro and non-metro areas, and by age, gender, education, and household income. Between 2021 and 2023, labor force participation rates increased the most among those aged 16 – 24 and those living in Middle Tennessee cities. Moreover, the growth in Tennessee jobs after the initial shock and recovery outpaced the growth in the state population. Between 2021 and 2023, the total number of jobs in Tennessee grew by 7.7%, compared to 2.1% population growth.

Below, we discuss and synthesize trends in different measures of the Tennessee workforce from three different sources.

Source #1: Bureau of Labor Statistics, Local Area Unemployment Statistics

Every month, the U.S. Bureau of Labor Statistics (BLS) provides official employment, unemployment, and labor force participation statistics for the nation and individual states. Figure 1 plots BLS estimates of the labor force participation rate for Tennessee and the U.S. as a whole.

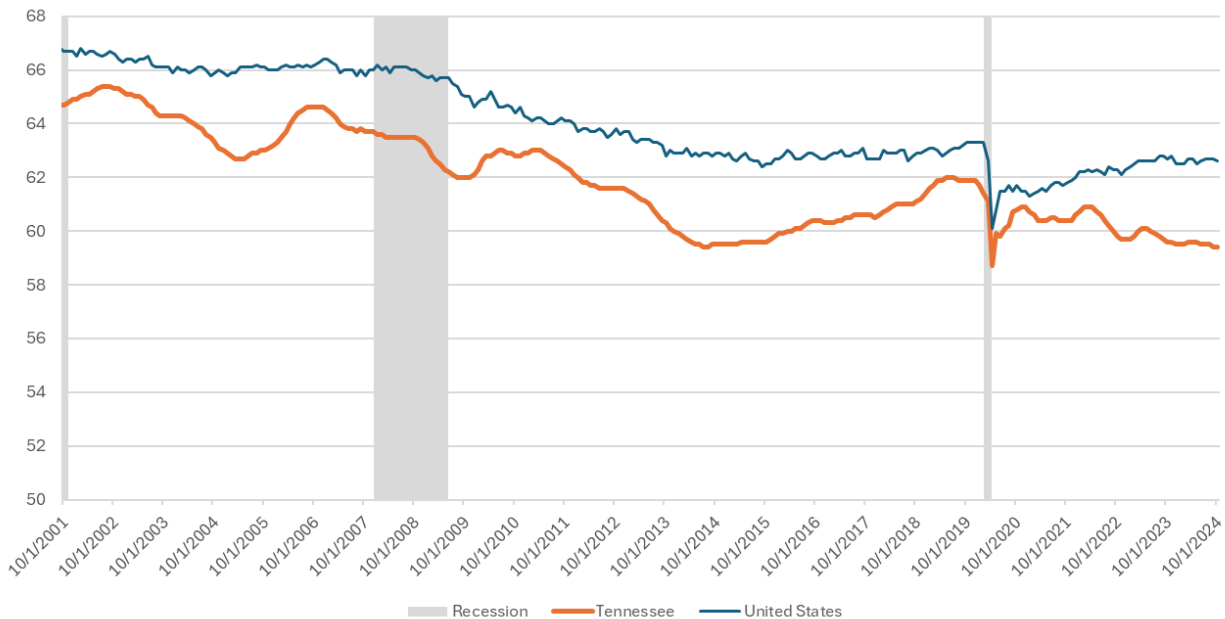
The instrument used to derive BLS estimates of labor force participation is the Current Population Survey (CPS). The CPS is a monthly survey of 60,000 U.S. households. New CPS data are published about one month after households are surveyed, providing nearly a real-time view of U.S. unemployment, labor force participation, and more. The survey records each respondent's state of residence, which allows for state-level estimates of these key indicators.¹ As shown in Figure 1, the BLS estimates that

¹ The CPS is a household-based survey, so individuals who live in Tennessee but work for entities in other states (remotely or by commuting across state lines) are counted in Tennessee's workforce statistics.

while U.S. labor force participation rates have returned to approximately pre-pandemic levels, labor force participation in Tennessee has fallen to its lowest level since the Summer of 2020.

Three technical features of the CPS are important to keep in mind when comparing Figure 1 estimates to other sources described below. First, the CPS is a large survey but not large enough on its own to yield representative labor force estimates for individual states. From 2021-2024, the CPS sampled between 1,700 and 4,500 households per month in Tennessee.² The BLS makes several adjustments to raw CPS data describing individuals in these households to estimate the number of people in a state who are employed, or who are unemployed but looking for work. These adjustments involve statistical models that combine historical CPS trends with other data sources on up-to-date employment totals in a state, including some that we reference below.³ The labor force participation rate requires an additional estimate of a state's age 16+ civilian population, which the BLS draws from Census Bureau sources.

Figure 1. Labor Force Participation in Tennessee and the U.S. (BLS-CPS)



Notes: Seasonally adjusted figures are sourced from the U.S. Bureau of Labor Statistics and [Federal Reserve Economic Data](#). The labor force participation rate is defined as the percent of the age 16+ civilian noninstitutionalized population who are either employed or actively looking for work.

Second, the number of unique persons in the CPS over the course of a year is smaller than the number of surveys that were completed in that time. Each sampled household appears in multiple CPS waves in order to capture how changing business and labor market conditions affect the same individuals month-to-month, and year-over-year.⁴ This survey design has a number of advantages but comes at further

² The March Supplement to the CPS is at the higher end of this range. In months other than March, the CPS interviews approximately 1,700 – 2,200 Tennessee households.

³ One feature of this procedure is that the BLS ensures that state employment estimates add up to the corresponding national figure. Additional details about BLS methods for estimating state and substate labor force indicators are here: <https://www.bls.gov/opub/hom/lau/calculation.htm>

⁴ For example, a household initially sampled in the February 2021 CPS would be followed for February-May 2021, and appear again in February-May 2022.

cost to sample size. In 2023, for example, only 3,143 unique households (7,292 unique individuals) appear in the CPS for Tennessee.

And finally, the way that people complete the CPS is designed to avoid “false positive” inclusions in the labor force. The survey uses 16 questions to determine labor force status. For example, someone who responds that they are unemployed needs to additionally specify if and how they are looking for work (by interviewing, calling contacts, etc.) to be counted as part of the workforce. The CPS is administered by Census Bureau representatives in person or by phone, and interviewers can assist respondents in interpreting questions.

Source #2: Bureau of Labor Statistics Establishment Data

A more comprehensive view of the state workforce is available through another BLS product, the Quarterly Census of Employment and Wages (QCEW). Rather than a survey, QCEW data are sourced from state Departments of Labor and administrative records on more than 95 percent of U.S. jobs.

Table 1 reports total Tennessee employment in June of 2020-2024. These data represent the total number of workers in Tennessee establishments (both public and private) who are eligible for unemployment insurance (UI) if displaced. Note that out-of-state residents who work for Tennessee employers are included in these data, and people who hold multiple jobs are counted more than once. From June 2021 to June 2023, the number of jobs in Tennessee establishments increased by 233,140. Over the same time period, Tennessee’s population increased by approximately 150,000,⁵ so Tennessee job growth outpaced population growth 7.7% to 2.1%.

Table 1. Total Employment in Tennessee (QCEW)

Year	Number of Establishments	Total Jobs	Change in Jobs	Percent Change in Jobs
2020	170,465	2,843,535	-205,077	-6.70%
2021	182,492	3,011,755	168,220	5.90%
2022	200,037	3,158,137	146,382	4.90%
2023	217,204	3,244,895	86,758	2.70%
2024	234,917	3,287,442	42,547	1.30%

Notes: Total second-quarter employment figures are sourced from the [BLS QCEW](#). Employment figures represent the number of unique employee-employer relationships that are eligible for Unemployment Insurance, as recorded by Tennessee firms.

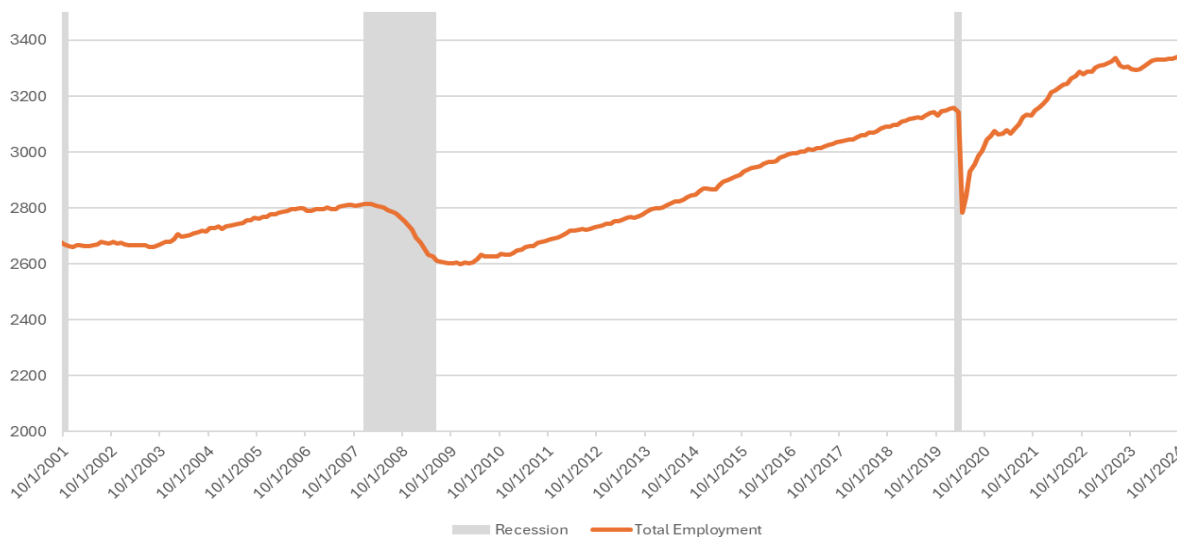
Gains in Tennessee jobs as seen in the QCEW are consistent with another BLS data series, the Current Employment Statistics (CES) survey of firms (Figure 2). Employment data from the CES are from a survey of establishments, so they are not as universal as the administrative QCEW records on all establishments. However, CES data are released at greater frequency and include employment estimates from a broader group of establishments, including those not covered by UI and the QCEW. However, both the CES and QCEW data yield similar estimates in terms of recent job growth. Much like QCEW job counts, CES data indicates that there were 7.4% more Tennessee jobs in mid-2023 than in mid-2021.

⁵ <https://tnsdc.utk.edu/estimates-and-projections/boyd-center-population-projections/>

Source #3: Census Bureau American Community Survey

The CPS, QCEW, and CES all share one major disadvantage, which is that they do not allow us to unpack state-level labor force participation trends to understand which subsets of the population drove Tennessee’s post-pandemic decline in labor force participation, or which demographic groups recovered more quickly than others. QCEW and CES data are from *workplaces* and do not include detailed *worker* information such as age, gender, education, or metro area residence. The CPS records these features and much more, but the survey is not large enough to be representative of substate populations. For this level of granularity, we turn to the American Community Survey (ACS), conducted by the U.S. Bureau of the Census.

Figure 2. Total Nonfarm Employment in Tennessee (CES)



Notes: Seasonally adjusted figures are sourced from the BLS CES, [State and Metro series](#). CES-derived employment figures represent the estimated number of unique employer-employee relationships in all Tennessee establishments, including those not covered by Unemployment Insurance.

The American Community Survey (ACS) samples 3.5 million addresses each year. It is a 1 percent sample of each state that is designed to be representative at the state level. The 2023 ACS surveyed approximately 71,000 individuals living in Tennessee.

The ACS and CPS both indicate whether a survey-taker was in the labor force, allowing us to use either source to compute labor force participation rates as a percent of a survey population. There are a number of differences between the two surveys, however, that lead to differences in bottom-line labor force participation. The ACS is administered year-round, but data are compiled and released once a year, much less often than the monthly CPS. Also different from the CPS, the ACS does not intentionally track individual households over multiple periods. In addition to sampling a larger number of unique individuals than the CPS, the ACS tends to have a higher response rate.⁶ The two surveys are also administered differently: The ACS can be completed online or by mail, whereas the CPS is completed

⁶ Completing the ACS is required by law, whereas the CPS is a voluntary survey. CPS response rate: <https://www.bls.gov/opub/hom/lau/calculation.htm>. ACS response rate and sample size by state: https://www.census.gov/acs/www/methodology/sample_size_and_data_quality/.

with an interviewer. There are several differences in survey content between the ACS and CPS, and fewer questions on work status in the ACS. To give one example, an unemployed ACS respondent who states that they are looking for work or would take a job if offered is counted as being in the labor force, without having to confirm which specific steps they are taking to find a job. Finally, CPS-derived labor force participation rates are the output of statistical models that combine a series of current and prior CPS responses with other sources of information on total employment (including the QCEW, illustrated above for Tennessee jobs) to arrive at an estimate of current employment, unemployment, and labor force participation. This sequence is necessary given the small number of CPS respondents in a given month, whereas the ACS is large enough to simply compute average labor force participation from the survey data.⁷

We use the ACS to measure Tennessee’s labor force participation by age, in-migration, gender, education, household income, and metro/nonmetro area. We mimic BLS/CPS definitions to the extent possible, limiting the ACS to non-institutionalized civilians age 16 and older and defining labor force participants as those who were either employed or looking for work. Table 2 presents our findings.

Table 2. Labor Force Participation in Tennessee and the United States by Age, Migration, Metro Residence, Gender, Education, and Household Income

	USA			Tennessee			Percentage point change, 2021 - 2023	
	2019	2021	2023	2019	2021	2023	USA	TN
Civilian population age 16+	64.5	63.8	64.6	62.7	62.2	63.5	0.8	1.3
Age 16-24	60.3	59.0	60.7	63.2	60.8	63.8	1.7	2.9
Age 25-54	84.0	83.5	84.9	82.0	81.7	83.3	1.4	1.6
Age 55+	40.1	39.8	39.8	37.4	37.6	37.6	0.0	0.0
New to state of residence	65.6	65.2	66.6	69.3	63.4	67.7	1.3	4.3
Female	59.3	58.8	59.9	57.8	57.0	58.3	1.0	1.3
Male	70.0	69.0	69.6	68.1	67.7	69.0	0.6	1.3
High school education	54.4	53.8	55.0	52.3	52.2	53.5	1.2	1.3
Some college or degree	71.3	70.3	70.8	71.2	69.9	71.0	0.5	1.1
Below 200% FPL household income	47.7	46.6	46.7	47.9	46.3	46.7	0.1	0.4
Above 200% FPL household income	72.8	72.3	73.3	72.4	72.2	73.4	1.0	1.1
Metro area resident	65.6	65.0	65.7	65.4	64.8	66.1	0.8	1.4
Nonmetro area resident	60.2	59.4	60.3	56.1	55.8	56.6	0.9	0.7
East Tennessee metros				60.7	61.5	62.3		0.8
Middle Tennessee metros				68.9	67.0	69.1		2.0
West Tennessee metros				64.2	64.0	65.8		1.7

Notes: Authors’ calculations using the American Community Survey (IPUMS USA, University of Minnesota, www.ipums.org), corroborated with extracts from <https://data.census.gov>. The labor force participation rate is defined as the percent of the age 16+ civilian non-institutionalized population who are either employed or actively looking for work. Respondents who are “new to state of residence” are those who were living in a different state or outside of the U.S. one year prior. For each population, we weight labor force participation rates using ACS-provided person weights.

⁷ We use ACS-provided weights when computing these means.

The primary takeaway from Table 2 is that ACS-derived estimates of Tennessee’s labor force participation are different from CPS-derived estimates depicted in Figure 1. CPS-derived estimates place Tennessee’s 2023 labor force participation rate between 59 and 60 percent. Table 2 estimates from the 2023 ACS (the most recent available) are considerably higher at 63.5 percent.

Our second broad takeaway is that the ACS and CPS-derived estimates depict a different degree of post-pandemic recovery in labor force participation. The official, CPS-based estimates indicate that 2023 U.S. labor force participation was slightly below pre-pandemic levels (62.6% in June 2023 versus 63.0% in June 2019) while ACS derivations suggest that the U.S. population was 0.8 percentage points more likely to be in the labor force in 2023 than in 2019. The ACS-CPS difference is even larger for Tennessee. According to CPS-based estimates, Tennessee’s labor force participation decreased by 2.0 percentage points from 2019 to 2023. The ACS, by contrast, estimates that labor force participation rates *increased* by 1.3 percentage points during that time.

Increases in labor force participation were most pronounced in three groups. For the youngest group of workers considered, individuals aged 16-24, labor force participation increased 2.9 percentage points in Tennessee, nearly twice the nationwide increase of 1.7 percentage points. Tennessee has experienced a rapid influx of new residents in recent years, particularly from other states. In 2019 and 2023, those who had recently moved to the state were much more likely than average to be in the workforce (by 4 – 7 percentage points), whereas in 2021 in-migrants were only 1 percentage point more likely than average to be in the workforce. It is important to note, however, that this is by far the smallest sample among the subpopulations that we describe in Table 2, and these fluctuations may be the result of statistical noise more so than emerging patterns in the labor force attachment of new Tennesseans. Finally, labor force participation rose across all three regions of Tennessee between 2021 and 2023. The largest gains were in Middle Tennessee metro areas (2.1 percentage points) followed by West Tennessee (1.8 percentage point increase) and East Tennessee (0.8 percentage points).

Synthesis: Has Tennessee’s Labor Force Bounced Back?

The number of Tennessee jobs fell sharply in 2020 but recovered to pre-pandemic levels by 2022, and strong job growth continued into 2023. The state’s workforce expanded by 7.7% between 2021 and 2023, outpacing 2.1% population growth over the same two years. In addition, the largest Census Bureau survey of Tennesseans indicates that the state’s labor force participation rate had recovered or exceeded pre-pandemic 2019 levels by 2023. Nonetheless, official labor force participation rates from the BLS were below pre-pandemic levels for Tennessee in 2023 and continued to decline through 2024.

Unfortunately, differences in data collection, sampling, timing, and compilation across the sources reviewed above make it impossible to reconcile these mixed findings. The QCEW and CES measure the volume of jobs, which is different from the number of Tennesseans who are working. Rapid growth in Tennessee jobs may over-state growth in Tennessee workers for various reasons—individuals holding multiple jobs, out-of-state employment in Tennessee firms—although these are unlikely to explain declining labor force participation amid 7.7% growth in total jobs.

Differences in survey content between the ACS and CPS, as well as differences in how individuals complete each survey, likely explain some of the differences in labor force participation rates between those two sources.⁸ A typical ACS respondent completes their survey on their own, rather than with a CPS interviewer, and the ACS defines labor force participation somewhat more broadly than the CPS. It is possible that Tennesseans are not as engaged in work as they report, after applying CPS criteria for employment or job search.

Nevertheless, the weight of the evidence points to a post-pandemic Tennessee workforce of the same or greater scale than in 2019, and on an individual level, at least as likely to be working or willing to work.

CPS-based estimates of employment, unemployment, and labor force participation rates are the best available near *real-time* measures on how emerging economic conditions affect household employment month to month and even year to year for the same households. However, administrative data from Tennessee are more closely aligned with our ACS-based estimates of the post-pandemic labor force recovery, and the ACS sample size is approximately 10 times larger than that of the CPS. For these reasons, the ACS is likely to provide more accurate estimates of long-run trends in the Tennessee workforce. We recommend these data sources be used jointly to get a complete picture of Tennessee’s overall labor market health and real-time adjustments.

⁸ More detail on differences between the ACS and CPS employment measures can be found here: <https://www.bls.gov/lau/acsqa.htm>.