

2020-2021 Reference Guide

TENNESSEE'S ECONOMY



TN Department of
**Labor & Workforce
Development**

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and Reporting Engine Division



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Executive Summary

Tennessee's economy experienced an historic increase in unemployment from 109,312 in March 2020 to 482,906 and an unemployment rate of 15.8 percent in April as the response to the coronavirus pandemic caused business closures throughout the state. By June 2020, however, the unemployment rate had dropped to 10.1 percent. As the state economy demonstrated its resilience and with the injection of federal funds, continued low interest rates, and measures to stem the COVID-19 pandemic, the unemployment rate continued to drop. The average unemployment rate for the year was 7.5 percent for 2020, compared to 3.4 percent in 2019.

The Tennessee labor force dropped by 1.2 percent in 2020 as schools went virtual, businesses most affected by the pandemic laid off workers or closed, and pandemic restrictions and increased home responsibilities caused people, especially women, to exit the labor force. Due to continuing historic effects of the pandemic on the state and regional economy this report contains real-time data through mid- 2021, as well as analyzing economic trends through 2020.

The Tennessee Economy in 2020 Nonfarm employment in Tennessee decreased by four percent from 2019 to 2020 to 2,998,600, suffering the loss of 124,300 jobs over the year (see summary, p. 3). Metropolitan growth was negative for all metropolitan areas with Memphis, Nashville, and Chattanooga all losing employment by more than four percent. Employment increased in only 13 of 95 counties. However, the number of establishments grew by 3.8 percent and nominal total payroll increased by 2.5 percent to 160.7 billion dollars. The average annual median wage (not adjusted for inflation) also increased by 4.3 percent to \$37,442. The average hourly wage for production workers increased slightly to \$20.33.

The unemployment rate for 2020 was 7.5 percent, lower than the U.S. rate of 8.1 percent, as the labor force decreased by 1.2 percent. In June 2020 the state job bank, jobs4t.gov, listed an average of 2.34 unemployed workers for each job opening. Although the unemployment rate for veterans was below the state average, rates for youth, those with disabilities, and in poverty were still in the double digits. Due primarily to demographic changes, as the labor force ages, the projected growth rate for all occupations through 2028 was 0.7 percent annually compared to previous projections of 1.2 percent through 2026.

Short Term Trends Tennessee's economy experienced significant changes in employment and unemployment during the period May 2020 to May 2021 due to the coronavirus pandemic, initial contraction, and recovery. From May 2020 to May 2021, more than 226,900 jobs were regained, about 55,000 jobs less than the annual average of 3.123 million in 2019. Over the year from May 2020 to May 2021 service-providing industries had job gains four times as great (181,000) as the goods-producing sector (45,600). Notably, job gains of 57,200 in leisure and hospitality were trending toward 2019 annual average employment but have not reached employment levels of 2019 as the pandemic continues. After having lost tens of thousands of jobs in 2020, transportation equipment manufacturing was only about 5,000 below its employment level of 75,300 in May 2019. Health services rebounded to previous levels (May 2019).

Statewide Employment Tennessee's average annual nonfarm employment decreased by four percent from 2019 to 2020, or 124,300 jobs. Goods-producing jobs decreased at the rate of 4.4 percent compared to 4.5 percent for private service-providing jobs. Jobs in the government sector decreased by 5.1 percent. In the goods-producing sector, mining, logging, and construction decreased by 1,100 jobs while manufacturing decreased by 20,300 jobs. Leisure and hospitality decreased by 54,600 jobs.

Labor Force and Demographics The annual average unemployment rate for the U.S. in 2011 was 8.9 percent and dropped to 3.7 percent in 2019. However, in 2020 it rose to 8.1 percent. Tennessee's annual average unemployment rate in 2010 was 9.1 percent, declined to 3.4 percent in 2019 and rose to 7.5 percent in 2020, remaining below the U.S. annual rate since 2016. Tennessee's June 2021 seasonally adjusted unemployment rate declined to 4.9 percent.

Tennessee Wages and Income 2020 Among the 22 major occupational groups, median wages increased for 21 of the groups. The highest percentage changes were for life, physical and social science occupations (7.25 percent), sales and related occupations (7.05 percent), and for farming, fishing, and forestry occupations (6.06 percent). Legal occupations experienced a wage decline of 1.63 percent.







Tennessee Safety 2019 The total recordable incidence rate for nonfatal occupational illnesses and injuries for all industries in Tennessee per 100 full-time equivalent workers during 2019 was estimated to be 2.9. The total recordable rate for private industry was 2.7 and the total recordable rate for public sector industries was 4.0. The transportation and warehousing industry had the highest incidence rate for nonfatal occupational injuries and illnesses in 2019.

Tennessee Long Term Outlook to 2028 From a base of 3.3 million jobs in 2018, total employment for Tennessee, including agricultural, self-employed, and private household workers, is expected to grow to 3.5 million by 2028, expecting to increase by 0.7 percent annually.

Detailed Regional Analysis Summaries of key labor force and economic trends for the West, Middle, and East Regions are included in this section. Detailed discussions of advanced energy employment in each region are included, as well as new data on targeted industry sectors with high location quotients, mature, and high growth industry sectors and related occupations, useful for workforce planning.

Workforce Strategies A brief description of workforce strategies includes analysis of the need for supportive services to increase program completion and data on apprenticeship completers in 2020 by occupation and sponsorship.

Tennessee's Economy | 2020

| | | | |
|--|---|---|---|
|  Employment | Total Nonfarm Employment 2020: 2,998,600 -4.0% 2019: 3,122,900 Challenge | New Jobs 2020: -124,300 2019: 55,500 Challenge | MSA Employment 2019-2020 Memphis: -4.45% Nashville: -4.42% Chattanooga: -4.04% Knoxville: -2.66% Challenge |
|  Employers | Total Number of Establishments 2020: 172,607 3.8% 2019: 166,368 Stronger | Total Wages 2020: \$160.7 Billion 2.51% 2019: \$156.8 Billion Stronger | Counties That Increased Employment 2020: 13 2019: 60 Challenge |
|  Wages & Income | Average Annual Wage 2020: \$47,533 6.7% 2019: \$45,653 Stronger | State Median Wage 2020: \$37,442 4.3% 2019: \$35,909 Stronger | Average Hourly Wages - Production Workers 2020: \$20.33 2019: \$19.76 Stronger |
|  Labor Force & Demographics | Unemployment Rate 2020: 7.5% 4.1% 2019: 3.4% Challenge | Labor Force 2020: 3,289,426 -1.2% 2019: 3,329,279 Challenge | Unemployment Rates Veterans, 2020: 6.8% Youth, 2019: 11.1% With Disability, 2019: 10.2% % In Poverty, 2019: 15.2% Stronger |
|  Job Outlook | Ratio of Unemployed to Job Openings June 2020: 2.34 1.67% June 2019: 0.67 Challenge | Projected Annual Growth Rate, All Occupations 2018-2028: 0.71% 2016-2026: 1.18% Challenge | Projected Job Openings 2018-2028: 4,154,529 Stronger |
|  Safety on the Job | Total Nonfatal Occupational Illnesses and Injuries, All 2019: 2.9 per 100 FTE 2018: 3.0 per 100 FTE Stronger | Total Nonfatal Occupational Illnesses and Injuries, Public Sector 2019: 4.0 per 100 FTE 2018: 4.0 per 100 FTE Strong | Fatal Occupational Injuries 2019: 124 2018: 122 Challenge |

Short Term Trends in the Tennessee Economy 2020 to June 2021

After Tennessee's unemployment rate reached 15 percent in April 2020 when the COVID-19 pandemic was first raging, a slow recovery began. From May 2019 to May 2020 more than 250,000 jobs were lost in Tennessee. However, from May 2020 to May 2021, 226,900 jobs were added, restoring employment close to pre-pandemic levels.

Table 1 displays the industries which have gained the most employment since May 2020. Last year, nearly four times as many jobs were lost in the service-providing industries as in the goods-producing sector. Over the year Job gains from May 2020 to May 2021 responded likewise, with service-providing industries having job gains four times as great (181,000) as the goods-producing sector (45,600). Notably, job gains of 57,200 in leisure and hospitality were trending toward 2019 annual average employment but have not reached employment levels of 2019 as the pandemic continues.

In May 2021 manufacturing was only about 10,000 below its annual average employment for 2019 of 355.4 thousand. After having lost tens of thousands of jobs in 2020, transportation equipment manufacturing was only about 5,000 below its employment level of 75,300 in May 2019. Other industries rebounding to previous levels (May 2019) included administrative and support and waste management and health services, especially ambulatory care. Local government education in May 2021 was within 5,000 of its May 2019 employment.

The industry experiencing a smaller employment recovery is retail trade, especially with the expansion of e-commerce during the pandemic. Its May 2019 the employment level was 339.7 thousand; in May 2021 at 329.5. National projections expect retail trade to continue to decline even after the pandemic is under control due to changes in consumers' spending habits and more individuals working at home.

Table 1: TN Industries Gaining the Most Employment May 2020-May 2021

| Industry Title | May 2021 | April 2021 | May 2020 | May 2021 - April 2021 Empl. Chg. | May 2021 - May 2020 Empl. Chg. |
|--|-----------|------------|-----------|----------------------------------|--------------------------------|
| Total Nonfarm | 3,067,800 | 3,049,800 | 2,840,900 | 18,000 | 226,900 |
| Goods Producing | 478,200 | 476,100 | 432,600 | 2,100 | 45,600 |
| Manufacturing | 345,400 | 344,100 | 299,500 | 1,300 | 45,900 |
| Transportation Equipment Manufacturing | 70,100 | 69,300 | 43,500 | 800 | 26,600 |
| Plastics and Rubber Products Manufacturing | 23,500 | 23,800 | 19,400 | -300 | 4,100 |
| Service-Providing | 2,589,600 | 2,573,700 | 2,408,300 | 15,900 | 181,300 |
| Wholesale Trade | 118,600 | 119,000 | 116,000 | -400 | 2,600 |
| Retail Trade | 329,500 | 325,600 | 308,700 | 3,900 | 20,800 |
| Transportation, Warehousing, and Utilities | 193,200 | 192,900 | 177,100 | 300 | 16,100 |
| Transportation and Warehousing | 189,500 | 189,200 | 173,500 | 300 | 16,000 |
| Professional and Business Services | 437,000 | 431,100 | 389,300 | 5,900 | 47,700 |
| Administrative and Support and Waste Management | 228,100 | 224,100 | 198,100 | 4,000 | 30,000 |
| Educational and Health Services | 427,300 | 430,600 | 418,500 | -3,300 | 8,800 |
| Ambulatory Health Care Services | 155,300 | 156,100 | 146,400 | -800 | 8,900 |
| Hospitals | 108,500 | 108,800 | 106,100 | -300 | 2,400 |
| Leisure and Hospitality | 310,400 | 300,900 | 253,200 | 9,500 | 57,200 |
| Accommodation | 31,300 | 29,900 | 21,500 | 1,400 | 9,800 |
| Food Services and Drinking Places | 240,400 | 236,300 | 204,200 | 4,100 | 36,200 |
| Government | 433,800 | 438,300 | 425,600 | -4,500 | 8,200 |
| Local Government Educational Services | 143,300 | 143,700 | 138,700 | -400 | 4,600 |
| Local Government, Excluding Education | 146,200 | 145,100 | 143,400 | 1,100 | 2,800 |

Source: TN Dept of Labor and Workforce Development, WIR²ED Division, Current Employment Statistics May 2021 Seasonally Adjusted Data, jobs4tn.gov.

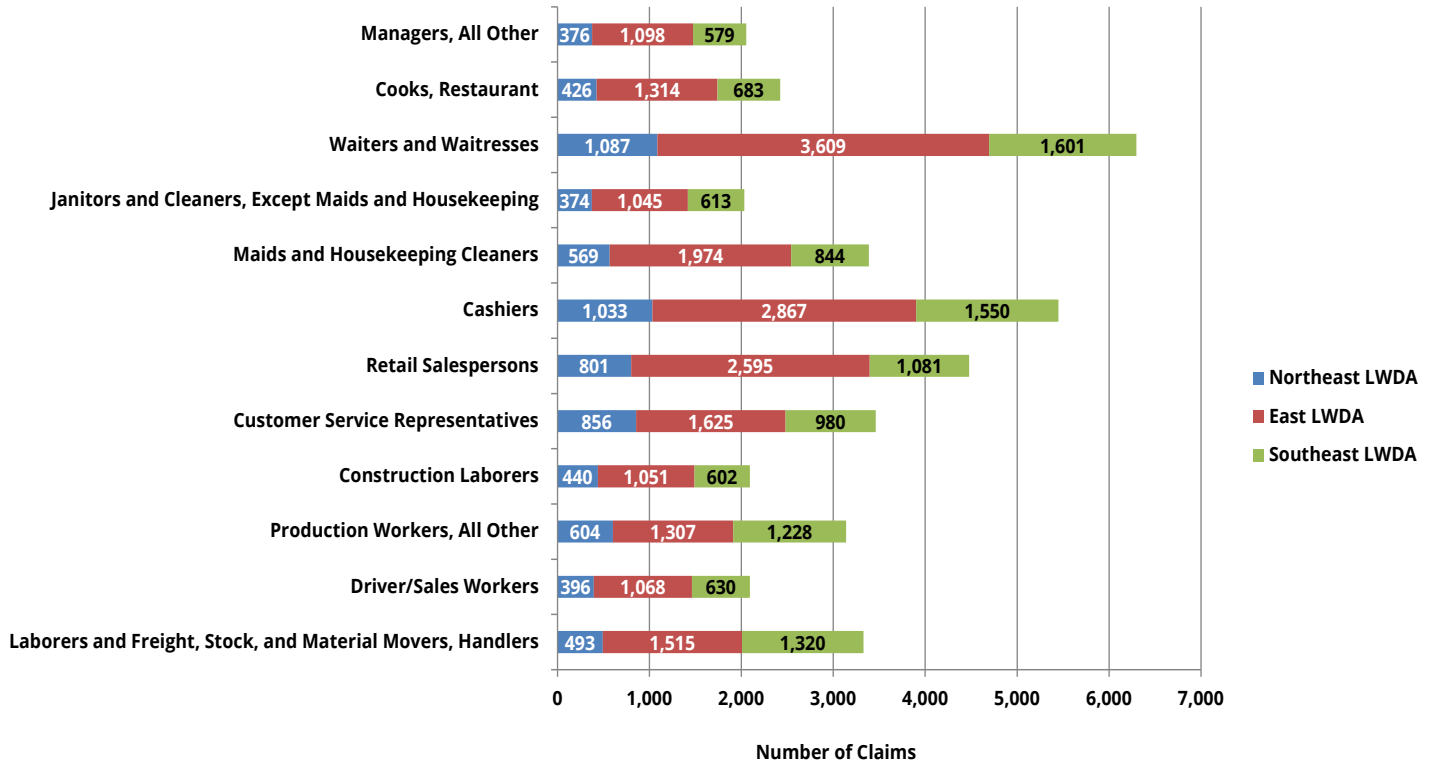
Unemployment Claims by Occupation: Data on unemployment continued claims for the week ending June 26, 2021 show the jobs of those most affected by the pandemic. Table 2 below displays the 20 occupations for which individuals filed the most claims. The table represents a year of claims. Many of the occupations for which claims were filed in the early stages of the pandemic are the same for which claims continued in 2021. Eighteen of the 20 occupations require no formal training or at most a high school diploma or the equivalent, making placement of claimants in higher skilled job openings less likely. The closing and smaller staffing needs of food services and drinking places caused large numbers of claims for waiters and waitresses, cooks, bartenders, and food preparation and serving workers. Claims in accommodation were filed by maids and housekeeping cleaners and janitors. Retail salespersons, cashiers, and stock clerks were laid off in retail trade. Laborers and inspectors lost jobs in manufacturing. Child care workers continue to be out of work as parents return more slowly to working onsite and child care centers have closed. Figures one through three on the following pages show the distribution of claimants by top occupations by region and LWDA.

**Table 2: Highest Number of Claims Filed by Occupation, Week Including June 26, 2021
(Estimated 2021 Employment > 100)**

| SOC Code | Occupation Title | 2021 Employment | Level Education | Training Needed | Total Claims |
|----------|---|-----------------|-----------------|-----------------|--------------|
| 53-7062 | Laborers and Freight, Stock, and Material Movers, Hand | 100,785 | None | ST OJT | 18,857 |
| 41-2011 | Cashiers | 75,711 | None | ST OJT | 18,702 |
| 35-3031 | Waiters and Waitresses | 53,049 | None | ST OJT | 18,248 |
| 41-2031 | Retail Salespersons | 88,481 | None | ST OJT | 13,696 |
| 43-4051 | Customer Service Representatives | 65,636 | HS | ST OJT | 11,648 |
| 51-9199 | Production Workers, All Other | 13,792 | HS | MT OJT | 11,114 |
| 53-3031 | Driver/Sales Worker | 8,258 | HS | ST OJT | 9,247 |
| 37-2012 | Maids and Housekeeping Cleaners | 24,487 | None | ST OJT | 9,201 |
| 35-2014 | Cooks, Restaurant | 22,854 | None | MT OJT | 8,132 |
| 37-2011 | Janitors and Cleaners, Except Maids and Housekeeping Cleaners | 44,540 | None | ST OJT | 7,897 |
| 43-5081 | Stock Clerks and Order Fillers | 58,588 | HS | ST OJT | 7,864 |
| 53-7064 | Packers and Packagers, Hand | 18,836 | None | ST OJT | 7,584 |
| 11-9199 | Managers, All Other | 34,527 | BA | None | 7,060 |
| 53-3032 | Heavy and Tractor-Trailer Truck Drivers | 74,154 | PS | ST OJT | 6,971 |
| 39-5012 | Hairdressers, Hairstylists, and Cosmetologists | 12,617 | PS | None | 6,949 |
| 39-9011 | Child Care Workers | 18,307 | HS | ST OJT | 6,597 |
| 35-3011 | Bartenders | 7,160 | None | ST OJT | 6,222 |
| 35-3021 | Combined Food Preparations and Serving Workers, Including Fast Food | 72,607 | None | ST OJT | 6,102 |
| 53-7051 | Industrial Truck and Tractor Operators | 18,857 | None | ST OJT | 5,732 |
| 51-9061 | Inspectors, Testers, Sorters, Samplers, and Weighers | 14,328 | HS | MT OJT | 5,732 |

Legend Entry Level Education:
None=No formal education; HS=High School; PS=Postsecondary non-degree award; SC=Some college; BA= Bachelor's degree
Job Training Needed: None=None; ST OJT=Short-term on-the-job; MT OJT=Moderate term on-the-job
Total Claims=Total initial and continued claims on June 26, 2021
Source: TN Dept of Labor and Workforce Development, WIR²ED Division, PROMIS Data, September 7, 2021 and TN Short Term Projections, 2020-2022

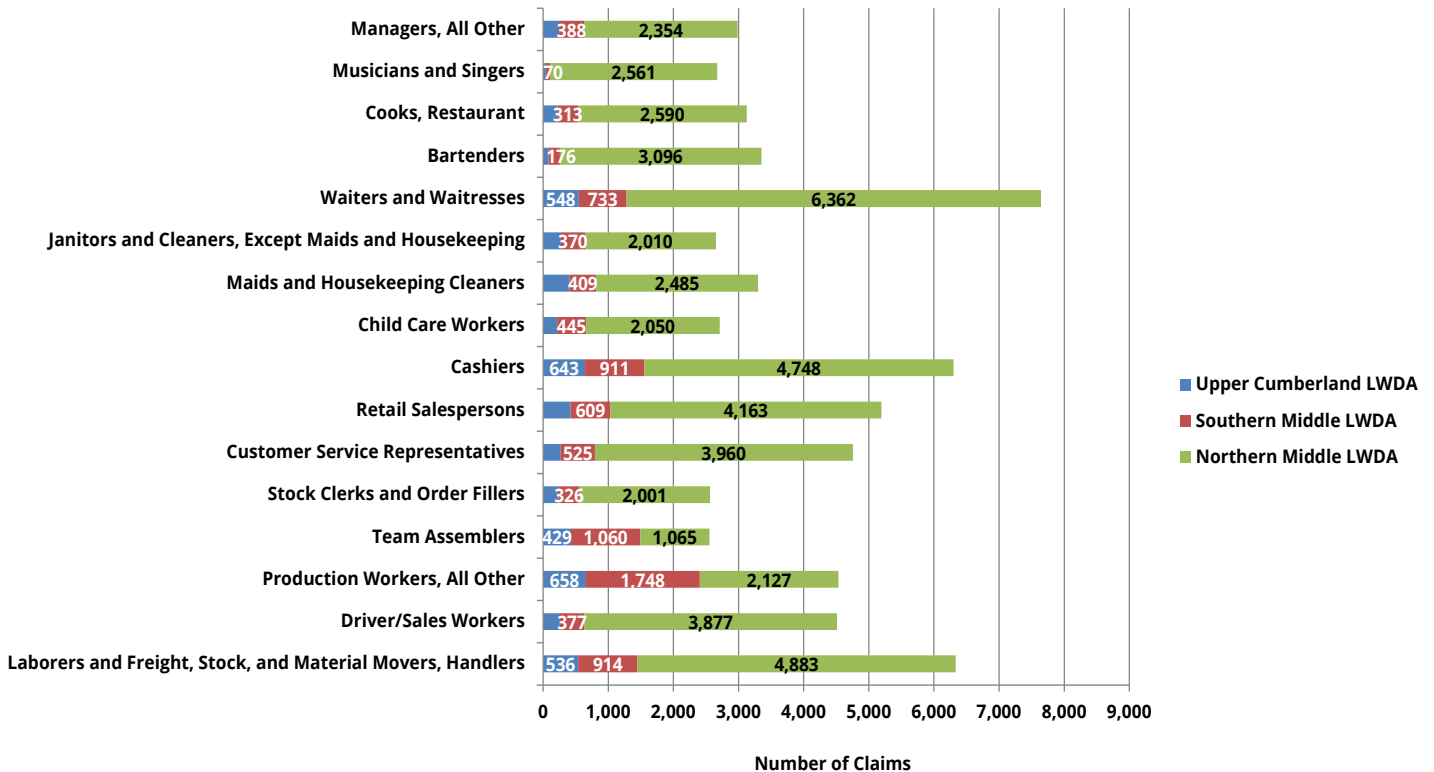
East Region Top Number of Claims by LWDA and Occupation



Includes the top ten occupations by number of initial and continued claims by LWDA.
 Source: TN Dept of Labor and Workforce Development WIR²ED Division PROMIS data, week ending June 26, 2021

Figure 1

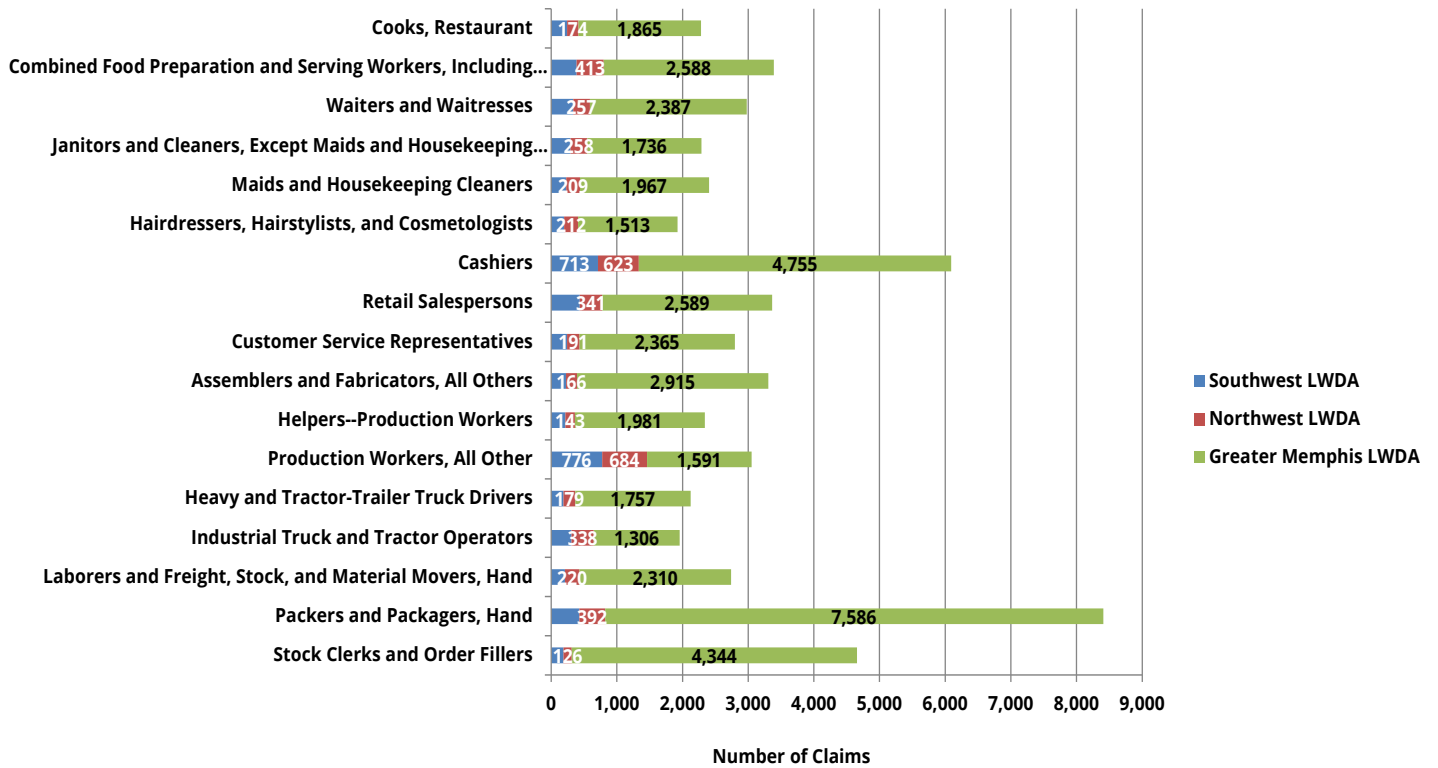
Middle Region Top Number of Claims by LWDA and Occupation



Includes the top ten occupations by number of initial and continued claims by LWDA.
 Source: TN Dept of Labor and Workforce Development WIR²ED Division PROMIS data, week ending June 26, 2021

Figure 2

West Region Top Number of Claims by LWDA and Occupation



Includes the top ten occupations by number of initial and continued claims by LWDA.
 Source: TN Dept of Labor and Workforce Development WIR²ED Division PROMIS data, week ending June 26, 2021

Figure 3

Table 3 shows the number of individuals with continued claims for the year July 2020 to June 2021 by major occupational group, for all the claims that were assigned occupations. The occupational group with the most claims was transportation and material moving workers, followed by production and food preparation and serving workers. Many of these workers are lower-skilled employees. Other than those with military-specific occupations, the smallest number of continued claims were received by those in legal occupations and farming, forestry, and fishing. Most workers in farming occupations are not covered by unemployment insurance.

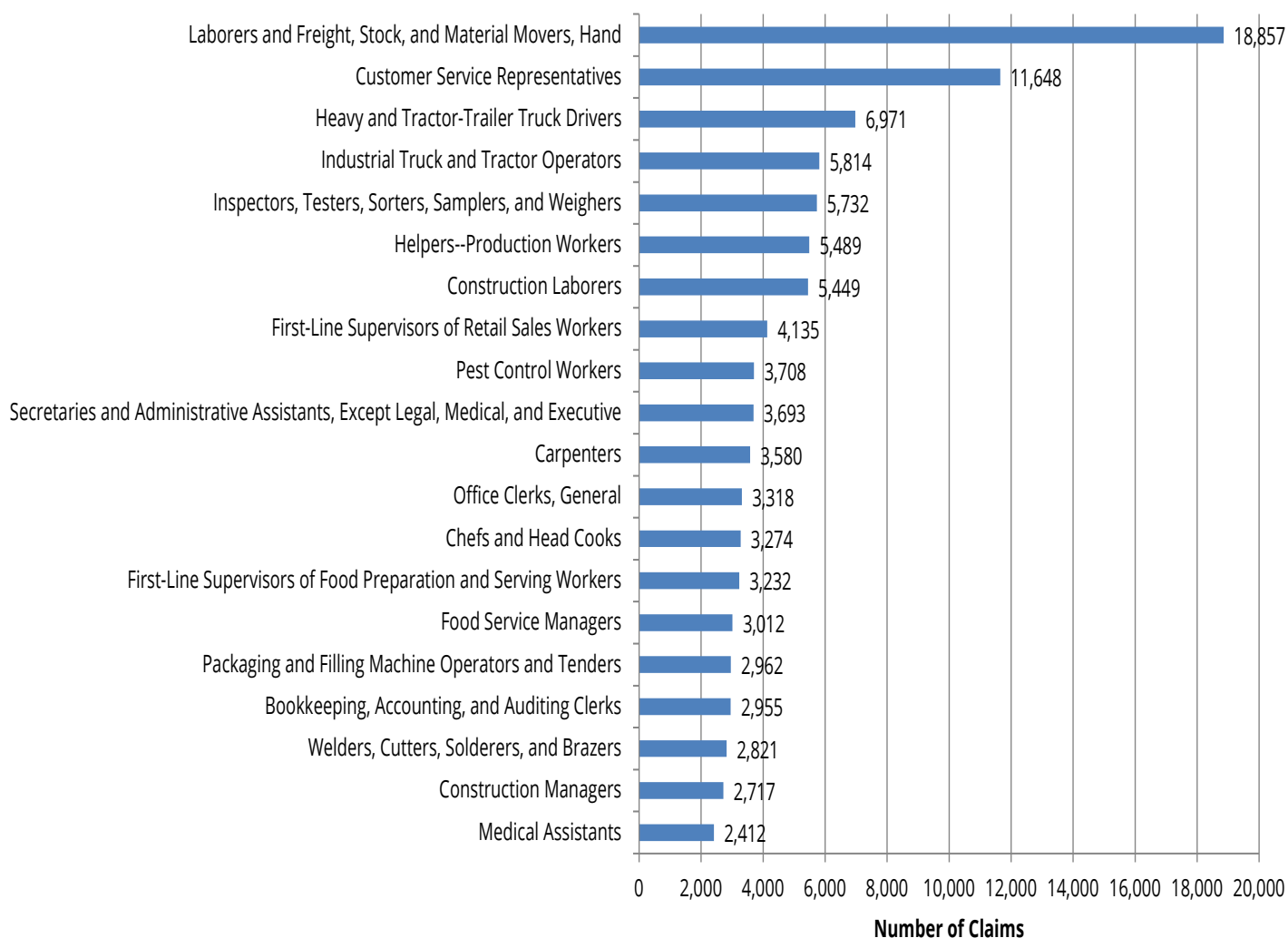
Table 3: Production, Material Moving, Food Prep. Lead in Number of Claims

| Major Occupational Group | TN Total Continued Claims July 2020 - June 2021 |
|---|--|
| Management Occupations | 103,407 |
| Business and Financial Operations Occupations | 49,636 |
| Computer and Mathematical Occupations | 19,265 |
| Architecture and Engineering Occupations | 22,107 |
| Life, Physical, and Social Science Occupations | 7,764 |
| Community and Social Service Occupations | 10,125 |
| Legal Occupations | 3,700 |
| Education, Training, and Library Occupations | 35,873 |
| Arts, Design, Entertainment, Sports, and Media Occupations | 41,442 |
| Healthcare Practitioners and Technical Occupations | 31,204 |
| Healthcare Support Occupations | 51,659 |
| Protective Service Occupations | 15,671 |
| Food Preparation and Serving Related Occupations | 169,329 |
| Building and Grounds Cleaning and Maintenance Occupations | 61,864 |
| Personal Care and Service Occupations | 100,754 |
| Sales and Related Occupations | 152,315 |
| Office and Administrative Support Occupations | 156,261 |
| Farming, Fishing, and Forestry Occupations | 5,623 |
| Construction and Extraction Occupations | 71,508 |
| Installation, Maintenance, and Repair Occupations | 48,873 |
| Production Occupations | 172,514 |
| Transportation and Material Moving Occupations | 192,164 |
| Military Specific Occupations | 848 |
| | 1,523,906 |

Source: TDLWD, WIR²ED Division, PROMIS Database

Figures 4 and 5 compare occupations identified by the department as occupations in demand in the long term with the number of continued claims filed. Seen in Figure 4, the largest number of claims for employees considered in demand occupations were filed by laborers and freight, stock, and material movers, hand. However, those 18,857 claimants were only 18.7 percent of the total occupational workforce, numbering nearly 100,780 workers. Customer service representatives, as well as tractor-trailer truck drivers and industrial truck and tractor operators, also had large numbers of claims. Unlike 2020, among healthcare workers, only medical assistants were in the top twenty demand occupations that had claims in 2021. Unlike 2020, no elementary or secondary local government teacher was among the 2021 claimants. However, chefs, food service managers, and first line supervisors of food preparation workers continued to be affected by the pandemic and have filed to receive unemployment. Three of the occupations were production workers. Far fewer skilled production workers were filing claims in 2021.

TN Demand Occupations by Total Claims 2021



Total Claims=Total initial and continued claims on June 26, 2021

Source: TN Dept of Labor and Workforce Development, WIR²ED Division, PROMIS Data, September 7, 2021 and TN Short Term Projections, 2020-2022, occupations with greater than 100 employment

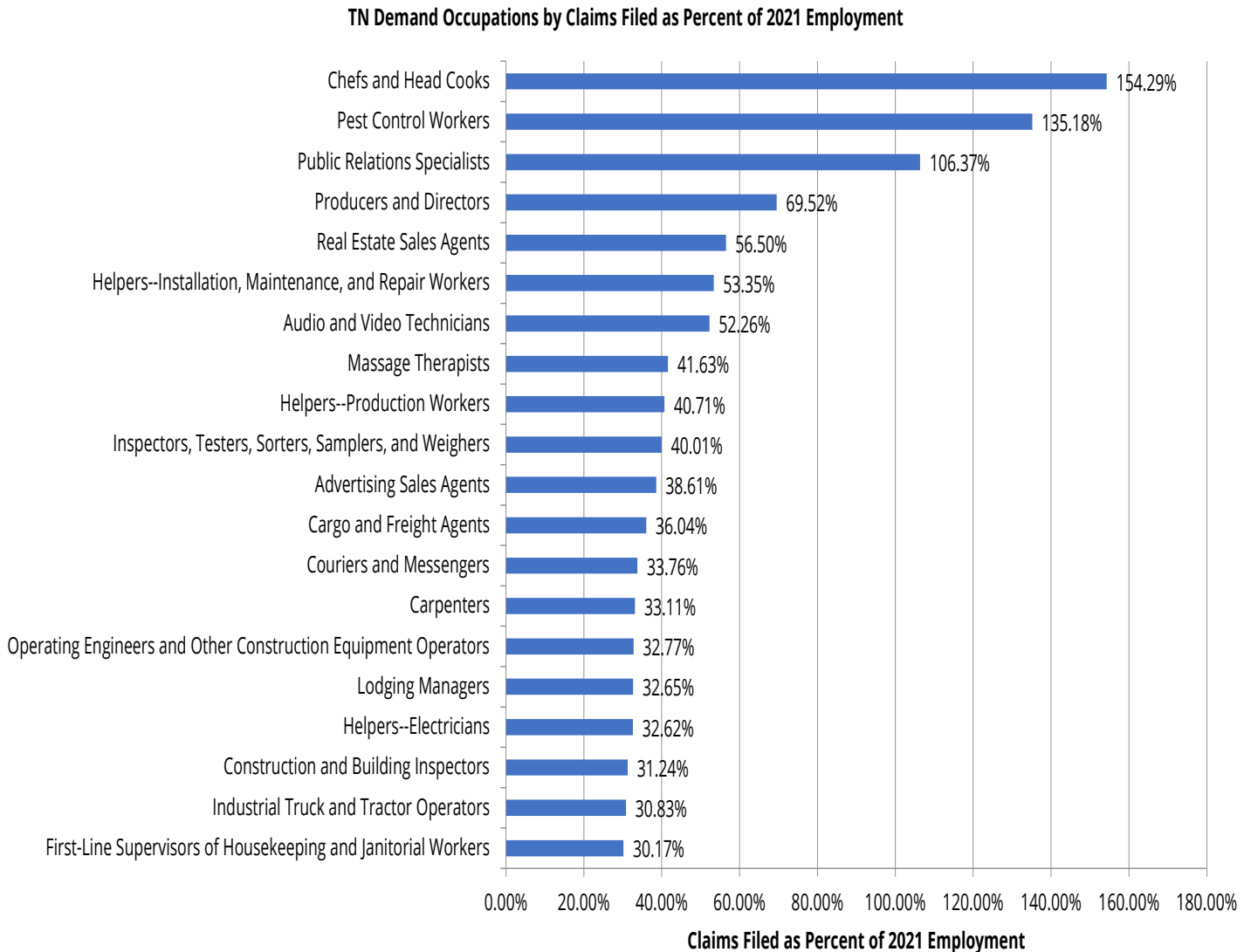
Figure 4

As Figure 5 shows, employees in the arts and entertainment industry (producers and directors and audio and video technicians) still had high percentages of their workforce receiving claims (69.52 percent and 52.26 percent, respectively). Skilled medical technicians are no longer on the top 20 list of occupations with large numbers of claims.

Production workers among the top 20 in demand occupations were those in occupations requiring high school or less education (helpers-installation, maintenance, and repair; helpers, production workers; and industrial truck and tractor operators), not skilled production workers.

What are the key points in this analysis?

- The arts and entertainment industry is not recovering quite as quickly as other industries.
- Food service and lodging workers still have significant numbers of claims.
- Local governments are no longer laying off large numbers of people in education and general government.
- A high proportion of those continuing to file claims are low-skilled workers who may need supportive services and/or training to move to new occupations.
- Many demand occupations outside of the arts and entertainment industry should continue to have opportunities for employment, although that may depend significantly on the geographic area.



Source: TN Dept of Labor and Workforce Development, WIR²ED Division, PROMIS Data, September 7, 2021 and TN Short Term Projections, 2020-2022

Figure 5

Essential industries: Many of the detailed industries listed below gained employment during the pandemic, but are now losing some of that employment or are growing more slowly. Construction of buildings lost some employment from May 2020 to May 2021. Reasons for the slowdown may include shortages of workers or increases in the prices of building materials, driven up by increased home improvement activity undertaken by homeowners while at home isolating as required by the pandemic. For similar reasons, employment in building material and garden equipment stores may have slowed as homeowners completed projects, became vaccinated, and returned to work and children to school.

Food and beverage stores added employment during 2020 as consumers reduced restaurant meals; as consumers have increased restaurant purchases, food and beverage stores reduced employment 1,800 over the year. The largest decrease in employment was in nursing and residential care facilities, which lost 6,000 jobs from May 2020 to May 2021. A high proportion of pandemic deaths, especially before vaccine availability, took place among nursing home residents and staff. Nursing home employment has been declining since at least 2019.

Table 4: Detailed Industries with Decreased Employment Over the Month and Year, May 2021

| Industry Title | May 2021 | April 2021 | May 2020 | May 2021 - April 2021 Employment Change | May 2021 - May 2020 Employment Change |
|---|-----------|------------|-----------|---|---------------------------------------|
| Total Nonfarm | 3,067,800 | 3,049,800 | 2,840,900 | 18,000 | 226,900 |
| Goods Producing | 478,200 | 476,100 | 432,600 | 2,100 | 45,600 |
| Construction of Buildings | 25,800 | 25,500 | 26,400 | 300 | -600 |
| Heavy and Civil Engineering Construction | 16,500 | 16,500 | 17,200 | 0 | -700 |
| Printing and Related Support Activities | 7,800 | 7,800 | 7,900 | 0 | -100 |
| Service-Providing | 2,589,600 | 2,573,700 | 2,408,300 | 15,900 | 181,300 |
| Building Material and Garden Equipment | 32,600 | 32,200 | 32,800 | 400 | -200 |
| Food and Beverage Stores | 56,100 | 56,600 | 57,900 | -500 | -1,800 |
| General Merchandise Stores | 68,500 | 68,000 | 69,100 | 500 | -600 |
| Truck Transportation | 56,900 | 57,400 | 57,700 | -500 | -800 |
| Nursing and Residential Care Facilities | 54,500 | 55,500 | 60,500 | -1,000 | -6,000 |
| Social Assistance | 50,600 | 50,500 | 50,900 | 100 | -300 |
| State Government, Excluding Education | 40,800 | 40,700 | 41,500 | 100 | -700 |

Source: TDLWD, WIR²ED Division, TN Current Employment Statistics, May 2021, Seasonally Unadjusted Data

What are some of the changes from COVID-19 that might affect the Tennessee economy in the longer run? An important question is whether self-employment will increase. One of the primary ways of collecting information on self-employment is the Current Population Survey which continuously surveys samples of households in the states. This survey has not shown evidence of increasing self-employment as the gig economy has been emerging. However, administrative records such as 1099 returns from the IRS are have shown some growth in self-employment.¹ Economists have suggested ways to change the questions on the CPS to better reflect different kinds of self-employment; until those questions are changed or researchers have better access to administrative data, the answer to this question will not be available.

According to current research, several trends are likely.² If work at home at increases, with the potential for new jobs closer to where people live, there may be more job growth outside of metropolitan areas. This could cause negative effects on business support services such as restaurants, hotels, cleaning, and maintenance services, hurting lower-wage workers.³ Lower-wage workers could also be displaced if more routine, lower-skilled jobs are displaced with the faster adoption of technology. But lack of funds for investment could slow this trend.

A third potential trend could be re-shoring of manufacturing, with COVID-19 disrupting off-shore supply chains. This has reinforced trends such as higher labor and transportation costs, and issues of product safety. Industries identified as more likely to re-shore are the following, many of which are prominent in Tennessee:

- Automobile bodies and trailers;
- Other transportation equipment manufacturing;
- Navigational, measurement equipment and control instruments;
- Basic chemicals;
- Semi-conductor and electronics components manufacturing;
- Medical equipment and supplies;
- Communications equipment manufacturing; and
- Aerospace products and parts.

Better ways to communicate through technology and re-shoring of manufacturing could also mean less international business travel and cause the airlines to continue to have reduced employment.⁴

¹ K. Abraham, J. Haltiwanger, K. Sandusky, J. Spletzer. Measuring the gig economy: current knowledge and open issues. National Bureau of Economic Research, January 9, 2020. <https://www.nber.org/chapters/c13887>.

² Dr. Susan N. Houseman, director of research at the Upjohn Institute for Employment Research, Projections Managing Partnership Summit presentation August 20, 2020. "Measuring industry and occupations trends beyond COVID-19".

³ D. Autor and E. Reynolds. The nature of work after the COVID crisis; too few low-wage jobs. autorReynolds_LO_Final.pdf hamiltonproject.org. Downloaded September 10, 2020.

⁴ Federal Reserve Bank of Atlanta. Businesses anticipate slashing post pandemic travel budgets. August 4, 2020. <https://www.frbatlanta.org/blogs/macroblog/2020/08/04/businesses-anticipate-slashing-postpandemic-travel-budgets> Downloaded September 10, 2020.



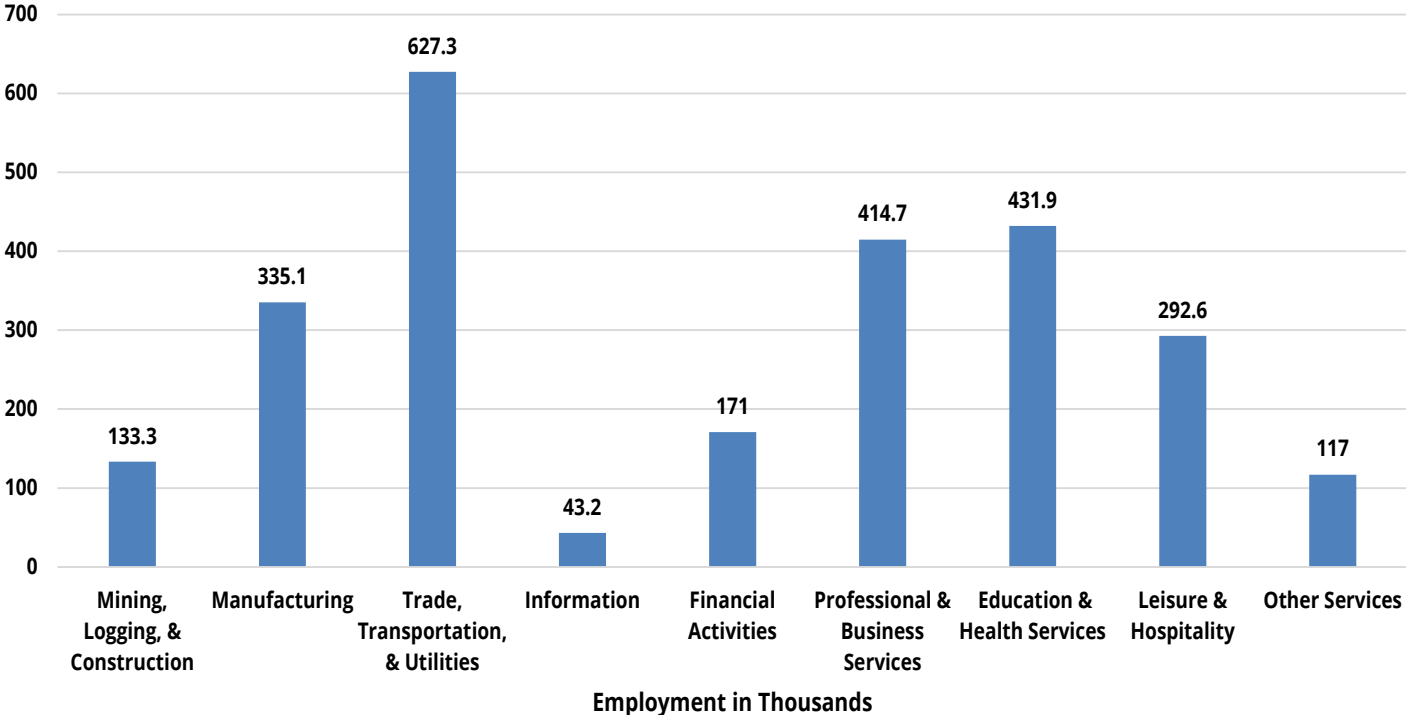
Statewide Employment

Tennessee’s average annual nonfarm employment decreased 4.0 percent from 2019 to 2020, losing 124,300 jobs. Goods producing jobs declined at a rate of 4.4 percent compared to 4.5 percent for private service-providing jobs. Jobs in the government sector declined by 1.2 percent. In the goods producing sector, mining, logging, and construction declined by 1,100 jobs while manufacturing decreased by 20,300 jobs .

Among the private service-providing industries, those with the largest job decreases were leisure and hospitality which lost 54,600 jobs, and education and health services which lost 13,500 jobs. Within the leisure and hospitality sector, accommodation and food services accounted for 46,500 of the lost jobs while health care and social assistance accounted for 9,900 of the 13,500 jobs lost in the education and health services sector. Transportation, warehousing, and utilities and professional, scientific, and technical services experienced an increase from 2019 to 2020 with a gain of 3,800 and 1,900 jobs respectively.

Since 2015, Tennessee has added 101,400 jobs, a 3.5 percent increase. Trade, transportation, and utilities led the way adding 27,200 jobs. Of those jobs, 29,200 were added in transportation, warehousing, and utilities, and 200 were added in wholesale trade. Other sectors gaining over 15,000 jobs included mining, logging, and construction; financial activities; professional and business services. Leisure and hospitality experienced a decline of 15,400 jobs from 2015 to 2020.

2020 Private Sector Employment



Source: TN Department of Labor & Workforce Development, Current Employment Statistics

Figure 6

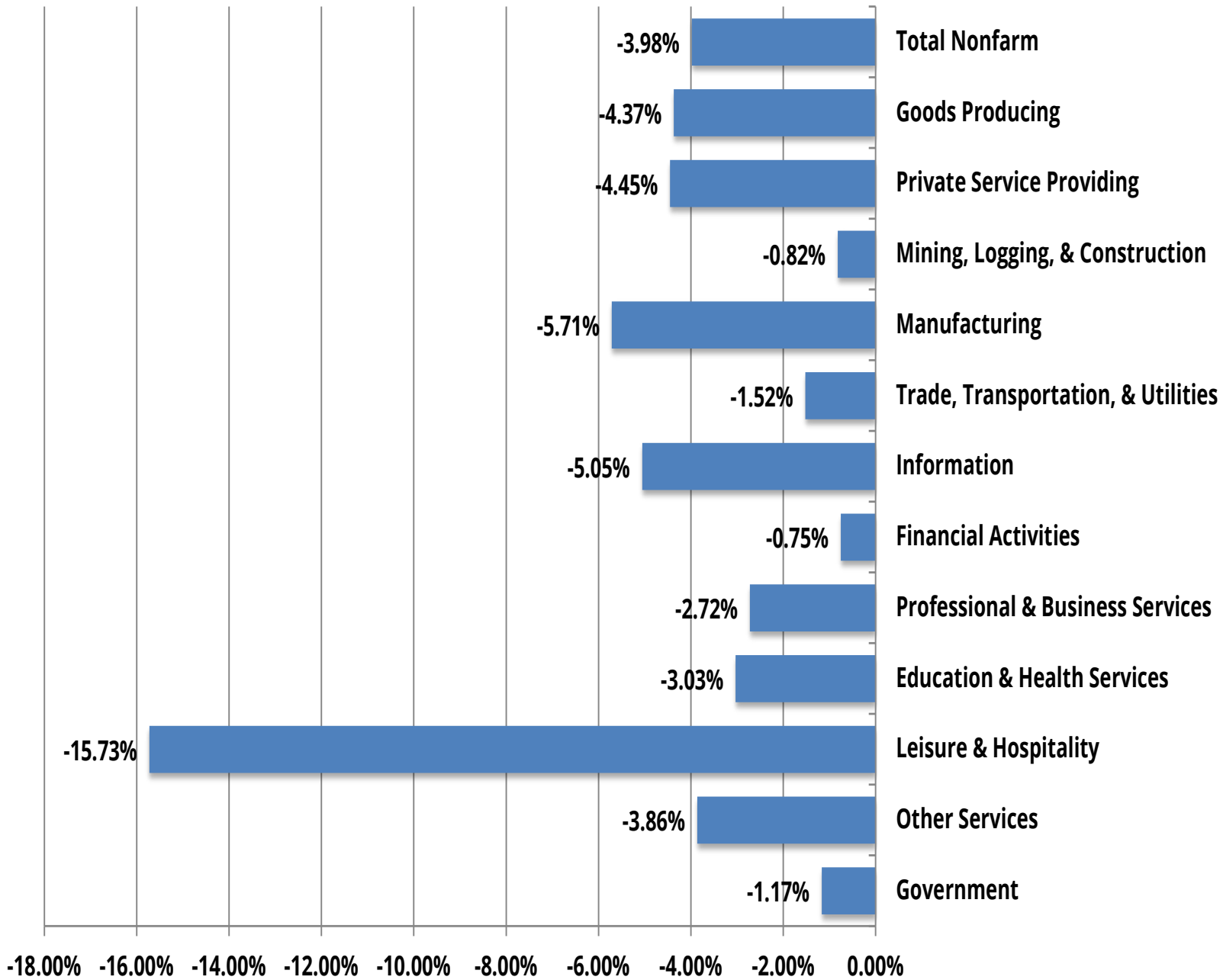
Table 5: Tennessee Industry Employment, 2015-2020

| Industry Employment (in thousands) | 2015 | 2019 | 2020 | 19-20 | 19-20 % | 15-20 | 15-20 % |
|---|---------|---------|---------|--------|---------|-------|---------|
| Total Nonfarm | 2,897.2 | 3,122.9 | 2,998.6 | -124.3 | -4.0% | 101.4 | 3.5% |
| Goods Producing | 448.1 | 489.8 | 468.4 | -21.4 | -4.4% | 20.3 | 4.5% |
| Mining, Logging, & Construction | 117.2 | 134.4 | 133.3 | -1.1 | -0.8% | 16.1 | 13.7% |
| Manufacturing | 330.9 | 355.4 | 335.1 | -20.3 | -5.7% | 4.2 | 1.3% |
| Durable Goods Manuf. | 211.2 | 227.5 | 211.3 | -16.2 | -7.1% | 0.1 | 0.0% |
| Non Durable Goods Manufacturing | 119.8 | 127.9 | 123.9 | -4.0 | -3.1% | 4.1 | 3.4% |
| Private Service-Providing | 2,024.1 | 2,195.4 | 2,097.7 | -97.7 | -4.5% | 73.6 | 3.6% |
| Trade, Transportation, & Utilities | 600.1 | 637.0 | 627.3 | -9.7 | -1.5% | 27.2 | 4.5% |
| Wholesale Trade | 117.4 | 121.0 | 117.6 | -3.4 | -2.8% | 0.2 | 0.2% |
| Retail Trade | 325.6 | 333.6 | 323.4 | -10.2 | -3.1% | -2.2 | -0.7% |
| Transportation, Warehousing, & Utilities | 157.1 | 182.5 | 186.3 | 3.8 | 2.1% | 29.2 | 18.6% |
| Information | 44.0 | 45.2 | 45.5 | 0.3 | 0.7% | 1.5 | 3.4% |
| Financial Activities | 150.9 | 172.3 | 171.0 | -1.3 | -0.8% | 20.1 | 13.3% |
| Finance & Insurance | 114.5 | 130.4 | 131.5 | 1.1 | 0.8% | 17.0 | 14.8% |
| Real Estate, Rental & Leasing | 36.4 | 42.0 | 39.5 | -2.5 | -6.0% | 3.1 | 8.5% |
| Professional & Business Services | 394.5 | 426.3 | 414.7 | -11.6 | -2.7% | 20.2 | 5.1% |
| Professional, Scientific & Technical Services | 128.7 | 145.6 | 147.5 | 1.9 | 1.3% | 18.8 | 14.6% |
| Management of Companies & Enterprises | 42.8 | 51.8 | 50.0 | -1.8 | -3.5% | 7.2 | 16.8% |
| Admin, Support, Waste Mgt & Remediation Services | 223.0 | 228.8 | 217.2 | -11.6 | -5.1% | -5.8 | -2.6% |
| Education & Health Services | 418.2 | 445.4 | 431.9 | -13.5 | -3.0% | 13.7 | 3.3% |
| Educational Services | 56.8 | 61.8 | 58.2 | -3.6 | -5.8% | 1.4 | 2.5% |
| Health Care & Social Assistance | 361.4 | 383.6 | 373.7 | -9.9 | -2.6% | 12.3 | 3.4% |
| Leisure & Hospitality | 308.0 | 347.2 | 292.6 | -54.6 | -15.7% | -15.4 | -5.0% |
| Arts, Entertainment & Recreation | 34.3 | 42.1 | 34.0 | -8.1 | -19.2% | -0.3 | -0.9% |
| Accommodation & Food Services | 273.7 | 305.1 | 258.6 | -46.5 | -15.2% | -15.1 | -5.5% |
| Other Services | 107.8 | 121.7 | 117.0 | -4.7 | -3.9% | 9.2 | 8.5% |
| Government | 425.1 | 437.6 | 432.5 | -5.1 | -1.2% | 7.4 | 1.7% |
| Federal Government | 49.1 | 50.1 | 51.9 | 1.8 | 3.6% | 2.8 | 5.7% |
| State Government | 96.5 | 96.8 | 95.5 | -1.3 | -1.3% | -1.0 | -1.0% |
| Local Government | 279.4 | 290.7 | 285.1 | -5.6 | -1.9% | 5.7 | 2.0% |

Source: TN Department of Labor & Workforce Development, Current Employment Statistics

Table 1 shows that total Tennessee nonfarm employment was 2 million, 998 thousand, 6 hundred in 2020. The most rapidly growing industries during 2015-2020 were transportation, warehousing, and utilities; management of companies and enterprises; and finance & insurance.

Tennessee Job Growth 2019-2020



Source: TN Department of Labor & Workforce Development, Current Employment Statistics

Figure 7

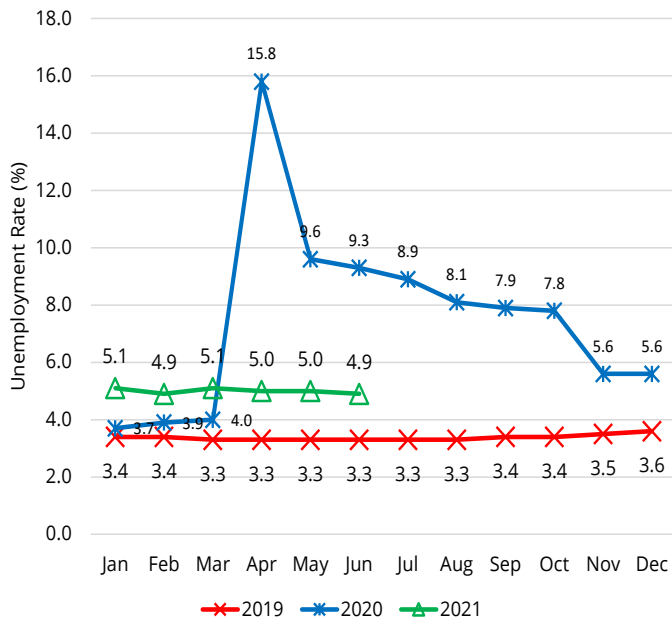


Labor Force & Demographics

Tennessee Labor Force and Demographics

Tennessee's June 2021 seasonally adjusted unemployment rate was 4.9 percent, a slight decrease from the revised May 2021 rate of 5.0 percent. Over the past year, Tennessee's seasonally adjusted unemployment rate decreased from 9.3 percent in June 2020 to 4.9 percent in June 2021 while the national rate decreased from 11.1 percent to 5.9 percent. The annual average unemployment rate for the U.S. in 2011 was 8.9 percent and dropped to 8.1 percent in 2020, a decrease of 0.8 of a percentage point. Tennessee's annual average in 2011 was 9.1 percent and declined to 7.5 percent in 2020, a decrease of 1.6 percentage points, which is more significant than the United States.

Unemployment Rates - Tennessee
Seasonally Adjusted - 2019 to 2021



Source: TN Department of Labor & Workforce Development, Local Area Unemployment Statistics, July 2021

Figure 8

Unemployment Rates - US & Tennessee
Seasonally Adjusted - January 2014 to June 2021

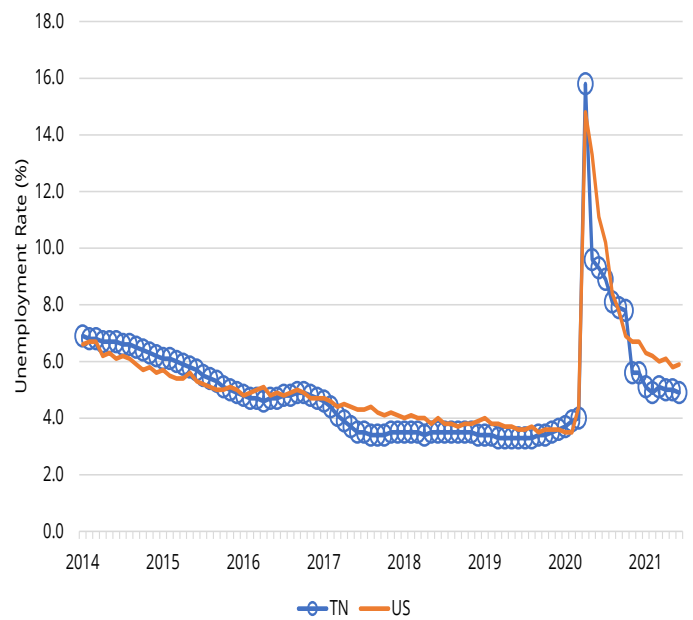


Figure 9

Table 6: U.S. & TN Annual Not Seasonally Adjusted Unemployment Rates, 2011-2020

| | 2011 Unemp. Rate | 2012 Unemp. Rate | 2013 Unemp. Rate | 2014 Unemp. Rate | 2015 Unemp. Rate | 2016 Unemp. Rate | 2017 Unemp. Rate | 2018 Unemp. Rate | 2019 Unemp. Rate | 2020 Unemp. Rate |
|---------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|
| United States | 8.9% | 8.1% | 7.4% | 6.2% | 5.3% | 4.9% | 4.4% | 3.9% | 3.7% | 8.1% |
| Tennessee | 9.1% | 8.0% | 7.8% | 6.6% | 5.6% | 4.7% | 3.7% | 3.5% | 3.4% | 7.5% |

Source: U.S. Bureau of Labor Statistics, Local Area Unemployment Statistics, July 2021



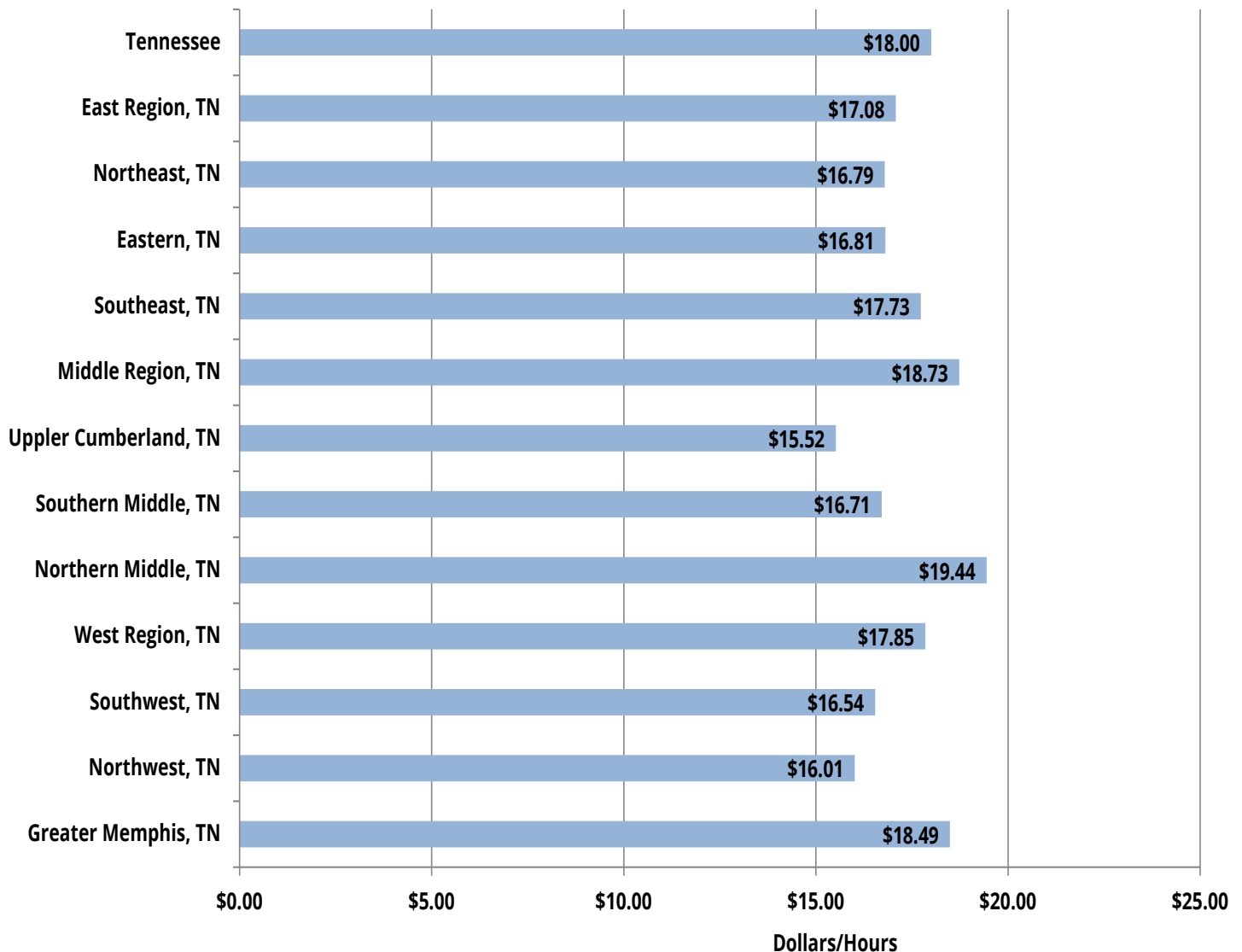
Wages & Income

Analysis of Median Wages in Tennessee 2019 - 2020

Among the 22 major occupational groups, median wages increased for 21 of the groups. The highest percentage changes were for life, physical, and social science occupations (7.25 percent), sales and related occupations (7.05 percent), and for farming, fishing, and forestry occupations (6.06 percent). The major group experiencing a decrease was legal occupations (-1.63 percent). Median wages in educational instruction and library occupations showed slight growth (0.13 percent).

Median hourly wage growth for Tennessee from 2019 to 2020 averaged 4.29 percent. All areas reported increases during the period. The top three areas displaying percentage changes greater than the state included the Southeast TN LWDA (5.41 percent), Southern Middle TN LWDA (4.31 percent), and Northwest TN LWDA (4.30 percent). Below the state's growth rate were Upper Cumberland TN LWDA (2.78 percent) and Southwest TN LWDA (3.44 percent). The LWDA containing our two largest cities matched the statewide growth rate for median hourly rate of 4.29 percent.

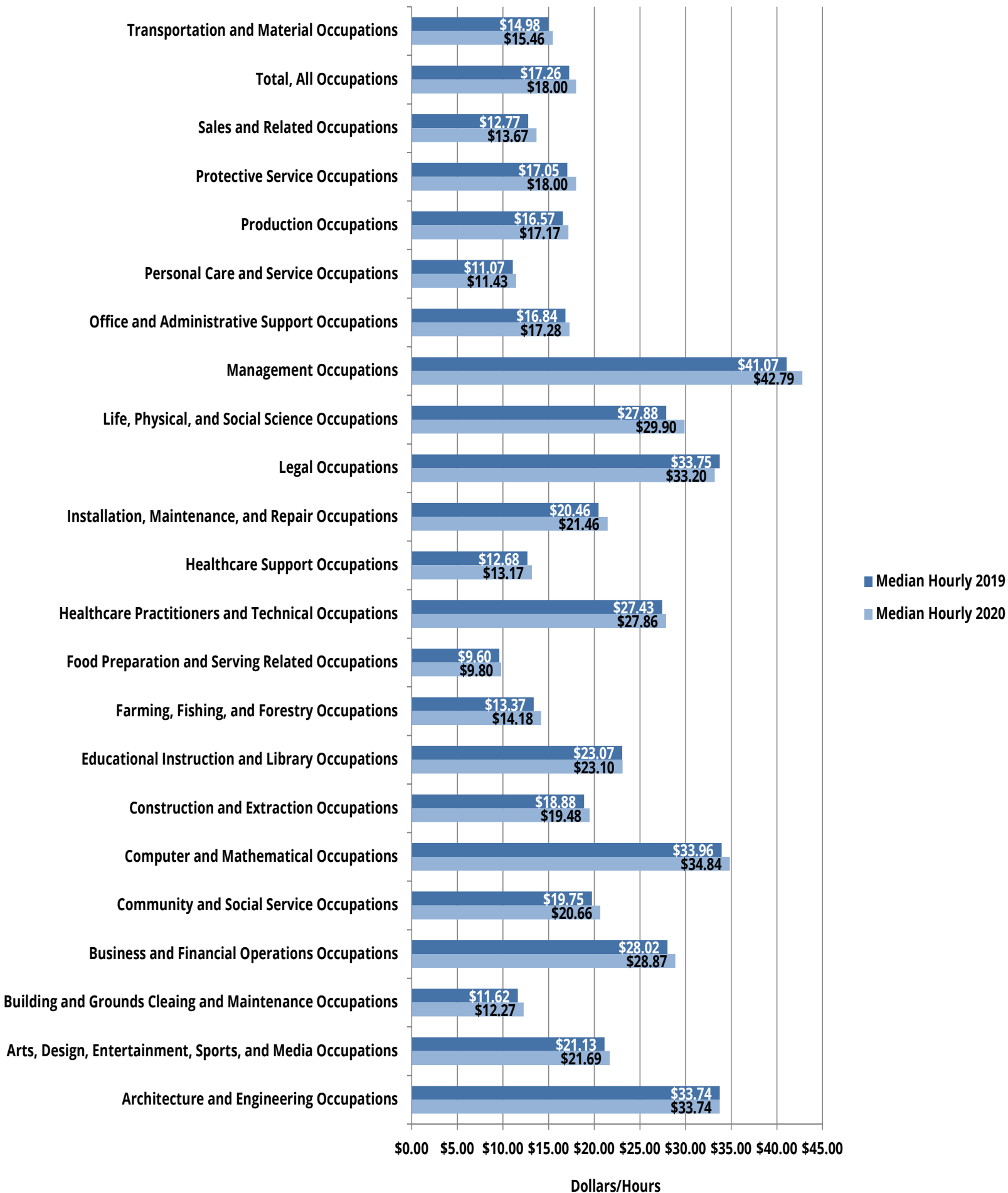
2020 Median Hourly Wages, State and Sub-State Areas



Source: TN Department of Labor & Workforce Development, Occupational Employment Statistics, May 2020

Figure 10

Median Hourly Wages, Major Occupational Groups



Source: TN Department of Labor & Workforce Development, Occupational Employment Statistics, May 2020

Figure 11



Tennessee Occupational Injuries, Illnesses, and Fatalities 2019

The WIR²ED Division of the Tennessee Department of Labor and Workforce Development, Labor Research and Statistics Unit, conducts the annual Survey of Occupational Injuries and Illnesses (SOII) from a random sample of public and private sector companies in Tennessee as well as the Census of Fatal Occupational Injuries (CFOI).

The data collected from the SOII survey is used to produce the occupational injury and illness rates for industries within the State of Tennessee. It also provides demographic and case characteristic data for work-related injuries and illnesses that result in days away from work or days of job transfer or restriction. The calculated rates represent the number of recordable occupational injuries and illnesses per 100 full-time equivalent employees. The survey is conducted in conjunction with the Bureau of Labor Statistics, U.S. Department of Labor.

Additional information can be found at <https://www.tn.gov/workforce/general-resources/major-publications0/major-publications-redirect/public-reports-redirect/occupational-injuries--illnesses--and-fatalities-statistics.html> or <https://www.bls.gov/iif/oshstate.htm#TN>.

Tennessee Survey of Occupational Injuries and Illnesses (SOII), 2019 Highlights

The total recordable incidence rate for all industries in Tennessee per 100 full-time equivalent workers during 2019 was estimated to be 2.9. The total recordable rate for private industry was 2.7 and the total recordable rate for public sector industries was 4.0.

- The highest total recordable case rate in private industry in one of the six major industry sectors was in transportation and warehousing at 4.1.
- The lowest total recordable case rate in private industry in one of the six major industry sectors was in construction at 2.1.
- There were an estimated 18,360 occupational injuries and illnesses in Tennessee including all ownerships during 2019 that resulted in lost days away from work.
- 60 percent of the occupational injuries and illnesses in Tennessee involving days away from work were sustained by men, while 40 percent were sustained by women.
- 35 percent of the occupational injuries and illnesses in Tennessee involving days away from work were the result of a sprain, strain or tear to a ligament or tendon.
- 31 percent of the occupational injuries and illnesses in Tennessee involving days away from work were due to overexertion or bodily reactions. An additional 25 percent were due to slips, trips and falls.
- In 32 percent of the occupational injuries and illnesses resulting in days away from work the injured employee suffered an injury to the upper extremities. In 26 percent of the cases the injury was to the lower extremities and in 20 percent of the cases the injury was to the trunk.

Source: TN Department of Labor, Labor Research & Statistics, WIR²ED, November 4, 2020.

Table 7: Number of nonfatal occupational injuries and illnesses involving days away from work¹ by major occupational group and selected worker occupations, all ownerships, Tennessee, 2019

| Occupation | All Ownerships |
|---|----------------|
| Total | 18,360 |
| Management occupations | 360 |
| Education, instruction, and library occupations | 470 |
| Elementary school teachers, except special education | 230 |
| Healthcare practitioners and technical occupations | 1,080 |
| Registered nurses | 270 |
| Emergency medical technicians and paramedics | 180 |
| Licensed practical nurses | 190 |
| Healthcare support occupations | 1,220 |
| Nursing assistants | 500 |
| Personal care aides | 250 |
| Protective service occupations | 1,010 |
| Police and sheriff's patrol officers | 390 |
| Firefighters | 210 |
| Correctional officers and jailers | 100 |
| Security guards | 110 |
| Food preparation and serving related occupations | 1,060 |
| Fast food and counter workers | 260 |
| Food preparation workers | 180 |
| Cooks, institution and cafeteria | 80 |
| Cooks, restaurant | 140 |
| Building and grounds cleaning and maintenance occupations | 890 |
| Janitors and cleaners, except maids and housekeeping cleaners | 370 |
| Landscaping and groundskeeping workers | 260 |
| Maids and housekeeping cleaners | 160 |
| Personal care and service occupations | 180 |
| Sales and related occupations | 1,190 |
| Retail salespersons | 430 |
| First-line supervisors of retail sales persons | 450 |
| Office and administrative support occupations | 740 |
| Construction and extraction occupations | 1,230 |
| Construction laborers | 290 |
| Installation, maintenance, and repair occupations | 1,460 |
| Maintenance and repair workers, general | 400 |
| Production occupations | 1,900 |
| Tire builders | 20 |
| Team assemblers | 270 |
| Transportation and material moving occupations | 4,930 |
| Heavy and tractor-trailer truck drivers | 1,570 |
| Light truck or delivery services drivers | 410 |
| Laborers and freight, stock and material moving workers, hand | 1,710 |
| Stockers and order fillers | 440 |

¹ Days-away-from-work cases include those that result in days away from work with or without job transfer or restriction.

Number of Nonfatal Occupational Injuries and Illnesses Involving Days Away from Work by Major Occupational Group and Selected Worker Occupations, 2018 and 2019

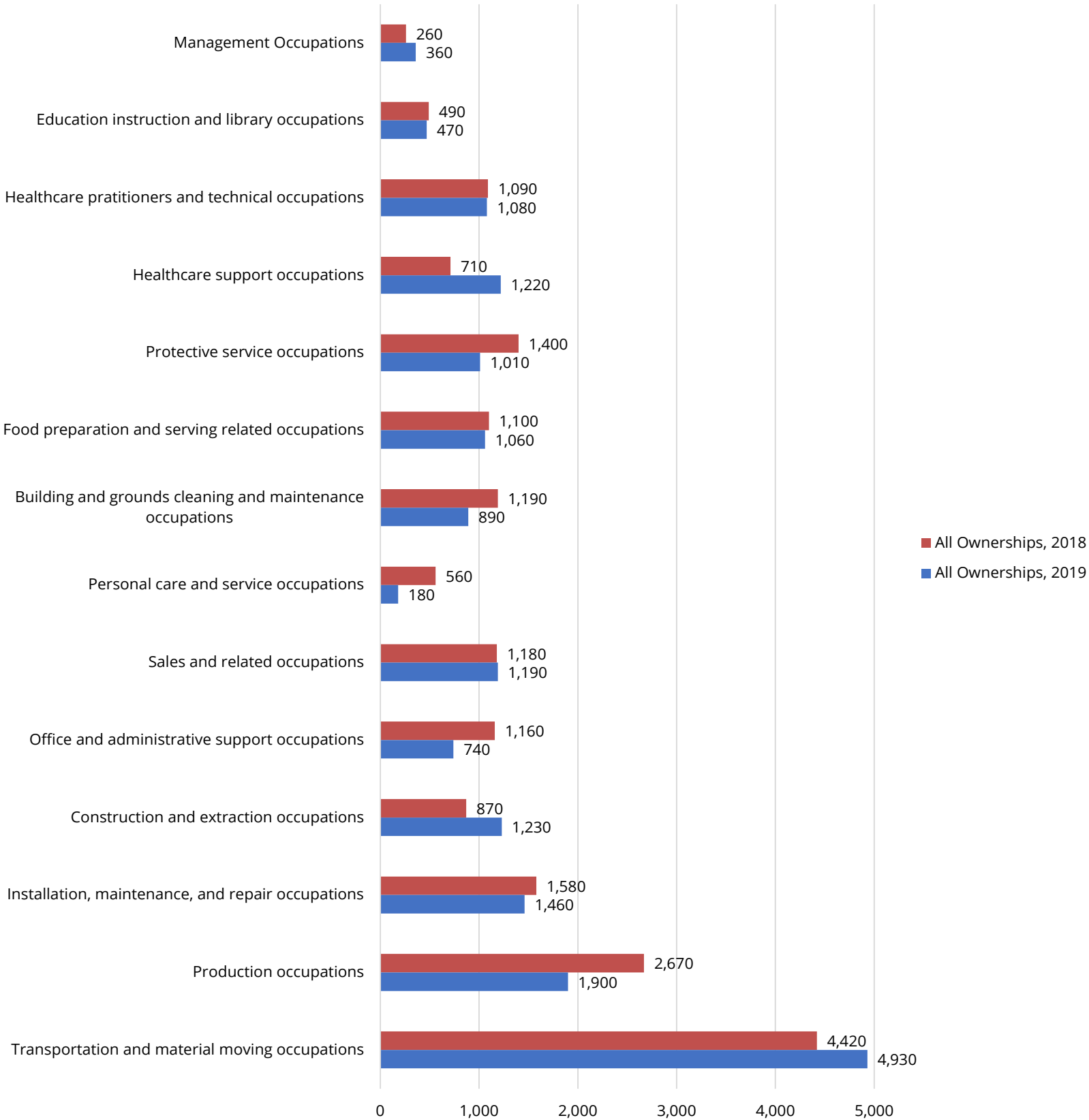


Figure 12

Source: TN Department of Labor, Labor Research & Statistics, WIR²ED, November 4, 2020.

Transportation and Warehousing Industry Sector had the Highest Incidence Rate for Nonfatal Occupational Injuries and Illnesses in 2019

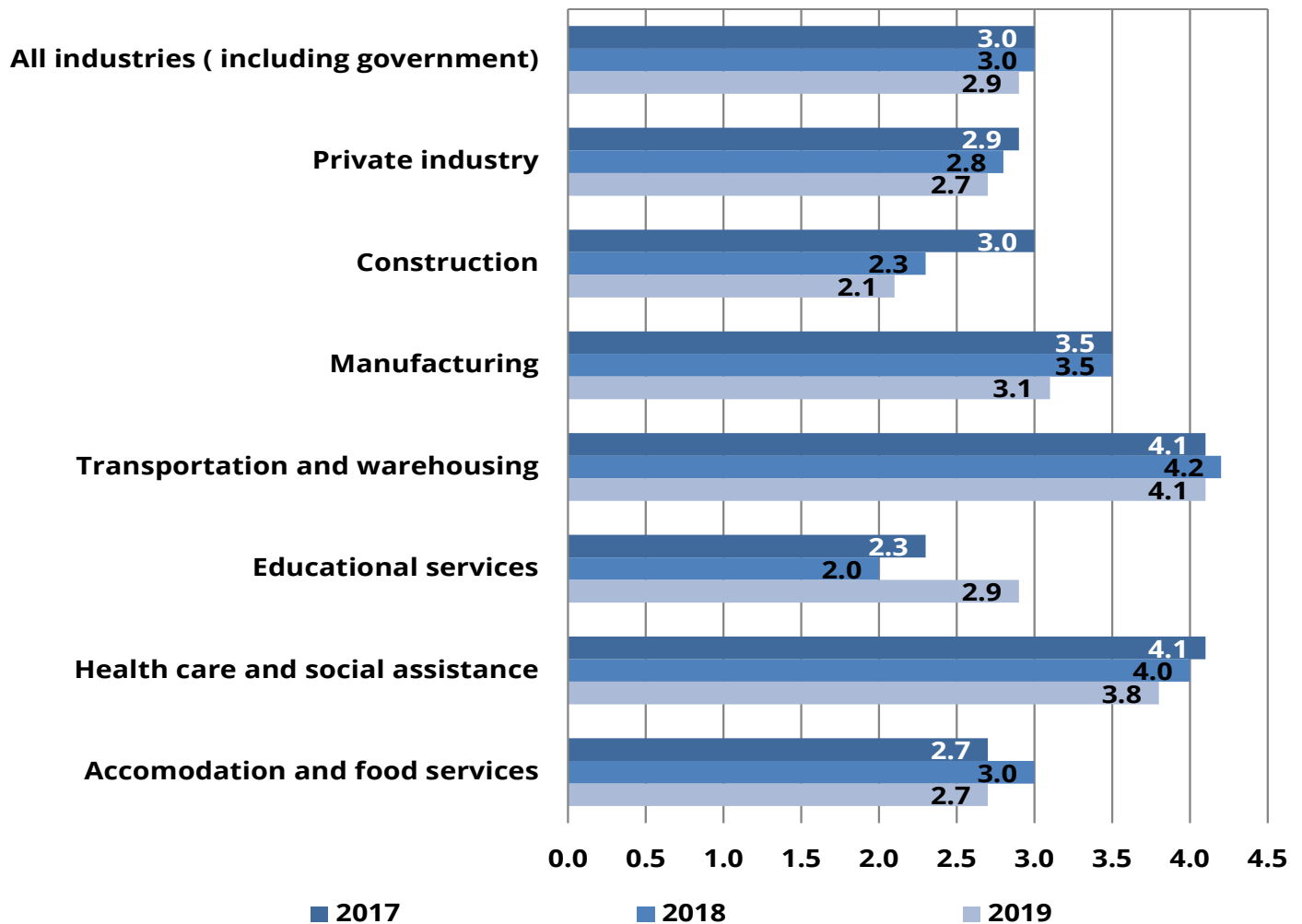


Figure 13

The transportation and warehousing sector had the highest incidence rate for nonfatal occupational injuries and illnesses in 2019 with a recordable incidence rate of 4.1 per 100 full-time equivalent workers. The major industry sector of construction had the lowest incidence rate with a recordable rate of 2.1 per 100 full-time equivalent workers.

Note: Because of rounding and data exclusion on non-classifiable responses, data may not sum to the totals

Source: TN Department of Labor, Labor Research & Statistics, WIR²ED, November 4, 2020.

Tennessee Census of Fatal Occupational Injuries (CFOI), 2019

There were 124 fatal work-related injuries in Tennessee during 2019, an increase of 2 over the 122 recorded during 2018.

2019 Census of Fatal Occupational Injuries Highlights:

- There were 95 fatal work injuries to wage and salary workers and 29 to self-employed persons
- There were 117 fatal work injuries to men and 7 fatal work injuries to women.
- There were 114 fatal work injuries in the private sector and 10 to government workers.
- Fatal work-related injuries due to transportation incidents increased 38 percent from 2018 to 2019 while fatal work-related incidents of violence increased by 26 percent.
- There were 84 fatal work-related injuries to White (non-Hispanic) workers, 21 to Black or African-American (non-Hispanic) workers, 16 to Hispanic or Latino workers, and 3 to Asian (non-Hispanic) workers.
- The highest number of fatal occupational injuries occurred to workers in the major occupational group of transportation and material moving workers with 34 work fatalities.
- The range of workers between the ages of 35 to 44 suffered the most fatal work injuries in Tennessee during 2019 with 28 or 23 percent of the yearly total number of work fatalities.

**Table 8: Fatal work related injuries by event or exposure
Tennessee, 2016-2019**

| Event or exposure | 2019 | 2018 | 2017 | 2016 |
|---|------------|------------|------------|------------|
| Transportation incidents | 58 | 42 | 57 | 42 |
| Violence and other injuries by persons or animals | 17 | 23 | 20 | 26 |
| Contact with objects and equipment | 18 | 24 | 18 | 26 |
| Falls, slips, trips | 16 | 19 | 21 | 20 |
| Exposure to harmful substances or environments | -- | 10 | 12 | 6 |
| Fires and explosions | -- | 4 | -- | 2 |
| Yearly Totals | 124 | 122 | 128 | 122 |

Note: Totals for major categories may not sum to yearly totals. Dashes indicate no data or data that do not meet publication criteria

Source: TN Department of Labor, Labor Research & Statistics, WIR²ED, December 16, 2020.



Tennessee Long Term Outlook to 2028

From a base of 3.3 million jobs in 2018, total employment for Tennessee, including agricultural, self-employed, and private household workers, is expected to grow to 3.5 million by 2028. Expected to increase by 0.7 percent annually, Tennessee’s economy in the long run is expected to continue expansion in nine of twelve major industry sectors.

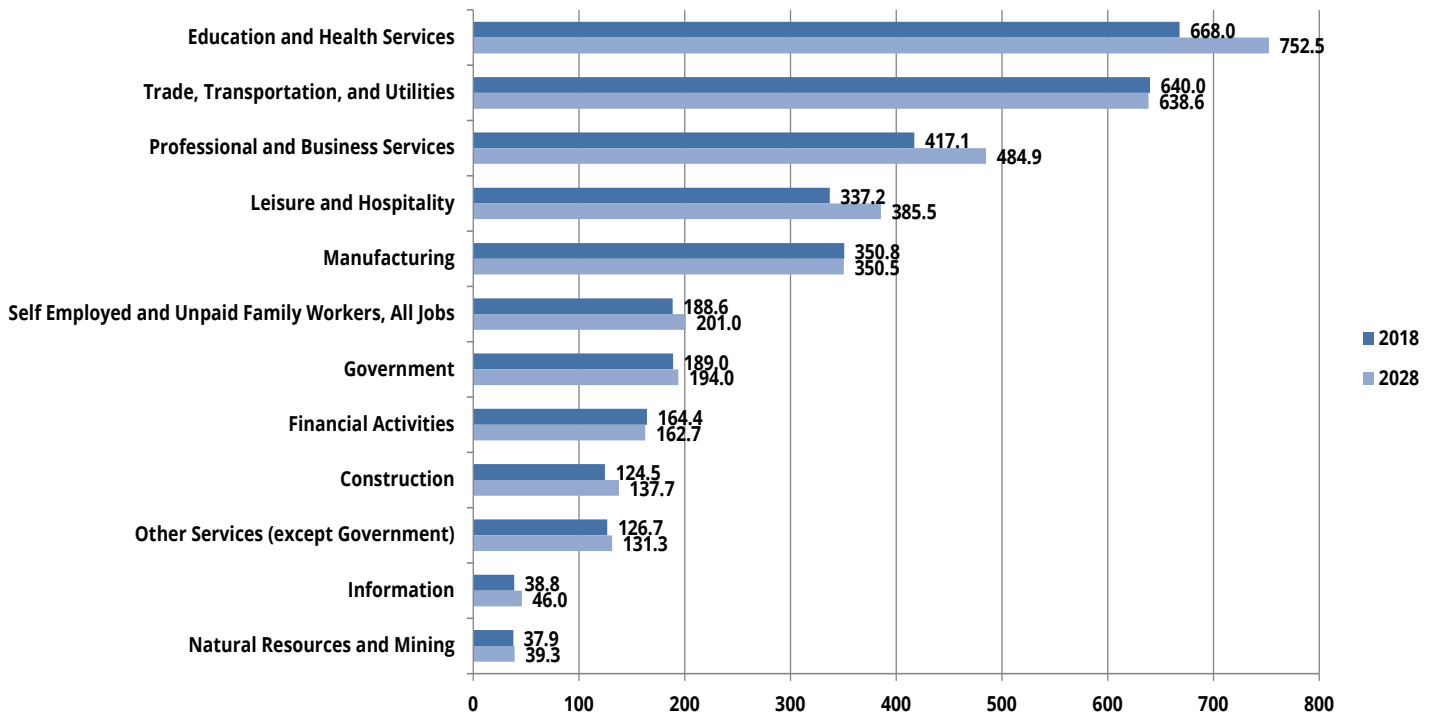
The goods-producing industries are expected to expand by 2.8 percent and create an estimated 14, 000 jobs. Construction is forecast to be the most rapidly growing sector at 1.52 percent annually, faster than the overall growth in the economy. However, manufacturing employment is expected to decline slightly. Natural resources and mining, which includes agriculture, is expected to gain a little less than 1,400 jobs.

The service-providing sector is expected to grow more rapidly than the goods-producing sector, at about eight percent annually. Growth will increase in information and leisure and hospitality; professional and business services are expected to increase more than 67,000 jobs alone. Continued losses in the financial sector are forecast due to employment reductions and continued technological expansion.

The service-providing industries expected to have the largest employment growth are education and health services, professional and business services, and leisure and hospitality, forecast to add a total of 200,000 jobs by 2028. As the retail and wholesale sector respond to short term loss of business and electronic sales, these sectors are expected to remain flat. Government will experience growth over this period of 2.6 percent as services expand.

With the expansion of e-commerce and changes in work organization, the number of self-employed and unpaid family workers is expected to grow at a slightly lower rate than the average for all employment (0.6 percent annually).

**During 2020-2021 Manufacturing Shows Slight Growth
Major Industry Sector Employment, 2018-2028**

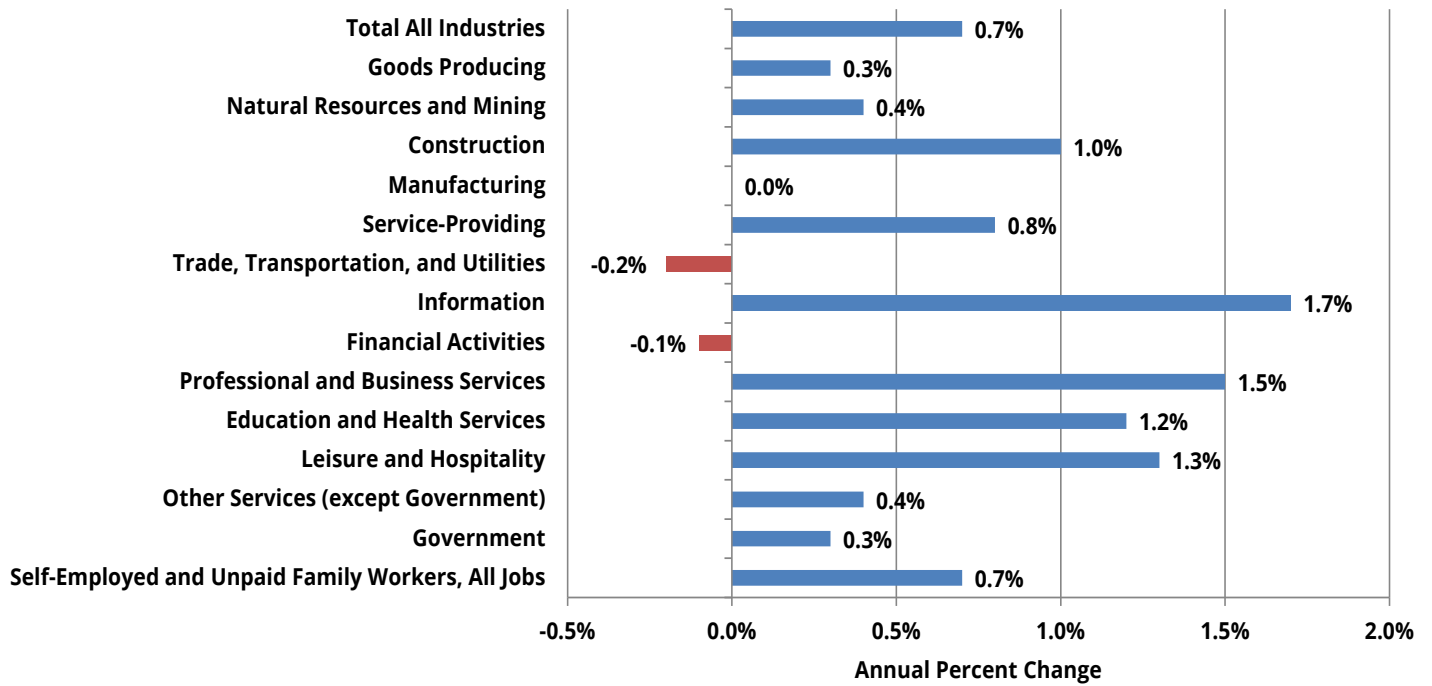


Note: Numbers reported are in the thousands

Source: TN Department of Labor and Workforce Development, WIR²ED Division, TN Long Term Industry Projections, 2018-2028

Figure 14

Tennessee Major Industry Sector Employment, Annual Percent Change 2018-2028



Source: TN Department of Labor and Workforce Development, WIR²ED Division, TN Long Term Industry Projections, 2018-2028
Figure 15

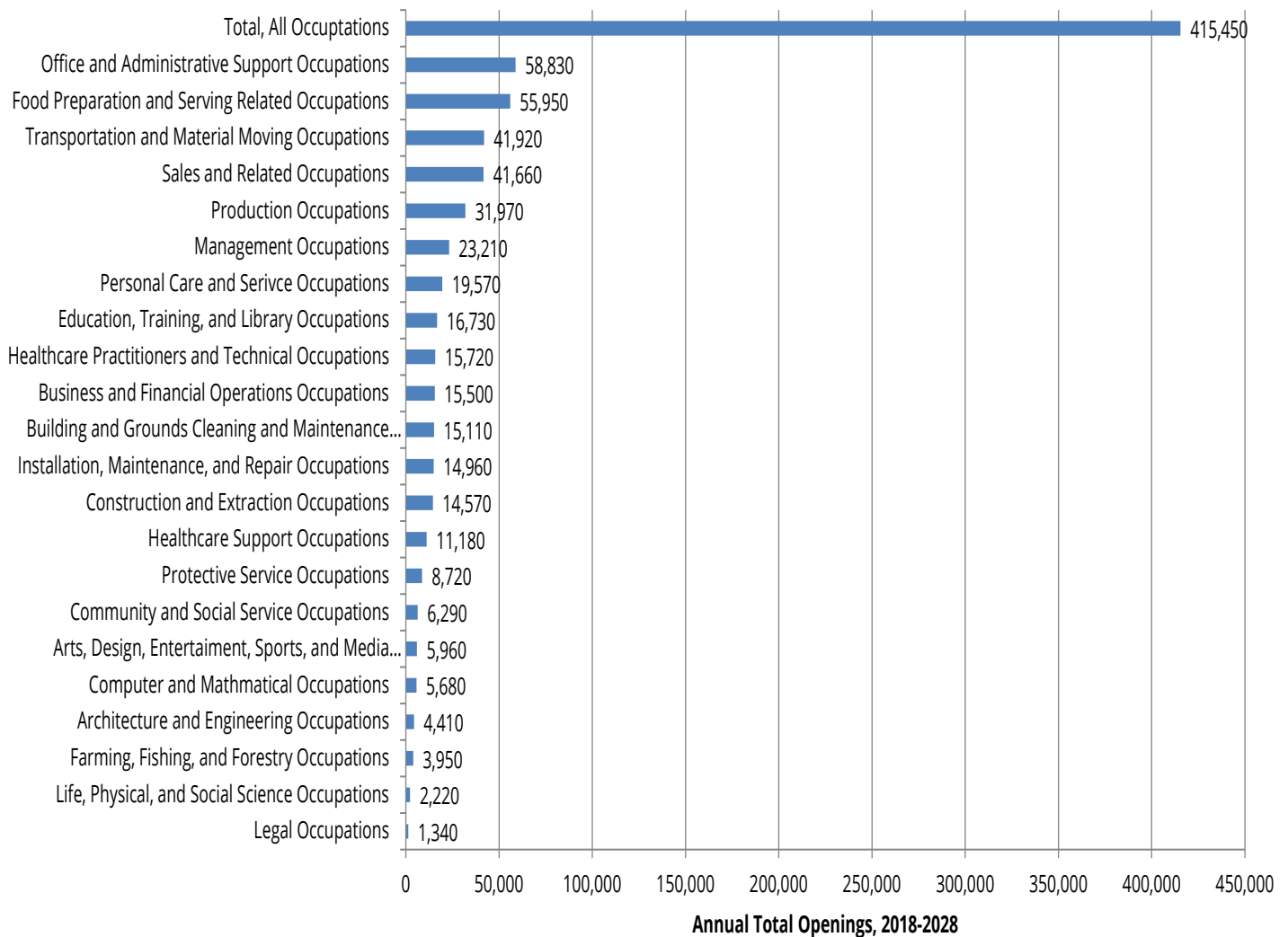
The most rapidly-growing occupational groups are listed in the following table. Two are in the education and health services industry- healthcare support and healthcare practitioners and technical occupations. These are two of the occupational groups which in the long term are expected to grow twice as rapidly as the average for all occupations. Other rapidly- growing groups are expected to be personal care and service; life, physical, and social science; and computer and mathematical occupations. Of the top five major groups, two (healthcare support and personal care) have median wages that are below the median for all occupations.

Table 9: Occupational Projections (Long-term) by Major Occupational Group In Tennessee in 2018-2028

| Major Occupation Title | 2018 Estimated Employment | 2028 Estimated Employment | Total 2018-2028 Employment Change | 2018-2028 Annual Avg. Percent Change | Median Wage 2020 |
|---|---------------------------------|---------------------------------|---|---|---------------------|
| Total All | 3,283,030 | 3,524,030 | 241,000 | 0.71% | \$35,909 |
| Personal Care and Service | 106,390 | 126,260 | 19,880 | 1.87% | \$23,775 |
| Health Support | 78,050 | 92,100 | 14,060 | 1.80% | \$27,388 |
| Computer and Mathematical | 60,140 | 69,340 | 9,200 | 1.53% | \$72,471 |
| Healthcare Practitioners and Technical | 205,040 | 234,700 | 29,660 | 1.45% | \$57,956 |
| Food Preparation and Serving Related | 281,290 | 319,710 | 38,420 | 1.37% | \$20,379 |
| Community and Social Services | 50,605 | 56,760 | 6,150 | 1.22% | \$42,980 |
| Architecture and Engineering | 46,280 | 51,360 | 5,080 | 1.10% | \$73,013 |
| Protective Services | 71,240 | 79,030 | 7,790 | 1.09% | \$37,439 |
| Management | 233,290 | 258,350 | 25,060 | 1.07% | \$89,000 |
| Transportation and Material Moving | 292,780 | 323,830 | 31,050 | 1.06% | \$32,152 |
| Life, Physical, and Social Science | 19,572 | 21,606 | 2,034 | 1.04% | \$62,183 |
| Construction and Extraction | 114,290 | 126,080 | 11,790 | 1.03% | \$40,525 |
| Business and Financial Operations | 142,315 | 155,947 | 13,632 | 0.96% | \$60,052 |
| Installation, Maintenance, and Repair | 135,140 | 146,630 | 11,490 | 0.85% | \$44,636 |
| Building and Grounds Cleaning and Maintenance | 104,810 | 113,660 | 8,850 | 0.84% | \$25,521 |
| Legal | 17,150 | 18,490 | 1,340 | 0.78% | \$69,063 |
| Arts, Design, Entertainment, Sports, and Media | 48,400 | 51,730 | 3,340 | 0.69% | \$45,113 |
| Education, Training, and Library | 171,270 | 182,910 | 11,640 | 0.68% | \$48,052 |
| Farming, Fishing, and Forestry | 23,820 | 24,430 | 610 | 0.26% | \$29,500 |
| Office and Administrative Support | 495,330 | 497,410 | 2,090 | 0.04% | \$35,947 |
| Production | 274,600 | 274,570 | -30 | 0.00% | \$35,706 |
| Sales and Related | 311,230 | 299,100 | -12,140 | -0.39% | \$28,433 |

Source: TN Department of Labor and Workforce Development, WIR²ED Division, TN Long Term Industry Projections, 2018-2028

TN Occupational Groups by Annual Total Openings, 2018-2028



Source: TN Dept of Labor & Workforce Development, WIR²ED Division, TN Employment Projections 2018-2028






Figure 16

The total number of job openings annually due to growth, transfers, and exits is forecast to be 415,450, with more than 90 percent of the jobs created by transfers and exits. The five occupational groups with the largest number of openings are forecast to be:

- Office and administrative support;
- Food preparation and serving;
- Transportation and material moving;
- Sales and related; and
- Production.

Jobs in these categories are some of those most affected by the current pandemic. More than 31,970 openings are expected in production occupations. In 2019, those jobs paid close to the median wage for all occupations. The smallest number of openings are expected in legal occupations. Some of the production occupations with the most openings will be assemblers and fabricators, metal workers and plastic workers, food processing workers, production supervisors, inspectors and testers, and welders.

Tennessee West Region's Economy | 2020

| | | | |
|--|---|---|--|
|  Employment | Total Employment 2020: 656,438 -5.6% 2019: 695,256 Challenge | New Jobs 2020: -38,818 2019: 10,401 Challenge | MSA Employment 2019-2020 Jackson: -3.30% Memphis: -4.45% Challenge |
|  Employers | Average Number of Establishments 2020: 33,930 2.3% 2019: 33,183 Stronger | Total Wages 2020: \$38.0 Billion 2.4% 2019: \$37.1 Billion Stronger | Counties That Increased Employment 2020: 2 2019: 12 Challenge |
|  Wages & Income | Average Annual Wage 2020: \$46,554 2.0% 2019: \$45,005 Stronger | West Median Wage 2020: \$37,128 4.2% 2019: \$35,641 Stronger | Counties That Increased Annual Wages 2020: 18 2019: 16 Stronger |
|  Labor Force & Demographics | Unemployment Rate 2020: 8.8% 4.7% 2019: 4.1% Challenge | Labor Force 2020: 719,663 -0.7% 2019: 724,731 Challenge | Unemployment Rates Youth 2019: 14.8% With Disability, 2019: 14.1% % In Poverty, 2019: 18.8% Stronger |
|  Job Outlook | Ratio of Unemployed to Job Openings June 2020: 2.83 2.01% June 2019: 0.82 Challenge | Projected Annual Growth Rate, All Occupations 2018-2028: 0.55% Stronger | Projected Annual Avg. Job Openings 2018-2028: 94,946 Stronger |

Workforce and Labor Force Issues in Tennessee's West Region

The population in the West Region in 2020 was estimated at 1,569,363, a decrease of 0.04 percent over 2019. This is a slightly slower rate of decline than the previous year's decline of 0.12 percent. Only the Southwest LWDA increased in population. It added an estimated 469 people, while the Greater Memphis LWDA lost an estimated 431 and the Northwest LWDA an estimated 720 people. Females were 52.0 percent of the population in the West Region during 2020. The Greater Memphis LWDA had the highest percent of females in the population in 2020 at 52.4 percent, compared to the Southwest LWDA at 51.3 percent and the Northwest LWDA at 51.1 percent.

The labor force participation rate in the West Region was 60.5 percent, just 0.9 percentage points lower than the State's rate of 61.4 percent. The Greater Memphis LWDA had the highest labor force participation rate at 63.8 percent, while the Northwest LWDA had the lowest at 53.6 percent. Average unemployment rates increased in all three LWDA's in the West Region, for a West Region average of 8.8 percent. The Greater Memphis LWDA had the highest unemployment rate at 9.4 percent, 0.6 percentage points above the West Region and 1.9 percentage points above the State's rate of 7.5 percent.

The lowest rate of higher educational attainment (attainment of some college or more for those 25 years of age or older) was in the Northwest LWDA, with a rate of 42.3 percent compared to the West Region's rate of 54.0 percent and the State's rate of 55.4 percent. In the West Region, the greatest percentage of those with a high school degree or more (88.6 percent) were those who identified as white. Those who identified as Hispanic or Latino only had the lowest percentage (56.5 percent).

Poverty rates decreased slightly in the West Region from 19.9 percent in 2018 to 18.8 percent in 2019. The Northwest LWDA had the highest poverty rate at 19.0 percent, just slightly above the West Region and 3.8 percentage points above the State's poverty rate of 15.2 percent. The Greater Memphis LWDA had a poverty rate of 18.8 and the Southwest LWDA had a poverty rate of 18.5 percent.

The percent of the unemployed with a disability in the West Region was 14.1 percent, 2.6 percentage points higher than the State's percent of the unemployed with a disability of 11.5 percent. The Greater Memphis LWDA had the highest percentage of those unemployed with a disability at 15.0 percent; the Northwest LWDA had the lowest percentage at 11.9 percent. The percent of those not in the labor force with a disability was 33.2 percent in the West Region, lower than the State's 33.7 percent. The Northwest LWDA had the highest percent of those not in the labor force with a disability at 42.6 percent, while the Greater Memphis LWDA had the lowest at 30.0 percent.

| West Tennessee Local Workforce Development Areas and Counties | |
|--|-----------|
| Southwest Tennessee (LWDA 7) | |
| Chester | Haywood |
| Decatur | Henderson |
| Hardeman | Madison |
| Hardin | McNairy |
| Northwest Tennessee (LWDA 8) | |
| Benton | Henry |
| Carroll | Lake |
| Crockett | Obion |
| Dyer | Weakley |
| Gibson | |
| Greater Memphis Tennessee (LWDA 9) | |
| Fayette | Shelby |
| Lauderdale | Tipton |

Table 10: West Region Labor Force Data

| | Southwest LWDA | Northwest LWDA | Greater Memphis LWDA | West Region | State Total |
|---|----------------|----------------|----------------------|-------------|-------------|
| Total Population 2019 | 257,437 | 247,171 | 1,065,437 | 1,570,045 | 6,830,325 |
| Total Population 2020 | 257,906 | 246,451 | 1,065,006 | 1,569,363 | 6,886,834 |
| Male Population 2020 | 125,568 | 120,533 | 507,210 | 753,311 | 3,358,020 |
| Female Population 2020 | 132,338 | 125,918 | 557,796 | 816,052 | 3,528,814 |
| Labor Force Participation Rate 2018 (5-Year Estimate) | 54.4% | 53.4% | 63.8% | 60.6% | 61.2% |
| Labor Force Participation Rate 2019 (5-Year Estimate) | 54.0% | 53.6% | 63.8% | 60.5% | 61.4% |
| Annual Average Unemployment Rate 2019 Percent | 4.1% | 4.5% | 4.0% | 4.1% | 3.4% |
| Annual Average Unemployment Rate 2020 Percent | 7.7% | 7.1% | 9.4% | 8.8% | 7.5% |
| Educational Attainment 25 Years and Over (2019) Some College Or Higher - Percent | 44.3% | 42.3% | 59.2% | 54.0% | 55.4% |
| Poverty Estimate, All Ages, Percent (2019) | 18.5% | 19.0% | 18.8% | 18.8% | 15.2% |
| Percentage of Unemployed with a Disability (2019) | 13.0% | 11.9% | 15.0% | 14.1% | 11.5% |
| Percent of Those Not in the Labor Force with a Disability (2019) | 35.1% | 42.6% | 30.0% | 33.2% | 33.7% |

Source: U.S. Census, American Community Survey, 2019

Table 11: West Region Educational Attainment by Race, 2018

| Educational Attainment | West Region White Only | West Region Black Only | West Region Hispanic or Latino Only | Statewide White Only | Statewide Black Only | Statewide Hispanic or Latino Only |
|--|------------------------|------------------------|-------------------------------------|----------------------|----------------------|-----------------------------------|
| Population 25 years and over | 617,935 | 373,166 | 37,660 | 3,641,698 | 697,227 | 173,116 |
| High school graduate only | 367,716 | 250,067 | 16,377 | 2,191,041 | 457,713 | 81,607 |
| Percent high school graduate only | 59.51% | 67.01% | 43.49% | 60.17% | 65.65% | 47.14% |
| High school graduate or higher | 547,632 | 314,758 | 21,284 | 3,194,533 | 595,489 | 107,877 |
| Percent high school graduate or higher | 88.62% | 84.35% | 56.52% | 87.72% | 85.41% | 62.31% |
| Bachelor degree or higher | 179,916 | 64,691 | 4,907 | 1,003,492 | 137,776 | 26,270 |
| Percent bachelor degree or higher | 29.12% | 17.34% | 13.03% | 27.56% | 19.76% | 15.17% |

Source: U.S. Census Bureau, 2014-2018 American Community Survey 5-Year Estimates (2015-2019 5-Year Estimates are not available)

Youth unemployment for those ages 16 to 24 topped 12 percent in all three LWDA's in the West Region. The Southwest LWDA had the highest youth unemployment rate at 18.5 percent. Greater Memphis LWDA had a youth unemployment rate of 14.4 percent, compared to 12.7 percent in the Northwest; both had a rate lower than the West Region, which was 14.8 percent.

Table 12: West Region Disability Status of Those in the Labor Force, 2019

| Area | Civilian Non-institutional Population | Total Labor Force | Total Employed | Employed W Disability | Employed W/O Disability | Total Unemployed | Unemployed W Disability | Unemployed W/O Disability |
|----------------------|---------------------------------------|-------------------|----------------|-----------------------|-------------------------|------------------|-------------------------|---------------------------|
| Southwest LWDA | 143,781 | 99,930 | 93,122 | 5,039 | 88,083 | 6,808 | 756 | 6,052 |
| Northwest LWDA | 142,176 | 98,613 | 92,996 | 7,578 | 85,418 | 5,617 | 1,028 | 4,589 |
| Greater Memphis LWDA | 643,218 | 492,152 | 457,271 | 22,919 | 434,352 | 34,881 | 4,052 | 30,829 |
| West Region | 929,175 | 690,695 | 643,389 | 35,536 | 607,853 | 47,306 | 5,836 | 41,470 |
| Tennessee | 4,053,247 | 3,052,526 | 2,893,064 | 179,393 | 2,713,671 | 159,462 | 23,420 | 136,042 |

Source: U.S. Census Bureau, 2015-2019 American Community Survey 5-Year Estimates

Table 13: West Region Disability Status of Those Not in the Labor Force, 2019

| Area | Civilian Non-institutional Population | Total Not In Labor Force | Not in Labor Force W Disability | Not In Labor Force W/O Disability | % W Disability | % W/O Disability |
|----------------------|---------------------------------------|--------------------------|---------------------------------|-----------------------------------|----------------|------------------|
| Southwest LWDA | 143,781 | 43,851 | 15,411 | 28,440 | 35.1% | 64.9% |
| Northwest LWDA | 142,176 | 43,563 | 18,571 | 24,992 | 42.6% | 57.4% |
| Greater Memphis LWDA | 643,218 | 151,066 | 45,260 | 105,806 | 30.0% | 70.0% |
| West Region | 929,175 | 238,480 | 79,242 | 159,238 | 33.2% | 66.8% |
| Tennessee | 4,053,247 | 1,000,721 | 337,665 | 663,056 | 33.7% | 66.3% |

Source: U.S. Census Bureau, 2015-2019 American Community Survey 5-Year Estimates

Table 14: West Region Youth Unemployment, Ages 16-24 in 2019

| Area | Labor Force | Unemployment | Rate |
|----------------------|-------------|--------------|-------|
| Southwest LWDA | 15,468 | 2,864 | 18.5% |
| Northwest LWDA | 15,936 | 2,017 | 12.7% |
| Greater Memphis LWDA | 72,151 | 10,410 | 14.4% |
| West Region | 103,555 | 15,291 | 14.8% |

Source: U.S. Census Bureau, 2015-2019 American Community Survey, 2019, 5-year estimates

Table 15: West Region Annual Average Unemployment Rates, 2019 to 2020

| Area | 2020 Annual Averages | | | | 2019 Annual Averages | | | |
|---|----------------------|-------------|---------------------|----------------------|----------------------|-------------|---------------------|----------------------|
| | Labor Force | Employment | Unemployment Number | Unemployment Percent | Labor Force | Employment | Unemployment Number | Unemployment Percent |
| UNITED STATES | 160,742,000 | 147,795,000 | 12,947,000 | 8.1% | 163,539,000 | 157,538,000 | 6,001,000 | 3.7% |
| TENNESSEE | 3,289,426 | 3,043,894 | 245,532 | 7.5% | 3,329,279 | 3,216,916 | 112,363 | 3.4% |
| WEST REGION | 719,663 | 656,438 | 63,225 | 8.8% | 724,731 | 695,256 | 29,475 | 4.1% |
| Metropolitan Statistical Areas (MSAs) | | | | | | | | |
| Jackson, TN MSA | 64,254 | 59,691 | 4,563 | 7.1% | 64,948 | 62,673 | 2,275 | 3.5% |
| Chester County | 8,390 | 7,912 | 478 | 5.7% | 8,596 | 8,303 | 293 | 3.4% |
| Crockett County | 6,836 | 6,436 | 400 | 5.9% | 6,975 | 6,734 | 241 | 3.5% |
| Madison County | 49,028 | 45,343 | 3,685 | 7.5% | 49,376 | 47,635 | 1,741 | 3.5% |
| Memphis, TN-MS-AR MSA | 639,654 | 583,157 | 56,497 | 8.8% | 643,951 | 617,177 | 26,774 | 4.2% |
| Fayette County | 18,987 | 17,774 | 1,213 | 6.4% | 19,533 | 18,828 | 705 | 3.6% |
| Shelby County | 447,769 | 404,507 | 43,262 | 9.7% | 447,655 | 429,816 | 17,839 | 4.0% |
| Tipton County | 27,498 | 25,612 | 1,886 | 6.9% | 28,281 | 27,191 | 1,090 | 3.9% |
| Arkansas Portion | 21,209 | 19,459 | 1,750 | 8.3% | 21,242 | 20,341 | 901 | 4.2% |
| Mississippi Portion | 124,192 | 115,805 | 8,387 | 6.8% | 127,239 | 121,000 | 6,239 | 4.9% |
| Micropolitan Statistical Areas (MCSAs) | | | | | | | | |
| Dyersburg (Dyer Co.) | 15,879 | 14,603 | 1,276 | 8.0% | 16,413 | 15,619 | 794 | 4.8% |
| Martin (Weakley Co.) | 15,456 | 14,554 | 902 | 5.8% | 16,087 | 15,443 | 644 | 4.0% |
| Paris (Henry Co.) | 13,668 | 12,642 | 1,026 | 7.5% | 14,170 | 13,584 | 586 | 4.1% |
| Union City, TN-KY | 14,163 | 13,176 | 987 | 7.0% | 14,510 | 13,792 | 718 | 4.9% |
| Obion Co. | 12,180 | 11,322 | 858 | 7.0% | 12,476 | 11,870 | 606 | 4.9% |
| Kentucky Portion (Fulton Co.) | 1,983 | 1,854 | 129 | 6.5% | 2,035 | 1,923 | 112 | 5.5% |

Source: TN Department of Labor and Workforce Development, WIR²ED Division, Local Area Unemployment Statistics

West Region's Unemployment Rates, 2019-2020

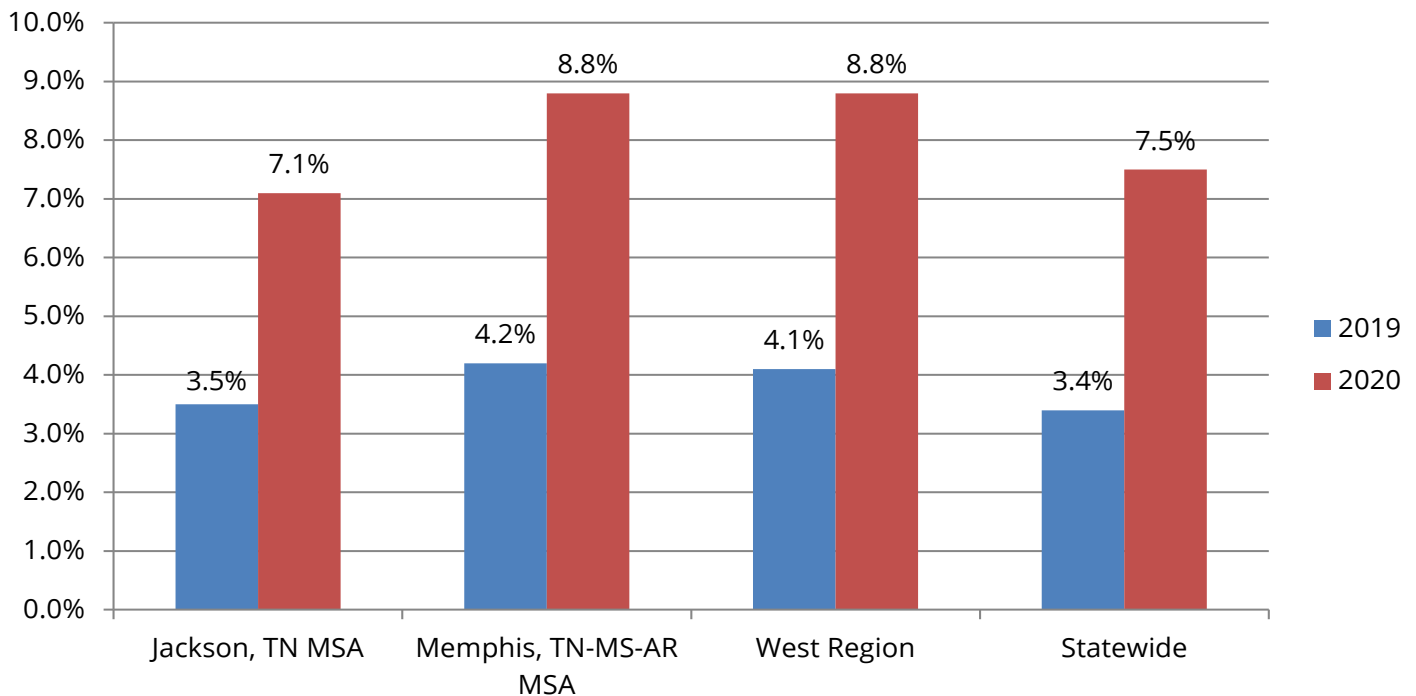
In 2020, the average unemployment rate in the West Region was 8.8 percent, which was above the state average of 7.5 percent. Of the two Metropolitan Statistical Areas in the West Region, the Memphis TN-MS-AR MSA had the highest unemployment rate at 8.8 percent in 2020. This was higher than the revised 2019 rate of 4.2 percent. The Jackson, TN MSA had an unemployment rate of 7.1 percent in 2020, up from the revised 2019 rate of 3.5 percent.

Four Micropolitan Statistical Areas are in the West Region. Dyersburg, TN (Dyer County) micropolitan statistical area had the highest unemployment rate at 8.0 percent in 2020, higher than the revised 2019 rate of 4.8 percent. Martin, TN (Weakley County) micropolitan statistical area had the lowest unemployment rate in 2020 at 5.8 percent, higher than the revised 2019 rate of 4.0 percent.

The State of Tennessee creates a monthly report of all unemployment rates by State, Region, County, LWDA, Metropolitan Statistical Area, and Micropolitan Statistical Area called the Labor Force Estimates. This report can be found on the State's website at: <https://www.tn.gov/workforce/general-resources/major-publications0/major-publications-redirect/public-reports-redirect/labor-force-estimates.html>

The State of Tennessee also creates a monthly report that provides the nonfarm employment, long-term graphs of the unemployment, and a brief explanation for each major MSA in the Tennessee Labor Market Report. That report can be found on the State's website at: <https://www.tn.gov/workforce/general-resources/major-publications0/major-publications-redirect/public-reports-redirect/labor-market-reports.html>

West TN Unemployment Rates by MSA, 2019 and 2020



Source: TN Department of Labor and Workforce Development, WIR²ED Division, Local Area Unemployment Statistics

Figure 17

Table 16: West Region - Significant Barriers to Employment

| | Southwest LWDA | Northwest LWDA | Greater Memphis LWDA | West Region | State Total |
|--|----------------|----------------|----------------------|-------------|-------------|
| Number of American Indians or Alaskan Natives alone | 379 | 911 | 2,324 | 3,614 | 18,189 |
| Population Ages 15-19 | 17,257 | 18,983 | 73,172 | 109,412 | 422,111 |
| Population Ages 20-24 | 17,132 | 18,933 | 76,676 | 112,741 | 458,394 |
| Population Ages 55+ | 75,141 | 92,114 | 241,620 | 408,875 | 1,784,288 |
| Number of Veterans 2020 | 15,603 | 19,901 | 60,552 | 96,056 | 456,197 |
| Number Below Poverty | 44,076 | 50,598 | 190,066 | 284,740 | 996,930 |
| Number With Disability | 18,108 | 8,488 | 114,980 | 136,576 | 737,731 |
| Number of Single Parent Families | 7,331 | 7,606 | 41,513 | 56,450 | 184,062 |
| Probationers and Parolees | 3,139 | 2,914 | 10,023 | 16,076 | 68,391 |
| Community Correction | 1,382 | 318 | 439 | 2,139 | 7,454 |
| Mental Health Court Statistics (FY 2020) | 0 | 0 | 85 | 85 | 218 |
| Limited English Speaking | 558 | 723 | 7,359 | 8,640 | 38,144 |
| *Foster Care Services - Youth Aged Out | 17 | 23 | 127 | 167 | 717 |
| Clients In Recovery Courts (2020) | 184 | 129 | 530 | 843 | 3,159 |
| Veterans Recovery Courts | 0 | 0 | 55 | 55 | 208 |
| In School Youth Experiencing Homelessness in 2019 | 621 | 195 | 1,735 | 2,551 | 17,228 |
| TANF 24 Months From Ending Total 2020 | 144 | 89 | 460 | 693 | 1,773 |
| Prison and Jail Population Total 2020 | 3,570 | 2,323 | 3,479 | 9,372 | 26,908 |

* Counties of commitment, not residence.

Source: Population: U.S. Census Bureau, 2015-2019 American Community Survey 5-Year Estimates.

Probationers and Parolees, Community Corrections: Dr. Mary Karpos, TN Department of Correction, Community Supervision.

Mental Health Court and Recovery Court Statistics: Rebekah Provost-Emmons, Recovery Court Administrator, Office of Criminal Justice Services, Division of Substance Abuse Services.

Limited English Speaking: U.S. Census Bureau, American Community Survey, 2019.

Foster Care Services: Dave Aguzzi, Office of Independent Living, TN Department of Children's Services.

In School Youth Experiencing Homelessness: Josh Carlson, Data Management Division, TN Department of Education.

TANF 24 Months for Ending Eligibility: Lakecia Peerson, Division of Family Assistance and Child Support, TN Department of Human Services.

Listed above are numbers of individuals with significant barriers to employment by LWDA's, with region and state totals.

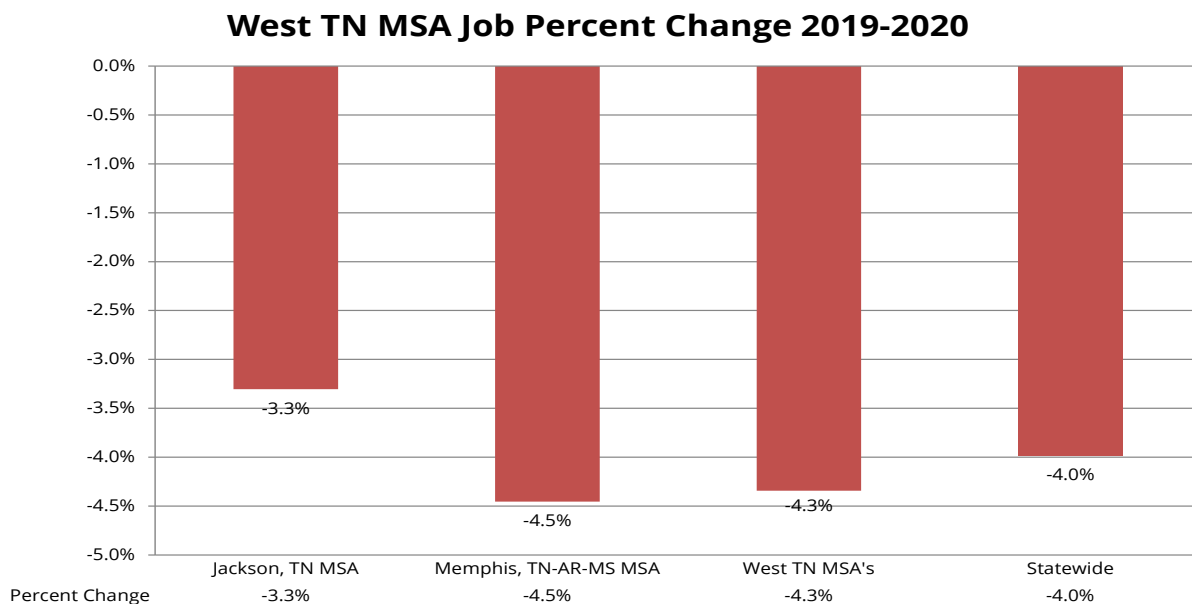
West Region's Economy, 2019-2020

Total employment in the West Region, excluding agriculture and the self-employed, decreased from 695,438 to 656,438, a decrease of 5.4 percent or nearly 39,000 jobs (see West Region Summary page 29). This rate of job growth was like that of the state. Employment in the metropolitan areas of Jackson and Memphis decreased by 3.3 and 4.5 percent over the year.

The West Region consists of three Local Workforce Development Areas (LWDAs): Greater Memphis, Southwest, and Northwest, encompassing a total of 21 counties (see list p. 30). Of these, 2 counties increased in employment from 2019 to 2020, fewer counties than the previous year. The average number of establishments increased to 33,930 over the year and payroll increased by 2.4 percent to \$38.0 billion. The increase in payroll was about the same as the rate of increase in the state; still, the payroll total in this region accounts for nearly 1 in every four dollars in the state.

The average annual industry wage in the region, calculated by dividing the total payroll by the average number of workers, increased by two percent in 2020 to \$46,554, about 1,000 dollars more than the state average. The median occupational wage increased by 2.7 percent to \$37,128, just below the state median. Regarding the labor force, the average unemployment rate increased from 2019 to 2020 to 8.8 percent, about 1.3 percentage points higher than the state average. The labor force decreased over the year by 0.7 percent, which was 0.5 percent less than the amount the state decreased. Youth unemployment in 2019 (the latest available) stood at 14.8 percent, compared to the state rate of 11.1 percent; the percent of those in poverty who were unemployed that year was 18.8 percent compared to the state rate of 15.2 percent. In 2020, the number of unemployed compared to the number of job listings on the state job bank, jobs4tn.gov, was 2.8 percent, which represents nearly 3 unemployed people for each job opening posted..

To summarize: In 2020 compared to 2019, the West Region saw negative growth in employment, with some growth being slower in the West metropolitan areas when compared to other areas of the state. Payroll increased, somewhat slower than the rest of the state. The level of the annual average wage and median wage were on par with the state. However, unemployment rates overall and for youth and those in poverty remain higher than state rates. "The 2.8 ratio of unemployed to jobs shows the depth of the economic downturn in the region. The forecast for long term projections to 2026 is for an average of 94,946 job openings annually in the West Region.



Source: TN Department of Labor & Workforce Development, Current Employment Statistics

Figure 18

West Region May 2020 Occupational Employment

The transportation and material moving occupational group was the largest in the West Region in May 2020, according to the annual Occupational Employment Survey, which provides data on all industries except agriculture, the self-employed, and a few not covered by Tennessee's unemployment insurance system. Employment was 14.8 percent of total employment in the region and exceeded 100,000 workers, with average entry level wages about at the level of all occupations in the Region (\$22,937). Salaries of experienced workers in the group averaged \$45,157.

Other major occupational groups employees with greater than five percent of employment in the Region included:

- Office and Administrative Support workers- 94,260 (13.7%)
- Sales and Related workers- 58,860 (8.6%)
- Food Preparation and Serving workers- 53,610 (7.8%)
- Production workers -56,270 (8.2%)
- Healthcare Practitioners and Technical workers -49,870 (7.3%)
- Management workers-40,480 (5.9%)
- Education, Training, and Library workers- 36,100 (5.2%)

Compared to state occupational employment, the West Region has a greater percentage of transportation and material moving employees (14.8 percent vs. 11.4 percent) and smaller percentages of food preparation and serving and sales and related employees and a slightly smaller proportion of production employees (8.6 v. 8.7 percent).

How different are the salaries for the employees in these occupational groups in the West Region compared to the state? For most occupational groups listed above, the West Region median salaries are lower with a few exceptions such as the computer and mathematical occupations. Business and financial occupations and healthcare support paying more in the West compared to the State median wages.

Table 17: Occupational Employment and Wage Rates (OES) for All Major Groups in the West Region in 2020

| Occupation | Occupation Code | Employment | Entry Level Salary | Median Salary | Experienced Salary |
|--|-----------------|------------|--------------------|---------------|--------------------|
| Total All Occupations | 000000 | 688,640 | \$22,462 | \$37,128 | \$58,600 |
| Architecture and Engineering | 170000 | 7,830 | \$43,652 | \$70,814 | \$89,275 |
| Arts, Design, Entertainment, Sports, and Media | 270000 | 5,070 | \$24,133 | \$41,381 | \$59,294 |
| Building and Grounds Cleaning and Maintenance | 370000 | 19,490 | \$19,222 | \$25,213 | \$32,479 |
| Business and Financial Operations | 130000 | 26,630 | \$37,401 | \$60,072 | \$79,444 |
| Community and Social Services | 210000 | 9,170 | \$30,031 | \$44,881 | \$57,097 |
| Computer and Mathematical | 150000 | 11,050 | \$43,192 | \$69,663 | \$89,174 |
| Construction and Extraction | 470000 | 20,620 | \$28,823 | \$40,113 | \$50,916 |
| Education, Training, and Library | 250000 | 36,100 | \$26,571 | \$48,165 | \$63,765 |
| Farming, Fishing, and Forestry | 450000 | 1,410 | \$21,784 | \$30,077 | \$39,934 |
| Food Preparation and Serving Related | 350000 | 53,610 | \$17,827 | \$20,310 | \$25,596 |
| Healthcare Practitioners and Technical | 290000 | 49,870 | \$37,056 | \$58,497 | \$85,745 |
| Installation, Maintenance, and Repair | 490000 | 28,000 | \$30,444 | \$45,344 | \$57,422 |
| Legal | 230000 | 3,550 | \$33,226 | \$57,204 | \$99,349 |
| Life, Physical, and Social Science | 190000 | 4,560 | \$38,080 | \$62,232 | \$99,126 |
| Management | 110000 | 40,480 | \$48,734 | \$88,444 | \$130,792 |
| Office and Administrative Support | 430000 | 94,260 | \$25,307 | \$36,329 | \$45,988 |
| Personal Care and Service | 390000 | 12,040 | \$18,006 | \$23,184 | \$31,149 |
| Production | 510000 | 56,270 | \$24,361 | \$35,872 | \$45,619 |
| Protective Service | 330000 | 22,770 | \$22,312 | \$36,266 | \$50,494 |
| Sales and Related | 410000 | 58,860 | \$19,738 | \$27,492 | \$50,929 |
| Transportation and Material Moving | 530000 | 101,620 | \$22,937 | \$33,335 | \$45,157 |

Source: TN Dept of Labor & Workforce Dev, Div Emp Sec, LMI

The median wage is estimated 50th percentile: 50 percent of workers in occupations earn less than the median wage, and 50 percent earn more than the median wage. Entry level and Experienced wage rates represent the means of the lower 1/3 and upper 2/3 of the wage distribution, respectively. Data is from an annual survey.

Targeted Industries and Occupations in the West Region

Total employment in the West Region in 2018 including self-employed and agricultural workers was 770,250, projected to increase to 813,650 by 2028, for an annual growth rate of 0.55 percent. From 2018 to 2028, a total of 949,460 jobs are forecast to be created- 43,400 new jobs and 906,060 from exits and transfers out of occupations. Current and projected employment by industry sector is displayed in the table below.

The largest sectors are trade, transportation, and utilities and education and health services. Trade, transportation, and utilities employed nearly 179,000 workers in 2018.

Table 18: Trade, Transportation, and Utilities is the Largest Employment Sector

| Industry Sector Title | Est. Employ. 2018 | Proj. Employ. 2028 | West Location Quotient | Median Annual Wage(s) |
|--------------------------------------|-------------------|--------------------|------------------------|-----------------------|
| Information | 5,950 | 5,290 | 0.65 | 47,788 |
| Natural Resources and Mining | 7,920 | 6,380 | 0.89 | 36,786 |
| Construction | 26,210 | 28,330 | 0.90 | 42,845 |
| Other Services (except Government) | 30,770 | 32,040 | 1.03 | 35,555 |
| Financial Activities | 31,670 | 33,620 | 0.82 | 42,056 |
| Government | 48,760 | 47,610 | 1.10 | 47,475 |
| Leisure and Hospitality | 66,450 | 71,250 | 0.84 | 20,262 |
| Manufacturing | 71,390 | 70,560 | 0.87 | 40,017 |
| Professional and Business Services | 94,050 | 119,110 | 0.96 | 33,711 |
| Education and Health Services | 166,750 | 186,250 | 1.06 | 43,555 |
| Trade, Transportation, and Utilities | 178,660 | 169,930 | 1.19 | 34,658 |

Source: TN Dept of Labor and Workforce Development, WIR²ED Division,
West Region Long Term Projections 2018-2028

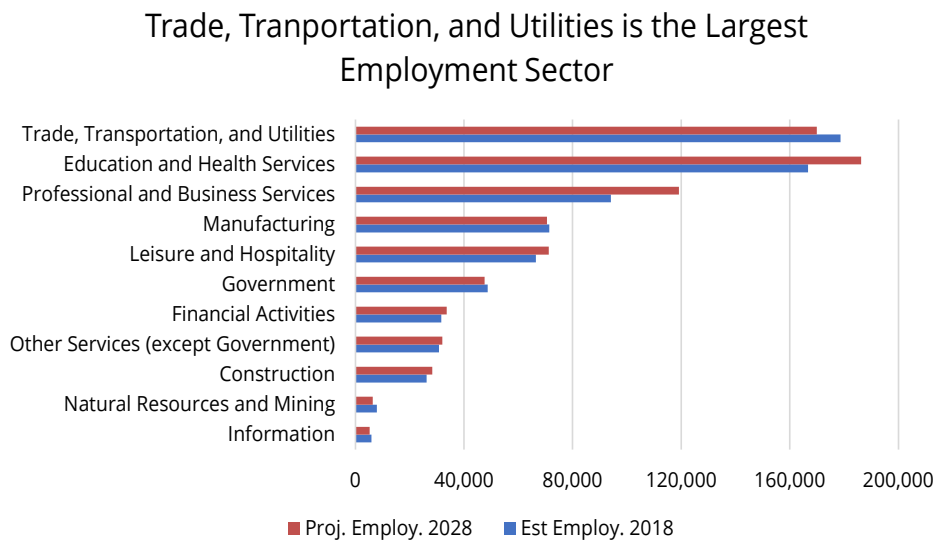


Figure 19

Source: TN Dept of Labor and Workforce Development, WIR²ED Division,
West Region Long Term Projections 2018-2028

As e-commerce continues to grow beyond the pandemic, both wholesale and retail trade will experience declining employment. However, the same trend will cause transportation and warehousing to grow and create new jobs. The second largest sector, education and health services, is expected to create nearly 20,000 new jobs, and reach total employment of more than 186,000. The most rapidly growing sector is expected to be professional and business services.

Manufacturing is expected to decline slightly. A loss of jobs in government will be due to a decline of about 1,400 jobs in the federal government and about 100 in state government, but local government jobs (excluding education and health services) are expected to increase.

Industry Specialization: Industry location quotients compare the percent of a sector’s employment to total employment in the region to the state’s percent of total employment in that sector. Location quotients greater than one indicate sector specialization in the region. As can be seen in the above table, the sectors with the highest location quotients are trade, transportation, and utilities (1.19), government (1.10), and education and health services (1.06). The Greater Memphis area is rich in water, air freight, trucking, and related transportation resources.

Emerging Industry Trends- Advanced Energy Industries Fueling Growth

A recent report¹ by the Tennessee Advanced Energy Business Council identifies industries included in the advanced energy (AE) sector in utilities and construction; manufacturing; information; professional, scientific, and technical services; and other services. Advanced energy sectors in Tennessee were found to employ 393,756 workers in 2019, a nearly 10 percent increase since 2016, and employment growth, payroll, and the number of establishments were growing faster than the state.² The report defines AE activities which include “...being directly involved with researching, developing, producing, manufacturing, distributing, selling, or implementing components, goods, or services related to alternative fuels and vehicles; energy efficiency; renewable, nuclear, and natural gas electricity generation; smart grid; and other related technologies.”³ It also includes activities supporting AE which encompass legal services, finance, consulting, and tax services. As one example, the three major automotive manufacturers in Tennessee are producing electric vehicles, creating related electric vehicle suppliers and other related industries.

Using AE industry codes identified in the report, the tables below list the largest detailed industries with positive growth in the five major industry sectors included in advanced energy and their 2018 and projected 2028 employment, location quotients, and expected annual growth rates. Some industries may be excluded due to confidentiality.

Advanced Energy- Manufacturing

Table 19: Medical Equipment and Supplies Lead in AE Manufacturing Growth

| NAICS Code | Industry Title | Est. Employ. 2018 | Proj. Employ. 2028 | Annual Growth Rate | West LQ |
|------------|---|-------------------|--------------------|--------------------|---------|
| 339100 | Medical Equipment and Supplies Manufacturing | 6,700 | 8,090 | 1.91 | 2.81 |
| 336300 | Motor Vehicle Parts Manufacturing | 4,060 | 3,550 | -1.33 | 0.38 |
| 335300 | Electrical Equipment Manufacturing | 2,430 | 2,680 | 0.97 | 2.13 |
| 324100 | Petroleum and Coal Products Manufacturing | 940 | 910 | -0.32 | 4.00 |
| 339900 | Other Miscellaneous Manufacturing | 770 | 900 | 1.56 | 0.48 |
| 333300 | Commercial and Service Industry Machinery Manufacturing | 600 | 780 | 2.62 | 1.33 |

Source: TN Dept of Labor and Workforce Development, WIR²ED Division, West Region Long Term Projections 2018-2028

¹ Tennessee Advanced Energy Business Council. *Tennessee Advanced Energy Economic Impact Report*. Knoxville: Howard Baker Jr. Center for Public Policy at the University of Tennessee, August 2021.

² Ibid, p. 7.

³ Ibid, p. 8.

Medical equipment and supplies manufacturing has a high location quotient, is an export industry, and is expected to add the most manufacturing jobs in AE. Electrical equipment manufacturing also has a higher location quotient and is expected to have job gains.

Advanced Energy- Utility and Construction

Table 20: Five AE Construction Sectors with Growth

| NAICS Code | Industry Title | Est. Employ. 2018 | Proj. Employ. 2028 | West LQ |
|------------|--|-------------------|--------------------|---------|
| 238200 | Building Equipment Contractors | 10,300 | 11,820 | 1.02 |
| 238100 | Foundation, Structure, and Building Exterior Contractors | 3,130 | 3,290 | 0.85 |
| 236200 | Nonresidential Building Construction | 2,510 | 2,560 | 0.75 |
| 238300 | Building Finishing Contractors | 2,360 | 2,250 | 0.91 |
| 236100 | Residential Building Construction | 2,170 | 2,350 | 0.74 |
| 237100 | Utility System Construction | 1,320 | 1,370 | 0.74 |

Source: TN Dept of Labor and Workforce Development, WIR²ED Division, West Region Long Term Projections 2018-2028

The construction sector in the West Region is expected to add about 2,000 new jobs over the decade, partially fueled by growth in several of the AE construction sectors, which are using new materials and construction techniques.

Advanced Energy- Professional, Scientific, and Technical Services

Table 21: Management Consulting will Add the Most New Jobs

| NAICS Code | Industry Title | Est. Employ. 2018 | Proj. Employ. 2028 | Annual Growth Rate | West LQ |
|------------|---|-------------------|--------------------|--------------------|---------|
| 541600 | Management, Scientific, and Technical Consulting Services | 7,040 | 8,930 | 2.41 | 0.96 |
| 541300 | Architectural, Engineering, and Related Services | 3,400 | 4,840 | 3.59 | 0.68 |
| 541500 | Computer Systems Design and Related Services | 2,910 | 3,670 | 2.33 | 0.60 |
| 541900 | Other Professional, Scientific, and Technical Services | 2,180 | 2,480 | 1.31 | 0.72 |
| 541700 | Scientific Research and Development Services | 600 | 810 | 3.09 | 0.32 |

Source: TN Dept of Labor and Workforce Development, WIR²ED Division, West Region Long Term Projections 2018-2028

As the pace of technology and business competitiveness increases, technical and consulting services for computer systems design, business strategies, and new engineering solutions will be sought.

Advanced Energy- Other Services

Table 22: Medical and Technological Diagnostic Services Needed

| NAICS Code | Industry Title | Est. Employ. 2018 | Proj. Employ. 2028 | Annual Growth Rate | West LQ |
|------------|---|-------------------|--------------------|--------------------|---------|
| 621500 | Medical and Diagnostic Laboratories | 1,400 | 1,710 | 2.01 | 0.82 |
| 811200 | Electronic and Precision Equipment Repair and Maintenance | 940 | 1,010 | 0.73 | 1.33 |
| 811300 | Commercial and Industrial Machinery and Equipment (except Automotive and Electronic) Repair and Maintenance | 940 | 1,060 | 1.18 | 0.92 |

Source: TN Dept of Labor and Workforce Development, WIR²ED Division, West Region Long Term Projections 2018-2028

The increased use of automation in business will require more sophisticated maintenance services.

Advanced Energy- Information

Table 23: Industry Sector Growth

| NAICS Code | Industry Title | Est. Employ. 2018 | Proj. Employ. 2028 | Annual Growth Rate | West LQ |
|------------|----------------------------|-------------------|--------------------|--------------------|---------|
| 511200 | Software Publishers | 370 | 440 | 1.57 | 0.50 |
| 519100 | Other Information Services | 270 | 190 | -3.46 | 1.33 |

Source: TN Dept of Labor and Workforce Development, WIR²ED Division, West Region Long Term Projections 2018-2028

Some growth is expected in information services, but this region does not have specialization in these industries.

The table below summarizes the number of new jobs projected for the decade ending in 2028 for the most prominent occupations in the AE industries. Additional jobs will be created in these occupations due to separations in 2018-2018.

Table 24: West Region Advanced Energy Top Occupations

| West Region - Most New Jobs in the Advanced Energy Industries | Estimated New Jobs 2018-28 |
|---|-----------------------------------|
| Advanced Energy Manufacturing | |
| Industrial Engineers | 80 |
| First-Line Supervisors of Production and Operating Workers | 50 |
| Welders, Cutters, Solderers, and Brazers | 30 |
| Advanced Energy - Professional, Scientific, and Technical Services | |
| Laborers and Freight, Stock, and Material Movers, Hand | 350 |
| Customer Service Representatives | 150 |
| Computer Systems Analysts | 130 |
| Veterinary Assistants and Laboratory Animal Caretakers | 120 |
| Civil Engineers | 110 |
| Market Research Analysts and Marketing Specialists | 100 |
| Architects, Except Landscape and Naval | 90 |
| Management Analysts | 90 |
| Veterinary Technologists and Technicians | 60 |
| Veterinarians | 60 |
| Advanced Energy - Utilities and Construction | |
| Heating, Air Conditioning, and Refrigeration Mechanics and Installers | 280 |
| Construction Laborers | 130 |
| Sheet Metal Workers | 60 |
| Helpers--Electricians | 50 |
| Roofers | 40 |
| Construction Managers | 30 |
| Advanced Energy - Other Services | |
| Clinical Laboratory Technologists and Technicians | 110 |
| Industrial Machinery Mechanics | 50 |
| Phlebotomists | 80 |
| Office and Administrative Support Occupations | 40 |
| Advanced Energy - Information Technology | |
| Computer and Mathematical Occupations | 110 |
| Management Occupations | 60 |

Source: TN Dept of Labor and Workforce Development, WIR²ED Division,
West Region Long Term Projections 2018-2028

Industries with High Location Quotients

The transportation, trade, and utilities sector is the largest employment sector in the West Region and also the sector with the highest location quotient. Detailed industries in this sector with the largest employment and expected positive growth rates are listed below.

Table 25: Couriers and Messengers has the Highest Employment and Location Quotient in TTU

| NAICS Code | Industry Title | Est. Employ. 2018 | Proj. Employ. 2028 | Annual Growth Rate | West LQ |
|------------|---|-------------------|--------------------|--------------------|---------|
| 492000 | Couriers and Messengers | 28,560 | 32,420 | 1.28 | 2.97 |
| 423000 | Merchant Wholesalers, Durable Goods | 19,160 | 19,510 | 0.18 | 1.17 |
| 484000 | Truck Transportation | 15,920 | 16,220 | 0.19 | 1.17 |
| 493000 | Warehousing and Storage | 9,470 | 11,680 | 2.13 | 1.10 |
| 444000 | Building Material and Garden Equipment and Supplies Dealers | 5,390 | 5,670 | 0.51 | 0.77 |
| 488000 | Support Activities for Transportation | 5,020 | 5,130 | 0.22 | 1.51 |
| 485000 | Transit and Ground Passenger Transportation | 2,520 | 3,050 | 1.91 | 1.50 |
| 425000 | Wholesale Electronic Markets and Agents and Brokers | 1,560 | 2,070 | 2.89 | 0.87 |

Source: TN Dept of Labor and Workforce Development, WIR²ED Division, West Region Long Term Projections 2018-2028

Appendix A, West Region lists occupations in the transportation industry for all workers and for middle skill workers which are expected to grow the fastest and have the most jobs. Some of these jobs include:

- Heavy and tractor-trailer truck drivers
- Light truck or delivery services drivers
- Industrial truck and tractor operators
- Couriers and messengers
- Dispatchers
- Cargo and freight agents
- Sales representatives, services

The industry sector with the next highest location quotient is government. The 2018 employment and expected growth over the decade is shown below

Table 26: Local and Federal Government have High Location Quotients

| NAICS Code | Industry Title | Est. Employ. 2018 | Proj. Employ. 2028 | Annual Growth Rate | West LQ |
|------------|---|-------------------|--------------------|--------------------|---------|
| 999300 | Local Government, Excluding Education and Hospitals | 31,320 | 31,740 | 0.13 | 1.17 |
| 999100 | Federal Government, Excluding Post Office | 10,820 | 9,410 | -1.39 | 1.27 |
| 999200 | State Government, Excluding Education and Hospitals | 6,620 | 6,460 | -0.23 | 0.72 |

Source: TN Dept of Labor and Workforce Development, WIR²ED Division, West Region Long Term Projections 2018-2028

Jobs in government are available in almost every occupation, given the wide range of services that are provided. Local government jobs are expected to grow slightly over the decade.

Mature Industries

Table 27: Largest Education and Health Care Industries

| NAICS Code | Industry Title | Est. Employ. 2018 | Proj. Employ. 2028 | Annual Growth Rate | West LQ |
|------------|---|-------------------|--------------------|--------------------|---------|
| 611000 | Educational Services | 63,110 | 64,940 | 0.29 | 1.04 |
| 622000 | Hospitals | 37,920 | 42,140 | 1.06 | 1.18 |
| 621000 | Ambulatory Health Care Services | 35,370 | 42,640 | 1.89 | 0.98 |
| 623000 | Nursing and Residential Care Facilities | 17,450 | 20,560 | 1.65 | 1.12 |
| 624000 | Social Assistance | 12,900 | 15,980 | 2.16 | 1.05 |

Source: TN Dept of Labor and Workforce Development, WIR²ED Division,
West Region Long Term Projections 2018-2028

Education and Health Services is the second largest employment sector in the West Region and is expected to add jobs over the decade. The region shows specialization in the hospital and nursing and residential care facilities sectors. Appendix A has additional information about fast growing jobs and those with the most openings in this sector. Occupations with the most expected openings include:

- Registered nurses
- LPNs
- Clinical laboratory technologists and technicians

Middle skill jobs with the most openings also include

- Emergency medical technicians
- Medical records and health information technicians
- Respiratory therapists

and a variety of clerical jobs including insurance claims clerks and medical secretaries. Growing educational jobs with the most openings include health specialties teachers, postsecondary and preschool teachers. Middle skill occupations include teacher assistants and substitute teachers.






Table 28: Fastest Growing Sector - Professional and Business Services

| NAICS Code | Industry Title | Est. Employ. 2018 | Proj. Employ. 2028 | Annual Growth Rate | West LQ |
|------------|--|-------------------|--------------------|--------------------|---------|
| 561300 | Employment Services | 28,780 | 41,490 | 3.73 | 1.25 |
| 541300 | Architecture, Engineering, and Related Services | 3,400 | 4,840 | 3.59 | 0.68 |
| 561600 | Investigation and Security Services | 8,300 | 11,550 | 3.36 | 1.57 |
| 541600 | Management, Scientific, and Technical Consulting Services | 7,040 | 8,930 | 2.41 | 0.96 |
| 541800 | Advertising, Public Relations, and Related Services | 1,590 | 2,000 | 2.34 | 0.95 |
| 541500 | Computer Systems Design and Related Services | 2,910 | 3,670 | 2.33 | 0.60 |
| 561100 | Office Administrative Services | 1,700 | 2,120 | 2.27 | 0.65 |
| 541200 | Accounting, Tax Preparation, Bookkeeping, and Payroll Services | 2,580 | 3,220 | 2.26 | 0.46 |
| 561700 | Services to Buildings and Dwellings | 9,810 | 11,450 | 1.56 | 0.96 |
| 561200 | Facilities Support Services | 1,590 | 1,790 | 1.23 | 1.17 |

Source: TN Dept of Labor and Workforce Development, WIR²ED Division,
West Region Long Term Projections 2018-2028

This is the most rapidly growing sector in the West Region. The industries employing more than 1,000 workers and expected to grow through 2028 are listed above. Many of these are considered AE industries. Jobs related to those industries are listed earlier in this section.

Tennessee Middle Region's Economy | 2020

| | | | |
|--|--|--|---|
|  <p>Employment</p> | <p>Total Employment</p> <p>2020: 1,343,995 -5.6% 2019: 1,423,777</p> <p>Challenge</p> | <p>New Jobs</p> <p>2020: -79,782</p> <p>2019: 45,275</p> <p>Challenge</p> | <p>MSA Employment 2019-2020</p> <p>Clarksville: -2.89% Nashville: -4.42%</p> <p>Challenge</p> |
|  <p>Employers</p> | <p>Average Number of Establishments</p> <p>2020: 73,191 4.6% 2019: 69,946</p> <p>Stronger</p> | <p>Total Wages</p> <p>2020: \$68.9 Billion 1.5% 2019: \$67.9 Billion</p> <p>Stronger</p> | <p>Counties That Increased Employment</p> <p>2020: 7 2019: 24</p> <p>Challenge</p> |
|  <p>Wages & Income</p> | <p>Average Annual Wage</p> <p>2020: \$49,724 2.9% 2019: \$47,695</p> <p>Stronger</p> | <p>Middle Median Wage</p> <p>2020: \$38,964 4.2% 2019: \$37,405</p> <p>Stronger</p> | <p>Counties That Increased Annual Wages</p> <p>2020: 36 2019: 33</p> <p>Stronger</p> |
|  <p>Labor Force & Demographics</p> | <p>Unemployment Rate</p> <p>2020: 7.1% 4.2% 2019: 2.9%</p> <p>Challenge</p> | <p>Labor Force</p> <p>2020: 1,447,185 -1.3% 2018: 1,466,858</p> <p>Challenge</p> | <p>Unemployment Rates</p> <p>Youth 2019: 9.5% With Disability, 2019: 9.3% % In Poverty, 2019: 13.1%</p> <p>Stronger</p> |
|  <p>Job Outlook</p> | <p>Ratio of Unemployed to Job Openings</p> <p>June 2020: 2.21 1.69% June 2019: 0.52</p> <p>Challenge</p> | <p>Projected Annual Growth Rate, All Occupations</p> <p>2018-2028: 1.07%</p> <p>Stronger</p> | <p>Projected Annual Avg. Job Openings</p> <p>2018-2028: 178,632</p> <p>Stronger</p> |

Workforce and Labor Force Issues in Tennessee's Middle Region

Population in the Middle Region in 2020 was estimated at 2,832,779, an increase of 1.3 percent over 2019. This is a slower rate of growth than the 2019 rate of 4.7 percent. All three LWDA's in the Middle Region increased in population: Northern Middle by 29,029, Upper Cumberland by 3,954, and Southern Middle by 2,716 people. Northern Middle LWDA had the highest percent of females in the population (51.1 percent).

The labor force participation rate in the Middle Region was 64.9 percent, which is 3.5 percentage points higher than the State's rate of 61.4 percent. Northern Middle LWDA had the highest labor force participation rate at 68.6 percent, while Upper Cumberland had the lowest at 53.6 percent. Average unemployment rates increased in all of the three LWDA's in the Middle Region, for a Middle Region average of 7.1 percent. The Southern Middle LWDA had the highest unemployment rate at 7.9 percent, 0.8 percentage points above the Middle Region and 0.4 percentage points above the State's rate of 7.5 percent.

The lowest rate of higher educational attainment (attainment of some college or more for those 25 years of age or older) is in the Upper Cumberland LWDA, with a rate of 41.4 percent compared to the Middle Region's rate of 58.1 percent and the State's rate of 55.4 percent. In the Middle Region, the greatest percentage of those with a high school degree or more (88.67) were those who identified as white. Those who identified as Hispanic or Latino only had the lowest percent at 66.1.

Poverty rates decreased in the Middle Region from 14.0 percent in 2018 to 13.1 percent in 2019. The Upper Cumberland LWDA had the highest poverty rate at 18.0 percent, which is above the Middle Region and 2.8 percentage points above the State's poverty rate of 15.2 percent. Northern Middle had the lowest poverty rate at 11.8 percent.

The percent of the unemployed with a disability in the Middle Region was 9.3 percent, 1.8 percentage points lower than the State's percent of the unemployed with a disability of 11.5 percent. The Southern Middle LWDA had the highest percentage at 11.7 percent; the Northern Middle LWDA had the lowest percentage at 8.6 percent. The percent of those not in the labor force with a disability was at 31.5 percent in the Middle Region, lower than the State's 33.7 percent. The Southern Middle LWDA had the highest percent of those not in the labor with a disability at 37.9 percent, while the Northern Middle LWDA had the lowest at 28.1 percent.

Youth unemployment for those ages 16 to 24 topped 9 percent in all three LWDA's in the Middle Region. The Upper Cumberland LWDA had the highest youth unemployment rate at 12.6 percent compared to Southern Middle LWDA at 10.1 percent and the Northern Middle LWDA at 9.0 percent. The total youth unemployment rate for the Middle Region was 9.5 percent.

Middle Tennessee Local Workforce Development Areas and Counties

Upper Cumberland Tennessee (LWDA 3)

| | |
|------------|-----------|
| Cannon | Overton |
| Clay | Pickett |
| Cumberland | Putnam |
| Dekalb | Smith |
| Fentress | Van Buren |
| Jackson | Warren |
| Macon | White |

Southern Middle Tennessee (LWDA 5)

| | |
|----------|----------|
| Bedford | Lincoln |
| Coffee | Marshall |
| Franklin | Maury |
| Giles | Moore |
| Hickman | Perry |
| Lawrence | Wayne |
| Lewis | |

Northern Middle Tennessee (LWDA 6)

| | |
|------------|------------|
| Cheatham | Rutherford |
| Davidson | Stewart |
| Dickson | Sumner |
| Houston | Trousdale |
| Humphreys | Williamson |
| Montgomery | Wilson |
| Robertson | |

Table 29: Middle Region Labor Force Data

| | Upper Cumberland LWDA | Southern Middle LWDA | Northern Middle LWDA | Middle Region | State Total |
|---|-----------------------|----------------------|----------------------|---------------|-------------|
| Total Population 2019 | 364,637 | 404,797 | 2,027,646 | 2,797,080 | 6,830,325 |
| Total Population 2020 | 368,591 | 407,513 | 2,056,675 | 2,832,779 | 6,886,834 |
| Male Population 2020 | 182,202 | 201,530 | 1,005,290 | 1,389,022 | 3,358,020 |
| Female Population 2020 | 186,389 | 205,983 | 1,051,385 | 1,443,757 | 3,528,814 |
| Labor Force Participation Rate 2018 (5-Year Estimate) | 53.4% | 57.4% | 68.4% | 64.6% | 61.2% |
| Labor Force Participation Rate 2019 (5-Year Estimate) | 53.6% | 57.9% | 68.6% | 64.9% | 61.4% |
| Annual Average Unemployment Rate 2019 Percent | 3.9% | 3.5% | 2.7% | 2.9% | 3.4% |
| Annual Average Unemployment Rate 2020 Percent | 7.2% | 7.9% | 7.0% | 7.1% | 7.5% |
| Educational Attainment 25 Years and Over (2019) Some College Or Higher - Percent | 41.4% | 44.7% | 64.4% | 58.1% | 55.4% |
| Poverty Estimate, All Ages, Percent (2019) | 18.0% | 14.3% | 11.8% | 13.1% | 15.2% |
| Percentage of Unemployed with a Disability (2019) | 10.3% | 11.7% | 8.6% | 9.3% | 11.5% |
| Percent of Those Not in the Labor Force with a Disability (2019) | 37.6% | 37.9% | 28.1% | 31.5% | 33.7% |

Source: U.S. Census, American Community Survey, 2019

Table 30: Middle Region Educational Attainment by Race, 2018

| Educational Attainment | Middle Region White Only | Middle Region Black Only | Middle Region Hispanic or Latino Only | Statewide White Only | Statewide Black Only | Statewide Hispanic or Latino Only |
|--|--------------------------|--------------------------|---------------------------------------|----------------------|----------------------|-----------------------------------|
| Population 25 years and over | 1,527,939 | 230,328 | 89,410 | 3,641,698 | 697,227 | 173,116 |
| High school graduate only | 893,398 | 143,689 | 44,726 | 2,191,041 | 457,713 | 81,607 |
| Percent high school graduate only | 58.47% | 62.38% | 50.02% | 60.17% | 65.65% | 47.14% |
| High school graduate or higher | 1,354,842 | 201,485 | 59,114 | 3,194,533 | 595,489 | 107,877 |
| Percent high school graduate or higher | 88.67% | 87.48% | 66.12% | 87.72% | 85.41% | 62.31% |
| Bachelor degree or higher | 461,444 | 57,796 | 14,388 | 1,003,492 | 137,776 | 26,270 |
| Percent bachelor degree or higher | 30.20% | 25.09% | 16.09% | 27.56% | 19.76% | 15.17% |

Source: U.S. Census Bureau, 2014-2018 American Community Survey 5-Year Estimates (2015-2019 5-Year Estimates are not available)

Table 31: Middle Region Disability Status of Those in the Labor Force, 2019

| Area | Civilian Non-institutional Population | Total Labor Force | Total Employed | Employed W Disability | Employed W/O Disability | Total Unemployed | Unemployed W Disability | Unemployed W/O Disability |
|-----------------------|---------------------------------------|-------------------|----------------|-----------------------|-------------------------|------------------|-------------------------|---------------------------|
| Upper Cumberland LWDA | 203,910 | 142,052 | 134,782 | 9,133 | 125,649 | 7,270 | 1,049 | 6,221 |
| Southern Middle LWDA | 259,971 | 190,524 | 181,392 | 11,982 | 169,410 | 9,132 | 1,589 | 7,543 |
| Northern Middle LWDA | 1,229,801 | 982,998 | 943,044 | 55,867 | 887,177 | 39,954 | 5,250 | 34,704 |
| Middle Region | 1,693,682 | 1,315,574 | 1,259,218 | 76,982 | 1,182,236 | 56,356 | 7,888 | 48,468 |
| Tennessee | 4,053,247 | 3,052,526 | 2,893,064 | 179,393 | 2,713,671 | 159,462 | 23,420 | 136,042 |

Source: U.S. Census Bureau, 2015-2019 American Community Survey 5-Year Estimates

Table 32: Middle Region Disability Status of Those Not in the Labor Force, 2019

| Area | Civilian Non-institutional Population | Total Not In Labor Force | Not in Labor Force W Disability | Not In Labor Force W/O Disability | % W Disability | % W/O Disability |
|-----------------------|---------------------------------------|--------------------------|---------------------------------|-----------------------------------|----------------|------------------|
| Upper Cumberland LWDA | 203,910 | 61,858 | 23,266 | 38,592 | 37.6% | 62.4% |
| Southern Middle LWDA | 259,971 | 69,447 | 26,302 | 43,145 | 37.9% | 62.1% |
| Northern Middle LWDA | 1,229,801 | 246,803 | 69,470 | 177,333 | 28.1% | 71.9% |
| Middle Region | 1,693,682 | 378,108 | 119,038 | 259,070 | 31.5% | 68.5% |
| Tennessee | 4,053,247 | 1,000,721 | 337,665 | 663,056 | 33.7% | 66.3% |

Source: U.S. Census Bureau, 2015-2019 American Community Survey 5-Year Estimates

Table 33: Middle Region Youth Unemployment, Ages 16-24 in 2019

| Area | Labor Force | Unemployment | Rate |
|-----------------------|-------------|--------------|-------|
| Upper Cumberland LWDA | 23,002 | 2,899 | 12.6% |
| Southern Middle LWDA | 28,172 | 2,842 | 10.1% |
| Northern Middle LWDA | 158,113 | 14,169 | 9.0% |
| Middle Region | 209,287 | 19,910 | 9.5% |

Source: U.S. Census Bureau, 2015-2019 American Community Survey, 2019, 5-year estimates

Table 34: Middle Region Annual Average Unemployment Rates, 2019 to 2020

| Area | 2020 Annual Averages | | | | 2019 Annual Averages | | | |
|---|----------------------|-------------|-----------------------------|------------------------------|----------------------|-------------|-----------------------------|------------------------------|
| | Labor Force | Employment | Unem- ployment Number | Unem- ployment Percent | Labor Force | Employment | Unem- ployment Number | Unem- ployment Percent |
| UNITED STATES | 160,742,000 | 147,795,000 | 12,947,000 | 8.1% | 163,539,000 | 157,538,000 | 6,001,000 | 3.7% |
| TENNESSEE | 3,289,426 | 3,043,894 | 245,532 | 7.5% | 3,329,279 | 3,216,916 | 112,363 | 3.4% |
| MIDDLE REGION | 1,447,185 | 1,343,995 | 103,190 | 7.1% | 1,466,858 | 1,423,777 | 43,081 | 2.9% |
| Metropolitan Statistical Areas (MSAs) | | | | | | | | |
| Clarksville, TN-KY MSA | 116,852 | 107,940 | 8,912 | 7.6% | 117,019 | 112,161 | 4,858 | 4.2% |
| Montgomery County | 86,234 | 79,666 | 6,568 | 7.6% | 86,537 | 83,283 | 3,254 | 3.8% |
| Kentucky Portion | 30,617 | 28,273 | 2,344 | 7.7% | 30,482 | 28,878 | 1,604 | 5.3% |
| Nashville-Mur- freesboro, TN MSA | 1,070,473 | 996,206 | 74,267 | 6.9% | 1,085,649 | 1,057,176 | 28,473 | 2.6% |
| Cannon County | 6,506 | 6,083 | 423 | 6.5% | 6,653 | 6,450 | 203 | 3.1% |
| Cheatham County | 21,313 | 20,113 | 1,200 | 5.6% | 21,882 | 21,308 | 574 | 2.6% |
| Davidson County | 402,058 | 369,787 | 32,271 | 8.0% | 402,736 | 392,552 | 10,184 | 2.5% |
| Dickson County | 26,354 | 24,799 | 1,555 | 5.9% | 27,132 | 26,318 | 814 | 3.0% |
| Hickman County | 11,103 | 10,458 | 645 | 5.8% | 11,425 | 11,076 | 349 | 3.1% |
| Macon County | 11,156 | 10,428 | 728 | 6.5% | 11,370 | 11,018 | 352 | 3.1% |
| Maury County | 49,915 | 45,854 | 4,061 | 8.1% | 50,244 | 48,658 | 1,586 | 3.2% |
| Robertson County | 37,300 | 35,018 | 2,282 | 6.1% | 38,227 | 37,125 | 1,102 | 2.9% |
| Rutherford County | 184,368 | 171,731 | 12,637 | 6.9% | 187,178 | 182,384 | 4,794 | 2.6% |
| Smith County | 9,259 | 8,701 | 558 | 6.0% | 9,503 | 9,218 | 285 | 3.0% |
| Sumner County | 102,069 | 95,424 | 6,645 | 6.5% | 104,025 | 101,247 | 2,778 | 2.7% |
| Trousdale County | 5,383 | 5,055 | 328 | 6.1% | 5,527 | 5,360 | 167 | 3.0% |
| Williamson County | 126,997 | 120,874 | 6,123 | 4.8% | 131,365 | 128,178 | 3,187 | 2.4% |
| Wilson County | 76,694 | 71,882 | 4,812 | 6.3% | 78,383 | 76,285 | 2,098 | 2.7% |
| Micropolitan Statistical Areas (MCSAs) | | | | | | | | |
| Cookeville | 49,398 | 46,097 | 3,301 | 6.7% | 49,746 | 47,931 | 1,815 | 3.6% |
| Jackson Co. | 4,740 | 4,363 | 377 | 8.0% | 4,670 | 4,456 | 214 | 4.6% |
| Overton Co. | 9,689 | 9,074 | 615 | 6.3% | 9,942 | 9,567 | 375 | 3.8% |
| Putnam Co. | 34,970 | 32,661 | 2,309 | 6.6% | 35,134 | 33,908 | 1,226 | 3.5% |
| Crossville (Cumber- land Co.) | 22,733 | 20,988 | 1,745 | 7.7% | 23,320 | 22,300 | 1,030 | 4.4% |
| Lawrenceburg (Law- rence Co.) | 19,092 | 17,603 | 1,489 | 7.8% | 19,195 | 18,410 | 785 | 4.1% |
| Lewisburg (Marshall Co.) | 15,374 | 13,978 | 1,396 | 9.1% | 15,766 | 15,211 | 555 | 3.5% |
| Shelbyville (Bedford Co.) | 20,956 | 19,293 | 1,663 | 7.9% | 21,082 | 20,297 | 785 | 3.7% |
| Tullahoma-Manches- ter | 49,004 | 45,249 | 3,755 | 7.7% | 49,506 | 47,873 | 1,633 | 3.3% |
| Coffee Co. | 25,612 | 23,620 | 1,992 | 7.8% | 25,665 | 24,813 | 852 | 3.3% |
| Franklin Co. | 19,782 | 18,213 | 1,569 | 7.9% | 20,218 | 19,542 | 676 | 3.3% |
| Moore Co. | 3,610 | 3,416 | 194 | 5.4% | 3,623 | 3,518 | 105 | 2.9% |

Source: TN Department of Labor and Workforce Development, WIR²ED Division, Local Area Unemployment Statistics

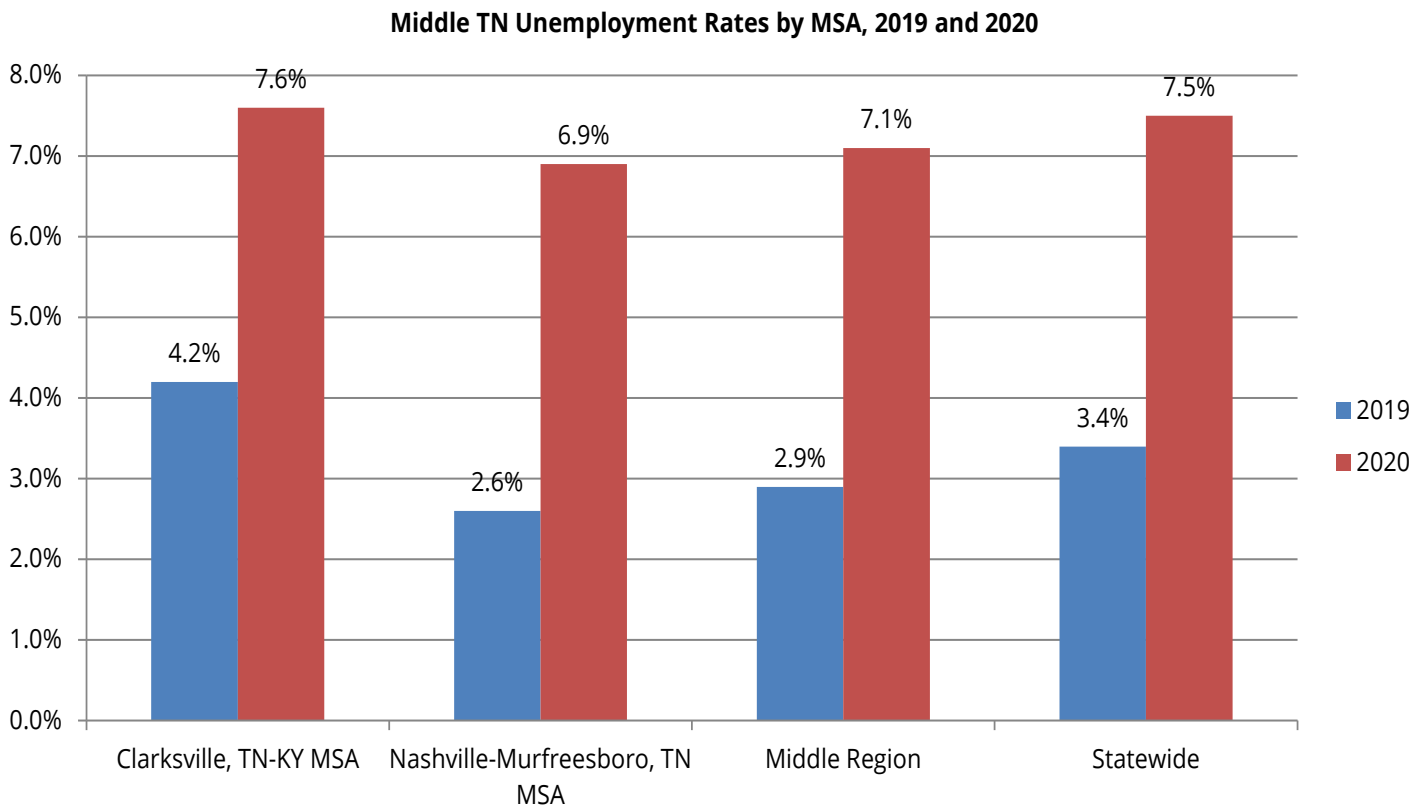
Middle Region's Unemployment Rates, 2019-2020

In 2020, the average unemployment rate in the Middle Region was 7.1 percent, which was below the state average of 7.5 percent. Of the two Metropolitan Statistical Areas in the Middle Region, the Clarksville TN-KY MSA had the higher unemployment rate at 7.6 percent in 2020. This was higher than the revised 2019 rate of 4.2 percent. The Nashville, TN MSA had an unemployment rate of 6.9 percent in 2020, up from the revised 2019 rate of 2.6 percent.

Six Micropolitan Statistical Areas are in the Middle Region. Lewisburg, TN (Lawrence County) micropolitan statistical area had the highest unemployment rate at 9.1 percent in 2020, higher than the revised 2019 rate of 3.5 percent. Cookeville, TN (Jackson County, Overton County, and Putnam County) micropolitan statistical area had the lowest unemployment rate in 2020 at 6.7 percent, higher than the revised 2019 rate of 3.6 percent.

The State of Tennessee creates a monthly report of all unemployment rates by State, Region, County, LWDA, Metropolitan Statistical Area, and Micropolitan Statistical Area called the Labor Force Estimates. This report can be found on the State's website at: <https://www.tn.gov/workforce/general-resources/major-publications0/major-publications-redirect/public-reports-redirect/labor-force-estimates.html>

The State of Tennessee also creates a monthly report that provides the nonfarm employment, long-term graphs of the unemployment, and a brief explanation for each major MSA in the Tennessee Labor Market Report. That report can be found on the State's website at: <https://www.tn.gov/workforce/general-resources/major-publications0/major-publications-redirect/public-reports-redirect/labor-market-reports.html>



Source: TN Department of Labor and Workforce Development, WIR²ED Division, Local Area Unemployment Statistics

Figure 20

Table 35: Middle Region - Significant Barriers to Employment

| | Upper Cumberland LWDA | Southern Middle LWDA | Northern Middle LWDA | Middle Region | State Total |
|--|-----------------------|----------------------|----------------------|---------------|-------------|
| Number of American Indians or Alaskan Natives alone | 1,205 | 967 | 5,515 | 7,687 | 18,189 |
| Population Ages 15-19 | 21,835 | 26,695 | 118,606 | 167,136 | 422,111 |
| Population Ages 20-24 | 22,934 | 26,367 | 134,910 | 184,211 | 458,394 |
| Population Ages 55+ | 112,202 | 128,059 | 416,687 | 656,948 | 1,784,288 |
| Number of Veterans 2020 | 25,183 | 29,912 | 132,494 | 187,589 | 456,197 |
| Number Below Poverty | 61,869 | 61,980 | 222,186 | 346,035 | 996,930 |
| Number With Disability | 30,843 | 42,428 | 204,665 | 277,936 | 737,731 |
| Number of Single Parent Families | 8,758 | 11,846 | 50,369 | 70,973 | 184,062 |
| Probationers and Parolees | 3,323 | 3,609 | 24,128 | 31,060 | 68,391 |
| Community Correction | 365 | 481 | 2,059 | 2,905 | 7,454 |
| Mental Health Court Statistics (FY 2020) | 0 | 0 | 39 | 39 | 218 |
| Limited English Speaking | 1,342 | 2,125 | 16,607 | 20,074 | 38,144 |
| *Foster Care Services - Youth Aged Out | 62 | 58 | 164 | 284 | 717 |
| Clients In Recovery Courts (2020) | 249 | 272 | 900 | 1,421 | 3,159 |
| Veterans Recovery Courts | 6 | 0 | 125 | 131 | 208 |
| In School Youth Experiencing Homelessness in 2019 | 1,129 | 70 | 8,016 | 9,215 | 17,228 |
| TANF 24 Months From Ending Total 2020 | 45 | 104 | 393 | 542 | 1,773 |
| Prison and Jail Population Total 2020 | 477 | 3,330 | 5,896 | 9,703 | 26,908 |

* Counties of commitment, not residence.

Source: Population: U.S. Census Bureau, 2015-2019 American Community Survey 5-Year Estimates.

Probationers and Parolees, Community Corrections: Dr. Mary Karpos, TN Department of Correction, Community Supervision.

Mental Health Court and Recovery Court Statistics: Rebekah Provost-Emmons, Recovery Court Administrator, Office of Criminal Justice Services, Division of Substance Abuse Services.

Limited English Speaking: U.S. Census Bureau, American Community Survey, 2019.

Foster Care Services: Dave Aguzzi, Office of Independent Living, TN Department of Children's Services.

In School Youth Experiencing Homelessness: Josh Carlson, Data Management Division, TN Department of Education.

TANF 24 Months for Ending Eligibility: Lakecia Peerson, Division of Family Assistance and Child Support, TN Department of Human Services.

Listed above are numbers of individuals with significant barriers to employment by LWDA, with region and state totals.

Middle Region's Economy, 2019-2020

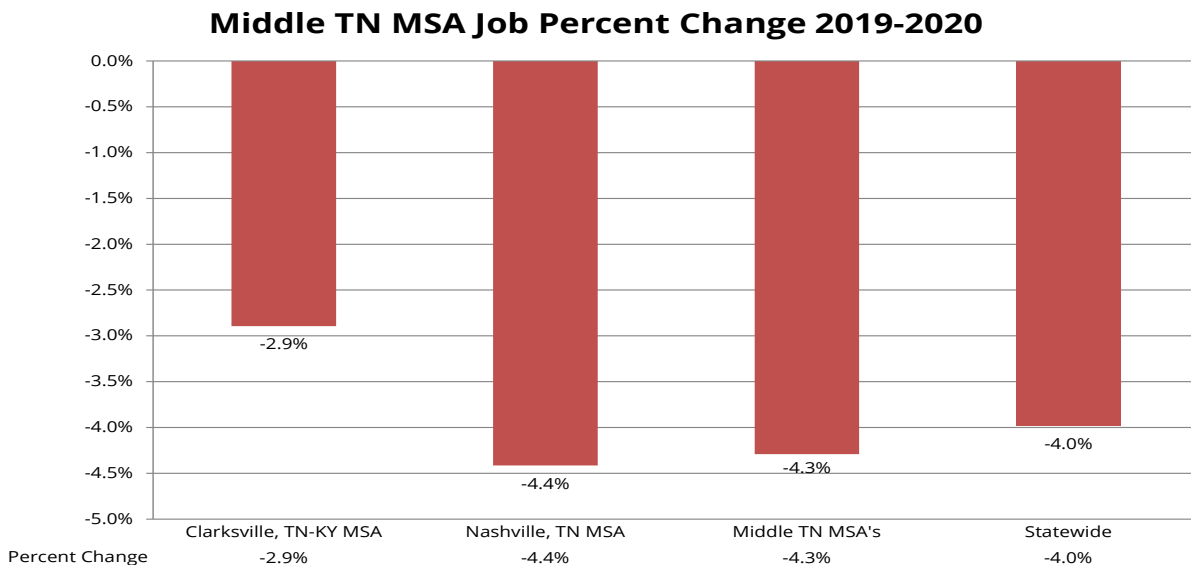
Total employment in the Middle Region, excluding agriculture and the self-employed, decreased from 1,423,777 to 1,343,995, a decrease of 5.6 percent or 79,782 jobs (see Middle Region Summary, p. 46). This rate of job growth was 1.6 faster than that of the state.

The Middle Region contains two Metropolitan Statistical Areas (MSAs), Clarksville TN-KY MSA and Nashville. The Nashville MSA had the second greatest percent decline in employment among MSAs in the state (4.4 percent); Clarksville fared much better while showing a decrease of 2.9 percent.

The Middle Region consists of three Local Workforce Development Areas and within them, 40 counties (see list p. 47). Of these, 7 counties increased employment from 2019 to 2020, fewer than in the previous year. The average number of establishments increased by 3,245 over the year and payroll increased by 1.5 percent to \$68.9 billion. Total payroll in this region accounts for over four in every ten dollars in the state.

The average annual industry wage in the region, calculated by dividing the total payroll by the average number of workers, increased by just over \$2,000 to \$49,724 in 2020, which was \$2,191 over the state average. The median occupational wage increased by 4.2 percent to \$38,964, also above the state average. With regard to the labor force, the average unemployment rate increased from 2019 to 2020 to 4.2 percent, the lowest of the three regions. The labor force decreased over the year by 1.3 percent, which tied it with the East Region for the largest loss. However, youth unemployment in 2019 (the latest available) stood at 9.5 percent, which was 1.6 percent lower than the state for the period provided. The percent of those in poverty who were unemployed that year was 13.1 percent, lower than the state rate. Also, in 2020, the number of unemployed compared to the number of job listings on the state job bank, jobs4tn.gov, was roughly two persons for each job listed.

In summary: In 2020 compared to 2019, the Middle Region saw more rapid employment losses than the state as a whole. The Nashville-Rutherford County MSA had the second most rapidly declining employment rate in the state, and the Clarksville MSA the fourth slowest. Only 7 of the 40 counties increased employment. The average annual wage and median wage were higher than the state, and this region had the second highest unemployment rate. However, in 2019 youth employment was lower than the state rate. The percent of those in poverty who were unemployed was 13.1 percent. Also, in 2020, on average, there were two unemployed persons for each job opening. The forecast for long term projections to 2028 is for an average of 178,632 job openings annually in the state.



Source: TN Department of Labor & Workforce Development, Current Employment Statistics

Figure 21

Middle Region May 2020 Occupational Employment

The office and administrative support occupational group was the largest in the Middle Region in May 2020, according to the annual Occupational Employment Survey, which provides data on all industries except agriculture, the self-employed, and a few not covered by Tennessee's unemployment insurance system. Employment was 14 percent of total employment in the region and exceeded 171,640 workers, with average entry level wages about \$2,340 more than the average for all occupations in the Region (\$23,455). Salaries of experienced workers in the group averaged \$47,219.

Other employees with greater than five percent of occupational employment in the Region included:

- Transportation and Material Moving workers- 128, 190 (10.5%)
- Food Preparation and Serving workers- 105,110 (8.6%)
- Sales and Related workers- 111,920 (9.2%)
- Production workers -95,670 (7.9%)
- Management workers-85,250- (7.0%)
- Healthcare Practitioners and Technical workers -79,770 (6.5%)
- Business and Financial Operations workers- 70,690 (5.8%)
- Education, Training, and Library workers-61,200 (5.0%)

Compared to state occupational employment, the Middle Region has a smaller percentage of transportation and material moving employees (10.5 vs. 11.2 percent) and larger proportions of management (7.0 vs. 6.3 percent) and business and financial operations employees (5.8 vs. 4.8 percent).

How different are the salaries for the employees in these occupational groups in the Middle Region compared to the state? The median annual salary for the Middle Region was 104 percent of the state median pay; that is, about four percent or \$1,500 higher per year. Several occupational groups in the Middle Region had higher median salaries than the state, notably Architecture and Engineering occupations (\$3,015 greater), and Life, Physical, and Social occupations (\$2,600 greater).

Table 36: Occupational Employment and Wage Rates (OES) for All Major Groups in the Middle Region in 2020

| Occupation | Occupation Code | Employment | Entry Level Salary | Median Salary | Experienced Salary |
|--|-----------------|------------|--------------------|---------------|--------------------|
| Total All Occupations | 000000 | 1,218,170 | \$23,455 | \$38,964 | \$62,859 |
| Architecture and Engineering | 170000 | 15,180 | \$43,891 | \$69,998 | \$89,250 |
| Arts, Design, Entertainment, Sports, and Media | 270000 | 16,380 | \$28,225 | \$49,016 | \$73,892 |
| Building and Grounds Cleaning and Maintenance | 370000 | 29,870 | \$20,247 | \$27,256 | \$34,901 |
| Business and Financial Operations | 130000 | 70,690 | \$39,743 | \$60,616 | \$79,477 |
| Community and Social Services | 210000 | 15,270 | \$29,793 | \$43,326 | \$53,656 |
| Computer and Mathematical | 150000 | 33,740 | \$44,434 | \$74,049 | \$95,242 |
| Construction and Extraction | 470000 | 43,810 | \$30,364 | \$41,135 | \$52,397 |
| Education, Training, and Library | 250000 | 61,200 | \$28,123 | \$48,118 | \$63,755 |
| Farming, Fishing, and Forestry | 450000 | 1,980 | \$22,132 | \$28,263 | \$35,692 |
| Food Preparation and Serving Related | 350000 | 105,110 | \$17,854 | \$20,693 | \$26,459 |
| Healthcare Practitioners and Technical | 290000 | 79,770 | \$37,112 | \$60,388 | \$94,585 |
| Installation, Maintenance, and Repair | 490000 | 48,120 | \$30,321 | \$45,176 | \$57,081 |
| Legal | 230000 | 8,310 | \$40,931 | \$71,837 | \$118,766 |
| Life, Physical, and Social Science | 190000 | 8,920 | \$38,260 | \$59,526 | \$82,188 |
| Management | 110000 | 85,250 | \$52,303 | \$92,831 | \$137,004 |
| Office and Administrative Support | 430000 | 171,640 | \$25,794 | \$37,311 | \$47,219 |
| Personal Care and Service | 390000 | 21,700 | \$19,093 | \$24,504 | \$33,823 |
| Production | 510000 | 95,670 | \$25,757 | \$36,219 | \$46,209 |
| Protective Service | 330000 | 27,710 | \$23,062 | \$37,489 | \$51,445 |
| Sales and Related | 410000 | 111,920 | \$20,973 | \$30,349 | \$52,658 |
| Transportation and Material Moving | 530000 | 128,190 | \$23,529 | \$32,210 | \$42,054 |

Source: TN Dept of Labor & Workforce Dev, Div Emp Sec, LMI

The median wage is estimated 50th percentile: 50 percent of workers in occupations earn less than the median wage, and 50 percent earn more than the median wage. Entry level and Experienced wage rates represent the means of the lower 1/3 and upper 2/3 of the wage distribution, respectively. Data is from an annual survey.

Targeted Industries and Occupations in the Middle Region

The Middle Region is the most rapidly growing region in the state and is expected to continue that trend, with employment growing at an annual rate of 1.07 percent. Total employment in the Middle Region in 2018 was 1,349,880 in 2018 and is projected to increase to 1,502,140 employment by 2028. Job openings will result from new job growth of 152,270 plus 1,634,060 job openings created from workers exiting the labor market or transferring into other jobs.

The table below displays base year 2018 employment and projected employment by industry sector in 2028.

Table 37: Education and Health Services is the Largest Employment Sector

| Industry Sector Title | Est. Employ. 2018 | Proj. Employ. 2028 | Middle LQ | Median Annual Wages \$ |
|--------------------------------------|-------------------|--------------------|-----------|------------------------|
| Natural Resources and Mining | 22,870 | 19,970 | 1.46 | 39,424 |
| Information | 24,400 | 28,410 | 1.53 | 56,320 |
| Construction | 53,360 | 61,850 | 1.04 | 42,986 |
| Other Services (except Government) | 53,780 | 57,860 | 1.03 | 33,322 |
| Financial Activities | 69,010 | 74,860 | 1.02 | 48,789 |
| Government | 78,750 | 82,640 | 1.01 | 47,172 |
| Manufacturing | 131,300 | 133,100 | 0.91 | 39,415 |
| Leisure and Hospitality | 143,760 | 168,200 | 1.04 | 21,346 |
| Professional and Business Services | 180,200 | 217,900 | 1.05 | 45,875 |
| Trade, Transportation, and Utilities | 241,310 | 256,200 | 0.92 | 33,268 |
| Education and Health Services | 268,400 | 312,110 | 0.98 | 44,502 |

Source: TDLWD, WIR²ED Division,

Middle Region Long Term Projections 2018-2028, and TN Middle Region Occupational Employment and Wages Survey (OEWS) 2020.

Education, Health Services Largest Sector

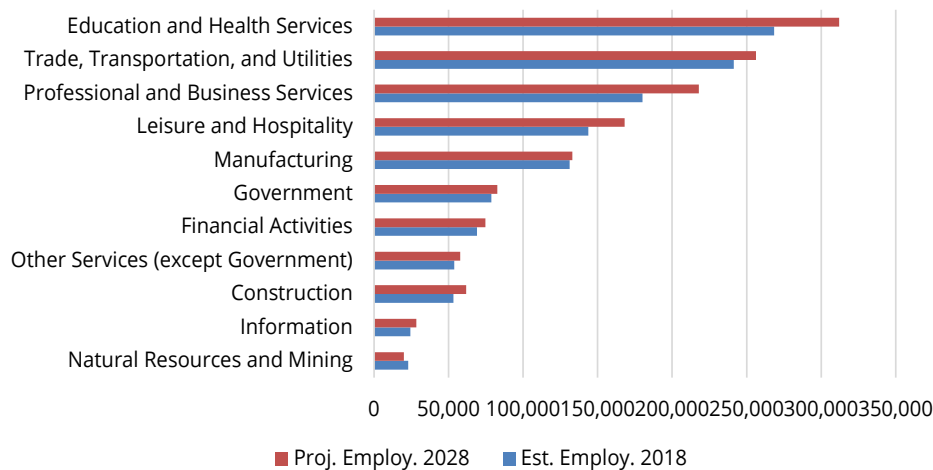


Figure 22

Source: TDLWD, WIR²ED Division,

Middle Region Long Term Projections 2018-2028, and TN Middle Region Occupational Employment and Wages Survey (OEWS) 2020.

The largest industry sectors are education and health services, expected to employ more than 310,000 people by 2028; trade, transportation, and utilities, forecast to employ 256,200; and professional and business services, with nearly 220,000 jobs projected. All three are expected to grow over the decade. The three sectors expected to grow the most rapidly include professional and business services (1.9 percent annually); leisure and hospitality (1.6 percent); and information (1.5 percent). Only natural resources and mining (which includes agriculture) is expected to decline.

Industry Specialization: Industry location quotients compare the percent of a sector's employment to total employment in the region to the state's percent of that sector's employment. Location quotients greater than one show industry specialization in the region. As shown in table 37, the industry sectors with the largest location quotients in the Middle Region are information (1.53) and natural resources and mining (1.46). As a growing metropolitan area, the region has a diverse economy with a balance of employment across many industry sectors, many of which are local serving. Professional and business services, construction, and leisure and hospitality all have location quotients greater than one, with professional and business services slightly larger.

Emerging Industry Trends- Advanced Energy Industries Fueling Growth

A recent report¹ by the Tennessee Advanced Energy Business Council identifies industries included in the advanced energy (AE) sector in utilities and construction; manufacturing; information; professional, scientific, and technical services; and other services. The study found that statewide the AE sectors employed 393,756 workers in 2019, a 9.9 percent increase since 2016, and employment growth, payroll, and the number of establishments were growing faster than the state.² The definition of AE activities in the report includes "...being directly involved with researching, developing, producing, manufacturing, distributing, selling, or implementing components, goods, or services related to alternative fuels and vehicles; energy efficiency; renewable, nuclear, and natural gas electricity generation; smart grid; and other related technologies."³ It also includes activities supporting AE which encompass legal services, finance, consulting, and tax services. All three of Tennessee's three major automotive manufacturers are producing electric vehicles, which is creating additional related electric vehicle suppliers and related industries.

The tables below list the largest detailed industries with positive growth in the five major industry sectors included in advanced energy and their 2018 and projected 2028 employment, location quotients, and expected annual growth rates. Some industries may be excluded due to confidentiality.

Advanced Energy- Information Industries

The information sector has the highest location quotient in the Middle Region. The information industries below also have high location quotients in the Middle Region and expected growth rates much higher than the average for all industries in the region. Starting at 6,510 employment in 2018, the industry sector is forecast to reach 11,790 by 2028.

¹ Tennessee Advanced Energy Business Council. *Tennessee Advanced Energy Economic Impact Report*. Knoxville: Howard Baker Jr. Center for Public Policy at the University of Tennessee, August 2021.

² Ibid, p. 7.

³ Ibid, p. 8.

Table 38: Data Processing Largest AE Information Industry

| NAICS Code | Industry Title | Est. Employ. 2018 | Proj. Employ. 2028 | Annual Growth Rate | Middle LQ |
|------------|--|-------------------|--------------------|--------------------|-----------|
| 511200 | Software Publishers | 2,020 | 5,030 | 9.54 | 1.50 |
| 518200 | Data Processing, Hosting, and Related Services | 3,980 | 5,870 | 3.96 | 1.67 |
| 519100 | Other Information Services | 480 | 870 | 6.21 | 1.33 |

Source: TDLWD, WIR²ED Division,
Middle Region Industry Employment Projections 2018-2028

Advanced Energy- Manufacturing Industries

The manufacturing industries listed below are the largest in AE employment in the Middle Region with positive growth rates expected. The growth rate for motor vehicle parts is expected to slow as electric vehicle production increases as they use fewer parts than gasoline engine vehicles. Total manufacturing employment in AE in the Middle Region was 62,590 in 2018 and expected to increase to 63,450 in 2028. Some AE manufacturing industries are expected to decline through 2028.

Table 39: Slow Growth in Motor Vehicle Parts Industry

| NAICS Code | Industry Title | Est. Employ. 2018 | Proj. Employ. 2028 | Annual Growth Rate | Middle LQ |
|------------|--|-------------------|--------------------|--------------------|-----------|
| 336300 | Motor Vehicle Parts Manufacturing | 23,710 | 24,600 | 0.37 | 1.25 |
| 339100 | Medical Equipment and Supplies Manufacturing | 1,780 | 2,310 | 2.65 | 0.42 |
| 335300 | Electrical Equipment Manufacturing | 950 | 1,130 | 1.72 | 0.47 |
| 335900 | Other Electrical Equipment and Component Manufacturing | 660 | 820 | 2.26 | 0.63 |

Source: TDLWD, WIR²ED Division,
Middle Region Industry Employment Projections 2018-2028

Advanced Energy – Utilities and Construction

Total AE employment in utilities and construction was 47,000 in 2018 and forecast to expand to 53,960 by 2028. Construction is forecast to be one of the fastest- growing industries in the Middle Region through 2028. Four of the industries have location quotients larger than 1.2, showing specialization for these industries in this region.

Table 40: High Growth Rates in AE Construction

| NAICS Code | Industry Title | Est. Employ. 2018 | Proj. Employ. 2028 | Annual Growth Rate | Middle LQ |
|------------|--|-------------------|--------------------|--------------------|-----------|
| 238200 | Building Equipment Contractors | 17,460 | 20,550 | 1.64 | 0.98 |
| 238100 | Foundation, Structure, and Building Exterior Contractors | 7,790 | 9,270 | 1.76 | 1.21 |
| 236100 | Residential Building Construction | 6,170 | 6,960 | 1.21 | 1.21 |
| 236200 | Nonresidential Building Construction | 5,080 | 5,610 | 1.00 | 0.86 |
| 238300 | Building Finishing Contractors | 4,890 | 5,470 | 1.14 | 1.06 |
| 237100 | Utility System Construction | 3,750 | 4,160 | 1.03 | 1.22 |
| 221100 | Electric Power Generation, Transmission and Distribution | 1,330 | 1,430 | 0.75 | 1.25 |

Source: TDLWD, WIR²ED Division,
Middle Region Industry Employment Projections 2018-2028

Advanced Energy- Professional Scientific and Technical Industries

Total employment in this AE sector was 43,140 in 2018 and is expected to grow rapidly to 57,950 by 2028.

Table 41: Computer Systems Design Growing 4 Times Faster than Regional Average

| NAICS Code | Industry Title | Est. Employ. 2018 | Proj. Employ. 2028 | Annual Growth Rate | Middle LQ |
|------------|---|-------------------|--------------------|--------------------|-----------|
| 541600 | Management, Scientific, and Technical Consulting Services | 15,430 | 18,410 | 1.78 | 1.20 |
| 541500 | Computer Systems Design and Related Services | 10,570 | 16,770 | 4.73 | 1.24 |
| 541300 | Architectural, Engineering, and Related Services | 9,670 | 12,580 | 2.67 | 1.11 |
| 541900 | Other Professional, Scientific, and Technical Services | 5,530 | 7,730 | 2.90 | 1.05 |
| 541700 | Scientific Research and Development Services | 1,100 | 2,030 | 6.31 | 0.32 |

Source: TDLWD, WIR²ED Division,
Middle Region Industry Employment Projections 2018-2028

Advanced Energy- Other Services

Total employment was 7070 in 2018, increasing to 8680 by 2028. Medical and diagnostic labs are needed to provide tests results for COVID-19 and other illnesses and should grow along with the health care industry.

Table 42: AE Other Services Sector Growth Industries

| NAICS Code | Industry Title | Est. Employ. 2018 | Proj. Employ. 2028 | Annual Growth Rate | Middle LQ |
|---------------|---|-------------------|--------------------|--------------------|-----------|
| 621500 | Medical and Diagnostic Laboratories | 4,200 | 5,260 | 2.28 | 1.41 |
| 81130 | Commercial and Industrial Machinery and Equipment (except Automotive and Electronic) Repair and Maintenance | 1,460 | 1,690 | 1.45 | 0.85 |
| 811200 | Electronic and Precision Equipment Repair and Maintenance | 1,410 | 1,730 | 2.08 | 1.11 |

Source: TDLWD, WIR²ED Division,
Middle Region Industry Employment Projections 2018-2028

The table below identifies top job categories projected to create new jobs in the Advanced Energy Industries by 2028. Occupations are listed if they are in the top ten in terms of new jobs to be created, or if there are not ten, jobs expected to have 30 or more openings. Some occupations are not included due to confidentiality. In addition to new jobs created in these industries, individuals transferring from these jobs and exiting the labor force altogether will create more separations openings in these occupations.

Table 43: Top Ten Job Categories in AE Professional and Technical Industries to Create More than 4,000 New Jobs by 2028

| Middle Region - Largest Occupations in the Advanced Energy Industries | Estimated New Jobs 2018-28 |
|--|----------------------------|
| Advanced Energy Manufacturing | |
| First-Line Supervisors of Production and Operating Workers | 250 |
| Industrial Engineers | 190 |
| Industrial Machinery Mechanics | 180 |
| Electrical, Electronic, and Electromechanical Assemblers, Except Coil Winders, Tapers, and Finishers | 150 |
| Welders, Cutters, Solderers, and Brazers | 130 |
| Helpers--Production Workers | 130 |
| Multiple Machine Tool Setters, Operators, and Tenders, Metal and Plastic | 120 |
| Laborers and Freight, Stock, and Material Movers, Hand | 110 |
| Dental Laboratory Technicians | 100 |
| Machinists | 100 |
| Advanced Energy - Professional, Scientific, and Technical Services | |
| Computer Systems Analysts | 830 |
| Software Developers, Systems Software | 720 |
| Computer User Support Specialists | 570 |
| Software Developers, Applications | 570 |
| Market Research Analysts and Marketing Specialists | 380 |
| Veterinary Technologists and Technicians | 360 |
| General and Operations Managers | 280 |
| Customer Service Representatives | 240 |
| Computer Programmers | 240 |
| Training and Development Specialists | 230 |

Source: TN Dept of Labor and Workforce Development, WIR²ED Division,
Middle Region LT Projections 2018-2028, industry occupation matrix

Table 43: Top Ten Job Categories in AE Professional and Technical Industries to Create More than 4,000 New Jobs by 2028 Continued

| Middle Region - Largest Occupations in the Advanced Energy Industries | Estimated New Jobs 2018-28 |
|---|-----------------------------------|
| Advanced Energy - Utilities and Construction | |
| Construction Laborers | 810 |
| Heating, Air Conditioning, and Refrigeration Mechanics and Installers | 690 |
| Electricians | 660 |
| Plumbers, Pipefitters, and Steamfitters | 510 |
| First-Line Supervisors of Construction Trades and Extraction Workers | 390 |
| Construction Managers | 280 |
| Carpenters | 250 |
| General and Operations Managers | 180 |
| Brickmasons and Blockmasons | 150 |
| First-Line Supervisors of Mechanics, Installers, and Repairers | 140 |
| Advanced Energy - Other Services | |
| Plebotomists | 90 |
| Billing and Posting Clerks | 50 |
| Bookkeeping, Accounting, and Auditing Clerks | 40 |
| Computer, Automated Teller, and Office Machine Repairers | 30 |
| Customer Service Representatives | 30 |
| Advanced Energy - Information Technology | |
| Customer Service Representatives | 620 |
| Computer User Support Specialists | 350 |
| Sales Representatives, Wholesale and Manufacturing, Technical and Scientific Products | 320 |
| General and Operations Managers | 260 |
| Software Developers, Systems Software | 220 |
| Financial Managers | 200 |
| Software Developers, Applications | 180 |
| Computer Systems Analysts | 180 |
| Market Research Analysts and Marketing Specialists | 170 |
| Packers and Packagers, Hand | 170 |

Source: TN Dept of Labor and Workforce Development, WIR²ED Division, Middle Region LT Projections 2018-2028, industry occupation matrix

Industry Sectors with Highest Location Quotients

Information

The information sector has the highest location quotient in the Middle Region (1.53), indicating specialization in this sector. The top industries in the sector employing more than 1,000 employees and expected to have positive growth rates in the next decade are listed below, with the most rapidly growing industry expected to be data processing and hosting.

Table 44: AE Information Sector Growth Industries

| NAICS Code | Industry Title | Est. Employ. 2018 | Proj. Employ. 2028 | Annual Growth Rate | Middle LQ |
|---------------|---|-------------------|--------------------|--------------------|-----------|
| 512000 | Motion Picture and Sound Recording Industries | 7,620 | 8,200 | 0.73 | 1.70 |
| 511000 | Publishing Industries (except Internet) | 5,330 | 7,320 | 3.21 | 1.43 |
| 518000 | Data Processing, Hosting and Related Services | 3,980 | 5,870 | 3.96 | 1.67 |
| 515000 | Broadcasting (except Internet) | 2,120 | 2,520 | 1.75 | 0.94 |

Source: TDLWD, WIR²ED Division,
Middle Region Industry Employment Projections 2018-2028

The number of annual average job openings in key occupations related to the information sector, along with their usual educational requirements, are listed in Appendix A. Top fast-growing information technology occupations include

- Computer user support specialists
- Software developers for applications and systems software
- Operations research analysts
- Information security analysts

Top middle skill occupations expected to grow most rapidly include computer user support specialists, computer network support specialists, and web developers.

The information sector also includes occupations in the arts, entertainment, and media. Occupations expected to have the most openings include editors, public relations specialists and producers and directors. A middle skill occupation with higher numbers of openings will be audio and video equipment technicians.

Natural Resources and Mining

Included in this sector are mining, other natural resources, and agricultural industries. with estimated employment of nearly 23,000 in 2018. However, all industries, including animal and crop production and mining, are expected to decline by 2028. The only industry expected to grow is support activities for agriculture and forestry, with a projection of 2,770 employment in 2028.

Mature Industry Sectors

The largest industry sectors in Middle Tennessee in terms of employment are Education and Health Services and Trade, Transportation, and Utilities.

Education and Health Services

These industries are the human capital cluster, acting to improve and maintain the learning capabilities and health status of the population. Education and Health Services is the largest employment sector in the Middle Region. The industries in Education Services include local and state public and private educational facilities at the preschool, elementary and secondary, and postsecondary levels. With just over 100,000 employment in 2018, it is expected to grow at about the same rate as employment in the Middle Region.

Table 45: Education and Health Services Growth Industries

| NAICS Code | Industry Title | Est. Employ. 2018 | Proj. Employ. 2028 | Annual Growth Rate | Middle LQ |
|------------|---|-------------------|--------------------|--------------------|-----------|
| 611000 | Educational Services | 104,230 | 115,510 | 1.03 | 0.98 |
| 621000 | Ambulatory Health Care Services | 62,400 | 79,320 | 2.43 | 0.98 |
| 622000 | Hospitals | 55,800 | 59,580 | 0.66 | 0.99 |
| 62300 | Nursing and Residential Care Facilities | 25,520 | 29,460 | 1.44 | 0.94 |
| 624000 | Social Assistance | 20,460 | 28,250 | 3.28 | 0.95 |

Source: TDLWD, WIR²ED Division,
Middle Region Industry Employment Projections 2018-2028

In the Middle as in the East Region, the number of employees working in ambulatory care settings such as doctors' offices and clinics outnumber those working in hospitals, and ambulatory care settings are expected to grow in employment nearly four times faster than hospitals. This should still be the case even with telemedicine expanding. As more individuals receive home and community-based care, growth will be greater in residential care facilities than nursing homes, which are seeing employment decreases.

The top fastest growing middle skill health practitioner and technical occupations include:

- Ophthalmic medical technicians
- Diagnostic medical sonographers
- Respiratory therapists
- Dental hygienists
- Veterinary technologists and technicians

The most openings for middle skill occupations are expected to be for registered nurses, LPNs, pharmacy technicians, emergency medical technicians, and dental hygienists. Fast-growing clerical occupations include medical secretaries, insurance claims clerks, and bill and account collectors. For additional detail, see Appendix A.

In educational services, the most rapidly growing occupations include preschool and self-enrichment education teachers (middle skill) as well as postsecondary business school and health specialties teachers and nursing instructors. Other needed middle skill occupations include teacher assistants and library technicians.

Trade, Transportation, and Utilities

This sector is the second largest in the Middle Region. As the region grows and consumer demand increases, particularly with online purchases, distribution facilities are expanding to meet the needs.

Warehousing and storage employment is expected to grow by nearly 10,000, and now has a location quotient showing specialization in the Middle Region. Both that industry and couriers and messengers are growing at four times the average growth rate for the region. Other fast-growing industries provide essential services, including food and beverage stores, health and personal care stores, and building materials for the many construction projects in the area.

Table 46: Trade, Transportation, and Utilities Growth Industries

| NAICS Code | Industry Title | Est. Employ. 2018 | Proj. Employ. 2028 | Annual Growth Rate | Middle LQ |
|------------|---|-------------------|--------------------|--------------------|-----------|
| 423000 | Merchant Wholesalers, Durable Goods | 26,560 | 28,080 | 0.56 | 0.93 |
| 441000 | Motor Vehicle and Parts Dealers | 19,400 | 21,200 | 0.89 | 0.99 |
| 445000 | Food and Beverage Stores | 19,340 | 22,000 | 1.30 | 0.86 |
| 484000 | Truck Transportation | 19,260 | 19,490 | 0.12 | 0.81 |
| 493000 | Warehousing and Storage | 17,580 | 27,440 | 4.55 | 1.16 |
| 424000 | Merchant Wholesalers, Nondurable Goods | 14,350 | 14,500 | 0.11 | 0.82 |
| 444000 | Building Material and Garden Equipment and Supplies Dealers | 12,930 | 14,810 | 1.37 | 1.05 |
| 446000 | Health and Personal Care Stores | 9,150 | 10,980 | 1.84 | 0.94 |
| 447000 | Gasoline Stations | 8,740 | 9,590 | 0.93 | 0.92 |
| 492000 | Couriers and Messengers | 7,840 | 11,900 | 4.27 | 0.46 |

Source: TDLWD, WIR²ED Division,
Middle Region Industry Employment Projections 2018-2028

Large and fast-growing transportation occupations are primarily middle skill, including

- Heavy and tractor-trailer truck drivers
- Light truck/delivery services drivers (projected 23 percent employment increase)
- Transportation supervisors and
- School bus drivers.

There is also increased demand for water vessel pilots.

Other middle skill occupations in the transportation sector involve clerical and recordkeeping and sales abilities. These include shipping, receiving, and traffic clerks and dispatchers, excluding fire, police, and ambulance. Fast-growing middle skill occupations in the sales area include:

- Sales representatives, services
- Sales representatives, wholesale and manufacturing, non-technical

Although the occupation of retail sales supervisors is declining, it remains the sales occupation with the most openings expected in this sector. For further information on these occupations, see Appendix A.

Fastest Growing Industry Sector- Professional and Business Services

This sector is forecast to grow at the annual rate of 1.92 percent from 2018-28, surpassing all other Middle Region industry sectors. Below are the prominent industries within this sector with more than 1000 employment and positive growth rates. All are growing more rapidly than average for the Middle Region.

Jobs in professional, scientific, and technical services in Alternative Energy were listed in an earlier table.

Table 47: Professional, Scientific, and Technical Services Industry Growing the Most Rapidly

| NAICS Code | Industry Title | Est. Employ. 2018 | Proj. Employ. 2028 | Annual Growth Rate | Middle LQ |
|------------|--|-------------------|--------------------|--------------------|-----------|
| 561000 | Administrative and Support Services | 86,200 | 97,150 | 1.20 | 0.97 |
| 541000 | Professional, Scientific, and Technical Services | 68,720 | 89,830 | 2.71 | 1.19 |
| 551000 | Management of Companies and Enterprises | 22,940 | 28,310 | 2.13 | 1.11 |
| 562000 | Waste Management and Remediation Service | 2,340 | 2,610 | 1.09 | 0.63 |






Source: TDLWD, WIR²ED Division,
Middle Region Industry Employment Projections 2018-2028

The professional and business services industries contain a wide variety of occupations- high level management occupations in the management of companies and enterprises industry (business headquarters), employment recruiters in the employer services industry, clerical and production workers in the temporary help industries, buildings and grounds workers in facilities management, and accountants and lawyers in professional services.

In the business and financial occupations category, some of the fastest-growing occupations include market research analysts and training and development specialists. Occupations with the most openings include accountants and auditors and human resource specialists. Middle skill occupations with significant numbers of openings include tax preparers.

For further information on Middle Region occupations, consult the Appendix A, Middle Region Section, and jobs4tn.gov, labor market information, occupation profiles.

Tennessee East Region's Economy | 2020

| | | | |
|--|---|--|--|
|  <p>Employment</p> | <p>Total Employment</p> <p>2020: 1,043,464 -5.0%</p> <p>2019: 1,097,887</p> <p>Challenge</p> | <p>New Jobs</p> <p>2020: -54,423</p> <p>2019: 23,580</p> <p>Challenge</p> | <p>MSA Employment 2019-2020</p> <p>Cleveland: -1.03% Johnson City: -3.44% Chattanooga: -4.04% Knoxville: -2.66%</p> <p>Challenge</p> |
|  <p>Employers</p> | <p>Average Number of Establishments</p> <p>2020: 54,190 3.1%</p> <p>2019: 52,537</p> <p>Stronger</p> | <p>Total Wages</p> <p>2020: \$48.6 Billion 2.8%</p> <p>2019: \$47.3 Billion</p> <p>Stronger</p> | <p>Counties That Increased Employment</p> <p>2020: 4</p> <p>2019: 24</p> <p>Challenge</p> |
|  <p>Wages & Income</p> | <p>Average Annual Wage</p> <p>2020: \$45,372 4.6%</p> <p>2019: \$43,383</p> <p>Stronger</p> | <p>East Median Wage</p> <p>2020: \$35,525 4.6%</p> <p>2019: \$33,974</p> <p>Stronger</p> | <p>Counties That Increased Annual Wages</p> <p>2020: 32</p> <p>2019: 30</p> <p>Stronger</p> |
|  <p>Labor Force & Demographics</p> | <p>Unemployment Rate</p> <p>2020: 7.0% 3.5%</p> <p>2019: 3.5%</p> <p>Challenge</p> | <p>Labor Force</p> <p>2020: 1,122,581 -1.3%</p> <p>2019: 1,137,700</p> <p>Challenge</p> | <p>Unemployment Rates</p> <p>Youth 2019: 10.6% With Disability, 2019: 12.7% % In Poverty, 2019: 15.7%</p> <p>Stronger</p> |
|  <p>Job Outlook</p> | <p>Ratio of Unemployed to Job Openings</p> <p>June 2020: 2.22 1.37%</p> <p>June 2019: 0.85</p> <p>Challenge</p> | <p>Projected Annual Growth Rate, All Occupations</p> <p>2018-2028: 0.76%</p> <p>Stronger</p> | <p>Projected Annual Avg. Job Openings</p> <p>2018-2028: 140,975</p> <p>Stronger</p> |

Workforce and Labor Force Issues in Tennessee's East Region

Population in the East Region in 2020 was estimated at 2,484,692, an increase of 0.87 percent over 2019. This is a slower rate of growth than the previous year's growth of 2.20 percent. All three LWDA's in the East Region increased in population. East LWDA added 11,795 people, Southeast LWDA added 8,523 people, and Northeast LWDA added 1,174 people. Females made up 51.1 percent of the population in the East Region during 2020. Southeast LWDA had the highest percent of the female population at the rate of 51.3 percent.

Labor force participation rate in the East Region was 57.8 percent, which is 3.4 percentage points lower than the State's labor force participation rate of 61.2 percent. Southeast LWDA had the highest labor force participation rate at 59.3 percent, while the Northeast LWDA had the lowest labor force participation rate at 53.9 percent. Average unemployment rates increased in all three LWDA's in the East Region, for an East Region average of 7.0 percent. The Southeast LWDA had the highest unemployment rate at 7.3 percent, 0.3 percentage points above the East Region and 0.2 percentage points below the State's rate of 7.5 percent.

The lowest rate of higher educational attainment (attainment of some college or more for those 25 years of age or higher) is in the Northeast LWDA, with a rate of 49.9 percent compared to the East Region's rate of 53.2 percent and the State's rate of 55.4 percent. In the East Region, the highest percentage of those with a high school degree or higher were those who identified as white. Those who identify as Hispanic or Latino only had the lowest percent of high school degrees or higher at 59.68 percent.

Poverty rates decreased in the East Region from 16.4 percent in 2018 to 15.7 percent in 2019. The Northeast LWDA had the highest poverty rate at 17.5 percent, above the East Region and 2.3 percentage points above the State's poverty rate of 15.2 percent. The East LWDA had a poverty rate of 15.4 percent and the Southeast LWDA had a poverty rate of 15.0 percent.

The percent of the unemployed with a disability in the East Region was 12.7 percent, 1.2 percentage points higher than the State's percent of the unemployed with a disability of 11.5 percent. The East LWDA had the highest percentage of those unemployed with a disability at 13.0 percent. The Southeast LWDA had the lowest percentage of those unemployed with a disability at 12.1 percent.

The percent of those not in the labor force with a disability was at 36.2 percent in the East Region, higher than the State's 33.7 percent of those not in the labor force with a disability. The Northeast LWDA had the highest percent of those not in the labor force with a disability at 40.5 percent, while the East LWDA had the lowest at 34.4 percent.

Youth unemployment for those ages 16 to 24 topped 10 percent in all three LWDA's in the East Region. The Northeast LWDA had the highest youth unemployment rate at 11.3 percent. Southeast LWDA had a youth unemployment rate of 11.1 and the East had a youth unemployment rate of 10.1. Only the East LWDA had a rate lower than the total youth unemployment rate for the East Region, which was 10.6 percent.

| East Tennessee Local Workforce Development Areas and Counties | |
|--|------------|
| Northeast Tennessee (LWDA 1) | |
| Carter | Johnson |
| Greene | Sullivan |
| Hancock | Unicoi |
| Hawkings | Washington |
| East Tennessee (LWDA 2) | |
| Anderson | Knox |
| Blount | Loudon |
| Campbell | Monroe |
| Claiborne | Morgan |
| Cocke | Roane |
| Grainger | Scott |
| Hamblen | Sevier |
| Jefferson | Union |
| Southeast Tennessee (LWDA 4) | |
| Bledsoe | McMinn |
| Bradley | Meigs |
| Grundy | Polk |
| Hamilton | Rhea |
| Marion | Sequatchie |

Table 48: East Region Labor Force Data

| | Northeast LWDA | East LWDA | Southeast LWDA | East Region | State Total |
|---|----------------|-----------|----------------|-------------|-------------|
| Total Population 2019 | 512,809 | 1,247,070 | 703,321 | 2,463,200 | 6,830,325 |
| Total Population 2020 | 513,983 | 1,258,865 | 711,844 | 2,484,692 | 6,886,834 |
| Male Population 2020 | 252,223 | 616,659 | 346,805 | 1,215,687 | 3,358,020 |
| Female Population 2020 | 261,760 | 642,206 | 365,039 | 1,269,005 | 3,528,814 |
| Labor Force Participation Rate 2018 (5-Year Estimate) | 53.9% | 58.8% | 59.3% | 57.8% | 61.2% |
| Labor Force Participation Rate 2019 (5-Year Estimate) | 54.1% | 58.9% | 59.4% | 58.0% | 61.4% |
| Annual Average Unemployment Rate 2019 Percent | 3.9% | 3.3% | 3.5% | 3.5% | 3.4% |
| Annual Average Unemployment Rate 2020 Percent | 7.2% | 6.8% | 7.3% | 7.0% | 7.5% |
| Educational Attainment 25 Years and Over (2019) Some College Or Higher - Percent | 49.9% | 53.6% | 55.1% | 53.2% | 55.4% |
| Poverty Estimate, All Ages, Percent (2019) | 17.5% | 15.4% | 15.0% | 15.7% | 15.2% |
| Percentage of Unemployed with a Disability (2019) | 12.6% | 13.0% | 12.1% | 12.7% | 11.5% |
| Percent of Those Not in the Labor Force with a Disability (2019) | 40.5% | 34.4% | 35.8% | 36.2% | 33.7% |

Source: U.S. Census, American Community Survey, 2019

Table 49: East Region Educational Attainment by Race, 2018

| Educational Attainment | East Region White Only | East Region Black Only | East Region Hispanic or Latino Only | Statewide White Only | Statewide Black Only | Statewide Hispanic or Latino Only |
|--|------------------------|------------------------|-------------------------------------|----------------------|----------------------|-----------------------------------|
| Population 25 years and over | 1,495,824 | 93,733 | 46,046 | 3,641,698 | 697,227 | 173,116 |
| High school graduate only | 929,927 | 63,957 | 20,504 | 2,191,041 | 457,713 | 81,607 |
| Percent high school graduate only | 62.17% | 68.23% | 44.53% | 60.17% | 65.65% | 47.14% |
| High school graduate or higher | 1,292,059 | 79,246 | 27,479 | 3,194,533 | 595,489 | 107,877 |
| Percent high school graduate or higher | 86.38% | 84.54% | 59.68% | 87.72% | 85.41% | 62.31% |
| Bachelor degree or higher | 362,132 | 15,289 | 6,975 | 1,003,492 | 137,776 | 26,270 |
| Percent bachelor degree or higher | 24.21% | 16.31% | 15.15% | 27.56% | 19.76% | 15.17% |

Source: U.S. Census Bureau, 2014-2018 American Community Survey 5-Year Estimates (2015-2019 5-Year Estimates are not available)

Table 50: East Region Disability Status of Those in the Labor Force, 2019

| Area | Civilian Non-institutional Population | Total Labor Force | Total Employed | Employed W Disability | Employed W/O Disability | Total Unemployed | Unemployed W Disability | Unemployed W/O Disability |
|----------------|---------------------------------------|-------------------|----------------|-----------------------|-------------------------|------------------|-------------------------|---------------------------|
| Northeast LWDA | 301,980 | 211,457 | 199,847 | 16,134 | 183,713 | 11,610 | 2,333 | 9,277 |
| East LWDA | 736,030 | 542,938 | 514,196 | 32,146 | 482,050 | 28,742 | 4,822 | 23,920 |
| Southeast LWDA | 393,483 | 292,064 | 276,447 | 18,637 | 257,810 | 15,617 | 2,569 | 13,048 |
| East Region | 1,431,493 | 1,046,459 | 990,490 | 66,917 | 923,573 | 55,969 | 9,724 | 46,245 |
| Tennessee | 4,053,247 | 3,052,526 | 2,893,064 | 179,393 | 2,713,671 | 159,462 | 23,420 | 136,042 |

Source: U.S. Census Bureau, 2015-2019 American Community Survey 5-Year Estimates

Table 51: East Region Disability Status of Those Not in the Labor Force, 2019

| Area | Civilian Non-institutional Population | Total Not In Labor Force | Not in Labor Force W Disability | Not In Labor Force W/O Disability | % W Disability | % W/O Disability |
|----------------|---------------------------------------|--------------------------|---------------------------------|-----------------------------------|----------------|------------------|
| Northeast LWDA | 301,980 | 90,523 | 36,620 | 53,903 | 40.5% | 59.5% |
| East LWDA | 736,030 | 193,092 | 66,352 | 126,740 | 34.4% | 65.6% |
| Southeast LWDA | 393,483 | 101,419 | 36,316 | 65,103 | 35.8% | 64.2% |
| East Region | 1,431,493 | 385,034 | 139,288 | 245,746 | 36.2% | 63.8% |
| Tennessee | 4,053,247 | 1,000,721 | 337,665 | 663,056 | 33.7% | 66.3% |

Source: U.S. Census Bureau, 2015-2019 American Community Survey 5-Year Estimates

Table 52: East Region Youth Unemployment, Ages 16-24 in 2019

| Area | Labor Force | Unemployment | Rate |
|----------------|-------------|--------------|-------|
| Northeast LWDA | 34,368 | 3,875 | 11.3% |
| East LWDA | 91,602 | 9,258 | 10.1% |
| Southeast LWDA | 44,334 | 4,943 | 11.1% |
| East Region | 170,304 | 18,076 | 10.6% |

Source: U.S. Census Bureau, 2015-2019 American Community Survey, 2019, 5-year estimates

Table 53: East Region Annual Average Unemployment Rates, 2019 to 2020

| Area | 2020 Annual Averages | | | | 2019 Annual Averages | | | |
|---|----------------------|-------------|-----------------------------|------------------------------|----------------------|-------------|-----------------------------|------------------------------|
| | Labor Force | Employment | Unem- ployment Number | Unem- ployment Percent | Labor Force | Employment | Unem- ployment Number | Unem- ployment Percent |
| UNITED STATES | 160,742,000 | 147,795,000 | 12,947,000 | 8.1% | 163,539,000 | 157,538,000 | 6,001,000 | 3.7% |
| TENNESSEE | 3,289,426 | 3,043,894 | 245,532 | 7.5% | 3,329,279 | 3,216,916 | 112,363 | 3.4% |
| EAST REGION | 1,122,581 | 1,043,464 | 79,117 | 7.0% | 1,137,700 | 1,0797,887 | 39,813 | 3.5% |
| Metropolitan Statistical Areas (MSAs) | | | | | | | | |
| Chattanooga, TN-GA MSA | 271,915 | 254,248 | 17,667 | 6.5% | 276,963 | 267,743 | 9,220 | 3.3% |
| Hamilton County | 182,352 | 169,337 | 13,015 | 7.1% | 185,057 | 179,097 | 5,960 | 3.2% |
| Marion County | 12,344 | 11,409 | 935 | 7.6% | 12,596 | 12,061 | 535 | 4.2% |
| Sequatchie County | 6,146 | 5,664 | 482 | 7.8% | 6,240 | 5,979 | 261 | 4.2% |
| Georgia Portion | 71,073 | 67,838 | 3,235 | 4.6% | 73,070 | 70,606 | 2,464 | 3.4% |
| Cleveland, TN MSA | 60,107 | 56,095 | 4,012 | 6.7% | 59,872 | 57,777 | 2,095 | 3.5% |
| Bradley County | 52,651 | 49,151 | 3,500 | 6.6% | 52,426 | 50,628 | 1,798 | 3.4% |
| Polk County | 7,455 | 6,943 | 512 | 6.9% | 7,446 | 7,149 | 297 | 4.0% |
| Johnson City, TN MSA | 90,522 | 84,426 | 6,096 | 6.7% | 92,168 | 88,764 | 3,404 | 3.7% |
| Carter County | 23,655 | 22,001 | 1,654 | 7.0% | 24,090 | 23,119 | 971 | 4.0% |
| Unicoi County | 7,083 | 6,497 | 586 | 8.3% | 7,040 | 6,690 | 350 | 4.9% |
| Washington County | 59,783 | 55,928 | 3,855 | 6.4% | 60,905 | 58,827 | 2,078 | 3.4% |
| Kingsport-Bristol, TN-VA MSA | 135,045 | 125,723 | 9,322 | 6.9% | 137,592 | 132,626 | 4,966 | 3.6% |
| Hawkins County | 23,468 | 21,663 | 1,805 | 7.7% | 23,903 | 22,924 | 979 | 4.1% |
| Sullivan County | 69,352 | 64,370 | 4,982 | 7.2% | 70,708 | 68,109 | 2,599 | 3.7% |
| Virginia Portion | 42,226 | 39,690 | 2,536 | 6.0% | 42,981 | 41,593 | 1,388 | 3.2% |
| Knoxville, TN MSA | 426,561 | 399,982 | 26,579 | 6.2% | 431,375 | 417,595 | 13,780 | 3.2% |
| Anderson County | 34,360 | 32,049 | 2,311 | 6.7% | 34,695 | 33,468 | 1,227 | 3.5% |
| Blount County | 63,505 | 59,440 | 4,065 | 6.4% | 64,072 | 62,043 | 2,029 | 3.2% |
| Campbell County | 14,717 | 13,597 | 1,120 | 7.6% | 14,869 | 14,190 | 679 | 4.6% |
| Grainger County | 9,480 | 8,793 | 687 | 7.2% | 9,550 | 9,165 | 385 | 4.0% |
| Knox County | 242,643 | 228,282 | 14,361 | 5.9% | 245,480 | 238,396 | 7,084 | 2.9% |
| Loudon County | 23,572 | 22,072 | 1,500 | 6.4% | 23,819 | 23,017 | 802 | 3.4% |
| Morgan County | 7,654 | 7,153 | 501 | 6.5% | 7,786 | 7,467 | 319 | 4.1% |
| Roane County | 23,021 | 21,508 | 1,513 | 6.6% | 23,402 | 22,457 | 945 | 4.0% |
| Union County | 7,610 | 7,088 | 522 | 6.9% | 7,703 | 7,392 | 311 | 4.0% |
| Morristown, TN MSA | 52,717 | 48,880 | 3,837 | 7.3% | 52,865 | 50,875 | 1,990 | 3.8% |
| Hamblen County | 28,020 | 26,027 | 1,993 | 7.1% | 28,171 | 27,090 | 1,081 | 3.8% |
| Jefferson County | 24,697 | 22,853 | 1,844 | 7.5% | 24,694 | 23,785 | 909 | 3.7% |
| Micropolitan Statistical Areas (MCSAs) | | | | | | | | |
| Athens (McMinn Co.) | 23,393 | 21,579 | 1,814 | 7.8% | 23,572 | 22,683 | 889 | 3.8% |
| Dayton (Rhea Co.) | 13,011 | 11,732 | 1,279 | 9.8% | 13,354 | 12,599 | 755 | 5.7% |
| Greeneville (Greene Co.) | 28,769 | 26,372 | 2,397 | 8.3% | 29,828 | 28,451 | 1,377 | 4.6% |
| Newport (Cocke Co.) | 14,713 | 13,205 | 1,508 | 10.2% | 15,024 | 14,343 | 681 | 4.5% |
| Sevierville (Sevier Co.) | 53,721 | 48,540 | 5,181 | 9.6% | 54,962 | 53,169 | 1,793 | 3.3% |

Source: TN Department of Labor and Workforce Development, WIR²ED Division, Local Area Unemployment Statistics

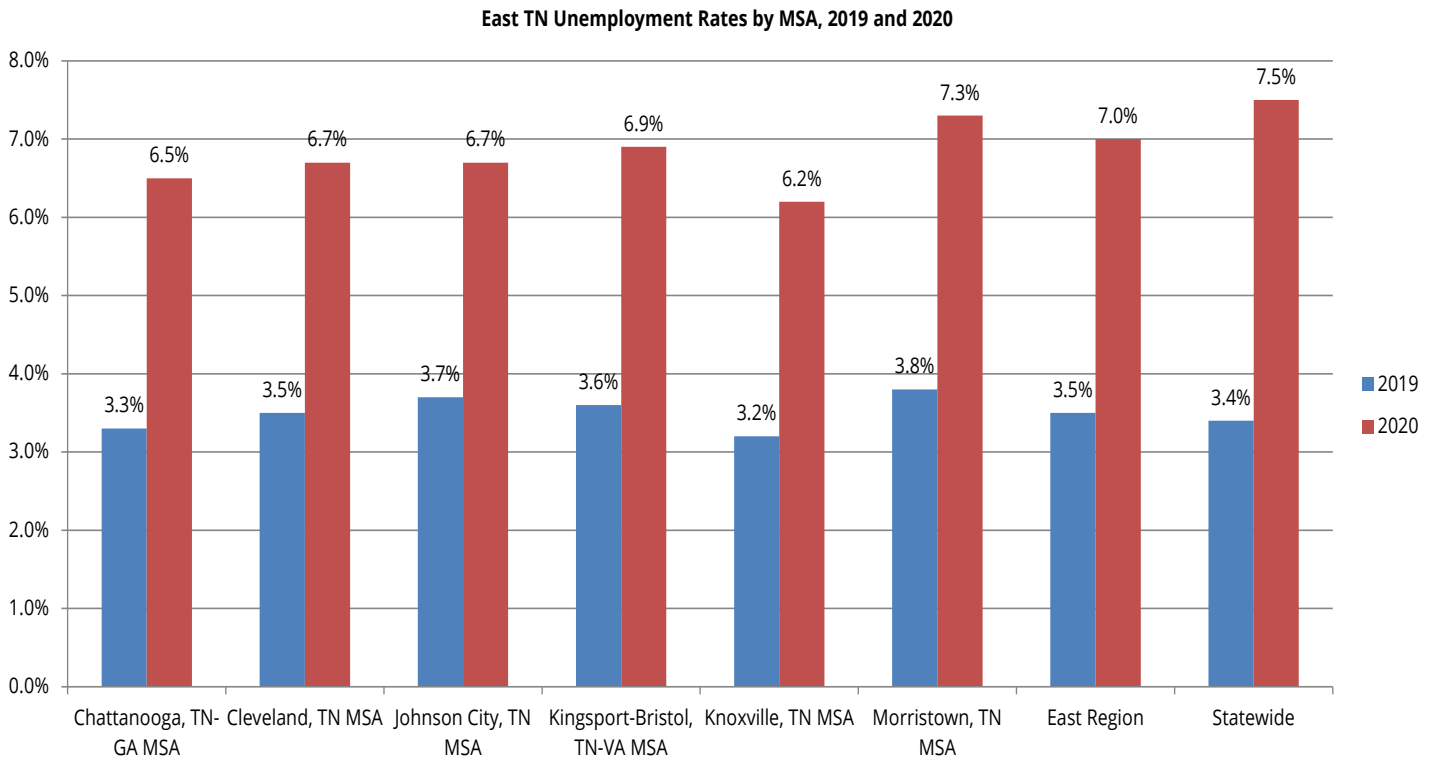
East Region's Unemployment Rates, 2019-2020

In 2020, the average unemployment rate in the East Region was 7.0 percent, which was below the state average of 7.5 percent. Of the six Metropolitan Statistical Areas in the East Region, the Morristown TN MSA had the highest unemployment rate at 7.3 percent in 2020. This was higher than the revised 2019 rate of 3.8 percent. The Knoxville, TN MSA had the lowest unemployment rate of 6.2 percent in 2020, up from the revised 2019 rate of 3.2 percent.

Five Micropolitan Statistical Areas are in the East Region. Newport, TN (Cocke County) micropolitan statistical area had the highest unemployment rate at 10.2 percent in 2020, up from the revised 2019 rate of 4.5 percent. Athens, TN (McMinn County) micropolitan statistical area had the lowest unemployment rate in 2020 at 7.8 percent, higher than the revised 2019 rate of 3.8 percent.

The State of Tennessee creates a monthly report of all unemployment rates by State, Region, County, LWDA, Metropolitan Statistical Area, and Micropolitan Statistical Area called the Labor Force Estimates. This report can be found on the State's website at: <https://www.tn.gov/workforce/general-resources/major-publications0/major-publications-redirect/public-reports-redirect/labor-force-estimates.html>

The State of Tennessee also creates a monthly report that provides the nonfarm employment, historical graphs of the unemployment, and a brief explanation for each major MSA in the Tennessee Labor Market Report. That report can be found on the State's website at: <https://www.tn.gov/workforce/general-resources/major-publications0/major-publications-redirect/public-reports-redirect/labor-market-reports.html>



Source: TN Department of Labor and Workforce Development, WIR²ED Division, Local Area Unemployment Statistics

Figure 23

Table 54: East Region - Significant Barriers to Employment

| | Northeast LWDA | East LWDA | Southeast LWDA | East Region | State Total |
|--|----------------|-----------|----------------|-------------|-------------|
| Number of American Indians or Alaskan Natives alone | 1,263 | 4,005 | 1,703 | 6,971 | 18,189 |
| Population Ages 15-19 | 30,416 | 75,339 | 39,808 | 145,563 | 422,111 |
| Population Ages 20-24 | 33,185 | 84,813 | 43,444 | 161,442 | 458,394 |
| Population Ages 55+ | 166,700 | 362,782 | 188,983 | 718,465 | 1,784,288 |
| Number of Veterans 2020 | 39,483 | 89,342 | 43,727 | 172,552 | 456,197 |
| Number Below Poverty | 86,237 | 184,750 | 95,168 | 366,155 | 996,930 |
| Number With Disability | 89,936 | 156,150 | 77,133 | 323,219 | 737,731 |
| Number of Single Parent Families | 12,631 | 28,163 | 15,845 | 56,639 | 184,062 |
| Probationers and Parolees | 5,623 | 10,935 | 4,697 | 21,255 | 68,391 |
| Community Correction | 425 | 1,460 | 525 | 2,410 | 7,454 |
| Mental Health Court Statistics (FY 2020) | 4 | 0 | 90 | 94 | 218 |
| Limited English Speaking | 829 | 5,532 | 3,069 | 9,430 | 38,144 |
| *Foster Care Services - Youth Aged Out | 44 | 153 | 69 | 266 | 717 |
| Clients In Recovery Courts (2020) | 152 | 555 | 188 | 895 | 3,159 |
| Veterans Recovery Courts | 0 | 16 | 6 | 32 | 208 |
| In School Youth Experiencing Homelessness in 2019 | 1,214 | 2,261 | 1,987 | 5,462 | 17,228 |
| TANF 24 Months From Ending Total 2020 | 106 | 261 | 171 | 538 | 1,773 |
| Prison and Jail Population Total 2020 | 2,120 | 3,208 | 2,505 | 7,833 | 26,908 |

* Counties of commitment, not residence.

Source: Population: U.S. Census Bureau, 2015-2019 American Community Survey 5-Year Estimates.

Probationers and Parolees, Community Corrections: Dr. Mary Karpos, TN Department of Correction, Community Supervision.

Mental Health Court and Recovery Court Statistics: Rebekah Provost-Emmons, Recovery Court Administrator, Office of Criminal Justice Services, Division of Substance Abuse Services.

Limited English Speaking: U.S. Census Bureau, American Community Survey, 2019.

Foster Care Services: Dave Aguzzi, Office of Independent Living, TN Department of Children's Services.

In School Youth Experiencing Homelessness: Josh Carlson, Data Management Division, TN Department of Education.

TANF 24 Months for Ending Eligibility: Lakecia Peerson, Division of Family Assistance and Child Support, TN Department of Human Services.

Listed above are numbers of individuals with significant barriers to employment by LWDA's, with region and state totals.

East Region's Economy, 2019-2020

Total employment in the East Region, excluding agriculture and the self-employed, decreased from 1,097,887 to 1,043,464, a decrease of 5.0 percent or nearly 54,420 jobs (see East Region Summary, p. 66). This rate of job loss was greater than that of the state.

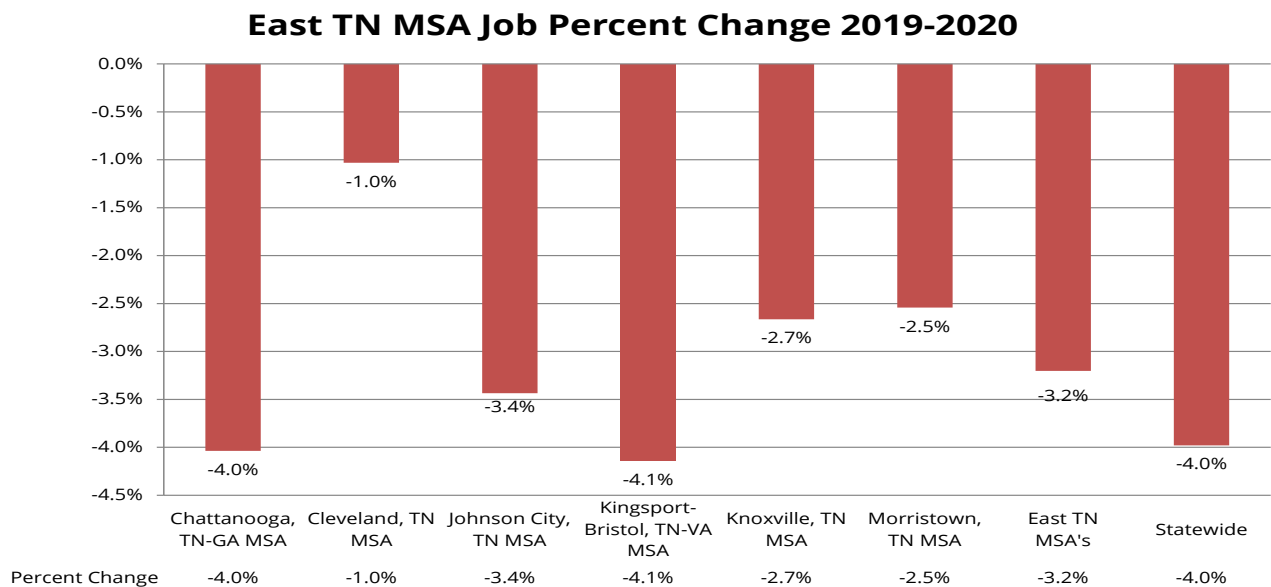
Employment in the metropolitan areas varied significantly across the region. Each of the MSA areas showed a decrease in growth rate for employment in MSAs with the decrease in the East region being -3.2 percent, near the state average, with the Kingsport-Bristol, TN-VA MSA displaying for the greatest decline at 4.1 percent.

The East Region consists of three Local Workforce Development Areas and within them, 34 counties (see list p. 67). Of these, 4 counties increased employment from 2019 to 2020, significantly less than the previous year. The average number of establishments increased by 1,653 over the year and payroll increased by 2.8 percent to \$48.6 billion. Total payroll in this region accounts for nearly one in every three dollars in the state.

The average annual industry wage in the region, calculated by dividing the total payroll by the average number of workers, increased by 4.6 percent in 2020 to \$45,372, which is \$2,000 below the state average. The median occupational wage increased by 4.6 percent to \$35,525 which is \$2,000 below the state median. Regarding the labor force, the average unemployment rate increased from 2019 to 2020 to 7.0 percent, slightly below the state average. The labor force decreased over the year by 1.3 percent, slightly faster than the state.

On a positive note, youth unemployment in 2019 (the latest available) stood at 10.6 percent, lower than the state rate of 11.1 percent. The percent of those in poverty who were unemployed that year was 15.7 percent just above the state rate of 15.2 percent. Also, in 2020, the number of unemployed compared to the number of job listings on the state job bank, jobs4tn.gov, was greater than two unemployed person for each job opening.

In summary: In 2020 compared to 2019, the East Region saw negative growth in employment, but growth rates varied by metropolitan area, with all MSA groups declining in employment. Payroll increased, slightly faster than the rest of the state. The level of the annual average wage and median wage were lower than the state; however, the average unemployment rates overall and for youth and those in poverty were similar to state levels. The number of unemployed were more than twice the number of jobs openings. The forecast for long term projections to 2026 is for an average of 140,975 job openings annually in the East Region.



Source: TN Department of Labor & Workforce Development, Current Employment Statistics

Figure 24

East Region May 2020 Occupational Employment

The office and administrative support occupational group was the largest in the East Region in May 2020, according to the annual Occupational Employment Survey, which provides data on all industries except agriculture, the self-employed, and a few not covered by Tennessee's unemployment insurance system. Employment was 14.5 percent of total employment in the region and exceeded 141,500 workers, with average entry level wages about \$2,000 more than the average for all occupations in the Region (\$23,990). Salaries of experienced workers in the group averaged \$43,344.

Other employees with greater than five percent of occupational employment in the Region included:

- Food Preparation and Serving workers- 92,750 (9.5%)
- Production workers -96,390 (9.9%)
- Sales and Related workers- 89,860 (9.2%)
- Transportation and Material Moving - 95,210 (9.4%)
- Healthcare Practitioners and Technical workers -66,460 (6.8%)
- Management workers-56,690 (5.8%)
- Education, Training, and Library workers- 49,750 (5.1%)

Compared to state occupational employment, the East Region has a lower percentage of transportation and material moving employees (9.8 percent vs. 11.4 percent) and smaller percentages of food preparation and serving and sales and related employees and a slightly higher proportion of production employees (9.9 v. 8.6 percent).

How different are the salaries for the employees in these occupational groups in the East Region compared to the state? The median annual salary for the East Region is 94 percent of the state median pay. Several occupational groups in the East have higher median salaries than the state, notably management (\$6,000 higher than the state median), office and administrative occupations (\$2,300 greater), sales and related (\$2,137 greater), and arts, design, entertainment and sports occupations (\$4,000 greater). This last category may be lower due to the lack of professional sports teams in the East Region.

Table 55: Occupational Employment and Wage Rates (OES) for All Major Groups in the East Region in 2020

| Occupation | Occupation Code | Employment | Entry Level Salary | Median Salary | Experienced Salary |
|--|-----------------|------------|--------------------|---------------|--------------------|
| Total All Occupations | 000000 | 973,270 | \$21,915 | \$35,525 | \$57,101 |
| Architecture and Engineering | 170000 | 16,510 | \$45,789 | \$77,160 | \$104,217 |
| Arts, Design, Entertainment, Sports, and Media | 270000 | 8,870 | \$24,129 | \$41,044 | \$63,131 |
| Building and Grounds Cleaning and Maintenance | 370000 | 29,050 | \$19,026 | \$24,408 | \$30,688 |
| Business and Financial Operations | 130000 | 39,210 | \$36,788 | \$58,426 | \$81,007 |
| Community and Social Services | 210000 | 12,330 | \$28,319 | \$41,239 | \$50,623 |
| Computer and Mathematical | 150000 | 17,990 | \$42,526 | \$71,348 | \$91,826 |
| Construction and Extraction | 470000 | 34,010 | \$29,021 | \$39,850 | \$51,000 |
| Education, Training, and Library | 250000 | 49,750 | \$24,751 | \$47,886 | \$62,518 |
| Farming, Fishing, and Forestry | 450000 | 1,160 | \$21,333 | \$33,118 | \$41,725 |
| Food Preparation and Serving Related | 350000 | 92,750 | \$17,789 | \$20,120 | \$24,872 |
| Healthcare Practitioners and Technical | 290000 | 66,460 | \$35,135 | \$54,679 | \$86,075 |
| Installation, Maintenance, and Repair | 490000 | 41,270 | \$29,205 | \$43,486 | \$55,475 |
| Legal | 230000 | 4,880 | \$38,109 | \$69,597 | \$106,646 |
| Life, Physical, and Social Science | 190000 | 8,470 | \$40,691 | \$64,956 | \$97,576 |
| Management | 110000 | 56,690 | \$44,039 | \$82,945 | \$126,061 |
| Office and Administrative Support | 430000 | 141,540 | \$23,990 | \$33,630 | \$43,344 |
| Personal Care and Service | 390000 | 16,850 | \$18,140 | \$23,115 | \$30,723 |
| Production | 510000 | 96,390 | \$25,278 | \$35,182 | \$45,353 |
| Protective Service | 330000 | 18,660 | \$25,178 | \$38,101 | \$50,571 |
| Sales and Related | 410000 | 89,860 | \$19,680 | \$26,296 | \$44,579 |
| Transportation and Material Moving | 530000 | 95,210 | \$21,750 | \$30,791 | \$41,095 |

Source: TN Dept of Labor & Workforce Dev, Div Emp Sec, LMI

The median wage is estimated 50th percentile: 50 percent of workers in occupations earn less than the median wage, and 50 percent earn more than the median wage. Entry level and Experienced wage rates represent the means of the lower 1/3 and upper 2/3 of the wage distribution, respectively. Data is from an annual survey.

Targeted Industries and Occupations in the East Region

Total employment in the East Region in 2018 was 1,097,460. It was projected to increase to 1,184,240 by 2028, for an annual growth rate of .76 percent. Over the decade, a total of 1,409,740 jobs were expected to be created; 86,780 new jobs and 1,322,960 from transfers and exits from occupations.

Current and projected employment by industry sector is displayed in the table below.

Table 56: Education and Health Services is the Largest Employment Sector

| Industry Sector Title | Est. Employ. 2018 | Proj. Employ. 2028 | East Location Quotient | Median Annual Wage(s) |
|--------------------------------------|-------------------|--------------------|------------------------|-----------------------|
| Information | 11,964 | 11,670 | 0.92 | 43,876 |
| Natural Resources and Mining | 14,144 | 11,985 | 1.11 | 39,649 |
| Other Services (except Government) | 40,740 | 42,372 | 0.96 | 31,811 |
| Construction | 42,404 | 47,164 | 1.02 | 41,419 |
| Financial Activities | 47,905 | 54,801 | 0.87 | 41,630 |
| Government | 61,678 | 65,102 | 0.98 | 42,076 |
| Professional and Business Services | 123,489 | 144,841 | 0.89 | 37,553 |
| Leisure and Hospitality | 125,194 | 139,748 | 1.11 | 20,373 |
| Manufacturing | 141,674 | 144,491 | 0.89 | 37,553 |
| Trade, Transportation, and Utilities | 201,372 | 204,809 | 0.94 | 31,001 |
| Education and Health Services | 223,881 | 249,947 | 1.00 | 41,024 |

Source: TN Dept of Labor and Workforce Development, WIR²ED Division, East Region Long Term Projections 2018-2028

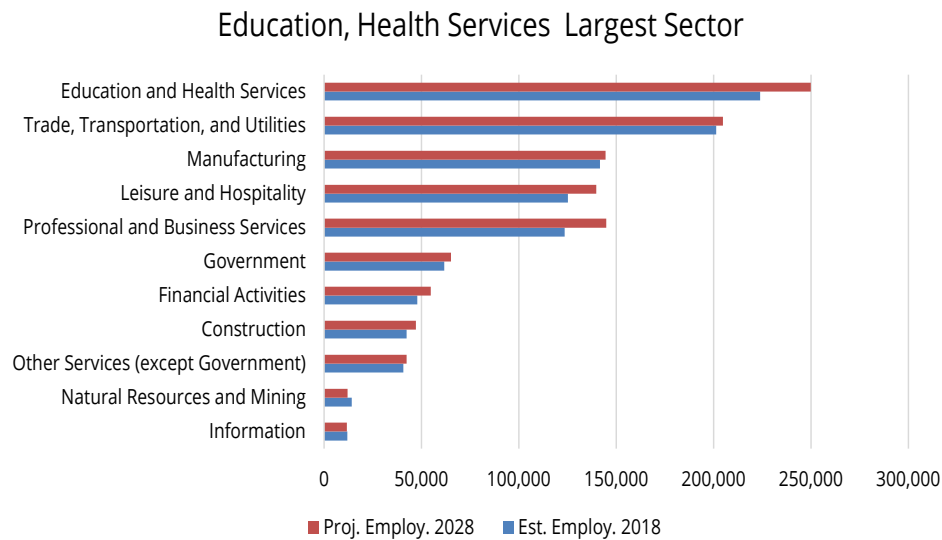


Figure 25

Source: TN Dept of Labor and Workforce Development, WIR²ED Division, East Region Long Term Projections 2018-2028

The largest sectors are education and health services, expected to employ nearly 250,000 people in 2028; trade, transportation, and utilities, expected to employ nearly 205,000, and manufacturing, with expected employment of nearly 145,000. All three sectors are expected to experience growth over the decade. The most rapidly- growing sectors are expected to be business and professional services (annual growth of 1.6 percent), financial activities (1.4 percent), and education and health services (1.1 percent).

Industry Specialization: Industry location quotients compare the percent of a sector’s employment to total employment in the region to the state percent of that sector’s employment in the state. Location quotients greater than one indicate industry sector specialization in the region. As can be seen in table 56, the industry sectors with the largest location quotients in the East Region are manufacturing (1.21), natural resources and mining (1.11), and leisure and hospitality (1.11). A location quotient of 1.2 or greater identifies the sector as an export industry sector.

A recent report¹ by the Tennessee Advanced Energy Business Council identifies industries included in the advanced energy (AE) sector in utilities and construction; manufacturing; information; professional, scientific, and technical services; and other services. Statewide, the study found that the AE sectors in the state employed 393,756 workers in 2019, a 9.9 percent increase since 2016, with employment growth, payroll, and the number of establishments growing faster than that of the state.² AE activities include “...being directly involved with researching, developing, producing, manufacturing, distributing, selling, or implementing components, goods, or services related to alternative fuels and vehicles; energy efficiency; renewable, nuclear, and natural gas electricity generation; smart grid; and other related technologies.”³ It also includes activities supporting AE such as legal services, finance, consulting, and tax services. Notable in Tennessee are Tennessee’s three major automotive manufacturers who are all producing electric vehicles, which is creating additional related electric vehicle suppliers and related industries.

A list of the manufacturing industries included in advanced energy manufacturing is included in the report. Total employment in the East Region in AE manufacturing is projected to increase from 46,050 to 49,220 in 2028. Some of the largest industries in AE manufacturing in the East Region that are growing are:

Table 57: Motor Vehicle Parts Top Industry

| NAICS Code | East LQ | Industry Title | Est. 2018 Employment | Proj. 2028 Employment |
|------------|---------|--|----------------------|-----------------------|
| 336300 | 1.19 | Motor Vehicle Parts Manufacturing | 18,410 | 19,160 |
| 336600 | 2.45 | Ship and Building | 2,970 | 3,310 |
| 336200 | 2.43 | Motor Vehicle Body and Trailer Manufacturing | 1,830 | 1,990 |
| 331500 | 1.60 | Foundries | 1,710 | 1,850 |
| 336400 | 2.00 | Aerospace Product and Parts Manufacturing | 1,590 | 1,610 |
| 339100 | 0.45 | Medical Equipment and Supplies Manufacturing | 1,550 | 1,890 |

Source: TN Dept of Labor and Workforce Development, WIR²ED Division, East Region Long Term Projections 2018-2028

¹ Tennessee Advanced Energy Business Council. *Tennessee Advanced Energy Economic Impact Report*. Knoxville: Howard Baker Jr. Center for Public Policy at the University of Tennessee, August 2021.

² Ibid, p. 7.

³ Ibid, p. 8.

High Location Quotient- Natural Resources and Mining Sector:

This sector includes mining, other natural resources, and agricultural industries. Total employment for these combined industries was estimated to be 14,140 in 2018. Although some industries have a location quotient greater than 1, there are no industries with more than 1,000 employment that have a positive projected growth rate. Agricultural industries projected to decline.

High Location Quotient- Leisure and Hospitality Sector:

This sector included an estimated 125,190 workers in 2018 and is projected to increase to 139,750 workers by 2028. The industries listed below have location quotients greater than 1.00, indicating industry specialization in the East Region. The median wage for all industries in amusement and recreation in the East Region in 2020 was \$20,373, making the industry a less attractive target for workforce services. The average statewide wage for the museums, historical sites, and similar institutions was \$40,040 in the last quarter of 2020, however. Employment in the amusement and recreation and museums, historical sites, and similar institutions is expected to grow more rapidly than the East Region's employment.

Table 58: Leisure and Hospitality Expecting Growth

| NAICS Code | Industry Title | Est. Employ. 2018 | Proj. Employ. 2028 | Annual Growth Rate | East LQ |
|------------|---|-------------------|--------------------|--------------------|---------|
| 713 | Amusement, Gambling, and Recreation Industries | 10,640 | 12,050 | 1.25 | 1.37 |
| 712 | Museums, Historical Sites, and Similar Institutions | 1,930 | 2,380 | 2.13 | 1.29 |
| 721 | Accommodation, including Hotels and Motels | 14,690 | 15,550 | 0.57 | 1.18 |

Source: TN Dept of Labor and Workforce Development, WIR²ED Division,
East Region Long Term Projections 2018-2028

Other Advanced Energy Sectors- Utilities and Construction and Information

Total employment in the East Region in the AE utility and construction industries was 36,770 in 2018 and expected to grow to 40,550 by 2028. The industries with the highest location quotients and positive growth rates include nonresidential building and other heavy and civil engineering construction. The table below displays industries in utilities and construction in the AE cluster with more than 1,000 employment and positive growth rates. Several have expected growth rates nearly double the average for all industries in the East Region.

Table 59: AE Construction Industries Experiencing Growth

| NAICS Code | East LQ | Industry Title | Est. 2018 Employment | Proj. 2028 Employment | Ann. Avg. Growth Rate |
|------------|---------|--|----------------------|-----------------------|-----------------------|
| 236100 | 0.95 | Residential Building Construction | 3,960 | 4,250 | 0.73 |
| 236200 | 1.32 | Nonresidential Building Construction | 6,330 | 6,410 | 0.13 |
| 237100 | 0.96 | Utility System Construction | 2,380 | 2,790 | 1.64 |
| 238100 | 0.83 | Foundation, Structure, and Building Exterior Contractors | 4,340 | 4,910 | 1.22 |
| 238200 | 1.00 | Building Equipment Contractors | 14,410 | 16,540 | 1.39 |
| 238300 | 1.00 | Building Fishing Contractors | 3,740 | 3,950 | 0.56 |

Source: TN Dept of Labor and Workforce Development, WIR²ED Division, East Region Long Term Projections 2018-2028

The advanced energy information sector is not as strong in the East Region. Software publishers, however, are expected to add employment more than twice as fast as the average for all industries.

Advanced Energy- Professional, Scientific, and Technical Services

This is one of the East Region's most rapidly growing sectors, with employment of 29, 890 in 2018 which is expected to increase to 37, 220 in 2028. The professional, scientific, and technical services industry (NAICS 541) is especially strong in this region, with two industries having location quotients greater than 1.1.

Table 60: AE Professional, Scientific, Technical Industries will Grow Rapidly

| NAICS Code | Industry Title | Est. Employ. 2018 | Proj. Employ. 2028 | Annual Growth Rate | East LQ |
|------------|---|-------------------|--------------------|--------------------|---------|
| 541500 | Computer Systems Design and Related Services | 4,160 | 5,850 | 3.47 | 0.60 |
| 541600 | Management, Scientific, and Technical Consulting Services | 6,360 | 9,810 | 4.43 | 0.61 |
| 541700 | Scientific Research and Development Services | 6,210 | 7,400 | 1.77 | 2.28 |
| 541900 | Other Professional, Scientific, and Technical Services | 5,010 | 6,120 | 2.04 | 1.18 |

Source: TN Dept of Labor and Workforce Development, WIR²ED Division, East Region Long Term Projections 2018-2028

Advanced Energy- Other Services

AE other services includes the important industries of medical and diagnostic laboratories and commercial and industrial machinery and repair, both with more than 1,000 employment in 2018. Total employment in AE other services was 4,490 in 2018, expected to grow to 5,100 in 2028, a growth rate nearly twice that of the average for the East Region (note that base and projected numbers were before rounding).

Table 61: AE Other Services Sector Growth Industries

| NAICS Code | Industry Title | Est. Employ. 2018 | Proj. Employ. 2028 | Annual Growth Rate | East LQ |
|---------------|---|-------------------|--------------------|--------------------|---------|
| 621500 | Medical and Diagnostic Laboratories | 1,580 | 1,890 | 1.79 | 0.64 |
| 81130 | Commercial and Industrial Machinery and Equipment (except Automotive and Electronic) Repair and Maintenance | 1,810 | 2,020 | 1.11 | 1.23 |

Source: TN Dept of Labor and Workforce Development, WIR²ED Division, East Region Long Term Projections 2018-2028

Table 62: East Region - Largest AE Occupations

| East Region - Largest Occupations in the Advanced Energy Industries | Estimated New Jobs 2018-28 |
|--|----------------------------|
| Advanced Energy Manufacturing - Top 10 Occupations | |
| Welders, Cutters, Solders, and Brazers | 80 |
| Maintenance and Repair Workers, General | 70 |
| Industrial Engineers | 70 |
| First-Line Supervisors of Production and Operating Workers | 70 |
| Multiple Machine Tool Setters, Operators, and Tenders, Metal and Plastic | 60 |
| Dental Laboratory Technicians | 60 |
| Electrical, Electronic, and Electromechanical Assemblers, Except Coil Winders, Tapers, and Finishers | 60 |
| Mechanical Engineers | 40 |
| Helpers--Production Workers | 40 |
| Laborers and Freight, Stock, and Material Movers, Hand | 40 |
| Advanced Energy - Professional, Scientific, and Technical Services | |
| Veterinary Assistant and Laboratory Animal Caretakers | 370 |
| Computer User Support Specialists | 280 |
| Software Developers, Applications | 260 |
| General and Operations Managers | 240 |
| Veterinarians | 180 |
| Computer Systems Analysts | 180 |
| Software Developers, Systems Software | 170 |
| Laborers and Freight, Stock, and Material Movers, Hand | 160 |
| First-Line Supervisors of Office and Administrative Support Workers | 150 |
| Customer Service Representatives | 130 |

Source: TN Dept of Labor and Workforce Development, WIR²ED Division, East Region Long Term Projections 2018-2028

Table 62: East Region - Largest AE Occupations Continued

| East Region - Largest Occupations in the Advanced Energy Industries | Estimated New Jobs 2018-28 |
|--|-----------------------------------|
| Advanced Energy - Utilities and Construction | |
| Heating, Air Conditioning, and Refrigeration Mechanics and Installers | 350 |
| Construction Laborers | 280 |
| Plumbers, Pipefitters, and Steamfitters | 280 |
| First-Line Supervisors of Construction Trades and Extraction Workers | 210 |
| Construction Managers | 110 |
| First-Line Supervisors of Mechanics, Installers, and Repairers | 90 |
| Carpenters | 90 |
| General and Operations Managers | 60 |
| Helpers--Electricians | 60 |
| Electrical Power-Line Installers and Repairers | 60 |
| Advanced Energy - Other Services | |
| Clinical Laboratory Technologists and Technicians | 110 |
| Industrial Machinery Mechanics | 50 |

Source: TN Dept of Labor and Workforce Development, WIR²ED Division,
East Region Long Term Projections 2018-2028

In addition to new jobs created in these industries, individuals transferring from these jobs and exiting the labor force altogether will create more openings in these occupations.

Mature Industry Sectors

- Health Care, Education, and Social Assistance, the human capital cluster, is the largest employment sector in the East Region, with total employment of 223,880 in 2018 and an expected 249,950 employment in 2028. The largest 3 digit industries are displayed below. Only the hospital sector is expected to decrease in size but will still employ nearly 42,000 persons. Notably, ambulatory care (outpatient) services are expected to grow more than three times faster than overall employment in the region and employ more than 70,000 people by 2028.
- The largest employers in educational services include local education and colleges and universities. In 623000, growth is occurring in assisted living and residential care facilities; in social assistance, in child care, and in individual and family services. The services provided by these employers will be essential in increasing the labor force participation rate in the East Region.

Table 63: Educational and Health Services Growth Industries

| NAICS Code | Industry Title | Est. Employ. 2018 | Proj. Employ. 2028 | Annual Growth Rate | East LQ |
|-------------------|---|--------------------------|---------------------------|---------------------------|----------------|
| 611000 | Educational Services | 87,010 | 90,180 | 0.36 | 1.01 |
| 62100 | Ambulatory Health Care Services | 54,490 | 70,330 | 2.59 | 1.06 |
| 62000 | Hospitals | 42,970 | 41,990 | -0.23 | 0.94 |
| 62300 | Nursing and Residential Care Facilities | 23,040 | 26,110 | 1.26 | 1.04 |
| 62400 | Social Assistance | 16,380 | 21,327 | 2.67 | 0.93 |

Source: TN Dept of Labor and Workforce Development, WIR²ED Division,
East Region Long Term Projections 2018-2028

Occupations in Health Services

Four of the five occupations expected to grow the most rapidly in health care/veterinary care require master's or doctoral degrees (See Appendix Table A). The fastest-growing middle skill occupations, requiring an associate's degree or less education, include dental hygienist, psychiatric technicians, ophthalmic medical technicians, and medical records and health information technicians. The five middle skill occupations expected to have the most openings, are registered nurses, emergency medical technicians, pharmacy technicians, licensed practical nurses, and medical records and health information technicians. Due to the pandemic, in August 2021 there were a total of 5,266 job openings listed for registered nurses in the three LWDA's which make up the East Region.

Thousands of openings for middle skill workers exist in clerical occupations in the health services; some of the fastest-growing occupations include billing and posting clerks, insurance claims and policy processing clerks, medical secretaries, and receptionists. Secretaries and administrative assistants are expected to have more than 1,800 openings, with nearly 1,400 for bookkeeping and accounting clerks.

Occupations in Educational Services

Educational services include all institutions from local education agencies to four-year colleges and universities, public and private. The occupations expected to grow the most rapidly are:

- Postsecondary business teachers
- Postsecondary nursing instructors and teachers
- Criminal justice and law enforcement teachers, postsecondary
- Preschool teachers

Business administration continues to be one of the most popular majors at higher educational institutions. With the expanding need for registered nurses and related occupations, having more nursing instructors will be vital in reducing nursing shortages. In order for more women to re-enter the labor force, more preschools will need to reopen and hire teachers. Preschool teachers are also one of the top five occupations with the most openings in education services. Other occupations in the top five with the most openings in educational services include elementary, middle school, and secondary school teachers, with an expected 700, 310, and 480 annual openings, respectively. For middle school occupations, teacher assistants are expected to have 890 openings annually.

Trade, Transportation, and Utilities- This sector is the second largest employment sector in the East Region, employing 201,370 in 2018 and expected to increase slightly to 2014, 810 in 2028, below the average rate of employment growth in the East Region.

Both wholesale and retail trade are expected to decline in employment from 2018 to 2028, whereas the transportation and warehousing industries are expected to grow at a rapid pace. Only the four wholesale and retail industries listed in the table below (with more than 1,000 employment) are expected to have positive growth rates, including durable goods wholesalers (who sell automobiles) and building material and garden equipment dealers, responding to the housing and construction expansion. The most rapid growth rate is in the warehousing and storage industry, which is forecast to add nearly 6,000 new jobs over the decade. Truck transportation is also one of the fastest growing industries with a location quotient showing specialization in the East Region.

Table 64: Trade, Transportation, and Utilities Growth Industries

| NAICS Code | Industry Title | Est. Employ. 2018 | Proj. Employ. 2028 | Annual Growth Rate | East LQ |
|------------|---|-------------------|--------------------|--------------------|---------|
| 423000 | Merchant Wholesalers, Durable Goods | 19,010 | 19,980 | 0.50 | 0.82 |
| 425000 | Wholesale Electronic Markets and Agents and Brokers | 2,600 | 2,780 | 0.66 | 1.06 |
| 444000 | Building Material and Garden Equipment and Supplies Dealers | 10,830 | 12,010 | 1.03 | 1.09 |
| 447000 | Gasoline Stations | 9,490 | 10,380 | 0.90 | 1.21 |
| 480000 | Transportation and Warehousing | 47,130 | 59,240 | 2.31 | 0.79 |
| 484000 | Truck Transportation | 22,220 | 27,810 | 2.27 | 1.14 |
| 485000 | Transit and Ground Passenger Transportation | 1,930 | 1,940 | 0.03 | 0.82 |
| 492000 | Couriers and Messengers | 4,270 | 4,910 | 1.41 | 0.31 |
| 493000 | Warehousing and Storage | 9,700 | 15,450 | 4.76 | 0.79 |

Source: TN Dept of Labor and Workforce Development, WIR²ED Division,
East Region Long Term Projections 2018-2028

Occupations in Trade, Transportation, and Utilities

Occupations in this industry sector, all middle skill occupations, expected to have the most annual openings include:

- First-line supervisors of transportation and material moving workers
- Bus drivers, school or special client
- Driver/sales workers
- Heavy and tractor-trailer truck drivers (3,670 annual openings)

First-line supervisors of transportation and material moving workers and tractor-trailer truck drivers are among the top five fastest-growing occupations in this industry sector. Other fast-growing occupations with more than 50 annual openings include dispatchers, except police, fire, and ambulance; and reservation and transportation ticket agents and travel clerks.

Among retail and wholesale sales occupations, the number of supervisors of retail sales workers is expected to decline, but still will have the most annual openings (1,510). Other occupations among those with the most openings include wholesale and manufacturing sales representatives for technical and scientific products (400 annual openings) and sales representatives for non-technical products (610 openings).

Most Rapidly Growing Sectors

- Professional and Business Services
- Financial Activities

The professional, scientific, and technical sector is forecast to be the most rapidly growing of all the industry sectors in the East Region, increasing from 2018 employment of 123,490 to expected employment of 144,840 in 2028. The employment and growth in the professional, scientific, and technical services sector has already been discussed; most of that employment is included in the AE sector. The remaining employment in this sector is expected to top 95,000 by 2028. All industries shown below are growing faster than average; management of companies and administrative support services at twice the average rate. The largest industries in the administrative and support group include employment services, services to buildings and dwellings, and business support services.

Table 65: Professional and Business Services Growth Industries

| NAICS Code | Industry Title | Est. Employ. 2018 | Proj. Employ. 2028 | Annual Growth Rate | East LQ |
|------------|---|-------------------|--------------------|--------------------|---------|
| 551000 | Management of Companies and Enterprises | 16,230 | 18,670 | 1.41 | 0.97 |
| 561000 | Administrative and Support Services | 63,650 | 73,470 | 1.44 | 0.88 |
| 562000 | Waste Management and Remediation Services | 3,260 | 3,650 | 1.14 | 1.11 |

Source: TN Dept of Labor and Workforce Development, WIR²ED Division, East Region Long Term Projections 2018-2028

Occupations in the Professional and Business Services Sector

Among the fastest-growing occupations in the professional and business services sector are

- Management analysts
- Meeting, convention, and event planners
- Market research analysts and marketing specialists
- Personal financial planners
- Tax preparers

Accountants and auditors and human resources specialists were expected to have the most annual openings. Middle skill occupations with the most openings include claims adjusters, examiners, and investigators and tax preparers.

The professional and technical sector includes a wide variety of professional services such as legal, accounting, architectural and engineering, computer design, management consulting, and research and development services; as well as management of companies, and administrative support services such as temporary help firms. Consequently, it includes significant employment in most of the occupational categories, from occupations requiring graduate degrees to those requiring less than a high school degree.

Financial Activities

The second-fastest growing industry sector in the East Region is financial activities. Employment in the securities and commodities contracts industries is growing four times as fast as the average for the region. Insurance carriers and those involved in real estate also expected to grow at a pace faster than average.

Table 66: Financial Industries Growing Faster than Average

| NAICS Code | Industry Title | Est. Employ. 2018 | Proj. Employ. 2028 | Annual Growth Rate | East LQ |
|------------|---|-------------------|--------------------|--------------------|---------|
| 522000 | Credit Intermediation and Related Activities | 20,150 | 22,610 | 1.16 | 1.12 |
| 523000 | Securities, Commodity Contracts, and Other Financial Investments and Related Activities | 1,610 | 2,140 | 2.89 | 0.47 |
| 524000 | Insurance Carriers and Related Activities | 15,160 | 17,890 | 1.67 | 0.77 |
| 531000 | Real Estate | 7,200 | 8,240 | 1.35 | 0.80 |

Source: TN Dept of Labor and Workforce Development, WIR²ED Division,
East Region Long Term Projections 2018-2028

Occupations in the Financial Activities Sector

Some of the most rapidly- growing occupations in the financial activities sector include

- Financial analysts
- Personal financial advisors
- Loan officers
- Tax preparers
- Securities, commodities, and financial services sales agents

with the most openings for accountants and auditors, financial analysts, credit counselors, loan officers, and tax preparers. Claims adjusters and tax preparers are occupations at the middle skill level. Clerical occupations growing rapidly and requiring less than a bachelor's degree include office supervisors (1,400 annual openings expected), insurance claims and policy processing clerks, and loan interviewers and clerks.

Workforce Strategies: The Need for Supportive Services

Successful completion of workforce and educational programs may depend on one or more supportive services being available and accessible to participants. A recent study¹ reviewed available data on the need for services and identified resources which could be used to expand them for participants.

Studies of job training programs have shown significant increases in earnings after program completion. In the WIA dislocated worker program, Maxwell et. al. (2012)² found women's wages to be 37 percent higher than those not receiving training a year after training completion. A study of six skills training programs in the industry sectors of health care, manufacturing, paralegal and information technology³ showed hourly earnings increasing, on average 30 percent, over the period of 12 months before training to 24 months after training. Participants worked more hours and were paid more per hour.

But these benefits cannot be realized if participants do not complete programs. A Social Policy Research Associates study found three in ten women (and a similar proportion of men) who were in a WIA-funded training program in Program Year 2013 exited and did not complete the program. Another study of first-time students enrolled in 2003 seeking certificates in postsecondary schools found 1 out of 3 exited the programs without a credential within six years. Shedding some light on potential reasons, a 2017 report⁴ found community college students with significant challenges: two-thirds were food insecure, about half were housing insecure, and about 14 percent were homeless. These conditions can affect their program completion, as well as short-term and long-term health. Other needs they experience include lack of childcare and reliable transportation.

There is evidence that supportive services can improve program success. The IWPR research cites the Mathematica study that 82 percent of women in the dislocated worker program receiving support services, compared to 70 percent with no services, were employed 12 months after leaving the program and earning more. Access to more than one service can increase success. More research is required to better identify the greatest needs.

To provide more comprehensive support, more funding sources need to be tapped. Besides WIOA funds, other funding sources used by states have included Temporary Assistance for Needy Families (TANF), Supplemental Nutrition Assistance Program Employment and Training (SNAP E&T), SNAP "50-50" funds, U.S. DOL Strengthening Working Families Initiatives, the Child Care and Development Fund (CCDF), and private funding. Program models implementing these sources, such as pathway programs with enhanced support services and integrated case management and service delivery are described in the IWPR report.

¹ Hess, C., Mayayeva, Y., Reichlin, L. & Thakur, M. (August 2020). *Supportive Services in Job Training and Education: A Research Review*. Institute for Women's Policy Research: Washington, D.C. www.iwpr.org

<https://iwpr.org/iwpr-issues/employment-and-earnings/supportive-services-in-job-training-and-education-a-research-review/>

² Maxwell, N., Hock, H., Verbitsky-Savitz, N. & Reed, D. (2012). *How are Women Served by the WIA Adult and Dislocated Worker Programs? Findings from Administrative Data*. Mathematica.

<http://www.mathematica-mpr.com/~media/publications/pdfs/labor/womenservedwia.pdf>

³ Roder, A. (2008). *Targeting Industries, Training Workers, and Improving Opportunities*. Philadelphia, Pa: Public/Private Ventures.

<https://www.issuelab.org/resource/>

[targeting_industries_training_workers_and_improving_opportunities_the_final_report_from_the_sectoral_employment_initiative/](https://www.issuelab.org/resource/targeting_industries_training_workers_and_improving_opportunities_the_final_report_from_the_sectoral_employment_initiative/)

⁴ Goldrick-Rab, S., Richardson, J., & Hernandez, A. (2017). *Hungry and homeless in college: Results of a national study of basic needs insecurity in higher education*. Wisconsin Hope Lab website:

<https://hope4college.com/wp-content/uploads/2018/09/Hungry-and-Homeless-in-College-Report.pdf>

Apprenticeship

In July 2019, Tennessee's Labor and Workforce Development Department received an Apprenticeship State Expansion grant in the amount of \$4.2 million dollars. This grant provided the opportunity for the state to establish an Apprenticeship Office under the Workforce Services Division. In September 2019 the state apprenticeship director was hired and charged with building a cross- functional team focused on growing the number of apprentices across the state including increasing the number of newly created Registered Apprenticeship Programs (RAP) and developing talent pipelines via pre-apprenticeship programs as a dependable workforce strategy for Tennessee employers. The Office is focused on the expansion and creation of both traditional and nontraditional apprenticeship occupations and increasing the diversity of the participants.

Under the newly formed Apprenticeship Office, ApprenticeshipTN emerged. ApprenticeshipTN is a statewide initiative powered by the Tennessee Workforce Development System (TWDS) to create a greater awareness of apprenticeship opportunities for employers and workers in every area of Tennessee. Under the direction set by Governor Bill Lee, TWDS creates a pathway to shared resources between agencies. The partnership allows Tennessee to more efficiently increase the number of RAPs and apprentices, helping bridge the skilled labor gap in the state. The TWDS is a consortium of seven state agencies working together to bolster the number of apprenticeships in Tennessee. The Department of Labor and Workforce Development, Tennessee College System, Tennessee Higher Education Commission, Department of Education, Department of Economic and Community Development, Department of Human Services, and Department of Correction each play a critical role in the ApprenticeshipTN program.

Earlier this year a Memo of Understanding (MOU) was signed with the U.S Department of Labor to allow the state to access the providers and training program data from the unified Apprenticeship reporting system to provide easier access to this data and better develop relationship with all users.

For the calendar year 2020, data on apprenticeship completers in Tennessee were obtained from Workforce Services Apprenticeship Office. Tables 40-42 include the names of apprenticeship sponsors with completers in 2020 in the East, Middle, and West Regions of Tennessee, who are also identified by county. Table 43 lists the apprenticeship occupations which had completers in calendar Year 2020. Compared to 2019, this year had 138 more apprenticeship completers, for a total of 981. Forty-four unique occupations had completers in 2020, although some occupations differ from previous years. Occupations in 2020 which did not have completers in 2019 were the following:

- Boiler Maker
- Cable Splicer
- Office Manager/Admin Services

As in the previous year, the largest number of completers are in the East Region, with 57 % of the completers. However, the West Region had a strong year increasing the number of completers by 7.3%, finishing the year with 16.6% of the overall completers. The Middle Region had 26% of the total completers.

Table 67: Registered Apprenticeship Sponsors with Completers 2020 East Region

| Registered Apprenticeship Sponsors | County | LWDA | Completers |
|--|---------------|------------------|-------------------|
| Baldor Electric Company | Hawkins | Northeast | 1 |
| Mountain Electric Cooperative | Johnson | Northeast | 4 |
| Eastman Chemical Co. - Coal Gas Division | Sullivan | Northeast | 8 |
| Eastman Chemical Co. - TN Operations | Sullivan | Northeast | 147 |
| Massey Electric, In. #2 | Sullivan | Northeast | 3 |
| Northeast State Community College/Rcam | Sullivan | Northeast | 9 |
| Primester | Sullivan | Northeast | 3 |
| AO Smith | Washington | Northeast | 5 |
| Plumber and Pipefitters, Local Union 538 JATC | Washington | Northeast | 3 |
| Total Northeast LWDA | -- | Northeast | 183 |
| Consolidated Nuclear Security, LLC | Anderson | East | 4 |
| Eagle Bend Manufacturing | Anderson | East | 2 |
| Oak Ridge Electric JATC | Anderson | East | 15 |
| Massey Electric #1 | Blount | East | 15 |
| Tennessee Valley Youth Apprenticeships | Blount | East | 1 |
| Walters State Community College | Hamblen | East | 6 |
| Electrician Training Academy Knoxville | Knox | East | 23 |
| Knoxville Ironworkers JAC | Knox | East | 18 |
| Knoxville Laborers JATC | Knox | East | 29 |
| Knoxville Plumbers & Steamfitters JATC | Knox | East | 28 |
| Knoxville Plumbing Heating Air Conditioning Cont. | Knox | East | 5 |
| Resource Valley | Knox | East | 36 |
| Shoffnerkalthoff, Mes. | Knox | East | 11 |
| Dienamic Tooling System Inc. | Roane | East | 2 |
| Total East LWDA | -- | East | 195 |
| Chattanooga Electrical JATC | Hamilton | Southeast | 82 |
| Chattanooga Ironworkers JAC | Hamilton | Southeast | 7 |
| Chattanooga State Community College | Hamilton | Southeast | 3 |
| Tennessee Carpenters Regional Council JATC | Hamilton | Southeast | 55 |
| Ua Local 43 Plumbers Steamfitters JATC | Hamilton | Southeast | 26 |
| ABB | McMinn | Southeast | 3 |
| E&E Manufacturing of Tennessee LLC | McMinn | Southeast | 5 |
| Operating Engineers Local No. 917 Apprenticeship & | McMinn | Southeast | 1 |
| Total Southeast LWDA | -- | Southeast | 182 |
| Grand Total For East Region | -- | -- | 560 |

Source: Office of Apprenticeship, Employment and Training Administration, U.S. Department of Labor

Table 68: Registered Apprenticeship Sponsors with Completers 2020 Middle Region

| Apprenticeship Sponsors | County | LWDA | Completers |
|---|---------------|------------------------|-------------------|
| Spring Hill Manufacturing (Saturn Corporation) | Maury | Southern Middle | 8 |
| Total Southern Middle LWDA | -- | Southern Middle | 8 |
| ABEC Electric Company, LLC | Davidson | Northern Middle | 14 |
| Boilermakers S A J A C | Davidson | Northern Middle | 88 |
| Elevator Constructors Local 93 | Davidson | Northern Middle | 29 |
| Fast Electrical Contractors, Inc. | Davidson | Northern Middle | 2 |
| Harlan Electric | Davidson | Northern Middle | 2 |
| Heat & Frost Insulators Local #86 JATC | Davidson | Northern Middle | 2 |
| John Bouchard & Sons Co. | Davidson | Northern Middle | 2 |
| Messer Construction Co. | Davidson | Northern Middle | 2 |
| Nashville Electrical Service | Davidson | Northern Middle | 25 |
| Nashville Electrical JATC | Davidson | Northern Middle | 3 |
| Nashville Ironworkers | Davidson | Northern Middle | 16 |
| Nashville Plumbers and Pipefitters | Davidson | Northern Middle | 23 |
| Nashville Sheetmetal JATC | Davidson | Northern Middle | 15 |
| Nashville Community College | Davidson | Northern Middle | 6 |
| Stansell Electric Apprenticeship Training Program | Davidson | Northern Middle | 9 |
| Travis Electric Co. | Davidson | Northern Middle | 1 |
| Cumberland Electric Membership Corporation | Montgomery | Northern Middle | 2 |
| Hatch Stamping Company | Robertson | Northern Middle | 2 |
| Middle Tennessee Electric Membership Cor. | Rutherford | Northern Middle | 1 |
| North American Stamping Group | Sumner | Northern Middle | 5 |
| Lee Company | Williamson | Northern Middle | 2 |
| Total Northern Middle LWDA | -- | Northern Middle | 251 |
| Grand Total For Middle Region | -- | -- | 259 |

Source: Office of Apprenticeship, Employment and Training Administration, U.S. Department of Labor

Table 69: Registered Apprenticeship Sponsors with Completers 2020 West Region

| Apprenticeship Sponsors | County | LWDA | Completers |
|---|---------------|------------------------|-------------------|
| Southwest Tennessee EMC | Haywood | Southwest | 6 |
| Arj Manufacturing | Madison | Southwest | 1 |
| Delta Electrical, Inc. | Madison | Southwest | 11 |
| Total Southwest LWDA | -- | Southwest | 18 |
| Amtek | Dyer | Northwest | 5 |
| Total Northwest LWDA | -- | Northwest | 5 |
| Chickasaw Electric Cooperative | Fayette | Greater Memphis | 1 |
| Divine Electrical, Inc. | Shelby | Greater Memphis | 2 |
| Federal Correctional Institute | Shelby | Greater Memphis | 1 |
| G.I. Apprentice Inc. | Shelby | Greater Memphis | 2 |
| International Union of Elevator Constructors Local | Shelby | Greater Memphis | 3 |
| Memphis Asbestors JAC | Shelby | Greater Memphis | 1 |
| Memphis Electrical JATC | Shelby | Greater Memphis | 31 |
| Memphis Ironworkers JATC | Shelby | Greater Memphis | 5 |
| Memphis, Light, Gas, and Water | Shelby | Greater Memphis | 23 |
| Memphis Plumbers JAC | Shelby | Greater Memphis | 8 |
| Memphis Sheet Metal Workers JAC | Shelby | Greater Memphis | 4 |
| Mid South Independent Electrical Contrac. | Shelby | Greater Memphis | 33 |
| Steamfitters Local Union 614 Join Apprenticeship Training Program | Shelby | Greater Memphis | 20 |
| West TN Associated Builders & Contractor | Shelby | Greater Memphis | 1 |
| Y & W Technologies | Shelby | Greater Memphis | 4 |
| Total Greater Memphis LWDA | -- | Greater Memphis | 139 |
| Grand Total For West Region | -- | -- | 162 |

Source: Office of Apprenticeship, Employment and Training Administration, U.S. Department of Labor

Table 70: Apprentice Completers 2020 by Job Title and Workforce Development Area

| Occupational Job Titles of Training Completers | Totals | NE LWDA | East LWDA | SE LWDA | UC LWDA | SM LWDA | NM LWDA | SW LWDA | NW LWDA | GM LWDA |
|---|---------------|----------------|------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| Application Developer | 5 | | | | | | 5 | | | |
| Boilermaker I | 88 | | | | | | 88 | | | |
| Cable Splicer | 1 | | | | | | | | | 1 |
| Carpenter | 41 | | 1 | 38 | | | 2 | | | |
| Chemical Laboratory Technician | 22 | 22 | | | | | | | | |
| Chemical Operator III | 80 | 80 | | | | | | | | |
| Composite Plastic Fabricator | 3 | | | | | | 2 | | | 1 |
| Construction Craft Laborer | 29 | | 29 | | | | | | | |
| Electric Meter Repairer | 4 | | | | | | 1 | | | 3 |
| Electrician | 2 | | | | | | | | | 2 |
| Electrician | 320 | 3 | 99 | 82 | | 8 | 45 | 11 | 5 | 67 |
| Electrician, Maintenance | 3 | | | 3 | | | | | | |
| Electrician, Powerhouse | 1 | | | | | | | | | 1 |
| Electrician, Substation | 8 | | | | | | | | | 8 |
| Electromechanical Technician | 24 | 24 | | | | | | | | |
| Elevator Constructor | 32 | | | | | | 29 | | | 3 |
| Environmental Control Syst. Instal/Services (HVAC) | 1 | | | | | | | | | 1 |
| Heating & Air-Conditioner Install/Service | 1 | | | | | | | | | 1 |
| Heating, Ventilation, Air Conditioning (| 1 | | 1 | | | | | | | |
| Industrial Manufacturing Technician | 10 | 7 | | 3 | | | | | | |
| IT Generalist | 1 | | 1 | | | | | | | |
| Line Erector | 1 | | | | | | 1 | | | |
| Line Installer-Repairer | 31 | 4 | | | | | 13 | 6 | | 8 |
| Machinist | 4 | 4 | | | | | | | | |
| Maintenance Mechanic (Any Industry) | 2 | | | | | | | | | 2 |
| Maintenance Repairer, Industrial | 10 | 8 | 2 | | | | | | | |
| Mechanical Engineering Technician | 1 | | | | | | 1 | | | |
| Mechatronics Technician | 2 | 2 | | | | | | | | |
| Medical Assistant | 6 | | 6 | | | | | | | |
| Metal Fabricators | 4 | 4 | | | | | | | | |
| Millwright | 17 | | | 17 | | | | | | |
| Office Manager/Admin Services | 2 | | | | | | | | | 2 |
| Operating Engineer | 1 | | | 1 | | | | | | |
| Pipe Fitter (Construction) | 94 | 3 | 30 | 20 | | | 21 | | | 20 |
| Plater | 4 | | | | | | | | | 4 |
| Plumber | 24 | | 6 | 6 | | | 4 | | | 8 |
| Power-Plant Operator | 8 | 8 | | | | | | | | |
| Refinery Operator | 8 | 8 | | | | | | | | |
| Sheet Metal Worker | 19 | | | | | | 15 | | | 4 |
| Structural Steel Worker | 46 | | 18 | 7 | | | 16 | | | 5 |
| Tool and Die Maker | 15 | | 2 | 5 | | | 7 | 1 | | |
| Transformer Repairer | 1 | | | | | | | | | 1 |
| Wast Treatment Operator | 3 | | | | | | | | | 3 |
| Wastewater-Treatment - Plant Operator | 1 | 1 | | | | | | | | |
| Totals for LWDA | 981 | 183 | 195 | 182 | 0 | 8 | 251 | 18 | 5 | 139 |

Conclusion

2020 was a very stressful year for Tennesseans, filled with economic uncertainty. The economic effects of the COVID-19 pandemic were so significant that they caused a national recession. At the same time, actions were taken by the federal government to provide stimulus payments to individuals and to expand unemployment insurance. Unemployment rates climbed to 15.8 percent and lines at many food banks were long.

As economic stimulus funds started to reach individuals and other mitigation strategies for COVID were put in place, the unemployment rate declined to 9.6 in May and finally fell to 5.6 in December. However, over the year the labor force declined by 1.2 percent, with parents, especially women, dropping out of the labor force as home responsibilities increased. Vaccines began distribution in the first months of 2021, finally providing some protections for essential workers.

Consumption patterns for consumers have changed during the pandemic- increased use of e-commerce, more work at home, reduced business travel, and increased technology in every area. The questions that remain are: which of these patterns will persist in the next few years? Which consumption and lifestyle patterns will change? What policies will be needed to fill labor force shortages? What role will growth in the advanced energy industries have on employment overall? Can the pandemic be better controlled? The answers to these questions will determine much about the future of employment in Tennessee in the next years and beyond.

Appendix A

Table A1: West Region Top Occupations

| SOC Code | Occupation Title | 2018 Employ. | 2028 Proj. | Change 2028-2018 | % Change | Ann. Total Openings | Educ. Level | Fastest Growth | Fast Growth Middle Skill Occup. | Most Openings | Most Openings Middle Skill Occ. |
|----------|---|--------------|------------|------------------|----------|---------------------|-------------|----------------|---------------------------------|---------------|---------------------------------|
| | Trade, Transportation, Utilities- Transportation and Material Moving | | | | | | | | | | |
| 537062 | Laborers and Freight Stock, and Material Movers, Hand | 38,430 | 44,200 | 5,780 | 15.03% | 6,320 | NFC | X | X | X | X |
| 533032 | Heavy and Tractor-Trailer Truck Drivers | 18,670 | 19,690 | 1,020 | 5.47% | 2,280 | PS | | | X | X |
| 537064 | Packers and Packagers, Hand | 5,680 | 6,010 | 330 | 5.79% | 880 | NFC | | | X | X |
| 533033 | Light Truck or Delivery Services Drivers | 7,050 | 7,420 | 370 | 5.23% | 860 | HS | | | X | X |
| 537051 | Industrial Truck and Tractor Operators | 5,340 | 6,390 | 1,060 | 19.76% | 770 | NFC | X | X | X | X |
| 533041 | Taxi Drivers and Chauffers | 1,640 | 2,140 | 500 | 30.73% | 250 | NFC | X | X | | |
| 533099 | Motor Vehicle Operators, All Other | 260 | 300 | 40 | 14.39% | 50 | NFC | X | X | | |
| 535021 | Captains, Mates, and Pilots of Water Vessels | 260 | 290 | 30 | 10.04% | 30 | PS | X | X | | |
| | Trade, Transportation, Utilities- Clerical and Information | | | | | | | | | | |
| 435032 | Dispatchers, Except Police, Fire, and Ambulance | 1,370 | 1,410 | 50 | 3.37% | 140 | HS | | X | | X |
| 435021 | Couriers and Messengers | 770 | 950 | 180 | 23.29% | 100 | HS | | X | | X |
| 535011 | Cargo and Freight Agents | 530 | 590 | 60 | 11.72% | 60 | HS | | X | | X |
| 434181 | Reservation and Transportation Ticket Agents and Travel Clerks | 240 | 270 | 30 | 11.57% | 30 | HS | | X | | X |
| | Trade, Transportation, Utilities- Sales | | | | | | | | | | |
| 413099 | Sales Representatives, Services, All Other | 4,490 | 4,940 | 452 | 10.06% | 640 | HS | X | X | X | X |
| 414011 | Sales Representatives, Wholesale and Manufacturing, Technical and Scientific Products | 2,110 | 2,410 | 300 | 14.20% | 270 | BA | X | | X | |
| 413041 | Travel Agents | 180 | 200 | 18 | 10.06% | 30 | HS | X | X | X | X |
| 419031 | Sales Engineers | 230 | 250 | 24 | 10.53% | 30 | BA | X | | X | |

Education Level Key: HS High School diploma or equivalent; PS Post Secondary non-degree award; AA Associate's degree; BA Bachelor's degree; MA Master's degree; D/P Doctoral or professional degree

Source: TN Dept of Labor and Workforce Development, WIR²ED Division, West Region LT Employment Projections 2018-2028, Jobs4tn.gov

Table A1: West Region Top Occupations Continued

| SOC Code | Occupation Title | 2018 Employ. | 2028 Proj. | Change 2028-2018 | % Change | Ann. Total Openings | Educ. Level | Fastest Growth | Fast Growth Middle Skill Occup. | Most Openings | Most Openings Middle Skill Occ. |
|----------|--|--------------|------------|------------------|----------|---------------------|-------------|----------------|---------------------------------|---------------|---------------------------------|
| | Health Services- Health Practitioners and Technical | | | | | | | | | | |
| 291141 | Registered Nurses | 15,380 | 17,820 | 2,439 | 15.85% | 1,130 | AA | | | X | X |
| 292061 | Licensed Practical and Licensed Vocational Nurses | 6,280 | 7,250 | 971 | 15.47% | 610 | PS | | X | X | X |
| 292010 | Clinical Laboratory Technologists and Technicians | 3,880 | 4,440 | 563 | 14.53% | 320 | BA | | | X | |
| 291171 | Nurse Practitioners | 1,680 | 2,120 | 448 | 26.73% | 150 | MA | X | | X | |
| 292041 | Emergency Medical Technicians and Paramedics | 1,750 | 1,880 | 131 | 7.49% | 130 | PS | | | X | X |
| 292071 | Medical Records and Health Information Technicians | 1,360 | 1,510 | 148 | 10.89% | 110 | PS | | | | X |
| 291126 | Respiratory Therapists | 890 | 1,120 | 232 | 26.21% | 80 | AA | X | X | | X |
| 291127 | Speech-Language Pathologists | 670 | 860 | 187 | 27.74% | 60 | MA | X | | | |
| 292053 | Psychiatric Technicians | 350 | 410 | 59 | 16.71% | 40 | PS | | X | | |
| 291071 | Physician Assistants | 320 | 420 | 99 | 30.56% | 30 | MA | X | | | |
| 292056 | Veterinary Technologists and Technicians | 280 | 340 | 64 | 23.19% | 30 | AA | X | X | | |
| 292032 | Diagnostic Medical Sonographers | 330 | 400 | 67 | 20.36% | 30 | AA | | X | | |
| | Health Services- Clerical and Information | | | | | | | | | | |
| 439061 | Office Clerks, General | 15,890 | 16,070 | 177 | 1.11% | 1,930 | HS | | X | | X |
| 434171 | Receptionists and Information Clerks | 4,490 | 4,720 | 235 | 5.24% | 640 | HS | | X | | X |
| 433021 | Billing and Posting Clerks | 2,740 | 3,100 | 367 | 13.41% | 350 | HS | | X | | X |
| 436013 | Medical Secretaries | 1,630 | 1,920 | 288 | 17.67% | 230 | HS | | X | | X |
| 439041 | Insurance Claims and Policy Processing Clerks | 250 | 300 | 49 | 19.44% | 30 | HS | | X | | X |

Education Level Key: HS High School diploma or equivalent; PS Post Secondary non-degree award; AA Associate's degree; BA Bachelor's degree; MA Master's degree; D/P Doctoral or professional degree
 Source: TN Dept of Labor and Workforce Development, WIR²ED Division, West Region LT Employment Projections 2018-2028, Jobs4tn.gov

Table A1: West Region Top Occupations Continued

| SOC Code | Occupation Title | 2018 Employ. | 2028 Proj. | Change 2028-2018 | % Change | Ann. Total Openings | Educ. Level | Fastest Growth | Fast Growth Middle Skill Occup. | Most Openings | Most Openings Middle Skill Occ. |
|----------|---|--------------|------------|------------------|----------|---------------------|-------------|----------------|---------------------------------|---------------|---------------------------------|
| | Education-Teaching | | | | | | | | | | |
| 259041 | Teacher Assistants | 5,610 | 5,730 | 119 | 2.12% | 610 | SC | | X | X | X |
| 251071 | Health Specialties Teachers, Postsecondary | 3,670 | 4,480 | 805 | 21.93% | 420 | D/P | X | | X | |
| 252011 | Preschool Teachers, Except Special Education | 1,570 | 1,700 | 133 | 8.48% | 180 | AA | X | X | X | X |
| 253021 | Self-Enrichment Education Teachers | 840 | 1,050 | 212 | 25.24% | 130 | HS | X | X | X | X |
| 253098 | Substitute Teachers | 1,000 | 1,110 | 102 | 10.17% | 130 | BA | X | | X | |
| 251121 | Art, Drama, and Music Teachers, Postsecondary | 510 | 540 | 30 | 5.93% | 50 | BA | X | | | |

Education Level Key: HS High School diploma or equivalent; PS Post Secondary non-degree award; AA Associate's degree; BA Bachelor's degree; MA Master's degree; D/P Doctoral or professional degree
 Source: TN Dept of Labor and Workforce Development, WIR²ED Division, West Region LT Employment Projections 2018-2028, Jobs4tn.gov

Table A2: Middle Region Top Occupations

| SOC Code | Occupation Title | 2018 Employ. | 2028 Proj. | Change 2028-2018 | % Change | Ann. Total Openings | Educ. Level | Fastest Growth | Fast Growth Middle Skill Occup. | Most Openings | Most Openings Middle Skill Occ. |
|----------|---|--------------|------------|------------------|----------|---------------------|-------------|----------------|---------------------------------|---------------|---------------------------------|
| | Health Services- Health Practitioners and Technical | | | | | | | | | | |
| 292061 | Licensed Practical and Licensed Vocational Nurses | 10,450 | 12,050 | 1,600 | 15.33% | 1,020 | PS | | | X | X |
| 292057 | Ophthalmic Medical Technicians | 470 | 560 | 90 | 19.28% | 50 | PS | | X | | |
| 292056 | Veterinary Technologists and Technicians | 950 | 1,320 | 370 | 39.26% | 130 | AA | | X | | |
| 292052 | Pharmacy Technicians | 4,540 | 5,260 | 720 | 15.92% | 470 | HS | | | X | X |
| 292041 | Emergency Medical Technicians and Paramedics | 2,510 | 2,790 | 280 | 11.32% | 200 | PS | | | | X |
| 292032 | Diagnostic Medical Sonographers | 570 | 680 | 120 | 20.46% | 50 | AA | | X | | |
| 292021 | Dental Hygienists | 1,500 | 1,830 | 330 | 22.00% | 150 | AA | X | X | | X |
| 292010 | Clinical Laboratory Technologists and Technicians | 3,490 | 3,950 | 470 | 13.33% | 280 | BA | | | X | |
| 291171 | Nurse Practitioners | 2,770 | 3,770 | 1,010 | 36.33% | 270 | MA | X | | X | |
| 291141 | Registered Nurses | 24,910 | 28,790 | 3,880 | 15.59% | 1,820 | AA | | | X | X |
| 291131 | Veterinarians | 880 | 1,200 | 320 | 36.36% | 70 | D/P | X | | | |
| 291127 | Speech-Language Pathologists | 1,260 | 1,650 | 390 | 31.39% | 120 | MA | X | | | |
| 291126 | Respiratory Therapists | 1,390 | 1,710 | 320 | 23.25% | 110 | AA | | X | | |
| 291071 | Physician Assistants | 1,130 | 1,660 | 530 | 46.55% | 130 | MA | X | | | |
| | Health Services- Clerical and Information | | | | | | | | | | |
| 436013 | Medical Secretaries | 2,500 | 3,090 | 590 | 23.60% | 370 | HS | | X | | |
| 433021 | Billing and Posting Clerks | 5,120 | 6,330 | 1,210 | 23.59% | 740 | HS | | X | | X |
| 439041 | Insurance Claims and Policy Processing Clerks | 1,740 | 2,000 | 260 | 14.98% | 210 | HS | | X | | |
| 434171 | Receptionists and Information Clerks | 8,520 | 9,380 | 860 | 10.08% | 1,290 | HS | | X | | X |
| 433011 | Bill and Account Collectors | 2,360 | 2,520 | 160 | 6.83% | 310 | HS | | X | | |
| 439061 | Office Clerks, General | 24,340 | 25,320 | 980 | 4.04% | 3,070 | HS | | | | X |
| 433031 | Bookkeeping, Accounting, and Auditing Clerks | 14,410 | 14,930 | 520 | 3.59% | 1,760 | SC | | | | X |
| 436014 | Secretaries and Administrative Assistants, Except Legal, Medical, and Executive | 22,820 | 21,950 | -220 | -3.81% | 2,420 | HS | | | | X |

Education Level Key: HS High School diploma or equivalent; PS Post Secondary non-degree award; AA Associate's degree; BA Bachelor's degree; MA Master's degree; D/P Doctoral or professional degree

Source: TN Dept of Labor and Workforce Development, WIR²ED Division, Middle Region LT Employment Projections 2018-2028, Jobs4tn.gov

Table A2: Middle Region Top Occupations Continued

| SOC Code | Occupation Title | 2018 Employ. | 2028 Proj. | Change 2028-2018 | % Change | Ann. Total Openings | Educ. Level | Fastest Growth | Fast Growth Middle Skill Occup. | Most Openings | Most Openings Middle Skill Occ. |
|----------|--|--------------|------------|------------------|----------|---------------------|-------------|----------------|---------------------------------|---------------|---------------------------------|
| | Education - Teaching | | | | | | | | | | |
| 259041 | Teacher Assistants | 9,300 | 10,530 | 1,230 | 13.24% | 1,170 | SC | | X | X | X |
| 252021 | Elementary School Teachers, Except Special Education | 12,320 | 13,810 | 1,490 | 12.07% | 1,110 | BA | | | X | |
| 252031 | Secondary School Teachers, Except Special and Career/Technical Education | 7,610 | 8,560 | 940 | 12.40% | 660 | BA | | | X | |
| 253097 | Teachers and Instructors, All Other, Except Substitute Teachers | 4,490 | 5,180 | 690 | 15.36% | 620 | BA | | | X | |
| 252011 | Preschool Teachers, Except Special Education | 3,770 | 4,630 | 860 | 22.83% | 510 | AA | X | X | X | X |
| 253021 | Self-Enrichment Education Teachers | 2,140 | 2,660 | 520 | 24.43% | 330 | HS | X | X | | X |
| 251011 | Business Teachers, Postsecondary | 1,540 | 1,840 | 300 | 19.61% | 170 | D/P | X | | | |
| 251071 | Health Specialists Teachers, Postsecondary | 1,080 | 1,310 | 230 | 20.76% | 120 | D/P | X | | | |
| 254031 | Library Technicians | 630 | 660 | 30 | 5.41% | 100 | PS | | X | | X |
| 251072 | Nursing Instructors and Teachers, Postsecondary | 590 | 750 | 160 | 26.09% | 70 | D/P | X | | | |
| | Trade, Transportation, and Utilities-Transportation and Material Moving | | | | | | | | | | |
| 533032 | Heavy and Tractor-Trailer Truck Drivers | 24,520 | 26,720 | 2,190 | 8.94% | 3,130 | PS | | | | X |
| 533033 | Light Truck or Delivery Services Drivers | 7,290 | 8,990 | 1,700 | 23.31% | 1,100 | HS | | X | | X |
| 531048 | First-Line Supervisors of Transportation and Material Moving Workers, Except Aircraft Cargo Handling | 4,620 | 5,380 | 760 | 16.33% | 610 | HS | | X | | X |
| 533022 | Bus Drivers, School or Special Client | 4,140 | 4,550 | 410 | 9.92% | 590 | HS | | | | X |
| 533031 | Driver/Sales Workers | 3,230 | 3,270 | 50 | 1.43% | 380 | HS | | X | | |
| 537021 | Bus Drivers, Transit and Intercity | 1,650 | 1,930 | 280 | 16.92% | 250 | HS | | X | | |

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 Source: TN Dept of Labor and Workforce Development, WIR²ED Division, Middle Region LT Employment Projections 2018-2028, Jobs4tn.gov

Table A2: Middle Region Top Occupations Continued

| SOC Code | Occupation Title | 2018 Employ. | 2028 Proj. | Change 2028-2018 | % Change | Ann. Total Openings | Educ. Level | Fastest Growth | Fast Growth Middle Skill Occup. | Most Openings | Most Openings Middle Skill Occ. |
|----------|---|--------------|------------|------------------|----------|---------------------|-------------|----------------|---------------------------------|---------------|---------------------------------|
| 537021 | Crane and Tower Operators | 320 | 370 | 50 | 14.78% | 50 | HS | | X | | |
| 535021 | Captains, Mates, and Pilots of Water Vessels | 420 | 470 | 50 | 11.11% | 50 | PS | | X | | |
| | Professional and Business Services-Business and Financial Operations | | | | | | | | | | |
| 132011 | Accountants and Auditors | 12,740 | 15,370 | 2,630 | 20.66% | 1,570 | BA | | | X | |
| 131199 | Business Operations Specialists, All Other | 8,100 | 9,530 | 1,430 | 17.70% | 990 | BA | | | X | |
| 131161 | Market Research Analysts and Marketing Specialists | 4,570 | 6,150 | 1,580 | 34.51% | 710 | BA | X | | X | |
| 131071 | Human Resource Specialists | 5,370 | 6,220 | 860 | 15.95% | 670 | BA | | | X | |
| 131111 | Management Analysts | 4,940 | 5,970 | 1,040 | 21.05% | 620 | BA | | | X | |
| 131151 | Training and Development Specialists | 2,390 | 2,980 | 590 | 24.59% | 350 | BA | X | | | |
| 131031 | Claims Adjusters, Examiners, and Investigators | 3,830 | 3,900 | 70 | 1.75% | 330 | HS | | X | | X |
| 132082 | Tax Preparers | 1,900 | 2,520 | 620 | 32.86% | 310 | HS | X | X | X | X |
| 131141 | Compensation, Benefits, and Job Analysis Specialists | 1,070 | 1,290 | 230 | 21.22% | 140 | BA | X | | | |
| 131131 | Fundraisers | 270 | 340 | 80 | 28.95% | 40 | BA | X | | | |

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 Source: TN Dept of Labor and Workforce Development, WIR²ED Division, Middle Region LT Employment Projections 2018-2028, Jobs4tn.gov

Table A3: East Region Top Occupations

| SOC Code | Occupation Title | 2018 Employ. | 2028 Proj. | Change 2028-2018 | % Change | Ann. Total Openings | Educ. Level | Fastest Growth | Fast Growth Middle Skill Occup. | Most Openings | Most Openings Middle Skill Occ. |
|----------|---|--------------|------------|------------------|----------|---------------------|-------------|----------------|---------------------------------|---------------|---------------------------------|
| | Health Services- Health Practitioners and Technical | | | | | | | | | | |
| 291066 | Psychiatrists | 220 | 290 | 70 | 33.03% | 10 | D/P | X | | | |
| 291071 | Physicians Assistants | 650 | 940 | 290 | 45.27% | 70 | MA | X | | | |
| 291127 | Speech-Language Pathologists | 1,170 | 1,530 | 350 | 29.9% | 110 | MA | X | | | |
| 291141 | Registered Nurses | 21,430 | 23,060 | 1,620 | 7.57% | 1,350 | AA | | | X | X |
| 291171 | Nurse Practitioners | 2,960 | 4,160 | 1,210 | 40.77% | 310 | MA | X | | X | |
| 292010 | Clinical Laboratory Technologists and Technicians | 3,110 | 3,420 | 310 | 9.81% | 240 | BA | | | X | |
| 292021 | Dental Hygienists | 1,480 | 1,730 | 250 | 16.68% | 130 | AA | | X | | |
| 292041 | Emergency Medical Technicians and Paramedics | 2,590 | 2,850 | 260 | 10.00% | 210 | PS | | | | X |
| 292052 | Pharmacy Technicians | 3,610 | 3,630 | 20 | 0.58% | 290 | HS | | | X | X |
| 292053 | Psychiatric Technicians | 240 | 320 | 80 | 35.44% | 30 | PS | X | X | | |
| 292056 | Veterinary Technologists and Technicians | 700 | 880 | 180 | 26.15% | 80 | AA | | X | | |
| 292057 | Ophthalmic Medical Technicians | 310 | 390 | 80 | 26.38% | 40 | PS | | X | | |
| 292061 | Licensed Practical and Licensed Vocational Nurses | 8,550 | 9,750 | 1,200 | 14.03% | 820 | PS | | | X | X |
| 292071 | Medical Record and Health Information Technicians | 1,470 | 1,790 | 320 | 21.84% | 140 | PS | | X | | X |
| | Health Services- Clerical and Information | | | | | | | | | | |
| 433021 | Billing and Posting Clerks | 4,040 | 4,900 | 860 | 21.36% | 570 | HS | | X | | |
| 439041 | Insurance Claims and Policy Processing Clerks | 940 | 1,140 | 200 | 21.21% | 120 | HS | | X | | |
| 436013 | Medical Secretaries | 2,810 | 3,340 | 530 | 18.95% | 400 | HS | | X | | |
| 434171 | Receptionists and Information Clerks | 6,790 | 7,650 | 860 | 12.68% | 1,060 | HS | | X | | |
| 433011 | Bill and Account Collectors | 2,580 | 2,860 | 280 | 10.89% | 350 | HS | | X | | |
| 439061 | Office Clerks, General | 20,570 | 20,660 | 90 | 0.45% | 2,480 | HS | | | | X |
| 436014 | Secretaries and Administrative Assistants, Except Legal, Medical, and Executive | 17,710 | 16,840 | -870 | -4.88% | 1,850 | HS | | | | X |

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Source: TN Dept of Labor and Workforce Development, WIR²ED Division, East Region LT Employment Projections 2018-2028, Jobs4tn.gov

Table A3: East Region Top Occupations Continued

| SOC Code | Occupation Title | 2018 Employ. | 2028 Proj. | Change 2028-2018 | % Change | Ann. Total Openings | Educ. Level | Fastest Growth | Fast Growth Middle Skill Occup. | Most Openings | Most Openings Middle Skill Occ. |
|----------|--|--------------|------------|------------------|----------|---------------------|-------------|----------------|---------------------------------|---------------|---------------------------------|
| 431011 | First-Line Supervisors of Office and Administrative Support Workers | 12,220 | 13,000 | 780 | 6.37% | 1,400 | HS | | | | X |
| 433031 | Bookkeeping, Accounting, and Auditing Clerks | 11,720 | 11,860 | 130 | 1.13% | 1,390 | SC | | | | X |
| | Education-Teaching | | | | | | | | | | |
| 251011 | Business Teachers, Postsecondary | 1,670 | 1,970 | 300 | 18.11% | 180 | D/P | X | | | |
| 251072 | Nursing Instructors and Teachers, Postsecondary | 390 | 480 | 100 | 24.87% | 50 | D/P | X | | | |
| 251111 | Criminal Justice and Law Enforcement Teachers, Postsecondary | 70 | 80 | 10 | 15.49% | 10 | D/P | X | | | |
| 252011 | Preschool Teachers, Except Special Education | 2,330 | 2,730 | 400 | 17.35% | 290 | AA | X | X | X | X |
| 252021 | Elementary School Teachers, Except Special Education | 9,200 | 9,360 | 150 | 1.66% | 700 | BA | | | X | |
| 252022 | Middle School Teachers, Except Special and Career/Technical Education | 4,110 | 4,190 | 70 | 1.73% | 310 | BA | | | X | |
| 252031 | Secondary School Teachers, Except Special and Career/Technical Education | 6,590 | 6,720 | 120 | 1.84% | 480 | BA | | | X | |
| 252051 | Special Education Teachers, Preschool | 40 | 50 | 10 | 20.93% | 10 | BA | X | | | |
| 253021 | Self-Enrichment Education Teachers | 1,630 | 1,750 | 120 | 7.37% | 210 | HS | | X | | X |
| 254031 | Library Technicians | 310 | 300 | 0 | -0.33% | 50 | PS | | | | X |
| 259041 | Teacher Assistants | 8,070 | 8,340 | 270 | 3.37% | 890 | SC | | X | X | X |
| | Trade, Transportation, Utilities-Transportation and Material Moving | | | | | | | | | | |
| 531011 | Aircraft Cargo Handling Supervisors | 80 | 110 | 20 | 26.51% | 10 | HS | | X | | |

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Table A3: East Region Top Occupations Continued

| SOC Code | Occupation Title | 2018 Employ. | 2028 Proj. | Change 2028-2018 | % Change | Ann. Total Openings | Educ. Level | Fastest Growth | Fast Growth Middle Skill Occup. | Most Openings | Most Openings Middle Skill Occ. |
|----------|--|--------------|------------|------------------|----------|---------------------|-------------|----------------|---------------------------------|---------------|---------------------------------|
| 531048 | First-Line Supervisors of Transportation and Material Moving Workers, Except Aircraft Cargo Handling | 3,030 | 3,480 | 460 | 15.17 | 390 | HS | | X | | X |
| 532012 | Commercial Pilots | 130 | 140 | 10 | 10.94% | 20 | HS | | X | | |
| 533022 | Bus Drivers, School or Special Client | 2,410 | 2,520 | 110 | 4.73% | 320 | HS | | | | X |
| 533031 | Driver/Sales Workers | 2,800 | 2,520 | -280 | -10.14% | 270 | HS | | | | X |
| 533032 | Heavy and Tractor-Trailer Truck Drivers | 24,460 | 30,140 | 5,680 | 23.24% | 3,670 | PS | | X | | X |
| 534011 | Locomotive Engineers | 1,640 | 1,970 | 330 | 20.23% | 200 | HS | | X | | X |
| | Trade, Transportation, Utilities-Clerical and Information | | | | | | | | | | |
| 435011 | Cargo and Freight Agents | 120 | 150 | 30 | 20.83% | 20 | HS | | X | | X |
| 435032 | Dispatchers, Except Police, Fire, and Ambulance | 2,000 | 2,410 | 410 | 20.43% | 250 | HS | | X | | X |
| 434181 | Reservation and Transportation Ticket Agents and Travel Clerks | 490 | 570 | 80 | 16.84% | 70 | HS | | X | | X |
| | Trade, Transportation, Utilities and Financial Activities-Sales | | | | | | | | | | |
| 411011 | First-Line Supervisors of Retail Sales Workers | 15,200 | 14,130 | -1,060 | -6.99% | 1,510 | HS | | | X | X |
| 411012 | First-Line Supervisors of Non-Retail Sales Workers | 3,130 | 3,250 | 120 | 3.86% | 320 | HS | | | X | X |
| 413011 | Advertising Sales Agents | 610 | 690 | 80 | 12.70% | 100 | HS | X | X | | |
| 413021 | Insurance Sales Agents | 2,870 | 3,080 | 210 | 7.17% | 310 | HS | | | X | X |
| 413031 | Securities, Commodities, and Financial Sales Agents | 1,040 | 1,300 | 260 | 25.17% | 140 | BA | X | | | |
| 413041 | Travel Agents | 170 | 210 | 40 | 20.23% | 30 | HS | X | X | | |

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Table A3: East Region Top Occupations Continued

| SOC Code | Occupation Title | 2018 Employ. | 2028 Proj. | Change 2028-2018 | % Change | Ann. Total Openings | Educ. Level | Fastest Growth | Fast Growth Middle Skill Occup. | Most Openings | Most Openings Middle Skill Occ. |
|----------|--|--------------|------------|------------------|----------|---------------------|-------------|----------------|---------------------------------|---------------|---------------------------------|
| 414011 | Sales Representatives, Wholesale and Manufacturing, Technical and Scientific Products | 3,440 | 3,650 | 210 | 6.13% | 390 | BA | | | X | |
| 414012 | Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products | 5,640 | 5,750 | 110 | 2.02% | 610 | HS | | | X | X |
| 419021 | Real Estate Brokers | 230 | 270 | 30 | 14.22% | 30 | HS | X | X | | |
| 419022 | Real Estate Sales Agents | 1,080 | 1,250 | 180 | 16.33% | 130 | HS | X | X | | |
| | Professional and Business Services- Business and Financial Operations | | | | | | | | | | |
| 131020 | Buyers and Purchasing Agents | 2,570 | 2,530 | -40 | -1.44% | 260 | BA | | | X | |
| 131031 | Claims Adjusters, Examiners, and Investigators | 1,480 | 1,520 | 40 | 2.50% | 130 | HS | | X | | X |
| 131071 | Human Resources Specialists | 3,650 | 4,030 | 380 | 10.44% | 420 | BA | | | X | |
| 131111 | Management Analysts | 2,320 | 2,800 | 480 | 20.47% | 290 | BA | X | | X | |
| 131121 | Meeting, Convention, and Event Planners | 420 | 500 | 80 | 18.29% | 60 | BA | X | | | |
| 131161 | Market Research Analysts and Marketing Specialists | 2,760 | 3,530 | 780 | 28.11% | 400 | BA | X | | X | |
| 132011 | Accountants and Auditors | 5,120 | 5,900 | 790 | 15.34% | 590 | BA | | | X | |
| 132052 | Personal Financial Advisors | 700 | 930 | 230 | 32.24% | 80 | BA | X | | | |
| 132082 | Tax Preparers | 640 | 770 | 130 | 20.06% | 90 | HS | X | X | | X |
| | Financial Activities- Business and Financial | | | | | | | | | | |
| 131031 | Claims Adjusters, Examiners, and Investigators | 1,480 | 1,520 | 40 | 2.50% | 130 | HS | | X | | X |
| 132011 | Accountants and Auditors | 5,120 | 5,900 | 790 | 15.34% | 590 | BA | | | X | |
| 132051 | Financial Analysts | 1,270 | 1,500 | 230 | 18.15% | 140 | BA | X | | X | |

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Table A3: East Region Top Occupations Continued

| SOC Code | Occupation Title | 2018 Emply. | 2028 Proj. | Change 2028-2018 | % Change | Ann. Total Openings | Educ. Level | Fastest Growth | Fast Growth Middle Skill Occup. | Most Openings | Most Openings Middle Skill Occ. |
|----------|--|-------------|------------|------------------|----------|---------------------|-------------|----------------|---------------------------------|---------------|---------------------------------|
| 132052 | Personal Financial Advisors | 700 | 930 | 230 | 32.24% | 80 | BA | X | | | |
| 132071 | Credit Counselors | 1,200 | 1,350 | 140 | 11.88% | 120 | BA | | | X | |
| 132072 | Loan Officers | 2,070 | 2,440 | 370 | 17.77% | 230 | BA | X | | X | |
| 132082 | Tax Preparers | 640 | 770 | 130 | 20.06% | 90 | HS | X | X | X | X |
| 132099 | Financial Specialists, All Other | 830 | 1,030 | 200 | 24.25 | 100 | BA | X | | | |
| | Financial Activities-Clerical and Information | | | | | | | | | | |
| 434011 | Brokerage Clerks | 140 | 180 | 40 | 31.85% | 20 | HS | | X | | |
| 439041 | Insurance Claims and Policy Processing Clerks | 1,310 | 1,540 | 220 | 16.89% | 170 | HS | | X | | |
| 434141 | New Accounts Clerks | 210 | 230 | 20 | 10.73% | 30 | HS | | X | | |
| 431011 | First-Line Supervisors of Office and Administrative Support Workers | 12,220 | 13,000 | 780 | 6.37% | 1,400 | HS | | X | | |
| | Manufacturing | | | | | | | | | | |
| 511011 | First-Line Supervisors of Production and Operating Workers | 7,130 | 7,530 | 400 | 5.55% | 790 | HS | | | | X |
| 512028 | Electrical, Electronic, and Electromechanical Assemblers, Except Coil Winders, Tapers, and Finishers | 1,990 | 2,050 | 60 | 3.22% | 240 | HS | | | | X |
| 512091 | Fiberglass Laminators and Fabricators | 960 | 1,080 | 120 | 12.92% | 130 | HS | | X | | |
| 512098 | Assemblers and Fabricators, All Other, Including Team Assemblers | 17,240 | 16,520 | -730 | -4.21% | 1,890 | HS | | | | X |
| 514012 | Computer Numerically Controlled Machine Tool Programmers, Metal and Plastic | 150 | 180 | 40 | 26.21% | 20 | PS | | X | | |
| 514031 | Cutting, Punching, and Press Machine Setters, Operators, and Tenders, Metal and Plastic | 1,820 | 1,810 | 40 | 26.21% | 200 | HS | | | | X |
| 514041 | Machinists | 2,690 | 2,960 | 260 | 9.73% | 310 | HS | | X | | X |

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Table A3: East Region Top Occupations Continued

| SOC Code | Occupation Title | 2018 Employ. | 2028 Proj. | Change 2028-2018 | % Change | Ann. Total Openings | Educ. Level | Fastest Growth | Fast Growth Middle Skill Occup. | Most Openings | Most Openings Middle Skill Occ. |
|----------|--|--------------|------------|------------------|----------|---------------------|-------------|----------------|---------------------------------|---------------|---------------------------------|
| 514081 | Multiple Machine Tool Setters, Operators, and Tenders, Metal and Plastic | 2,080 | 2,300 | 220 | 10.34% | 250 | HS | | X | | X |
| 514121 | Welders, Cutters, Solders, and Brazers | 4,760 | 5,100 | 340 | 7.12% | 570 | HS | | | | X |
| 517041 | Sawing Machine Setters, Operators, and Tenders, Wood | 470 | 610 | 130 | 28.06% | 80 | HS | | X | | |
| 518021 | Stationary Engineers and Boiler Operators | 250 | 280 | 30 | 12.85% | 30 | HS | | X | | |
| 519011 | Chemical Equipment Operators and Tenders | 2,150 | 2,100 | -50 | -2.10% | 240 | HS | | | | X |
| 519061 | Inspectors, Testers, Sorters, Samplers, and Weighers | 5,430 | 4,810 | -620 | -11.41% | 570 | HS | | | | X |
| 519081 | Dental Laboratory Technicians | 280 | 350 | 70 | 26.35% | 50 | HS | | X | | |
| 519082 | Medical Appliance Technicians | 130 | 150 | 30 | 22.40% | 20 | HS | | X | | |
| 519111 | Packaging and Filling Machine Operators and Tenders | 3,670 | 3,670 | 10 | 0.16% | 430 | HS | | | | X |
| 519192 | Cleaning, Washing, and Metal Pickling Equipment Operators and Tenders | 380 | 410 | 40 | 9.81% | 70 | HS | | X | | |
| 519197 | Tire Builders | 180 | 200 | 20 | 11.24% | 20 | HS | | X | | |

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