

**AN ECONOMIC REPORT  
TO THE GOVERNOR  
OF THE STATE OF TENNESSEE**

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THE STATE'S  
ECONOMIC  
OUTLOOK  
JANUARY

**2020**





# AN ECONOMIC REPORT TO THE GOVERNOR OF THE STATE OF TENNESSEE

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Matthew N. Murray, Associate Director and Project Director  
Boyd Center for Business and Economic Research

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Knoxville, Tennessee

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and  
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## PREFACE

This 2020 volume of *An Economic Report to the Governor of the State of Tennessee* is the forty-fourth in a series of annual reports compiled in response to requests by state government officials for assistance in achieving greater interdepartmental consistency in planning and budgeting efforts sensitive to the overall economic environment. Both short-term, or business cycle-sensitive forecasts, and longer-term, or trend forecasts, are provided in this report.

The quarterly state forecast through the first quarter of 2022 and annual forecast through 2029 represent the collective judgment of the staff of the University of Tennessee's Boyd Center for Business and Economic Research in conjunction with the Quarterly and Annual Tennessee Econometric Models. The national forecasts were prepared by IHS Markit. Tennessee forecasts, current as of December 2019, are based on an array of assumptions, particularly at the national level, which are described in Chapter One. Chapter Two details evaluations for major sectors of the Tennessee economy, with an agriculture section provided by the University of Tennessee Institute of Agriculture. Chapter Three presents the long-run outlook and forecast for the state. Chapter Four discusses public health and wellbeing in Tennessee. It highlights poor health as an economic problem in the state, and shows that improving health across the state—over the long term—will lead to improved economic growth and prosperity for individuals and in distressed areas.

The primary purpose of this annual volume—published, distributed, and financed through the Tennessee Department of Finance and Administration, Tennessee Department of Economic and Community Development, the Tennessee Department of Revenue, and the Tennessee Department of Labor and Workforce Development—is to provide wide public dissemination of the most-current possible economic analysis to planners and decision-makers in the public and private sectors.



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## EXECUTIVE SUMMARY

### THE U.S. ECONOMY

The U.S. economy remained strong in 2019. Inflation-adjusted gross domestic product (GDP) growth of 2.3 percent ensured the 2010s was a recession-free decade, the first such decade since records began in 1855. Growth should continue in 2020, at rates higher than comparable developed economies but slower than domestic growth in 2019.

The economic prosperity was shared throughout the different components of the economy. Personal incomes grew by 4.8 percent. The national savings rate reached 8.1 percent, up from 7.7 percent in 2018, and the highest level since 2012. Consumption increased by 2.6 percent, driven by a 4.8 percent increase in the consumption of durables.

Investment increased by just 2.0 percent in 2019. This represented of the weaker performing components of the economy, with substantial declines in certain sub-components of investment like nonresidential structures. This perhaps reflects uncertainty about the future, with after-tax profits of enterprises down by 1.2 percent in the year. If there is uncertainty about future profits, it was not reflected in the value of the S&P 500, which increased by over 20 percent in 2019. Similarly, the rate of unemployment, at 3.5 percent, is lower than it has been for decades.

Despite the strong growth in 2019, there are uncomfortable warning signs of decreased future growth. Notably, consumer sentiment declined in 2019. While the economy is growing it not does appear particularly resilient to negative shocks. Specifically, the Federal Reserve's decision to modestly increase interest rates appeared to have considerable negative consequences for the economy. An inverted yield curve, where short-term interest rates exceed long-term rates and historically a recessionary warning signal, occurred for the first time since mid-2007. The Fed changed course, reverting and lowering interest rates before year's end. The weakened sentiment is reflected in relatively low inflation rates, with a basket of consumer goods costing 1.8 percent more than last year.

While the aftermath of Tax Cuts and Jobs Act (TCJA) saw substantial increases in investment, the stimulatory effects of the cut are dissipating. Investment in Equipment grew by 1.6 percent in 2019, substantially lower than the 5.0 percent gains seen on average over the prior two years. While nonresidential fixed investment grew by 2.2 percent, residential fixed investment fell by 1.7 percent. More strikingly, investment in structures declined by 4.9 percent. Slower economy-wide growth will contribute to weak investment spending as there is a diminished need for new productive capacity. The OECD's Business Confidence Index for the United States fell every month of 2019, and now stands at its lowest level since mid-2009.

The changes in the economy are also reflected in demographic transitions. There are 1.5 million fewer people under the age of 21 in the U.S. today than there was in 2010. Fertility rates have fallen significantly below the natural replacement rate, with births among women aged 20-24 having fallen 30.7 percent since 2006. The total fertility rate in 2018 (1.73) was the lowest on record.

Surprisingly, life expectancy has actually fallen for some demographic groups. Life expectancy had grown considerably in the U.S. in a relatively short time-span. A person born in 1980 could expect to live 73.6 years, and thirty years later this had risen to 78.54 years, just shy of five additional years per person. Despite the economic growth, life expectancy stagnated during this decade. Using the most recent available figures, a person born in 2017 could expect to live precisely the same number of years (78.54) as someone born in 2010.

A similar trend emerges with international trade, where the overall picture is lackluster. Continued skirmishes with its major trading partners saw retaliatory measures against the U.S. Exports declined by 0.2 percent in 2019, causing a drag on growth. This was the first decrease since the Great Recession. Both imports and exports were affected by increased tariffs. While overall consumption within the economy grew by 2.6 percent in 2019, the growth of imports was more modest (1.5 percent).

## THE U.S. ECONOMY, CONTINUED

Regardless of one's political beliefs, there is a strong possibility of a major reversal in U.S. trade policy within the next twelve months. With elections scheduled for November, the Trump administration can last a maximum of five more years. In contrast, President Xi Jinping faces fewer electoral challenges in China. The Chinese government can credibly commit to policies for a much longer horizon, even if the strategy is unpopular with the public. Retrenchment seems unlikely, and so there is limited scope for export growth to provide a path for continued growth. As this report goes to press, it appears that a new NAFTA will be approved by Congress.

The warning signs are not yet strong enough to expect a recession in the immediate future. Our projections and narrative for 2020 indicate slower but positive growth. GDP will increase by

2.1 percent, with the improvements in consumer sentiment driving consumption growth of 2.8 percent. Wages and salaries will increase by 3.3 percent, and unemployment will fall to another record low of 3.4 percent.

The increases in wages and salaries (3.3 percent) and personal income (3.9 percent) will be faster than increases in productivity, which is expected to grow by 1.1 percent. Productivity growth has been disappointing for a number of years, with growth rates averaging below 1.2 percent since 2010. In a pessimistic scenario (which we forecast as occurring with 35 percent probability) worse than expected productivity growth leads to a decrease in investment. This results in a sharp increase in unemployment (to 5.8 percent) and an immediate monetary response from the Federal Reserve. In the pessimistic scenario, GDP declines by 2.0 percent.

## THE TENNESSEE ECONOMY

### The Short-Term Economic Outlook

Both Tennessee and the U.S. are currently enjoying the longest economic expansion in recorded history, and both saw steady economic growth in 2018 and much of 2019. In Tennessee, inflation-adjusted state gross domestic product (real GDP) advanced at a 2.7 percent rate in 2018, which was slightly slower than nation's 2.9 percent rate of growth. As the already record-long expansion continues to push forward, labor markets at both the state and national level grow tighter and tighter, leaving less room for job growth going forward. As a result, both Tennessee and the U.S. saw nonfarm jobs increase by 1.7 percent in 2018, marking two consecutive years with job gains below 2.0 percent. The first three quarters of 2019 have brought more of the same, as state job growth has ranged from 1.2 to 1.9 percent per quarter. This is still a sign of healthy gains in the labor market. Job growth in the state's service sectors continue to show resiliency, as job growth in professional and business services, educational and health services, and leisure and

hospitality services have all seen gains of 3.0 percent or more in the most recent quarter of 2019 (2019Q3). The manufacturing sector has also seen decent job gains recently, despite setbacks for the national economy. In 2018, manufacturing jobs expanded by a modest 1.3 percent, but have fared better in 2019, seeing job growth ranging from 1.4 percent up to 2.7 percent in the first three quarters of 2019. Manufacturing job growth has largely been driven by durable goods manufacturing, which saw gains of 3.6 percent in the most recent quarter of 2019, while jobs in nondurable goods manufacturing expanded by a more moderate 1.1 percent in the third quarter of 2019.

The state's unemployment rate (i.e. the percentage of the adult population that is not working but actively looking for work), has remained incredibly low by historical standards, falling to 3.5 percent for the 2018 year as a whole, and drifting down to 3.2 percent in the first quarter of 2019 before ticking back up to 3.5 percent in the third quarter. These incredibly low unemployment rates are suggestive of a very healthy and very tight labor market. A low labor

## THE TENNESSEE ECONOMY, CONTINUED

force participation rate (59.7 percent in 2018) suggests that there is still a large portion of the state's adult population that is not working or actively looking for work. Finding ways to entice these individuals (back) into the labor market could be a potential avenue for future economic growth. Nonetheless, as the labor market continues to tighten, we are finally starting to see signs of income growth. In Tennessee, nominal personal income grew by a healthy 5.3 percent in 2018. This was slightly slower than the 5.6 percent rate of growth registered for the nation as a whole.

A number of temporary factors have helped stimulate both the state and national economies in recent years, including the 2017 Tax Cut and Jobs Act, which provided temporary stimulus to business and consumer spending, and the 2018 and 2019 Bipartisan Budget Acts which increased government spending. Upward momentum from some of these policies may continue into the first half of 2020 before fading, and then slower economic growth will likely follow. In addition, uncertainty surrounding U.S. trade policy and a systemic global economic slowdown could put downward pressure on economic growth in the short term. Thus, our short-term outlook (10 quarters ahead) calls for positive but slower economic growth in the near term. Our forecast does not point to a recession in the near term—though one is always possible—but we do project slower, positive economic growth going forward. In Tennessee, real GDP will fall from 2.7 percent in 2019, to 2.1 percent in 2020, and 1.6 percent in 2021. The state labor market will see moderate growth of 0.9 percent in 2020 and 0.5 percent in 2021. This is closely in line, but slightly slower than the projected national employment growth of 1.2 percent in 2020 and 0.8 percent in 2021. Tennessee's manufacturing sector will see employment growth of 0.6 percent in 2020 but face a contraction of 0.5 percent in 2021. Employment in the state's manufacturing sector will fare better than at the national level, where manufacturing employment will fall by 0.7 percent in 2020 and 1.8 percent in 2021.

Tennessee's unemployment rate will hover around 3.5 percent for the next two years, closely

tracking the national unemployment rate, and nominal personal income will continue to show healthy growth (4.6 percent in 2020 and 4.7 percent in 2021). Nominal taxable sales are also projected to grow by 4.8 percent in 2020 and 4.7 percent in 2021. On a fiscal year (FY) basis, taxable sales will advance by 5.3 percent in FY 2019/20 and 4.7 percent in FY2020/21. Taxable sales growth will be higher in FY 2019/20 in part due to the recent U.S. Supreme Court decision in the *South Dakota v. Wayfair Inc.* case, which decided that states can mandate business without a physical presence in the state (e.g. internet merchants) to collect and remit sales and use taxes on transactions made in the state. Tennessee began taxing these online retailers (if their sales to Tennessee consumers exceeded \$500,000 in the previous year) on July 1, 2019, so we are projecting an uptick in sales tax collections in 2019 and 2020.

### Tennessee's Agricultural & Forest Industries & Rural Industries

The agri-forestry industrial complex encompasses the supply chain from farm and forest to consumers of final products and is a vital part of the state economy. The complex directly and indirectly contributed an estimated \$81 billion to the Tennessee economy and supplies 342,000 jobs. Farming operations occupied 10.9 million acres in Tennessee, around 40.5 percent of the state's nearly 27 million acres of land area. Approximately half of this farmland is operated as cropland. Tennessee's largest row crops are corn, cotton, soybeans and wheat. For many, 2019 was a challenging production year, with wet planting conditions, followed by a late-season drought across a large portion of the state. Wet conditions and the flooding of the Mississippi River caused over 100,000 acres of corn, cotton, soybeans and wheat in several counties to not be planted.

Farm receipts from crops and livestock in the state was just over \$3.5 billion, with \$1.4 billion from animals and \$2.1 billion from crops. The top ten commodities in the state accounted for over 84 percent of 2018 cash farm receipts. In terms of cash receipts, Tennessee ranks in the top 20 states

## THE TENNESSEE ECONOMY, CONTINUED

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for several commodities and in the top ten states for tobacco and cotton. The largest value of farm receipts was derived from soybeans, followed by cattle and calves. However, net farm income was \$297 million in 2018, a decline from \$1.4 billion in 2013 but an increase from the low of \$203 million in 2016. Looking towards 2020, prices and producer profitability are unlikely to improve substantially without resolution of the trade dispute with China or a production disruption domestically or abroad.

In 2019, Tennessee farmers benefited from Federal support programs administered by the United States Department of Agriculture (USDA). In July 2018, the USDA announced \$12 billion in funding for producers that have been adversely affected by retaliatory tariffs and international trade disruptions. China, Mexico, Canada, and the E.U. implemented retaliatory tariffs that have had a measurable impact on agricultural commodity prices, such as soybeans, pork, corn, dairy, sorghum, cotton, wheat, as well as nuts, vegetables, fruits, and berries. In July 2019, USDA announced additional funding of \$16 billion. In 2019, payments will be made to producers on total planted acres (aggregated planted acres times the county payment rate), based on the commodities planted in the county. In Tennessee, county payment rates ranged from \$16 (Anderson and Johnson counties) to \$126 (Hardeman County) per planted acre. This support is in addition to that provided through the Farm Bill, which provided Tennessee crop producers with \$125.5 million in direct payments from Agricultural Risk Coverage (ARC) and Price Loss Coverage (PLC) programs for the 2014-2017 crop years. Additionally, the federal government's portion of crop insurance premiums paid by Tennessee producers was \$274.6 million for the 2014-2018 crop years.

Like many other states, the Tennessee has experienced an explosion in the number of farmers growing hemp and in the number of people interested in doing so. As of November 2019, the state had 3,800 producers licensed to grow up to 51,000 acres. The hemp is

primarily grown for the cannabidiol (CBD) oil or other extracts that is obtained by processing components of the plant, particularly the plant's flower (bud). While enterprise budgets by UT Extension indicate that hemp may be profitable, rapidly changing market conditions and other concerns should make actual and potential producers quite wary. For example, all of the hemp under cultivation may not be harvested or if harvested, may not find a market.

Trade disruptions have resulted in reduced access to markets for U.S. agricultural production. In fiscal year (FY) 2019 (Oct. 2018-Sept. 2019), total U.S. agricultural exports, as reported by the USDA, were \$136 billion, down 5 percent when compare to the previous fiscal year (\$143 billion). Key exports in FY2019 for Tennessee included cotton (\$678 million); prepared foods and beverages (\$249 million); poultry products (\$63 million); dairy products (\$51 million); and tobacco (\$37 million). During this period, Tennessee was also a leading exporter of two agriculture-related products: distilled spirits (\$469 million) and forest products (\$187 million). For many of these sectors, Tennessee exports were down significantly when compared to the previous fiscal year. Tennessee's agricultural exports in FY2019 were slightly above \$1.4 billion, down 4 percent when compared to the previous fiscal year. This overall decline was, in part, driven by a decline in exports to China, which were down by 37 percent. Product categories where Tennessee experienced more significant declines include cotton and tobacco. Two major declines for the State are in agriculture-related categories: distilled spirits and forest products. In FY2019, Tennessee distilled spirits exports in FY2019 were \$469 million, down 35 percent. Tennessee forest products exports in FY2019 were \$187 million, down 34 percent.

### The Long-Term Economic Outlook

Over the past ten years, the state economy has been on an extended growth spurt, starting with the end of the Great Recession in the summer of 2009, with no intervening economic

## THE TENNESSEE ECONOMY, CONTINUED

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contractions. Since 2010 when the economy began to show material signs of improvement, the state economy has created 496,300 jobs reflecting a compound growth rate of 1.8 percent, ahead of the pace of job creation for the nation. Importantly, this historical window captures a rebound in the manufacturing sector which has seen uninterrupted growth since 2011. Job growth has been concentrated in the state's metropolitan areas, especially the Middle Tennessee region centered around Nashville. Rural areas of the state have struggled, and many counties have lost jobs.

One of the most remarkable features of this ongoing expansion has been the unemployment rate. After peaking above 10 percent in 2009, the unemployment rate drifted down and bottomed out in February, 2019 at 3.2 percent. While the national rate also fell, Tennessee's current unemployment rate is below the national rate. As with nonfarm job growth, unemployment rates tend to be the lowest in the state's metropolitan areas; unemployment rates in rural Tennessee remain elevated. The disparity between urban and rural is largely a reflection of differences in educational attainment and health status of the population, with both measures showing much greater strength in larger cities.

Tennessee's gross domestic product (GDP) saw compound annual growth of 4.2 percent between 2009 and 2019 compared to 4.0 percent growth for the nation. Output growth in the

manufacturing sector has been especially robust, reflecting both hiring gains and improvements in productivity.

Tennessee's long-term outlook extends to 2029 and generally reflects ongoing growth for the state economy. However, growth is expected to be muted over the next decade. One reason is that the momentum behind the current expansion is waning as the economy confronts the constraints of full employment, best illustrated by tight labor markets across the state and the nation. Another reason is that the next ten years are expected to produce slower growth in employment due to underlying demographic factors that will constrain labor force growth. Finally, economy-wide productivity gains have been modest, and this is expected to continue for the foreseeable future. Together these factors will hold back overall output growth.

Between 2019 and 2029, the state's GDP should be up 1.7 percent on a compound basis, slightly lower than the nation's rate of output growth. Manufacturing is expected to see output growth slow but remain in the black. However, manufacturing sector employment is expected to contract starting early in the 2020s.

Overall nonfarm employment will see modest growth of just 0.7 percent (compound annual growth rate) between 2019 and 2029. The unemployment rate should remain very low by historical standards but slowly drift upward, ultimately reaching 4.1 percent.

## PUBLIC HEALTH AND ECONOMIC WELLBEING IN TENNESSEE

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The goal of Chapter 4 is to highlight poor health as an economic problem in the state, and to show that improving health across the state, over the long term, will lead to improved economic growth and prosperity for individuals and in distressed areas. We show that Tennesseans are more likely than their counterparts across the U.S. to exit the labor force before retirement

age, starting at approximately age 50. We show that the increased likelihood of labor force exit is preceded by increased incidence of chronic illness, and further preceded by higher rates of smoking, obesity, and sedentary lifestyles. We then expand the discussion to show that both across the U.S. and in Tennessee specifically, poor population health predicts slower economic

## PUBLIC HEALTH AND ECONOMIC WELLBEING IN TENNESSEE, CONTINUED

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growth while improved access to care predicts stronger growth. Altogether, these results indicate that poor population health is leading Tennessee to grow at less than full potential.

In discussing how to address population, this chapter develops a framework for improving population health based on evidence from a wide body of research. Health is produced by behavioral considerations, access and usage of clinical care, community and environmental factors, and policy considerations. This chapter discusses previous research on the types of health interventions that have been successful, and documents aspects of health care for which access to services may be problematic, particularly

for rural Tennesseans.

The caveat with investing in public health, as with investing in accessible and affordable education, is that the costs are immediate, but the benefits are gradually accrued over time. When individuals become healthier, jobs obviously do not instantly materialize in their local areas. Rather, these benefits come to pass because of coordinated efforts by health programs and economic and community development. While progress is likely to be slow, we conclude that investments in improving the health outlook of individuals in Tennessee has the capacity to improve the strength of the overall state economy and its attractiveness to existing and new industry.

## CHAPTER 1: THE U.S. ECONOMY

### IN THIS CHAPTER —

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#### 1.2. THE U.S. ECONOMY: YEAR IN REVIEW

- CONSUMPTION
- INVESTMENT
- INTEREST RATES
- GOVERNMENT PURCHASES
- THE DECLINING FERTILITY RATE
- INTERNATIONAL TRADE
- INFLATION AND PRICES

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#### 1.3. THE U.S. FORECAST

- CONSUMPTION
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- FEDERAL BUDGET
- INTERNATIONAL TRADE
- INFLATION AND PRICES
- PREDICTORS OF THE NEXT RECESSION

#### 1.4. ALTERNATE SCENARIOS

### 1.1. INTRODUCTION

The U.S. economy continued to grow in 2019, rounding out the tenth consecutive year of output growth. The 2010s will go down in history as the first full-decade without a recession since records began in 1855.

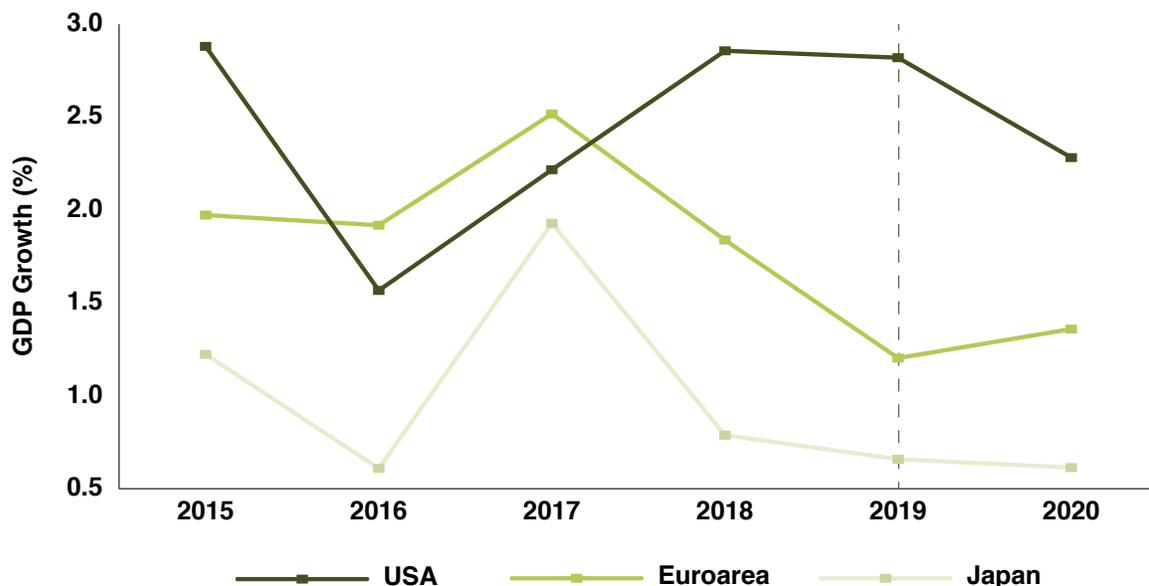
Personal income grew by 4.8 percent in 2019, resulting in a 2.6 percent increase in consumption and a savings rate of 8.1 percent. Nonresidential fixed investment rose 2.2 percent, with investment in equipment up by 1.6 percent. Inflation is relatively low, with a basket of consumer goods costing 1.8 percent more than last year. The S&P 500 Index opened in January at 2500 and in December had

risen to 3100, growth of 24 percent.

The unemployment rate, at 3.7 percent, is at its lowest value recorded in decades. Importantly, the low unemployment rate is concurrent with an increase in the prime age (under 65) labor force participation rate, which has seen growth six years in a row.

The growth of the U.S. economy, expanding overall by 2.3 percent in 2019, continues to impress by international standards. The OECD predicts growth rates of 1.3 percent in Canada, 0.7 percent in Japan and Germany, and 1.2 percent in the Euroarea and the United Kingdom.

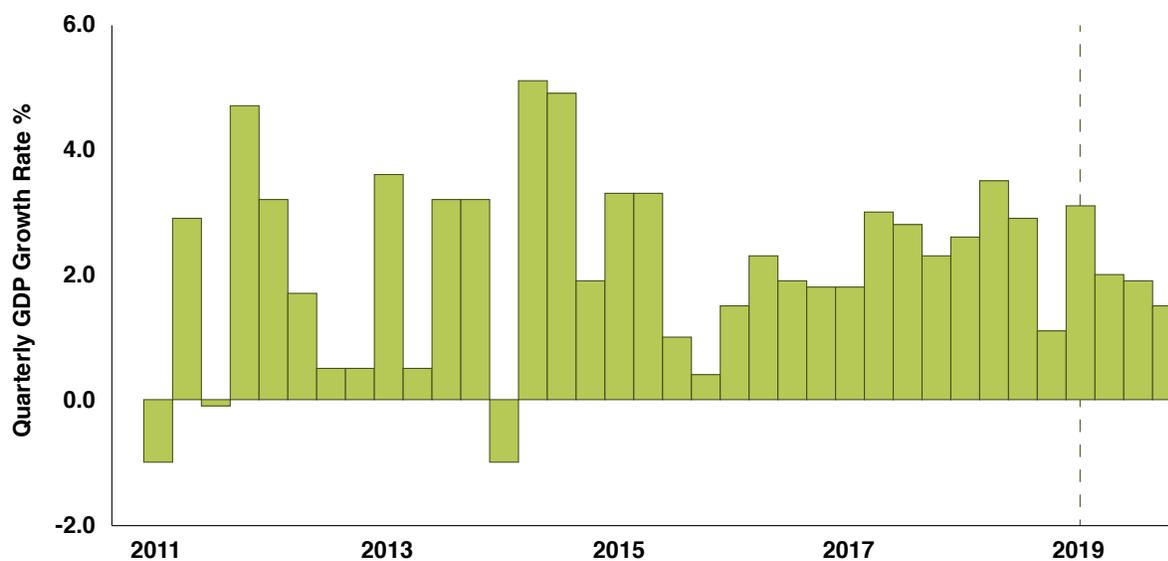
Figure 1.1: U.S. GDP Growth Continues to Outpace International Competitors in 2019



Source: Organisation for Economic Co-operation and Development.

## 1.1. INTRODUCTION, CONTINUED

Figure 1.2: GDP Growth was Positive, but Slowing, in 2019



Source: Bureau of Economic Analysis; IHS Markit™(copyright).

Consumption is the largest component of the economy and more than three-quarters (78.0 percent) of overall growth is attributable to growth in consumption. There are two major sub-components of consumption, goods and services, both of which grew in 2019. Goods growth contributed 0.83 percentage points to gross domestic product (GDP) growth, and services boosted it by 0.94 percentage points.

Investment also aided growth, contributing 0.35 percentage points to the overall total. This is down sharply from 2018, when tax-inspired growth in investment contributed 0.87 percentage points to GDP growth.

Declines in exports provided a drag on growth, as did the international trade deficit in general. As the U.S. struggled with retaliatory tariffs from trading partners, the value of exports declined for the first time since 2009. The value of imports grew by 1.5 percent.

With GDP growing, unemployment low, stock markets rising, and inflation manageable, the overall view of the macroeconomy is unambiguously positive. However, there are signs that the economy may be approaching its peak with slower growth on the horizon. While a recession seems unlikely in the near-

term, there is evidence of weakened growth. Consumer Sentiment was lower at the end of 2019 than it was entering it. Similarly, while nonresidential fixed investment grew by 2.2 percent in the year, residential fixed investment declined by 1.7 percent. Investment in structures declined by 4.9 percent, and the real value of exports declined for the first time in a decade. The difference between long- and short-term interest rates, traditionally an early warning signal for a recession, became negative in 2019 (See page 14 of this report for more.) The U.S. manufacturing sector is now showing signs of contraction.

Overall while GDP growth should remain positive, growth is forecast to decline every year of the next five years. The Federal Reserve has responded to the increased uncertainty by loosening monetary policy, lowering the Federal Funds rate closer to the zero lower-bound. While this has eased financial markets, it restricts the ability of the Fed to counteract a recession. The imprudent repeated deficits of the federal government in this strong economic climate will similarly provide little ammunition to engage in countercyclical fiscal policy in the case of an economic downturn.

## 1.2. THE U.S. ECONOMY: YEAR IN REVIEW

The U.S. economy grew for the tenth straight year in 2019. Nominal GDP rose to \$21.4 trillion, and the unemployment rate fell to 3.7 percent. Helped by strong consumption growth and boosted by the trillion-dollar federal deficit, GDP growth was 2.7, 2.3, 2.0 percent in quarters 1 through 3. With fourth quarter growth of 2.1 percent expected, the average growth rate of the economy for 2019 will be 2.3 percent. This represents a slowdown relative to 2018, when growth was 2.9 percent. Growth in the economy is set to continue, albeit at a slower pace, with growth of 2.1 percent expected next year.

### Consumption

Personal consumption expenditure is the largest single component of GDP, and will comprise 69.7 percent of GDP in 2019. This is up slightly on 2018's 69.4 percent and represents a growing trend of an increased consumption share, up from 67.7 percent in 2013.

The growth in GDP has been disproportionately driven by consumption patterns, with over three-quarters (78 percent)

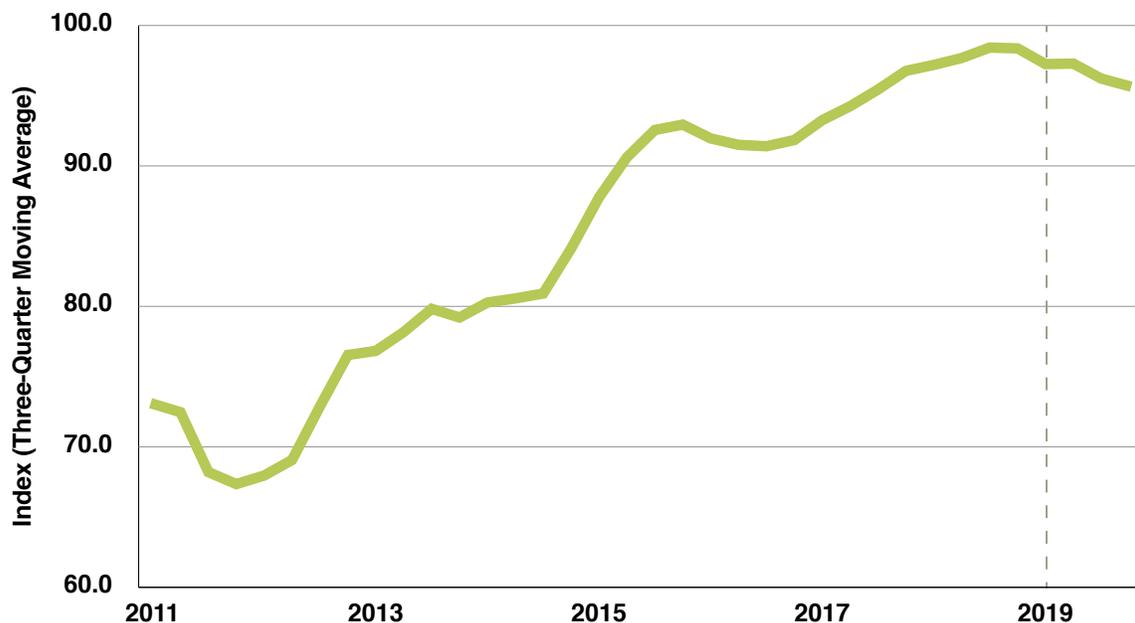
of the increase in GDP attributable to increases in consumption. Much of the growth was experienced in the second quarter of the year, with consumption up 4.6 percent. This compares with growth rates of 1.1, 2.9, and 2.7 percent in the other respective quarters.

The deceleration in GDP growth is noticeable, with consumption growth up 2.6 percent overall this year compared to 3.0 percent in 2018. This is more pronounced in population-adjusted terms, with per capita consumption up 1.9 percent in 2019 compared to 2.4 percent in 2018. This represents the slowest per capita increase since 2013.

Personal consumption comprises three parts: durable goods, such as cars and computers; nondurable goods, such as food and tobacco; and services such as health care and electricity.

Comprising 64.4 percent of the total, services is by far the largest component of overall consumption. Consumption of services provided a slight drag on the growth of overall consumption, with services up only 2.0 percent this year (down from growth of 2.5 percent in 2018). Health care service expenditure, which itself represents

Figure 1.3: Consumer Sentiment Fell Slightly in 2019



Note: consumer sentiment index includes two lags to generate a moving average.  
Source: IHS Markit™ (copyright).

## 1.2. THE U.S. ECONOMY: YEAR IN REVIEW, CONTINUED

11.8 percent of GDP, grew by 3.1 percent. This represented significantly higher growth than the 2.4 percent and 2.9 percent experienced in 2017 and 2018 respectively. With growth of 7.5 percent in 2019, the telecommunication services sector saw its fastest growth this decade.

Durables consumption grew by 4.8 percent in 2019. This was by far the fastest growing component of consumption, but was significantly down on the 6.3 percent increase in the prior year.

The declining consumer preference for new automobiles continued in 2019, with real spending declining by 11.3 percent. This compounds the previous experience of five-year negative growth in the sector, with purchases of used automobiles also down 1.0 percent in the year.

Consumers are switching their preference to light trucks and SUVs, which are up 1.2 percent for the year. This sector has seen continuous growth for a decade, and now comprise 59.8 percent of registered vehicles in the country. A decade ago, the U.S. produced about as many cars as light trucks. This year the domestic industry produced 9.6 million light trucks, more than twice the 4.7 million number of cars.

Nondurables consumption was up 3.5 percent

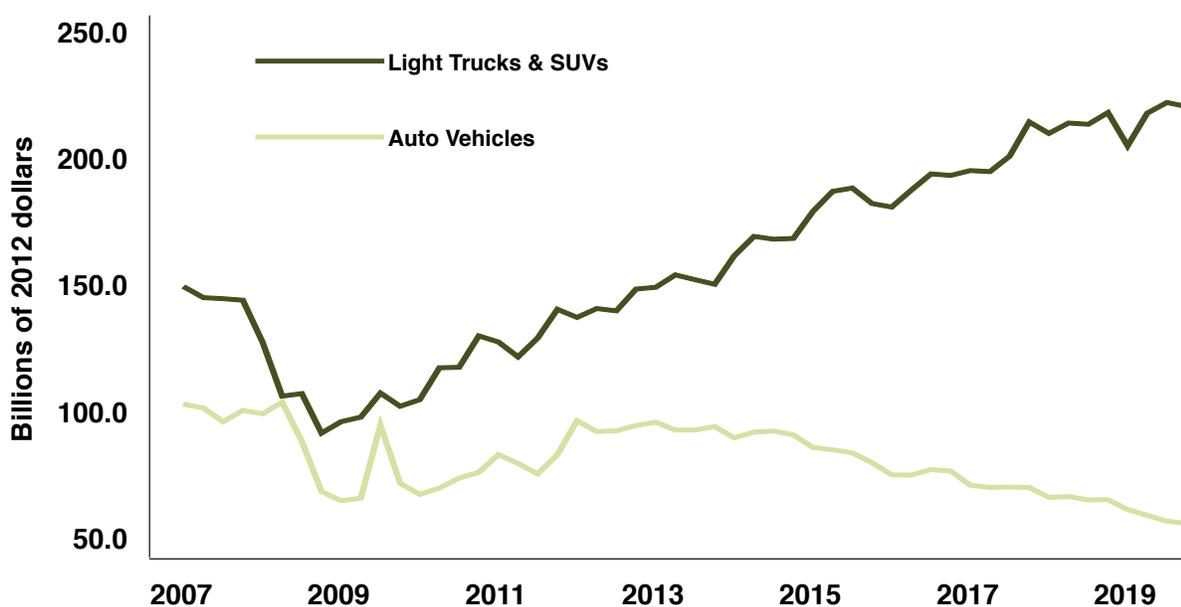
in 2019, accelerating from the 3.0 percent seen in 2018 and the largest one-year increase this decade. The largest increase was in pharmaceutical & other medical products which surged 8.0 percent in the year. By way of comparison, consumption of food & beverages increased by 2.2 percent. Tobacco saw the largest single-unit decline, with sales down 3.4 percent.

### Investment

Investment represents 18 percent of the U.S. economy in 2019. A driver of future growth, fixed nonresidential investment represented the bulk of this. At 14.4 percent of GDP, nonresidential fixed investment is considerably larger than the other two subcomponents of investment, residential investment and changes in inventories.

Investment in equipment rose 1.6 percent over the year, with rates of -0.1, 0.8, -3.8, and 1.1 percent the specific quarterly figures. This represents a significant decline in investment in 2017 and 2018, which averaged over 5.0 percent per year. The most notable sector in this regard was aviation. Aircraft sales were down 33.8

Figure 1.4: Spending on New Auto Vehicles Continues to Decline, in Real Terms



Source: IHS Markit™(copyright).

## 1.2. THE U.S. ECONOMY: YEAR IN REVIEW, CONTINUED

percent this year, driven in large part by the grounding of Boeing's 737 MAX. The nature of that industry means it is known for volatility; growth is expected to rebound to 26.9 percent next year.

Investment in intellectual property products increased 8.0 percent in 2019, the strongest increase in the decade. Investment in research and development was up 7.4 percent for the year, and has increased by a cumulative 47.3 percent in real terms since 2010.

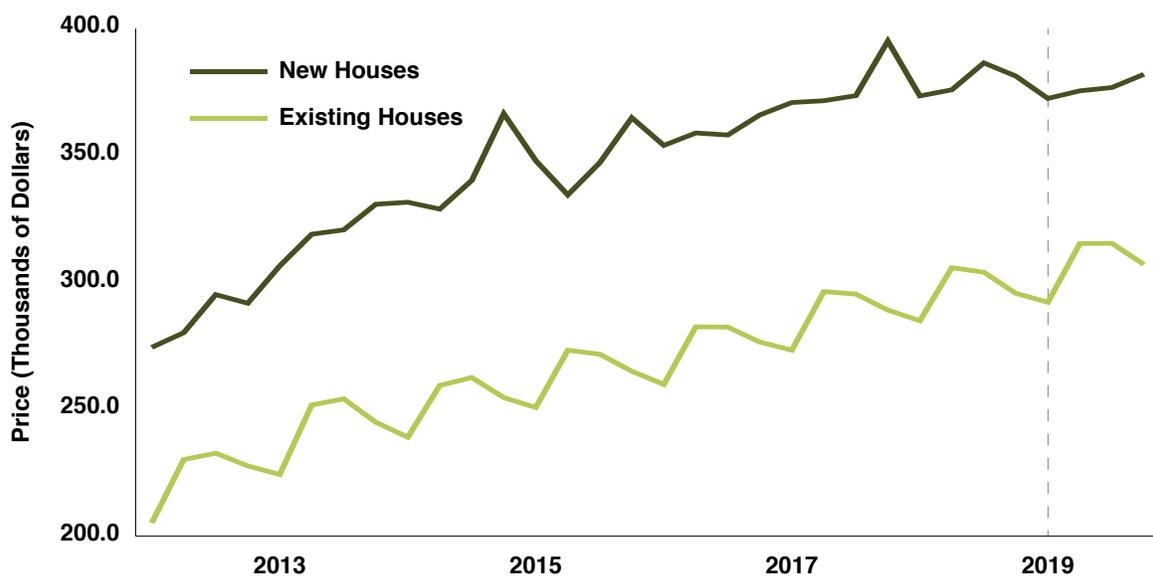
The rate of investment in structures fell by 4.9 percent in 2019, canceling out the gains of 4.1 percent in 2018. Of particular note was mining and petroleum, where investment fell 7.9 percent. This is in the context of huge policy-driven increases in investment of 24.2 and 40.9 percent in 2018 and 2017 respectively, so investment remains relatively high overall. Continued decreases are forecast for 2020 (12.1 percent decrease) and 2021 (8.1 percent decrease).

Residential fixed investment fell 1.7 percent in the year. Growth in housing starts was modest, up only 5,000 off a 2018 base of 1.25 million. Though modest in 2019, this represents a 25 percent increase in the 1 million homes started

in 2014. Investment in single-family homes fell by 7.6 percent in real terms. Sales of existing homes also shows signs of weak growth, from 5.34 million to 5.36 million transactions. With relatively low increases in supply but the population continually increasing, there was upward pressure on prices. Houses prices are up nationally by 3.3 percent, and the median house price rose by 4.0 percent. The rental vacancy rate stayed constant at 6.9 percent.

Business inventories increased by 2.6 percent in real terms in 2019. This was driven by increases in nonfarm inventories, with farm inventories actually 4.7 percent lower in quarter four of 2019 than twelve months prior. Nonfarm inventories were volatile over the year and particularly elevated at the start of the year, with nearly 39.8 percent of the annual increase occurring in the first quarter of 2019. The relatively lower increases in quarters two through four constituted a flow correction, resulting in an overall increase in nonfarm inventories of 3.1 percent. As nonfarm inventories are more than ten times the size of farm inventories, the growth in the former resulted in a weighted average that more than overcame the reduction in the latter.

Figure 1.5: The Real Price of New Houses has Fallen Slightly in Recent Years



Source: IHS Markit™ (copyright).

## 1.2. THE U.S. ECONOMY: YEAR IN REVIEW, CONTINUED

### Interest Rates

Governing much more than mortgage costs, interest rates are perhaps the single most important set of prices in the economy. In addition to being a key determinant of investment and consumer spending, interest rates affect exchange rates. Higher interest rates increase the demand for the dollar. This heightened demand for the domestic currency consequently makes foreign currency relatively cheaper. Therefore cheaper foreign currency, which encourages imports and dampens exports, is a side-effect of higher interest rates. In turn, higher imports provide a drag on growth.

Monetary policy is governed by the Federal Reserve Board. Having previously held interest rates at remarkably low levels since the Great Recession, the Fed increased interest rates from early 2017 (0.7 percent rate) through mid-2019 (2.4 percent rate). Amid concerns about deteriorating economic performance, the Federal Reserve reverted course slightly in August, lowering the rate to 2.2 percent. This was followed by a further reduction in the target rate to 1.7 percent in October.

Yields on U.S. Treasury bills followed much the same pattern as the Federal Funds rate. The bond-equivalent yield on a 6-month Treasury bill started at 2.51 percent in quarter one, before falling to 2.34, 1.96, and 1.61 percent in quarters two through four respectively.

Notably, yields inverted in the third quarter of 2019 when the rate on the 3-month Treasury-bill (2.02 percent) was priced higher than the rate on a 6-month Treasury-bill (1.96 percent). Such inversions have historically been predictors of impending recession. We discuss this relationship in greater detail on page 14.

### Government Purchases

The economic footprint of the federal government continues to grow. Building on growth of 2.9 percent in 2018, federal expenditures grew by another 3.3 percent in 2019. This was the fourth straight year of increases,

and the largest single-year growth in the sector since 2010, when the U.S. was recovering from the effects of the Great Recession.

Expenditure increases were focused in defense, which saw growth of 4.6 percent. Although some of the increase in defense spending was in labor compensation (1.2 percent growth), much of it was in gross investment (5.8 percent growth). Growth in nondefense components was more modest, with real increases restricted to 1.4 percent. Labor compensation in nondefense actually fell by 0.7 percent in real terms.

State & local expenditures also grew in 2019, but at 1.6 percent the increase was about half that of the federal level. The overall growth comprised a 1.1 percent increase in consumption (such as wages & salaries, which grew by 0.6 percent) and a 4.2 percent increase in gross investment (such as equipment, which grew by 4.0 percent).

Government expenditure must be paid for either by current taxpayers or by future taxpayers through increased debt. Examination of budget deficits shows that policymakers are heavily reliant on the latter. In 2019, federal outlays will exceed receipts by nearly \$1 trillion. This represents a deficit of 5.41 percent of GDP – higher than the 4.91 percent deficit of 2018 and a considerable increase on the 3.71 percent deficit from 2017. Since 2017, current expenditures have increased by 12.9 percent but current receipts have increased by just 3.2 percent. While some sources of revenue have increased since 2017 (such as personal current taxes, up 5.8 percent), these gains have been largely offset by reductions in other taxes (such as revenue from the corporate income tax, which is down 54.4 percent) over the same period.

The expanding gulf between revenues and expenditures is less pronounced on the state and local side, where many jurisdictions are bound by balanced budget requirements. Current receipts increased by 4.5 percent in 2019, far in excess of the 3.1 percent increase in current expenditures. In contrast to the federal government, state and local agencies have seen growth rates in current receipts exceed current expenditures for each of the past three years.

## 1.2. THE U.S. ECONOMY: YEAR IN REVIEW, CONTINUED

### The Declining Fertility Rate

The population of the U.S. stands at 330.1 million people. There are three major factors that influence the change in population: net migration, the number of deaths, and the number of births. Migration persists as a heated political topic, but there is less discussion about the determinants and effects of fertility and mortality on the population.

Research has been conducted on the aging of society, primarily in terms of the future funding of the social security system. People living longer will shift the demographic pyramid up and require higher taxes on the working population.

Separately to the fact that people are living longer, fertility is declining. Although the overall population of the U.S. has grown by 20 million people since the start of the decade, the number of people under the age of 21 has decreased. Relative to 2010, there are 1.5 million fewer young people in the U.S. today. Indeed, the total fertility rate reached an historic low in 2018.

Figure 1.6: Total Fertility Rate



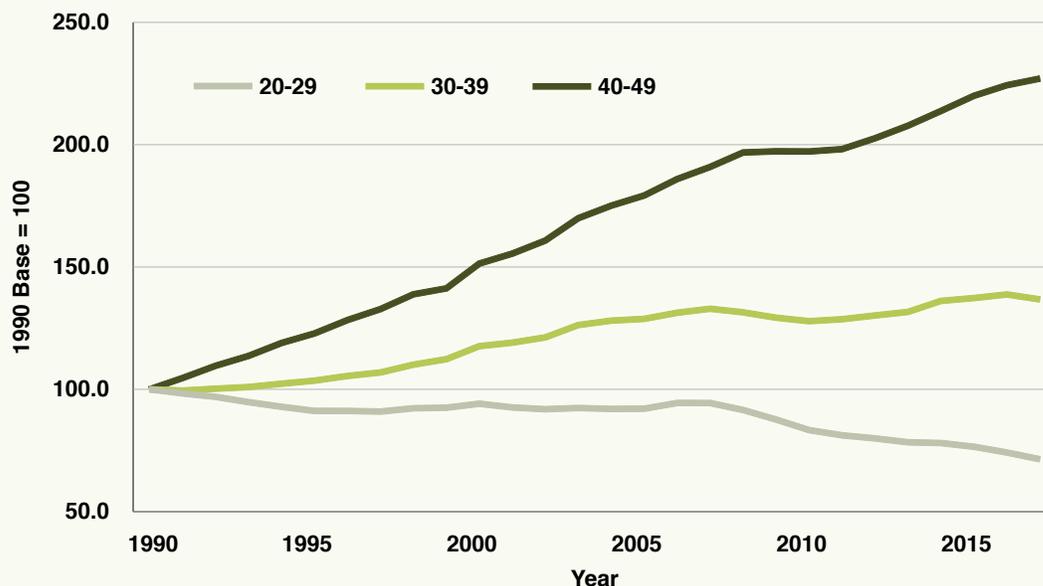
Sources: Organisation for Economic Co-operation and Development, Centers for Disease Control and Prevention.

It is natural to investigate the causes of the decline in the birth rate. An obvious candidate, but ultimately one that is untrue, is an increase in terminations. The termination rate has fallen in recent years. In fact, researchers from the Centers for Disease Control and Prevention have shown that the abortion rate is now at its lowest rate since the *Roe v. Wade* case in 1973.

*Continued on Page 8*

## 1.2. THE U.S. ECONOMY: YEAR IN REVIEW, CONTINUED

Figure 1.7: Decline in Overall Fertility is Driven by Younger Women



Source: Human Fertility Database, [humanfertility.org](http://humanfertility.org).

### The Declining Fertility Rate, continued from Page 7

Economic research has proposed an alternative hypothesis: fertility delays. The data from a recent paper show that the declines in fertility are overwhelmingly concentrated among young women. Among 20 to 24 year-olds, births have fallen from 92.3 per thousand women in 2006 to 64.0 per thousand women in 2017.

The declines are even more dramatic for teenagers: for 15 to 19 year-olds, births have fallen from 26.4 per thousand women in 2006 to just 12.0 per thousand women in 2017, a decrease of 54.5 percent.

Conversely, women in their thirties and forties have shown increases in fertility. Take women aged 32 as one example. In 1990, their fertility rate was 8.1 children per thousand women. By 2017, this had risen to 10.3 children per thousand women. The increase is even more dramatic for older cohorts: in 1990, the unweighted average fertility rate for women in their forties was 2.7 children per thousand women; by 2017 this was up to 6.2 children. That represents a more than doubling of the rate, an increase of 130 percent. This pattern is consistent with women delaying fertility, but not at a rate which can overcome the decline for younger women.

#### Further Reading:

Bailey, Martha J. (2019) *Panel on Economic Determinants of Fertility Behaviour*. NBER Summer Institute, July 2019.  
 Buckles, Kasey, Melanie E. Guldi and Lucie Schmidt (2019) *Fertility Trends in the United States, 1980–2017: The Role of Unintended Births*. NBER Working Paper 25521, January 2019.  
 Jones, Rachel K., and Jenna Jerman. (2017) *Abortion Incidence and Service Availability in the United States, 2014*. *Perspectives on Sexual and Reproductive Health*.  
 Human Fertility Database. Max Planck Institute for Demographic Research (Germany) and Vienna Institute of Demography (Austria). Available at [www.humanfertility.org](http://www.humanfertility.org) (data downloaded on 3 December, 2019).

## 1.2. THE U.S. ECONOMY: YEAR IN REVIEW, CONTINUED

### International Trade

The year experienced a continuation of skirmishes in the U.S. trade disputes with China, the European Union, and others. While the political narrative has been focused on restricting imports through heightened tariffs, retaliatory measures created a commensurate drag on exports.

This is reflected in the poor performance of exports of goods and services which declined 0.2 percent in 2019. This is the first decline since the Great Recession, and is considerably poorer than the 4.2 percent average growth rate in the other years of the decade.

Some of the poor export performance can be explained by the troubles faced by Boeing, as exports of aircraft declined 7.9 percent in the year. However, this was more than compensated for by the 7.7 percent increase in petroleum and products, a sector which is more than twice the size of aviation. Services exports, too, declined in 2019. A 0.7 percent reduction in services exports represents a \$6 billion drag on GDP growth.

Despite the decrease in exports, the value of goods and services imported in the country grew in 2019. Imports have grown every year this decade, and by 1.5 percent in 2019. Good imports grew by a modest 0.9 percent, the low rate driven in part by a 7.8 percent reduction in petroleum. Heightened importation of consumer goods (4.8 percent), vehicles and parts (4.5 percent) and foods, feeds and beverages (3.2 percent) continued in 2019.

The importation of services grew by 3.9 percent, significantly higher than the 1.6 percent growth in 2018. With exports down and imports up, the trade deficit grew to \$653 billion. For context, this is more than three times the value of all exported consumer goods.

### Inflation & Prices

There are many measures of price changes. The Consumer Price Index (CPI) is the most-cited measure, and includes a large basket of goods. Core inflation is very similar to the CPI, but excludes food and energy. In addition to the consumer-side of the market, there are measures of producer prices including the costs of materials.

Overall, the CPI rose 1.8 percent in 2019. This indicates increasing consumer prices, but at a lower rate than last year (2.4 percent) or the year before (2.1 percent). Core inflation was higher, at 2.2 percent. This was slightly up on the prior year of 2.1 percent. The difference between CPI and core inflation is due to the different trajectories of food and energy. Food prices grew by 1.9 percent, a significant acceleration of the 0.3 percent, 0.9 percent, and 1.4 percent experienced in 2016-2018. Energy prices fell 2.4 percent, a welcome rebalancing after increases of 8.0 percent and 7.4 percent in the previous two years.

Producer prices also increased slightly in 2019. While core inflation was 2.2 percent, a 4.9 percent reduction in energy prices resulted in finished goods increasing by 0.7 percent. Intermediate materials fell by 1.5 percent, and crude materials fell by 7.2 percent. Gas fuels fell by 27.0 percent.

### The Labor Market

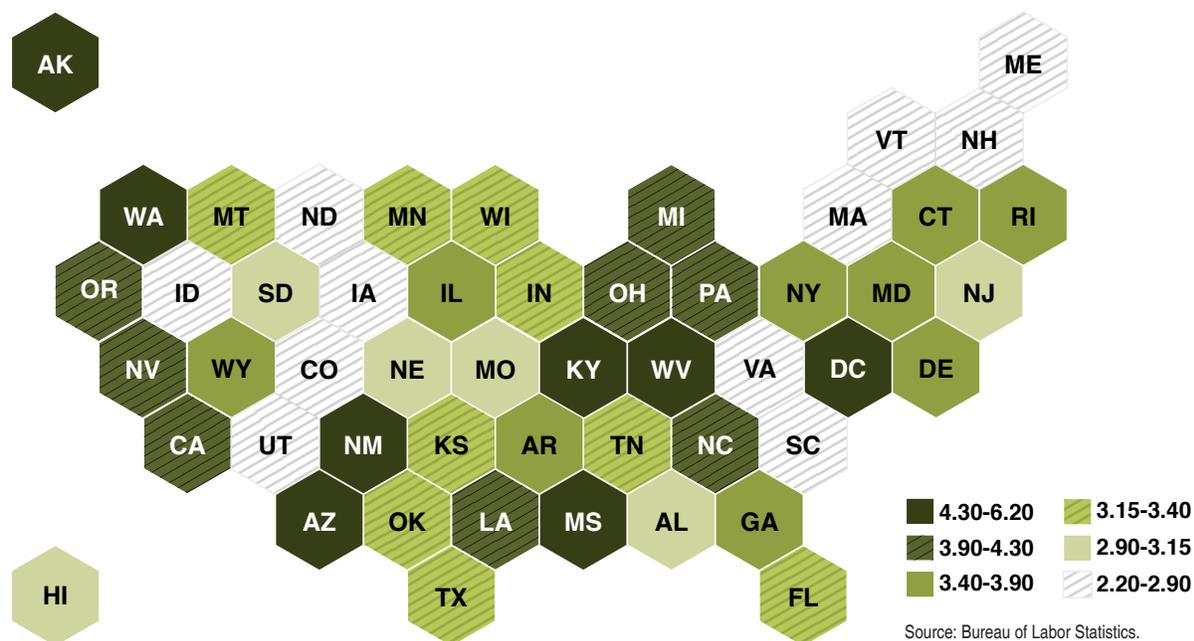
The unemployment rate, which averaged 3.7 percent over the course of 2019, is at its lowest level in decades. Having started the year at the relatively low rate of 3.9 percent in quarter one, steady declines see the rate entering 2020 at 3.5 percent.

While low overall, unemployment varies considerably across borders and types of people. As of September, Vermont recorded the lowest level of unemployment in the country at just 2.2 percent. Unemployment is also notably low in Iowa, New Hampshire, and North Dakota, all of which recorded rates of 2.5 percent. Tennessee ranks joint 25th in the nation, with unemployment at 3.5 percent. The labor markets in Washington, D.C., Mississippi, and Alaska, are less buoyant, as they all recorded unemployment rates in excess of 5.0 percent.

The large and persistent differences between groups of people (by age, gender, etc.) are perhaps more surprising than differences in unemployment by geographical location. Generational differences are quite stark. The unemployment rate for young people aged 16 to 19 years is 12.3 percent, more than three times the 3.2 percent observed for people aged 20 and over. The unemployment rate for the foreign-born population is 2.9 percent,

## 1.2. THE U.S. ECONOMY: YEAR IN REVIEW, CONTINUED

Figure 1.8: Variations in Unemployment Rates, by State (2019)



notably below the 3.4 percent -recorded for native born. The participation rate for males (aged 20 years and over) is 71.6 percent, substantially higher than the corresponding 59.2 percent for females.

The population of the U.S. stands at 330 million people, up 0.7 percent on the previous year. Of course many of these are children, students, retirees, or otherwise not in the labor force. The labor force itself comprises 163.5 million people which implies a labor force participation rate of 63.1 percent, up 0.2 percentage points on the previous year.

The participation rate was significantly higher at the turn of the century (67.1 percent) than today (63.1 percent). Much analysis has focused on this decline as the cause of economic worry. However, the prime aged labor force participation rate, at 72.6 percent in 2019, is at its highest level since the Great Recession. In reality, much of the decline in the participation can be explained by changes in the age profile of the population. In 2000, there were 35.1 million people (12.4 percent of total, about one person out of every eight) aged 65 and up. That number has now increased

to 54.5 million, representing about one person out of every six (16.5 percent). Older people are less likely to work. Nonetheless, as people live longer it is unsurprising that they spend longer in the labor market. The participation rate of people aged 65 and up has increased from 12.9 percent in 2000 to 19.5 percent in 2019.

### Productivity & Wages

Wages and salaries grew by 3.0 percent in 2019, matching the increase of 2018. Benefits (including health insurance) increased by 2.1 percent, resulting in total compensation increasing by 2.7 percent.

On average, people work 32.3 hours per week. This has been relatively constant throughout the decade, as 32.3 hours per week matches the level recorded in 2010. Manufacturing workweeks are longer, averaging 41.6 hours in 2019. This is down from the 42.1 hours in 2018, and is at the lowest level since 2012. Hourly compensation is \$43.90, up from \$42.20 in 2018. Compensation attributable

## 1.2. THE U.S. ECONOMY: YEAR IN REVIEW, CONTINUED

to employees grew to 63.1 percent of national income, the highest level since 2009.

Nonfarm productivity increased by 1.3 percent in 2019, a rather poor showing with important implications for the nation's growth path. This was helped by a 3.7 percent increase in the capital stock, which has grown by

more than 3.0 percent every year since 2013. Manufacturing output per hour increased by 0.4 percent in 2019, a decrease on the 0.7 percent gain in 2018. Collectively, potential GDP increased by 2.0 percent, beating the 1.9 percent increase last year, and representing the largest increase over the decade.

## 1.3. THE U.S. FORECAST

We forecast that the U.S. economy will continue to expand in 2020. Growth in real GDP will be 1.9, 2.0, 2.1, and 2.3 percent in quarters one through four, generating an average growth rate of 2.1 percent. This is slightly slower than the growth rate of 2.3 percent experienced in 2019. As the stimulatory effects of the Tax Cuts and Jobs Act continue to dissipate, growth will continue to slow in 2021 (2.0 percent) and 2022 (1.6 percent) in the baseline forecast. Slower global growth, tariffs and labor scarcity will contribute to the slower growth outlook.

### Consumption

Consumer spending is expected to remain strong, with growth of 2.8 percent in 2020 and 2.4 percent in 2021 forecasted. While down on the 3.0 percent and 2.6 percent experienced over the past two years, this represents strong growth on an historical basis.

Increased consumption will be most noticeable with 5.2 percent growth in durable goods. This reflects optimistic consumer sentiment, ongoing job gains and confidence in the strength of the economy. Consumers will continue to shift away from automobiles, with negative growth of 8.1 percent and 4.2 percent expected in 2020 and 2021. Some of this will be captured in traditional substitutes like light trucks, which will see growth of 3.9 and 7.9 percent over the next two years.

Consumption of nondurable goods will also increase, with growth of 3.2 percent forecast for

2020. This should slow to 1.9 percent in 2021, and to 1.4 percent in 2022. The consumption of services will see a relatively slower expansion, with 2.3 percent growth forecast for 2020. Health care (2.9 percent) and food services (5.5 percent) will be among the biggest winners in the services sector.

### The Labor Market

The buoyant labor market should continue in 2020. Wages and salaries should grow by 3.3 percent in 2020, substantially above the 1.1 percent increase in nonfarm output per hour. This will result in the compensation of employees increasing to 63.3 percent of national income in 2020, and rising above 64 percent by 2025.

Entering the year at 3.5 percent, the national rate of unemployment will fall to 3.4 percent by the end of 2020.

### Investment and Interest Rates

Investment will continue to grow in 2020 but at a modest pace. Slower economy-wide growth will diminish the need to acquire new equipment and expand structures capacity. With growth of 1.7 percent forecast, investment growth will not match the TCJA-fueled expansion of 2018 (6.8 percent) and be more in line with 1.6 percent experienced in 2019. With investment growth lagging the overall growth rate of the economy, fixed nonresidential investment as a percent of GDP will fall to 13.3 percent in 2020. Assuming the recertification

### 1.3. THE U.S. FORECAST, CONTINUED

of Boeing’s 737 MAX can compensate for a disastrous 2019, investment in aviation is expected to be a big winner in 2020 with 26.9 percent growth.

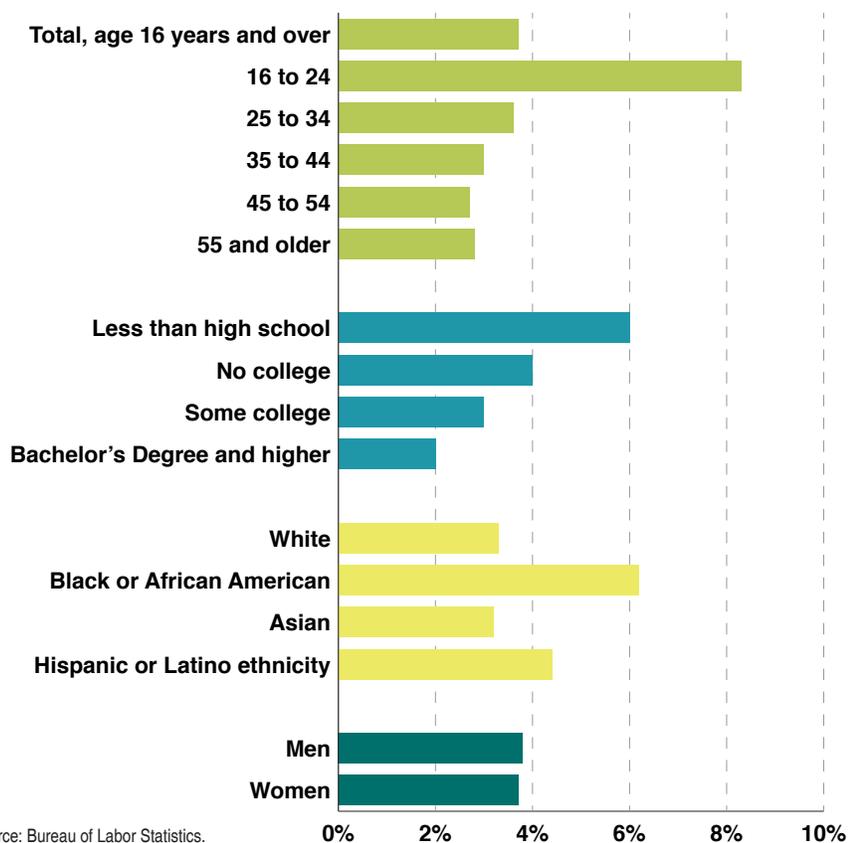
A volatile element of investment is the rate of change of inventories. In 2019, the dollar value of nonfarm inventories increased by \$80 billion. Volatility will continue with inventories expected to increase in value by a much more modest \$15 billion in 2020.

Residential construction will pick up considerably in 2020, with growth of 0.4 percent arresting the negative growth rates in 2018 and 2019. The sector will start 1.3 million new homes in 2020, and average house prices are expected to grow by 3.1 percent. Much of this will be at the higher-end of the market: median house price increases, at 1.8 percent, will be more modest.

#### Federal Budget

In 2020 federal receipts will amount to 17.1 percent of GDP, slightly up on 2019, but substantially below the 18.0-18.9 percent raised in 2013-2017. In contrast, expenditures will grow to 22.3 percent of GDP, the highest level since 2012. The difference will amount to 5.2 percent of GDP. Thus the federal government will continue to increase the national debt, with the deficit predicted to exceed \$1 trillion in both 2020 and 2021. The national debt currently stands at 80.3 percent of GDP. This will increase to 82.5 percent in 2020, and 84.5 percent in 2021. The debt-to-GDP ratio will exceed 90 percent by 2025. This contrasts with the much more modest 33.6 percent recorded at the start of the millennium.

**Figure 1.9: Unemployment Rates by Age, Educational Attainment, Race and Ethnicity, and Gender (October 2018, Seasonally Adjusted)**



Source: Bureau of Labor Statistics.

### 1.3. THE U.S. FORECAST, CONTINUED

#### International Trade

The forthcoming year will see a minor thaw in the U.S. trade skirmishes, with both imports and exports forecast to increase in 2020. Following a decline of exports by 0.2 percent in 2019, growth (of 2.1 percent) will return in 2020. Service exports will increase 1.6 percent, a significant improvement on the reduction of 0.7 percent in 2019. The growth in goods exports will be spread throughout the economy with capital goods increasing by 5.6 percent and consumer goods by 1.0 percent. As noted above, much of the increase is predicated on the resumption of Boeing 737 MAX sales.

Imports will grow faster than exports. Forecasted import growth of 2.4 percent in 2020, coupled with growth rates exceeding 4.0 percent each year in 2021-2023, will expand the trade deficit to over \$1 trillion. The largest growth area for imports is services, which is set to grow by 2.9 percent in 2020. This is slower than the rate for 2019, but remains higher than the forecasted growth in goods (2.3 percent). Importation of petroleum will increase by 3.9 percent in 2019, and of consumer goods by 5.1 percent. Imports of vehicles and parts will fall by 1.2 percent, the first decline since 2009.

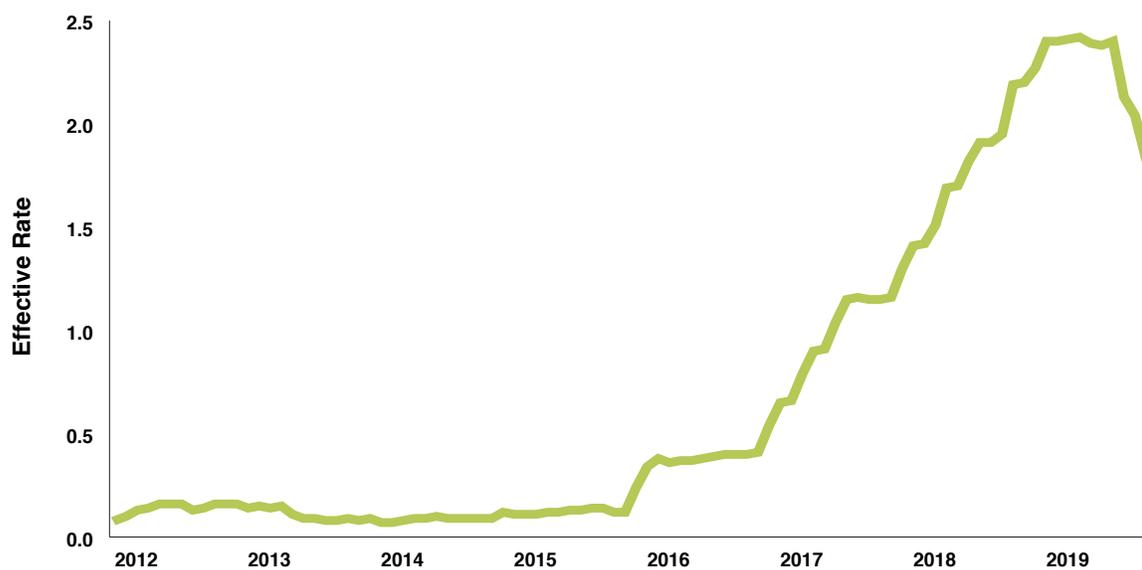
#### Inflation & Prices

The CPI will continue its modest growth with rates of 1.6, 2.4, 1.4, and 0.7 percent forecast in quarters one through four of 2020. The 2020 average rate of 1.9 percent is slightly above the 1.8 percent of 2018, and the general trend will be replicated in 2021 with the cost of the basket of goods increasing by 1.8 percent. Core inflation, which excludes food and energy, will be slightly higher than CPI inflation. This is because of a predicted 2.5 percent decline in energy prices.

Producer prices will grow by 1.0 percent in 2020. This is a slower rate than consumer prices, in part because of producers' heavier reliance on crude materials which are forecast to fall by 7.2 percent. The gradual increase in producer prices will continue in subsequent years, with inflation of 1.0 percent and 2.3 percent forecast for 2021 and 2022 respectively.

Having fallen from 2.4 percent to below 1.9 percent, interest rates were lower at year-end 2019 than they were in January. The Federal Reserve will likely maintain its relatively looser monetary policy through 2020, as rates are likely to remain below 1.7 percent for the year on average, before rising above 2.0 percent in 2021.

Figure 1.10: The Federal Funds Rate Fell in 2019



Source: Federal Reserve Bank.

## 1.3. THE U.S. FORECAST, CONTINUED

### Predictors of the Next Recession

The economy of the United States has grown every year since the Great Recession. In aggregate, GDP has grown by 25 percent since 2009. That increase has been shared among a population that has increased by 7.3 percent. A remarkable fact of the recovery is that the 2010s will be remembered as the first decade without a recession since records began in the Antebellum period.

While the economy has remained resilient in recent years, future downturns are somewhat inevitable. Policymakers have two major levers to combat recessions: fiscal and monetary policy. Recent historical choices have resulted in both of these levers left with little slack. Monetary policy has for years been struggling near the zero lower bound for interest rates, providing the Federal Reserve with less room to maneuver in case of financial market distress. Expansionary fiscal policy is the other principal way to overcome an economic downturn, though Congressional approval for increased expenditure seems unlikely when the federal government is already running a large deficit. With fewer policy options available under poor economic conditions, predicting a

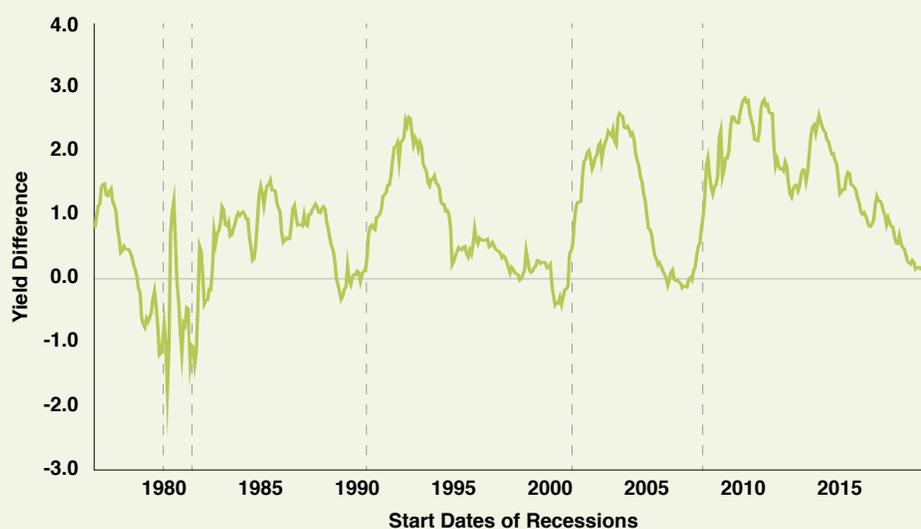
recession becomes more important.

Yield curves graph the difference between interest rates of different durations. An *Inverted Yield Curve* is perhaps the best-known predictor of a recession. The relationship between an inverted yield curve signaling a recession has been known since the 1980s. In general, a longer-term horizon ties up money for longer and thus demands a higher rate of return. Consequently, the yield on a 10-Year bond is higher than the yield on a 5-Year bond, which in turn commands more of a yield than a 1-Year bond and so on.

This relationship is not always true and the phenomenon of a longer bond yielding less than a shorter bond is referred to as a “yield curve inversion”, or an “inverted yield curve”. U.S. Treasury yields inverted in the third quarter of 2019, when the rate on the 3-month Treasury-bill (2.02 percent) became slightly higher than the rate on a 6-month Treasury -bill (1.96 percent). Such inversions rarely persist for a long time period, and the unusual pattern had dissipated by quarter four. Nonetheless, yield curve inversions are predictors of recessions.

*Continued on Page 15*

Figure 1.11: Recession Predictor: Yield Curve



Source: Federal Reserve Bank.

### 1.3. THE U.S. FORECAST, CONTINUED

#### Predictors of the Next Recession, continued from Page 14

Figure 1.11 shows the difference between yields on 10-year and 2-year Treasury bonds. The yields on 10-year maturities are typically higher, and so the difference is usually positive. Yield curve inversions cause the difference to drop below zero. Consistent with the inversion for the 3-month and 6-month maturities, the gap between yields on 10-year and 2-year maturities has been closing. We can see that historically this has served as advanced warning of a recession, although the exact timing varies across the decades. The experience in recent years has been a significant contraction in the yield curve, signaling that financial markets are somewhat worried about recession.

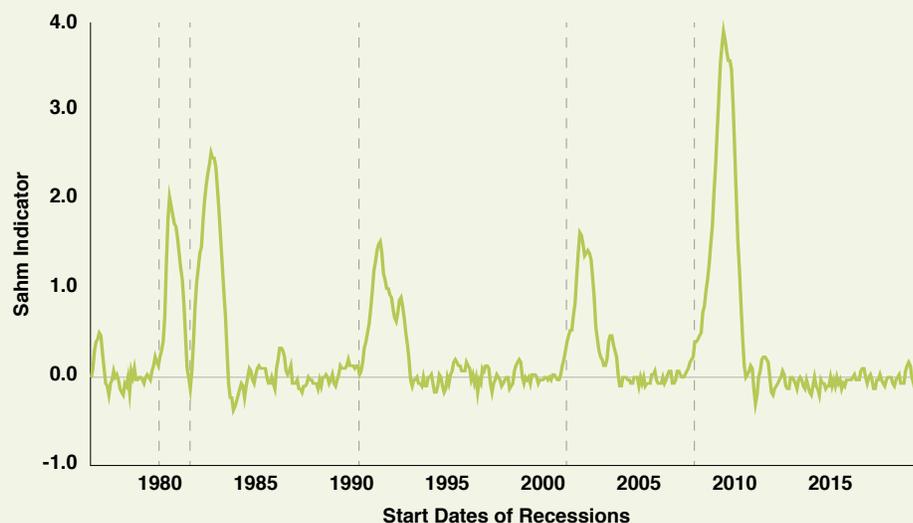
As statistical agencies must first collect and analyze the data, quarterly GDP statistics are typically published with a slight lag. This means that policymakers often discover that the economy is in recession after it has started. The difference in time between a recession starting and a recession being declared can be quite large. For example, the National

Bureau of Economic Research did not pinpoint December 2007 as the start of the Great Recession until over a year after that date. The Sahm Curve has recently been found to provide a recession indicator that operates closer to real-time.

The Sahm Curve, named for economist Claudia Sahm, plots the change in the unemployment rate relative to the previous year. As unemployment data are released every month, policymakers can update the Sahm Curve at much greater frequency than official GDP statistics. Sahm noted that an increase in unemployment by 0.5 percentage points within one year is a very good predictor of immediate recession, and that any policy responses to this increase “would have been triggered only in recessions.” Figure 1.12 shows a sharp increase in the Sahm Curve has been a precise predictor of recent recessions. We recommend that concerned policymakers should consider the Sahm Curve as a clearer, faster recessionary warning signal than an inverted yield curve.

Sahm, Claudia (2019) *Direct Stimulus Payments to Individuals*. In Boushey, Heather, and Ryan Nunn and Jay Shambaugh (Eds.) “Recession Ready: Fiscal Policies to Stabilize the American Economy” (pp. 67–92). Hamilton Project, Brookings Institution.  
 Stock, James H., and Mark W Watson. “Forecasting output and inflation: The role of asset prices.” *Journal of Economic Literature* 41.3 (2003): 788-829.

Figure 1.12: Recession Predictor: Sahm Curve



Source: Federal Reserve Economic Database, NBER. Dashed lines represent the start of recessions.

## 1.4. ALTERNATE SCENARIOS

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In the pessimistic scenario, loss of consumer confidence and increased aversion to risk could result in a recession. In the *Economic Report to the Governor of 2018*, we placed this as a relatively low probability (25 percent) event and indeed it did not transpire. While still less likely than our baseline prediction, we increase the probability of the pessimistic scenario to 35 percent.

While no recession is desirable, the decline in real GDP under the pessimistic outlook is a manageable 2.0 percent. The pessimistic scenario predicts a recession beginning toward the end of 2020 and lasting less than a year. The driver of the decline is a sharp reduction in the rate of fixed business investment, as expectations of future profits decrease. In turn, unemployment increases to 5.8 percent and inflation falls from 2.1 percent to 1.1 percent.

The Federal Reserve would react to the adverse economic conditions, lowering interest rates to return the unemployment rate to lower levels. With interest rates already low by historical standards, the ability of monetary policy to guide macroeconomic conditions is curtailed. The large debt overhang from years of relatively loose fiscal policy would also restrict the ability

of policymakers to avoid recession or mitigate its consequences. As a result, the economy recovers only slowly throughout the remainder of 2021, resulting in overall growth of 0.1 percent of output.

In the optimistic scenario, faster-than-expected productivity gains results in GDP growth of 3.4 percent in 2020. We consider this scenario quite unlikely, assigning it a probability of 10 percent. This is lower than the 15 percent probability given to the optimistic scenario last year, reflecting a more cautious outlook.

Increasing productivity gains increase GDP growth, but when paired with low unemployment and high interest rates, they also result in higher wages. Supposing productivity growth reaches an annual average rate of 2.7 percent, we forecast investment to rise by 4.4 percent and a 3.3 percent increase in consumer spending.

With increased investment and GDP growth, unemployment will fall to 3.1 percent. The Federal Reserve will respond by increasing the Funds Rate to over 3.0 percent. This will ensure inflation remains at reasonable levels. The S&P 500 would increase by 6.5 percent, continuing its growth of 21.7 percent in 2019.

## CHAPTER 2: THE TENNESSEE ECONOMY: SHORT-TERM OUTLOOK

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#### 2.2. THE CURRENT ECONOMIC ENVIRONMENT

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- INCOME AND TAXABLE SALES
- NEW BUSINESS FILINGS, A LEADING INDICATOR?
- STATE FINANCES ACROSS THE NATION
- THE SOUTHEASTERN STATES AND TENNESSEE

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- SUMMARY
- REFERENCES

### 2.1. INTRODUCTION

Both Tennessee and the nation have now seen positive economic growth for more than 10 consecutive years, making this the longest economic expansion on record, dating back to the 1850s. The state unemployment rate averaged 3.5 percent during the third quarter of 2019, and has now been below 4 percent for two full years, suggesting that the economy is hovering around its full employment level (i.e. everyone who is willing and able to work is doing so).<sup>1</sup> As a result, labor force growth is largely constrained to new entrants from school, migrants, and those remaining on the sidelines (i.e. not participating in the labor

force), and, there is less room for job growth going forward. Evidence of this can already be seen in the labor market, where job growth in Tennessee has slowed from 2.5 percent in 2016, down to 1.6 percent in 2017, and 1.8 percent in 2018. In addition to the tightening labor market, there are other headwinds in sight that could limit economic growth at both the state and national levels. A cloud of uncertainty surrounding trade policy with China coupled with a global economic slowdown has led to a more moderate pace of growth for much of 2019 in the form of weakened business spending and lower net exports (exports minus

<sup>1</sup> Even at this "full employment" level, structural and frictional unemployment still exist, and therefore the unemployment rate remains above zero. Structural unemployment occurs when there is a mismatch between the skill set of the unemployed and the employer's needs or if the unemployed live in a region that is too far from the available jobs and are unable to move. Structural unemployment is often a long-term issue. Frictional unemployment occurs when workers spend time searching for the right job, or due to quitting/being terminated from a current job. Frictional unemployment is generally shorter-term for most individuals.

## 2.1. INTRODUCTION, CONTINUED

imports). Calls of an imminent recession were louder than usual this past summer and fall, but seem to have abated as the Federal Reserve cut the federal funds rate three times since July 2019 to help stimulate the economy. Thus, while our short-term forecast (10 quarters ahead) does not call for a recession, we do project slower positive economic growth in the near term.

To that end, the short-term outlook calls for steady economic growth through 2020 before slightly moderating in 2021. A number of temporary factors will help boost growth this year, including the spending stimulus associated with the 2018 and 2019 Bipartisan Budget Acts, and the stimulative effects associated with the Federal Reserve's rate reductions. By mid-2020 we should also see the hiring of around 350 thousand temporary workers nationwide for the 2020 Census which will help to temporarily boost economic activity across the country. However, this forecast presumes that the Federal Reserve will reverse course and start to raise interest rates again by the end of 2020. In addition, the effects of fiscal stimulus will start to wane, and a slowing of economic growth will commence in 2021. These factors are reflected in our forecast, which calls for a 2.1 percent increase in inflation-adjusted state gross domestic product (real GDP) in 2020 and a much slower 1.6 percent increase in 2021. Similarly,

nonfarm jobs in Tennessee will grow by 0.9 percent in 2020 but slow to 0.5 percent in 2021. A comparable pattern is expected for the nation as a whole, where nonfarm jobs will grow by 1.2 percent in 2020 but only 0.8 percent the year after. In the manufacturing sector, we have seen some pullback in both orders and output due to the ongoing trade war with China as well as a systemic slowdown of global economic growth. As a result, manufacturing employment in Tennessee will only grow by 0.6 percent in 2020 and then contract by 0.5 percent in 2021. The slowdown will be even more pronounced in the national economy, where manufacturing employment—which is already contracting—is projected to fall by 0.7 percent in 2020 and 1.8 percent in 2021. A less pessimistic outlook for the state manufacturing sector is due in part to the planned Volkswagen expansion in Chattanooga that should add 1,000 new jobs in the early part of the new decade, and should help to offset some of the expected employment losses from other areas of the state's manufacturing sector.

The state unemployment rate is expected to average 3.5 percent in each of the next two years. Nominal personal income will grow by 4.6 percent in 2020 and 4.7 percent in 2021. On a fiscal year (FY) basis, personal income should advance by 4.9 percent in FY 2019/20 and 4.5 percent in FY 2020/21.

## 2.2. THE CURRENT ECONOMIC ENVIRONMENT

### The Labor Market

The labor markets in both the state and nation continue to tighten as the current economic expansion grows more mature and the economies hover around full employment. In Tennessee, nonfarm jobs grew by 1.7 percent in 2018, representing a gain of over 50 thousand jobs compared to the year prior. Job growth in Tennessee was on par with the nation, which also recorded a 1.7 percent growth rate. This is the second consecutive year that the state registered

job growth below 2 percent, but this is still a sign of healthy gains in the labor market. Moreover, with nearly 3.1 million workers in the state labor market, this is the fifth consecutive year that state employment levels exceeded their pre-recession peak of 2.8 million. However, it took 7 years for the state labor market to regain all of the jobs lost during the recession. So while this has been a very long expansionary period, job growth during this expansion has been somewhat soft.

For perspective, **Table 2.1** reports nonfarm job growth trends for all southeastern states since

## 2.2. THE CURRENT ECONOMIC ENVIRONMENT, CONTINUED

**Table 2.1: Nonfarm Employment Growth across the Southeast Since the Great Recession**

	Employment (in thousands)		Growth Dec. 2007 to Oct. 2019
	Dec-07	Oct-19	
Florida	7,930.6	9,079.0	14.5%
South Carolina	1,949.0	2,185.0	12.1%
Georgia	4,171.3	4,641.4	11.3%
<b>Tennessee</b>	<b>2,805.6</b>	<b>3,119.9</b>	<b>11.2%</b>
North Carolina	4,166.1	4,589.1	10.2%
United States	138,409.0	151,945.0	9.8%
Virginia	3,779.6	4,029.7	6.6%
Arkansas	1,206.6	1,282.2	6.3%
Kentucky	1,858.0	1,964.5	5.7%
Alabama	2,032.1	2,091.8	2.9%
Louisiana	1,938.0	1,990.6	2.7%
Mississippi	1,160.1	1,171.2	1.0%
West Virginia	729.4	733.3	0.5%

Source: Bureau of Labor Statistics.

the first month of the Great Recession, December 2007. Over the twelve-year period, nonfarm employment in the nation was up 9.8 percent. Florida, South Carolina, Georgia, Tennessee, and North Carolina were the only southeastern states to see stronger job growth than the national average. Florida had the strongest job growth at 14.5 percent, while Tennessee was fourth in the region at 11.2 percent. By comparison, employment in West Virginia and Mississippi only grew by 0.5 percent and 1.0 percent respectively over the past twelve years.

In 2018, most broad sectors of the Tennessee economy saw some job growth. The only exception being the information sector, which contracted by 1.1 percent compared to the year prior, equivalent to a loss of 500 jobs. The information sector, with roughly 45,000 workers statewide, has the smallest labor force among all broad sectors in the state, and the number of information sector workers has generally trended downward since even before the Great Recession. In contrast, the natural resources, mining, and construction sector saw the strongest rate of job growth in 2018, expanding by 3.9 percent and gaining 4,900 jobs compared to the year prior.

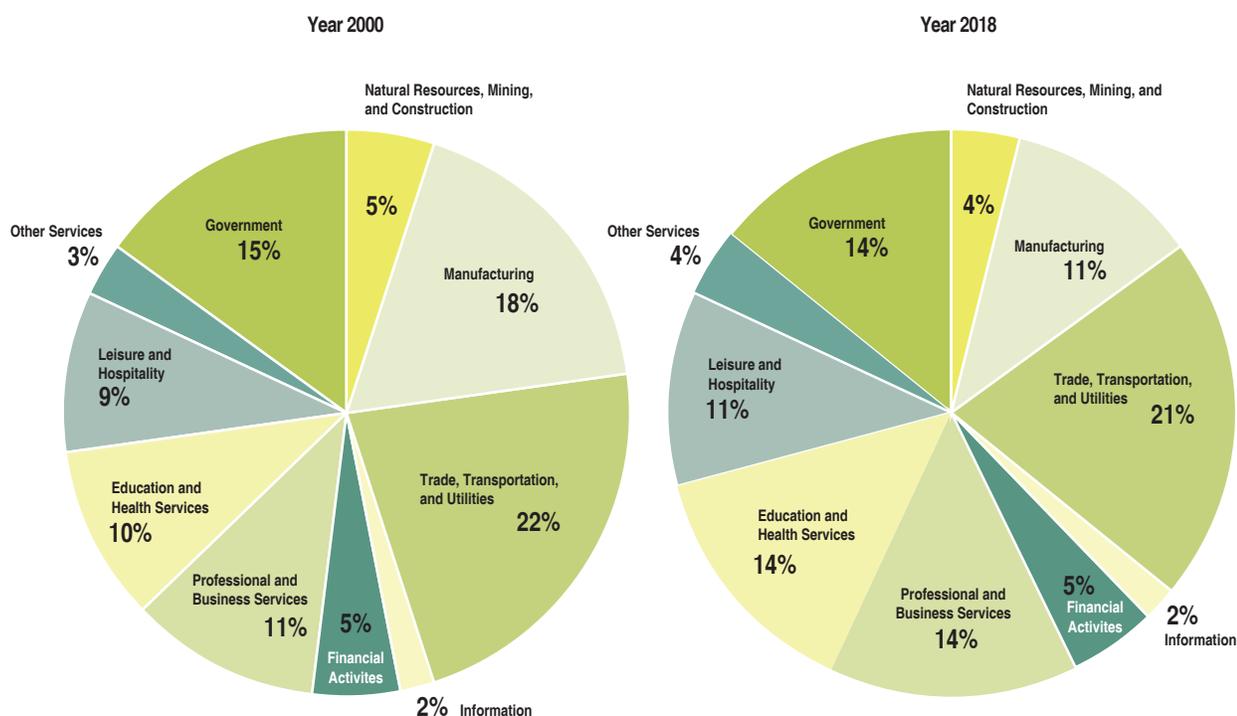
Similarly, Tennessee's service sectors saw healthy job gains in 2018, and for much of the current expansion these sectors have helped buoy overall job growth in the state. In 2018, jobs in other services grew by 3.3 percent or 3,800 jobs, leisure and hospitality jobs increased by 3.1 percent, equivalent to a net addition of 10,300 workers, and the financial activities sector saw job growth of 2.5 percent or 4,000 workers. In addition, jobs in professional and business services expanded by 1.5 percent, representing an increase of 6,100 more workers. In total, there are over 1.5 million service sector workers in the state, which accounts for roughly 50 percent of the state workforce.

**Figure 2.1** shows how the composition of workers in Tennessee has changed since the beginning of the millennium. In 2000, 18 percent of the Tennessee workforce was employed in the manufacturing sector, but this share has fallen dramatically over the past two decades and is down to 11 percent as of 2018. By contrast, there has been a large upswing in service sector workers, as the percentage of workers in leisure and hospitality has risen by 2 percent, the percentage of professional and business services workers is up 3 percent, and the percentage of education and health services workers has grown by a robust 4 percent. Thus, the labor force composition in Tennessee has shifted dramatically away from manufacturing and towards service-providing industries. This is a trend that we have seen play out nationwide as well.

The manufacturing sector saw modest job growth of 1.3 percent in 2018, representing an increase of 4,500 more workers than the number in 2017. The state's manufacturing sector has now seen job growth in eight consecutive years. However, manufacturing employment in Tennessee grew at a much slower rate than in the nation, which saw 2.0 percent growth compared to the year prior. Within Tennessee's manufacturing sector, jobs in the nondurable goods sector grew by 1.8 percent and jobs in the durable goods sector expanded by a more moderate 1.0 percent pace.

## 2.2. THE CURRENT ECONOMIC ENVIRONMENT, CONTINUED

Figure 2.1: Tennessee's Workforce Has Largely Shifted From Manufacturing to the Service Sector



Source: Bureau of Labor Statistics.

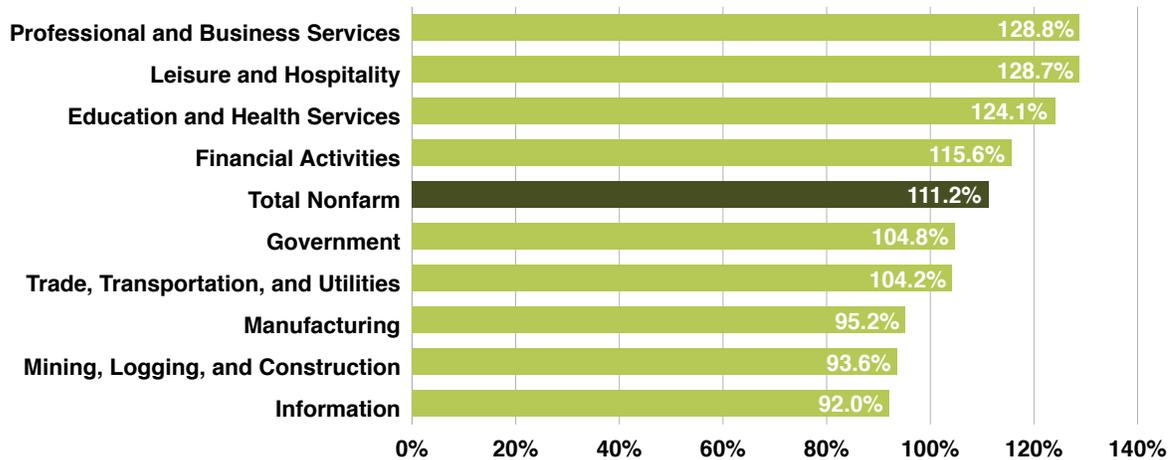
In the durable goods sector, the computer and electronics subsector showed the strongest growth, advancing by 4.8 percent, followed by miscellaneous durables, which saw job growth of 4.3 percent—these are some of the smaller subsectors in durable goods manufacturing. The transportation equipment subsector, which accounts for a third of all durable goods manufacturing workers, faced job losses of 0.6 percent in 2018. This is consistent with national light vehicle sales peaking and now trending down. In the nondurable goods sector, jobs in the beverage and tobacco subsector grew by 6.1 percent, marking four consecutive years of robust job growth. Miscellaneous nondurable goods and chemical manufacturing also saw decent job gains of 3.6 percent and 2.2 percent respectively.

Figure 2.2 shows how much employment growth each sector in Tennessee has seen since December 2007. Employment levels in most broad sectors of the state economy have fully

recovered since the Great Recession. The service sectors have seen the strongest gains, with employment in professional and business services expanding by 28.8 percent and jobs in leisure and hospitality increasing by 28.7 percent since 2007. Conversely, employment levels in information, manufacturing, and the mining, logging, and construction sector have still not fully recovered from the recession, for reasons distinct to their respective sectors. The information sector, which includes industries such as print publishing and TV broadcasting, has faced consistent job losses since before the Great Recession, in part due to the internet. Today, more people get their news online and rely less on print publications such as magazines and newspapers, and more people are cutting their cable cords or getting a larger portion of their television entertainment from streaming services that are not headquartered in Tennessee and therefore do not employ as many Tennessee workers. The manufacturing

## 2.2. THE CURRENT ECONOMIC ENVIRONMENT, CONTINUED

Figure 2.2: Job Levels in Most Tennessee Sectors Have Fully Recovered Since the Great Recession



Source: Bureau of Labor Statistics.

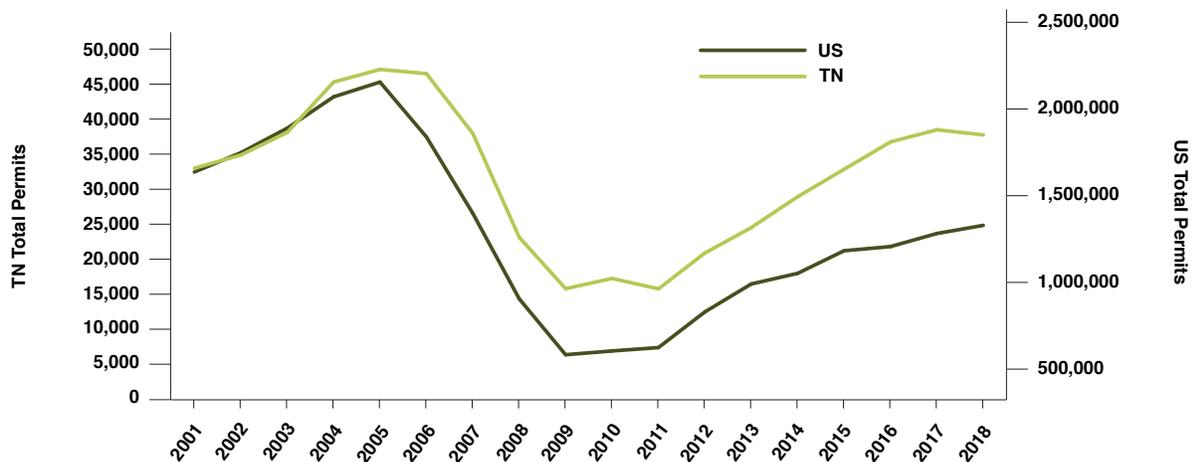
sector saw some of the largest job losses of any industry during the recession, shedding roughly 100 thousand jobs between 2006 and 2010. And while manufacturing has made a considerable rebound during the current expansion, many business owners are relying more heavily on advanced manufacturing and automation to produce more goods with fewer workers. As a result, manufacturing employment levels have still yet to fully rebound from the losses faced during the recession. Finally, the mining, logging, and construction sector also has not fully rebounded since the Great Recession. Prior to the recession, construction activity and employment were overly (and unhealthy) inflated due to the housing boom/bubble. Once the housing bubble burst, we saw steep job losses in this sector, and both employment levels and production have not gotten back to the inflated level that we saw before the recession. In addition to Figure 2.2, which shows that employment levels in the construction sector have still not fully recovered, **Figure 2.3** presents data on building permits (authorized construction of new privately-owned housing units) at both the state and national level, both of which have been on an upward trajectory since 2011 but are still well below their pre-recession peak levels. This is consistent with national data on existing home sales, which is also well below its pre-recession peak. There are

a number of possible reasons as to why building permits (and the housing market as a whole) have been slow to recover. First, builders and developers are not putting up enough new homes due to rising construction costs, trouble finding skilled labor, and a shortage of buildable lots. In addition, many single family homes, especially those underwater, were converted into rental units in the wake of the Great Recession. These factors have led to a low-inventory issue in the housing market, which has put upward pressure on house prices across much of the nation and dampened house sales.

**Figure 2.4** shows how employment growth varies across all Tennessee counties in March of 2019 (the most recent county-level data available). Between March 2018 and March 2019, statewide employment grew by 2.0 percent. During this period, 58 counties saw positive employment growth, 37 of which saw gains that outpaced the state average. The strongest growth rates were recorded in Hancock County (up 12.2 percent) and Fentress County (up 8.6 percent), though both counties are relatively small so these large percentage gains reflect modest gains in the number of jobs (just 103 new jobs in Hancock and 410 new jobs in Fentress). By comparison, Davidson County, with over 500,000 workers, saw job growth of 3.2 percent and added a state-best 15,000 new jobs over the 12-month

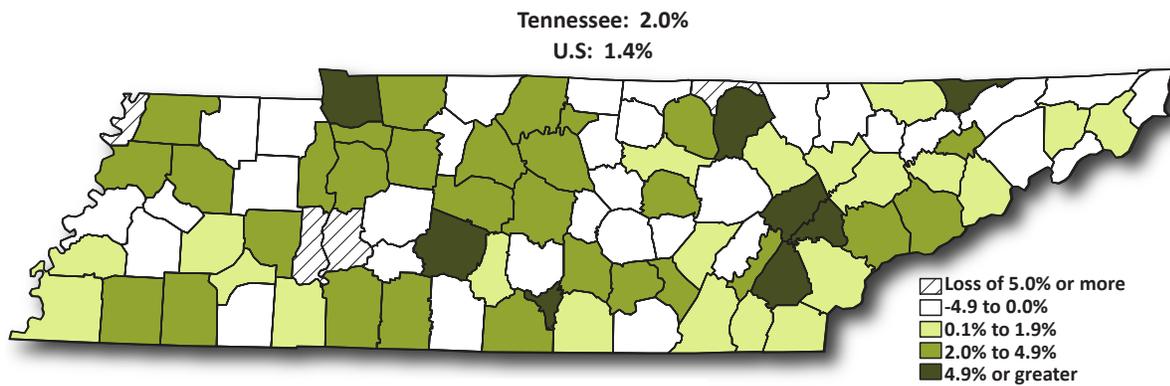
## 2.2. THE CURRENT ECONOMIC ENVIRONMENT, CONTINUED

**Figure 2.3: Building Permits in both the US and Tennessee are Still Well Below Pre-Recession Peak Levels**



Source: U.S. Census Bureau

**Figure 2.4: Most Tennessee Counties Are Seeing Some Employment Growth in the First Quarter of 2019**



Note: Growth of total employment covered by the state unemployment insurance program.  
Source: Bureau of Labor Statistics.

period. In a distant second was Shelby County, where 5,336 additional jobs were created, and Williamson County with 5,141 more jobs. During this same period, there were three counties where employment remained flat, and 34 counties to report job losses. The steepest declines were in Pickett County (down 17.4 percent) and Perry County (down 9.6 percent), representing losses of 205 and 200 jobs respectively.

Tennessee’s civilian labor force, which includes those working and those unemployed but actively seeking employment, notched upward by 1.7 percent in 2018. This was driven by a 2.0 percent increase in the number of

employed people in Tennessee. As a result, the labor force participation rate ticked upward from 59.3 percent in 2017 to 59.7 percent in 2018. Tennessee’s labor force participation rate had been on a downward trend since the fourth quarter of 2006. From 2000 through 2005, the state participation rate hovered between 64 and 65 percent, then fell to around 62 percent during the recession, and more worryingly continued to fall for much of the ensuing expansion, dropping as low as 57.9 percent during the third quarter of 2014. More recent data has the participation rate trending upward again, reaching 61.2 percent in the most recent quarter

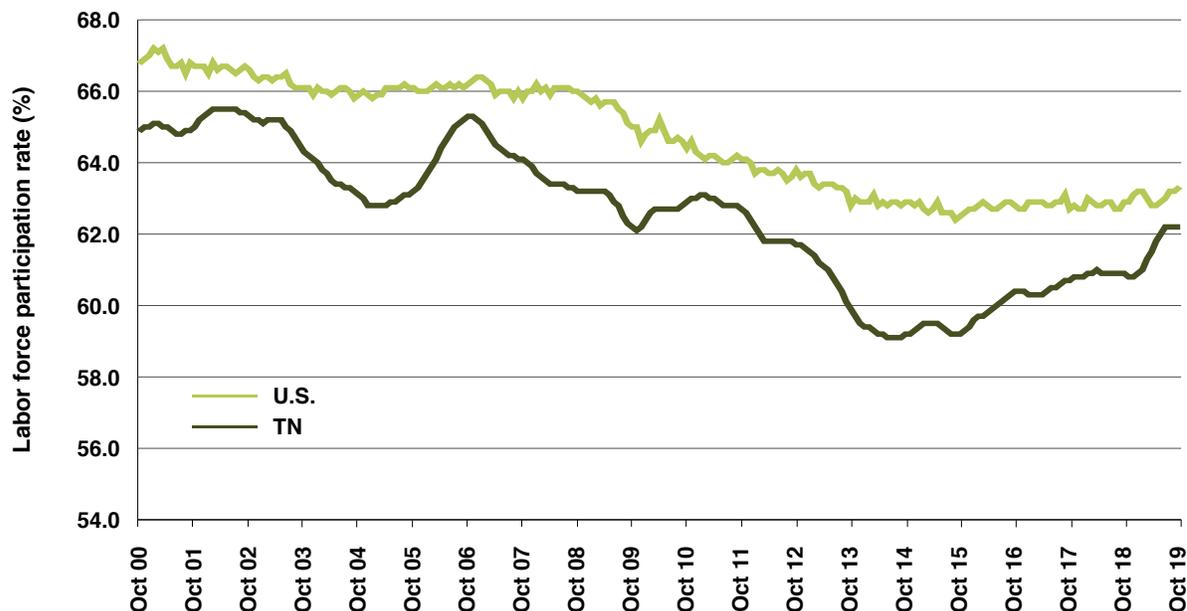
## 2.2. THE CURRENT ECONOMIC ENVIRONMENT, CONTINUED

(third quarter of 2019), but still well below the pre-recession trend. This pattern is not unique to Tennessee. **Figure 2.5** presents monthly labor force participation rates for both the state and the nation from January 2000 through 2019, and shows that the national participation rate has also been trending downward since 2000, well before the Great Recession. There are a number of possible reasons for lower labor force participation rates, including (but not limited to) more younger people going to school, and more importantly, more people from the Baby Boom generation retiring. There is also still a relatively large group of 340 thousand discouraged workers in the country who could potentially be coaxed back into the labor force. This is nonetheless a great improvement, as the number of discouraged workers was over 500,000 just 12 months ago, and above 1.0 million in 2010. More worryingly, the state participation rate has consistently been below that of the nation's. This is likely due in part to lower levels of educational attainment and poorer health status for Tennesseans. However, a recent upward

trend in the state's participation rate has led to a narrowing of this gap.

The number of unemployed people (i.e. not working but actively looking for employment) in Tennessee fell by 5.2 percent in 2018, but rose dramatically in both the second and third quarter of 2019. This increase in unemployed could suggest that more people are entering the labor force (by beginning to look for a job) but have yet to find work, which is a good sign, and is consistent with the recent uptick in labor force participation at the state level. The state's unemployment rate, measured as the percentage of the adult population that is not working but actively searching for a job, has also been remarkably low, falling to 3.5 percent for the 2018 year as a whole, and ticking as low as 3.2 percent in the first quarter of 2019 before drifting back up to 3.5 percent in the third quarter. These incredibly low unemployment rates are suggestive of a very healthy and very tight labor market. However, a low unemployment rate coupled with low labor force participation also implies that there is a large swath of the state population that is not working

**Figure 2.5: Since 2000, Labor Force Participation Rates for Both Tennessee and the U.S. Have Been Declining, but the State Rate has Seen a Recent Uptick**



Source: Bureau of Labor Statistics.

## 2.2. THE CURRENT ECONOMIC ENVIRONMENT, CONTINUED

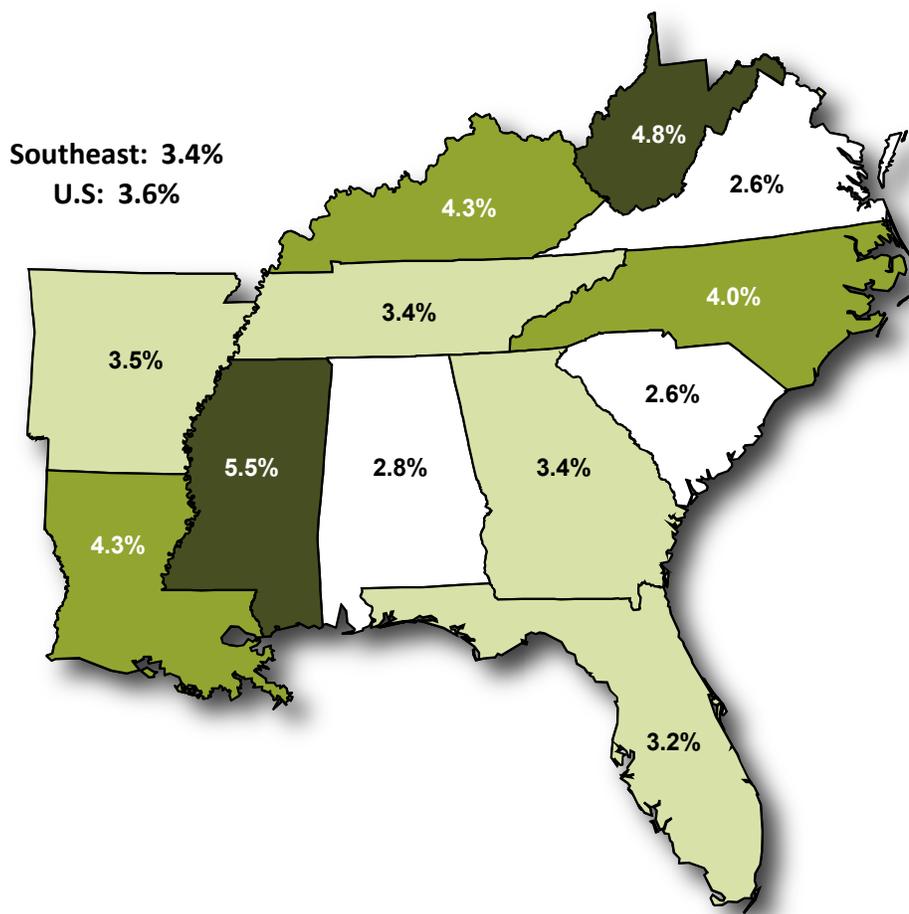
(a component in the labor force participation rate) and not actively looking for work (a component in the labor force participation rate and the unemployment rate). Finding ways to pull these individuals back into the labor force could be a boon for economic growth.

**Figure 2.6** presents seasonally adjusted unemployment rates for all southeastern states for October 2019. Tennessee’s monthly unemployment rate of 3.4 percent is slightly lower than the national rate of 3.6 percent, but both are very low compared to historic norms. Virginia and South Carolina recorded the lowest rates for the region, both at 2.6 percent, followed by Alabama at 2.8 percent. Conversely, Mississippi and West Virginia had the highest unemployment

rates in the southeast, at 5.5 percent and 4.8 percent respectively.

**Figure 2.7** displays non-seasonally adjusted county-level unemployment rates across the state for September 2019. Only five Tennessee counties had unemployment rates of 5.0 percent or higher. Clay County had the highest unemployment rate at 5.6 percent, followed by Hardeman (5.4 percent), and Hancock (5.2 percent). Additionally, Lauderdale and Rhea both registered unemployment rates of 5.0 percent. In contrast, there were 21 counties with rates at or below 3.0 percent, including Williamson and Sevier tied with the lowest county rates in the state at 2.3 percent. The map also shows that the counties containing or located near the larger metro areas have the lower unemployment rates.

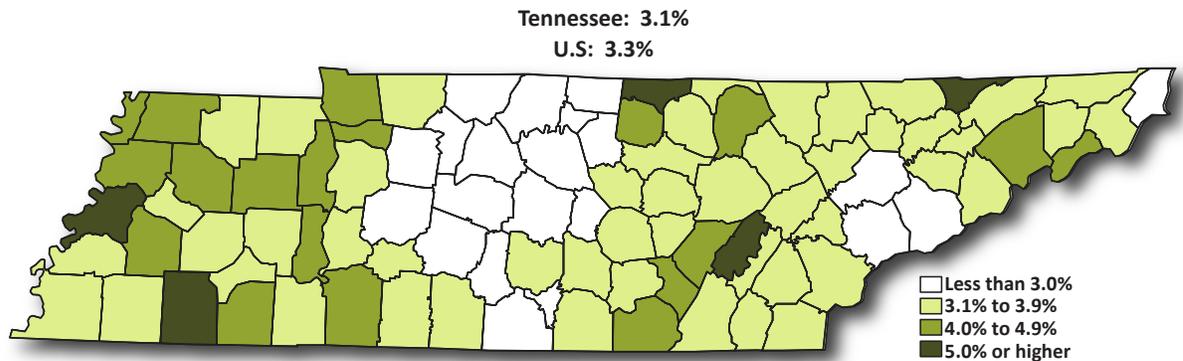
**Figure 2.6: Unemployment Rates are Low Throughout Much of the Southeast Region**



Note: Growth of total employment covered by the state unemployment insurance program.  
Source: Bureau of Labor Statistics.

## 2.2. THE CURRENT ECONOMIC ENVIRONMENT, CONTINUED

**Figure 2.7**  
**Unemployment Rates are Lowest in Counties Containing or Surrounding the Larger Metro Areas, September 2019**



Source: Bureau of Labor Statistics.

### Income and Taxable Sales

A continued tightening of the labor market and low unemployment rates have finally put some upward pressure on nominal personal income at both the state and national level. After growing by only 3.8 percent in 2017, state personal income growth accelerated to 5.3 percent in 2018. This was slightly below the 5.6 percent rate recorded for the nation as a whole. In Tennessee, personal income gains have been driven in large part by strong wage and salary growth, which advanced by 5.1 percent in 2018. In addition, rent, interest, and dividend income shot up by 8.1 percent, and transfer payments grew by 5.1 percent. At the national level, wages for those at the lower end of the income distribution have been rising more rapidly. This is notable since these workers typically spend a larger percentage of their take-home pay, which could have stimulative effects on economic growth. There is also evidence of wage growth among new hires, while wages for experienced workers has remained somewhat stagnant.<sup>2</sup>

Per capita income in Tennessee also saw some accelerated growth in 2018. Following lackluster growth of 2.9 percent in 2017, Tennessee saw per capita income gains of 4.4

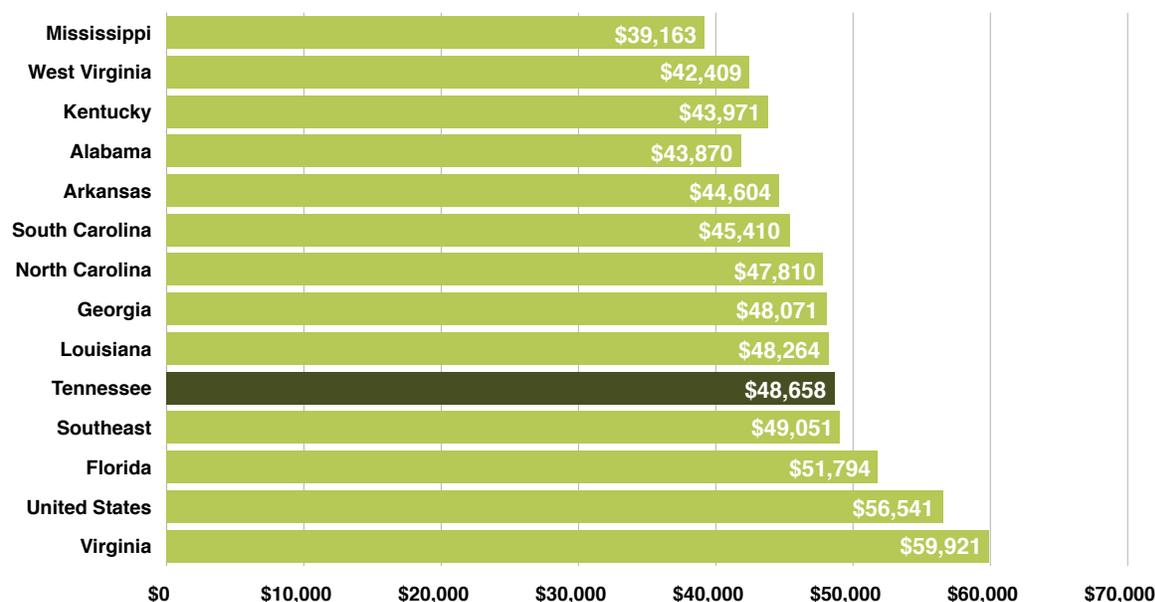
percent in 2018. However, per capita income in the nation grew at a slightly faster rate of 4.9 percent. As a result Tennessee's per capita income level of \$46,904 is still well below the national average of \$54,374. For more context, **Figure 2.8** presents nominal per capita income levels for all southeastern states in the second quarter of 2019. At \$48,658 per person, Tennessee's per capita income level was slightly below the regional average (\$49,051) and well below the national average (\$56,541). However, this is an issue for the southeast region as a whole. Virginia, at \$59,921 per person, is the only southeastern state with per capita income above the national average. By comparison, Mississippi has the lowest average income in the region, at \$39,163 per person, followed by West Virginia at \$42,409.

**Figure 2.9** reports per capita personal income in current dollars across all Tennessee counties in 2018. At \$94,872 per person, Williamson County has the highest per capita income level in Tennessee, by a wide margin. In fact, Williamson County has the third-highest average income level among all counties in the southeast region, only behind Goochland, Virginia (\$100,545) and Arlington, Virginia (\$95,198), and has the 22nd highest average

<sup>2</sup> Levanon, G, Torok, J, and Steemers, F. (November 2019). "US Salary Increase Budgets for 2020." The Conference Board. <https://www.conference-board.org/publications/publicationdetail.cfm?publicationid=8793>

## 2.2. THE CURRENT ECONOMIC ENVIRONMENT, CONTINUED

Figure 2.8: The Majority of Southeast States Have Per Capita Income Levels Below the National Average. 2019Q2



Source: U.S. Bureau of Economic Analysis.

income level among all counties in the nation. In addition to Williamson County, Davidson, at \$66,060 per person, and Fayette, at \$55,364, are the only Tennessee counties with average income levels above the national average of \$54,374. There were six additional counties with income levels above the state average of \$46,904 per person: Hamilton, Knox, Shelby, Wilson, Sumner, and Loudon, all of which house or are in close proximity to the state's larger metro areas. Conversely, the state's lowest per capita income levels are in some of the more rural counties, with eight Tennessee counties recording per capita income levels below \$30,000 per year (Bledsoe, Hancock, Hardeman, Lake, Lauderdale, Morgan, Scott, and Wayne). The lowest of such were in Lake County (\$23,230) and Bledsoe County (\$26,281), both of which are only around 2 times the 2018 U.S. poverty threshold of \$12,784 for a one person household.<sup>3</sup>

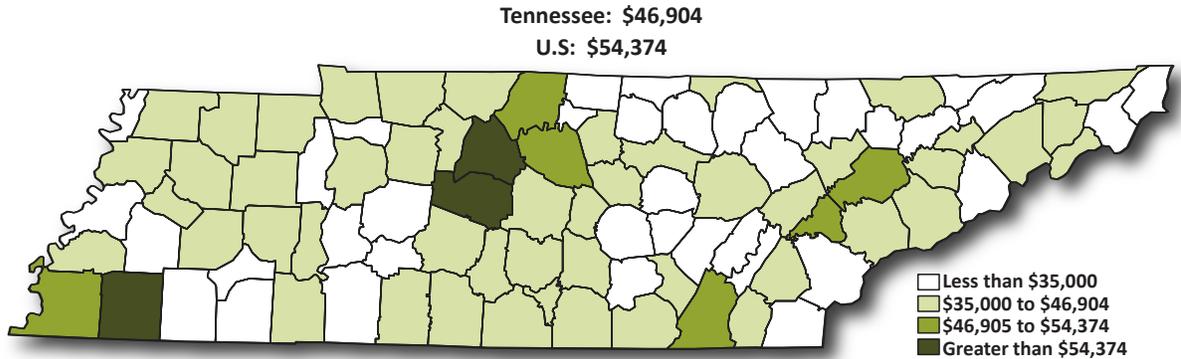
Taxable sales showed incredibly robust

growth in 2018. Growth in personal income is one of the main drivers of sales, and while personal income grew at a healthy clip of 5.3 percent in 2018, taxable sales advanced by an even faster 6.8 percent. This is the sixth consecutive year with taxable sales growth exceeding income growth. Strong gains in other retail and service sales was a major factor for overall taxable sales growth in 2018, increasing by 8.6 percent for the year. Sales in the transportation and communications sector were also up 8.9 percent, and purchases from manufacturers grew by 8.3 percent. Taxable sales from auto dealers saw the slowest growth among all broad categories, increasing by only 3.6 percent compared to the year prior. This also marks two consecutive years of relatively slow auto sales growth, and is consistent with a slowdown in national auto sales, which peaked in 2016 and have since slowed over the last few years. On a fiscal year (FY) basis, nominal taxable sales grew by 5.4 percent in FY 2018-19.

<sup>3</sup> U.S. Census Bureau

## 2.2. THE CURRENT ECONOMIC ENVIRONMENT, CONTINUED

**Figure 2.9: Only Three Tennessee Counties Have Per Capita Income Levels Above the National Average**



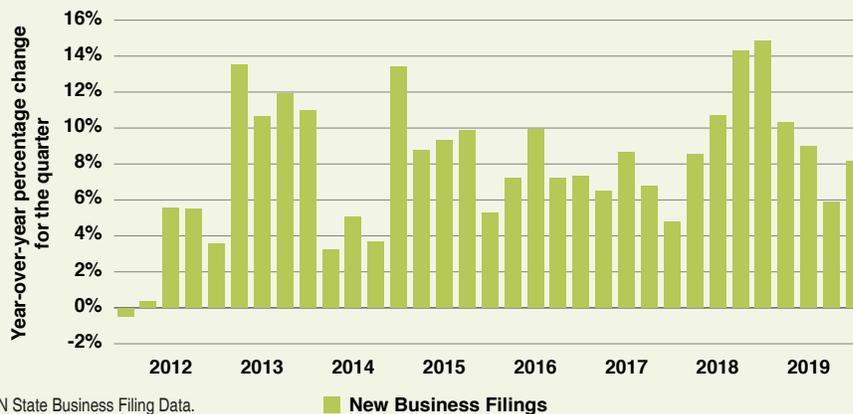
Source: Bureau of Economic Analysis. Calculations by Boyd Center for Business and Economic Research.

### New Business Filings, A Leading Indicator?

Statistical analysis suggests that new business filings in Tennessee (i.e. the creation of newly incorporated companies), as collected by the Tennessee Secretary of State’s office, is a good leading indicator for broader economic activity in the state. More specifically, growth of new business filings suggests future growth in the Tennessee economy with regards to nonfarm employment, personal income, and total tax revenues. In the third quarter of 2019, new business filings grew by a robust 8.2 percent compared to the same time last year. This suggests that the state economy should see continued economic growth in the near term.

**Figure 2.10** shows that new business filings have expanded for 31 consecutive quarters. Furthermore, we have now seen robust year-over-year growth of 8.0 percent or more in seven of the last eight quarters, dating back to the fourth quarter of 2017. New filings growth has largely been driven by the creation of new domestic limited liability corporations (LLCs), which have expanded by 10 percent or more in each of the last eight quarters. In total, there were 11,585 new business filings in the third quarter of 2019, 84.5 percent of which were from domestic firms, and foreign entities accounted for the remaining 15.5 percent. A large proportion of these new filings were concentrated in the four largest counties: Davidson, Shelby, Knox, and Hamilton, which saw a combined 6,856 new filings, and accounted for 59.2 percent of all third quarter filings in the state.

**Figure 2.10:**  
**The Number of New Business Filings in Tennessee has Increased for 31 Consecutive Quarters**



Source: TN State Business Filing Data.

## 2.2. THE CURRENT ECONOMIC ENVIRONMENT, CONTINUED

### State Finances across the Nation

In total, states collected \$742.9 billion in tax revenues during the first three quarters of FY2018-19 (2018Q3 – 2019Q1), representing a 3.5 percent increase compared to the same period last year. Corporate income tax revenues saw the strongest growth, increasing by a robust 25.9 percent compared to last fiscal year-to-date (F-YTD), sales tax revenues grew by 5.5 percent, and motor vehicle fuel tax collections expanded by 4.3 percent.<sup>4</sup> Conversely, personal income tax collections fell by 1.7 percent, due to a spike in state income tax payments in late-2017 and early-2018 in response to the Federal Tax Cut and Jobs Act.

State tax revenues grew in all regions with the exception of the Mideast (Delaware, Maryland, New Jersey, New York, and Pennsylvania), which saw a 0.1 percent decline in revenue collections. The decline in the Mideast was largely due to reductions in personal income tax collections in both New Jersey and, to a larger extent, New York due to income tax shifting in response to federal tax policy. In contrast, the Southwest region saw the strongest revenue growth, as collections expanded by 10.9 percent, followed by the Great Lakes region with gains of 4.4 percent.

### The Southeastern States and Tennessee

Total tax collections among the southeastern states (Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, South Carolina, Tennessee, Virginia, and West

Virginia) grew by 3.8 percent during this F-YTD, and slightly outpaced the 3.5 percent rate of growth registered for the nation as a whole.<sup>5</sup>

In Tennessee, total tax revenues grew by 5.9 percent during this F-YTD. Tax revenue growth during this period was largely driven by strong sales tax revenue collections, which were up 5.9 percent compared to last F-YTD, and motor vehicle fuel tax revenues which grew by 7.4 percent. More recent tax collections data from the Tennessee Department of Revenue show that as of October 2019, Tennessee tax collections totaled \$3.82 billion for the fiscal year to date (August 2019 – October 2019), representing a \$303.8 million or 8.6 percent increase over last F-YTD. The bulk of these revenue gains stem from revenue growth in the sales and use tax and franchise and excise tax. Sales tax collections have grown by \$145.2 million or 6.3 percent and franchise and excise tax collections are up \$84.1 million or 17.1 percent for the F-YTD. These two categories account for 75 percent of the total tax revenue growth realized thus far during the fiscal year. Motor vehicle fuel taxes have also seen healthy growth during the fiscal year, with gasoline tax revenues, which saw a 1-cent per gallon tax increase associated with the IMRPOVE Act, growing by \$10.9 million or 4.9 percent, and motor vehicle fuel tax revenues, which saw a 3-cent per gallon tax hike, up by a robust \$33.3 million or 50.9 percent. In addition to the tax rate increase, one-time payments by railroad companies may be an additional factor helping to buoy motor vehicle fuel tax revenues.

<sup>4</sup> Dadayan, L. (September 2019). "Turbulence Continues in State Tax Revenues in the First Half of 2019, Largely Related to TCJA Federal Tax Changes. State Tax and Economic Review, 2019 Quarter 1." Urban Institute.

<sup>5</sup> *ibid*

## 2.3. SHORT-TERM OUTLOOK

The Tennessee economy will continue to grow at a decent clip in 2019 before slowing to a more moderate pace in 2020, and more muted growth in 2021. Government policies including the 2017

tax cuts and both the 2018 and 2019 Bipartisan Budget acts will continue to bolster economic activity in 2019 and to a lesser extent 2020, but as these temporary effects continue to wane we will

### 2.3. SHORT-TERM OUTLOOK, CONTINUED

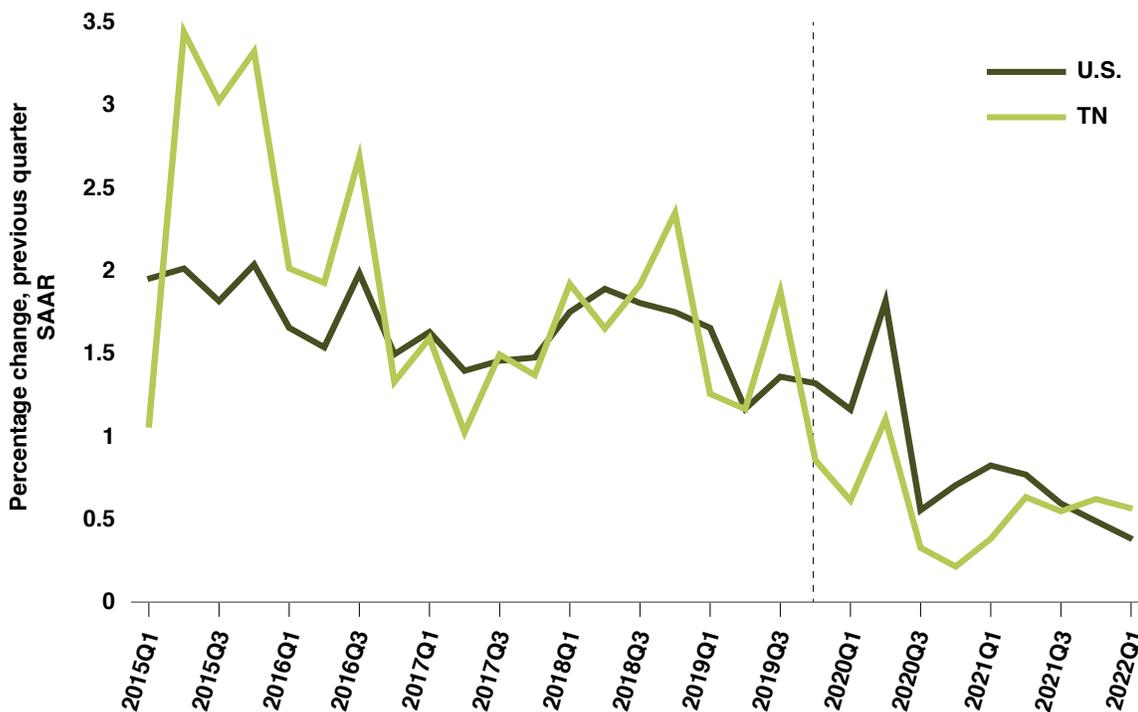
see slower growth in 2021. The Federal Reserve cut the federal funds rate three times since July 2019 as insurance against rumbles of a recession, which should also have stimulative effects through 2019 and much of 2020, but it is believed that they may start raising rates again by the end of 2020. In addition to a tightening of monetary policy (i.e. the Fed raising interest rates), a few other downside risks are apparent, including a global economic slowdown and uncertainty surrounding trade policy. These factors are built into our forecast, as Tennessee’s inflation-adjusted gross domestic product (real GDP) will advance by 2.7 percent in 2019, and then slow to 2.1 percent in 2020 and further down to 1.6 percent in 2021. The slower expected pace of growth (in both 2020 and 2021) is also due to the fact that many sectors of the state economy are operating at or near full employment and have little room for further growth.

A summary of the short-term outlook is provided in **Table 2.2**. Nonfarm jobs are projected to increase by 0.9 percent in 2020 and

0.5 percent in 2021, slightly below the pace of job growth projected for the nation as a whole (1.2 percent in 2020 and 0.8 percent in 2021).

**Figure 2.11** shows that these projections reflect an ongoing downward trend in job growth at both the state and national levels. Manufacturing employment, which has also seen slower growth in each of the last three years is projected to expand by a meager 0.6 percent in 2020 before contracting by 0.5 percent in 2021. However, this seems rosy compared to national projections, which call for employment losses in each of the next two years. Nationwide, manufacturing employment will fall by 0.7 percent in 2020 and 1.8 percent in 2021. Overall, nonfarm job growth in Tennessee will be propped up by gains in the service sectors, especially professional and business services which will see job growth of 2.9 percent in 2020 and 2.7 percent in 2021. Financial activities, education and health services, and leisure and hospitality will also see decent job gains over the next two years.

**Figure 2.11: Nonfarm Job Growth is Projected to Trend Downward for Both Tennessee and the U.S.**



Source: Bureau of Labor Statistics, IHS, UT Boyd CBER.

## 2.3. SHORT-TERM OUTLOOK, CONTINUED

Table 2.2: Selected U.S. and Tennessee Economic Indicators, Seasonally Adjusted, January 2020

	History		Forecast Data										Annual			
	2019:2	2019:3	2019:4	2020:1	2020:2	2020:3	2020:4	2021:1	2021:2	2021:3	2021:4	2022:1	2018	2019	2020	2021
U.S. GDP (BIL2012\$) SAAR.....	19021.9	19112.5	19183.9	19286.5	19408.0	19515.9	19621.7	19720.0	19808.0	19885.9	19968.5	20049.8	18638.2	19061.4	19458.0	19845.6
% Chg Prev Qtr SAAR.....	2.01	1.92	1.50	2.16	2.54	2.24	2.19	2.02	1.80	1.58	1.67	1.64	2.93	2.27	2.08	1.99
% Chg Same Qtr Last Yr....	2.28	2.03	2.13	1.90	2.03	2.11	2.28	2.25	2.06	1.90	1.77	1.67	2.93	2.27	2.08	1.99
U.S. GDP (BIL\$) SAAR.....	21340.3	21525.8	21730.9	21960.0	22217.0	22456.8	22699.0	22944.7	23182.4	23413.7	23653.0	23893.0	20580.2	21424.0	22332.3	23298.4
% Chg Prev Qtr SAAR.....	4.66	3.52	3.87	4.28	4.76	4.39	4.40	4.21	4.05	4.15	4.12	4.12	5.43	4.10	4.24	4.32
% Chg Same Qtr Last Yr....	4.05	3.74	3.99	4.08	4.11	4.32	4.46	4.48	4.35	4.26	4.20	4.13	5.43	4.10	4.24	4.32
TN PERSONAL INCOME (MIL2012\$) SAAR.....	303139	305432	307060	308839	310770	312534	314637	317025	319136	321374	323851	325968	293594	304215	311695	320346
% Chg Prev Qtr SAAR.....	2.56	3.06	2.15	2.34	2.52	2.29	2.72	3.07	2.69	2.83	3.12	2.64	3.13	3.62	2.46	2.78
% Chg Same Qtr Last Yr....	3.80	3.33	3.65	2.53	2.52	2.33	2.47	2.65	2.69	2.83	2.93	2.82	3.13	3.62	2.46	2.78
U.S. PERSONAL INCOME (BIL2012\$) SAAR.....	16983	17075	17147	17240	17297	17380	17486	17604	17699	17785	17874	17981	16477	17016	17351	17741
% Chg Prev Qtr SAAR.....	2.97	2.20	1.69	2.20	1.33	1.92	2.47	2.72	2.18	1.96	2.02	2.41	3.41	3.27	1.97	2.25
% Chg Same Qtr Last Yr....	3.46	3.25	3.14	2.26	1.85	1.78	1.98	2.11	2.32	2.33	2.22	2.14	3.41	3.27	1.97	2.25
TN PERSONAL INCOME (MIL\$) SAAR.....	332004	335910	339820	343684	347315	350968	354730	359002	363307	367619	372048	376635	317515	333927	349174	365494
% Chg Prev Qtr SAAR.....	5.00	4.79	4.74	4.63	4.29	4.27	4.36	4.91	4.88	4.83	4.91	5.02	5.29	5.17	4.57	4.67
% Chg Same Qtr Last Yr....	5.28	4.83	5.46	4.79	4.61	4.48	4.39	4.46	4.60	4.74	4.88	4.91	5.29	5.17	4.57	4.67
U.S. PERSONAL INCOME (BIL\$) SAAR.....	18600	18772	18946	19134	19297	19469	19656	19876	20082	20287	20497	20724	17819	18668	19389	20185
% Chg Prev Qtr SAAR.....	5.43	3.77	3.76	4.02	3.46	3.61	3.89	4.56	4.20	4.15	4.21	4.50	5.57	4.77	3.86	4.11
% Chg Same Qtr Last Yr....	4.93	4.71	4.78	4.24	3.75	3.71	3.74	3.88	4.07	4.20	4.28	4.26	5.57	4.77	3.86	4.11
TN NONFARM JOBS (THOUS).....	3104.6	3119.0	3125.7	3130.5	3139.1	3141.7	3143.3	3146.4	3151.3	3155.6	3160.5	3165.0	3062.2	3111.2	3138.6	3153.5
% Chg Prev Qtr SAAR.....	1.17	1.87	0.86	0.61	1.10	0.33	0.22	0.38	0.63	0.55	0.62	0.57	1.68	1.60	0.88	0.47
% Chg Same Qtr Last Yr....	1.67	1.66	1.29	1.13	1.11	0.73	0.56	0.51	0.39	0.44	0.55	0.59	1.68	1.60	0.88	0.47
U.S. NONFARM JOBS (MIL).....	151.1	151.6	152.1	152.6	153.2	153.5	153.7	154.0	154.3	154.6	154.8	154.9	149.1	151.4	153.3	154.4
% Chg Prev Qtr SAAR.....	1.17	1.36	1.32	1.16	1.81	0.56	0.71	0.82	0.77	0.60	0.49	0.38	1.67	1.56	1.23	0.77
% Chg Same Qtr Last Yr....	1.59	1.48	1.38	1.25	1.41	1.21	1.06	0.97	0.71	0.72	0.67	0.56	1.67	1.56	1.23	0.77
TN MFG JOBS (THOUS).....	356.8	359.1	361.4	361.3	360.9	360.2	359.6	359.1	358.7	358.4	358.2	357.9	350.7	358.2	360.5	358.6
% Chg Prev Qtr SAAR.....	1.41	2.70	2.54	-0.15	-0.43	-0.79	-0.59	-0.63	-0.36	-0.40	-0.23	-0.26	1.29	2.13	0.63	-0.53
% Chg Same Qtr Last Yr....	2.07	2.06	2.23	1.62	1.15	0.28	-0.49	-0.61	-0.59	-0.50	-0.41	-0.31	1.29	2.13	0.63	-0.53
U.S. MFG JOBS (MIL).....	12.8	12.8	12.8	12.9	12.8	12.7	12.6	12.6	12.5	12.5	12.5	12.5	12.7	12.8	12.7	12.5
% Chg Prev Qtr SAAR.....	0.26	0.34	-0.55	0.57	-1.74	-2.71	-1.88	-2.95	-1.22	-0.21	-0.08	-0.19	2.00	1.18	-0.69	-1.80
% Chg Same Qtr Last Yr....	1.42	1.03	0.35	0.15	-0.35	-1.12	-1.45	-2.32	-2.19	-1.57	-1.12	-0.43	2.00	1.18	-0.69	-1.80
TN UNEMPLOYMENT RATE (%).....	3.3	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.4	3.5	3.5
U.S. UNEMPLOYMENT RATE (%).....	3.6	3.6	3.5	3.5	3.4	3.4	3.4	3.4	3.5	3.5	3.6	3.7	3.9	3.7	3.4	3.5
CHAINED PRICE INDEX, GDP (2012=100.0).....	112.2	112.6	113.3	113.9	114.5	115.1	115.7	116.4	117.0	117.7	118.5	119.2	110.4	112.4	114.8	117.4
% Chg Prev Qtr SAAR.....	2.42	1.66	2.30	2.08	2.17	2.10	2.15	2.33	2.37	2.43	2.44	2.44	2.40	1.83	2.11	2.29
% Chg Same Qtr Last Yr....	1.78	1.69	1.86	2.11	2.05	2.16	2.12	2.19	2.24	2.32	2.39	2.42	2.40	1.83	2.11	2.29
U.S. PERS CONSUMP DEFL (2012=100.0).....	109.5	109.9	110.5	111.0	111.6	112.0	112.4	112.9	113.5	114.1	114.7	115.3	108.1	109.7	111.7	113.8
% Chg Prev Qtr SAAR.....	2.38	1.53	2.04	1.79	2.10	1.66	1.38	1.79	1.98	2.15	2.15	2.04	2.09	1.45	1.86	1.82
% Chg Same Qtr Last Yr....	1.42	1.41	1.58	1.93	1.86	1.90	1.73	1.73	1.70	1.82	2.02	2.08	2.09	1.45	1.86	1.82
CONSUMER PRICE INDEX, ALL-URBAN (82-84=1.000).....	2.551	2.563	2.578	2.589	2.604	2.613	2.618	2.629	2.643	2.660	2.677	2.692	2.511	2.556	2.606	2.652
% Chg Prev Qtr SAAR.....	2.92	1.79	2.45	1.60	2.44	1.39	0.73	1.68	2.17	2.61	2.60	2.21	2.44	1.81	1.94	1.78
% Chg Same Qtr Last Yr....	1.82	1.76	2.00	2.19	2.07	1.97	1.54	1.56	1.49	1.79	2.26	2.40	2.44	1.81	1.94	1.78
BANK PRIME INTEREST RATE (%).....	5.5	5.3	4.8	4.7	4.8	4.8	4.8	5.0	5.0	5.3	5.3	5.5	4.9	5.3	4.8	5.1
FEDERAL FUNDS RATE (% per annum).....	2.397	2.190	1.700	1.624	1.625	1.626	1.667	1.877	1.915	2.127	2.152	2.378	1.832	2.172	1.636	2.018
30-YEAR FIXED MORTGAGE RATE (%).....	4.0	3.7	3.7	3.7	3.9	4.0	4.1	4.2	4.3	4.3	4.4	4.5	4.5	3.9	3.9	4.3
TN TAXABLE SALES (MIL2012\$).....	32041	32286	32451	32624	32838	33075	33314	33574	33770	33972	34230	34490	123681	128388	131850	135546
% Chg Prev Qtr SAAR.....	5.57	3.09	2.06	2.15	2.65	2.92	2.92	3.16	2.36	2.41	3.07	3.08	4.58	3.81	2.70	2.80
% Chg Same Qtr Last Yr....	4.27	4.47	3.21	3.21	2.49	2.44	2.66	2.91	2.84	2.71	2.75	2.73	4.58	3.81	2.70	2.80
TN TAXABLE SALES (MIL\$).....	35092	35507	35913	36305	36699	37142	37559	38019	38444	38861	39324	39851	133758	140929	147704	154648
% Chg Prev Qtr SAAR.....	8.08	4.82	4.65	4.43	4.42	4.91	4.56	5.00	4.55	4.40	4.86	5.47	6.76	5.36	4.81	4.70
% Chg Same Qtr Last Yr....	5.75	5.98	5.01	5.49	4.58	4.60	4.58	4.72	4.75	4.63	4.70	4.82	6.76	5.36	4.81	4.70
TN AVG ANNUAL WAGE, NONFARM (2012\$).....	47922	47906	47909	48014	48209	48342	48542	48771	48936	49126	49351	49496	47014	47878	48277	49046
% Chg Prev Qtr SAAR.....	1.22	-0.13	0.03	0.88	1.64	1.11	1.66	1.90	1.36	1.57	1.84	1.18	1.27	1.84	0.83	1.59
% Chg Same Qtr Last Yr....	2.32	1.29	2.15	0.50	0.60	0.91	1.32	1.58	1.51	1.62	1.67	1.49	1.27	1.84	0.83	1.59
TN AVG ANNUAL WAGE, NONFARM (\$).....	52485	52686	53021	53431	53878	54287	54727	55228	55709	56195	56695	57190	50843	52552	54081	55957
% Chg Prev Qtr SAAR.....	3.63	1.54	2.57	3.13	3.39	3.07	3.28	3.72	3.53	3.54	3.60	3.54	3.38	3.36	2.91	3.47
% Chg Same Qtr Last Yr....	3.77	2.75	3.93	2.72	2.65	3.04	3.22	3.36	3.40	3.52	3.60	3.55	3.38	3.36	2.91	3.47

### 2.3. SHORT-TERM OUTLOOK, CONTINUED

Tennessee's unemployment rate will tick up slightly but remain low over the short-term outlook horizon, averaging 3.5 percent per year in both 2020 and 2021. In 2020, the number of employed people will grow by 1.7 percent while the number unemployed will increase by 5.6 percent. This suggests that a number of people still on the sidelines will enter the labor market by starting their job search. However, since there is generally a lag between starting the job search and beginning to work, we will see an uptick in the number of unemployed people. Similarly, the labor force participation rate will start to slowly increase, advancing from 60.8 percent in 2019 to 61.4 percent in 2020, as the number of people working or not working but actively searching for work grows.

Nominal personal income in Tennessee will grow by 4.6 percent in 2020 and 4.7 percent in 2021, outpacing national income growth in both years. Wage and salary income, which accounts for nearly 50 percent of state personal income, will advance by 3.8 percent in 2020 and 3.9 percent in 2021. Transfer payments, such as those through Social Security, Medicare, and Medicaid, will see the strongest growth as the state population continues to age, increasing by 6.5 percent in 2020 and 6.2 percent in 2021. On a fiscal year basis, nominal personal income will grow by 4.9 percent in 2019/20 and 4.5 percent in 2020/21.

Taxable sales in Tennessee will expand by 4.8 percent in 2020 and 4.7 percent in 2021. This represents a slight slowdown compared to 2019, as auto sales and purchases in transportation and communication have both slowed. Conversely, other retail and service sales are projected to grow by 7.2 percent in 2020 and 6.5 percent in 2021. Part of this influx is due to the U.S. Supreme Court decision in the *South Dakota v. Wayfair Inc.* case of 2018, which decided that states can mandate that businesses without a physical presence in the state (e.g. internet merchants) collect and remit sales and use taxes on transactions made in the state. Tennessee began taxing these online retailers (if their sales to Tennessee consumers exceeded \$500,000 in the previous year) on July 1, 2019, so we should see an uptick in sales tax collections in 2019 and 2020. To the extent that these online sales are captured in the other retail and service category, much of the increase should be seen in this category. In contrast, we have seen muted growth in the manufacturing sector due to a global economic slowdown and a cloud of uncertainty surrounding trade policy with China. As a result, taxable purchases from manufacturers will slow from its strong pace of 8.3 percent in 2018, down to 6.8 percent in 2019, and 3.0 percent in 2020. On a fiscal year basis, taxable sales will grow by 5.3 percent in FY 2019/20 and 4.7 percent in FY2020/21.

### 2.4. TENNESSEE FORECAST AT A GLANCE

- Tennessee's inflation-adjusted GDP will increase by 2.1 percent in 2020 followed by slightly slower pace of 1.6 percent growth in 2021.
- Nonfarm employment in Tennessee will expand by 0.9 percent in 2020 and 0.5 percent in 2021, while manufacturing employment will grow 0.6 percent this year but contract by 0.5 percent in 2021.
- The state's unemployment rate will continue to hover around an annual average of 3.5 percent over the next two years.
- Nominal personal income in Tennessee will grow at a healthy rate of 4.6 percent in 2020 and 4.7 percent in 2021, and nominal taxable sales will expand by 4.8 percent in 2020 and 4.7 percent in 2021.

## 2.5. TENNESSEE'S AGRICULTURAL AND FOREST INDUSTRIES AND RURAL ECONOMY

### Introduction

Tennessee's agri-forestry industrial complex encompasses the supply chain from farm and forest to consumers of the end products, such as retail foods, clothing, paper, and furniture. The agri-forestry industrial complex includes crop and livestock farming, timber removal and sawmills, and agricultural inputs production, such as agricultural machinery, fertilizers, soil amendments, and herbicides. The complex also includes downstream manufacturers of food and fiber goods (i.e., food and beverage products, textiles and textile products, wood, paper, and furniture products) that demand goods from farmers and first-stage forestry operations. This section of the report focuses on economic indicators for three main areas related to the agri-forestry industrial complex: a) primary agriculture and forestry, which includes farming and first-stage forestry; b) secondary agriculture and forestry, which includes manufacturing and processing facilities; and c) well-being indicators for rural communities, which provide important infrastructural, resource, and labor support for the agri-forestry industrial complex.<sup>6</sup> In 2019, Tennessee's agri-forestry industrial complex was significantly impacted by the ongoing trade war primarily between the U.S. and China. A special feature focuses on the trade war and how trade policies affected Tennessee's agri-forestry sector.

### Agriculture and Primary Forestry

#### *Agricultural Land Use and Farm Size*

In 2018, farming operations occupied 10.9 million acres in Tennessee, around 40.5 percent of the state's nearly 27.0 million acres of land area. Approximately 48.6 percent of the farmland in Tennessee was operated as cropland in 2017. Tennessee's farming industry is characterized by two types of farming operations: larger farms that rely primarily on farm income and small farms, many of which are operated by part-time farmers. Of Tennessee's 70,000 farming operations, average

farm size in 2017 was around 156 acres, compared with the U.S. average of 441 acres. Tennessee ranks 9th in the U.S. in terms of the number of farming operations (USDA/NASS, 2019a, 2019b).

#### *Tennessee's Crops and Livestock*

The 2018 value of cash farm receipts from crops and livestock in Tennessee was just over \$3.5 billion, with \$1.4 billion from animals and \$2.1 billion from crops (**Table 2.3**). Overall, Tennessee ranks 30th in the U.S. in cash farm receipts (USDA/ERS, 2019a). The top ten Tennessee agricultural products in value of cash farm receipts are listed in **Table 2.3**, along with the state's ranking for each commodity/product. In 2018, the largest value of cash farm receipts was derived from soybeans, followed by cattle and calves. These were followed in magnitude by broilers, corn, cotton, hay, dairy products, tobacco, wheat, and hogs. The top ten commodities in the state accounted for over 84 percent of 2018 cash farm receipts. In terms of cash receipts, Tennessee ranks in the top 20 states for several commodities (**Table 2.3**) and in the top ten states for tobacco and cotton. For many commodities, following national trends, price declines pushed cash receipts downward on average from 2014 to 2018 (excluding cotton, hay, and hogs). Wheat and dairy products experienced the largest average annual declines at 14.3 percent and 10.7 percent, respectively, while hay, cotton, and hogs experienced the largest positive increases at 6.3 percent, 3.4 percent, and 3.0 percent, respectively. Changes in production and price driving these trends will be discussed in the crops and livestock sections of this chapter.

#### *Livestock, Poultry, and Dairy Industries*

Animals and animal products accounted for 39.8 percent (\$1.4 billion) of Tennessee agricultural receipts in 2018. Based on 2018 cash receipts, cattle and calves was the second largest agricultural sector in Tennessee with cash receipts totaling \$549.0 million, which accounted for 15.5 percent of total agricultural cash receipts. Broiler production continues to close

<sup>6</sup> Defined as the primary industries typically associated with agriculture and forest operations, such as growing crops, the breeding and feeding of livestock, and the management and logging of trees. Also included in the industrial complex are input supplying industries and value-added subsectors, which include food and beverage manufacturing, apparel and textiles, and forestry products manufacturing.

## 2.5. TENNESSEE'S AGRICULTURAL AND FOREST INDUSTRIES AND RURAL ECONOMY, CONTINUED

**Table 2.3: Tennessee Cash Farm Receipts, 2014-2018**

Commodity	2014	2015	2016	2017	2018	Avg Annual Growth (2014-2018)	Ranking in U.S. in 2018*
<b>All commodities</b>	4,263	3,669	3,315	3,533	3,542	-4.2%	30
<b>Animals &amp; products</b>	1,811	1,564	1,326	1,429	1,409	-5.5%	32
<b>Crops</b>	2,451	2,105	1,989	2,104	2,132	-3.3%	27
<b>Tennessee's Top 10 in 2017</b>							
1. Soybeans	835	745	680	711	698	-4.1%	16
2. Cattle & calves	813	693	537	573	549	-8.1%	25
3. Broilers	598	528	444	494	525	-3.0%	17
4. Corn	487	397	416	382	385	-5.2%	19
5. Cotton	236	139	140	263	268	3.4%	10
6. Hay	126	127	131	142	158	6.3%	15
7. Dairy (Milk)	191	139	119	130	109	-10.7%	33
8. Tobacco	115	117	97	94	99	-3.3%	3
9. Wheat	215	137	121	94	92	-14.3%	19
10. Hogs	71	68	74	85	80	3.0%	19

\*Italics indicate at least top 20 ranking in the US  
Source: USDA/ERS, 2019a

the gap on cattle and calves and was a close third, totaling more than \$525.0 million and representing 14.8 percent of cash receipts. Dairy products and milk (3.1 percent of cash receipts); hogs (2.2 percent); and chicken eggs (2.0 percent) rounded out the top five Tennessee ranking for animals and animal products based on cash receipts in 2018 (USDA/ERS, 2019b). Tennessee markets for animals and animal products are influenced by national and international market forces. Thus, changes in the national and international market impact local prices, production, and receipts.

The key issues impacting the 2019 animals and animal products markets have been associated with trade agreements, tariffs, and African Swine Fever. Through the first week of October 2019, year-to-date red meat (beef, veal, pork, lamb/mutton) production was 2.1 percent higher than the previous year and was just shy of 41.0 billion pounds (USDA/AMS, 2019a). Similarly, poultry (chicken, turkey, duck) production through the end of September was 2.4 percent greater than the same nine months in 2018 and totaled 34.9 billion pounds (USDA/AMS, 2019b). Milk production the first eight months of 2019 was unchanged from the previous year, even though average monthly dairy cow inventory was down

86,000 head for the year (USDA/NASS, 2019c).

International demand for meat remains strong but varies depending on the meat source. U.S. beef exports from January through August decreased 3.8 percent compared to 2018 and totaled 1.47 billion pounds. Total beef export value over the first eight months of 2019 totaled \$4.80 billion, a decrease of 2.6 percent compared to 2018. Pork exports the first eight months of 2019 were 4.7 percent higher than 2018 and totaled 3.0 billion pounds. Total pork export value totaled \$3.7 billion, an increase of 3.6 percent compared to 2018 (USMEF, 2019). On the dairy side, exports of most dairy products the first seven months of 2019 were less than the previous year. The total aggregate volume of U.S. dairy exports through July were 2.6 billion pounds, which is a decrease of 13.2 percent compared to 2018, while total dairy export value is up 2.8 percent to \$3.4 billion (USDEC, 2019).

Calf (500- to 600-pound steer) and feeder cattle (700- to 800-pound steer) prices in Tennessee through the first nine months of 2019 decreased 4.8 and 4.3 percent, respectively, compared to 2018 (USDA/AMS, 2019c). The price pressure in 2019 likely stems from increased meat production, trade issues, and feed price uncertainty. Some of this negative price

## 2.5. TENNESSEE'S AGRICULTURAL AND FOREST INDUSTRIES AND RURAL ECONOMY, CONTINUED

pressure may subside with completed trade deals with Canada, Mexico, and Japan. Alternatively, Tennessee milk prices for the Appalachian and Southeast Federal Milk Marketing Orders through the first eight months of 2019 increased 11.0 percent and 10.8 percent, respectively, compared to the same eight months in 2018 (USDA/AMS, 2019d).

Tennessee ranked 16th nationally in terms of total cattle and calve inventory as of January 1, 2019 (1.80 million head, including 914,000 beef cows and 36,000 dairy cows), which is the same ranking as a year ago. Tennessee ranks 12th in total beef cow numbers, with Kentucky being the only state east of the Mississippi River with a larger beef cow inventory (USDA/NASS, 2019d). The state is ranked 3rd nationally in meat goat numbers at 89,000 head (USDA/NASS, 2019e).

The beef, pork, and poultry sectors have continued to expand production, but expansion is slowing in the beef industry. Expansion in all three industries is expected to continue slowing in 2020. The dairy industry also continues to expand production nationally despite a continued contraction in the number of dairy farms and dairy cows. Tennessee beef cattle numbers are expected to remain steady in 2020, while dairy cattle numbers will likely decline further.

### *Row Crop Production*

In terms of harvested acreage, Tennessee's four largest row crops are corn, cotton, soybeans, and wheat. Based on 2018 national cash receipts by commodity, Tennessee ranks 19th in corn production (\$385.3 million; 0.8 percent of U.S. total); 10th in cotton production (\$267.8 million; 3.3 percent of U.S. total); 16th in soybean production (\$697.9 million; 1.8 percent of U.S. total); and 19th in wheat production (\$91.6 million; 1.0 percent of U.S. total) (USDA/ERS, 2019b). Harvested acreage, production, and yield from 2014 to 2019 for the four principal row crops are shown in **Table 2.4**. In 2019, harvested acreage for Tennessee row crops were estimated to be 1.4 million acres of soybeans, 920,000 acres of corn, 400,000 acres of cotton, and 220,000 acres of wheat. Soybean acreage was down 17.0 percent from 2018 and 17.0 percent below the previous five-year average;

corn acreage was up 33.0 percent compared to 2018 and 21.0 percent greater than the five-year average; cotton acreage was up 13.0 percent compared to 2018 and 48.0 percent higher than the five-year average; and wheat acreage was down 25.0 percent from 2018 and 39.0 percent lower than the five-year average (USDA/NASS, 2019a). Soybean acreage was down due to lower prices as a result of higher U.S. soybean stocks and reduced exports to China. Corn acres were up, as winter/spring prices favored planting corn over soybeans. The higher corn price relative to soybeans was due to a combination of lower national soybean prices and greater corn basis certainty in Tennessee. Wheat acres were down as a result of lower prices and a challenging fall planting season in West Tennessee due to excess moisture. Cotton acres were up year-over-year as winter and early spring price ratios favored planting cotton and corn over soybeans. Cotton prices dropped substantially over the course of the 2019 crop year. State average corn and soybean yields for 2019 are projected to be 175 bushels per acre (an all-time state record if realized) and 47 bushels per acre, respectively. Cotton yield (1,128 pounds per acre) is projected to be the highest on record. Wheat yield was 67 bushels per acre, 2 bushels per acre greater than last year and 1 bushel below the five-year average. In Tennessee, 2019 was a challenging production year with wet planting conditions and a late season drought across a large portion of the state. For the 2019 crop, the wet conditions/flooding of the Mississippi River caused 106,684 acres of corn, cotton, soybeans, and wheat in Lake, Dyer, Lauderdale, Tipton, and Shelby counties to be prevented from being planted (USDA/FSA, 2019a).

Prices received by Tennessee producers are influenced by local, national, and global market forces. Increased global production, as a result of higher row crop commodity prices from 2010-2013, has led to record or near-record global stocks for corn, soybeans, and wheat, pushing prices lower. Global cotton prices have been adversely affected by increased synthetic fiber production and loss of market share to competing fibers. Additionally, 2018-2019 trade disruptions with China, Canada, Mexico, and the E.U. have adversely affected prices

## 2.5. TENNESSEE'S AGRICULTURAL AND FOREST INDUSTRIES AND RURAL ECONOMY, CONTINUED

for Tennessee and U.S. producers. Nationally, U.S. producers had a challenging planting season with 18.26 million acres of corn, cotton, soybeans, and wheat prevented from being planted, the most on record (USDA/FSA, 2019a). In spite of planting challenges, projected national average yields are estimated to be near national trend line for corn, cotton, soybean, and wheat. U.S. beginning stocks for the 2019-20 marketing year for corn, cotton, soybeans, and wheat are estimated at 2.11 billion bushels (down 1.2 percent), 4.9 million bales (up 15.5 percent), 913 million bushels (up 108.0 percent), and 1.1 billion bushels (down 1.7 percent). Current stocks are restrictive to short-term price improvements.

Trade disruptions have resulted in reduced access to markets for U.S. agricultural production, especially China. Trade restrictions/tariffs have a negative impact on the prices Tennessee producers receive for their commodities. Currently, 2019 marketing year average corn prices are 3.5 percent above the five-year average and 3.2 percent above 2018; soybean prices are 4.3 percent below the five-year average and 5.3 percent above 2018; wheat prices are 1.5 percent above the five-year average and 1.9 percent below 2018; and cotton prices are 1.4 percent below the five-year average and 9.3 percent below 2018 (Table 2.5).

**Table 2.4: Tennessee Harvested Acres, Production, and Yield for Corn, Cotton, Soybeans, and Wheat, 2014-2019\***

	2014	2015	2016	2017	2018	2019*	5-Year Average	Change 5-Year Average to 2018	Change 2018 to 2019
<b>Corn</b>									
Harvested Acres (million)	0.84	0.73	0.83	0.71	0.69	0.92	0.76	21%	33%
Production (million bushels)	141.1	116.8	125.3	121.4	115.9	161.0	124.1	30%	39%
Yield (bu/acre)	168	160	151	171	168	175	164	7%	4%
<b>Cotton</b>									
Harvested Acres (million)	0.27	0.14	0.25	0.34	0.36	0.40	0.27	48%	13%
Production ('000 bales)	0.49	0.31	0.58	0.73	0.77	0.94	0.58	63%	22%
Yield (bu/acre)	878	1,046	1,104	1,033	1,041	1,128	1,020	11%	8%
<b>Soybeans</b>									
Harvested Acres (million)	1.61	1.72	1.63	1.66	1.67	1.38	1.66	-17%	-17%
Production (million bushels)	74.1	79.1	73.4	83.0	76.0	64.9	77.1	-16%	-15%
Yield (bu/acre)	46	46	45	50	45.5	47	47	1%	3%
<b>Wheat</b>									
Harvested Acres (million)	0.48	0.40	0.34	0.28	0.29	0.22	0.35	-39%	-25%
Production (million bushels)	31.4	26.9	24.5	19.3	18.5	14.4	24.1	-40%	-22%
Yield (bu/acre)	66	68	73	70	65	67	68	-2%	3%

\*Estimated data. Source: USDA/NASS, 2019b

**Table 2.5: Marketing Year Average Prices for Tennessee, 2014-2019\***

Commodity	2014	2015	2016	2017	2018	5-Year Average	2019*
<b>Corn</b>	\$3.81	\$3.92	\$3.66	\$3.55	\$3.75	\$3.74	\$3.87
<b>Cotton</b>	\$0.63	\$0.62	\$0.70	\$0.68	\$0.73	\$0.67	\$0.60
<b>Soybeans</b>	\$10.60	\$9.29	\$9.78	\$9.70	\$8.75	\$9.62	\$9.21
<b>Wheat</b>	\$5.63	\$5.22	\$4.64	\$4.60	\$5.24	\$5.07	\$5.14

\*Projected marketing year average price in Tennessee based on typical basis and current future market prices. Source: USDA/NASS, 2019a

## 2.5. TENNESSEE’S AGRICULTURAL AND FOREST INDUSTRIES AND RURAL ECONOMY

*United States Department of Agriculture (USDA)  
Trade Retaliation Programs*

On July 24, 2018, the USDA announced \$12 billion in funding for producers that have been adversely affected by retaliatory tariffs. China, Mexico, Canada, and the E.U. implemented retaliatory tariffs that have had a measurable impact on agricultural commodity prices, such as soybeans, pork, corn, dairy, sorghum, cotton, wheat, as well as nuts, vegetables, fruits, and berries. For the 2018 production year, the USDA provided three tariff-mitigating programs: 1) Market Facilitation Program, 2) Food Purchase and Distribution Program, and 3) Agricultural Trade Promotion Program. On July 25, 2019, USDA continued support for the three tariff mitigating programs.

### Market Facilitation Program

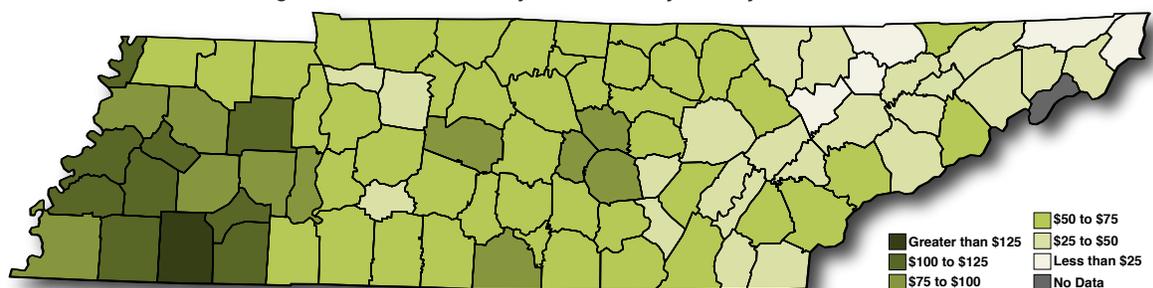
**2018:** The Market Facilitation Program (MFP) was authorized under the Commodity Credit Corporation (CCC) Charter Act and provided payments to producers of soybeans, sorghum, corn, wheat, cotton, dairy, and hogs. The support was intended to help farmers manage disrupted markets and deal with surplus commodities resulting from the

impacts of retaliatory tariffs (USDA, 2018). USDA Farm Service Agency Service Centers accepted applications from September 4, 2018, to January 15, 2019. The 2018 MFP payment rates were:

- Cotton \$0.06 per pound
- Corn \$0.01 per bushel
- Dairy \$0.12 per cwt.
- Hogs \$8.00 per head (number of head as of August 1, 2018)
- Sorghum \$0.86 per bushel
- Soybeans \$1.65 per bushel
- Wheat \$0.14 per bushel

**2019:** MFP payment rates were changed from commodity-specific rates in 2018 to county-specific payment rates in 2019. In 2019, MFP payments will be made to producers on total planted acres (aggregated planted acres times the county payment rate), based on the commodities planted in the county. In Tennessee, county payment rates ranged from \$16 (Anderson and Johnson Counties) to \$126 (Hardeman County) per planted acre. No payment rate was issued for Unicoi County (**Figure 2.12**). Payment limitations to individual legal entities apply.

**Figure 2.12: 2019 MFP Payment Rates by County in Tennessee**



Anderson: \$16	Claiborne: \$21	Fentress: \$53	Hawkins: \$36	Lauderdale: \$105	Meigs: \$36	Roane: \$31	Trousdale: \$63
Bedford: \$68	Clay: \$56	Franklin: \$73	Haywood: \$115	Lawrence: \$66	Monroe: \$51	Robertson: \$58	Unicoi: No Data
Benton: \$71	Cocke: \$56	Gibson: \$78	Henderson: \$88	Lewis: \$46	Montgomery: \$57	Rutherford: \$63	Union: \$23
Bledsoe: \$56	Coffee: \$75	Giles: \$68	Henry: \$67	Lincoln: \$91	Moore: \$58	Scott: \$49	Van Buren: \$41
Blount: \$52	Crockett: \$125	Grainger: \$49	Hickman: \$67	Loudon: \$49	Morgan: \$61	Sequatchie: \$44	Warren: \$77
Bradley: \$37	Cumberland: \$31	Greene: \$41	Houston: \$41	McMinn: \$53	Obion: \$73	Sevier: \$40	Washington: \$33
Campbell: \$46	Davidson: \$55	Grundy: \$58	Humphreys: \$68	McNairy: \$102	Overton: \$68	Shelby: \$93	Wayne: \$51
Cannon: \$82	Decatur: \$76	Hamblen: \$31	Jackson: \$63	Macon: \$64	Perry: \$55	Smith: \$60	Weakley: \$61
Carroll: \$110	DeKalb: \$86	Hamilton: \$57	Jefferson: \$44	Madison: \$99	Pickett: \$60	Stewart: \$52	White: \$60
Carter: \$33	Dickson: \$50	Hancock: \$75	Johnson: \$16	Marion: \$56	Polk: \$35	Sullivan: \$18	Williamson: \$78
Cheatham: \$65	Dyer: \$95	Hardeman: \$126	Knox: \$48	Marshall: \$63	Putnam: \$75	Sumner: \$58	Wilson: \$64
Chester: \$101	Fayette: \$114	Hardin: \$71	Lake: \$105	Mauzy: \$63	Rhea: \$33	Tipton: \$101	

Source: USDA, 2019

## 2.5. TENNESSEE'S AGRICULTURAL AND FOREST INDUSTRIES AND RURAL ECONOMY, CONTINUED

### Food Purchase and Distribution Program

**2018:** The Food Purchase and Distribution Program was authorized under the CCC Charter Act and implemented through the Agricultural Marketing Service (AMS) to purchase surplus supplies of 31 commodities and food products (USDA, 2018). USDA AMS purchased processed commodity and food products to be delivered to schools, food banks, and households across the country as a component of the nation's food safety net. For 2018, purchases were projected at \$1.4 billion.

**2019:** Purchases of pork, dairy, beef, lamb, citrus, apples, strawberries, blueberries, apricots, plums/prunes, pears, figs, sweet corn, raisins, potatoes, onions, and processed foods in 2019 through the FPDP are projected to be \$1.359 billion. Purchasing will begin October 1, 2019, and distributions will commence in January 2020. Commodities and products purchased through this program will be distributed to states for use in the network of food banks and food pantries that participate in the Emergency Feeding Assistance Program (TEFAP), elderly feeding programs such as the Commodity Supplemental Food Program (CSFP), tribes that operate the Food Distribution Program on Indian Reservations (FDPIR), and child nutrition programs such as the National School Lunch Program (USDA, 2019). Other channels of distribution may be explored.

### Agricultural Trade Promotion Program

In August 2018, \$200 million will be added to the Agricultural Trade Promotion Program (ATP) as part of the relief package to assist farmers affected by trade retaliation. In March 2019, an additional \$100 million was approved for ATP as part of the second relief package. The Foreign Agricultural Service (FAS) administers the ATP under authority of the CCC. In Tennessee, there is an infrastructure in place for participation in the ATP program. The Tennessee Department of Agriculture (TDA) has worked with FAS on trade promotion of agricultural and food products produced in Tennessee and has participated in FAS-sponsored trade missions as part of a state-

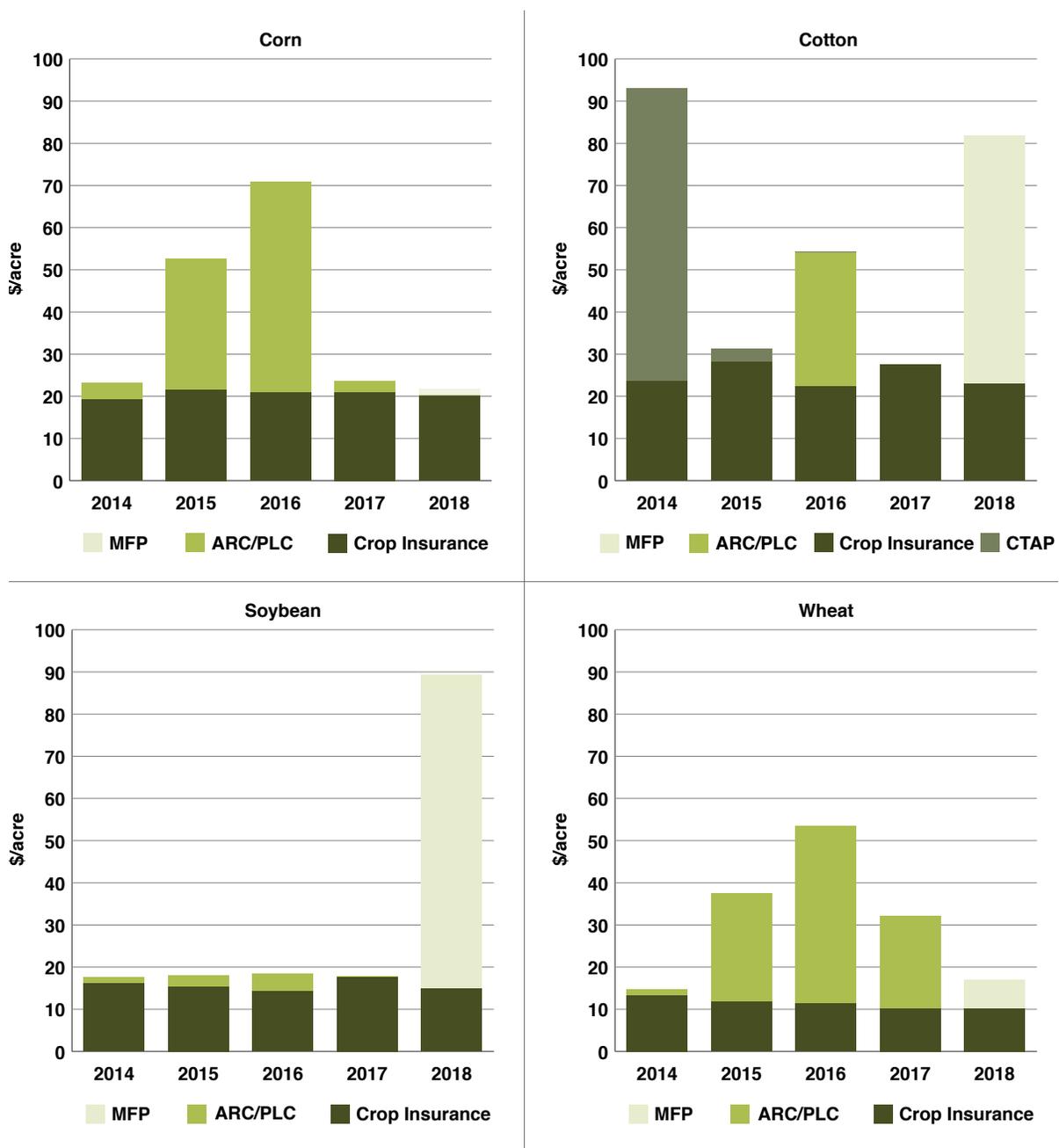
level trade promotion. Additionally, the Southern United States Trade Association (SUSTA), of which the state of Tennessee is a member, helps small- and medium-sized companies in the South promote food and agricultural products to foreign markets (Best, Smith and Muhammad, 2018). Through the Market Access Program, FAS has partnered with SUSTA and businesses to share the costs of overseas marketing and promotional activities that build export markets for U.S. agricultural products. Funding for SUSTA is primarily provided by the Market Access Program, which is also administered by FAS and operates similar to the ATP (Best, Smith, and Muhammad, 2018; USDA, 2019).

### *Federal Government Payments*

The previous Farm Bill (the Agricultural Act of 2014) provided Tennessee crop producers with \$125.5 million in direct payments from Agricultural Risk Coverage (ARC) and Price Loss Coverage (PLC) programs for the 2014-2017 crop years (USDA/FSA, 2019b); 2018 payments were not available at the time of publication). Additionally, the federal government's portion of crop insurance premiums paid by Tennessee producers was \$274.6 million for the 2014-2018 crop years (USDA/RMA, 2019). Cotton producers received additional support from the federal government through the Cotton Transition Assistance (CTAP) and Cotton Ginning Cost Share (CGCS) programs. **Figure 2.13** depicts the estimated federal government support per planted acre for corn, cotton, soybean, and wheat for ARC/PLC, crop insurance premiums, CTAP, CGCS, and MFP programs. The recently authorized Farm Bill (Agricultural Improvement Act of 2018) will be implemented by USDA FSA in winter/spring 2019-20. Minor changes were made between the 2014 and 2018 Farm Bills, but the core of the row-crop safety net remains largely unchanged for the 2019-2023 crop years. The new Farm Bill does not fundamentally change the ARC/PLC or crop insurance programs. Payments to producers for the 2019-2023 crop years will be determined by market forces.

## 2.5. TENNESSEE'S AGRICULTURAL AND FOREST INDUSTRIES AND RURAL ECONOMY, CONTINUED

Figure 2.13: Estimated Per Planted Acre Subsidies for Tennessee Corn, Cotton, Soybean, and Wheat Producers, 2014-2018 (Excluding ARC/PLC Payments for 2018 Crop Year)



Source: USDA/FSA, 2019a; USDA/RMA, 2019; USDA/ERS, 2019a

## 2.5. TENNESSEE'S AGRICULTURAL AND FOREST INDUSTRIES AND RURAL ECONOMY, CONTINUED

### Commodity Market Trends and Outlook

#### *Livestock, Poultry, and Dairy Outlook*

U.S. meat protein production will continue to increase in 2020 from the beef, pork, and poultry industries. It is unlikely domestic demand for meat protein will be able to keep up with supply to provide much needed price support. It will be important to move more meat protein through the export market to support prices. This support is sure to come through the U.S.-Korea Free Trade Agreement (KORUS), which has already demonstrated its significance to the U.S. meat protein industries. The bilateral agreement between the United States and Japan should also help the U.S. beef industry to recapture some market share in Japan. Additionally, the completion of the United States-Mexico-Canada Agreement (USMCA), if finalized, should support domestic animal and animal product prices. The wild card from a trade standpoint remains China. It does not appear progress has been made between the two countries, which keeps the largest population market closed to significant U.S. meat protein exports. The one bright spot for U.S. meat producers coming from China is that African Swine Fever has wreaked havoc on the Chinese swine herd, which likely means China will continue to look to international markets to fulfill their meat protein needs. The export market will be integral to growth or contraction in meat protein and dairy product industries.

Prices are expected to be steady across the meat and dairy complex in 2020 compared to 2019. If there are time periods of lower prices compared to year-ago prices, it will likely be due to increased production. However, continued resolution of trade conflicts and increases in exports could support market prices, resulting in steady to slightly higher prices in the latter half of 2020 compared to 2019. Tennessee producer profitability hinges on focusing on efficiencies and value-added opportunities as well as cost management. Specifically, beef and pork production are expected to increase in 2020, placing pressure on prices, but strong demand will keep prices from deflating. Poultry production will be steady to slightly higher with little change in prices,

while dairy production will be fairly steady with slightly higher prices in 2020.

#### *Row Crops Outlook*

Looking towards 2020, prices and producer profitability are unlikely to improve substantially without resolution of the trade dispute with China or a production disruption domestically or abroad. Producer profitability for the 2019-20 marketing year will be largely contingent on payments from the federal government. For the 2019-20 marketing year, Tennessee farm-gate prices are projected to be \$4.50-\$5.75 for wheat; \$3.50-\$4.50 for corn; \$8.00-\$9.75 for soybeans; and \$0.60-\$0.70 for cotton. Key factors for producer profitability in 2019-20 include government program payments, trade, adverse weather events, access to financing, interest rates, exchange rates, regulations and policies, and global economic growth. Given several years of low to negative margins, it is likely that some producers will exit the agricultural industry in the upcoming year. Consolidation in the row crop industry and associated agricultural service sectors remains likely as high-cost producers exit the industry.

### U.S. and Tennessee Agricultural Trade Outlook

In fiscal year (FY) 2019 (Oct. 2018-Sept. 2019), total U.S. agricultural exports, as reported by the USDA, were \$136 billion, down 5 percent when compare to the previous fiscal year (\$143 billion). Trade tensions with major markets for U.S. agricultural exports, particularly China, is the primary reason for this decline. Key exports in FY2019 for Tennessee included cotton (\$678 million); prepared foods and beverages (\$249 million); poultry products (\$63 million); dairy products (\$51 million); and tobacco (\$37 million). During this period, Tennessee was also a leading exporter of two agriculture-related products: distilled spirits (\$469 million) and forest products (\$187 million) (USDA/FAS, 2019a). For many of these sectors, Tennessee exports were down significantly when compared to the previous fiscal year, which is discussed in more detail later in the section. Although reported by USDA, these values

## 2.5. TENNESSEE'S AGRICULTURAL AND FOREST INDUSTRIES AND RURAL ECONOMY, CONTINUED

are compiled by U.S. Census and may not include bulk commodities (i.e., corn and soybeans) and other shipments that are consolidated with exports from other states and usually attributed to port states such as Louisiana, Georgia, or South Carolina.

The USDA's Economic Research Service (ERS) calculates state exports using a methodology that accounts for the level of production in the state relative to other states and on a calendar-year basis. Consequently, the number reported by ERS is usually different from what is reported by the U.S. Census. According to ERS (Table 6), Tennessee agricultural exports were \$1.47 billion in 2018, down 2.9 percent when compared to the previous year (Table 7). Of the 50 states, Tennessee ranked 27th in total agricultural exports in 2018. In 2018, major export categories for Tennessee included soybeans (\$299 million, 16th largest state); cotton (\$217 million, 10th); other feed grains (\$88 million, 20th); corn (\$102 million, 19th); tobacco (\$84 million, 3rd); wheat (\$55 million, 19th); beef and veal (\$68 million, 25th); and broiler meat (\$52 million, 17th) (USDA/ERS, 2019c).

According to USDA, FY2020 (fiscal year) agricultural exports are projected to be \$137 million, which is an increase of \$2.5 billion when compared to FY2019. This anticipated increase is primarily driven by expected increases in exports of pork, beef, soybeans, and horticultural products. Pork exports are projected at \$6.3 billion, up \$800 million from FY 2019 due to expected higher volumes and prices, partially resulting from the repeal of Mexico's retaliatory tariffs and an increase in global pork demand due to the African Swine Fever epidemic. Beef and veal exports are projected at \$7.8 billion, up \$300 million from FY 2019 due to expected higher volumes and prices. Horticultural exports are projected to increase by \$500 million to \$35.5 billion. Soybean exports are expected to rise by \$400 million to \$16.8 billion on higher volumes. Cotton exports are projected up \$100 million to nearly \$6 billion.

Canada and Mexico are the most important markets for U.S. agricultural exports. Agricultural exports to Canada are expected to increase by \$400 million to \$21.5 billion, and exports to Mexico are expected to increase by \$500 million to \$19.8 billion. China is also an important market for U.S.

**Table 2.6: Tennessee Agricultural Exports Reported by ERS, 2017 and 2018**

Product	Million \$	US Rank	% Change	U.S. Rank (2018)
Beef and veal	61.1	26	10	25
Pork	26.1	19	-8	19
Hides and skins	13.9	28	-26	27
Other livestock products <sup>1</sup>	20.0	40	-1	34
Dairy products	18.4	31	-7	33
Broiler meat	51.5	17	1	17
Other poultry products <sup>2</sup>	13.1	30	-12	31
Vegetables, fresh	3.2	32	81	29
Vegetables, processed	6.0	32	62	29
Fruits, fresh	0.0	49	NA	47
Fruits, processed	0.0	49	NA	47
Tree nuts	0.0	43	NA	43
Rice	0.0	43	NA	43
Wheat	66.2	18	-16	19
Corn	75.9	19	33	19
Feeds and other feed grains <sup>3</sup>	80.8	21	5	20
Grain products, processed	41.9	25	2	26
Soybeans	400.6	16	-24	16
Soybean meal	72.9	16	25	16
Vegetable oils	55.1	16	-11	17
Other oilseeds and products <sup>4</sup>	0.0	46	NA	46
Cotton	196.2	8	7	10
Tobacco	68.5	4	22	3
Other plant products <sup>5</sup>	215.9	20	-6	22
Total agricultural exports	1,487.4	28	-3	27
Total animal products	204.1	34	-1	35
Total plant products	1,283.3	26	-3	25

<sup>1</sup> Includes other non-poultry meats, animal fat, live farm animals, and other animal parts.

<sup>2</sup> Includes turkey meat, eggs, and other fowl products.

<sup>3</sup> Includes processed feeds, fodder, barley, oats, rye, and sorghum.

<sup>4</sup> Includes peanuts (oil stock), other oil crops, corn meal, other oilcake and meal, protein substances, bran, and residues.

<sup>5</sup> Includes sweeteners and products, other horticulture products, planting seeds, cocoa, coffee, and other processed foods.

Source: USDA/ERS, 2019c

agricultural exports. Despite current trade tensions, U.S. agricultural exports to China are expected to increase by \$200 million in FY2020 to \$7.5 billion due to expected higher demand for imported pork due to African Swine Fever (Daugherty and Jiang, 2019).

## 2.5. TENNESSEE'S AGRICULTURAL AND FOREST INDUSTRIES AND RURAL ECONOMY, CONTINUED

### *Impacts of the Trade War on Tennessee Agricultural and Agriculture-Related Exports*

In FY2019, the top destinations for U.S. agricultural exports included Canada (\$24 billion); Mexico (\$19 billion); EU-28 (\$13 billion); Japan (\$12 billion); China (\$10 billion); and South Korea (\$8 billion) (USDA/FAS, 2019a). In the previous fiscal year, there were trade tensions between the U.S. and each of these countries/regions either due to their response to U.S. steel and aluminum tariffs, the U.S. pulling out of pending trade agreements or renegotiating existing agreements, and a tit-for-tat trade war with China. Fortunately, the U.S. was able to renegotiate the U.S.-Korea Trade Agreement (signed September 2018). Tensions with Canada and Mexico eased with the renegotiation of the North American Free

Trade Agreement (NAFTA), renamed the United States-Mexico-Canada Agreement (USMCA). However, the USMCA remains stalled in Congress. In October 2019, the U.S. signed the U.S.-Japan Trade Agreement, where Japan has agreed to significantly lower tariffs on U.S. agriculture (**See Information Box: United States and Japan Sign Trade Agreement**). An agreement with the EU-28 (or EU-27 assuming Britain's exit from the EU) remains elusive. Trade tensions with China have yet to be resolved, resulting in significant loss for U.S. agriculture. U.S. agricultural exports to these top markets have remained relatively unchanged in FY2019 when compared to FY2018. China is the noted exception. U.S. agricultural exports to China in FY2019 were down 38 percent when compared to the previous fiscal year.

### United States and Japan Sign Trade Agreement

On October 7, 2019, the U.S. Trade Representative and Japan Ambassador to the U.S. signed the U.S.-Japan Trade Agreement. The U.S.-Japan Trade Agreement will eliminate or reduce tariffs on many agricultural products. In effect, the Agreement provides U.S. agriculture the same advantages given to CP-TPP countries selling in the Japanese market. With Japan's \$5 trillion economy, this Agreement will expand U.S. food and agricultural exports, increase farm income, generate more rural economic activity, and promote job growth (USTR, 2019; USDA/FAS 2019b).

In 2018, Japan signed the Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP) (TPP minus the U.S.) and an agreement with the European Union (EU). These agreements put U.S. agricultural exports to Japan at a competitive disadvantage with respect to countries that have existing trade agreements with Japan (e.g., Australia, New Zealand, Canada, and EU). The new U.S.-Japan Trade Agreement is expected to put U.S. agriculture on a more level playing field by eliminating or reducing tariffs comparable to what Japan has afforded other countries.

Of the \$14.1 billion in U.S. food and agricultural products exported to Japan in 2018, \$5.2 billion were already duty free (imported at a zero-percent tariff rate). Under the first stage of the Agreement, Japan will eliminate or reduce tariffs on an additional \$7.2 billion of U.S. food and agricultural products. When implemented, over 90 percent of U.S. food and agricultural exports to Japan will either be duty free or receive

preferential tariff access. Under the Agreement, Japan has agreed to do the following:

- Reduce tariffs on products such as fresh and frozen beef and pork;
- Provide U.S.-specific quota access for wheat and wheat products;
- Immediately eliminate tariffs on almonds, walnuts, blueberries, cranberries, sweet corn, grain sorghum, broccoli, and many other products; and
- Provide staged tariff elimination for products such as cheeses, processed pork, poultry, beef offal, ethanol, wine, frozen potatoes, oranges, fresh cherries, egg products, and tomato paste.

One of the more important aspects of the agreement are tariff reductions for U.S. beef and pork products. At nearly \$3 billion, Japan is a leading market for U.S. beef and pork exports. In 2018, the U.S. exported \$2.1 billion of beef and beef products to Japan. Under the Agreement, Japan has agreed to reduced tariffs on chilled and frozen beef from 38.5 percent to 9 percent in 15 years. Additionally, Japan will fully eliminate tariffs on processed beef products, which are as high as 50 percent, in five-15 years. In 2018, the U.S. exported \$1.6 billion of pork and pork products to Japan. Japan is the U.S.'s largest export market for pork. Japan's tariffs on muscle cuts from the U.S. will be eliminated over a nine-year period, and tariffs on processed pork products will be phased down to zero within five years.

## 2.5. TENNESSEE'S AGRICULTURAL AND FOREST INDUSTRIES AND RURAL ECONOMY, CONTINUED

China's retaliatory tariffs (as well as other countries) on U.S. agriculture were mostly imposed in July and August of 2018. This allows for comparing exports pre- (FY2018) and post- (FY2019) trade war. Tennessee's agricultural exports in FY2019 were slightly above \$1.4 billion, down 4 percent when compared to the previous fiscal year (Table 2.7). This overall decline was, in part, driven by a decline in exports to China, which were down by 37 percent. Product categories where Tennessee experienced more significant declines include cotton and tobacco. Tennessee cotton exports in FY2019 in total and to China were \$678 million and \$36 million, respectively, down 10 percent overall, with exports to China down 41 percent. Tennessee tobacco exports were primarily impacted by tariffs in the EU-28. In FY2019, Tennessee tobacco exports decreased to \$37 million, down 35 percent; exports to the EU in FY2019 (\$18 million) were down 20 percent. Two major declines for the State are in agriculture-related categories: distilled spirits and forest products. In FY2019, Tennessee distilled spirits exports in FY2019 in total and to the EU were \$469 million and \$278 million, respectively, down 35 percent and 42 percent. This decline was due to retaliatory tariffs in the EU on Tennessee Whiskey. Tennessee forest products exports in FY2019 in total and to China were \$187 million and \$46 million, respectively, down 34 percent and 64 percent, due to the retaliatory tariffs in China on Tennessee log and lumber exports. The country, overall, has experienced similar declines in cotton and tobacco exports. Note that in FY2019, U.S. cotton exports were down 8 percent and tobacco down 30 percent. For distilled spirits and forest products, Tennessee exports are down by a larger percent when compared to the U.S. overall. Note that U.S. distilled spirits and forestry exports were down 15 percent and 18 percent in FY2019 (USDA/FAS, 2019a).

### Infrastructure

Tennessee's on-farm grain storage capacity in 2018 was 100 million bushels, whereas off-farm storage facilities including all elevators, warehouses, terminals, merchant mills, other storage, and oilseed crushers provided 75 million bushels of storage

**Table 2.7: Tennessee Agricultural Exports (Total Agriculture and Select Products) Before and After the Start of the Trade War**

Partner	Product	FY2018 Million \$	FY2019 Million \$	% Change
World	Total Agriculture	1,470	1,412	-4
Canada	Total Agriculture	262	246	6
Vietnam	Total Agriculture	171	151	-12
Mexico	Total Agriculture	109	91	-16
China	Total Agriculture	94	59	-37
World	Cotton	757	678	-10
China	Cotton	60	36	-41
World	Tobacco	57	37	-35
EU-28	Tobacco	22	18	-20
World	Distilled Spirits	725	469	-35
EU-28	Distilled Spirits	477	278	-42
World	Forest Products	282	187	-34
China	Forest Products	127	46	-64

Source: (USDA/ERS 2018a).

capacity (USDA/NASS, 2019f). Cumulatively from 2006 to 2018, the Tennessee Agricultural Enhancement Program (TAEP) invested nearly \$86 million in 13,394 projects to enhance the storage for grain, hay, and livestock feed (TAEP, 2019). However, growth in agricultural production outpaces the expansion of storage capacity. It is estimated that Tennessee's total storage capacity in 2019 will be short by 72.6 million bushels for crop production and stocks, making Tennessee's rank as the fourth state in terms of crop storage shortage (USDA/AMS, 2019e).

Trucking remains the most utilized mode for commodities, including agricultural products, in domestic markets. In 2016, more than two-thirds of the \$700 billion freight in Tennessee was transported by truck (TRIP, 2019). The share of the freight travel by combination trucks on Tennessee's rural interstates roads ranked the top six in the nation. However, the road infrastructure has not met the increasing demand for commerce. About 13 percent of the major roads in the state are in poor or mediocre condition, while five percent of the state's bridges are structurally deficient (TRIP, 2019). The poor road and bridge conditions not only adversely

## 2.5. TENNESSEE'S AGRICULTURAL AND FOREST INDUSTRIES AND RURAL ECONOMY, CONTINUED

affect regional development and accessibility, but also connect with the safety issue: Tennessee's fatality rate on rural roads is among the highest in the nation.

In April 2019, Governor Bill Lee and the Tennessee Department of Transportation (TDOIT) Commissioner Clay Bright announced a three-year transportation program with a priority given to infrastructure needs in distressed and at-risk counties (TDOIT, 2019). More than \$2 billion in total will be invested for 139 individual project phases during the period. The comprehensive program emphasized bridge repairs and replacements and continue to enhance the IMPROVE Act signed in 2017 that supports infrastructure investment in all 95 counties.

Inland waterways and rail transportation primarily serve the export-oriented agricultural products. A recent study suggests that Tennessee soybean exports via inland waterways in 2016 generated more than \$221 million in GDP and nearly 4,900 jobs (Informa, 2019). Meanwhile, corn exports through waterways contribute \$35 million of GDP and 1,284 jobs to the state.

### Farmers Markets, CSAs, Wineries, and the Green Industry

As reported in prior years, the "local foods" movement, along with technical and financial assistance provided by the USDA, TDA, the University of Tennessee Institute for Agriculture (UTIA), and other agencies, has helped increase direct marketing by farmers. While farmers markets remain an important component of local food sales, their growth has slowed nationally and in Tennessee. Tennessee added a net of three farmers market in 2019 (from 131 to 134) compared to the rapid expansion in prior years (e.g., from 99 in 2013) (USDA/AMS, 2019f). Nationally, the number of farmers markets increased by only 0.6 percent from 2018 to 2019. A growing interest in intermediated sales of local foods (to institutions or to businesses that sale to consumers such as grocery stores and restaurants) is probably a major reason for the slowdown in the growth in number of

farmers markets. Still, analysis reported in last year's Governors Report indicates that Tennessee has room to grow additional farmers markets.

Our analysis of Tennessee farmers markets, based on the data provided by the USDA's AMS, indicates that 64.2 percent (86) accept credit cards and 33.6 percent (45) accept SNAP payments. Well over half report baked goods (88), eggs (81), and meat (71) vendors. Among the 134 farmers markets, 39 markets (29 percent) report organic product vendors. All of these values only changed slightly from those reported last year.

Community supported agriculture (CSA) and food hubs are other expanding components of local foods markets, both nationally and in Tennessee. In a CSA, consumers (buying members) make advanced payment for a farm's products and in return receive a share of the production on a consistent basis throughout the growing season (Demuth, 1993). Farmers are assured of a return for their efforts before production, and consumers are assured of an adequate and timely supply of locally produced products. Our analysis of data provided by TDA indicates that 90 CSAs (a slight decline from 2018) and two food hubs currently operate in the state. Among the CSAs, 28.9 percent (26) were found in East Tennessee, 58.9 percent (53) in Middle Tennessee, and 12.2 percent (11) in West Tennessee.

As indicated in last year's report, and based on a 2015 survey conducted by USDA/NASS (2017), 4,148 farms in Tennessee reported local sales valued at \$58.7 million.<sup>7</sup> Among these farms, 90.4 percent (3,748) reported direct sales to consumers, totaling \$41.4 million in value or sales of \$11,050 per farm. Survey results also imply that direct sales are growing. Among the 3,748 producers, 39.2 percent have been direct marketing for less than five years, while 33.1 percent have been selling directly to consumers for six to 10 years. Further, the 3,748 producers is an increase over the 3,679 farmers in 2012 and 3,581 farmers in 2007 with direct sales to consumers. The \$41.4 million is more than twice the value of direct sales (\$19.2 million) reported by Tennessee farmers for 2012 (USDA/NASS, 2012).

<sup>7</sup> The 2017 Agricultural Census had questions regarding the sale of local food and value-added production. However, the coverage of the 2015 survey is apparently more complete, so we report those results.

## 2.5. TENNESSEE'S AGRICULTURAL AND FOREST INDUSTRIES AND RURAL ECONOMY, CONTINUED

Among the 4,148 responding farms, 3,748 farms provide value-added products (i.e., they physically transformed the product) with \$29.6 million in value-added sales (or 50.4 percent of all directly marketed sales in value terms). The 400 farmers who sell locally to institutional (such as school systems) or retail (such as grocery stores) buyers or through other intermediaries (such as food hubs) are generally larger operations with local food sales of \$43,265 per farm.

Cattle and other livestock producers are also becoming interested in finishing and processing cattle for local and regional markets. Based on survey results (McLeod, 2017), over three-fourths of Tennessee cattle producers expressed interest in supplying an in-state federally inspected cattle processing facility. Interest in a Tennessee meat brand continues to grow. Some of these producers are growing purely grass-fed or pastured-raised animals. Linking to local and regional markets and access to federally inspected processing facilities remain a challenge for livestock producers interested in meeting the growing demand for locally sourced meat. Although research indicates that a small, well-managed, federally inspected processing facility could be profitable (Hughes et al., 2017), the state has not witnessed strong growth in the number of such facilities. The temporary closing of a facility in East Tennessee was a bottleneck for producers seeking to process cull beef and dairy cattle regionally.

Similar to prior years, other new or nontraditional agricultural ventures also continue to grow in Tennessee. According to the 2017 Agriculture Census, the state has 644 agritourism venues, up from 616 in 2012 and 510 in 2007. Total receipts from agritourism activity increased to \$14.5 million in 2017 from \$11.9 million in 2012.

Analysis of the most recent data (2019) released by the U.S. Bureau of Labor Statistics (BLS, 2019) indicates that growth of the Tennessee wine and grape industry may have leveled off. Direct-hired jobs in the Tennessee winery industry was 447 workers in the first quarter of 2019, a slight decrease from the same time last year. The state now has 89 bonded wineries, including several cideries (where hard cider is produced), an increase of 47 from 2012. However, growth in Tennessee grape production from 645

bearing acres in 2012 to 747 bearing acres in 2017 (an increase of 15.8 percent over five years) has not matched the growth in the number of wineries. This result implies that many state wineries rely on out-of-state sources.

The craft beer industry and the craft distillery industry in Tennessee are growing rapidly. An estimated 159 breweries are now in Tennessee, which is an increase of over six-fold from the 26 in 2010. As of the first quarter of 2019, 75 breweries report an average of 788 workers with a first quarter payroll of \$5.0 million versus 26 breweries reporting 148 workers in 2014. The brewing industry continues to be concentrated in urban centers. Farmers seeking to produce hops and other inputs for that industry are small in number and face several challenges. Likewise, the number of distilleries reporting employment has increased from 19 in 2014, to 35 in the first quarter of 2018, to 39 in the first quarter of 2019. Farmers are increasing production of corn and other grains as inputs for the Tennessee whiskey industry (Tharel, 2017).

As reported in previous years, the green industry (ornamental horticulture including nursery and turfgrass producers) remains an important component of Tennessee agriculture, especially in Middle Tennessee. As of 2017, nursery sales were valued at \$135.0 million, a slight increase from 2012 at \$132.1 million but with a decline of 10 percent in the number of farms from 570 in 2012 to 513 in 2017 (USDA/NASS, 2019a, 2019b).

Also, like many other states, the state has experienced an explosion in the number of farmers growing hemp and in the numbers of people interested in doing so. As of November 2019, the state had 3,800 producers licensed to grow up to 51,000 acres (Tennessee Department of Agriculture, 2019). The hemp is primarily grown for the cannabidiol (CBD) oil or other extracts that is obtained by processing components of the plant, particularly the plant's flower (bud). While enterprise budgets by Cui and Smith (2019) indicate that the crop may be profitable, rapidly changing market conditions and other concerns should make actual and potential producers quite wary. For example, all of the hemp under cultivation may not be harvested

## 2.5. TENNESSEE'S AGRICULTURAL AND FOREST INDUSTRIES AND RURAL ECONOMY, CONTINUED

or if harvested, may not find a market. One claim is that 50-70 percent of the hemp planted in the U.S. this year will not be processed (Fly Intel, 2019). Access to processing facilities (especially in-state processing that live up to contracts) for locally grown hemp continues to be an area of concern.

### Financial Indicators for Tennessee Farming Industries

Several measures can be used to indicate the financial well-being of farms and farm operators in Tennessee. **Table 2.8** presents financial data from 2013-2018 for the Tennessee farming sector. The value of farm production declined from just under \$5.1 billion in 2013 to \$4.2 billion in 2018 (USDA/ERS 2019a). Net farm income was \$297 million in 2018 (down from \$1.4 billion in 2013 but up from the low of \$203 million in 2016), averaging \$4,240 per operation. Net cash farm income on a per-acre basis was \$27/acre. The net farm income ratio (net farm income/value of production) during 2013 to 2018 ranged from 5 to 28 percent efficiency in converting production to net farm income, with a downtick from 10 percent in 2017 to 7 percent in 2018. The interest expense ratios for the farming sector, holding at 6 percent or less, reflect a low debt burden and interest payment level relative to production. Times interest earned is another measure of ability to cover debt payments, specifically

interest payments. For all years, the values are greater than one, implying sufficient cash to meet interest payments, and in 2018, the value was 2.13. The state's capital consumption ratio, or the percent of production needed to cover the sector's capital consumption, was relatively low for the 2013 to 2018 period, ranging between 13 percent and 20 percent. In 2018, the state's farming sector had an operating expense ratio of 0.74, suggesting 74 percent of the value of production was used to cover operating expenses. The 2018 estimated market value of land and buildings on farms was \$42.7 billion or around \$610,548 per farm in Tennessee.

Tennessee's farm structure is characterized by many small farming operations; however, a relatively few larger farms make up the majority of farm sales (USDA/NASS, 2019b). According to the 2017 Census of Agriculture, about 36 percent of farmers in Tennessee cite farming as their principal occupation. This illustrates the importance of other sources of rural income to economic sustainability of the agricultural sector. The average age of farm operators in Tennessee is 58 years old. Over 35 percent of farmers are 65 and older. About 14.9 percent of principal operators are beginning farmers, having less than five years of experience. This is up from the value of 8 percent in the 2012 Census. Over 73 percent of principal operators had 10 years or more of farming experience.

**Table 2.8: Indicators of Financial Well-Being of the Tennessee Farm Sector, 2013-2018**

	2013	2014	2015	2016	2017	2018
Value of Production (mill \$)	\$5,104	\$4,893	\$4,578	\$4,007	\$4,284	\$4,203
Net Farm Income (mill \$)	\$1,412	\$688	\$714	\$203	\$450	\$297
Interest Expense <sup>1</sup> (mill \$)	\$179	\$189	\$196	\$208	\$238	\$263
Market Value of Farmland, Buildings, and Equipment (mill \$)	\$38,913	\$39,458	\$40,221	\$41,093	\$41,856	\$42,728
Capital Consumption <sup>1</sup> (mill \$)	\$665	\$875	\$750	\$793	\$670	\$608
Total Production Expenses <sup>1</sup> (mill \$)	\$3,749	\$4,212	\$3,832	\$3,827	\$3,908	\$3,966
Net Farm Income Ratio	0.28	0.14	0.16	0.05	0.10	0.07
Capital Consumption Ratio	0.13	0.18	0.16	0.20	0.16	0.14
Operating Expense Ratio	0.57	0.64	0.63	0.71	0.70	0.74
Interest Expense Ratio	0.04	0.04	0.04	0.05	0.06	0.06
Times Interest Earned	8.88	4.64	4.65	1.98	2.89	2.13

<sup>1</sup> Excludes operator dwellings. Source: (USDA/ERS 2019a)

## 2.5. TENNESSEE'S AGRICULTURAL AND FOREST INDUSTRIES AND RURAL ECONOMY, CONTINUED

### Primary Forestry in Tennessee

In 2016, the state's 144 sawmill establishments employed 2,157 workers with a total payroll of \$72.7 million, while the state's 140 logging establishments employed 845 workers with a total payroll of \$25.6 million (US Census Bureau, 2018). From 2010 through 2016, average annual growth rates in employees, payroll, and establishments for sawmills (NAICS 321113) were 2.2 percent, 7.2 percent, and -2.8 percent, respectively. For logging (NAICS 1133), the average annual growth rates over the same period were 3.6 percent, 7.6 percent, and -0.2 percent, respectively, for employees, payroll, and establishments. The dominant forest type in the state is oak-hickory, accounting for an estimated 9.9 million acres (Tennessee Forestry Association, 2017). Of the close to 14.0 million acres in forest, 83.4 percent is privately owned with federal and state/local forests comprising 10.0 percent and 6.6 percent, respectively. For 2015, average annual sawtimber<sup>8</sup> removals on timberland<sup>9</sup> were estimated

at 1.4 billion board feet. Of that value, the majority of the removals, 86.3 percent, were from private landowners (1.2 billion board feet); followed by other non-federal public (141.7 million board feet); state (42.9 million board feet); and other federal entities (3.5 million board feet). The predominant species removed on other federal lands were red and white oaks, and for state lands, yellow poplar and white and red oaks. For privately owned lands, white and red oaks, yellow poplar, loblolly/shortleaf pines, and hickory were the predominant species removed (USDA/FS, 2019).

### Food, Fiber, and Forestry Manufacturing in Tennessee

*Value of Shipments, Number of Establishments, and Employees*

The state's 1,668 food and fiber processing and manufacturing facilities employed 78,714 workers, with a payroll of \$3.7 billion in 2016 (Table 2.9). The value of shipments originating

<sup>8</sup> Commercial tree species with at least a 12-foot sawlog or two noncontiguous sawlogs 8 feet or longer and meeting regional specifications for freedom from defect. Softwoods must be at least 9.0 inches in diameter at breast height (d.b.h.); hardwoods must be at least 11.0 inches d.b.h. (USDA/FS, 2019).

<sup>9</sup> Forestland producing or is capable of producing crops of industrial wood and not withdrawn from timber utilization by statute or administrative regulation (USDA/FS, 2019).

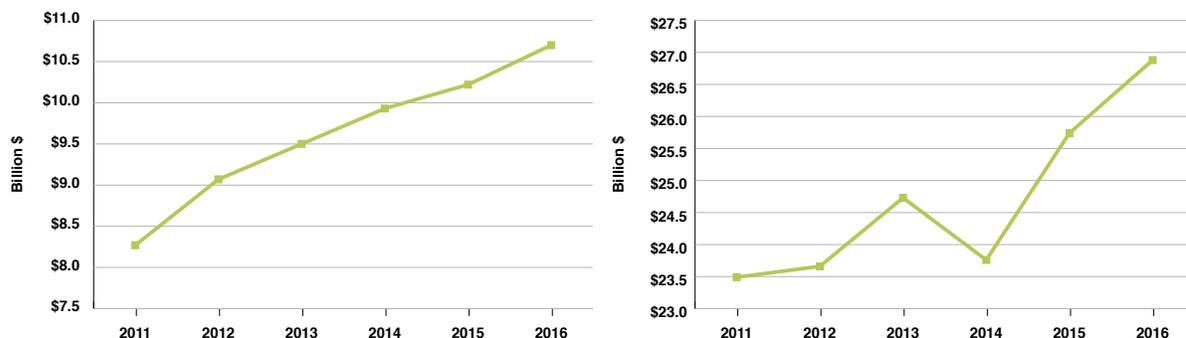
**Table 2.9: Tennessee Food, Fiber, and Forestry Manufacturing, 2016<sup>a</sup>**

Manufacturing Industry (NAICS)	Employees (number)	Payroll (mill \$)	Establishments (number)	Shipments (mill \$)
<b>Food (311)</b>	36,062	\$1,718	344	\$20,642
<b>Animal Slaughtering/ Processing</b>	10,519	\$382	66	\$3,872
(3116)	3,481	\$226	135	\$6,244
<b>Beverage &amp; Tobacco Products (312)</b>	2,400	\$115	45	\$905
<b>Textile Mills (313)</b>	1,627	\$65	131	\$414
<b>Textile Product Mills (314)</b>	2,492	\$75	86	\$281
<b>Apparel (315)</b>	475	\$13	29	\$45
<b>Leather &amp; Allied Products (316)</b>	11,055	\$427	465	\$2,785
<b>Wood Products (321)</b>	10,319	\$629	122	\$5,866
<b>Paper (322)</b>	10,803	\$441	311	\$2,049
<b>Furniture &amp; Related Products (337)</b>	10,803	\$441	311	\$2,049
<i>Total</i>	78,714	\$3,709	1,668	\$39,231

<sup>a</sup> Values for animal slaughtering and processing are embedded in food manufacturing (311) values. Source: US Census Bureau, 2018

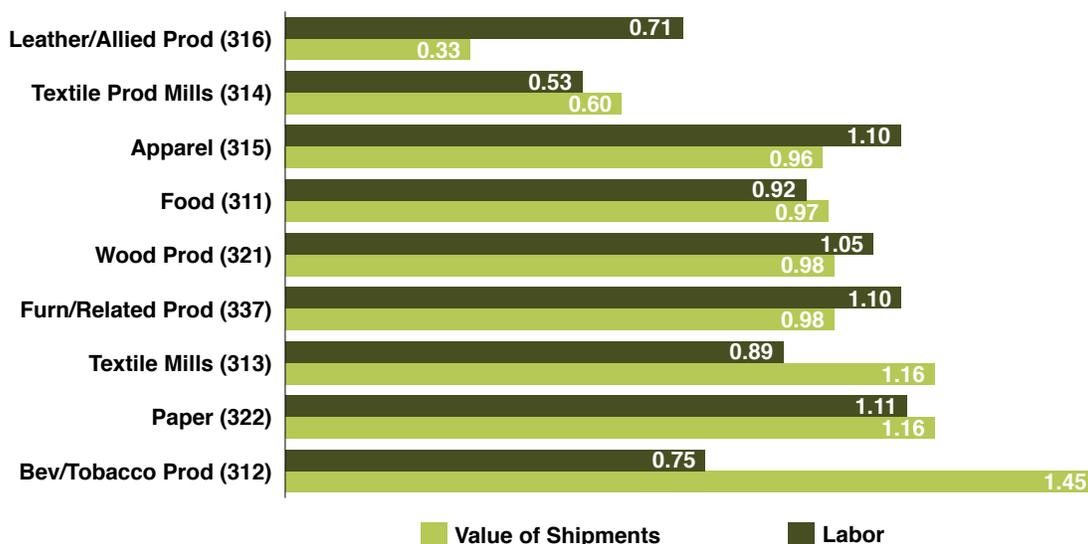
## 2.5. TENNESSEE’S AGRICULTURAL AND FOREST INDUSTRIES AND RURAL ECONOMY, CONTINUED

Figure 2.14: Value of Shipments From Tennessee Agri-Forestry, 2010-2016



Source: U.S. Census Bureau, 2019

Figure 2.15: Tennessee Agri-forestry Manufacturing Location Quotients (LQ), 2016



Source: U.S. Census Bureau, 2019

from these industries was \$39.2 billion (US Census Bureau, 2018). By comparison, the state’s overall manufacturing employment was 308,966 workers in 2016, and the value of shipments was \$149.1 billion. Thus, food- and fiber-related manufacturing in Tennessee employed more than 1 in 4 manufacturing workers and generated nearly \$1 out of every \$4 in manufacturing shipments. Food processing accounted for 52.6 percent of the values of food- and fiber-related manufacturing shipments, followed by beverage and tobacco products at 15.9 percent and paper products at 15.0 percent.

Figure 2.14 displays the growth in value

of shipments from 2010 through 2016 for Tennessee’s food, beverage, and tobacco products manufacturing (NAICS 311 and 312 combined) and wood, paper, and furniture products (NAICS 321, 322, and 337 combined). Other than a 3.9 percent decline in shipments in 2014, food, beverage, and tobacco products manufacturing experienced 4.2 percent average annual growth from 2010 to 2016. During this same period, forest products manufacturing also experienced an average annual growth of 4.2 percent.

The location quotients (LQ) displayed in Figure 2.15 reflect the concentration

## 2.5. TENNESSEE'S AGRICULTURAL AND FORESTRY INDUSTRIES AND RURAL ECONOMY, CONTINUED

of Tennessee's agri-forestry manufacturing compared with the U.S., based upon 2016 value of shipments and labor.<sup>10</sup> An LQ greater than one indicates Tennessee's manufacturing is more concentrated toward that particular manufacturing industry than the U.S. For value of shipments, the state's manufacturing is more concentrated toward beverages and tobacco (1.45), paper (1.16), and textile mills (1.16) compared to the U.S. However, for food manufacturing, only the LQ is less than one (0.97). For labor, paper, apparel, furniture industries, and wood products the LQs are greater than one, suggesting that Tennessee's manufacturing industries' labor is more concentrated toward these industries than the U.S. From 2007 to 2014, textile product mills and textile mills declined 62.4 percent and 38.3 percent, respectively. For this same time frame, beverage and tobacco products increased 44.8 percent, followed by food processing (25.8 percent), paper (15.6 percent), wood products (2.5 percent), and furniture industries (1.9 percent).

### Economic Impacts from the Agri-forestry Industrial Complex

In 2017, the agri-forestry industrial complex directly contributed (without multiplier effects) \$53.0 billion in economic activity to the state's economy, adding 177.0 thousand jobs. The agri-forestry industrial complex contributed \$16.1 billion in value-added. When accounting for multiplier effects, the agri-forestry industrial complex added \$81.0 billion to Tennessee's economy or 11.8 percent of the state's economic activity, accounting for 342.0 thousand jobs or 8.6 percent of all jobs. Agriculture, with multiplier effects, accounted for 8.3 percent of the state's economy and generated \$56.8 billion in output, adding close to 244,000 jobs, with over 92,000 employed (both full- and part-time) directly in

agricultural production (Menard, English and Jensen, 2019).

The 2017 economic activity multipliers for agricultural commodities and forestry activities (i.e., logging, sawmills, and pulp-, paper-, and paperboard-mills) ranged from 1.030 to 1.851 for economic activity. Sawmill's output multiplier of 1.84 indicates that for every dollar invested in the sawmill industry, an additional \$0.84 of economic activity is generated. Employment multipliers for agriculture and forestry ranged from 1.03 to 4.81. Logging's employment multiplier of 2.376 indicates that for every job created in the sawmill industry, an estimated 1.376 additional jobs are added in other industries (Menard, English and Jensen, 2019).

### Rural Economies and Well-Being

Rural communities and their resources are important contributors to the health of the agri-forestry industrial complex. In 2018, about 22.4 percent of Tennessee's population lived in counties classified as rural.<sup>11</sup> As classified here, rural counties had 2018 populations of 28,601 on average, while counties not classified as rural had average populations of 124,197 (Table 2.10). The state continues to become more urban in nature, as population growth in rural counties averaged 1.9 percent growth from 2010-2018, while counties classified as urban averaged 8.1 percent growth from 2010-2018. The data in Table 8 show that rural counties had lower median household incomes, lower percentages of people aged 25 and over with four-year college degrees or greater, and higher unemployment and poverty rates than their urban counterparts.

Several poverty indicators were used to calculate a score: these included low education, high unemployment, child poverty, greater than 15 percent food insecurity, and less than average

<sup>10</sup> LQs measure a region's industrial specialization relative to a larger geographic unit (usually the nation). An LQ is computed as an industry's share of a regional total for some economic statistic (in this case, value of shipments) divided by the industry's share of the national total for the same statistic.

<sup>11</sup> This study defines rural using the ERS/USDA Rural/Urban Continuum categories of a) non-metro-urban population of 2,500 to 19,999, not adjacent to a metro area; b) non-metro-completely rural or less than 2,500 urban population, adjacent to a metro area; and c) non-metro-completely rural or less than 2,500 urban population, not adjacent to a metro area (USDA/ERS, 2017).

## 2.5. TENNESSEE'S AGRICULTURAL AND FOREST INDUSTRIES AND RURAL ECONOMY, CONTINUED

**Table 2.10: Population, Household Income, Education Level, Unemployment, Poverty, and Food Insecurity Across Rural County Status, Tennessee**

Measure	Rural	Not Rural
2018 Average Population Per County	28,601	124,197
2010-2018 Population Change	1.9%	8.1%
2013-2017 Median Household Income (2016\$)	\$39,583	\$52,561
<b>2013-2017 Education Level, Persons 25 and Over (5-Yr Avg)</b>		
- Have Not Completed a High School Degree	19.3%	15.01%
- High School Degree or Higher	80.7%	85.0%
- Completed 4-Yr College or Higher	13.63%	20.4%
2014-2018 Unemployment Rates (Percent)	5.8%	4.6%
2013-2017 Poverty Rates	19.41%	15.78%
<b>Persistent 2013</b>		
Child Poverty Rates	28.30%	14.29%
2017 Food Insecurity Rates	14.02 %	12.45%
Poverty Indicator Score	1.92	0.95

Sources: (USDA/ERS, 2015a; USDA/ERS, 2015b; USDA/ERS, 2016, Feeding America, 2016.

median household income for Tennessee's counties.<sup>12</sup> A county is scored as a 5 if it exhibited all five indicators or 0 if they exhibited none. As shown in Table 8, on average, rural counties scored 1.92, while non-rural counties scored 0.95.

### Summary

According to USDA, the 2018 value of cash farm receipts from crops and livestock in Tennessee was just over \$3.5 billion, with \$1.4 billion from animals and \$2.1 billion from crops. Net farm income was \$297 million in 2018 (down from \$1.4 billion in 2013 but up from the low of \$203 million in 2016), averaging \$4,240 per operation. Farming operations occupied 10.9 million acres in Tennessee, around 40.5 percent of the state's nearly 27.0 million acres of land area. Approximately half of the farmland in Tennessee was operated as cropland.

Looking towards 2020, crop prices and

producer profitability are unlikely to improve substantially without resolution of the trade dispute with China or a production disruption domestically or abroad. The previous Farm Bill (the Agricultural Act of 2014) provided Tennessee crop producers with \$125.5 million in direct payments from Agricultural Risk Coverage (ARC) and Price Loss Coverage (PLC) programs for the 2014-2017 crop years. Additionally, the federal government's portion of crop insurance premiums paid by Tennessee producers was \$274.6 million for the 2014-2018 crop years. Producer profitability for the 2019-20 marketing year will be largely contingent on payments from the federal government.

Animals and animal products are a major portion of the Tennessee agricultural economy, with cattle and calves and poultry being the dominant sectors. These markets are driven by domestic and international supply and demand factors, which provides local producers little to no leverage to control the market. U.S. meat protein production will continue to increase in 2020 from the beef, pork, and poultry industries. The key issues impacting the animals and animal products markets have been associated with trade agreements, tariffs, and African Swine Fever.

Like many other states, the Tennessee has experienced an explosion in the number of farmers growing hemp and in the number of people interested in doing so. As of November 2019, the state had 3,800 producers licensed to grow up to 51,000 acres. The hemp is primarily grown for the cannabidiol (CBD) oil or other extracts that is obtained by processing components of the plant, particularly the plant's flower (bud). While enterprise budgets by UT Extension indicate that hemp may be profitable, rapidly changing market conditions and other concerns should make actual and potential producers quite wary. For example, all of the hemp under cultivation may not be harvested or if harvested, may not find a market.

<sup>12</sup> *Low-Education County*: At least 20 percent or more of the residents age 25 to 64 did not have a high school diploma or equivalent during 2012-16.

*High-unemployment county*: Greater than 10 percent of residents age 25-64 were unemployed in 2012-16.

*Persistent related-child-poverty county*: 20 percent or more of related children under 18 years old were poor as measured by the 1980, 1990, and 2000 decennial censuses and the American Community Survey five-year estimates for 2007-11 (USDA/ERS, 2017).

## 2.5. TENNESSEE'S AGRICULTURAL AND FOREST INDUSTRIES AND RURAL ECONOMY, CONTINUED

One claim is that 50-70 percent of the hemp planted in the U.S. this year will not be processed.

In fiscal year 2019, Tennessee exports were \$1.4 billion, down 4 percent when compared to the previous fiscal year. This overall decline was, in part, driven by a decline in exports to China, which were down by 37 percent. Tennessee cotton exports were down 10 percent overall, with exports to China down 41 percent; tobacco exports were down 35 percent; distilled spirits exports were down 35 percent; and forest products exports were down 34 percent, primarily due to the trade war and retaliatory tariffs in China and other countries. In fiscal year 2020, the USDA is projecting agricultural exports at \$137 million, which is an increase of \$2.5 billion when compared to the previous year. This anticipated increase is primarily driven by expected increases in exports of pork, beef, soybeans, and horticultural products, as well as potential increased exports to Canada, Mexico, Japan, and even China. Projections for the U.S. suggest that Tennessee agricultural exports will increase in 2020.

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## CHAPTER 3: THE TENNESSEE ECONOMY: LONG-TERM OUTLOOK

### IN THIS CHAPTER —

#### 3.1. INTRODUCTION

#### 3.2. NONFARM EMPLOYMENT - THE IMPACTS OF AUTONOMOUS VEHICLES ON TENNESSEE EMPLOYMENT AND TAX REVENUES

#### 3.3. UNEMPLOYMENT

#### 3.4. POPULATION & LABOR FORCE

#### 3.5. ARTIFICIAL INTELLIGENCE IN THE ECONOMY

#### 3.6. INCOME, EARNINGS & OUTPUT

#### 3.7. FORECAST AT A GLANCE

### 3.1. INTRODUCTION

The previous chapter explored Tennessee's economic performance over the past ten quarters and provided the short-term economic outlook for the state extending out ten quarters into the future. That *cyclical forecast* projected ongoing growth for the state economy, although with reduced rates of expansion for key metrics like nonfarm employment. The current chapter takes a longer-term perspective by examining the state's growth path over the past ten years and the economic outlook extending out to 2029. The *trend forecast* presented here for the state connects the dots between short-term cyclical projections and long-term projections.

As the name implies, cyclical forecasts are built around the ups and downs of the business cycle. This is the classic boom-bust cycle that most are familiar with from history. The current cycle is truly unique, as it started in the summer of 2009 with the economy bottoming out from the pressures of the Great Recession. Most long windows of time like this would have included a recession. But as of today, the state and national economies are enjoying the longest expansion in the historical record dating back to the middle of

the 1850s. As documented in Chapter 2 for the state and Chapter 1 for the nation, the economy continues to expand, but by most measures the economy is cooling. Rates of job growth are slowing, the U.S. manufacturing sector is showing signs of contraction and further reductions in the unemployment rate have stalled. This is not a recessionary environment or outlook, but instead one that is characterized by an economy confronting the constraints of full employment. There are clearly headwinds, including ongoing trade wars and tariffs, but the fact is that the economy is simply running out of capacity for further strong growth. The labor market offers a sound example, with demographic forces holding back stronger growth in the labor force and thus the pace of nonfarm job creation. As the pace of employment growth slows, so too does income. As income growth slows, sales slow, and then production slows. These trends characterize the current short-run performance of the economy.

Long-term (or trend) economic growth is driven by just a small number of factors. Primary ingredients include population growth, which directly influences the labor force; private sector

### 3.1. INTRODUCTION, CONTINUED

capital investment, that accounts for equipment, intellectual property and buildings held by business; public infrastructure, ranging from roads to airports to broadband; and productivity growth, which captures improved efficiency of inputs used to produce privately and publicly produced goods and services.

One important factor missing from this list is *labor force quality*. Early models of long-term growth developed by economists placed emphasis on labor in terms of its quantity—the number of people and hours of work. However, it is especially clear today that the quality of the labor force is in fact a critical ingredient to economic growth and development and the wellbeing of workers and their families. What is labor force quality? It captures formal education, informal training and on-the-job experience, along with health status, all of which influence the productivity of the worker. Tennesseans tend to have poor health status compared to their counterparts across the country that weakens overall economic performance and individual wellbeing. And while Tennessee has traditionally trailed the nation in terms of educational attainment, the state is now making impressive investments in education that will bear fruit in the future.

The long-term forecast for Tennessee includes

the short-term cyclical forecast for the next ten quarters and then connection to the trend forecast which extends to 2029. In the short-term, expect growth to moderate relative to the last several years. As the economy reverts to trend, growth will see slight acceleration. This muted outlook is a reflection of two important underlying trends. First, labor force growth is expected to slow due to core demographic trends that will limit the number of new entrants to the labor market. Second, the economy continues to yield rather disappointing gains in productivity. This is not trivial as a one-half percentage point gain in productivity would boost output growth by a similar amount. The nation and state remain stuck in a low-productivity trap.

Tennessee's inflation-adjusted gross domestic product (GDP) will see compound annual growth of 1.7 percent between 2019 and 2029 versus 2.0 percent growth for the national economy. In the next several years, unemployment rates will stay in the mid 3 percent range, rising to above 4 percent at the end of the forecast horizon. Tennessee nonfarm jobs will be at a 0.7 percent compound annual rate, ahead of the nation's pace of job creation. By 2021, both the state and national economies will see ongoing jobs losses in manufacturing, reversing the short-lived trend that dates back to 2011.

### 3.2. NONFARM EMPLOYMENT

Tennessee nonfarm employment is projected to be up just 1.6 percent in 2019, the second-lowest rate of job growth since 2010 when jobs slid 0.2 percent. Job growth turned to the black and registered a 1.8 percent gain in 2011, and since that time jobs have seen sustained but now slowing growth. Since 2010, the state has created 496,300 jobs for a simple growth rate of 19.0 percent. While the national economy saw a roughly similar pattern of job growth, the gain was slower at 16.1 percent. All broad sectors of the state economy have posted gains in the past five years.

One of the bright spots in the ongoing economic expansion is the growth of jobs in the manufacturing sector. For both Tennessee and the U.S., manufacturing jobs began contracting in the late 1990s, a pattern that was amplified over the course of the Great Recession with dramatic setbacks in 2009: manufacturing jobs in Tennessee were down 14.4 percent compared to an 11.6 percent loss for the nation. But since 2011, manufacturing has seen a resurgence, with steady gains in jobs that are expected to continue through 2019. Recent national data point to a weakening of the manufacturing

## 3.2. NONFARM EMPLOYMENT, CONTINUED

sector, including monthly job losses. Data for Tennessee have yet to turn to the red. The third quarter of 2019 produced a 2.7 percent seasonally-adjusted increase in manufacturing sector employment in Tennessee. Job growth has been healthy in both durable goods and nondurable goods manufacturing.

Tennessee's performance relative to peer states in the Southeast is shown in **Table 3.1** for the 2009–2019 period. Based on these data from the Bureau of Labor Statistics, Tennessee saw slightly stronger nonfarm employment growth and much stronger manufacturing job growth than the nation. Two states in the Southeast—Florida and South Carolina—outperformed Tennessee in nonfarm job creation. West Virginia and Louisiana experienced especially weak nonfarm job growth between 2009 and 2019, with gains of just 2.9 percent and 4.2 percent respectively. Tennessee's 16.2 percent jump in manufacturing jobs was roughly twice the pace of the nation (8.3 percent) and placed it fourth in the Southeast, just behind South Carolina, Kentucky and Florida.

**Figure 3.1** shows where job growth has taken place, as well as where losses have materialized between 2009 and 2018. The broad Middle Tennessee corridor has seen the strongest pace of job creation, along with many counties in East Tennessee. What is striking—if not alarming—is that 16 of the state's 95 counties actually experienced reductions in employment over this long window of time, while another 17 counties posted growth of less than 10.0 percent—half the state average growth rate of 19.2 percent. Van Buren and Hancock Counties experienced withering employment contractions in excess of 25 percent. This widespread loss of jobs in rural Tennessee is consistent with a pattern that is taking place across the country.

A modest renaissance has taken place in manufacturing in both Tennessee and for the national economy. Between 2009 and 2018, manufacturing employment in Tennessee was up 13.5 percent while U.S. manufacturing jobs were up at the slower rate of 7.1 percent. (See

**Figure 3.2.**) As with most other economic data for the state, the strength tends to be concentrated in Middle and East Tennessee. Eight counties had setbacks of 25 percent or greater; 28 counties had employment losses in the manufacturing sector.

The overall nonfarm employment outlook for Tennessee and the nation extending to 2029 is shown in **Figure 3.3**, along with history dating back to 2009. As is clear from the figure, job growth is expected to slow appreciably in the years ahead, though job contractions and economy-wide recession are not expected. This rather anemic job outlook is in part a reflection of labor market constraints and an increasingly limited pool of workers to draw into employment. The dearth of available workers will be a primary factor in slowing the pace of output growth for the state and the nation in the near term as well as the long term.

**Table 3.2** presents Tennessee's long-term employment outlook by broad sector. The state economy is expected to produce stronger nonfarm job growth and manufacturing job growth than the nation, as noted above. While Tennessee will lose manufacturing jobs, it is still expected to capture migrating manufacturing jobs from elsewhere around the U.S. as well as some gains in key sectors like transportation equipment. Good examples include Denso and Volkswagen (the latter which just announced 1,000 new jobs to be created in support of electric vehicle production). While only one sector (information) lost jobs between 2009 and 2019, three sectors (manufacturing; trade, transportation and utilities; and information) are expected to suffer setbacks by 2029. Professional and business services, along with education and health services, will enjoy the strongest growth.

The forecast for the manufacturing sector is presented in **Figure 3.4**. U.S. manufacturing employment is expected to experience contraction in 2020 and the remaining years of the long-term outlook. The state economy is expected to begin to see job losses in manufacturing beginning in 2021. While a very

3.2. NONFARM EMPLOYMENT, CONTINUED

Table 3.1: Southeast Employment

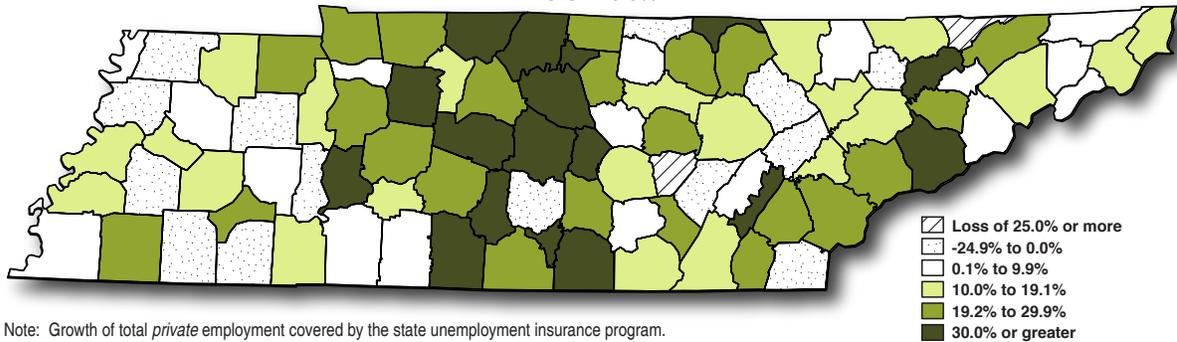
		2009		2010		2011		2012		2013		2014		2015		2016		2017		2018		2019*		2009 to 2019
Area		Level	%	Level	%	Level	%	Level	%	Level	%	Level	%	Level	%	Level	%	Level	%	Level	%	Level	%	%
		<b>Total Nonfarm</b>																						
	<b>U.S.</b>	<b>131.3</b>	<b>-4.3</b>	<b>130.4</b>	<b>-0.7</b>	<b>131.9</b>	<b>1.2</b>	<b>134.2</b>	<b>1.7</b>	<b>136.4</b>	<b>1.6</b>	<b>139.0</b>	<b>1.9</b>	<b>141.8</b>	<b>2.1</b>	<b>144.4</b>	<b>1.8</b>	<b>146.6</b>	<b>1.6</b>	<b>149.1</b>	<b>1.7</b>	<b>151.0</b>	<b>1.3</b>	<b>15.0</b>
	Tennessee	2,619.4	-5.6	2,614.9	-0.2	2,661.6	1.8	2,715.1	2.0	2,760.0	1.7	2,821.4	2.2	2,892.8	2.5	2,965.1	2.5	3,011.6	1.6	3,062.1	1.7	3,107.9	1.5	18.7
	Alabama	1,904.7	-5.2	1,889.8	-0.8	1,890.1	0.0	1,905.8	0.8	1,924.2	1.0	1,943.9	1.0	1,970.4	1.4	1,997.1	1.4	2,018.9	1.1	2,042.2	1.2	2,077.5	1.7	9.1
	Arkansas	1,164.6	-3.1	1,162.9	-0.1	1,169.4	0.6	1,177.2	0.7	1,177.7	0.0	1,190.0	1.0	1,213.2	1.9	1,233.2	1.6	1,248.8	1.3	1,262.4	1.1	1,275.7	1.1	9.5
	Florida	7,233.0	-6.3	7,175.1	-0.8	7,255.0	1.1	7,399.5	2.0	7,585.6	2.5	7,826.7	3.2	8,109.0	3.6	8,388.2	3.4	8,573.4	2.2	8,784.5	2.5	8,983.6	2.3	24.2
	Georgia	3,899.8	-5.4	3,860.7	-1.0	3,900.9	1.0	3,952.8	1.3	4,031.5	2.0	4,144.4	2.8	4,261.2	2.8	4,372.7	2.6	4,454.4	1.9	4,540.7	1.9	4,613.6	1.6	18.3
	Kentucky	1,759.6	-4.5	1,759.9	0.0	1,783.6	1.3	1,811.1	1.5	1,830.2	1.1	1,857.6	1.5	1,885.3	1.5	1,909.4	1.3	1,920.9	0.6	1,932.5	0.6	1,953.4	1.1	11.0
	Louisiana	1,904.0	-1.9	1,887.8	-0.9	1,905.5	0.9	1,929.4	1.3	1,956.6	1.4	1,987.5	1.6	1,996.3	0.4	1,974.8	-1.1	1,972.4	-0.1	1,981.9	0.5	1,984.7	0.1	4.2
	Mississippi	1,097.5	-4.5	1,092.4	-0.5	1,093.2	0.1	1,102.2	0.8	1,111.2	0.8	1,120.5	0.8	1,133.4	1.1	1,146.6	1.2	1,151.7	0.4	1,154.9	0.3	1,166.6	1.0	6.3
	North Carolina	3,901.4	-5.5	3,868.1	-0.9	3,916.7	1.3	3,984.8	1.7	4,055.9	1.8	4,139.1	2.1	4,239.7	2.4	4,340.1	2.4	4,412.1	1.7	4,488.0	1.7	4,559.4	1.6	16.9
	South Carolina	1,814.0	-5.8	1,811.0	-0.2	1,832.8	1.2	1,864.5	1.7	1,901.1	2.0	1,951.3	2.6	2,006.2	2.8	2,055.3	2.4	2,095.0	1.9	2,145.6	2.4	2,177.3	1.5	20.0
	Virginia	3,650.7	-3.2	3,646.1	-0.1	3,693.1	1.3	3,735.7	1.2	3,762.3	0.7	3,783.1	0.6	3,858.2	2.0	3,914.5	1.5	3,956.3	1.1	4,001.1	1.1	4,031.6	0.8	10.4
	West Virginia	714.7	-2.3	717.0	0.3	724.6	1.1	734.1	1.3	731.9	-0.3	729.3	-0.3	726.0	-0.5	717.0	-1.2	715.4	-0.2	726.1	1.5	735.6	1.3	2.9
<b>Manufacturing</b>																								
	<b>U.S.</b>	<b>11.8</b>	<b>-11.6</b>	<b>11.5</b>	<b>-2.7</b>	<b>11.7</b>	<b>1.7</b>	<b>11.9</b>	<b>1.7</b>	<b>12.0</b>	<b>0.8</b>	<b>12.2</b>	<b>1.4</b>	<b>12.3</b>	<b>1.2</b>	<b>12.4</b>	<b>0.1</b>	<b>12.4</b>	<b>0.7</b>	<b>12.7</b>	<b>2.0</b>	<b>12.8</b>	<b>1.2</b>	<b>8.3</b>
	Tennessee	306.9	-14.4	296.9	-3.2	302.5	1.9	311.4	2.9	316.2	1.6	322.6	2.0	330.7	2.5	341.7	3.3	346.4	1.4	350.7	1.2	356.6	1.7	16.2
	Alabama	246.8	-13.2	236.4	-4.2	237.5	0.5	243.7	2.6	249.5	2.4	253.2	1.5	257.8	1.8	260.6	1.1	263.6	1.1	267.1	1.3	270.2	1.1	9.5
	Arkansas	163.7	-10.9	160.3	-2.1	159.0	-0.8	155.4	-2.2	152.8	-1.7	154.3	1.0	155.2	0.6	154.9	-0.2	157.4	1.6	160.5	2.0	163.7	2.0	0.0
	Florida	324.1	-12.7	309.3	-4.6	312.8	1.1	317.6	1.5	322.6	1.6	332.0	2.9	343.4	3.4	355.7	3.6	363.6	2.2	371.9	2.3	381.1	2.5	17.6
	Georgia	359.8	-12.5	347.1	-3.5	353.0	1.7	357.0	1.1	360.1	0.9	370.3	2.8	381.3	3.0	391.7	2.7	400.3	2.2	408.1	1.9	411.2	0.8	14.3
	Kentucky	213.1	-13.1	209.1	-1.8	212.8	1.7	223.4	5.0	229.1	2.6	235.1	2.6	241.4	2.7	248.4	2.9	250.4	0.8	251.9	0.6	255.3	1.3	19.8
	Louisiana	142.1	-7.0	137.9	-3.0	139.8	1.4	142.3	1.8	144.7	1.7	147.6	2.0	144.0	-2.4	136.0	-5.6	134.7	-0.9	135.1	0.3	137.1	1.5	-3.5
	Mississippi	141.0	-11.6	136.0	-3.6	135.3	-0.5	137.0	1.3	136.8	-0.1	139.6	2.0	141.8	1.6	143.2	1.0	144.2	0.7	144.8	0.4	146.5	1.2	3.9
	North Carolina	448.3	-13.2	432.6	-3.5	434.3	0.4	440.6	1.5	443.4	0.6	449.7	1.4	462.0	2.7	465.6	0.8	468.6	0.7	474.0	1.1	473.1	-0.2	5.5
	South Carolina	212.8	-11.9	206.6	-2.9	214.7	3.9	219.3	2.1	223.3	1.8	228.2	2.2	233.4	2.3	235.7	1.0	241.0	2.2	247.8	2.8	255.4	3.1	20.1
	Virginia	239.5	-9.6	230.7	-3.7	231.1	0.2	231.6	0.2	231.1	-0.2	232.2	0.5	234.1	0.8	233.2	-0.4	235.0	0.8	240.2	2.2	246.0	2.4	2.7
	West Virginia	50.5	-10.6	49.2	-2.7	49.5	0.7	49.1	-0.8	48.4	-1.4	47.9	-1.2	47.7	-0.3	46.9	-1.8	46.7	-0.4	47.1	0.9	47.9	1.7	-5.2

Notes: State employment in thousands, U.S. in millions. Year 2019 data is year-to-date average (January through October).  
Source: Bureau of Labor Statistics.

### 3.2. NONFARM EMPLOYMENT, CONTINUED

**Figure 3.1: Middle Tennessee Dominates Nonfarm Job Growth, 2009 to 2018**

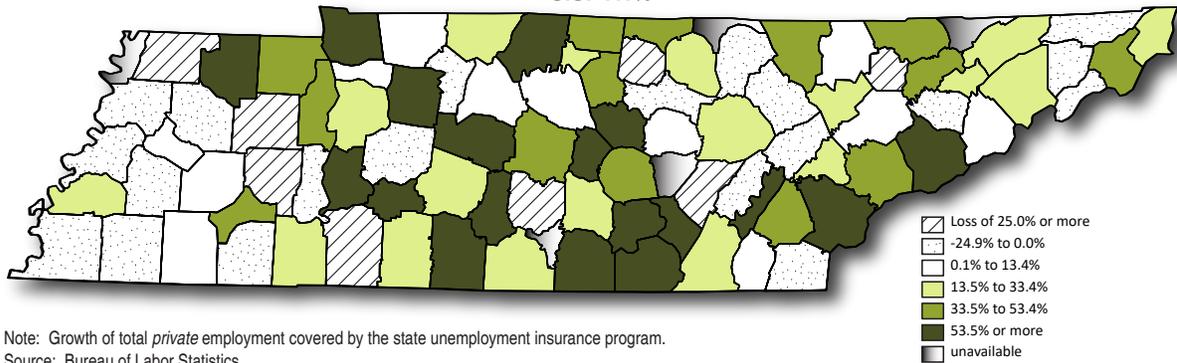
Tennessee: 19.2%  
U.S.: 16.5%



Note: Growth of total *private* employment covered by the state unemployment insurance program.  
Source: Bureau of Labor Statistics.

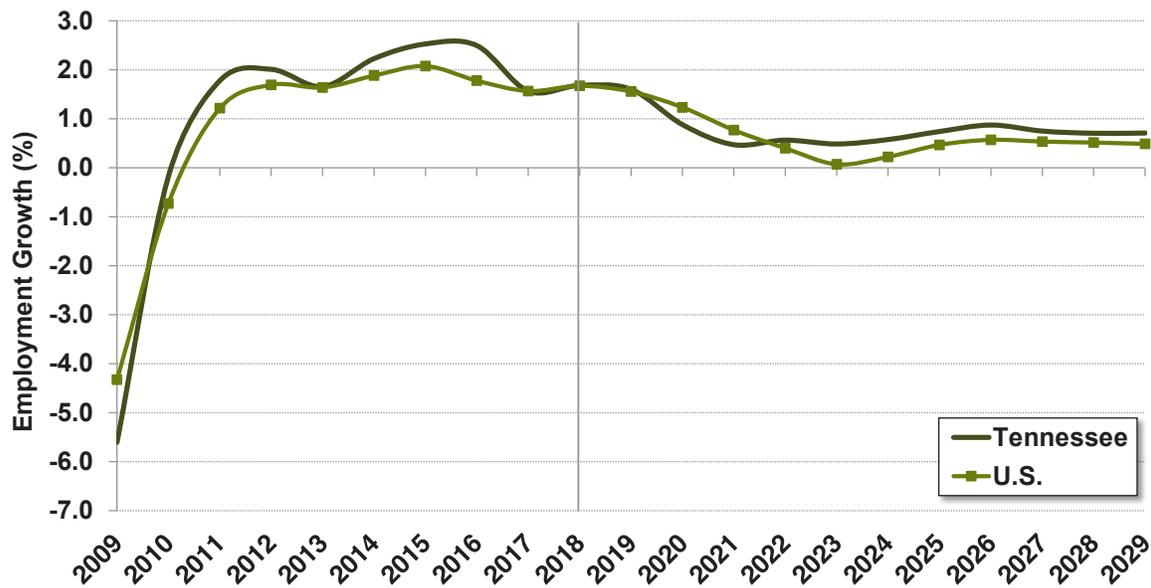
**Figure 3.2: A Modest Renaissance: Manufacturing Job Growth, 2009 to 2018**

Tennessee: 13.5%  
U.S.: 7.1%



Note: Growth of total *private* employment covered by the state unemployment insurance program.  
Source: Bureau of Labor Statistics.

**Figure 3.3: Nonfarm Employment Growth Slows**



Source: Bureau of Labor Statistics, IHS Markit™ (copyright), and Boyd Center for Business and Economic Research.

### 3.2. NONFARM EMPLOYMENT, CONTINUED

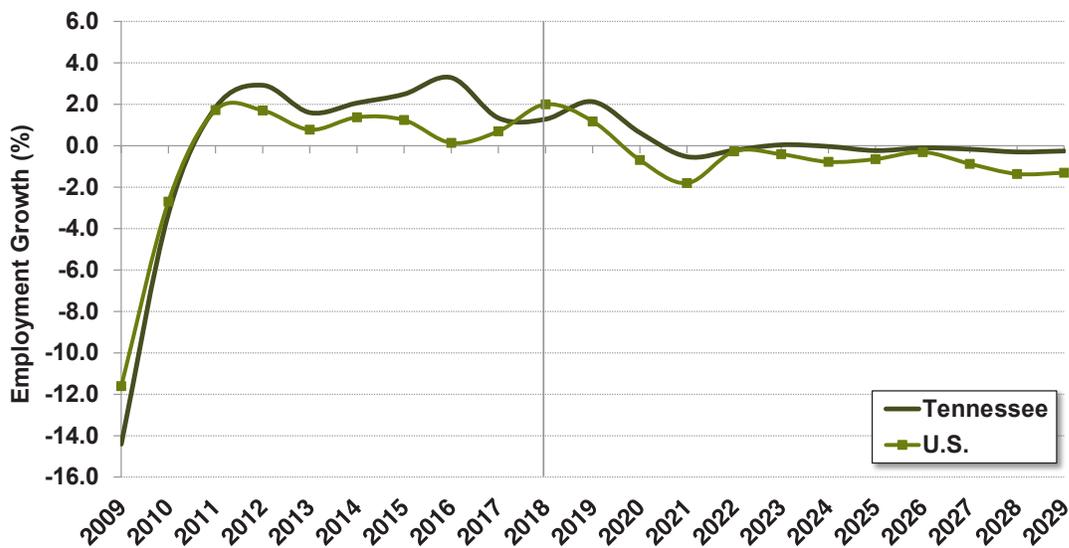
**Table 3.2: Tennessee Nonfarm Employment Outlook by Broad Sector**

Sector	Employment (thous)			Growth Rate*	
	2009	2019	2029	2009 to 2019	2019 to 2029
<b>Total Nonfarm</b>	2,619.5	3,111.2	3,328.2	1.74%	0.68%
Natural Resources, Mining & Construction	110.0	130.8	142.2	1.75%	0.84%
Manufacturing	307.0	358.2	354.1	1.56%	-0.11%
Trade, Transportation, Utilities	557.8	633.8	595.6	1.28%	-0.62%
Information	47.3	46.1	44.3	-0.25%	-0.41%
Financial Activities	140.6	167.7	170.7	1.78%	0.17%
Professional & Business Services	297.4	422.8	520.9	3.58%	2.11%
Education & Health Services	367.8	438.9	526.8	1.78%	1.84%
Leisure & Hospitality	263.5	353.7	385.1	2.99%	0.85%
Other Services	102.0	119.0	122.4	1.55%	0.29%
Government	426.0	440.1	466.1	0.33%	0.57%
U.S. nonfarm (in millions)	131.3	151.4	159.6	1.43%	0.53%
U.S. manufacturing (in millions)	11.8	12.8	11.8	0.81%	-0.84%

\*Compound Annual Growth Rate (CAGR).

Sources: Bureau of Labor Statistics; IHS Markit™ (copyright), and Boyd Center for Business and Economic Research.

**Figure 3.4: Manufacturing Employment Growth Returns to the Red**



Source: Bureau of Labor Statistics, IHS Markit™ (copyright), and Boyd Center for Business and Economic Research.

## 3.2. NONFARM EMPLOYMENT, CONTINUED

**Table 3.3: Tennessee Manufacturing Employment Outlook by Sector**

Sector	Employment (thous)			Growth Rate*	
	2009	2019	2029	2009 to 2019	2019 to 2029
<b>Manufacturing</b>	<b>307.0</b>	<b>358.2</b>	<b>354.1</b>	<b>1.56%</b>	<b>-0.11%</b>
<b>Total Durable Goods</b>	<b>182.1</b>	<b>229.9</b>	<b>230.3</b>	<b>2.36%</b>	<b>0.02%</b>
Wood Products	11.3	12.5	14.1	1.00%	1.20%
Nonmetallic Minerals	11.6	14.9	16.2	2.56%	0.84%
Primary Metals	9.2	11.8	11.6	2.54%	-0.10%
Fabricated Metals	33.8	37.8	35.4	1.13%	-0.64%
Machinery	26.0	25.8	25.7	-0.08%	-0.06%
Computers & Electronics	6.2	5.5	3.7	-1.33%	-3.72%
Electrical Equipment, Appliances & Components	17.8	18.8	18.0	0.57%	-0.44%
Transportation Equipment	40.4	76.1	79.0	6.52%	0.38%
Furniture	10.8	9.6	9.1	-1.17%	-0.55%
Miscellaneous Durables	15.0	17.2	17.5	1.37%	0.13%
<b>Total Nondurable Goods</b>	<b>124.9</b>	<b>128.3</b>	<b>123.8</b>	<b>0.27%</b>	<b>-0.35%</b>
Food	32.4	35.9	36.8	1.03%	0.26%
Beverage & Tobacco	5.1	7.9	8.4	4.47%	0.61%
Paper	13.6	12.0	11.5	-1.24%	-0.46%
Printing & Related Support	13.3	9.0	7.8	-3.81%	-1.42%
Chemicals	25.9	25.7	21.7	-0.08%	-1.69%
Plastics & Rubber	20.4	25.1	24.4	2.07%	-0.25%
Miscellaneous Nondurable Goods	14.2	12.8	13.3	-1.07%	0.37%

\*Compound Annual Growth Rate (CAGR).

Sources: Bureau of Labor Statistics; IHS Markit™ (copyright), and Boyd Center for Business and Economic Research.

small gain in jobs is projected for 2023, the overall outlook for manufacturing employment is negative. Even modest productivity gains will ensure that manufacturing output continues to grow despite setbacks in employment. Note that while the net number of jobs in manufacturing will decline, there will still be significant job opportunities through quits and terminations and new business startups.

Details on the past and projected future of the manufacturing sector and its main components are provided in **Table 3.3**. The next decade will clearly

be a reversal of fortunes for manufacturing with a compound annual loss of 0.1 percent compared to the 1.6 percent growth of the past decade. While 51,200 jobs were created between 2009 and 2019, 4,100 jobs will be lost in the next ten years. Durable goods is projected to eke out a small gain, but nondurable goods manufacturing will witness job losses. A handful of sectors will see net gains in employment, including wood products, nonmetallic minerals, transportation equipment, miscellaneous durable goods, food, beverage and tobacco, and miscellaneous nondurable goods.

## 3.2. NONFARM EMPLOYMENT, CONTINUED

### The Impacts of Autonomous Vehicles on Tennessee Employment and Tax Revenues

The adoption of autonomous vehicles (AVs) will bring major changes to the industry as fleets of self-driving vehicles begin to dominate the market. AVs will cause the immediate retreat of internal combustion engines and fossil fuel as each AV will be equipped with an electric engine. Car ownership will decrease as fleets of AVs become the dominant means of transportation.

#### Current Vehicle-Related Employment

Tennessee will be impacted by AVs because the state economy has a robust vehicle sector that spans many industries and employs hundreds of thousands of Tennesseans, with vehicle-related employment accounting for 16.46 percent of total. Vehicle-related employment is defined as being composed of three categories (Table 3.4): vehicle manufacturing employment, vehicle support industries' employment, and employment in vehicle intensive-use occupations.

##### *Manufacturing*

Tennessee accounts for 7 percent (72,507 jobs) of total vehicle manufacturing jobs in the U.S., compared with the 2 percent of the nation's population. Most of these state workers make vehicle parts. Tennessee is home to over 900 auto parts suppliers.

##### *Vehicle Intensive*

The largest share of vehicle-related employment is in vehicle intensive-use occupations. This category includes motor vehicle operator occupations and other on-the-job

driver occupations where driving is a significant requirement. Given the state's geographic advantage, many transportation-related industries make their home in Tennessee. Trucking (60,350 workers) represents most of the state's motor vehicle operator employment.

##### *Motor Vehicle Support*

Motor vehicle support industries such as automobile dealers, gasoline stations, auto repair and maintenance, and auto parts accessories and tire stores comprise 70 percent of employment in this category. In total, motor vehicle support industries provide 118,993 jobs for Tennesseans and account for 4.1 percent of all employment in the state.

#### Vehicle-Related Employment Outlook

##### *Manufacturing*

The shift to electric vehicles will change many vehicle component parts and may create a mismatch between the skills required to make electric vehicles and parts and the skills of existing workers. More importantly, fleet ownership will reduce total vehicles, reducing the number of workers demanded. The impact on Tennessee depends on the ability to transition from making internal combustion engine parts and vehicle assembly to making electric and AV parts and assembling these vehicles. In any event, manufacturing employment related to transportation equipment is likely to fall over the next several decades unless Tennessee increases market share.

*Continued on Page 61*

**Table 3.4: Vehicle-Related Employment, Tennessee and the U.S., 2017**

	Tennessee		U.S.	
	Employment	Share	Employment	Share
<b>Total Employment</b>	<b>2,930,932</b>	<b>100.0%</b>	<b>143,859,855</b>	<b>100.0%</b>
Vehicle Manufacturing	72,507	2.47%	1,023,674	0.71%
Vehicle Support	118,993	4.06%	5,425,489	3.77%
Motor Vehicle Operators & Other On-the-Job Drivers	291,000	9.93%	16,571,180	11.52%
<b>Total, Vehicle-Related</b>	<b>482,500</b>	<b>16.46%</b>	<b>23,020,343</b>	<b>16.00%</b>

Source: Bureau of Labor Statistics, Quarterly Census of Employment and Wages & Occupational Employment Statistics.

## 3.2. NONFARM EMPLOYMENT, CONTINUED

### The Impacts of Autonomous Vehicles, continued from Page 60

#### *Vehicle Intensive*

Workers in vehicle-intensive occupations are at the greatest risk of job loss from AVs. Motor vehicle operators like taxi drivers and truck drivers may see immediate job losses as AVs replace 100 percent of the tasks performed by these workers. Not all vehicle-intensive occupations will see as many job losses because the occupation requires tasks outside of operating a motor vehicle, such as ambulance drivers. Lastly, public sector employment may decline more slowly if policymakers are reticent to replace workers with AVs in order to limit the transitional effects on people.

#### *Motor Vehicle Support*

The impact of AVs on vehicle-support industries differs. Many support services will be eliminated or reduced, while others may see an increase in demand for services—at least in the near-term.

#### *Revenue Impacts*

AVs will impact state revenues both directly and indirectly. Direct impacts arise from taxes on vehicle-related activity and total 16 percent of the \$14.5 billion in tax revenues collected in FY17-18 (Figure 3.5). Most revenue from existing taxes on transportation-related activity will be diminished or lost. The shortfall in revenues is a result of a tax structure that is dependent on a large numbers of vehicles that require fossil fuels.

#### **Revenue Impacts**

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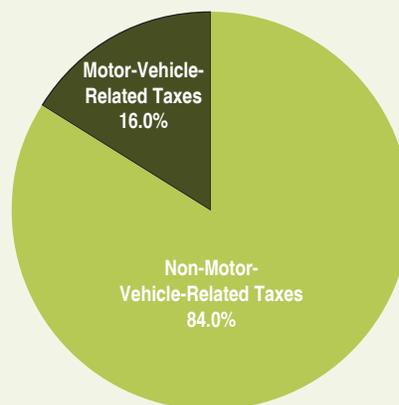
Taxes (such as the sales tax) will be indirectly affected as AV's disrupt the economy through employment transitions. While job losses will occur, the losses may be offset as AVs create new employment opportunities and shift consumer preferences. Thus, the net effect is difficult to forecast, but Tennessee will likely see revenue losses during some intervals as most taxes are linked to economic activity, and vehicle-related employment makes up 16.5 percent of jobs in Tennessee.

#### **Punchline**

The onset of AVs will impact employment and tax revenues in Tennessee. Tennessee's large vehicle-related employment and tax structure, which is dependent on large numbers of vehicles that use fossil fuels, make the state sensitive to the transition. Industrial recruitment and retention initiatives and training programs are among policies that will need to be reassessed to ensure that they are meeting the needs of Tennesseans as the state grapples with this change in industrial structure.

This information comes from "Potential Impacts of Autonomous Vehicles on Tennessee's Economy," a Boyd Center for Business and Economic Research study by Bill Fox, Alex Norwood and Vickie Cunningham, completed for the State of Tennessee.

**Figure 3.5: Tennessee Sources of Revenue, FY2018**



Source: State of Tennessee, The Budget, Fiscal Year 2019-2020; and Tennessee Department of Revenue, Revenue Collections, June 2018.

### 3.3. UNEMPLOYMENT

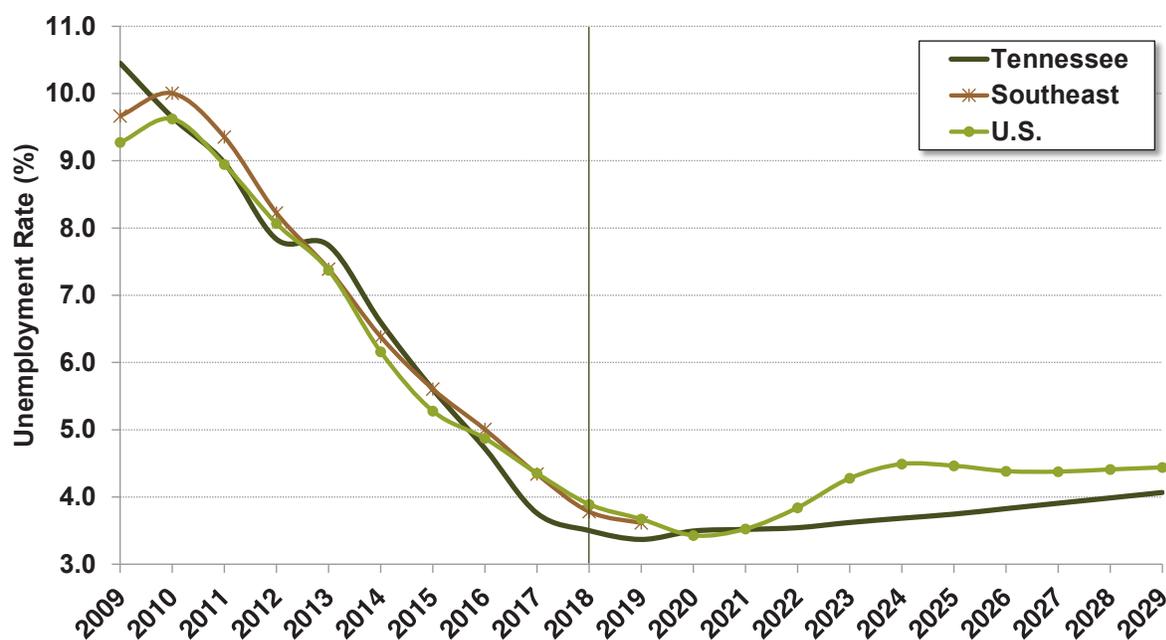
The economy’s impressive growth streak has caused the unemployment rate to dip to record lows. Tennessee’s seasonally-adjusted unemployment rate bottomed out at 3.2 percent in February and held steady until a slight uptick in May to 3.3 percent. For perspective, Tennessee’s unemployment rate averaged 10.5 percent in 2009, the last year of the Great Recession; the U.S. unemployment rate was 9.3 percent in the same year. The state unemployment rate has consistently fallen below the nation’s unemployment rate dating back to December 2016. This long-term improvement in the unemployment rate has dramatically reduced the number of discouraged workers (i.e., individuals who exit the labor force because of poor employment prospects) and underemployed workers (i.e., those who would like to work more hours but are unable to do so because of employer constraints).

Hidden behind these national and regional unemployment figures is substantial variation for subregions and certain demographic groups of the population. In general, in Tennessee and across the nation, rural communities are experiencing sustained and elevated rates of unemployment. In a significant

number of rural communities, as noted above, job counts are in decline and population growth rates are negative as able-bodied individuals leave to seek employment opportunities elsewhere, typically in metropolitan regions. This generally characterizes the urban-rural divide in Tennessee. While metropolitan areas enjoy systematically lower unemployment rates than their rural counterparts, pockets of elevated unemployment rates still exist but are invisible at the county level. The pockets are concentrated in metropolitan areas where levels of educational attainment tend to be low and job opportunities are relatively scarce.

Figure 3.6 shows historical unemployment rates for the U.S., the Southeastern states and Tennessee dating back to 2009, along with national and state projections out to 2029. As one would expect, the series tend to track one another over time. Both the state and national rates of unemployment are expected to rise as the trend outlook takes hold in the forecast. History is very likely to repeat itself and produce relatively high unemployment rates for rural places and for individuals with poor health status and/or low levels of educational attainment.

Figure 3.6: Unemployment Rate Bottoms Out



Southeast: Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, South Carolina, Tennessee, Virginia, West Virginia  
 Source: Bureau of Labor Statistics, IHS Markit™ (copyright), and Boyd Center for Business and Economic Research.

### 3.4. POPULATION AND LABOR FORCE

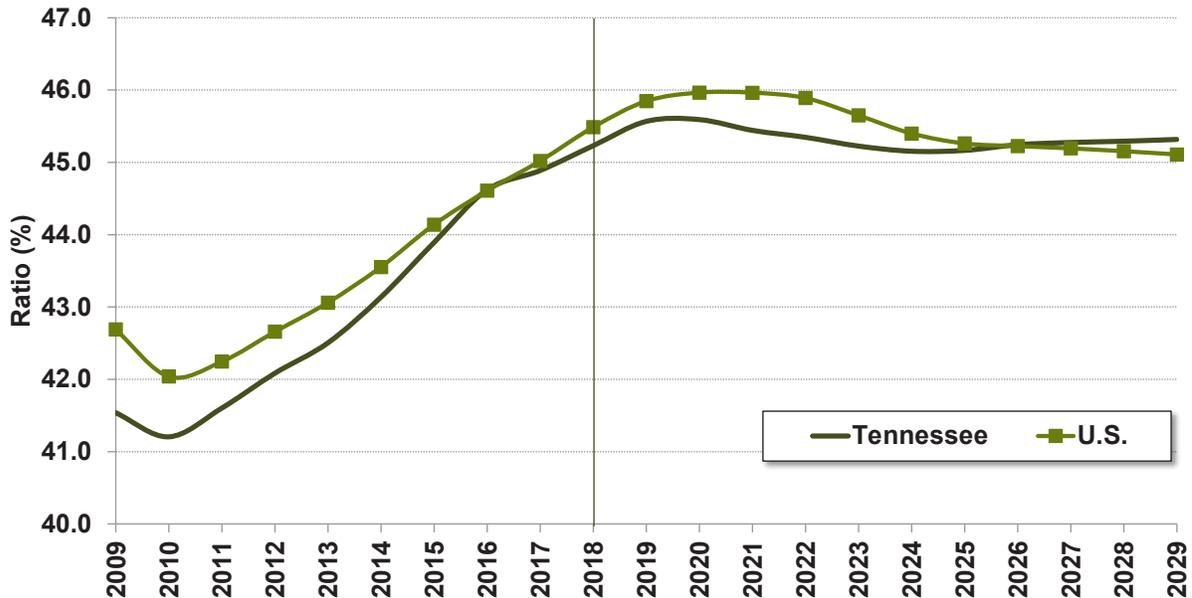
As discussed in the introduction to this chapter, labor force growth is one of the primary ingredients to long-term economic growth. In the short-run, when population is fixed, strong economic conditions draw people into the labor force while weak economic conditions can cause people to withdraw from the labor force. In the long-run, population growth (including net migration from other states and from abroad) dictates the available pool of people for the labor force.

Figure 3.7 includes two maps of Tennessee, one capturing the last decade of population growth and the second providing the forecast out to 2029. Middle Tennessee has been—and will continue to be—the growth pole for the state. Thirty-one counties lost population in the last decade. The next ten years will once again be a challenge for rural Tennessee, while metropolitan Tennessee struggles with the management of

its strong population growth. While the state population was up 8.6 percent between 2009 and 2019, growth will slow to 7.6 percent in the decade ahead.

Historically, Tennessee has had a lower rate of labor force participation than the nation. There are many possible explanations for this pattern, including lower levels of educational attainment and relative poor health status. A complementary view of the labor force participation rate is the employment-to-population ratio. Figure 3.8 shows historical and projected figures on the employment-to-population ratio for Tennessee and the U.S. Consistent with labor force participation rate data, the U.S. has generally had a higher share of population that has been employed compared to Tennessee. The long-term forecast indicates that the gap will be narrowed as the current economic expansion continues into the next decade.

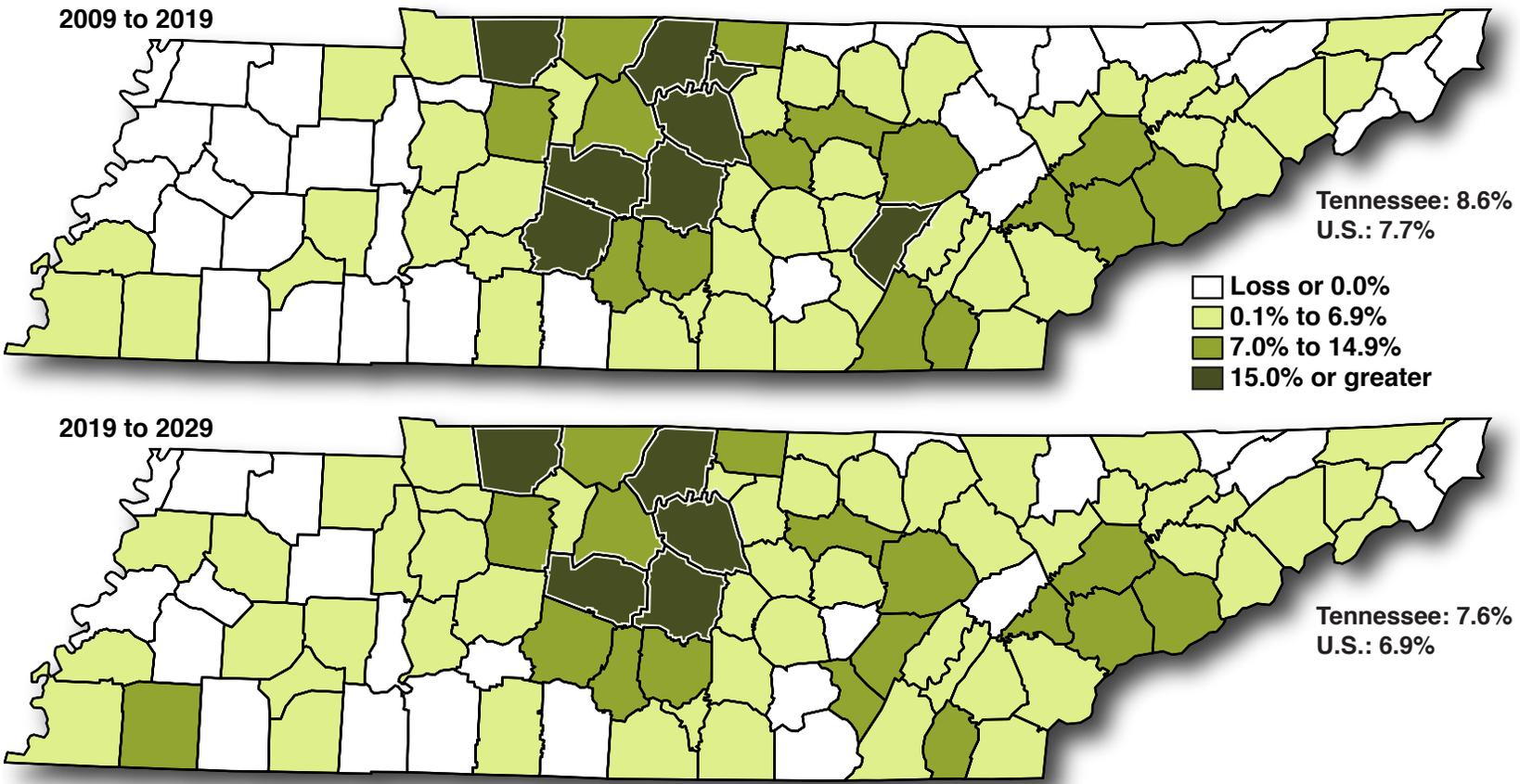
Figure 3.8: Employment to Population Ratio Expected to Peak



Source: U.S. Census Bureau, Bureau of Labor Statistics, IHS Markit™ (copyright), and Boyd Center for Business and Economic Research.

3.4. POPULATION AND LABOR FORCE, CONTINUED

Figure 3.7: Population Growth Shows Strength in Metropolitan Tennessee



Source: U.S. Census Bureau and Boyd Center for Business and Economic Research.

### 3.5. ARTIFICIAL INTELLIGENCE IN THE ECONOMY

There is a growing debate among policymakers on the impacts of technology and artificial intelligence (AI) on the economy. While advancements in technology are predicted to lead to economic growth and prosperity as a whole, there is a growing fear over whether AI and other technological advancements will replace jobs. According to a 2017 survey by Pew Research, three quarters of Americans are worried about a future in which robots and computers diminish job prospects and increase economic inequality.<sup>1</sup> However, the extent to which technological developments will impact the American workforce is unclear. There are a multitude of studies that try to quantify the impact of AI on different sectors of the economy, but conclusions vary. If AI develops in the same general fashion as other technological innovation, there will be both winners and losers.

Most policymakers agree that automation and AI will create worker displacement problems in the near future, just like the emergence of other technologies and their application over the course of history. However, quantifying who will be most affected has proven difficult. Previous studies looking at the impact of AI on the labor market have generally concluded that white-collar jobs are most susceptible to automation.<sup>2</sup> Recent work by Michael Webb, a Ph.D. student at Stanford University, and the Brookings Institute reveal that occupations with high levels of education will be most exposed to automation and AI. Occupations such as market research analysis, sales managers, programmers, and management analysts are increasingly likely to be exposed to AI. However, it is important to note that exposure is not necessarily negative. Specifically, high exposure to AI could mean changes in duties, but not

necessarily the loss of jobs.

Regardless of which types of jobs may be more exposed to automation, the pace at which automation technologies displace workers will depend on rates of development, adoption, and economic growth. In a study conducted by the McKinsey Global Institute, they conclude that 75 million to 375 million workers (3-14 percent of global workforce) will need to switch occupational categories by 2030.<sup>3</sup> Further, the impact may be more prominent in rural communities. However, even with increased levels of automation, the demand for work could increase with economic prosperity. If AI creates efficiency gains for the economy, growth will take place elsewhere as these efficiency gains are realized.

The Bureau of Labor Statistics (BLS) estimates that the labor force will increase from 157 million in 2015 to 186 million in 2060, an increase of 29 million while the labor force participation rate will fall. However, the composition of the labor force is changing.<sup>4</sup> The labor force participation rate of workers aged 55 and older has been increasing since 1996. And, while the BLS predicts that this rate will fall in the long run, a report by Deloitte Review predicts that the labor force participation rate of those 55 and older will increase from 2014–2024.<sup>5</sup> Older generations of workers are typically less adaptable to changes in technology making them more likely to drop out of the labor force entirely rather than complete displaced worker training. Therefore, older workers may exit the work force at higher rates than other age groups.

The education level of an average American has been increasing in recent decades. The percentage of Americans aged 25+ who have completed a 4-year college degree has risen from

<sup>1</sup> Smith, A., & Anderson, M. (2017, November 16). Pew Research Center. "Americans' attitudes about a future where robots and computers do many human jobs."

<sup>2</sup> Previous studies include Muro, Mark, Robert Maxim, and Jacob Whiton. "Automation and Artificial Intelligence: How Machines are Affecting People and Places." Metropolitan Policy Program at Brookings (2019), Manyika, James, et al. "Jobs lost, jobs gained: Workforce transitions in a time of automation." McKinsey Global Institute (2017), and Engler, John, Penny Pritzker, and Alden. *The Work Ahead: Machines, Skills, and US Leadership in the Twenty-first Century*. Council on Foreign Relations, 2018.

<sup>3</sup> Manyika, James, et al. "Jobs lost, jobs gained: Workforce transitions in a time of automation." McKinsey Global Institute (2017)

<sup>4</sup> A look at the future of the U.S. labor force to 2060." U.S. Bureau of Labor Statistics (2016).

<sup>5</sup> Buckley, Patricia, and Daniel Bachman. "Meet the U.S. workforce of the future: Older, more diverse, and more educated." Deloitte Review 21 (2017).

### 3.5. ARTIFICIAL INTELLIGENCE IN THE ECONOMY, CONTINUED

17 to 33 percent since 1980.<sup>6</sup> Further, the share of master’s degree holders in the labor force increased from 4 percent in 1999 to 7 percent in 2015.<sup>7</sup> As technology improves, education requirements will increase. Since 2010, nearly two thirds of the 13 million new jobs created in the U.S. required medium or advance levels of digital skills. However, differences in education attainment could lead to higher income inequality. Over the past three decades, the earnings gain between those with a high school diploma and college education doubled. Further, mean wages in “highly digital” occupations are nearly two times that of wages in occupations that require only “basic digital” skills.<sup>8</sup> With fewer women and minorities receiving educational training for these skills, this could lead to further wage disparities.

Educational requirements will also increase with technological advancement. Occupations requiring a college degree will grow over the next decade. Even now, in times of record low unemployment and increased job creation, employers say they struggle to find the employees they need. Since 2010, nearly two thirds of new jobs created have required medium to advanced levels of digital skills. However, the education level of an average worker in the U.S. is falling behind that of other countries. Currently in Canada and South Korea, 60 percent of young workers are graduating from post-secondary programs. Additionally, while computer and technology skills are highly desirable, demand is also growing for skills machines cannot replicate: empathy, teamwork, critical thinking.<sup>9</sup> America’s competitive advantage in terms of a skilled and educated workforce is clearly eroding.

Recommendations for addressing the anticipated changes of technological advancement and the incorporation of artificial intelligence include expanding worker displacement training

programs, increasing access to education programs for digital skills enhancement, introducing midcareer job training, and maintaining or increasing funding for research and development. Worker displacement due to automation may cause unemployment to increase in the short run. The expansion of retraining programs for these workers would help bridge the skills gap temporarily. However, in the long run, increasing access to education programs centered around digital skills and machine learning would help the U.S. maintain its competitive edge. A highly educated work force has allowed the U.S. to dominate innovation and automation on the world stage. Thus, with the rapid rate of automation and technological advancements, midcareer job training may be essential to keeping workers in the labor force. By progressively maintaining continual education to match required skill sets, workers are less likely to become displaced. Thus, a commitment to furthering education programs would ensure sustained economic growth. Finally, the U.S. must maintain its dominance in research and development. R&D funding at the federal and state level have been dwindling over the last few decades. Federal funding is at its lowest since the early 1950s.<sup>10</sup> The U.S. could fall behind other developed countries without policies and funding to promote the development and commercial adoption of technological advances.

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<sup>6</sup> Engler, John, Penny Pritzker, and Alden. *The Work Ahead: Machines, Skills, and U.S. Leadership in the Twenty-first Century*. Council on Foreign Relations, 2018.

<sup>7</sup> Buckley, Patricia, and Daniel Bachman. “Meet the U.S. workforce of the future: Older, more diverse, and more educated.” *Deloitte Review* 21 (2017).

<sup>8</sup> Engler, John, Penny Pritzker, and Alden. *The Work Ahead: Machines, Skills, and US Leadership in the Twenty-first Century*. Council on Foreign Relations, 2018.

<sup>9</sup> *ibid.*

<sup>10</sup> *ibid.*

### 3.5. ARTIFICIAL INTELLIGENCE IN THE ECONOMY, CONTINUED

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### 3.6. INCOME, EARNINGS AND OUTPUT

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Tennessee’s nominal personal income has enjoyed healthy growth since 2014 when income advanced 4.2 percent. The prior year was especially weak, with just a 1.0 percent gain. Growth was also strong in 2010 through 2012 as the economy rebounded from the trough of the Great Recession in the summer of 2009. Personal income growth for the nation has shown a roughly similar pattern, surpassing Tennessee’s growth in some years and lagging our growth in other years. For 2019, the state is expected to see personal income growth of 5.2 percent, ahead of the pace for the nation (4.8 percent).

Between 2019 and 2029, Tennessee’s nominal personal income should see a 4.3 percent compound annual growth rate, slightly lower than the 4.4 percent growth projected for the nation. A major factor restraining overall income growth will be slow growth in the labor force and employment, which will in turn dampen growth in wage and salary income.

Wage and salary income is the largest component of personal income, accounting for about 50 percent of total income in 2018. Strong job growth has helped buoy wage and salary income, in turn improving the performance of overall personal income. On the other hand, weak-to-modest growth in the average wage has kept income from growing faster still. The average wage grew 4.1 percent in 2007 on the eve of the Great Recession, but in no year since then has growth in the wage exceeded 4 percent. Growth was exceptionally weak in 2013 with an increase of just 0.2 percent. There was some acceleration between 2016 and 2018; growth in 2019 is expected to match last year’s growth of 3.4 percent.

Weak growth in earnings has received considerable attention from analysts and the media. The puzzle is the absence of stronger wage growth in the face of a falling unemployment rate and a strong pace of job creation. Historically,

### 3.6. INCOME, EARNINGS AND OUTPUT, CONTINUED

when unemployment rates have fallen, earnings growth has accelerated due to a tightening of labor market conditions. That has not happened during the current expansion. **Figure 3.9** shows this relationship between the Tennessee unemployment rate and the inflation-adjusted average wage. While there has been some wage rate acceleration since 2016, the gain has been modest; there is little evidence of a consistent trend in the earlier data. The forecast points to weak future wage growth, a result of the expectation of a slightly rising unemployment rate as the economy begins to move through the next decade.

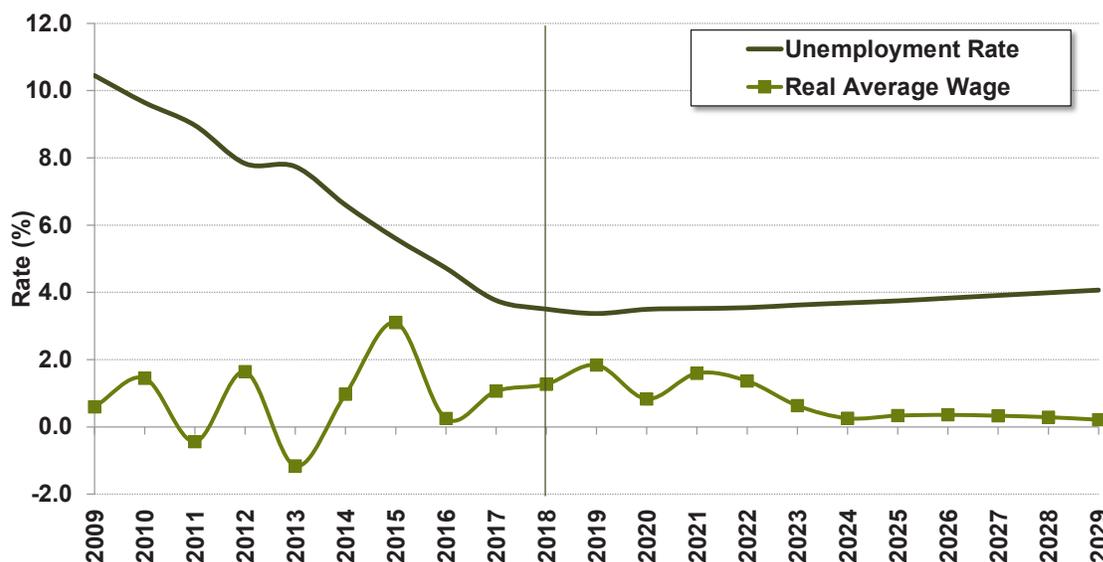
Many explanations have been offered for the break in the historical linkage between these two metrics, including the declining influence of unions and global competition which places pricing pressures on businesses. There are also important compositional effects that have held back the overall average wage. One of these is the retirement of the Baby Boom generation. As these individuals leave the labor market, they leave behind a relatively high salary. New workers, on the other hand, come in at a lower level of earnings. Another compositional effect has to do with different occupations. There is some national

evidence for rising wages for some workers where demand is currently high, including construction and production workers. Unfortunately, this evidence is not as clear in data for Tennessee.

Per capita income accounts for all personal income earned by Tennesseans, regardless of where that income is sourced. For example, if a Tennessee resident works in Georgia, the income accrues to Tennessee. Similarly, if one earns profits from an out-of-state business, some share of that income (depending on how the business is structured) is counted as Tennessee income. Because personal income and per capita income are residence-based measures, they are important metrics that reflect on the wellbeing of residents of Tennessee.

Per capita income in Tennessee has historically trailed per capita income for the nation as a whole. Two important explanations include lower levels of educational attainment and poorer health status in Tennessee compared to the nation. Because the state starts from a lower base level of per capita income, we must see stronger growth in Tennessee in order to catch up with the nation. If we simply match the U.S. per capita income growth rate, the disparity will grow. Tennessee's per capita income

**Figure 3.9: Tennessee Unemployment Rate and Real Average Wage Growth Show Little Correlation**



Source: Bureau of Labor Statistics, Bureau of Economic Analysis, and Boyd Center for Business and Economic Research.

### 3.6. INCOME, EARNINGS AND OUTPUT, CONTINUED

should be \$48,912 in 2019 compared to U.S. per capita income of \$56,562. Between 2009 (when per capita income actually contracted 1.7 percent) and 2019, per capita income grew at a 3.6 percent compound annual growth rate compared to 3.7 percent for the U.S. This slightly stronger growth for the nation widened the gap between per capita incomes from \$4,827 to \$7,650.

Per capita income varies widely across the state, with metropolitan areas generally performing better than their rural counterparts, as illustrated in **Figure 3.10**. A primary explanation is higher levels of educational attainment and a healthier workforce in metropolitan Tennessee. Just three Tennessee counties have per capita incomes that exceed the national average in 2018: Davidson, Fayette and Williamson. And just six counties exceed the statewide average, a sign of a skewed distribution of income across the state

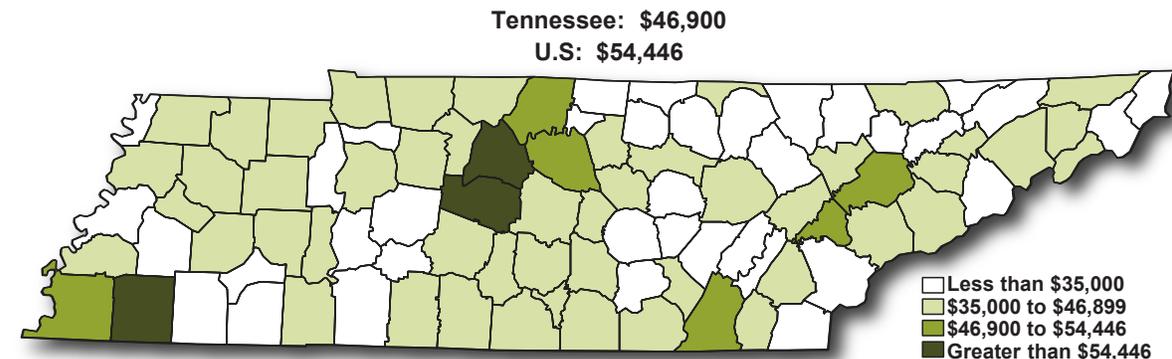
The long-term forecast for Tennessee points to compound annual growth in per capita income of 3.5 percent between 2019 and 2029. In 2019, Tennessee’s per capita income of \$48,912 represented 86.5 percent of U.S. per capita income. By 2029, the state’s per capita income is expected to reach \$68,955, slipping to 84.5 percent of U.S. per capita income (\$81,646). Note that despite comparable rates of growth, the disparity in per capita income will grow over time.

Tennessee and the U.S. both saw GDP contract in 2009. Since that time, GDP has seen decent growth. On a compound annual basis,

Tennessee’s GDP was up 4.2 percent between 2009 and 2019 compared to 4.0 percent for the national economy. The state’s manufacturing sector was battered in 2009 with a 11.0 percent inflation-adjusted output setback; in durable goods, the setback was an astounding 17.5 percent loss. Manufacturing enjoyed exceptionally strong growth in output in 2011–2013. Growth in 2018 is projected at 2.7 percent and growth in 2019 is estimated to be 2.4 percent, consistent with a slowing national economy. Output growth in vehicle-related manufacturing has been very strong, with the exception of 2015. Growth in these sectors has slowed as national light vehicles have plateaued and started to decline. Professional and business services, along with financial activities, have seen several years of strong growth in the 2009–2019 window.

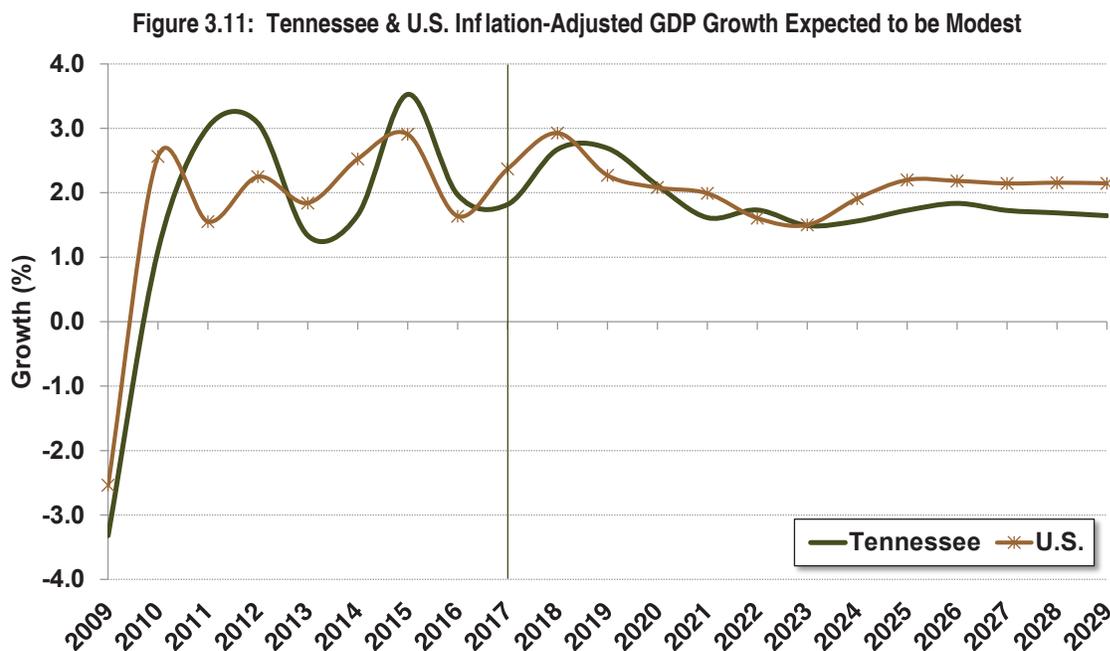
The state should see inflation-adjusted GDP rise at a 1.7 compound annual rate between 2019 and 2029 compared to 2.0 percent growth for the U.S. (See **Figure 3.11**.) The state’s manufacturing sector is expected to experience output growth of 1.7 percent, with durable goods up 1.9 percent and nondurables up at the slower rate of 1.4 percent. The growth in output is encouraging in light of expected employment losses, signaling rising productivity in the state’s industrial sector. Apparel and leather products is the only broad sector of the state economy that is expected to have a contraction in output by 2029; output was down sharply between 2009 and 2019.

**Figure 3.10: Per Capita Personal Income Varies Widely Across Tennessee**



Note: 2018 annual data.  
Source: Bureau of Economic Analysis.

### 3.6. INCOME, EARNINGS AND OUTPUT, CONTINUED



Source: Bureau of Economic Analysis, IHS Markit™ (copyright), and Boyd Center for Business and Economic Research.

### 3.7 FORECAST AT A GLANCE

- Growth over the next decade is expected to subside due to the current short-run cycle of slower growth and weaker future growth in the labor force. Nonfarm employment is expected to advance at a 0.7 percent compound annual rate between 2019 and 2029.

- The state's manufacturing sector, which has enjoyed many years of sustained growth, will encounter setbacks as the 2020s unfold, consistent with the expected pattern for the nation.

- The state unemployment rate will drift upwards over the course of the next ten years, reaching 4.1 percent in 2029.

- Tennessee's inflation-adjusted personal income will see compound annual growth of 2.2 percent in the next decade compared to 2.3 percent for the nation.

- The state's inflation-adjusted GDP should be up at a 1.7 percent compound annual rate, slightly behind the pace of national output growth.

## CHAPTER 4: PUBLIC HEALTH AND ECONOMIC WELLBEING IN TENNESSEE

### IN THIS CHAPTER —

- 4.1. INTRODUCTION  
- ACHIEVING HEALTH

4.2. MEASURING HEALTH OUTCOMES AND THE DETERMINANTS OF HEALTH  
- POLICIES TO IMPROVE HEALTH

4.3. THE CASE FOR POOR HEALTH BEING AN ECONOMIC DRAG ON TENNESSEE
- 4.4. COUNTY LEVEL RELATIONSHIPS BETWEEN HEALTH AND ECONOMIC GROWTH – TENNESSEE AND THE U.S.

4.5. CONCLUSION

### 4.1. INTRODUCTION

Tennessee has better than average public health funding, spending \$99 per person in state and federal dollars on public health programs.<sup>1</sup> Additionally, Tennessee is rated favorably in public health policy. However, population health in Tennessee remains very poor, far below the national average. Tennessee ranks number 42 of 50 states in terms of overall health outcomes, 46th in cancer deaths, 45th in heart disease deaths, 45th in diabetes, 41st in physical distress, and is also in the bottom 10 for access to clinical care, mental health providers, and preventable hospitalizations.<sup>2</sup> These rankings should not be viewed as unfavorable to the Tennessee Department of Health, nor to the regional organizations or local public health departments working in these areas, but rather as an indication of the magnitude of the challenge these agencies are facing.

In addition, while the state has experienced strong economic growth for the last decade and ranks in the top 15 states in terms of growth in employment and overall economic output,<sup>3</sup> this success obscures indications that Tennessee is far from reaching its full economic potential. Economic growth has not been distributed evenly over the state. Although Nashville and other metropolitan areas continue to experience growth, smaller markets and rural areas are either stagnating or in decline. Similarly, poor health indicators are not distributed uniformly over the state, and there are strong correlations between poor health and poor economic performance within the state. A significant facet of this linkage relates to the economic wellbeing of individuals and families where adults have relatively poor health stock. The takeaway from these statistics is that poor health is likely a

<sup>1</sup> America's Health Rankings (2019), [https://www.americashealthrankings.org/explore/annual/measure/PH\\_funding/state/ALL](https://www.americashealthrankings.org/explore/annual/measure/PH_funding/state/ALL).

<sup>2</sup> Robert Wood Johnson Foundation's County Health Rankings report for Tennessee (2019), <https://www.countyhealthrankings.org/reports/state-reports/2019-tennessee-report>.

<sup>3</sup> United Health Foundation "America's Health Rankings" using data from Centers for Disease Control, <https://www.americashealthrankings.org/explore/annual/measure/Overall/state/TN>.

## 4.1. INTRODUCTION, CONTINUED

damper, if not an outright barrier, to economic and community development efforts in rural counties and for many individuals across the state.

Using data on counties in the state of Tennessee, as well as national and subnational comparisons, this chapter provides an overview of the key indicators of the determinants of health and metrics of the state's health care system. In addition, this chapter will present the relationship between poor health and economic productivity in the form of labor force participation and economic growth rates.

The goal of this chapter is to highlight poor health as an *economic* problem in the state and to show that improving health across the state, over the long term, will lead to improved economic growth and prosperity for individuals and in distressed areas. The caveat with investing in public health, as with investing in accessible and affordable education, is that the costs are immediate, but the benefits are gradually accrued over time. When individuals become healthier, jobs obviously do not instantly materialize in their local areas. Rather, these benefits come to pass because of coordinated efforts by health programs and economic and community development. While progress is likely to be slow, we conclude that investments in improving the health outlook of individuals in Tennessee has the capacity to improve the strength of the overall state economy and its attractiveness to existing and new industry.

### Achieving Health

According to the World Health Organization, *health* is “a state of complete physical and mental and social wellbeing.”<sup>4</sup> How can individuals, communities and populations achieve health? The most common answer is by increasing access to *health care*, that is the maintenance and improvement of health through guidance on healthy lifestyles and the provision of medical care. Under this framework, solutions hinge on expanding access, improving quality, and lowering the cost of medical care. This approach has generated countless na-

tional debates and news headlines on the structure of the health care system and its financing, yet it misses many of the determinants of health. While a robust and effective health care system is a vital part in the protection, restoration, and production of health, it is only *one* of several factors. Additional factors impacting the health of individuals and communities are related to health behaviors, social and cultural contexts, and the environment in which people live. Adverse health behaviors, such as tobacco, alcohol and substance use, poor eating habits, lack of sufficient sleep and exercise, as well as socioeconomic factors such as education, unemployment, poverty, unstable housing and unsafe communities, and the stress that living in such conditions entail, all significantly impact the achievement of health. Importantly, poor health is not only damaging to the individuals and communities experiencing it, but it also undermines the ability of the economy to grow and places to thrive.

Economists view health in a very similar fashion as education, that is as a form of *human capital*, intangible collective resources possessed by individuals and groups within a given population. Most people acknowledge that education increases engagement with the labor market and makes workers more productive—particularly when that education is relevant to the individual's occupation. By the same token, if two individuals are given a series of tasks to complete, all else equal, economists expect that the healthier individual will be more efficient in completing the work. This is borne out in research on the topic. Perhaps even *more so* than education, better health is linked to *greater productivity* across occupational domains. There are also clear linkages between health and attractiveness as a business location. Industry knows that health is a crucial determinant of labor force participation, at-work productivity or “presenteeism”, and expected insurance costs for potential employers. It seems clear that economic development depends on a stable, engaged, and healthy workforce. How then can the public health needs of Tennesseans be addressed to improve economic growth and quality of life in the state?

<sup>4</sup> World Health Organization's Constitution (1948 [2014]) 48th ed. <http://apps.who.int/gb/bd/PDF/bd48/basic-documents-48th-edition-en.pdf#page=7>.

## 4.2. MEASURING HEALTH OUTCOMES AND THE DETERMINANTS OF HEALTH

*Health outcomes* represent the physical and mental wellbeing of residents. Such outcomes may be measured using outcomes like premature death, life expectancy, the incidence of deaths from cancer, cardiovascular disease, and diabetes, as well as physical and mental distress. On average, Tennesseans are losing 600,000 years of life due to premature death.<sup>5</sup>



While there are multiple frameworks for measuring the achievement of health, one of the most straightforward approaches is that of the United Health Foundation's *America's Health Rankings* in which health outcomes are presented as a function of individual behaviors, community and environmental conditions, clinical care, and policy choices. This framework is very similar to the Robert Wood Johnson Foundation's (RWJF) *County Health Rankings Model*.<sup>6</sup> To be more comprehensive, a mixture of measures from both frameworks has been included in this chapter.

*Health behaviors* are actions that individuals take that can improve or harm their health. Measures of behavior include:

- Alcohol, Drug, and Tobacco Use
- Diet and Exercise
- Risky Sexual Activity
- Educational Attainment (k-12)

Although Tennessee has comparatively low rates of excessive alcohol use,<sup>7</sup> at 15.7 percent of adults, this figure has been trending upward, gaining 10 percent in the last year from 14.3 percent. In addition, in the past 10 years, drug deaths have increased 58 percent, to 24.3 deaths per 100,000.<sup>8</sup> The opioid epidemic has partially fueled this trend, with nearly more pain prescriptions in the state than residents, more than 20,000 non-fatal overdoses,<sup>9</sup> and 1,304 overdose deaths in 2018.<sup>10</sup> Not only is opioid use a life and death issue, it is also an *economic issue*. The CDC estimates that *each* overdose death results in an economic cost of \$1.3 million due to the loss of productive work years resulting from premature death. Academic research by the Boyd Center also has demonstrated that increases in opioid use per capita can explain over half of the decline in labor force participation since 2000. Additionally, a 10 percent decrease in opioid prescribing in Tennessee would lead to an increase in over \$800 million in personal income in Tennessee.<sup>11</sup>

Furthermore, according to the Tennessee Department of Health,<sup>12</sup> more than 38,000 high school students in the state smoke, with 3,400 of children under the age of 18 becoming new daily smokers each year. Additionally, more than 1.1 million, or one in five, Tennessee adults smoke. A third of cancer deaths in the state are attributed to smoking, and 11,400 Tennessee adults die each year as a result of their tobacco use. This adverse health behavior costs the state \$2.67 billion dollars, with \$823.6 million paid for by TennCare, the state's Medicaid program. In addition, the shortened life-span of productive workers costs the state an estimated \$3.59 billion.

<sup>5</sup> RWJF's data show Tennessee loses an average of 9,100 of life years due to reduced life expectancy before age 75 per 100,000 population.

<sup>6</sup> <https://www.countyhealthrankings.org/explore-health-rankings/measures-data-sources/county-health-rankings-model>.

<sup>7</sup> Excessive drinking is either binge drinking, for women having four or more, or for men five or more drinks on one occasion in the past 30 days, or chronic drinking, women having eight or more or men having 15 or more drinks per week.

<sup>8</sup> Based on data from America's Health Rankings: <https://www.americashealthrankings.org/explore/annual/measure/ExcessDrink/state/TN>.

<sup>9</sup> Tennessee Department of Health's "Tennessee's Vital Signs" <https://www.tn.gov/health/health-program-areas/tennessee-vital-signs/redirect-tennessee-vital-signs/redirect-dashboard/dashboard.html>.

<sup>10</sup> "Faces of Opioids," Tennessee Department of Health: <https://www.tn.gov/infacesofopioids.html>.

<sup>11</sup> Harris, Matt, Larry Kessler, Matt Murray and Beth Glenn. *forthcoming*. "Prescription Opioids and Labor Market Pains." (Accepted by the *Journal of Human Resources*)

<sup>12</sup> Tennessee Department of Health, <https://www.tn.gov/health/health-program-areas/tennessee-tobacco-program/ttp/about-ttp.html>.

## 4.2. MEASURING HEALTH OUTCOMES AND THE DETERMINANTS OF HEALTH, CONTINUED

Residents in the state also struggle to maintain healthy and active lifestyles with more than 30 percent of Tennessee adults reporting that they did no physical activity or exercise other than their regular job in the past 30 days.<sup>13</sup> This leaves the state 47th in the country due to its low level of physical activity. And although residents report eating fruits and vegetables near the national average, one in three adults are obese with a body mass index of 30.0 or higher.<sup>14</sup> This is triple the rate of the state thirty years ago in 1990 when just over one in ten residents were considered obese. The national medical costs of obesity have been estimated to be \$342.2<sup>15</sup> billion, with absenteeism linked to obesity leading to additional \$8.65 billion in losses each year.<sup>16</sup>

Risky sexual behavior is also a problem in the state with chlamydia, the most commonly reported sexually transmitted infection (STI) for men and women, affecting 522.4 Tennessee residents per 100,000. According to the CDC, STIs, including HIV, cost nearly \$16 billion to treat annually.<sup>17</sup> Teen births are also high in the state, with an average of 330 per 100,000 residents.<sup>18</sup> Teenagers who bear children are less likely to continue their education beyond high school, more likely to be obese in adulthood, and are more likely to experience depression and psychological distress.

In contrast to these trends, Tennessee is becoming a leader in educational attainment, measured as the percentage of individuals obtaining their high school diploma within four years of starting the 9th grade. Ranked 3rd in the country in 2019, with an 89.8 percent graduation rate, it seems

clear that the state's focus on education is beginning to show results. Earning a regular diploma as opposed to a GED is associated with an improved health outlook, as high school graduates are less likely to smoke, more likely to exercise, and more likely to self-report being healthy. Students who do well in high school also earn more than their less-educated counterparts, with each one point increase in a student's grade point average being associated with a 12 percent rise in adult earnings for males, and 14 percent for females.<sup>19</sup> Previous administrations, the Haslam administration in particular, have also prioritized increasing access to post-secondary education for all Tennesseans, particularly low-income individuals. The primary motivation for the "Drive to 55" initiative was that the state's Department of Economic and Community Development recognized that Tennessee's workforce was not sufficiently educated to make the state as attractive to current and potential employers as it needed to be.

In sum, choices surrounding behavior can play a significant role in health outcomes at the individual and population level. Adverse health behaviors often pose substantial costs to individual quality of life, as well as to the state budget and its potential for economic growth. At the same time, while individual choices can play a vital role in the overall health of a population, the context where individuals live can play an equal if not more important role in health outcomes. Indeed, research has found that a better predictor for an individual's health is not their genetic code, but their Zip code.<sup>20</sup> One lesson is that

<sup>13</sup> America's Health Rankings analysis of CDC, Behavioral Risk Factor Surveillance System, <https://www.americashealthrankings.org/explore/annual/measure/Sedentary/state/TN>.

<sup>14</sup> *ibid*

<sup>15</sup> Biener, Adam, Cawley, John and Chad Meyerhoefer. 2017. "The High and Rising Costs of Obesity to the US Health Care System" *Journal of General Internal Medicine*, 32 (April):6-8.

<sup>16</sup> Andreyeva, Tatiana, Luedicke, Joerg, and Clarie Wang. 2014. "State-Level Estimates of Obesity-Attributable Costs of Absenteeism" *Journal of Occupational and Environmental Medicine* 56(11): 1120-1127.

<sup>17</sup> 2013 CDC Fact Sheet, "Incidence, Prevalence, and Cost of Sexually Transmitted Infections in the United States," <https://www.cdc.gov/std/stats/STI-Estimates-Fact-Sheet-Feb-2013.pdf>.

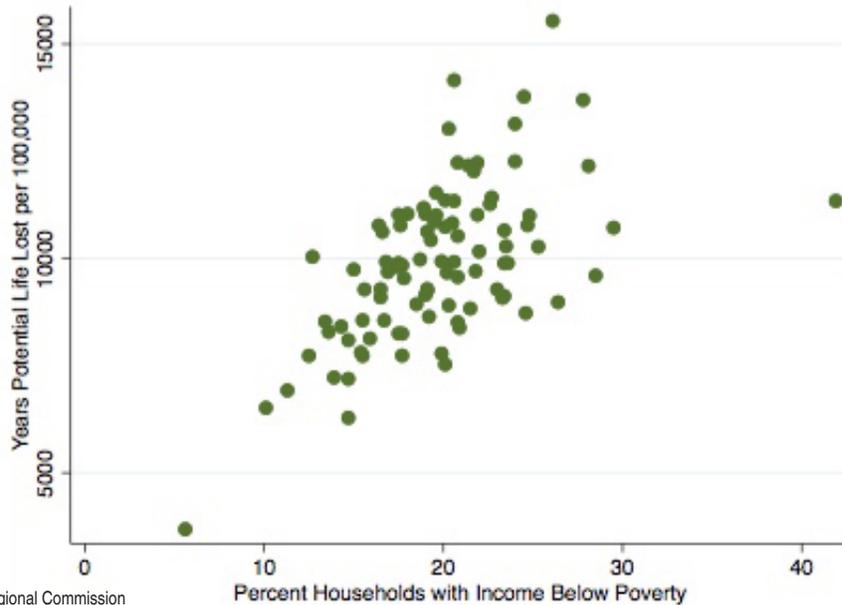
<sup>18</sup> County Health Rankings, of the National Vital Statistic System, <https://www.countyhealthrankings.org/app/tennessee/2019/measure/factors/14/datasource>.

<sup>19</sup> French, Michael, Homer, Jenny, Popovici, Ioana, and Philip Robins. 2015. "What You Do in High School Matters: High School GPA, Educational Attainment, and Labor Market Earnings as a Young Adult" *Eastern Economic Journal* 41(3):370-386.

<sup>20</sup> RWJF "Where You Live Affects How Long You Live," <https://www.rwjf.org/en/library/interactives/whereyouliveaffectshowlongyoulive.html>.

## 4.2. MEASURING HEALTH OUTCOMES AND THE DETERMINANTS OF HEALTH, CONTINUED

Figure 4.1: Relationship Between County-Level Poverty and Premature Death Rates in Tennessee Counties



Source: Appalachian Regional Commission

all of society bears costs associated with lifestyle choices that hamper individual health.

*Community and environment* describes the social and physical context in which individuals live, work, and spend their free time. Measures of community and environment include:

### *Community*

- Educational Attainment
- Employment
- Income
- Family and Social Support

### *Environment*

- Air and Water Quality
- Housing and Transit
- Food Security and Access
- Community Safety
- Occupational and Injury Deaths

In terms of community and environment

factors, three key trends emerge from the data for Tennessee: children in poverty, food insecurity, and violent crime. The first trend, *children in poverty*, is a measure of the percentage of children living below the federal poverty threshold, or in households with less than \$25,750 for a family of four.<sup>21</sup> In Tennessee, 22 percent, or nearly one in four children, live in poverty.<sup>22</sup> In addition, half of these children are in a family that spends more than 50 percent of its income on housing costs, limiting funds available for healthy food, clothing, and medical care.<sup>23</sup> Research has established that childhood poverty can lead to a range of adverse health outcomes, including risky and unhealthy behaviors such as smoking, truancy, as well as adult obesity, heart disease, and premature mortality. Childhood poverty costs an estimated \$1 trillion annually, or 5.4% of the nation's gross domestic product.<sup>24</sup>

Figure 4.1 above shows the percentage of households in each Tennessee county below the

<sup>21</sup> 2019 Federal Poverty Guidelines, <https://aspe.hhs.gov/2019-poverty-guidelines>.

<sup>22</sup> America's Health Rankings analysis of U.S. Census Bureau, American Community Survey, available at: <https://www.americashealthrankings.org/explore/annual/measure/ChildPoverty/state/TN>.

<sup>23</sup> See Tennessee's 2019 *County Health Rankings Report* for additional details, [https://www.countyhealthrankings.org/sites/default/files/state/downloads/CHR2019\\_TN.pdf](https://www.countyhealthrankings.org/sites/default/files/state/downloads/CHR2019_TN.pdf).

<sup>24</sup> McLaughlin, Michael and Mark Rank. 2018. "Estimating the Economic Cost of Childhood Poverty in the United States" *Social Work Research* 42(2): 73-83.

## 4.2. MEASURING HEALTH OUTCOMES AND THE DETERMINANTS OF HEALTH, CONTINUED

poverty level on years of potential life lost per 100,000 using data from the *Appalachian Regional Commission's* “Health Disparities” report. It is clear from the figure that there is a strong and positive correlation between communities in poverty and life years lost. Simply put, communities in poverty do not live as long—one percent increase in household poverty at the county level is associated with 226 years of life lost in the community.

The second trend is related to *food security and access*, that is the likelihood of having sufficient nutritious food for all members of a household and access to healthy food options. These two factors present a challenge for many Tennessee communities, particularly in rural areas. While food insecurity has decreased in the state since 2015 and is now near the national average, many counties remain food deserts, that is an area with low income (poverty rate at least 20 percent) and low access (at least one third of the population lives more than a half mile from a supermarket in an urban area, or 10 miles in a rural area).<sup>25</sup> Many of these communities are served by convenience stores with high-sugar and high-fat foods, rather than fruit, vegetables, meat, and other staples. Even when such foods are in supply at these locations, they are often more expensive than the unhealthy counterparts and therefore may be less attractive to consumers on limited budgets. The health-related costs attributed to hunger and associated malnourishment have been estimated at \$160 billion nationally, with an additional \$17.8 billion in lost economic productivity, education costs, and charitable donations to alleviate hunger.<sup>26</sup>

The third and final trend is related to community safety and that is the rate of violent crime—the number of murders, rapes, robberies and aggravated assaults per 100,000 people in the population.

Tennessee’s violent crime rate is nearly double the national average, with 624 crimes per 100,000 in 2019.<sup>27</sup> Not only does violent crime have a direct impact on victims, it has the indirect effect of weakening community bonds through the dynamics of fear, anxiety, and stress. This can further amplify social isolation and mental health challenges. Individuals in unsafe communities are also less likely to spend time recreating outdoors and, as a result, report to be in poorer health.<sup>28</sup> Research has estimated a \$65 billion price-tag for violent crime as a result of lost productivity.<sup>29</sup>

In sum, the context of a community and its environment *matters* for health outcomes. Research suggests that communities that are impoverished, lack access to healthy food, and are unsafe, among other forces, undermine the potential of residents to live long and healthy lives.

*Clinical Care* describes the availability and quality of medical treatment. Measures of clinical care include:

- Primary Care Physicians, Dentists, and Mental Health Providers
- Preventable Hospital Stays
- Low Birthweight
- Mammography Screenings
- Flu Vaccinations
- Uninsured Population

Tennessee has a high percentage of *preventable hospitalizations*, measured as the number of discharges for conditions that do not require hospitalization per 1,000 Medicare enrollees. Many of these hospitalizations occur due to a lack of primary care addressing chronic conditions in preventative settings. This is sometimes due to a lack of continuity of care and effective case management across multiple providers. While this figure has been trending downward in

<sup>25</sup> USDA “Mapping Food Deserts in the United States,” <https://www.ers.usda.gov/amber-waves/2011/december/data-feature-mapping-food-deserts-in-the-us/>.

<sup>26</sup> 2016 Hunger Report, <http://hungerreport.org/2016/wp-content/uploads/2015/11/HR2016-Full-Report-Web.pdf> - page=81.

<sup>27</sup> America’s Health Rankings analysis of U.S. Department of Justice, Federal Bureau of Investigation, <https://www.americashealthrankings.org/explore/annual/measure/Crime/state/TN>.

<sup>28</sup> Healthy People’s “Crime and Violence,” <https://www.healthypeople.gov/2020/topics-objectives/topic/social-determinants-health/interventions-resources/crime-and-violence>.

<sup>29</sup> Corso, Phaedra et al. 2007. “Medical Costs and Productivity Losses Due to Interpersonal and Self-Directed Violence in the United States” *American Journal of Preventative Medicine* 32(6): 474-482.

## 4.2. MEASURING HEALTH OUTCOMES AND THE DETERMINANTS OF HEALTH, CONTINUED

Tennessee over the last 20 years, the state still has 59.3 unnecessary or preventable hospitalizations per 1,000 Medicare recipients.<sup>30</sup> Since the hospital is the most expensive location to receive care, these occurrences place a significant burden on patients, insurers, and hospital services.

Tennessee has an insufficient number of *mental health providers* with only 153 per 100,000 residents.<sup>31</sup> These providers, which include psychiatrists, licensed clinical social workers, counselors, marriage and family therapists, substance abuse counselors, and advanced practice nurses, offer essential care to those with mental and behavioral challenges. According to health disparities data collected by the *Appalachian Regional Commission*, Tennesseans in the state's 95 counties experience an average of more than four mentally-unhealthy days each month, and 14 percent of adults in the state report frequent mental distress.<sup>32</sup> The *National Institute of Mental Health* has found these residents are not alone; nearly one-in-five Americans experience some form of mental illness, not including those with substance abuse disorders.<sup>33</sup> Work absences and loss of labor productivity associated with mental health were estimated to cost \$2.5 trillion globally in 2010, and that figure is anticipated to double by 2030.<sup>34</sup>

Combined these represent costly trends in the state, with costs borne by individuals, families, friends, communities and state and local governments. And while clinical care is a key aspect of health achievement, policies that narrowly focus on expanding such care often miss broader and potentially longer-term solutions that lead to healthy behaviors, communities, and environments, and prevent poor outcomes in the first place. Importantly, such an approach is more focused on preventing, rather than treating, poor health.

### Policies to Improve Health

In addition to the three factors (behavior, community and environment, and clinical care) policy, is the final contributor to health outcomes. Policy is the programs, laws, and regulations at the local, state, and federal level that seek to impact health.

Some examples of policies that seek to *incentivize* healthy behaviors include promoting community recreation by adding greenspace and sidewalks, or using vacant lots as urban gardens and farmer's markets to improve the ability of residents to access fresh fruit and vegetables. There is evidence that reducing the cost of healthy food options, for example, leads to an increase in purchases over unhealthy counterparts that are rendered a more expensive choice. Data also overwhelmingly supports a link between health and greenspace, noting that these areas promote physical activity and reduce stress, even for at-risk populations such as those living in public housing or the elderly.<sup>35</sup> According to Tennessee's Vital Statistics, 71 percent of residents currently have access to parks and greenways.

Using grants from the USDA, Tennessee has had a Farmer's Market Nutrition Program (FMNP) associated with its Women, Infants, and Children (WIC) program since 1992.<sup>36</sup> The FMNP provides locally grown fruits, vegetables, and herbs to families with limited resources as well as nutrition information. Recipients receive \$20 per year in the form of \$5 checks. The program currently operates in the following counties: Bedford, Coffee, Hickman, Lincoln, Madison, Maury, Moore, Rutherford and Sullivan. The state also offers a similar program for elderly residents (SFMNP) in Davidson, Dyer, Shelby, Hamblen and Warren counties. The 14,000

<sup>30</sup> America's Health Rankings analysis of The Dartmouth Atlas of Health Care, <https://www.americashealthrankings.org/explore/annual/measure/preventable/state/TN>.

<sup>31</sup> America's Health Rankings analysis of U.S. HHS, Centers for Medicare & Medicaid Services, National Plan and Provider Enumeration System, Sept. 2019; U.S. Census Bureau, Annual Estimates of the Resident Population: April 1, 2010 to July 1, 2018, <https://www.americashealthrankings.org/explore/annual/measure/MHP/state/TN>.

<sup>32</sup> Tennessee Department of Health's "Tennessee's Vital Signs," <https://www.tn.gov/health/health-program-areas/tennessee-vital-signs/redirect-tennessee-vital-signs/redirect-dashboard/dashboard.html>.

<sup>33</sup> National Institute of Mental Health, <https://www.nimh.nih.gov/health/statistics/mental-illness.shtml>.

<sup>34</sup> Trautmann, Sebastian, Rehm, Jurgen, and Hans-Ulrich Wittchen. 2016. "The Economic Costs of Mental Disorders" *EMBO Reports* 17(9):1245-1249.

<sup>35</sup> University of Washington, [https://depts.washington.edu/hhwb/Thm\\_StressPhysiology.html](https://depts.washington.edu/hhwb/Thm_StressPhysiology.html).

<sup>36</sup> Tennessee's *Farmers Market Nutrition Programs*, <https://www.tn.gov/health/health-program-areas/fhw/farmers.html>.

## 4.2. MEASURING HEALTH OUTCOMES AND THE DETERMINANTS OF HEALTH, CONTINUED

participating recipients receive \$35 each year.

Information, education, and communication campaigns (IEC) are also common policy strategies in reshaping health behaviors. These campaigns are sometimes tied to monetary incentives. This is the case with Tennessee's *Baby&Me—Tobacco Free Program*<sup>37</sup> which started in 2013. Eligible pregnant women enrolled in the program attend four prenatal smoking cessation sessions and receive education on the consequences of tobacco use. After starting the program, if a woman tests tobacco free, she receives a Walmart diaper voucher for \$25. This voucher will continue each month for up to 12 months provided the woman continues to test negative for tobacco. Smokers who reside with pregnant women can also participate in the program and earn additional monthly diaper vouchers. Data released by the state shows that the program reduced the number of cigarettes smoked per day for pregnant participants, halved the rate of low birthweight births, and reduced hospital charges for newborns by an estimated \$1.9 million.<sup>38</sup>

In some cases, policies may also *prohibit or criminalize* a behavior in an effort to curb adverse health choices. This includes age limits on the purchase of alcohol and tobacco products, proposed bans on e-cigarette vaping, criminalization of substance abuse, and passage of “dry” county laws that do not allow the sale of alcohol. There is some evidence that policies that restrict the availability of alcohol, including limiting the days or hours of alcohol sales, can be effective in reducing associated harms.<sup>39</sup> There also are policies that seek to penalize unhealthy behaviors. These policies include excise taxes on the sale

of alcohol and tobacco, as well as on candy, soft drinks, fast food, and other consumables that have been linked to negative health consequences. While there is evidence to suggest that these so-called “sin taxes” are effective, with some studies finding that a one percent increase in tax on alcohol or tobacco decreases sales by half-a-percent, economists often point out that such approaches are inefficient as they treat the regular consumer of such products the same as the person who has an occasional drink or cheeseburger.<sup>40</sup>

In addition to these options, some policies that *engage the community* and *expand access to care* have been shown to have a positive impact. For example, *telemedicine*, that is the provision of care via the telephone or other telecommunications network has been shown to be effective at treating patients who live in remote areas or have difficulty traveling from their home.<sup>41</sup> Telehealth also provides a useful way of reaching communities as needs arise without committing to brick-and-mortar facilities that most often require significant capital investment. Tennessee is already moving in this direction, earlier this year adding the state as one of 29 other states to the *Interstate Medical Licensure Compact*,<sup>42</sup> which is expected to expand the ability of practitioners to engage in telemedicine by making it easier to treat individuals across state lines without getting additional licensure.

The key point is that expanding and creating efficient and effective policies would likely be beneficial to the state's success in addressing health challenges and spurring economic development. Doing so may also provide an opportunity for the state to lead the country in innovative solutions to shared policy challenges.

<sup>37</sup> Tennessee's *Baby&Me—Tobacco Free Program*, <https://www.tn.gov/health/health-program-areas/fhw/baby-me-tobacco-free.html>.

<sup>38</sup> More information at Association of Maternal and Child Health Programs (October 2017) “Baby & ME—Tobacco Free Program,” [http://www.amchp.org/programsandtopics/BestPractices/InnovationStation/ISDocs/IS%20Template\\_Baby%20and%20Me.pdf](http://www.amchp.org/programsandtopics/BestPractices/InnovationStation/ISDocs/IS%20Template_Baby%20and%20Me.pdf) and from the Association of State and Territorial Health Officials (2016) “State Success Story” available at: <https://www.astho.org/Prevention/Tobacco/Tennessee-Counties-Help-Pregnant-Women-Quit-Smoking-Through-the-Baby-and-Me-Tobacco-Free-Program/>.

<sup>39</sup> Kelly-Weeder, Susan, Kathryn Phillips, and Shannon Rounseville. 2011. “Effectiveness of Public Health Programs for Decreasing Alcohol Consumption” *Patient Intelligence* May (3): 29-38.

<sup>40</sup> <https://www.economist.com/the-economist-explains/2018/08/10/do-sin-taxes-work>.

<sup>41</sup> Bashshur, Rashid et al. 2016. “The Empirical Evidence for Telemedicine Interventions in Mental Disorders” *Telemedicine and e-Health* 22(2), for a more complete discussion.

<sup>42</sup> Interstate Licensure Compact, <https://imlcc.org/>.

### 4.3. THE CASE FOR POOR HEALTH BEING AN ECONOMIC DRAG ON TENNESSEE

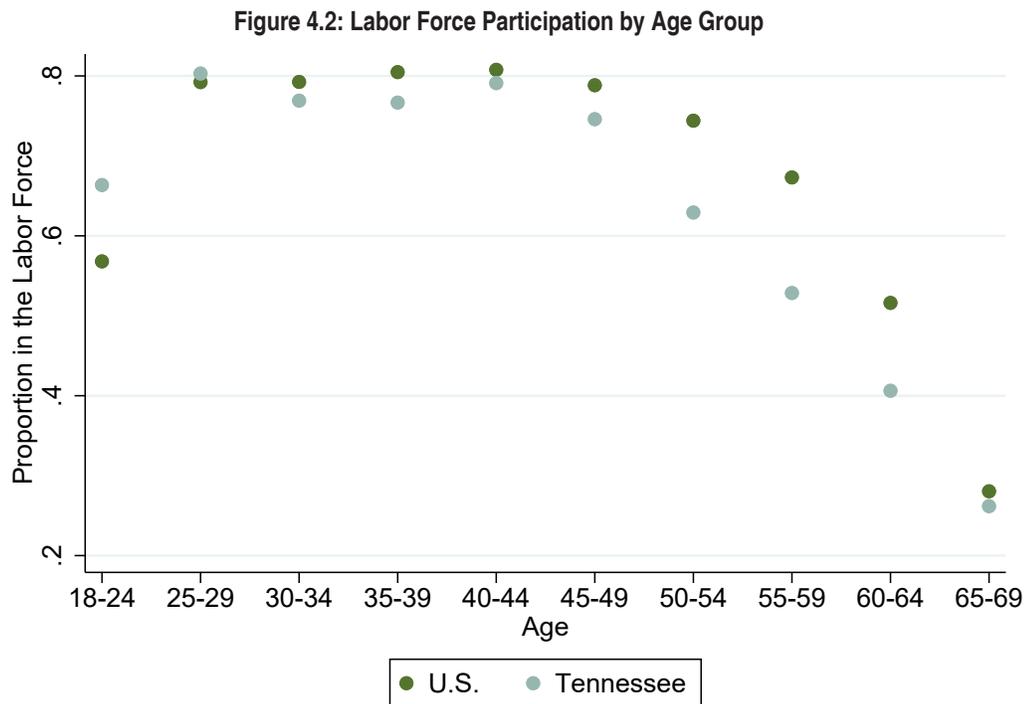
To examine the relationship between health, specific health conditions, and economic outcomes, we use data from the Center for Disease Control’s Behavior Risk Factor Surveillance System (BRFSS). BRFSS is the world’s largest telephone survey, netting approximately 500,000 respondents per year. Designed to be representative at the state level, it contains information on income, employment, health, access to care, and health behaviors.

One of the challenges with examining the consequences of access to care or health-related choices is that the consequences of those choices are not immediately felt. Rather, if individuals do not have adequate care—or information—or resources to maintain health, those problems will not manifest until midlife or later.

**Figure 4.2** illustrates exactly such a story, depicting labor force participation rates by five-year age bands in Tennessee and the rest of the U.S. When Tennesseans are young (between 25 and 44), they participate in the labor force (defined as being employed or seeking work) at approximately the same rates as the rest of the U.S. (approximately

80 percent). By age 65, labor force participation in Tennessee and the U.S. is down to approximately 30 percent. However, between ages 45-64, we see clear evidence that Tennesseans are exiting the labor force earlier than their average counterparts across the nation. For individuals aged 50-59 in particular, Tennessee’s labor force participation rates are 12 percentage points (approximately 20 percent) lower than the national average. It is worth noting that this is not consistent with labor force participation being generally lower in Tennessee. Rather the age at which labor force participation falls relative to the national average—50—is the approximate age at which risk for failing health begins to increase.

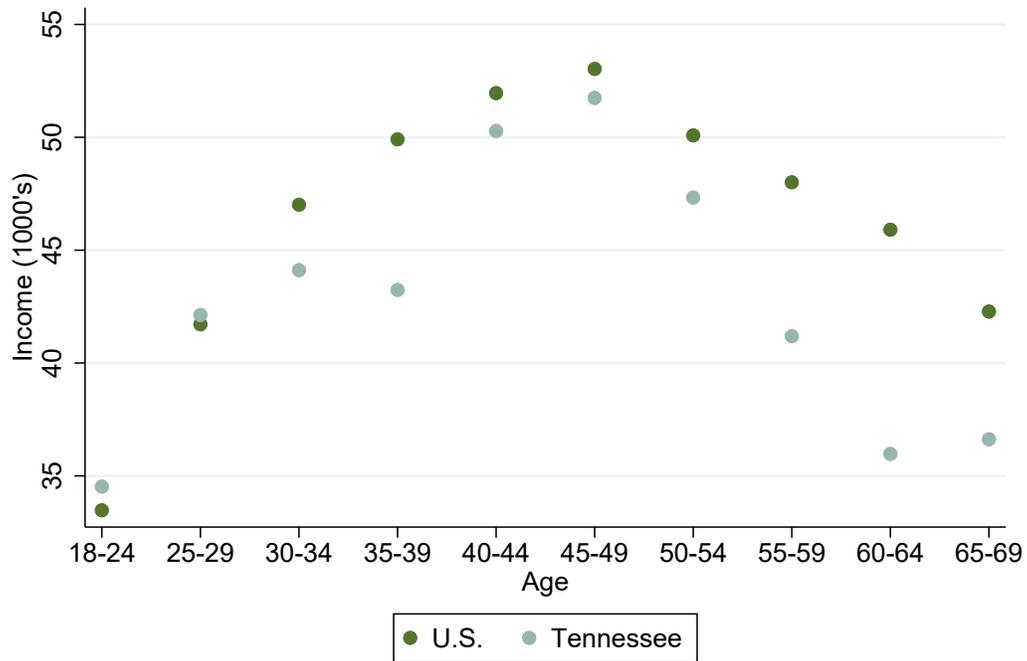
One of the primary reasons we care about labor force participation from a public perspective is its effects on the tax base. Income is the primary predictor of consumer spending, and ensuing sales tax, property tax, and other revenues. **Figure 4.3** depicts average income among BRFSS respondents by age group for Tennessee and the U.S. While for most age groups, the two values are relatively close,



Source: Center for Disease Control, Behavior Risk Factor Surveillance System (BRFSS).

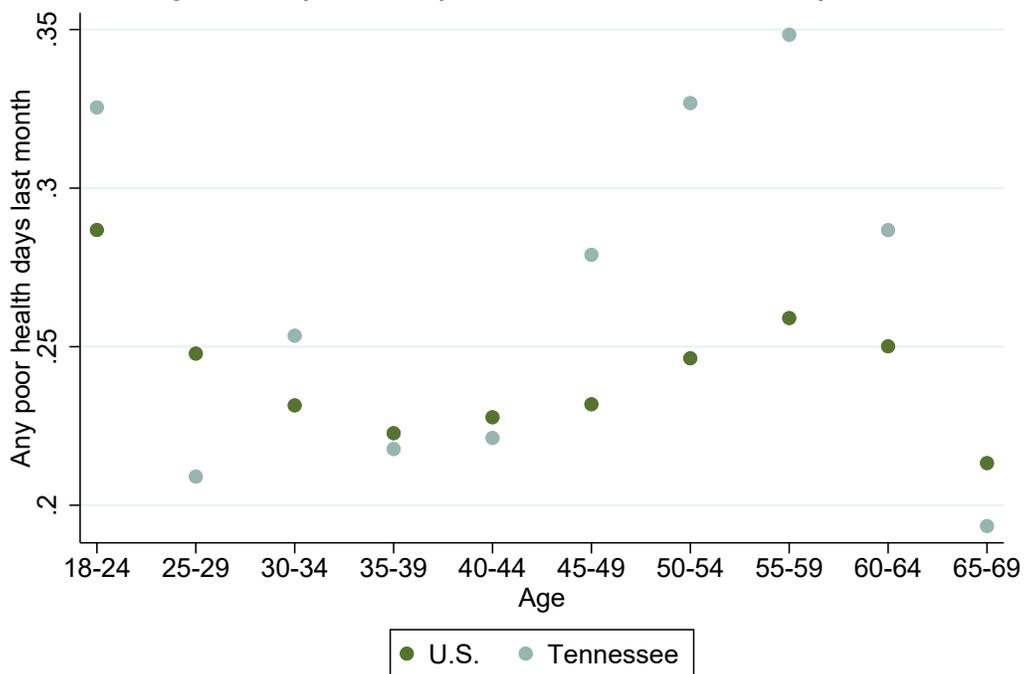
### 4.3. THE CASE FOR POOR HEALTH BEING AN ECONOMIC DRAG ON TENNESSEE, CONTINUED

Figure 4.3: Mean Annual Income by Age Group



Source: Appalachian Regional Commission

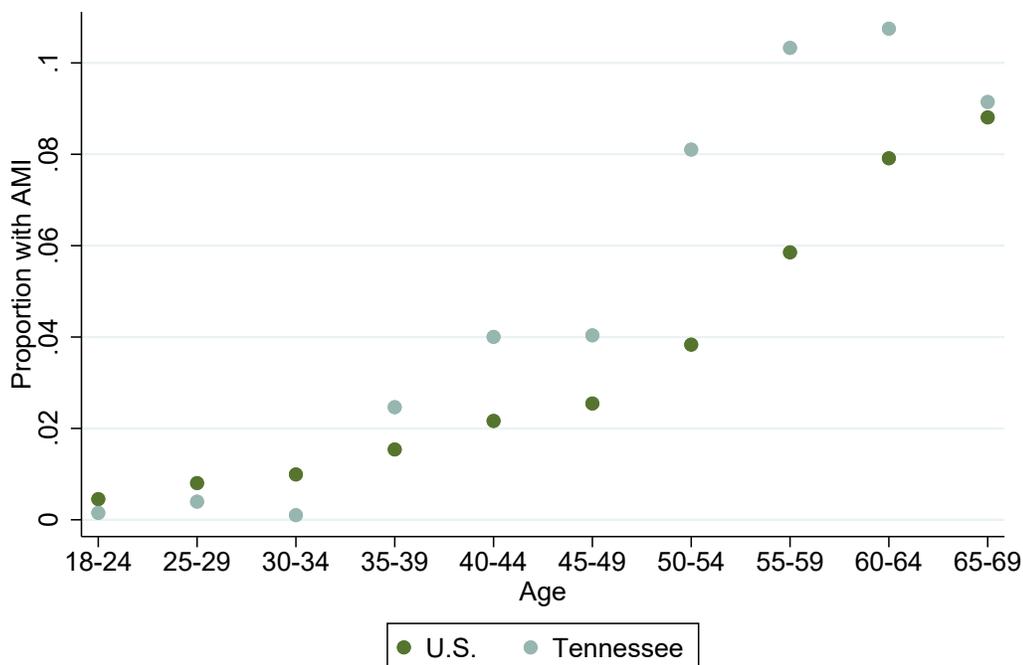
Figure 4.4: Proportion of Population in Poor Health in Last 30 Days



Source: Appalachian Regional Commission

### 4.3. THE CASE FOR POOR HEALTH BEING AN ECONOMIC DRAG ON TENNESSEE, CONTINUED

Figure 4.5: Proportion with an Acute Myocardial Infarction, by Age Group



Source: Appalachian Regional Commission

income for Tennesseans begins to fall sharply, compared to the national average. Therefore, we see that for a variety of factors, including health, older working-age Tennesseans are participating in the labor force at lower-than-expected rates, and earning relatively less when they are working. While there are several candidate mechanisms for sharper-than-average decline, earlier-than-average declines in health—particularly in a state in the bottom 10 in health rankings, are worth considering.

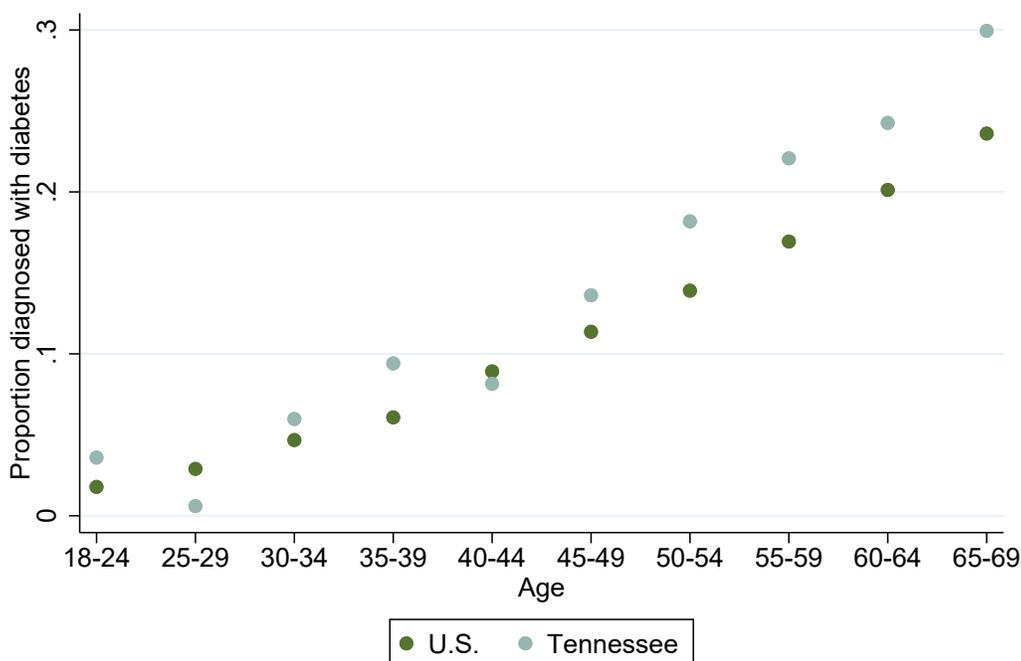
So, what evidence is there to link these lifecycle patterns to health? **Figure 4.4** plots the proportion of individuals in each age band reporting at least one day of poor health during the last 30 days. It is important to note that poor health is defined as a lack of functionality in some way, rather than having a mild acute illness. Compare the lifecycle patterns of Tennesseans (relative to the U.S.) in **Figure 4.4** with labor force participation patterns in **Figure 4.2**. For much of the early life (ages 30-44) individuals in Tennessee and the U.S. respond with similar rates. When Tennessee and the U.S. di-

verge later in life, the differences are virtual mirror images with one key distinction: the divergence in experiencing poor health days occurs at about five years of age younger than the drop off in employment outcomes. Between ages 45-49, Tennesseans begin disproportionately reporting days with poor health – by ages 50-54, they begin disproportionately selecting out of the labor force. The timing of this is consistent with health being a determining factor that nudges workers in Tennessee out of the labor force.

We may be also interested in specific health conditions that can explain the early exits from the labor force and lost income during peak earning years. One of the features of BRFSS is that it provides information on several chronic conditions that are most likely to subtract individuals from the labor force. For example, **Figure 4.5** depicts the number of individuals who has ever had an AMI (acute myocardial infarction – heart attack) by age group. While at virtually all age groups, heart attacks in Tennessee are more prevalent than the na-

### 4.3. THE CASE FOR POOR HEALTH BEING AN ECONOMIC DRAG ON TENNESSEE, CONTINUED

Figure 4.6: Prevalence of Diabetes by Age Group



Source: Appalachian Regional Commission

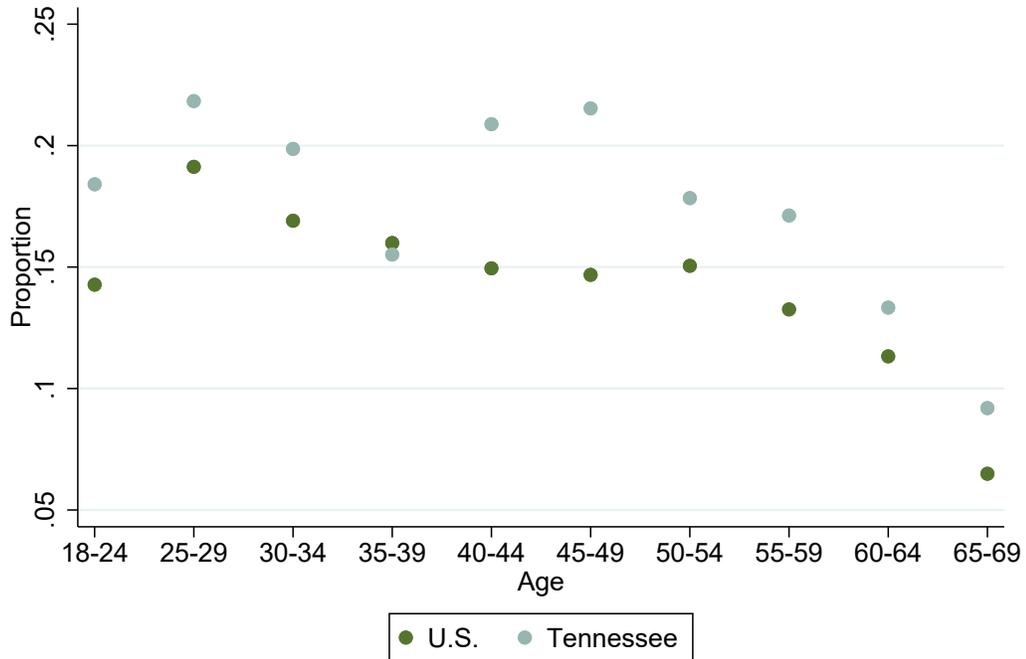
tional average, the difference rapidly grows around age 50 when the differences in labor force participation and income become most pronounced. However, the magnitudes of these differences indicate they are insufficient to fully explain the decline in labor market outcomes. For example, between ages 55-59, Tennesseans are 4 percentage points more likely to have had a heart attack. Even if all heart attacks removed individuals permanently from the labor force (which we know is not the case), heart attacks would only explain 40 percent of the TN-U.S. difference in labor force participation. However, heart disease in general, even if insufficient to cause a heart attack, is hard on individuals, reducing energy and making it more difficult to be engaged productively in the labor force. To the extent to which prevalence of AMIs are a signal of generally poor cardiovascular health, heart disease may, in fact, be a key contributing factor to the worse labor market outcomes faced by older Tennesseans.

**Figure 4.6** depicts the proportion of the population diagnosed with diabetes by age group.

In this case, we are mainly interested in differences between Tennessee and the U.S. from ages 50 on – because most of those cases are type 2 diabetes – which are preventable. (Juvenile diabetes, or Type 1 diabetes, is hereditary and cannot be prevented. However, recent years have seen increased incidence of adult onset Type 1 diabetes. The factors behind these changes are not yet well understood.) While well-controlled diabetes may not be sufficient to remove someone from the labor force, poorly controlled diabetes (and the resulting complications thereof) can be debilitating. For diabetes and other chronic conditions, access to care is a crucial factor for maintaining the health status necessary for productive engagement in the labor force. To that end, **Figure 4.7** reports the proportion of individuals in each age band who were unable to see a doctor during the last 12 months because of cost. While Tennessee generally exhibits higher rates of cost-barriers-to-care than other states in all age groups, note that these differences are particularly pronounced for individuals aged

### 4.3. THE CASE FOR POOR HEALTH BEING AN ECONOMIC DRAG ON TENNESSEE, CONTINUED

Figure 4.7: Proportion of Individuals Who Report They are Unable to See a Doctor because of Cost



Source: Appalachian Regional Commission

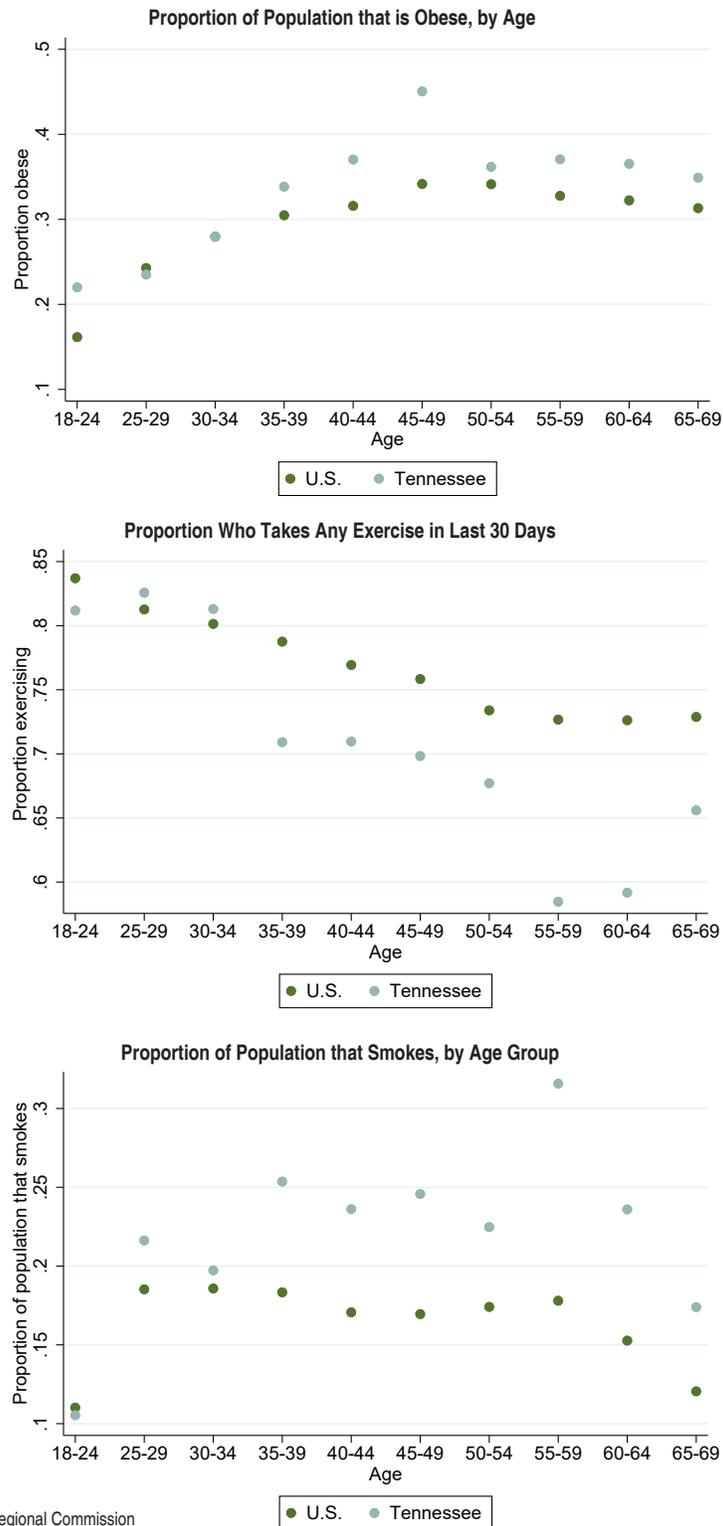
40-50 years— or the decade immediately preceding the disproportionate labor force exits.

We may also be interested in the health behaviors that generate these conditions. In what areas might primary prevention interventions/nudges be most necessary to prevent chronic illness? While most of this is well trodden ground, it bears repeating. **Figure 4.8** depicts rates of obesity, sedentarity (not exercising) and smoking rates by age. For almost all ages, Tennesseans are more likely to smoke than the U.S. average. Additionally, from ages 35-54, Tennesseans are much less likely to exercise than the U.S. average. Together, with obesity rates approximately 15 percent higher than the national average during the midlife, these factors are a recipe for early onset of heart disease, diabetes, and other chronic conditions that, without access to care, can remove individuals from the labor force, the tax base, and the engine of economic growth during the prime of their working years.

All together, these pictures tell a compelling story: compared to the U.S. average, Tennesseans are more likely to smoke, less likely to exercise, and more likely to become obese. By the middle of their working lives, Tennesseans are more likely to have heart disease and/or diabetes, and are at a greater risk for heart attacks. During this time, Tennesseans also face higher barriers to care on the basis of cost and other factors (i.e., hospital closures). By age 50, they are less likely to participate in the labor force, and earn less money than the national average for their cohort when they do. This reduced income leads to substantial economic losses for the state, even in an era of strong economic growth. In fact, the opportunity costs of poor health among older workers may be particularly high when the labor market is tight. Having made the case that health and labor market outcomes are linked, statistically, at the individual level, we turn to the relationship between health and access to health care and economic growth.

### 4.3. THE CASE FOR POOR HEALTH BEING AN ECONOMIC DRAG ON TENNESSEE, CONTINUED

Figure 4.8: Differences in Determinants of Chronic Illness by Age Group



#### 4.4. COUNTY LEVEL RELATIONSHIPS BETWEEN HEALTH AND ECONOMIC GROWTH – TENNESSEE AND THE U.S.

While the relationship between health, employment, and income over the lifecycle is a useful starting point to motivate the relationship between health, access to care, and economic growth, the above analysis is incomplete in multiple ways. First, if the above relationships are true between Tennessee and the rest of the U.S., they should hold within Tennessee as well. More generally, how true are these relationships between *counties* across the U.S.? Second, the above is a snapshot of Tennessee and the U.S. for 2018. However, that doesn't take into consideration how these factors affect changes in overall economic activity.

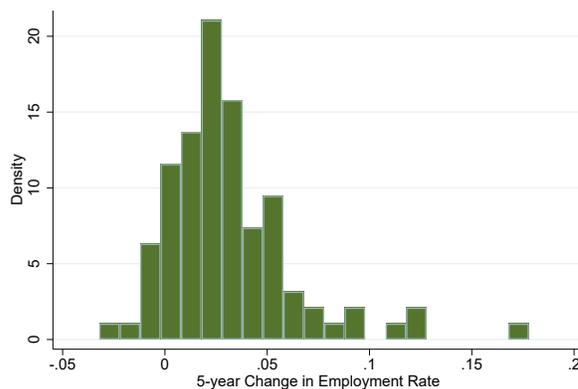
In this section, we examine correlational relationship between health, access to care, and economic growth at the county level from 2013–2018 using multiple data sources. First, we use data from the Appalachian Regional Commission (ARC), which has compiled data from several sources on incidence of disease and mortality rates attributable to specific conditions from CDC-WONDER and County Health Rankings. Second, as our proxy for economic growth, we use data on county-level total employment from Bureau of Labor Statistics' Local Area Unemployment Statistics (LAUS). Because the timing of the health data from ARC is somewhat varied,

but mostly occurs between 2013 and 2018, those are the years we use from LAUS as well.

**Figures 4.9 and 4.10** show that there is considerable variation in both employment growth and heart disease mortality in Tennessee counties. Heart disease mortality rates range from 15 per 100,000 to 35 per 10,000. There is also considerable variation in employment rate growth during the five-year span.

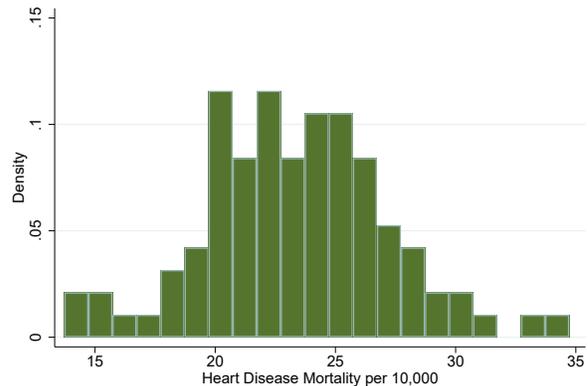
**Figure 4.9** plots change in total employment rates from 2013–2018 and heart disease mortality for each of the 95 counties in Tennessee. Because the points overall depict a negative, but somewhat noisy relationship, **Figure 4.11** also includes a linear trend line. While the relationship cannot be interpreted causally, all else equal, 100 fewer heart disease deaths per 100,000 is associated with a 2 percentage point increase in employment growth in a given county. **Figure 4.10** demonstrates that although that relationship is stronger in Tennessee than the rest of the U.S., it is not *confined* to Tennessee. Because the scatterplots for all 3000+ counties in the U.S. can be difficult to interpret, we collapse counties for Tennessee and the U.S. into clusters with each dot on the graph representing 5 percent of counties (five per dot in Tennessee, and 60 per dot for the U.S.). What **Figure 4.12**

**Figure 4.9: Distribution of Employment Growth in Tennessee Counties**



Source: Bureau of Labor Statistics

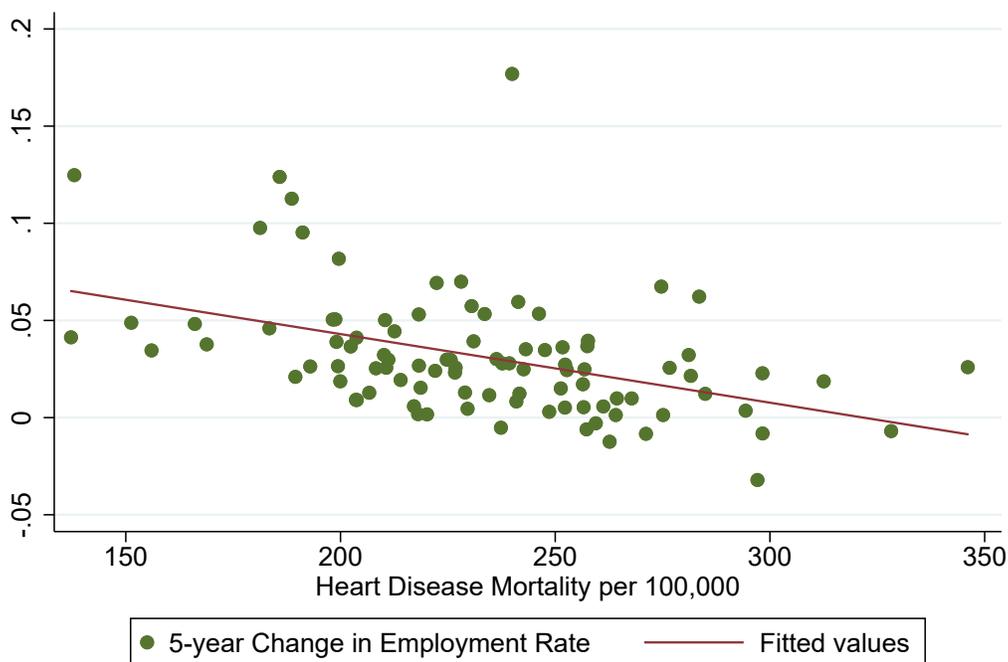
**Figure 4.10: Distribution of Heart Disease Rates in Tennessee Counties**



Source: Bureau of Labor Statistics

#### 4.4. COUNTY LEVEL RELATIONSHIPS BETWEEN HEALTH AND ECONOMIC GROWTH – TENNESSEE AND THE U.S., CONTINUED

Figure 4.11: Employment Growth is Stronger in Heart-Healthy Counties



Source: Appalachian Regional Commission, Bureau of Labor Statistics and Centers for Disease Control.

conveys is that greater incidence of heart disease is linked to slower employment growth in both Tennessee and the U.S. It bears repeating that this relationship is not in any way causal, but reflects other factors such as education and other comorbidities that are likely correlated with heart disease mortality at the county level. Nevertheless, the overarching trend is that employment growth (and by proxy, economic development) is stronger in areas where individuals are in better cardiovascular health.

**Figure 4.13** depicts a similar relationship between change in total employment and obesity. Generally, this relationship between health and employment growth at the county level holds for other conditions sufficiently common to be a signal of population health in that county (e.g., smoking rates, physical inactivity, diabetes, etc.) For other, less common conditions (e.g., COPD mortality), the relationship is less pronounced as that particular condition may not be indicative

of overall county health.

By contrast, access to care is positively linked to economic growth at the county level, both in Tennessee and across the U.S. **Figure 4.14** shows that the number of primary care doctors per-capita is linked with greater growth in total employment. There are several possible mechanisms through which this relationship can operate. First, access to care may help keep workers healthy and productive. This relationship is especially important in rural areas where access to care is most likely to be limited. Second, the presence of adequate health services is likely to be a desirable feature for both businesses (who want healthy workers) potentially looking to expand or relocate, and also the workers themselves. Finally, health care is in and of itself a viable source of employment and can lead to some economic growth. Therefore, attempts to increase access to care are likely to yield benefits for employment and growth through multiple mechanisms.

### 4.4. COUNTY LEVEL RELATIONSHIPS BETWEEN HEALTH AND ECONOMIC GROWTH – TENNESSEE AND THE U.S., CONTINUED

Figure 4.12: Across Tennessee and the U.S., Lower Heart Disease is Linked to Stronger Employment Growth

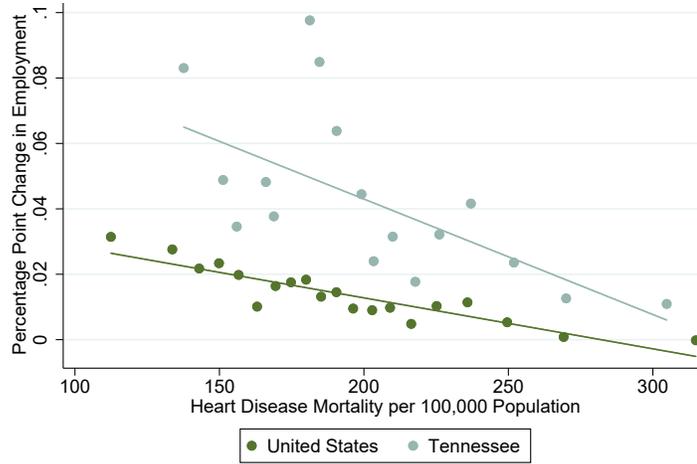


Figure 4.13: Across Tennessee and the U.S., Lower Obesity Rates are Linked to Stronger Economic Growth

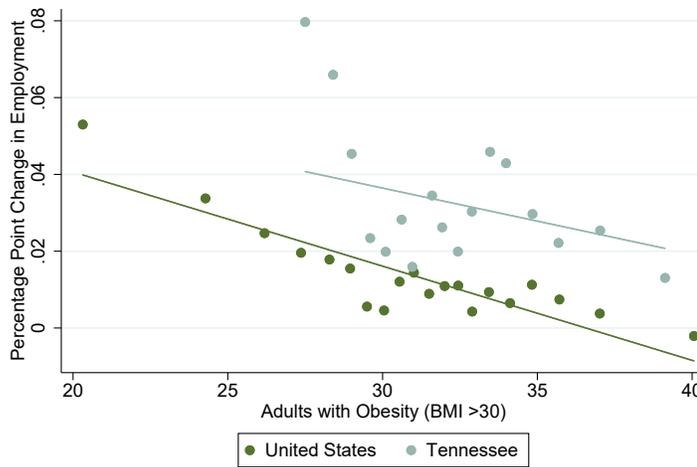
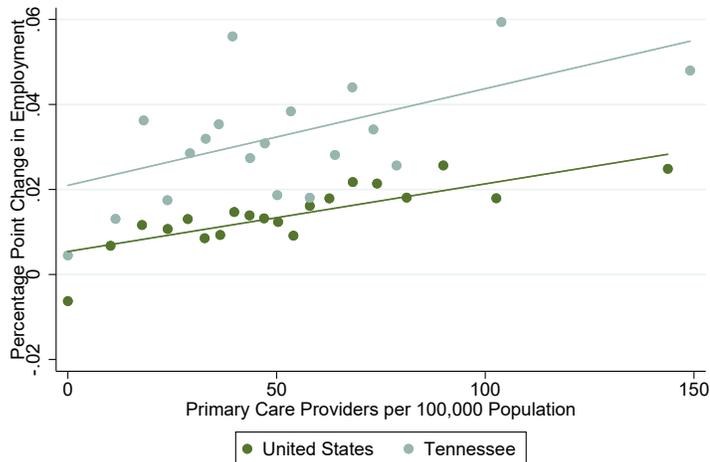


Figure 4.14: Improved Access to Primary Care is Linked to Stronger Employment Growth



Sources for all figures: Appalachian Regional Commission, Bureau of Labor Statistics and Centers for Disease Control.

## 4.5. CONCLUSION

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Tennessee has a long history of relatively poor health, but strong economic growth. While the state has taken considerable measures to improve population health, there is much work to be done to understand what kinds of interventions work in this state and what services will have the most impact. With health care expenditures—particularly when managing chronic conditions—at stratospheric levels, poor health provides a strong economic disincentive for employers looking to relocate or expand their ranks. This especially likely to hold in rural areas

where there is a smaller pool of potential employees from which to choose.

In this chapter, we have drawn linkages between environment and community, access to care, education, and population health. We have illustrated the relationship between health and labor force engagement, and health and economic growth at the state and county level. Tennessee has a lot to offer as a business location. However, taking steps to improve the health of the population over the next generation will be critical for unlocking the Tennessee’s full economic potential.

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QUARTERLY  
ANNUAL

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Table 1: Selected U.S. and Tennessee Economic Indicators, Seasonally Adjusted

January 2020

	History		Forecast Data										Annual			
	2019:2	2019:3	2019:4	2020:1	2020:2	2020:3	2020:4	2021:1	2021:2	2021:3	2021:4	2022:1	2018	2019	2020	2021
US GDP (Bil2012\$) SAAR.....	19021.9	19112.5	19183.9	19286.5	19408.0	19515.9	19621.7	19720.0	19808.0	19885.9	19968.5	20049.8	18638.2	19061.4	19458.0	19845.6
% Chg Prev Qtr SAAR.....	2.01	1.92	1.50	2.16	2.54	2.24	2.19	2.02	1.80	1.58	1.67	1.64	2.93	2.27	2.08	1.99
% Chg Same Qtr Last Yr.....	2.28	2.03	2.13	1.90	2.03	2.11	2.28	2.25	2.06	1.90	1.77	1.67	2.93	2.27	2.08	1.99
US GDP (Bil\$) SAAR.....	21340.3	21525.8	21730.9	21960.0	22217.0	22456.8	22699.0	22944.7	23182.4	23413.7	23653.0	23893.0	20580.2	21424.0	22333.2	23298.4
% Chg Prev Qtr SAAR.....	4.66	3.52	3.87	4.28	4.76	4.39	4.39	4.40	4.21	4.05	4.15	4.12	5.43	4.10	4.24	4.32
% Chg Same Qtr Last Yr.....	4.05	3.74	3.99	4.08	4.11	4.32	4.46	4.48	4.35	4.26	4.20	4.13	5.43	4.10	4.24	4.32
TN PERSONAL INCOME (MIL2012\$) SAAR....	303139	305432	307060	308839	310770	312534	314637	317025	319136	321374	323851	325968	293594	304215	311695	320346
% Chg Prev Qtr SAAR.....	2.56	3.06	2.15	2.34	2.52	2.29	2.72	3.07	2.69	2.83	3.12	2.64	3.13	3.62	2.46	2.78
% Chg Same Qtr Last Yr.....	3.80	3.33	3.65	2.53	2.52	2.33	2.47	2.65	2.69	2.83	2.93	2.82	3.13	3.62	2.46	2.78
US PERSONAL INCOME (BIL2012\$) SAAR....	16983	17075	17147	17240	17297	17380	17486	17604	17699	17785	17874	17981	16477	17016	17351	17741
% Chg Prev Qtr SAAR.....	2.97	2.20	1.69	2.20	1.33	1.92	2.47	2.72	2.18	1.96	2.02	2.41	3.41	3.27	1.97	2.25
% Chg Same Qtr Last Yr.....	3.46	3.25	3.14	2.26	1.85	1.78	1.98	2.11	2.32	2.33	2.22	2.14	3.41	3.27	1.97	2.25
TN PERSONAL INCOME (MIL\$) SAAR.....	332004	335910	339820	343684	347315	350968	354730	359002	363307	367619	372048	376635	317515	333927	349174	365494
% Chg Prev Qtr SAAR.....	5.00	4.79	4.74	4.63	4.29	4.27	4.36	4.91	4.88	4.83	4.91	5.02	5.29	5.17	4.57	4.67
% Chg Same Qtr Last Yr.....	5.28	4.83	5.46	4.79	4.61	4.48	4.39	4.46	4.60	4.74	4.88	4.91	5.29	5.17	4.57	4.67
US PERSONAL INCOME (BIL\$) SAAR.....	18600	18772	18946	19134	19297	19469	19656	19876	20082	20287	20497	20724	17819	18668	19389	20185
% Chg Prev Qtr SAAR.....	5.43	3.77	3.76	4.02	3.46	3.61	3.89	4.56	4.20	4.15	4.21	4.50	5.57	4.77	3.86	4.11
% Chg Same Qtr Last Yr.....	4.93	4.71	4.78	4.24	3.75	3.71	3.74	3.88	4.07	4.20	4.28	4.26	5.57	4.77	3.86	4.11
TN NONFARM JOBS (THOUS).....	3104.6	3119.0	3125.7	3130.5	3139.1	3141.7	3143.3	3146.4	3151.3	3155.6	3160.5	3165.0	3062.2	3111.2	3138.6	3153.5
% Chg Prev Qtr SAAR.....	1.17	1.87	0.86	0.61	1.10	0.33	0.22	0.38	0.63	0.55	0.62	0.57	1.68	1.60	0.88	0.47
% Chg Same Qtr Last Yr.....	1.67	1.66	1.29	1.13	1.11	0.73	0.56	0.51	0.39	0.44	0.55	0.59	1.68	1.60	0.88	0.47
US NONFARM JOBS (MIL).....	151.1	151.6	152.1	152.6	153.2	153.5	153.7	154.0	154.3	154.6	154.8	154.9	149.1	151.4	153.3	154.4
% Chg Prev Qtr SAAR.....	1.17	1.36	1.32	1.16	1.81	0.56	0.71	0.82	0.77	0.60	0.49	0.38	1.67	1.56	1.23	0.77
% Chg Same Qtr Last Yr.....	1.59	1.48	1.38	1.25	1.41	1.21	1.06	0.97	0.71	0.72	0.67	0.56	1.67	1.56	1.23	0.77
TN MFG JOBS (THOUS).....	356.8	359.1	361.4	361.3	360.9	360.2	359.6	359.1	358.7	358.4	358.2	357.9	350.7	358.2	360.5	358.6
% Chg Prev Qtr SAAR.....	1.41	2.70	2.54	-0.15	-0.43	-0.79	-0.59	-0.63	-0.36	-0.40	-0.23	-0.26	1.29	2.13	0.63	-0.53
% Chg Same Qtr Last Yr.....	2.07	2.06	2.23	1.62	1.15	0.28	-0.49	-0.61	-0.59	-0.50	-0.41	-0.31	1.29	2.13	0.63	-0.53
US MFG JOBS (MIL).....	12.8	12.8	12.8	12.9	12.8	12.7	12.6	12.6	12.5	12.5	12.5	12.5	12.7	12.8	12.7	12.5
% Chg Prev Qtr SAAR.....	0.26	0.34	-0.55	0.57	-1.74	-2.71	-1.88	-2.95	-1.22	-0.21	-0.08	-0.19	2.00	1.18	-0.69	-1.80
% Chg Same Qtr Last Yr.....	1.42	1.03	0.35	0.15	-0.35	-1.12	-1.45	-2.32	-2.19	-1.57	-1.12	-0.43	2.00	1.18	-0.69	-1.80
TN UNEMPLOYMENT RATE (%).....	3.3	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.4	3.5	3.5
US UNEMPLOYMENT RATE (%).....	3.6	3.6	3.5	3.5	3.4	3.4	3.4	3.4	3.5	3.5	3.6	3.7	3.9	3.7	3.4	3.5

(CONTINUED ON NEXT PAGE)

**Table 1: Selected U.S. and Tennessee Economic Indicators, Seasonally Adjusted**

**January 2020**

	History		Forecast Data										Annual			
	2019:2	2019:3	2019:4	2020:1	2020:2	2020:3	2020:4	2021:1	2021:2	2021:3	2021:4	2022:1	2018	2019	2020	2021
CHAINED PRICE INDEX, GDP																
(2012=100.0).....	112.2	112.6	113.3	113.9	114.5	115.1	115.7	116.4	117.0	117.7	118.5	119.2	110.4	112.4	114.8	117.4
% Chg Prev Qtr SAAR.....	2.42	1.66	2.30	2.08	2.17	2.10	2.15	2.33	2.37	2.43	2.44	2.44	2.40	1.83	2.11	2.29
% Chg Same Qtr Last Yr.....	1.78	1.69	1.86	2.11	2.05	2.16	2.12	2.19	2.24	2.32	2.39	2.42	2.40	1.83	2.11	2.29
US PERS CONSUMP DEFL (2012=100.0).....	109.5	109.9	110.5	111.0	111.6	112.0	112.4	112.9	113.5	114.1	114.7	115.3	108.1	109.7	111.7	113.8
% Chg Prev Qtr SAAR.....	2.38	1.53	2.04	1.79	2.10	1.66	1.38	1.79	1.98	2.15	2.15	2.04	2.09	1.45	1.86	1.82
% Chg Same Qtr Last Yr.....	1.42	1.41	1.58	1.93	1.86	1.90	1.73	1.73	1.70	1.82	2.02	2.08	2.09	1.45	1.86	1.82
CONSUMER PRICE INDEX,																
ALL-URBAN (82-84=1.000).....	2.551	2.563	2.578	2.589	2.604	2.613	2.618	2.629	2.643	2.660	2.677	2.692	2.511	2.556	2.606	2.652
% Chg Prev Qtr SAAR.....	2.92	1.79	2.45	1.60	2.44	1.39	0.73	1.68	2.17	2.61	2.60	2.21	2.44	1.81	1.94	1.78
% Chg Same Qtr Last Yr.....	1.82	1.76	2.00	2.19	2.07	1.97	1.54	1.56	1.49	1.79	2.26	2.40	2.44	1.81	1.94	1.78
BANK PRIME INTEREST RATE (%).....	5.5	5.3	4.8	4.7	4.8	4.8	4.8	5.0	5.0	5.3	5.3	5.5	4.9	5.3	4.8	5.1
FEDERAL FUNDS RATE (% per annum).....	2.397	2.190	1.700	1.624	1.625	1.626	1.667	1.877	1.915	2.127	2.152	2.378	1.832	2.172	1.636	2.018
30-YEAR FIXED MORTGAGE RATE (%).....	4.0	3.7	3.7	3.7	3.9	4.0	4.1	4.2	4.3	4.3	4.4	4.5	4.5	3.9	3.9	4.3
TN TAXABLE SALES (MIL2012\$).....	32041	32286	32451	32624	32838	33075	33314	33574	33770	33972	34230	34490	123681	128388	131850	135546
% Chg Prev Qtr SAAR.....	5.57	3.09	2.06	2.15	2.65	2.92	2.92	3.16	2.36	2.41	3.07	3.08	4.58	3.81	2.70	2.80
% Chg Same Qtr Last Yr.....	4.27	4.47	3.21	3.21	2.49	2.44	2.66	2.91	2.84	2.71	2.75	2.73	4.58	3.81	2.70	2.80
TN TAXABLE SALES (MIL\$).....	35092	35507	35913	36305	36699	37142	37559	38019	38444	38861	39324	39851	133758	140929	147704	154648
% Chg Prev Qtr SAAR.....	8.08	4.82	4.65	4.43	4.42	4.91	4.56	5.00	4.55	4.40	4.86	5.47	6.76	5.36	4.81	4.70
% Chg Same Qtr Last Yr.....	5.75	5.98	5.01	5.49	4.58	4.60	4.58	4.72	4.75	4.63	4.70	4.82	6.76	5.36	4.81	4.70
TN AVG ANNUAL WAGE, NONFARM																
(2012\$).....	47922	47906	47909	48014	48209	48342	48542	48771	48936	49126	49351	49496	47014	47878	48277	49046
% Chg Prev Qtr SAAR.....	1.22	-0.13	0.03	0.88	1.64	1.11	1.66	1.90	1.36	1.57	1.84	1.18	1.27	1.84	0.83	1.59
% Chg Same Qtr Last Yr.....	2.32	1.29	2.15	0.50	0.60	0.91	1.32	1.58	1.51	1.62	1.67	1.49	1.27	1.84	0.83	1.59
TN AVG ANNUAL WAGE, NONFARM (\$)......	52485	52686	53021	53431	53878	54287	54727	55228	55709	56195	56695	57190	50843	52552	54081	55957
% Chg Prev Qtr SAAR.....	3.63	1.54	2.57	3.13	3.39	3.07	3.28	3.72	3.53	3.54	3.60	3.54	3.38	3.36	2.91	3.47
% Chg Same Qtr Last Yr.....	3.77	2.75	3.93	2.72	2.65	3.04	3.22	3.36	3.40	3.52	3.60	3.55	3.38	3.36	2.91	3.47

Boyd Center for Business and Economic Research, University of Tennessee

Tennessee Econometric Model

**Table 2: Selected Per Capita U.S. and Tennessee Economic Indicators, Seasonally Adjusted** **January 2020**

	History		Forecast Data										Annual			
	2019:2	2019:3	2019:4	2020:1	2020:2	2020:3	2020:4	2021:1	2021:2	2021:3	2021:4	2022:1	2018	2019	2020	2021
US GDP (2012\$) SAAR.....	57684	57856	57969	58176	58439	58660	58875	59066	59226	59356	59499	59638	56873	57753	58538	59287
% Chg Prev Qtr SAAR.....	1.29	1.20	0.78	1.44	1.82	1.52	1.47	1.31	1.09	0.88	0.97	0.94	2.28	1.55	1.36	1.28
% Chg Same Qtr Last Yr.....	1.55	1.30	1.41	1.18	1.31	1.39	1.56	1.53	1.35	1.19	1.06	0.97	2.28	1.55	1.36	1.28
US GDP (\$) SAAR.....	64715	65161	65665	66240	66897	67500	68108	68725	69316	69885	70477	71070	62799	64911	67188	69602
% Chg Prev Qtr SAAR.....	3.91	2.79	3.13	3.55	4.03	3.65	3.65	3.67	3.48	3.33	3.43	3.40	4.77	3.36	3.51	3.59
% Chg Same Qtr Last Yr.....	3.30	3.00	3.25	3.34	3.37	3.59	3.72	3.75	3.62	3.53	3.48	3.41	4.77	3.36	3.51	3.59
TN PERSONAL INCOME (2012\$) SAAR.....	44449	44692	44837	45005	45194	45358	45572	45826	46040	46272	46537	46751	43370	44560	45282	46169
% Chg Prev Qtr SAAR.....	1.70	2.20	1.31	1.50	1.69	1.46	1.90	2.25	1.88	2.03	2.32	1.85	2.24	2.74	1.62	1.96
% Chg Same Qtr Last Yr.....	2.92	2.46	2.79	1.68	1.67	1.49	1.64	1.83	1.87	2.01	2.12	2.02	2.24	2.74	1.62	1.96
US PERSONAL INCOME (2012\$) SAAR.....	51500	51689	51814	52003	52083	52239	52467	52728	52921	53085	53259	53484	50278	51555	52198	52998
% Chg Prev Qtr SAAR.....	2.24	1.48	0.97	1.47	0.61	1.20	1.76	2.00	1.47	1.25	1.31	1.70	2.76	2.54	1.25	1.53
% Chg Same Qtr Last Yr.....	2.73	2.52	2.41	1.54	1.13	1.06	1.26	1.39	1.61	1.62	1.51	1.43	2.76	2.54	1.25	1.53
TN PERSONAL INCOME (\$) SAAR.....	48682	49152	49621	50082	50508	50936	51379	51894	52412	52930	53463	54017	46904	48912	50726	52675
% Chg Prev Qtr SAAR.....	4.12	3.92	3.87	3.77	3.45	3.43	3.52	4.07	4.05	4.01	4.09	4.21	4.37	4.28	3.71	3.84
% Chg Same Qtr Last Yr.....	4.38	3.94	4.58	3.92	3.75	3.63	3.54	3.62	3.77	3.91	4.06	4.09	4.37	4.28	3.71	3.84
US PERSONAL INCOME (\$) SAAR.....	56404	56827	57251	57716	58105	58519	58977	59534	60044	60552	61074	61642	54374	56562	58330	60302
% Chg Prev Qtr SAAR.....	4.68	3.03	3.02	3.28	2.73	2.88	3.16	3.83	3.48	3.42	3.49	3.78	4.91	4.02	3.13	3.38
% Chg Same Qtr Last Yr.....	4.19	3.96	4.03	3.50	3.02	2.98	3.01	3.15	3.34	3.47	3.56	3.54	4.91	4.02	3.13	3.38
TN TAXABLE SALES (2012\$).....	4698	4724	4739	4754	4775	4800	4825	4853	4872	4891	4919	4947	18270	18806	19155	19535
% Chg Prev Qtr SAAR.....	4.68	2.23	1.22	1.31	1.81	2.09	2.10	2.34	1.55	1.61	2.27	2.28	3.67	2.93	1.86	1.99
% Chg Same Qtr Last Yr.....	3.39	3.59	2.34	2.35	1.64	1.61	1.83	2.08	2.02	1.90	1.94	1.93	3.67	2.93	1.86	1.99
TN TAXABLE SALES (\$).....	5146	5196	5244	5290	5337	5390	5440	5496	5546	5595	5651	5716	19759	20642	21458	22288
% Chg Prev Qtr SAAR.....	7.18	3.95	3.79	3.58	3.57	4.07	3.73	4.16	3.72	3.59	4.04	4.65	5.84	4.47	3.95	3.87
% Chg Same Qtr Last Yr.....	4.85	5.09	4.13	4.61	3.72	3.75	3.73	3.88	3.92	3.80	3.88	4.00	5.84	4.47	3.95	3.87

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**Table 3: Tennessee Personal Income Components, Seasonally Adjusted Annual Rates (millions of 2012 dollars)**

**January 2020**

	History		Forecast Data										Annual				
	2019:1	2019:2	2019:3	2019:4	2020:1	2020:2	2020:3	2020:4	2021:1	2021:2	2021:3	2021:4	2022:1	2018	2019	2020	2021
TN PERSONAL INCOME.....	301229	303139	305432	307060	308839	310770	312534	314637	317025	319136	321374	323851	325968	293594	304215	311695	320346
% Chg Prev Qtr SAAR.....	6.92	2.56	3.06	2.15	2.34	2.52	2.29	2.72	3.07	2.69	2.83	3.12	2.64	3.13	3.62	2.46	2.78
% Chg Same Qtr Last Yr.....	3.68	3.80	3.33	3.65	2.53	2.52	2.33	2.47	2.65	2.69	2.83	2.93	2.82	3.13	3.62	2.46	2.78
WAGES AND SALARIES.....	148784	149668	150311	150637	151194	152219	152760	153468	154334	155095	155905	156854	157532	144842	149850	152410	155547
% Chg Prev Qtr SAAR.....	8.98	2.40	1.73	0.87	1.48	2.74	1.43	1.87	2.28	1.99	2.11	2.46	1.74	2.97	3.46	1.71	2.06
% Chg Same Qtr Last Yr.....	3.41	4.02	2.96	3.45	1.62	1.70	1.63	1.88	2.08	1.89	2.06	2.21	2.07	2.97	3.46	1.71	2.06
OTHER LABOR INCOME.....	31531	31688	31846	32071	32575	32607	32922	33187	33427	33673	33859	34104	34264	30853	31784	32823	33766
% Chg Prev Qtr SAAR.....	4.89	2.00	2.00	2.86	6.43	0.40	3.93	3.25	2.92	2.97	2.24	2.93	1.88	2.38	3.02	3.27	2.87
% Chg Same Qtr Last Yr.....	3.72	3.20	2.24	2.93	3.31	2.90	3.38	3.48	2.62	3.27	2.85	2.76	2.50	2.38	3.02	3.27	2.87
PROPRIETORS INCOME.....	41065	41073	41300	41835	41973	42176	42425	42811	43065	43344	43720	44044	44373	40120	41318	42346	43543
% Chg Prev Qtr SAAR.....	3.97	0.08	2.23	5.28	1.32	1.95	2.39	3.69	2.39	2.62	3.51	3.00	3.02	0.93	2.99	2.49	2.83
% Chg Same Qtr Last Yr.....	3.44	3.11	2.53	2.87	2.21	2.69	2.72	2.33	2.60	2.77	3.05	2.88	3.04	0.93	2.99	2.49	2.83
RENT, INTEREST, DIVIDENDS.....	44318	44925	45062	45099	45098	45202	45376	45594	45837	46084	46361	46705	46997	44250	44851	45318	46247
% Chg Prev Qtr SAAR.....	-3.95	5.59	1.23	0.33	-0.01	0.93	1.55	1.93	2.15	2.17	2.43	3.00	2.53	5.91	1.36	1.04	2.05
% Chg Same Qtr Last Yr.....	1.70	1.92	1.09	0.74	1.76	0.62	0.70	1.10	1.64	1.95	2.17	2.44	2.53	5.91	1.36	1.04	2.05
TRANSFER PAYMENTS.....	60698	61079	62301	62825	63462	64121	64675	65287	66145	66776	67426	68127	68846	57998	61726	64386	67119
% Chg Prev Qtr SAAR.....	15.61	2.54	8.24	3.41	4.12	4.22	3.50	3.83	5.36	3.87	3.95	4.22	4.29	2.97	6.43	4.31	4.24
% Chg Same Qtr Last Yr.....	5.78	5.58	7.00	7.33	4.55	4.98	3.81	3.92	4.23	4.14	4.25	4.35	4.08	2.97	6.43	4.31	4.24
LESS: PERS CONT FOR SOC INS.....	23396	23504	23590	23607	23656	23742	23804	23882	23946	23991	24047	24123	24177	22772	23524	23771	24027
% Chg Prev Qtr SAAR.....	10.95	1.86	1.48	0.29	0.84	1.45	1.05	1.32	1.07	0.76	0.93	1.28	0.90	1.86	3.31	1.05	1.08
% Chg Same Qtr Last Yr.....	2.84	3.76	3.07	3.56	1.11	1.01	0.90	1.16	1.22	1.05	1.02	1.01	0.97	1.86	3.31	1.05	1.08
RESIDENCE ADJUSTMENT.....	-1771	-1790	-1798	-1801	-1805	-1813	-1821	-1828	-1837	-1845	-1851	-1859	-1866	-1696	-1790	-1817	-1848
% Chg Prev Qtr SAAR.....	13.37	4.45	1.72	0.64	0.93	1.82	1.73	1.54	1.93	1.80	1.43	1.63	1.51	4.85	5.52	1.50	1.72
% Chg Same Qtr Last Yr.....	7.16	7.48	2.70	4.93	1.93	1.28	1.28	1.51	1.76	1.75	1.68	1.70	1.59	4.85	5.52	1.50	1.72
PER CAPITA PERSONAL INCOME (\$).....	44262	44449	44692	44837	45005	45194	45358	45572	45826	46040	46272	46537	46751	43370	44560	45282	46169
% Chg Prev Qtr SAAR.....	6.01	1.70	2.20	1.31	1.50	1.69	1.46	1.90	2.25	1.88	2.03	2.32	1.85	2.24	2.74	1.62	1.96
% Chg Same Qtr Last Yr.....	2.80	2.92	2.46	2.79	1.68	1.67	1.49	1.64	1.83	1.87	2.01	2.12	2.02	2.24	2.74	1.62	1.96

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**Table 4: Tennessee Personal Income Components, Seasonally Adjusted Annual Rates (millions of current dollars) January 2020**

	History		Forecast Data											Annual			
	2019:1	2019:2	2019:3	2019:4	2020:1	2020:2	2020:3	2020:4	2021:1	2021:2	2021:3	2021:4	2022:1	2018	2019	2020	2021
TN PERSONAL INCOME.....	327975	332004	335910	339820	343684	347315	350968	354730	359002	363307	367619	372048	376635	317515	333927	349174	365494
% Chg Prev Qtr SAAR.....	7.34	5.00	4.79	4.74	4.63	4.29	4.27	4.36	4.91	4.88	4.83	4.91	5.02	5.29	5.17	4.57	4.67
% Chg Same Qtr Last Yr.....	5.11	5.28	4.83	5.46	4.79	4.61	4.48	4.39	4.46	4.60	4.74	4.88	4.91	5.29	5.17	4.57	4.67
WAGES AND SALARIES.....	161994	163920	165310	166709	168252	170119	171545	173024	174769	176561	178340	180197	182018	156641	164483	170735	177467
% Chg Prev Qtr SAAR.....	9.41	4.84	3.44	3.43	3.75	4.51	3.40	3.49	4.10	4.16	4.09	4.23	4.10	5.13	5.01	3.80	3.94
% Chg Same Qtr Last Yr.....	4.84	5.50	4.45	5.25	3.86	3.78	3.77	3.79	3.87	3.79	3.96	4.15	4.15	5.13	5.01	3.80	3.94
OTHER LABOR INCOME.....	34331	34705	35023	35493	36250	36441	36971	37416	37853	38333	38732	39180	39590	33367	34888	36769	38525
% Chg Prev Qtr SAAR.....	5.30	4.43	3.72	5.47	8.81	2.13	5.94	4.90	4.76	5.17	4.22	4.71	4.25	4.53	4.56	5.39	4.77
% Chg Same Qtr Last Yr.....	5.15	4.67	3.71	4.73	5.59	5.00	5.56	5.42	4.42	5.19	4.76	4.71	4.59	4.53	4.56	5.39	4.77
PROPRIETORS INCOME.....	44711	44984	45421	46299	46708	47135	47642	48267	48767	49343	50011	50599	51270	43389	45354	47438	49680
% Chg Prev Qtr SAAR.....	4.38	2.46	3.95	7.95	3.59	3.71	4.37	5.35	4.21	4.81	5.53	4.78	5.41	3.04	4.53	4.60	4.73
% Chg Same Qtr Last Yr.....	4.86	4.58	4.01	4.67	4.47	4.78	4.89	4.25	4.41	4.68	4.97	4.83	5.13	3.04	4.53	4.60	4.73
RENT, INTEREST, DIVIDENDS..	48253	49202	49559	49911	50186	50518	50957	51404	51906	52463	53033	53655	54302	47856	49231	50766	52764
% Chg Prev Qtr SAAR.....	-3.57	8.10	2.93	2.87	2.23	2.67	3.52	3.56	3.97	4.36	4.42	4.78	4.91	8.13	2.87	3.12	3.94
% Chg Same Qtr Last Yr.....	3.10	3.36	2.55	2.50	4.01	2.67	2.82	2.99	3.43	3.85	4.07	4.38	4.61	8.13	2.87	3.12	3.94
TRANSFER PAYMENTS.....	66087	66895	68518	69528	70622	71662	72629	73606	74903	76019	77129	78266	79547	62723	67757	72130	76579
% Chg Prev Qtr SAAR.....	16.06	4.98	10.06	6.03	6.44	6.02	5.51	5.49	7.24	6.09	5.97	6.03	6.71	5.13	8.03	6.45	6.17
% Chg Same Qtr Last Yr.....	7.24	7.08	8.54	9.20	6.86	7.12	6.00	5.87	6.06	6.08	6.20	6.33	6.20	5.13	8.03	6.45	6.17
LESS: PERS CONT FOR SOC II	25473	25742	25944	26126	26325	26534	26731	26925	27117	27312	27507	27714	27935	24626	25821	26629	27412
% Chg Prev Qtr SAAR.....	11.39	4.29	3.18	2.83	3.09	3.20	3.01	2.94	2.87	2.91	2.89	3.04	3.24	3.99	4.85	3.13	2.94
% Chg Same Qtr Last Yr.....	4.26	5.23	4.56	5.37	3.35	3.07	3.03	3.06	3.00	2.93	2.90	2.93	3.02	3.99	4.85	3.13	2.94
RESIDENCE ADJUSTMENT.....	-1928	-1961	-1977	-1993	-2009	-2026	-2045	-2061	-2080	-2100	-2118	-2136	-2156	-1835	-1965	-2035	-2108
% Chg Prev Qtr SAAR.....	13.81	6.94	3.43	3.19	3.19	3.58	3.70	3.16	3.75	3.97	3.40	3.39	3.87	7.05	7.10	3.58	3.60
% Chg Same Qtr Last Yr.....	8.64	9.00	4.19	6.76	4.18	3.35	3.41	3.41	3.55	3.64	3.57	3.63	3.66	7.05	7.10	3.58	3.60
PER CAPITA PERSONAL INCOME	48192	48682	49152	49621	50082	50508	50936	51379	51894	52412	52930	53463	54017	46904	48912	50726	52675
% Chg Prev Qtr SAAR.....	6.43	4.12	3.92	3.87	3.77	3.45	3.43	3.52	4.07	4.05	4.01	4.09	4.21	4.37	4.28	3.71	3.84
% Chg Same Qtr Last Yr.....	4.21	4.38	3.94	4.58	3.92	3.75	3.63	3.54	3.62	3.77	3.91	4.06	4.09	4.37	4.28	3.71	3.84

**Table 5: Tennessee Nonfarm Employment by Sector, Not Seasonally Adjusted (thousands of jobs)**

**January 2020**

	History		Forecast Data										Annual			
	2019:2	2019:3	2019:4	2020:1	2020:2	2020:3	2020:4	2021:1	2021:2	2021:3	2021:4	2022:1	2018	2019	2020	2021
TOTAL NONFARM.....	3105.6	3111.6	3155.3	3108.8	3140.1	3134.2	3173.1	3124.5	3152.4	3148.2	3190.5	3143.0	3060.3	3111.7	3139.1	3153.9
% Chg Same Qtr Last Yr.....	1.73	1.68	1.28	1.12	1.11	0.73	0.57	0.50	0.39	0.45	0.55	0.59	1.63	1.68	0.88	0.47
NATURAL RESOURCES, MINING & CONSTRUCTION...	132.3	131.3	130.5	127.6	129.8	130.7	129.9	127.2	129.7	131.0	130.7	128.3	129.2	130.8	129.5	129.7
% Chg Same Qtr Last Yr.....	2.66	-0.61	-1.70	-1.09	-1.93	-0.45	-0.44	-0.27	-0.01	0.25	0.60	0.83	3.86	1.25	-0.98	0.15
MANUFACTURING.....	357.1	359.7	361.3	360.5	361.2	360.7	359.5	358.3	359.0	359.0	358.0	357.2	350.7	358.2	360.5	358.6
% Chg Same Qtr Last Yr.....	2.06	2.08	2.22	1.62	1.15	0.28	-0.49	-0.61	-0.59	-0.50	-0.41	-0.31	1.29	2.14	0.63	-0.53
DURABLE GOODS.....	228.7	230.8	232.4	232.3	232.5	232.0	231.2	230.8	230.9	230.7	230.2	230.1	224.3	229.9	232.0	230.7
% Chg Same Qtr Last Yr.....	2.31	2.44	2.77	2.03	1.65	0.52	-0.53	-0.64	-0.66	-0.55	-0.43	-0.30	1.00	2.52	0.91	-0.57
NONDURABLE GOODS.....	128.4	128.9	128.8	128.3	128.7	128.7	128.3	127.5	128.1	128.2	127.8	127.1	126.5	128.3	128.5	127.9
% Chg Same Qtr Last Yr.....	1.61	1.44	1.24	0.88	0.28	-0.15	-0.41	-0.56	-0.48	-0.40	-0.36	-0.34	1.80	1.46	0.15	-0.45
TRADE, TRANSPORTATION, UTILITIES.....	632.7	632.0	642.3	626.4	628.2	627.8	637.4	622.0	624.7	623.1	632.8	617.3	627.2	634.0	629.9	625.7
% Chg Same Qtr Last Yr.....	1.58	0.96	0.00	-0.44	-0.71	-0.67	-0.75	-0.69	-0.56	-0.74	-0.72	-0.76	1.21	1.09	-0.65	-0.68
WHOLESALE TRADE.....	120.1	119.6	120.0	118.7	118.9	119.2	119.5	118.5	118.8	119.0	119.2	118.0	119.7	120.1	119.1	118.9
% Chg Same Qtr Last Yr.....	0.53	-0.19	-0.85	-1.57	-1.05	-0.32	-0.41	-0.16	-0.07	-0.22	-0.27	-0.47	1.31	0.36	-0.84	-0.18
RETAIL TRADE.....	338.4	337.8	343.9	333.8	335.0	333.2	339.1	329.6	331.4	328.8	335.0	326.0	337.6	339.1	335.3	331.2
% Chg Same Qtr Last Yr.....	0.55	0.66	-0.40	-0.72	-1.01	-1.37	-1.40	-1.26	-1.07	-1.30	-1.20	-1.09	0.48	0.43	-1.13	-1.21
TRANSPORTATION & UTILITIES.....	174.2	174.6	178.4	173.9	174.4	175.4	178.8	173.9	174.5	175.3	178.6	173.3	169.9	174.9	175.6	175.6
% Chg Same Qtr Last Yr.....	4.42	2.38	1.39	0.90	0.09	0.45	0.26	0.03	0.08	-0.02	-0.11	-0.33	2.63	2.91	0.42	-0.01
INFORMATION.....	46.2	46.6	46.8	46.5	46.5	46.1	46.4	46.3	46.5	46.1	46.3	46.1	45.5	46.2	46.4	46.3
% Chg Same Qtr Last Yr.....	0.00	4.56	2.19	3.16	0.82	-1.06	-0.92	-0.38	-0.07	-0.09	-0.21	-0.48	-1.28	1.52	0.47	-0.19
FINANCIAL ACTIVITIES.....	167.4	168.8	169.0	168.9	169.6	170.2	169.9	169.6	170.2	170.7	170.4	170.0	162.5	167.6	169.6	170.2
% Chg Same Qtr Last Yr.....	3.21	2.84	3.09	2.09	1.32	0.84	0.56	0.42	0.34	0.30	0.29	0.28	2.42	3.14	1.20	0.34
PROFESSIONAL & BUSINESS SERVICES.....	418.9	424.8	434.2	425.9	432.5	436.4	445.8	437.3	444.5	447.9	457.1	448.0	416.9	422.8	435.1	446.7
% Chg Same Qtr Last Yr.....	0.70	1.90	2.07	3.02	3.23	2.72	2.66	2.67	2.79	2.64	2.54	2.45	1.32	1.44	2.91	2.66
EDUCATION & HEALTH SERVICES.....	435.8	437.4	447.3	443.0	444.6	444.5	454.4	450.0	452.0	451.9	461.7	457.0	435.6	438.9	446.6	453.9
% Chg Same Qtr Last Yr.....	0.55	0.74	1.53	1.77	2.02	1.64	1.58	1.59	1.66	1.66	1.61	1.55	1.11	0.76	1.75	1.63
LEISURE & HOSPITALITY.....	359.9	363.7	352.1	344.6	366.0	368.9	357.0	347.6	367.8	370.3	359.0	351.1	338.9	353.7	359.1	361.2
% Chg Same Qtr Last Yr.....	4.71	4.66	2.81	1.68	1.69	1.42	1.39	0.87	0.51	0.40	0.56	1.00	3.03	4.37	1.54	0.58
OTHER SERVICES.....	120.0	119.3	118.4	117.7	119.5	119.1	117.4	116.5	118.6	118.2	116.9	115.9	118.3	119.0	118.4	117.5
% Chg Same Qtr Last Yr.....	1.18	0.14	-1.15	-0.41	-0.37	-0.22	-0.79	-1.04	-0.80	-0.73	-0.47	-0.51	3.24	0.57	-0.45	-0.76
GOVERNMENT.....	435.3	427.8	453.4	447.8	442.2	429.7	455.3	449.6	439.3	429.9	457.5	452.0	435.5	440.4	443.8	444.1
% Chg Same Qtr Last Yr.....	1.01	1.06	0.99	0.61	1.58	0.45	0.42	0.41	-0.67	0.02	0.49	0.54	1.19	1.13	0.76	0.07
FEDERAL, CIVILIAN.....	50.0	50.4	50.1	50.6	55.9	53.2	51.5	51.2	51.2	51.2	51.2	51.0	49.1	50.0	52.8	51.2
% Chg Same Qtr Last Yr.....	2.32	2.93	0.79	2.33	11.97	5.47	2.77	1.21	-8.43	-3.80	-0.52	-0.47	0.00	1.85	5.64	-3.03
STATE & LOCAL.....	385.4	377.4	403.3	397.2	386.3	376.6	403.7	398.4	388.1	378.7	406.2	401.1	386.4	390.4	391.0	392.8
% Chg Same Qtr Last Yr.....	0.84	0.82	1.02	0.39	0.25	-0.20	0.12	0.31	0.45	0.55	0.61	0.67	1.34	1.03	0.14	0.48

**Table 6: Tennessee Durable Goods Manufacturing Employment, Not Seasonally Adjusted (thousands of jobs) January 2020**

	History		Forecast Data										Annual			
	2019:2	2019:3	2019:4	2020:1	2020:2	2020:3	2020:4	2021:1	2021:2	2021:3	2021:4	2022:1	2018	2019	2020	2021
TOTAL DURABLE GOODS.....	228.7	230.8	232.4	232.3	232.5	232.0	231.2	230.8	230.9	230.7	230.2	230.1	224.3	229.9	232.0	230.7
% Chg Same Qtr Last Yr.....	2.31	2.44	2.77	2.03	1.65	0.52	-0.53	-0.64	-0.66	-0.55	-0.43	-0.30	1.00	2.52	0.91	-0.57
WOOD PRODUCTS.....	12.5	12.6	12.5	12.3	12.4	12.5	12.5	12.4	12.5	12.6	12.7	12.7	12.6	12.5	12.5	12.6
% Chg Same Qtr Last Yr.....	-0.79	0.00	-1.11	-0.82	-0.47	-0.43	0.55	0.61	0.67	0.59	1.30	2.30	0.13	-0.54	-0.29	0.79
NONMETALLIC MINERAL PRODUCTS.....	14.8	15.1	15.2	15.4	15.6	15.6	15.5	15.6	15.7	15.7	15.5	15.6	14.1	14.9	15.5	15.6
% Chg Same Qtr Last Yr.....	4.98	6.10	7.02	6.45	5.39	3.63	1.82	1.29	0.88	0.39	0.24	0.16	3.36	5.62	4.29	0.70
PRIMARY METALS.....	11.6	11.8	12.3	12.4	12.4	12.4	12.5	12.5	12.4	12.3	12.3	12.3	11.0	11.8	12.4	12.4
% Chg Same Qtr Last Yr.....	5.79	6.31	9.13	9.01	7.22	5.47	2.07	0.57	-0.11	-0.91	-1.49	-1.52	2.80	6.55	5.87	-0.49
FABRICATED METAL PRODUCTS.....	37.5	38.0	38.2	37.9	37.8	37.6	37.4	37.1	37.1	37.2	37.1	37.0	36.6	37.8	37.7	37.1
% Chg Same Qtr Last Yr.....	3.40	2.52	2.72	1.52	0.79	-0.91	-2.24	-2.19	-1.84	-1.11	-0.65	-0.29	2.91	3.22	-0.22	-1.45
MACHINERY.....	26.0	25.9	25.9	25.9	26.4	26.0	25.5	25.6	26.0	25.5	25.2	25.2	25.5	25.8	25.9	25.6
% Chg Same Qtr Last Yr.....	0.65	1.31	2.49	1.60	1.46	0.37	-1.23	-1.39	-1.56	-1.62	-1.48	-1.49	0.73	1.37	0.55	-1.51
COMPUTER & ELECTRONIC PRODUCTS.....	5.4	5.5	5.5	5.5	5.4	5.3	5.2	5.2	5.1	5.1	5.1	5.0	5.1	5.5	5.3	5.1
% Chg Same Qtr Last Yr.....	7.95	5.77	4.58	1.60	-1.34	-3.59	-4.96	-4.86	-4.25	-3.66	-3.17	-2.84	4.77	6.38	-2.10	-3.99
ELECTRICAL EQUIPMENT, APPLIANCES & COMPONENTS.....	18.7	18.9	19.0	18.9	18.9	18.9	18.9	18.7	18.7	18.7	18.7	18.6	18.9	18.8	18.9	18.7
% Chg Same Qtr Last Yr.....	-1.23	-0.18	0.44	0.65	1.02	0.00	-0.53	-1.13	-1.16	-0.77	-0.60	-0.51	-1.77	-0.46	0.28	-0.92
TRANSPORTATION EQUIPMENT.....	75.6	76.1	76.8	77.0	76.5	76.5	76.7	76.9	76.4	76.5	76.7	76.9	74.1	76.1	76.7	76.7
% Chg Same Qtr Last Yr.....	3.05	2.79	2.27	1.45	1.23	0.52	-0.14	-0.02	-0.06	-0.03	-0.04	-0.04	-0.55	2.75	0.76	-0.04
FURNITURE.....	9.5	9.6	9.8	9.8	9.8	9.8	9.7	9.8	9.8	9.7	9.7	9.8	9.6	9.6	9.8	9.7
% Chg Same Qtr Last Yr.....	-1.73	0.35	3.64	3.40	3.56	1.60	-0.72	-0.59	-0.39	-0.19	-0.10	0.02	0.53	0.38	1.94	-0.32
MISCELLANEOUS DURABLE GOODS.....	17.1	17.4	17.3	17.2	17.3	17.4	17.2	17.1	17.2	17.3	17.2	17.0	16.9	17.2	17.3	17.2
% Chg Same Qtr Last Yr.....	1.78	1.75	2.20	0.91	0.74	-0.22	-0.66	-0.53	-0.51	-0.44	-0.40	-0.32	4.27	2.13	0.19	-0.47

**Table 7: Tennessee Nondurable Goods Manufacturing Employment, Not Seasonally Adjusted (thousands of jobs)**

**January 2020**

	History		Forecast Data										Annual			
	2019:2	2019:3	2019:4	2020:1	2020:2	2020:3	2020:4	2021:1	2021:2	2021:3	2021:4	2022:1	2018	2019	2020	2021
TOTAL NONDURABLE GOODS.....	128.4	128.9	128.8	128.3	128.7	128.7	128.3	127.5	128.1	128.2	127.8	127.1	126.5	128.3	128.5	127.9
% Chg Same Qtr Last Yr.....	1.61	1.44	1.24	0.88	0.28	-0.15	-0.41	-0.56	-0.48	-0.40	-0.36	-0.34	1.80	1.46	0.15	-0.45
FOOD.....	35.8	36.1	36.1	35.9	35.8	36.0	36.0	35.8	35.8	36.1	36.1	35.9	35.8	35.9	35.9	36.0
% Chg Same Qtr Last Yr.....	0.19	1.12	0.72	0.96	0.07	-0.25	-0.21	-0.28	-0.08	0.17	0.33	0.36	1.01	0.37	0.14	0.04
BEVERAGE & TOBACCO.....	7.9	8.0	7.9	7.8	8.0	8.0	7.9	7.8	8.0	8.0	8.0	7.8	7.4	7.9	7.9	8.0
% Chg Same Qtr Last Yr.....	7.73	7.14	4.58	1.97	0.76	0.19	0.21	0.50	0.46	0.43	0.35	0.25	6.14	6.96	0.77	0.43
PAPER.....	12.0	12.1	12.0	11.9	12.1	12.1	12.1	12.0	12.1	12.2	12.1	12.0	12.0	12.0	12.0	12.1
% Chg Same Qtr Last Yr.....	0.56	0.00	-0.10	-0.19	0.42	0.32	0.62	0.63	0.50	0.40	0.33	0.22	0.77	0.04	0.29	0.47
PRINTING & RELATED SUPPORT.....	9.0	9.0	9.0	9.0	9.0	9.0	8.9	8.8	8.8	8.8	8.7	8.6	9.0	9.0	9.0	8.8
% Chg Same Qtr Last Yr.....	0.75	-1.10	-0.09	0.02	-0.08	-0.49	-1.23	-1.74	-2.04	-2.29	-2.48	-2.44	-0.09	0.35	-0.45	-2.14
CHEMICALS.....	25.8	25.8	25.6	25.4	25.3	25.2	25.0	24.7	24.7	24.7	24.4	24.2	25.6	25.7	25.2	24.6
% Chg Same Qtr Last Yr.....	0.78	0.26	-0.21	-0.80	-1.65	-2.21	-2.57	-2.93	-2.57	-2.24	-2.06	-1.90	2.16	0.53	-1.81	-2.45
PLASTICS & RUBBER.....	25.1	25.0	25.1	25.2	25.3	25.2	25.3	25.3	25.4	25.2	25.3	25.3	24.8	25.1	25.2	25.3
% Chg Same Qtr Last Yr.....	1.35	0.54	0.76	0.88	0.99	0.68	0.53	0.40	0.29	0.16	0.04	0.02	1.71	1.13	0.77	0.22
MISCELLANEOUS NONDURABLE GOODS.....	12.8	12.9	13.1	13.0	13.2	13.2	13.1	13.1	13.3	13.3	13.2	13.2	12.0	12.8	13.1	13.2
% Chg Same Qtr Last Yr.....	6.08	6.61	7.03	5.12	3.16	2.24	0.68	0.57	0.55	0.56	0.57	0.58	3.58	6.21	2.77	0.56

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Tennessee Econometric Model

**Table 8: Tennessee Nonfarm Employment by Sector, Seasonally Adjusted (thousands of jobs)****January 2020**

	History		Forecast Data										Annual			
	2019:2	2019:3	2019:4	2020:1	2020:2	2020:3	2020:4	2021:1	2021:2	2021:3	2021:4	2022:1	2018	2019	2020	2021
	TOTAL NONFARM.....	3104.6	3119.0	3119.0	3125.7	3130.5	3139.1	3141.7	3143.3	3149.8	3155.4	3161.1	3166.4	3062.2	3111.2	3138.6
% Chg Prev Qtr SAAR.....	1.17	1.87	1.87	0.86	0.61	1.10	0.33	0.22	0.82	0.72	0.72	0.68	1.68	1.60	0.88	0.62
% Chg Same Qtr Last Yr.....	1.67	1.66	1.66	1.29	1.13	1.11	0.73	0.56	0.62	0.52	0.62	0.73	1.68	1.60	0.88	0.62
NATURAL RESOURCES, MINING AND CONSTRUCTION.....	132.1	130.0	130.0	129.9	129.8	129.6	129.4	129.3	129.5	129.6	129.8	130.1	129.3	130.8	129.5	129.7
% Chg Prev Qtr SAAR.....	2.77	-6.21	-6.21	-0.34	-0.35	-0.68	-0.43	-0.31	0.36	0.33	0.63	1.11	3.93	1.22	-0.98	0.14
% Chg Same Qtr Last Yr.....	3.12	0.21	0.21	-1.70	-1.09	-1.93	-0.45	-0.44	-0.27	-0.02	0.25	0.60	3.93	1.22	-0.98	0.14
MANUFACTURING.....	356.8	359.1	359.1	361.4	361.3	360.9	360.2	359.6	359.1	358.7	358.4	358.2	350.7	358.2	360.5	358.6
% Chg Prev Qtr SAAR.....	1.41	2.70	2.70	2.54	-0.15	-0.43	-0.79	-0.59	-0.63	-0.36	-0.40	-0.23	1.29	2.13	0.63	-0.53
% Chg Same Qtr Last Yr.....	2.07	2.06	2.06	2.23	1.62	1.15	0.28	-0.49	-0.61	-0.59	-0.50	-0.41	1.29	2.13	0.63	-0.53
DURABLE GOODS.....	228.5	230.6	230.6	232.6	232.5	232.3	231.8	231.4	231.0	230.8	230.5	230.4	224.3	229.9	232.0	230.7
% Chg Prev Qtr SAAR.....	1.19	3.62	3.62	3.64	-0.29	-0.32	-0.88	-0.64	-0.72	-0.38	-0.46	-0.17	1.00	2.51	0.91	-0.57
% Chg Same Qtr Last Yr.....	2.33	2.42	2.42	2.78	2.03	1.64	0.52	-0.53	-0.64	-0.65	-0.55	-0.43	1.00	2.51	0.91	-0.57
NONDURABLE GOODS.....	128.2	128.6	128.6	128.8	128.8	128.6	128.4	128.2	128.1	128.0	127.9	127.8	126.5	128.3	128.5	127.9
% Chg Prev Qtr SAAR.....	1.79	1.07	1.07	0.58	0.09	-0.63	-0.63	-0.48	-0.47	-0.34	-0.29	-0.35	1.80	1.45	0.15	-0.45
% Chg Same Qtr Last Yr.....	1.60	1.43	1.43	1.24	0.88	0.27	-0.15	-0.41	-0.55	-0.48	-0.40	-0.36	1.80	1.45	0.15	-0.45
TRADE, TRANSPORTATION, UTILITIES.....	634.3	633.5	633.5	632.8	631.6	629.8	629.2	628.1	628.0	627.0	626.4	625.3	627.6	633.8	629.7	626.7
% Chg Prev Qtr SAAR.....	-0.04	-0.52	-0.52	-0.42	-0.77	-1.14	-0.36	-0.74	-0.06	-0.61	-0.40	-0.67	1.27	0.98	-0.65	-0.48
% Chg Same Qtr Last Yr.....	1.37	0.99	0.99	0.00	-0.44	-0.71	-0.67	-0.75	-0.57	-0.44	-0.45	-0.44	1.27	0.98	-0.65	-0.48
WHOLESALE TRADE.....	120.3	119.4	119.4	119.5	119.2	119.0	119.0	119.0	119.0	118.9	118.8	118.7	119.6	120.1	119.1	118.8
% Chg Prev Qtr SAAR.....	-2.83	-2.85	-2.85	0.25	-0.82	-0.76	0.04	-0.12	0.20	-0.40	-0.56	-0.34	1.26	0.37	-0.84	-0.18
% Chg Same Qtr Last Yr.....	0.70	-0.28	-0.28	-0.85	-1.57	-1.05	-0.32	-0.41	-0.16	-0.07	-0.22	-0.27	1.26	0.37	-0.84	-0.18
RETAIL TRADE.....	338.7	339.3	339.3	338.3	336.7	335.3	334.7	333.6	333.3	332.4	332.1	331.4	337.9	338.9	335.1	332.3
% Chg Prev Qtr SAAR.....	-0.59	0.75	0.75	-1.21	-1.82	-1.74	-0.71	-1.31	-0.38	-0.99	-0.37	-0.91	0.55	0.29	-1.13	-0.83
% Chg Same Qtr Last Yr.....	0.35	0.68	0.68	-0.40	-0.72	-1.01	-1.37	-1.40	-1.04	-0.85	-0.76	-0.66	0.55	0.29	-1.13	-0.83
TRANSPORTATION & UTILITIES.....	175.4	174.8	174.8	175.1	175.6	175.5	175.5	175.5	175.7	175.7	175.5	175.3	170.1	174.8	175.6	175.5
% Chg Prev Qtr SAAR.....	3.02	-1.36	-1.36	0.69	1.31	-0.25	0.05	-0.07	0.38	-0.05	-0.35	-0.43	2.76	2.76	0.42	-0.01
% Chg Same Qtr Last Yr.....	3.91	2.48	2.48	1.39	0.90	0.09	0.45	0.26	0.03	0.08	-0.02	-0.11	2.76	2.76	0.42	-0.01
INFORMATION.....	46.0	46.8	46.8	46.7	46.5	46.3	46.3	46.3	46.3	46.3	46.3	46.2	45.6	46.1	46.4	46.3
% Chg Prev Qtr SAAR.....	8.23	7.76	7.76	-0.85	-2.05	-1.28	-0.05	-0.31	0.10	-0.03	-0.14	-0.78	-1.12	1.30	0.47	-0.19
% Chg Same Qtr Last Yr.....	-0.36	4.00	4.00	2.19	3.16	0.82	-1.06	-0.92	-0.38	-0.07	-0.09	-0.21	-1.12	1.30	0.47	-0.19
FINANCIAL ACTIVITIES.....	167.5	168.5	168.5	169.1	169.4	169.7	169.9	170.0	170.2	170.4	170.6	170.8	162.7	167.7	169.8	170.5
% Chg Prev Qtr SAAR.....	3.66	2.41	2.41	1.43	0.88	0.58	0.45	0.35	0.50	0.47	0.48	0.28	2.51	3.13	1.20	0.45
% Chg Same Qtr Last Yr.....	3.33	3.02	3.02	3.09	2.09	1.32	0.84	0.56	0.47	0.44	0.45	0.43	2.51	3.13	1.20	0.45

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**Table 8: Tennessee Nonfarm Employment by Sector, Seasonally Adjusted (thousands of jobs)**

**January 2020**

	History		Forecast Data										Annual			
	2019:2	2019:3	2019:4	2020:1	2020:2	2020:3	2020:4	2021:1	2021:2	2021:3	2021:4	2022:1	2018	2019	2020	2021
PROFESSIONAL & BUSINESS SERVICES...	419.8	424.9	424.9	428.1	430.9	433.4	436.5	439.5	442.4	445.5	448.0	450.6	417.6	422.8	435.1	446.6
% Chg Prev Qtr SAAR.....	1.51	4.92	4.92	3.01	2.67	2.36	2.85	2.77	2.72	2.81	2.26	2.36	1.47	1.23	2.91	2.66
% Chg Same Qtr Last Yr.....	0.64	1.76	1.76	2.07	3.02	3.23	2.72	2.66	2.67	2.79	2.64	2.54	1.47	1.23	2.91	2.66
EDUCATION & HEALTH SERVICES.....	436.8	440.1	440.1	442.3	444.2	445.6	447.4	449.3	451.7	454.0	455.8	458.0	435.4	438.9	446.6	454.9
% Chg Prev Qtr SAAR.....	0.34	3.09	3.09	1.97	1.72	1.32	1.56	1.72	2.15	2.10	1.57	1.94	1.03	0.80	1.75	1.85
% Chg Same Qtr Last Yr.....	0.37	0.83	0.83	1.53	1.77	2.02	1.64	1.58	1.69	1.88	1.89	1.94	1.03	0.80	1.75	1.85
LEISURE & HOSPITALITY.....	352.8	355.5	355.5	355.9	356.6	358.8	360.5	360.9	361.3	362.2	363.6	364.5	339.2	353.7	359.2	362.9
% Chg Prev Qtr SAAR.....	2.42	3.06	3.06	0.46	0.80	2.44	1.97	0.35	0.53	0.99	1.49	1.00	3.12	4.29	1.54	1.03
% Chg Same Qtr Last Yr.....	4.90	4.54	4.54	2.81	1.68	1.69	1.42	1.39	1.32	0.96	0.84	1.00	3.12	4.29	1.54	1.03
OTHER SERVICES.....	119.0	118.6	118.6	118.8	119.1	118.6	118.3	117.9	117.8	117.6	117.5	117.3	118.3	119.0	118.5	117.6
% Chg Prev Qtr SAAR.....	-1.88	-1.34	-1.34	0.83	0.79	-1.71	-0.77	-1.47	-0.21	-0.76	-0.49	-0.42	3.27	0.56	-0.45	-0.76
% Chg Same Qtr Last Yr.....	1.13	-0.11	-0.11	-1.15	-0.41	-0.37	-0.22	-0.79	-1.04	-0.80	-0.73	-0.47	3.27	0.56	-0.45	-0.76
GOVERNMENT.....	439.5	441.9	441.9	440.6	441.1	446.4	443.9	442.5	443.5	444.0	444.8	445.4	435.8	440.1	443.5	444.4
% Chg Prev Qtr SAAR.....	0.95	2.26	2.26	-1.17	0.43	4.91	-2.23	-1.27	0.92	0.47	0.70	0.57	1.28	0.99	0.76	0.22
% Chg Same Qtr Last Yr.....	0.89	0.96	0.96	0.99	0.61	1.58	0.45	0.42	0.55	-0.54	0.20	0.66	1.28	0.99	0.76	0.22
FEDERAL, CIVILIAN.....	50.0	50.4	50.4	50.0	50.7	55.9	53.2	51.4	51.3	51.2	51.2	51.1	49.0	50.0	52.8	51.2
% Chg Prev Qtr SAAR.....	3.55	3.79	3.79	-3.44	5.69	48.40	-18.30	-12.95	-0.60	-0.54	-0.49	-0.45	-0.08	1.93	5.64	-3.03
% Chg Same Qtr Last Yr.....	2.46	2.72	2.72	0.79	2.33	11.97	5.47	2.77	1.21	-8.43	-3.80	-0.52	-0.08	1.93	5.64	-3.03
STATE & LOCAL.....	389.5	391.5	391.5	390.6	390.4	390.5	390.7	391.1	392.2	392.8	393.6	394.3	386.8	390.1	390.7	393.2
% Chg Prev Qtr SAAR.....	0.62	2.07	2.07	-0.88	-0.23	0.06	0.26	0.41	1.12	0.60	0.86	0.70	1.45	0.87	0.14	0.66
% Chg Same Qtr Last Yr.....	0.69	0.74	0.74	1.02	0.39	0.25	-0.20	0.12	0.46	0.60	0.75	0.82	1.45	0.87	0.14	0.66

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**Table 9: Tennessee Durable Goods Manufacturing Employment, Seasonally Adjusted (thousands of jobs) January 2020**

	History		Forecast Data										Annual			
	2019:2	2019:3	2019:4	2020:1	2020:2	2020:3	2020:4	2021:1	2021:2	2021:3	2021:4	2022:1	2018	2019	2020	2021
	TOTAL DURABLE GOODS.....	228.5	230.6	230.6	230.3	230.1	229.7	229.4	229.1	229.0	228.8	228.6	228.4	224.3	229.4	229.9
% Chg Prev Qtr SAAR.....	1.19	3.62	0.12	-0.58	-0.44	-0.60	-0.48	-0.55	-0.24	-0.34	-0.25	-0.35	1.00	2.29	0.21	-0.43
% Chg Same Qtr Last Yr.....	2.33	2.42	1.89	1.08	0.67	-0.37	-0.52	-0.52	-0.47	-0.40	-0.35	-0.29	1.00	2.29	0.21	-0.43
WOOD PRODUCTS.....	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.6	12.6	12.6	12.5	12.5	12.5
% Chg Prev Qtr SAAR.....	-1.13	0.71	-1.89	0.30	0.31	0.34	0.39	0.42	0.43	0.44	0.55	0.59	0.13	-0.46	-0.14	0.41
% Chg Same Qtr Last Yr.....	-0.79	0.00	-0.79	-0.51	-0.15	-0.24	0.33	0.37	0.40	0.42	0.46	0.50	0.13	-0.46	-0.14	0.41
NONMETALLIC MINERALS.....	14.7	15.0	15.0	15.1	15.2	15.2	15.3	15.3	15.3	15.4	15.4	15.4	14.1	14.8	15.2	15.4
% Chg Prev Qtr SAAR.....	6.06	8.39	1.13	1.87	1.37	1.29	1.29	1.25	1.02	0.21	1.08	0.86	3.36	5.14	2.57	1.09
% Chg Same Qtr Last Yr.....	4.97	6.10	5.17	4.32	3.15	1.42	1.45	1.30	1.21	0.94	0.89	0.79	3.36	5.14	2.57	1.09
PRIMARY METALS.....	11.6	11.8	11.9	12.0	12.0	12.1	12.1	12.1	12.1	12.0	12.0	12.0	11.0	11.7	12.1	12.0
% Chg Prev Qtr SAAR.....	8.02	8.72	3.83	1.53	1.51	1.46	1.44	-1.08	-1.05	-0.99	-1.03	-1.06	2.79	5.85	3.20	-0.12
% Chg Same Qtr Last Yr.....	5.83	6.26	6.39	5.48	3.86	2.08	1.49	0.83	0.18	-0.43	-1.04	-1.03	2.79	5.85	3.20	-0.12
FABRICATED METALS.....	37.5	37.9	37.8	37.6	37.5	37.4	37.2	37.0	37.0	37.0	37.0	36.9	36.6	37.7	37.4	37.0
% Chg Prev Qtr SAAR.....	1.49	3.53	-0.31	-2.27	-1.41	-1.53	-1.97	-1.56	0.00	-0.32	-0.14	-0.61	2.91	2.97	-0.69	-1.09
% Chg Same Qtr Last Yr.....	3.45	2.45	1.76	0.59	-0.14	-1.38	-1.80	-1.62	-1.27	-0.97	-0.51	-0.27	2.91	2.97	-0.69	-1.09
MACHINERY.....	25.6	25.8	25.9	25.9	25.8	25.8	25.7	25.6	25.6	25.5	25.5	25.5	25.5	25.8	25.8	25.6
% Chg Prev Qtr SAAR.....	-0.37	3.23	1.55	-0.84	-0.85	-1.06	-0.90	-0.87	-0.80	-0.70	-0.69	-0.67	0.73	1.18	0.10	-0.85
% Chg Same Qtr Last Yr.....	0.64	1.29	1.76	0.88	0.76	-0.31	-0.91	-0.92	-0.91	-0.82	-0.77	-0.72	0.73	1.18	0.10	-0.85
COMPUTERS & ELECTRONICS.....	5.4	5.5	5.5	5.4	5.3	5.3	5.2	5.1	5.1	5.1	5.0	5.0	5.1	5.4	5.3	5.1
% Chg Prev Qtr SAAR.....	6.35	3.95	-2.74	-4.37	-5.33	-5.15	-4.63	-3.97	-2.90	-2.78	-2.72	-2.64	4.77	6.14	-2.71	-3.91
% Chg Same Qtr Last Yr.....	7.95	5.78	3.63	0.70	-2.19	-4.40	-4.87	-4.77	-4.17	-3.57	-3.09	-2.76	4.77	6.14	-2.71	-3.91
ELECTRICAL EQUIPMENT, APPLIANCES & COMPONENTS.....	18.76	18.85	18.86	18.88	18.86	18.76	18.71	18.67	18.64	18.61	18.60	18.57	18.92	18.83	18.80	18.63
% Chg Prev Qtr SAAR.....	-1.78	1.89	0.28	0.37	-0.35	-2.17	-1.04	-0.95	-0.50	-0.62	-0.35	-0.57	-1.77	-0.51	-0.14	-0.92
% Chg Same Qtr Last Yr.....	-1.23	-0.18	0.25	0.18	0.54	-0.47	-0.80	-1.13	-1.17	-0.78	-0.60	-0.51	-1.77	-0.51	-0.14	-0.92
TRANSPORTATION EQUIP.....	75.77	76.28	76.31	76.23	76.19	76.16	76.16	76.13	76.10	76.07	76.01	75.95	74.07	75.99	76.18	76.08
% Chg Prev Qtr SAAR.....	1.01	2.68	0.18	-0.43	-0.22	-0.12	-0.03	-0.14	-0.15	-0.19	-0.28	-0.32	-0.56	2.59	0.26	-0.14
% Chg Same Qtr Last Yr.....	3.04	2.78	1.66	0.86	0.55	-0.15	-0.20	-0.13	-0.11	-0.13	-0.19	-0.24	-0.56	2.59	0.26	-0.14
FURNITURE.....	9.44	9.60	9.57	9.55	9.53	9.51	9.50	9.50	9.50	9.50	9.50	9.51	9.55	9.52	9.52	9.50
% Chg Prev Qtr SAAR.....	-1.51	7.04	-1.47	-0.86	-0.89	-0.70	-0.23	-0.18	-0.03	0.02	0.11	0.21	0.52	-0.27	-0.01	-0.23
% Chg Same Qtr Last Yr.....	-1.72	0.34	0.99	0.74	0.89	-0.98	-0.67	-0.50	-0.29	-0.11	-0.02	0.08	0.52	-0.27	-0.01	-0.23
MISCELLANEOUS DURABLES.....	17.15	17.29	17.22	17.18	17.16	17.14	17.13	17.11	17.09	17.08	17.07	17.07	16.87	17.20	17.15	17.09
% Chg Prev Qtr SAAR.....	0.15	3.26	-1.53	-0.93	-0.45	-0.49	-0.37	-0.40	-0.41	-0.22	-0.24	-0.12	4.27	1.95	-0.28	-0.38
% Chg Same Qtr Last Yr.....	1.80	1.71	1.47	0.22	0.07	-0.85	-0.56	-0.43	-0.42	-0.35	-0.32	-0.25	4.27	1.95	-0.28	-0.38

**Table 10: Tennessee Nondurable Goods Manufacturing Employment, Seasonally Adjusted (thousands of jobs)**

**January 2020**

	History		Forecast Data										Annual			
	2019:2	2019:3	2019:4	2020:1	2020:2	2020:3	2020:4	2021:1	2021:2	2021:3	2021:4	2022:1	2018	2019	2020	2021
TOTAL NONDURABLE GOODS.....	128.2	128.6	128.7	128.7	128.5	128.3	128.1	128.0	127.8	127.8	127.6	127.5	126.5	128.3	128.4	127.8
% Chg Prev Qtr SAAR.....	1.79	1.07	0.31	0.00	-0.65	-0.62	-0.48	-0.47	-0.34	-0.29	-0.35	-0.37	1.80	1.44	0.07	-0.45
% Chg Same Qtr Last Yr.....	1.60	1.43	1.17	0.79	0.18	-0.24	-0.44	-0.56	-0.48	-0.39	-0.36	-0.34	1.80	1.44	0.07	-0.45
FOOD.....	35.9	36.0	36.0	36.0	36.0	35.9	35.9	35.9	36.0	36.0	36.0	36.1	35.8	35.9	36.0	36.0
% Chg Prev Qtr SAAR.....	3.03	0.71	-0.13	0.52	-0.54	-0.58	-0.27	0.21	0.25	0.43	0.35	0.35	1.02	0.38	0.19	0.02
% Chg Same Qtr Last Yr.....	0.18	1.12	0.79	1.03	0.14	-0.18	-0.22	-0.29	-0.09	0.16	0.31	0.35	1.02	0.38	0.19	0.02
BEVERAGE & TOBACCO.....	7.9	7.9	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	7.3	7.9	8.0	8.0
% Chg Prev Qtr SAAR.....	5.17	2.77	2.92	-0.25	0.31	0.41	0.55	0.57	0.06	0.27	0.19	0.21	6.14	7.12	1.28	0.37
% Chg Same Qtr Last Yr.....	7.73	7.09	5.21	2.64	1.43	0.84	0.25	0.46	0.40	0.36	0.27	0.18	6.14	7.12	1.28	0.37
PAPER.....	12.0	12.0	12.0	12.0	12.0	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.0	12.0	12.1	12.1
% Chg Prev Qtr SAAR.....	-1.73	1.03	0.40	0.51	0.58	0.53	0.45	0.58	0.13	0.18	0.20	0.17	0.77	0.11	0.42	0.39
% Chg Same Qtr Last Yr.....	0.57	-0.03	0.17	0.05	0.63	0.51	0.52	0.54	0.42	0.33	0.27	0.17	0.77	0.11	0.42	0.39
PRINTING & RELATED SUPPORT.....	9.0	9.0	9.0	8.9	8.9	8.9	8.9	8.8	8.8	8.7	8.7	8.6	9.0	9.0	8.9	8.8
% Chg Prev Qtr SAAR.....	-0.97	0.16	-1.04	-0.97	-1.08	-0.96	-1.09	-2.13	-2.29	-2.20	-2.16	-2.28	-0.10	0.19	-0.87	-1.76
% Chg Same Qtr Last Yr.....	0.77	-1.15	-0.70	-0.71	-0.73	-1.01	-1.03	-1.32	-1.62	-1.93	-2.20	-2.23	-0.10	0.19	-0.87	-1.76
CHEMICALS.....	25.8	25.7	25.6	25.5	25.3	25.1	25.0	24.8	24.7	24.6	24.5	24.3	25.6	25.7	25.2	24.6
% Chg Prev Qtr SAAR.....	0.24	-0.83	-1.16	-1.25	-3.17	-3.11	-2.78	-2.69	-1.71	-1.79	-2.05	-2.06	2.16	0.55	-1.78	-2.46
% Chg Same Qtr Last Yr.....	0.79	0.26	-0.16	-0.75	-1.61	-2.17	-2.58	-2.94	-2.57	-2.24	-2.06	-1.90	2.16	0.55	-1.78	-2.46
PLASTICS & RUBBER.....	25.0	25.1	25.2	25.2	25.3	25.3	25.3	25.3	25.3	25.3	25.3	25.3	24.8	25.1	25.3	25.3
% Chg Prev Qtr SAAR.....	0.07	1.80	1.85	0.44	0.42	0.48	0.47	-0.01	0.02	-0.03	0.00	-0.07	1.71	1.16	0.85	0.17
% Chg Same Qtr Last Yr.....	1.34	0.51	0.94	1.04	1.12	0.79	0.45	0.34	0.24	0.11	-0.01	-0.02	1.71	1.16	0.85	0.17
MISCELLANEOUS NONDURABLE GOODS..	12.7	12.9	12.9	12.9	12.9	12.9	13.0	13.0	13.0	13.0	13.0	13.1	12.0	12.7	12.9	13.0
% Chg Prev Qtr SAAR.....	8.52	4.20	0.78	0.50	0.53	0.55	0.56	0.59	0.61	0.61	0.62	0.63	3.57	5.81	1.50	0.58
% Chg Same Qtr Last Yr.....	6.06	6.65	5.46	3.45	1.49	0.59	0.54	0.56	0.58	0.59	0.61	0.62	3.57	5.81	1.50	0.58

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Table 11: Tennessee Average Annual Wage and Salary Rate by Sector, Not Seasonally Adjusted (2012 dollars)

January 2020

	History		Forecast Data										Annual				
	2019:1	2019:2	2019:3	2019:4	2020:1	2020:2	2020:3	2020:4	2021:1	2021:2	2021:3	2021:4	2022:1	2018	2019	2020	2021
TOTAL NONFARM.....	48109	47906	48021	47460	48349	48193	48457	48086	49112	48920	49243	48887	49843	47048	47874	48271	49040
% Chg Same Qtr Last Yr.....	1.35	2.26	1.28	2.15	0.50	0.60	0.91	1.32	1.58	1.51	1.62	1.66	1.49	1.33	1.76	0.83	1.59
NATURAL RESOURCES, MINING AND CONSTRUCTION.....	57975	57319	54875	54664	56648	56146	55786	56212	57602	56628	56238	56704	58026	53989	56208	56198	56793
% Chg Same Qtr Last Yr.....	3.60	5.60	2.82	4.44	-2.29	-2.05	1.66	2.83	1.68	0.86	0.81	0.88	0.74	-1.16	4.11	-0.02	1.06
MANUFACTURING.....	55369	55333	55305	55430	55674	55698	55814	56168	56469	56444	56595	56918	57138	55122	55359	55839	56606
% Chg Same Qtr Last Yr.....	-0.30	0.36	-0.20	1.89	0.55	0.66	0.92	1.33	1.43	1.34	1.40	1.33	1.19	-2.49	0.43	0.87	1.37
DURABLE GOODS.....	56270	56336	56500	56709	56927	57086	57304	57683	57982	58099	58346	58711	58914	55492	56454	57250	58285
% Chg Same Qtr Last Yr.....	0.35	2.38	1.03	3.21	1.17	1.33	1.42	1.72	1.85	1.78	1.82	1.78	1.61	0.27	1.73	1.41	1.81
NONDURABLE GOODS.....	53757	53545	53165	53122	53406	53192	53128	53439	53730	53459	53446	53688	53925	54463	53397	53291	53581
% Chg Same Qtr Last Yr.....	-1.52	-3.20	-2.48	-0.59	-0.65	-0.66	-0.07	0.59	0.61	0.50	0.60	0.47	0.36	-7.15	-1.96	-0.20	0.54
TRADE, TRANSPORTATION, UTILITIES....	44471	44234	44160	43463	44524	44381	44496	43938	45136	44990	45133	44553	45698	43414	44082	44335	44953
% Chg Same Qtr Last Yr.....	1.52	1.34	0.70	2.64	0.12	0.33	0.76	1.09	1.38	1.37	1.43	1.40	1.24	0.88	1.54	0.57	1.40
WHOLESALE TRADE.....	69421	70289	69723	69640	70203	70086	70126	70309	71208	71221	71290	71461	72307	67926	69768	70181	71295
% Chg Same Qtr Last Yr.....	0.72	2.40	2.30	5.54	1.13	-0.29	0.58	0.96	1.43	1.62	1.66	1.64	1.54	-1.51	2.71	0.59	1.59
RETAIL TRADE.....	29748	29467	29600	28976	29700	29515	29650	29072	29844	29601	29728	29158	29900	29502	29448	29484	29583
% Chg Same Qtr Last Yr.....	0.18	-0.69	-1.73	1.59	-0.16	0.16	0.17	0.33	0.48	0.29	0.26	0.30	0.19	0.98	-0.19	0.12	0.33
TRANSPORTATION & UTILITIES.....	55740	54949	54814	53778	55454	55418	55268	54501	56354	56363	56268	55470	57302	53790	54820	55160	56114
% Chg Same Qtr Last Yr.....	2.81	1.87	1.91	1.06	-0.51	0.85	0.83	1.34	1.62	1.71	1.81	1.78	1.68	2.28	1.92	0.62	1.73
INFORMATION.....	63990	63168	64113	63788	64078	63967	64635	64369	64850	64861	65750	65640	66053	67501	63765	64262	65275
% Chg Same Qtr Last Yr.....	-8.08	-8.72	-4.94	0.07	0.14	1.27	0.81	0.91	1.21	1.40	1.72	1.97	1.85	5.80	-5.54	0.78	1.58
FINANCIAL ACTIVITIES.....	72246	73013	73327	73678	74207	74393	74688	75389	76219	76548	76982	77775	78508	70314	73066	74670	76881
% Chg Same Qtr Last Yr.....	4.49	6.60	0.23	4.55	2.71	1.89	1.86	2.32	2.71	2.90	3.07	3.16	3.00	5.02	3.91	2.19	2.96
PROFESSIONAL & BUSINESS SERVICES.....	58595	58748	58827	58050	59659	59356	59779	59442	61624	61594	62055	61794	63891	55726	58555	59559	61767
% Chg Same Qtr Last Yr.....	2.23	7.78	5.54	4.89	1.82	1.04	1.62	2.40	3.29	3.77	3.81	3.96	3.68	5.54	5.08	1.71	3.71
EDUCATION & HEALTH SERVICES.....	48101	47910	48173	47257	47994	48106	48414	47713	48514	48562	48855	48130	48895	47229	47860	48057	48515
% Chg Same Qtr Last Yr.....	2.07	0.62	2.99	-0.30	-0.22	0.41	0.50	0.96	1.08	0.95	0.91	0.88	0.79	0.05	1.34	0.41	0.95
LEISURE & HOSPITALITY.....	25014	23502	23396	24141	24670	23371	23263	24049	24613	23294	23213	24012	24558	24253	24013	23838	23783
% Chg Same Qtr Last Yr.....	0.22	0.14	-3.25	-1.07	-1.37	-0.55	-0.57	-0.38	-0.23	-0.33	-0.21	-0.16	-0.22	2.57	-0.99	-0.73	-0.23
OTHER SERVICES.....	43142	42427	42552	43025	43431	42671	42836	43476	43974	43258	43503	44121	44563	41749	42786	43103	43714
% Chg Same Qtr Last Yr.....	3.08	2.80	1.37	2.70	0.67	0.57	0.67	1.05	1.25	1.38	1.56	1.48	1.34	0.42	2.48	0.74	1.42
GOVERNMENT.....	43199	44268	45334	42569	43162	44642	45447	42639	43204	44218	45207	42516	43014	43621	43843	43972	43786
% Chg Same Qtr Last Yr.....	0.94	0.58	0.42	0.09	-0.09	0.85	0.25	0.17	0.10	-0.95	-0.53	-0.29	-0.44	0.78	0.51	0.30	-0.42
FEDERAL, CIVILIAN.....	76926	76812	77123	77014	77494	77521	77642	77604	78092	77977	78049	77944	78297	76067	76969	77565	78015
% Chg Same Qtr Last Yr.....	1.82	1.25	0.89	0.80	0.74	0.92	0.67	0.77	0.77	0.59	0.52	0.44	0.26	1.60	1.18	0.78	0.58
STATE & LOCAL.....	38985	40048	41086	38287	38790	39874	40889	38183	38724	39759	40766	38051	38533	39500	39602	39434	39325
% Chg Same Qtr Last Yr.....	0.73	0.27	0.09	-0.06	-0.50	-0.44	-0.48	-0.27	-0.17	-0.29	-0.30	-0.34	-0.49	0.72	0.26	-0.42	-0.28

**Table 12: Tennessee Average Annual Wage and Salary Rate by Sector, Seasonally Adjusted (2012 dollars)**

**January 2020**

	History		Forecast Data										Annual				
	2019:1	2019:2	2019:3	2019:4	2020:1	2020:2	2020:3	2020:4	2021:1	2021:2	2021:3	2021:4	2022:1	2018	2019	2020	2021
TOTAL NONFARM.....	47777	47922	47906	47909	48014	48209	48342	48542	48771	48936	49126	49351	49496	47014	47878	48277	49046
% Chg Prev Qtr SAAR.....	7.67	1.22	-0.13	0.03	0.88	1.64	1.11	1.66	1.90	1.36	1.57	1.84	1.18	1.27	1.84	0.83	1.59
% Chg Same Qtr Last Yr.....	1.60	2.32	1.29	2.15	0.50	0.60	0.91	1.32	1.58	1.51	1.62	1.67	1.49	1.27	1.84	0.83	1.59
<b>NATURAL RESOURCES, MINING</b>																	
AND CONSTRUCTION.....	56973	57391	55409	54912	55669	56217	56330	56467	56607	56700	56785	56961	57024	53921	56171	56171	56763
% Chg Prev Qtr SAAR.....	37.86	2.97	-13.12	-3.54	5.63	3.99	0.80	0.98	0.99	0.66	0.60	1.25	0.44	-1.25	4.17	0.00	1.06
% Chg Same Qtr Last Yr.....	5.15	5.13	1.98	4.44	-2.29	-2.05	1.66	2.83	1.68	0.86	0.81	0.88	0.74	-1.25	4.17	0.00	1.06
MANUFACTURING.....	55258	55380	55396	55408	55563	55747	55905	56146	56356	56493	56688	56896	57024	55120	55360	55840	56608
% Chg Prev Qtr SAAR.....	6.60	0.89	0.11	0.08	1.13	1.33	1.14	1.74	1.50	0.97	1.39	1.48	0.91	-2.49	0.44	0.87	1.38
% Chg Same Qtr Last Yr.....	-0.29	0.36	-0.18	1.89	0.55	0.66	0.92	1.33	1.43	1.34	1.40	1.34	1.19	-2.49	0.44	0.87	1.38
DURABLE GOODS.....	56224	56379	56557	56661	56882	57130	57361	57635	57937	58143	58404	58663	58867	55492	56455	57252	58287
% Chg Prev Qtr SAAR.....	9.99	1.10	1.27	0.73	1.57	1.75	1.63	1.92	2.11	1.43	1.80	1.79	1.40	0.28	1.74	1.41	1.81
% Chg Same Qtr Last Yr.....	0.36	2.36	1.06	3.20	1.17	1.33	1.42	1.72	1.85	1.77	1.82	1.78	1.61	0.28	1.74	1.41	1.81
NONDURABLE GOODS.....	53533	53601	53314	53144	53183	53249	53276	53460	53505	53517	53595	53710	53699	54462	53398	53292	53582
% Chg Prev Qtr SAAR.....	0.56	0.50	-2.12	-1.27	0.30	0.50	0.21	1.38	0.34	0.08	0.59	0.86	-0.08	-7.15	-1.95	-0.20	0.54
% Chg Same Qtr Last Yr.....	-1.52	-3.20	-2.46	-0.59	-0.65	-0.66	-0.07	0.59	0.61	0.50	0.60	0.47	0.36	-7.15	-1.95	-0.20	0.54
TRADE, TRANSPORTATION, UTILITIES.....	44102	44122	44058	44111	44154	44269	44393	44593	44761	44877	45028	45217	45318	43377	44098	44352	44971
% Chg Prev Qtr SAAR.....	10.89	0.18	-0.58	0.48	0.39	1.04	1.13	1.82	1.52	1.04	1.36	1.69	0.90	0.80	1.66	0.58	1.40
% Chg Same Qtr Last Yr.....	1.81	1.55	0.68	2.64	0.12	0.33	0.76	1.09	1.38	1.37	1.43	1.40	1.24	0.80	1.66	0.58	1.40
WHOLESALE TRADE.....	69115	70212	69859	69948	69894	70008	70263	70621	70895	71142	71430	71778	71988	67941	69783	70196	71311
% Chg Prev Qtr SAAR.....	18.28	6.50	-1.99	0.51	-0.31	0.65	1.46	2.05	1.56	1.41	1.63	1.96	1.18	-1.46	2.71	0.59	1.59
% Chg Same Qtr Last Yr.....	0.79	2.23	2.38	5.54	1.13	-0.29	0.58	0.96	1.43	1.62	1.66	1.64	1.54	-1.46	2.71	0.59	1.59
RETAIL TRADE.....	29488	29441	29466	29456	29440	29489	29516	29554	29583	29575	29594	29642	29639	29474	29463	29500	29598
% Chg Prev Qtr SAAR.....	6.96	-0.63	0.34	-0.13	-0.22	0.66	0.37	0.52	0.38	-0.10	0.25	0.66	-0.04	0.90	-0.04	0.13	0.33
% Chg Same Qtr Last Yr.....	0.57	-0.48	-1.76	1.59	-0.16	0.16	0.17	0.33	0.48	0.29	0.26	0.30	0.19	0.90	-0.04	0.13	0.33
TRANSPORTATION & UTILITIES.....	55174	54584	54762	54796	54891	55049	55216	55532	55782	55988	56214	56519	56721	53716	54829	55172	56126
% Chg Prev Qtr SAAR.....	7.20	-4.21	1.31	0.25	0.70	1.15	1.22	2.31	1.82	1.48	1.63	2.19	1.43	2.15	2.07	0.63	1.73
% Chg Same Qtr Last Yr.....	3.07	2.37	1.81	1.06	-0.51	0.85	0.83	1.34	1.62	1.71	1.81	1.78	1.68	2.15	2.07	0.63	1.73
INFORMATION.....	63990	63442	63839	63927	64078	64245	64359	64509	64850	65143	65469	65783	66053	67386	63800	64298	65311
% Chg Prev Qtr SAAR.....	0.68	-3.38	2.53	0.55	0.94	1.05	0.71	0.94	2.13	1.82	2.02	1.93	1.65	5.62	-5.32	0.78	1.58
% Chg Same Qtr Last Yr.....	-8.08	-8.39	-4.43	0.07	0.14	1.27	0.81	0.91	1.21	1.40	1.72	1.97	1.85	5.62	-5.32	0.78	1.58
FINANCIAL ACTIVITIES.....	71999	72984	73457	73633	73954	74364	74821	75343	75959	76517	77119	77727	78240	70266	73018	74621	76831
% Chg Prev Qtr SAAR.....	9.24	5.58	2.62	0.96	1.75	2.24	2.48	2.82	3.31	2.97	3.18	3.19	2.67	4.94	3.92	2.19	2.96
% Chg Same Qtr Last Yr.....	4.83	6.47	0.07	4.55	2.71	1.89	1.86	2.32	2.71	2.90	3.07	3.16	3.00	4.94	3.92	2.19	2.96

(CONTINUED ON NEXT PAGE)

**Table 12: Tennessee Average Annual Wage and Salary Rate by Sector, Seasonally Adjusted (2012 dollars)** **January 2020**

	History		Forecast Data										Annual				
	2019:1	2019:2	2019:3	2019:4	2020:1	2020:2	2020:3	2020:4	2021:1	2021:2	2021:3	2021:4	2022:1	2018	2019	2020	2021
PROFESSIONAL & BUSINESS SERVICES...	57913	58622	58817	58885	58965	59229	59769	60297	60907	61462	62045	62683	63147	55615	58560	59565	61774
% Chg Prev Qtr SAAR.....	13.24	4.98	1.34	0.46	0.54	1.80	3.70	3.58	4.11	3.70	3.85	4.17	3.00	5.38	5.30	1.72	3.71
% Chg Same Qtr Last Yr.....	2.85	7.85	5.69	4.89	1.82	1.04	1.62	2.40	3.29	3.77	3.81	3.96	3.68	5.38	5.30	1.72	3.71
EDUCATION & HEALTH SERVICES.....	47972	47801	47870	47793	47865	47996	48110	48253	48384	48451	48548	48675	48764	47253	47859	48056	48514
% Chg Prev Qtr SAAR.....	0.28	-1.42	0.59	-0.65	0.61	1.10	0.95	1.20	1.09	0.55	0.80	1.06	0.73	0.14	1.28	0.41	0.95
% Chg Same Qtr Last Yr.....	1.79	0.80	2.89	-0.30	-0.22	0.41	0.50	0.96	1.08	0.95	0.91	0.88	0.79	0.14	1.28	0.41	0.95
LEISURE & HOSPITALITY.....	24172	23972	23938	23886	23840	23839	23802	23795	23785	23760	23751	23757	23732	24218	23992	23819	23763
% Chg Prev Qtr SAAR.....	0.47	-3.27	-0.57	-0.87	-0.76	-0.02	-0.63	-0.12	-0.17	-0.41	-0.15	0.11	-0.43	2.49	-0.93	-0.72	-0.23
% Chg Same Qtr Last Yr.....	0.57	-0.04	-3.14	-1.07	-1.37	-0.55	-0.57	-0.38	-0.23	-0.33	-0.21	-0.16	-0.22	2.49	-0.93	-0.72	-0.23
OTHER SERVICES.....	42649	42771	42815	42858	42935	43017	43100	43307	43471	43609	43772	43950	44053	41733	42773	43090	43701
% Chg Prev Qtr SAAR.....	9.09	1.15	0.41	0.40	0.72	0.77	0.78	1.93	1.52	1.28	1.50	1.64	0.95	0.39	2.49	0.74	1.42
% Chg Same Qtr Last Yr.....	2.81	2.85	1.63	2.70	0.67	0.57	0.67	1.05	1.25	1.38	1.56	1.48	1.34	0.39	2.49	0.74	1.42
GOVERNMENT.....	43853	43852	43888	43801	43815	44222	43997	43874	43858	43802	43764	43747	43665	43569	43848	43977	43793
% Chg Prev Qtr SAAR.....	0.84	-0.01	0.33	-0.78	0.12	3.78	-2.02	-1.12	-0.14	-0.51	-0.34	-0.16	-0.75	0.69	0.64	0.29	-0.42
% Chg Same Qtr Last Yr.....	1.26	0.70	0.52	0.09	-0.09	0.85	0.25	0.17	0.10	-0.95	-0.53	-0.29	-0.44	0.69	0.64	0.29	-0.42
FEDERAL, CIVILIAN.....	76770	76812	77123	77221	77337	77521	77642	77813	77934	77977	78049	78153	78139	76144	76982	77578	78028
% Chg Prev Qtr SAAR.....	0.84	0.22	1.63	0.51	0.60	0.95	0.63	0.88	0.63	0.22	0.37	0.54	-0.07	1.69	1.10	0.78	0.58
% Chg Same Qtr Last Yr.....	1.40	1.11	1.09	0.80	0.74	0.92	0.67	0.77	0.77	0.59	0.52	0.44	0.26	1.69	1.10	0.78	0.58
STATE & LOCAL.....	39660	39623	39606	39524	39462	39451	39417	39415	39394	39338	39299	39279	39201	39439	39604	39436	39327
% Chg Prev Qtr SAAR.....	1.15	-0.37	-0.17	-0.82	-0.63	-0.11	-0.35	-0.02	-0.21	-0.57	-0.40	-0.20	-0.79	0.61	0.42	-0.42	-0.28
% Chg Same Qtr Last Yr.....	1.14	0.42	0.17	-0.06	-0.50	-0.43	-0.48	-0.28	-0.17	-0.29	-0.30	-0.35	-0.49	0.61	0.42	-0.42	-0.28

**Table 13: Tennessee Average Annual Wage and Salary Rate by Sector, Not Seasonally Adjusted (current dollars)**

**January 2020**

	History		Forecast Data											Annual			
	2019:1	2019:2	2019:3	2019:4	2020:1	2020:2	2020:3	2020:4	2021:1	2021:2	2021:3	2021:4	2022:1	2018	2019	2020	2021
TOTAL NONFARM.....	52380	52468	52813	52524	53803	53861	54416	54214	55615	55690	56329	56163	57591	50878	52546	54074	55949
% Chg Same Qtr Last Yr.....	2.75	3.71	2.74	3.93	2.72	2.65	3.04	3.22	3.37	3.40	3.52	3.59	3.55	3.45	3.28	2.91	3.47
NATURAL RESOURCES, MINING																	
AND CONSTRUCTION.....	63122	62777	60350	60496	63039	62749	62647	63375	65229	64466	64330	65143	67045	58379	61686	62952	64792
% Chg Same Qtr Last Yr.....	5.03	7.10	4.30	6.26	-0.13	-0.05	3.80	4.76	3.47	2.74	2.69	2.79	2.78	0.89	5.67	2.05	2.92
MANUFACTURING.....	60286	60601	60824	61344	61956	62248	62677	63326	63946	64256	64739	65389	66020	59609	60764	62552	64582
% Chg Same Qtr Last Yr.....	1.07	1.79	1.24	3.67	2.77	2.72	3.05	3.23	3.21	3.23	3.29	3.26	3.24	-0.46	1.94	2.94	3.25
DURABLE GOODS.....	61266	61701	62138	62759	63350	63799	64351	65033	65660	66141	66742	67449	68071	60010	61966	64133	66498
% Chg Same Qtr Last Yr.....	1.73	3.83	2.49	5.01	3.40	3.40	3.56	3.62	3.65	3.67	3.72	3.71	3.67	2.36	3.26	3.50	3.69
NONDURABLE GOODS.....	58530	58643	58470	58790	59431	59447	59662	60248	60845	60858	61137	61678	62307	58896	58608	59697	61129
% Chg Same Qtr Last Yr.....	-0.16	-1.83	-1.07	1.15	1.54	1.37	2.04	2.48	2.38	2.37	2.47	2.37	2.40	-5.22	-0.49	1.86	2.40
TRADE, TRANSPORTATION, UTILITIES.....	48420	48446	48567	48100	49547	49600	49968	49537	51113	51217	51627	51183	52801	46947	48383	49663	51285
% Chg Same Qtr Last Yr.....	2.91	2.78	2.16	4.43	2.33	2.38	2.89	2.99	3.16	3.26	3.32	3.32	3.30	2.98	3.06	2.65	3.27
WHOLESALE TRADE.....	75584	76982	76680	77070	78124	78328	78749	79269	80637	81079	81549	82096	83546	73453	76579	78617	81340
% Chg Same Qtr Last Yr.....	2.11	3.85	3.77	7.39	3.36	1.75	2.70	2.85	3.22	3.51	3.55	3.57	3.61	0.55	4.26	2.66	3.46
RETAIL TRADE.....	32390	32273	32554	32067	33051	32986	33297	32777	33795	33698	34006	33498	34548	31903	32321	33027	33749
% Chg Same Qtr Last Yr.....	1.56	0.72	-0.31	3.36	2.04	2.21	2.28	2.21	2.25	2.16	2.13	2.20	2.23	3.09	1.31	2.19	2.19
TRANSPORTATION & UTILITIES.....	60689	60182	60284	59516	61711	61935	62065	61445	63816	64164	64365	63725	66209	58169	60168	61789	64017
% Chg Same Qtr Last Yr.....	4.23	3.32	3.38	2.82	1.68	2.91	2.95	3.24	3.41	3.60	3.70	3.71	3.75	4.42	3.44	2.69	3.61
INFORMATION.....	69672	69182	70511	70594	71308	71489	72583	72571	73437	73838	75211	75408	76320	72988	69990	71988	74474
% Chg Same Qtr Last Yr.....	-6.81	-7.42	-3.57	1.82	2.35	3.33	2.94	2.80	2.99	3.29	3.62	3.91	3.92	8.00	-4.11	2.85	3.45
FINANCIAL ACTIVITIES.....	78661	79966	80644	81539	82580	83142	83873	84996	86312	87143	88060	89350	90711	76045	80202	83648	87716
% Chg Same Qtr Last Yr.....	5.93	8.12	1.68	6.38	4.98	3.97	4.00	4.24	4.52	4.81	4.99	5.12	5.10	7.22	5.47	4.30	4.86
PROFESSIONAL & BUSINESS SERVICES..	63798	64342	64697	64244	66390	66336	67130	67016	69783	70119	70985	70990	73822	60261	64270	66718	70469
% Chg Same Qtr Last Yr.....	3.64	9.32	7.06	6.72	4.06	3.10	3.76	4.32	5.11	5.70	5.74	5.93	5.79	7.75	6.65	3.81	5.62
EDUCATION & HEALTH SERVICES.....	52372	52472	52980	52299	53409	53763	54368	53792	54937	55283	55885	55293	56495	51076	52531	53833	55350
% Chg Same Qtr Last Yr.....	3.47	2.05	4.48	1.43	1.98	2.46	2.62	2.85	2.86	2.83	2.79	2.79	2.83	2.15	2.85	2.48	2.82
LEISURE & HOSPITALITY.....	27235	25739	25731	26717	27454	26120	26124	27114	27872	26518	26554	27585	28375	26227	26356	26703	27132
% Chg Same Qtr Last Yr.....	1.60	1.56	-1.85	0.66	0.80	1.48	1.53	1.48	1.52	1.52	1.65	1.74	1.81	4.72	0.49	1.32	1.61
OTHER SERVICES.....	46973	46467	46798	47615	48331	47689	48103	49016	49796	49245	49763	50688	51490	45150	46963	48285	49873
% Chg Same Qtr Last Yr.....	4.49	4.26	2.83	4.49	2.89	2.63	2.79	2.94	3.03	3.26	3.45	3.41	3.40	2.52	4.02	2.81	3.29
GOVERNMENT.....	47035	48483	49858	47110	48031	49892	51036	48072	48925	50338	51712	48843	49700	47174	48122	49258	49955
% Chg Same Qtr Last Yr.....	2.33	2.01	1.87	1.84	2.12	2.91	2.36	2.04	1.86	0.89	1.32	1.60	1.58	2.89	2.01	2.36	1.41
FEDERAL, CIVILIAN.....	83756	84126	84818	85231	86237	86637	87190	87493	88432	88770	89280	89544	90468	82264	84483	86889	89006
% Chg Same Qtr Last Yr.....	3.22	2.68	2.34	2.56	2.96	2.98	2.80	2.65	2.55	2.46	2.40	2.34	2.30	3.73	2.70	2.85	2.44
STATE & LOCAL.....	42447	43862	45186	42372	43167	44563	45918	43048	43851	45262	46632	43714	44523	42717	43467	44174	44865
% Chg Same Qtr Last Yr.....	2.12	1.69	1.54	1.68	1.70	1.60	1.62	1.60	1.59	1.57	1.56	1.55	1.53	2.83	1.75	1.63	1.56

**Table 14: Tennessee Average Annual Wage and Salary Rate by Sector, Seasonally Adjusted (current dollars) January 2020**

	History		Forecast Data										Annual				
	2019:1	2019:2	2019:3	2019:4	2020:1	2020:2	2020:3	2020:4	2021:1	2021:2	2021:3	2021:4	2022:1	2018	2019	2020	2021
	TOTAL NONFARM.....	52019	52485	52686	53021	53431	53878	54287	54727	55228	55709	56195	56695	57190	50843	52552	54081
% Chg Prev Qtr SAAR.....	8.09	3.63	1.54	2.57	3.13	3.39	3.07	3.28	3.72	3.53	3.54	3.60	3.54	3.38	3.36	2.91	3.47
% Chg Same Qtr Last Yr.....	3.00	3.77	2.75	3.93	2.72	2.65	3.04	3.22	3.36	3.40	3.52	3.60	3.55	3.38	3.36	2.91	3.47
NATURAL RESOURCES, MINING AND CONSTRUCTION.....	62032	62856	60938	60770	61950	62828	63257	63662	64102	64548	64957	65439	65887	58310	61649	62924	64761
% Chg Prev Qtr SAAR.....	38.40	5.42	-11.66	-1.10	7.99	5.79	2.76	2.59	2.79	2.81	2.56	3.00	2.77	0.80	5.73	2.07	2.92
% Chg Same Qtr Last Yr.....	6.60	6.62	3.46	6.26	-0.13	-0.05	3.80	4.76	3.47	2.74	2.69	2.79	2.78	0.80	5.73	2.07	2.92
MANUFACTURING.....	60164	60654	60924	61319	61832	62302	62780	63301	63818	64312	64845	65363	65888	59608	60765	62554	64585
% Chg Prev Qtr SAAR.....	7.02	3.29	1.79	2.62	3.39	3.08	3.10	3.36	3.31	3.13	3.36	3.24	3.25	-0.46	1.94	2.94	3.25
% Chg Same Qtr Last Yr.....	1.08	1.78	1.26	3.66	2.77	2.72	3.05	3.23	3.21	3.23	3.29	3.26	3.24	-0.46	1.94	2.94	3.25
DURABLE GOODS.....	61217	61747	62201	62706	63299	63848	64415	64979	65608	66191	66808	67393	68018	60009	61968	64135	66500
% Chg Prev Qtr SAAR.....	10.43	3.51	2.97	3.29	3.84	3.51	3.60	3.55	3.93	3.60	3.78	3.55	3.76	2.37	3.26	3.50	3.69
% Chg Same Qtr Last Yr.....	1.74	3.82	2.51	5.00	3.40	3.40	3.56	3.62	3.65	3.67	3.71	3.71	3.67	2.37	3.26	3.50	3.69
NONDURABLE GOODS.....	58286	58704	58634	58813	59183	59511	59828	60272	60590	60924	61307	61703	62046	58895	58609	59698	61131
% Chg Prev Qtr SAAR.....	0.96	2.90	-0.48	1.23	2.54	2.23	2.15	3.00	2.13	2.22	2.54	2.61	2.24	-5.22	-0.49	1.86	2.40
% Chg Same Qtr Last Yr.....	-0.16	-1.82	-1.06	1.15	1.54	1.37	2.04	2.48	2.38	2.37	2.47	2.37	2.40	-5.22	-0.49	1.86	2.40
TRADE, TRANSPORTATION, UTILITIES.....	48018	48323	48454	48817	49136	49475	49852	50276	50688	51088	51508	51946	52362	46909	48403	49684	51308
% Chg Prev Qtr SAAR.....	11.32	2.57	1.09	3.03	2.64	2.79	3.09	3.44	3.32	3.19	3.33	3.45	3.24	2.91	3.19	2.65	3.27
% Chg Same Qtr Last Yr.....	3.21	2.99	2.13	4.43	2.33	2.38	2.89	2.99	3.16	3.26	3.32	3.32	3.30	2.91	3.19	2.65	3.27
WHOLESALE TRADE.....	75252	76897	76830	77411	77780	78241	78903	79619	80282	80989	81708	82460	83178	73470	76597	78636	81360
% Chg Prev Qtr SAAR.....	18.75	9.04	-0.35	3.06	1.92	2.39	3.43	3.68	3.37	3.57	3.60	3.73	3.53	0.59	4.26	2.66	3.46
% Chg Same Qtr Last Yr.....	2.17	3.68	3.86	7.39	3.36	1.75	2.70	2.85	3.22	3.51	3.55	3.57	3.61	0.59	4.26	2.66	3.46
RETAIL TRADE.....	32106	32245	32406	32599	32762	32957	33146	33320	33500	33668	33852	34053	34246	31874	32339	33046	33768
% Chg Prev Qtr SAAR.....	7.38	1.73	2.02	2.40	2.01	2.40	2.32	2.12	2.17	2.03	2.20	2.40	2.28	3.00	1.46	2.19	2.19
% Chg Same Qtr Last Yr.....	1.95	0.93	-0.34	3.36	2.04	2.21	2.28	2.21	2.25	2.16	2.13	2.20	2.23	3.00	1.46	2.19	2.19
TRANSPORTATION & UTILITIES.....	60073	59781	60226	60642	61084	61522	62006	62608	63168	63737	64303	64930	65537	58091	60181	61805	64035
% Chg Prev Qtr SAAR.....	7.62	-1.93	3.01	2.79	2.95	2.90	3.18	3.94	3.63	3.65	3.60	3.96	3.79	4.29	3.60	2.70	3.61
% Chg Same Qtr Last Yr.....	4.49	3.82	3.28	2.82	1.68	2.91	2.95	3.24	3.41	3.60	3.70	3.71	3.75	4.29	3.60	2.70	3.61
INFORMATION.....	69672	69483	70210	70748	71308	71800	72273	72730	73437	74159	74890	75573	76320	72863	70028	72028	74515
% Chg Prev Qtr SAAR.....	1.08	-1.08	4.25	3.10	3.20	2.79	2.66	2.55	3.95	3.99	4.00	3.70	4.01	7.81	-3.89	2.86	3.45
% Chg Same Qtr Last Yr.....	-6.81	-7.09	-3.05	1.82	2.35	3.33	2.94	2.80	2.99	3.29	3.62	3.91	3.92	7.81	-3.89	2.86	3.45
FINANCIAL ACTIVITIES.....	78392	79934	80787	81489	82298	83109	84022	84944	86017	87108	88217	89295	90402	75995	80150	83593	87659
% Chg Prev Qtr SAAR.....	9.67	8.10	4.34	3.52	4.03	4.00	4.47	4.46	5.15	5.17	5.19	4.98	5.05	7.14	5.47	4.30	4.86
% Chg Same Qtr Last Yr.....	6.27	7.99	1.51	6.38	4.98	3.97	4.00	4.24	4.52	4.81	4.99	5.12	5.10	7.14	5.47	4.30	4.86

(CONTINUED ON NEXT PAGE)

**Table 14: Tennessee Average Annual Wage and Salary Rate by Sector, Seasonally Adjusted (current dollars)**

**January 2020**

	History		Forecast Data										Annual				
	2019:1	2019:2	2019:3	2019:4	2020:1	2020:2	2020:3	2020:4	2021:1	2021:2	2021:3	2021:4	2022:1	2018	2019	2020	2021
PROFESSIONAL & BUSINESS SERVICES...	63056	64204	64686	65168	65618	66194	67119	67980	68971	69968	70973	72011	72963	60144	64278	66728	70481
% Chg Prev Qtr SAAR.....	13.69	7.49	3.04	3.01	2.79	3.56	5.71	5.23	5.96	5.91	5.87	5.98	5.39	7.59	6.88	3.81	5.62
% Chg Same Qtr Last Yr.....	4.26	9.38	7.22	6.72	4.06	3.10	3.76	4.32	5.11	5.70	5.74	5.93	5.79	7.59	6.88	3.81	5.62
EDUCATION & HEALTH SERVICES.....	52232	52352	52647	52892	53266	53640	54026	54402	54791	55157	55533	55919	56344	51102	52531	53833	55350
% Chg Prev Qtr SAAR.....	0.68	0.92	2.27	1.87	2.86	2.84	2.91	2.81	2.89	2.70	2.76	2.81	3.07	2.23	2.80	2.48	2.82
% Chg Same Qtr Last Yr.....	3.19	2.23	4.38	1.43	1.98	2.46	2.62	2.85	2.86	2.83	2.79	2.79	2.83	2.23	2.80	2.48	2.82
LEISURE & HOSPITALITY.....	26319	26255	26327	26434	26530	26643	26729	26827	26934	27049	27169	27293	27420	26191	26334	26682	27111
% Chg Prev Qtr SAAR.....	0.87	-0.97	1.10	1.64	1.46	1.71	1.29	1.48	1.61	1.71	1.79	1.84	1.88	4.64	0.54	1.32	1.61
% Chg Same Qtr Last Yr.....	1.96	1.38	-1.74	0.66	0.80	1.48	1.53	1.48	1.52	1.52	1.65	1.74	1.81	4.64	0.54	1.32	1.61
OTHER SERVICES.....	46436	46844	47087	47431	47779	48076	48401	48826	49227	49645	50070	50491	50901	45133	46949	48270	49858
% Chg Prev Qtr SAAR.....	9.52	3.56	2.09	2.95	2.97	2.51	2.73	3.56	3.33	3.44	3.47	3.40	3.29	2.49	4.03	2.81	3.29
% Chg Same Qtr Last Yr.....	4.22	4.31	3.09	4.49	2.89	2.63	2.79	2.94	3.03	3.26	3.45	3.41	3.40	2.49	4.03	2.81	3.29
GOVERNMENT.....	47747	48027	48267	48475	48758	49423	49408	49464	49665	49864	50062	50258	50452	47118	48129	49263	49962
% Chg Prev Qtr SAAR.....	1.24	2.37	2.01	1.73	2.36	5.57	-0.12	0.46	1.64	1.61	1.59	1.57	1.56	2.79	2.15	2.36	1.42
% Chg Same Qtr Last Yr.....	2.65	2.13	1.97	1.84	2.12	2.91	2.36	2.04	1.86	0.89	1.32	1.60	1.58	2.79	2.15	2.36	1.42
FEDERAL, CIVILIAN.....	83587	84126	84818	85460	86063	86637	87190	87728	88254	88770	89280	89784	90285	82347	84498	86905	89022
% Chg Prev Qtr SAAR.....	1.24	2.61	3.33	3.06	2.85	2.70	2.58	2.49	2.42	2.36	2.32	2.28	2.25	3.81	2.61	2.85	2.44
% Chg Same Qtr Last Yr.....	2.80	2.54	2.55	2.56	2.96	2.98	2.80	2.65	2.55	2.46	2.40	2.34	2.30	3.81	2.61	2.85	2.44
STATE & LOCAL.....	43182	43396	43558	43741	43914	44090	44264	44438	44610	44782	44954	45124	45294	42652	43469	44177	44868
% Chg Prev Qtr SAAR.....	1.55	2.00	1.50	1.69	1.59	1.61	1.59	1.58	1.56	1.55	1.54	1.53	1.51	2.71	1.92	1.63	1.56
% Chg Same Qtr Last Yr.....	2.54	1.84	1.62	1.68	1.70	1.60	1.62	1.59	1.59	1.57	1.56	1.54	1.53	2.71	1.92	1.63	1.56

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**Table 15: Tennessee Civilian Labor Force and Unemployment Rate, Not Seasonally Adjusted**

													January 2020			
	History		Forecast Data										Annual			
	2019:2	2019:3	2019:4	2020:1	2020:2	2020:3	2020:4	2021:1	2021:2	2021:3	2021:4	2022:1	2018	2019	2020	2021
CIVILIAN LABOR FORCE (THOUS).....	3364	3368	3371	3404	3432	3409	3402	3435	3461	3435	3427	3460	3245	3350	3412	3439
% Chg Same Qtr Last Yr.....	3.39	3.63	3.60	3.19	2.04	1.23	0.92	0.91	0.83	0.76	0.74	0.74	1.72	3.25	1.84	0.81
EMPLOYED PERSONS (THOUS).....	3254	3247	3261	3280	3313	3286	3290	3309	3340	3310	3314	3333	3132	3237	3292	3318
% Chg Same Qtr Last Yr.....	3.58	3.70	3.44	2.91	1.83	1.21	0.89	0.88	0.81	0.73	0.72	0.72	2.00	3.37	1.70	0.79
UNEMPLOYED PERSONS (THOUS).....	110	121	109	124	119	123	111	126	121	125	113	128	113	113	119	121
% Chg Same Qtr Last Yr.....	-2.01	1.96	8.49	11.10	8.28	1.90	1.74	1.56	1.49	1.43	1.48	1.48	-5.55	-0.25	5.68	1.49
PARTICIPATION RATE (PERCENT).....	61.4	61.4	61.3	61.8	62.1	61.6	61.3	61.8	62.1	61.6	61.3	61.8	59.7	61.1	61.7	61.7
% Chg Same Qtr Last Yr.....	2.49	2.76	2.75	2.31	1.18	0.39	0.08	0.08	0.01	-0.06	-0.06	-0.06	0.62	2.36	0.99	-0.01
UNEMPLOYMENT RATE (PERCENT).....	3.3	3.6	3.2	3.6	3.5	3.6	3.3	3.7	3.5	3.6	3.3	3.7	3.5	3.4	3.5	3.5

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**Table 16: Tennessee Civilian Labor Force and Unemployment Rate, Seasonally Adjusted**

**January 2020**

	History		Forecast Data										Annual			
	2019:2	2019:3	2019:4	2020:1	2020:2	2020:3	2020:4	2021:1	2021:2	2021:3	2021:4	2022:1	2018	2019	2020	2021
CIVILIAN LABOR FORCE (THOUS).....	3321	3356	3373	3380	3389	3398	3404	3410	3417	3423	3429	3436	3244	3332	3393	3420
% Chg Prev Qtr SAAR.....	5.67	4.31	1.96	0.82	1.11	1.03	0.72	0.76	0.81	0.74	0.68	0.74	1.69	2.70	1.83	0.81
% Chg Same Qtr Last Yr.....	2.44	3.31	3.61	3.17	2.04	1.23	0.92	0.91	0.83	0.76	0.75	0.74	1.69	2.70	1.83	0.81
EMPLOYED PERSONS (THOUS).....	3212	3240	3256	3262	3271	3279	3285	3291	3297	3303	3308	3314	3130	3219	3274	3300
% Chg Prev Qtr SAAR.....	5.43	3.52	1.96	0.78	1.08	1.01	0.70	0.74	0.78	0.71	0.65	0.72	1.96	2.84	1.70	0.79
% Chg Same Qtr Last Yr.....	2.79	3.29	3.44	2.91	1.83	1.21	0.89	0.88	0.81	0.73	0.72	0.71	1.96	2.84	1.70	0.79
UNEMPLOYED PERSONS (THOUS).....	109	117	117	118	118	119	119	120	120	121	121	121	114	112	119	120
% Chg Prev Qtr SAAR.....	12.98	29.65	1.98	2.00	1.95	1.68	1.34	1.27	1.67	1.43	1.56	1.27	-5.23	-1.13	5.58	1.49
% Chg Same Qtr Last Yr.....	-7.00	3.82	8.49	11.10	8.28	1.90	1.74	1.56	1.49	1.43	1.48	1.48	-5.23	-1.13	5.58	1.49
PARTICIPATION RATE (PERCENT).....	60.6	61.2	61.3	61.3	61.4	61.4	61.4	61.4	61.4	61.4	61.3	61.3	59.7	60.8	61.4	61.4
% Chg Prev Qtr SAAR.....	4.77	3.42	1.11	-0.03	0.27	0.20	-0.10	-0.06	0.00	-0.07	-0.11	-0.05	0.60	1.82	0.98	-0.01
% Chg Same Qtr Last Yr.....	1.55	2.44	2.76	2.30	1.18	0.39	0.08	0.08	0.01	-0.06	-0.06	-0.06	0.60	1.82	0.98	-0.01
UNEMPLOYMENT RATE (PERCENT).....	3.3	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.4	3.5	3.5

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Table 17: Tennessee Taxable Sales, Not Seasonally Adjusted (millions of 2012 dollars)

January 2020

	History		Forecast Data										Annual			
	2019:2	2019:3	2019:4	2020:1	2020:2	2020:3	2020:4	2021:1	2021:2	2021:3	2021:4	2022:1	2018	2019	2020	2021
TOTAL TAXABLE SALES.....	32318	32104	34773	30191	33117	32878	35717	31063	34054	33762	36720	31903	123745	128449	131904	135599
% Chg Same Qtr Last Yr.....	4.30	4.53	3.27	3.21	2.47	2.41	2.71	2.89	2.83	2.69	2.81	2.70	4.53	3.80	2.69	2.80
AUTO DEALERS.....	3225	3232	2970	3007	3145	3178	2961	2999	3138	3181	2969	3003	12334	12434	12291	12287
% Chg Same Qtr Last Yr.....	2.82	2.72	-1.65	-0.04	-2.48	-1.66	-0.27	-0.24	-0.22	0.10	0.24	0.12	1.45	0.81	-1.15	-0.03
PURCHASES FROM MANUFACTURERS....	1401	1393	1754	1222	1421	1412	1779	1243	1444	1437	1810	1262	5510	5775	5834	5934
% Chg Same Qtr Last Yr.....	4.64	5.12	1.09	-0.44	1.45	1.37	1.43	1.71	1.58	1.77	1.78	1.52	6.34	4.80	1.02	1.71
MISC DURABLE GOODS.....	5604	5406	5717	4941	5775	5550	5893	5100	5965	5723	6064	5272	20961	21511	22160	22852
% Chg Same Qtr Last Yr.....	1.81	1.95	2.78	3.27	3.06	2.67	3.09	3.21	3.28	3.11	2.90	3.36	3.89	2.63	3.02	3.12
EATING AND DRINKING PLACES.....	3550	3471	3447	3338	3638	3566	3535	3440	3747	3656	3622	3522	12664	13721	14077	14464
% Chg Same Qtr Last Yr.....	9.53	9.94	4.36	2.58	2.49	2.75	2.54	3.07	2.97	2.51	2.47	2.36	3.81	8.35	2.59	2.75
FOOD STORES.....	2957	3045	3290	2924	3032	3118	3370	2998	3104	3193	3448	3057	11823	12108	12444	12743
% Chg Same Qtr Last Yr.....	2.10	3.68	4.27	3.83	2.54	2.40	2.42	2.53	2.40	2.39	2.30	1.96	3.23	2.41	2.77	2.40
LIQUOR STORES.....	233	224	272	217	240	230	280	223	247	237	289	230	902	945	967	996
% Chg Same Qtr Last Yr.....	5.99	2.86	1.69	0.63	2.78	2.71	2.95	3.06	2.95	2.95	2.91	2.77	5.13	4.82	2.32	2.97
HOTELS AND MOTELS.....	1171	1178	1081	870	1200	1206	1104	889	1224	1231	1127	906	3558	4325	4379	4471
% Chg Same Qtr Last Yr.....	21.67	26.80	9.34	-2.76	2.48	2.35	2.06	2.19	2.03	2.10	2.08	1.90	4.12	21.56	1.26	2.09
OTHER RETAIL AND SERVICE.....	9801	9832	11449	9516	10258	10268	11952	9972	10734	10718	12502	10420	38197	40000	41995	43926
% Chg Same Qtr Last Yr.....	5.33	5.32	6.05	6.70	4.67	4.43	4.40	4.79	4.64	4.38	4.60	4.49	6.24	4.72	4.99	4.60
MISC NONDURABLE GOODS.....	2432	2367	2814	2275	2491	2425	2888	2338	2559	2489	2964	2400	9639	9806	10079	10350
% Chg Same Qtr Last Yr.....	3.31	2.54	1.18	3.74	2.43	2.42	2.66	2.77	2.75	2.64	2.60	2.65	3.26	1.73	2.79	2.69
TRANSPORTATION, COMMUNICATION.....	1947	1956	1980	1881	1918	1925	1954	1859	1892	1898	1927	1832	8158	7824	7678	7577
% Chg Same Qtr Last Yr.....	-4.07	-4.84	-4.05	-3.08	-1.50	-1.57	-1.32	-1.18	-1.33	-1.38	-1.37	-1.44	6.59	-4.10	-1.86	-1.32
PER CAPITA (\$)......	4739	4698	5078	4400	4816	4772	5173	4490	4913	4861	5277	4576	18278	18812	19160	19541
% Chg Same Qtr Last Yr.....	3.42	3.65	2.41	2.35	1.63	1.58	1.88	2.06	2.01	1.88	2.00	1.90	3.62	2.93	1.85	1.98

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**Table 18: Tennessee Taxable Sales, Seasonally Adjusted (millions of 2012 dollars)**

**January 2020**

	History		Forecast Data										Annual			
	2019:2	2019:3	2019:4	2020:1	2020:2	2020:3	2020:4	2021:1	2021:2	2021:3	2021:4	2022:1	2018	2019	2020	2021
	TOTAL TAXABLE SALES.....	32041	32286	32451	32624	32838	33075	33314	33574	33770	33972	34230	34490	123681	128388	131850
% Chg Prev Qtr SAAR.....	5.57	3.09	2.06	2.15	2.65	2.92	2.92	3.16	2.36	2.41	3.07	3.08	4.58	3.81	2.70	2.80
% Chg Same Qtr Last Yr.....	4.27	4.47	3.21	3.21	2.49	2.44	2.66	2.91	2.84	2.71	2.75	2.73	4.58	3.81	2.70	2.80
AUTO DEALERS.....	3154	3121	3076	3077	3076	3069	3067	3070	3069	3072	3075	3074	12335	12430	12290	12286
% Chg Prev Qtr SAAR.....	10.23	-4.14	-5.70	0.22	-0.16	-0.89	-0.25	0.33	-0.05	0.36	0.31	-0.14	1.50	0.77	-1.12	-0.03
% Chg Same Qtr Last Yr.....	2.76	2.72	-1.65	-0.04	-2.48	-1.66	-0.27	-0.24	-0.22	0.10	0.24	0.12	1.50	0.77	-1.12	-0.03
PURCHASES FROM MANUFACTURERS....	1436	1441	1445	1449	1457	1461	1466	1473	1480	1487	1492	1496	5489	5777	5832	5932
% Chg Prev Qtr SAAR.....	-5.19	1.51	1.21	0.85	2.24	1.20	1.43	1.96	1.72	1.95	1.47	0.93	6.12	5.26	0.95	1.71
% Chg Same Qtr Last Yr.....	4.93	5.12	1.09	-0.44	1.45	1.37	1.43	1.71	1.58	1.77	1.78	1.52	6.12	5.26	0.95	1.71
MISC DURABLE GOODS.....	5347	5410	5444	5475	5511	5555	5613	5651	5692	5727	5775	5841	20941	21503	22153	22846
% Chg Prev Qtr SAAR.....	3.51	4.75	2.56	2.25	2.71	3.17	4.25	2.73	2.98	2.50	3.39	4.60	3.86	2.68	3.02	3.13
% Chg Same Qtr Last Yr.....	1.88	1.95	2.78	3.27	3.06	2.67	3.09	3.21	3.28	3.11	2.90	3.36	3.86	2.68	3.02	3.13
EATING AND DRINKING PLACES.....	3417	3440	3469	3483	3502	3535	3557	3590	3606	3624	3645	3674	12665	13721	14077	14464
% Chg Prev Qtr SAAR.....	2.61	2.79	3.32	1.63	2.24	3.85	2.48	3.74	1.85	1.99	2.30	3.32	3.82	8.33	2.59	2.75
% Chg Same Qtr Last Yr.....	9.60	9.94	4.36	2.58	2.49	2.75	2.54	3.07	2.97	2.51	2.47	2.36	3.82	8.33	2.59	2.75
FOOD STORES.....	3025	3046	3064	3083	3102	3119	3138	3161	3177	3193	3210	3223	11826	12104	12441	12741
% Chg Prev Qtr SAAR.....	7.87	2.74	2.33	2.51	2.58	2.17	2.43	2.96	2.06	2.12	2.08	1.59	3.41	2.35	2.79	2.41
% Chg Same Qtr Last Yr.....	2.16	3.68	4.27	3.83	2.54	2.40	2.42	2.53	2.40	2.39	2.30	1.96	3.41	2.35	2.79	2.41
LIQUOR STORES.....	234	236	237	239	241	242	244	246	248	250	251	253	900	945	966	995
% Chg Prev Qtr SAAR.....	-5.25	3.15	2.29	2.59	3.10	2.88	3.23	3.04	2.68	2.87	3.08	2.48	4.93	5.00	2.27	2.97
% Chg Same Qtr Last Yr.....	5.78	2.86	1.69	0.63	2.78	2.71	2.95	3.06	2.95	2.95	2.91	2.77	4.93	5.00	2.27	2.97
HOTELS AND MOTELS.....	1066	1072	1081	1086	1092	1097	1103	1110	1115	1120	1126	1131	3555	4335	4378	4470
% Chg Prev Qtr SAAR.....	-16.97	2.33	3.30	1.87	2.42	1.81	2.15	2.37	1.82	2.05	2.10	1.62	4.30	21.96	0.99	2.10
% Chg Same Qtr Last Yr.....	21.90	26.80	9.34	-2.76	2.48	2.35	2.06	2.19	2.03	2.10	2.08	1.90	4.30	21.96	0.99	2.10
OTHER RETAIL AND SERVICE.....	9958	10106	10219	10313	10424	10554	10669	10807	10907	11016	11159	11293	38180	39949	41960	43890
% Chg Prev Qtr SAAR.....	12.68	6.07	4.55	3.72	4.36	5.10	4.42	5.28	3.76	4.06	5.30	4.86	6.33	4.64	5.03	4.60
% Chg Same Qtr Last Yr.....	5.27	5.32	6.05	6.70	4.67	4.43	4.40	4.79	4.64	4.38	4.60	4.49	6.33	4.64	5.03	4.60
MISC NONDURABLE GOODS.....	2451	2466	2479	2493	2510	2526	2545	2562	2579	2592	2612	2630	9632	9799	10074	10345
% Chg Prev Qtr SAAR.....	8.19	2.50	2.21	2.19	2.82	2.48	3.16	2.63	2.72	2.04	3.02	2.81	3.29	1.73	2.81	2.69
% Chg Same Qtr Last Yr.....	3.33	2.54	1.18	3.74	2.43	2.42	2.66	2.77	2.75	2.64	2.60	2.65	3.29	1.73	2.81	2.69
TRANSPORTATION, COMMUNICATION.....	1952	1947	1937	1928	1923	1917	1911	1905	1897	1890	1885	1878	8158	7825	7678	7577
% Chg Prev Qtr SAAR.....	-7.24	-0.99	-2.09	-1.88	-1.01	-1.29	-1.08	-1.34	-1.61	-1.48	-1.05	-1.60	6.74	-4.08	-1.87	-1.31
% Chg Same Qtr Last Yr.....	-4.14	-4.84	-4.05	-3.08	-1.50	-1.57	-1.32	-1.18	-1.33	-1.38	-1.37	-1.44	6.74	-4.08	-1.87	-1.31
PER CAPITA (\$) % Chg Prev Qtr SAAR.....	4698	4724	4739	4754	4775	4800	4825	4853	4872	4891	4919	4947	18270	18806	19155	19535
% Chg Same Qtr Last Yr.....	4.68	2.23	1.22	1.31	1.81	2.09	2.10	2.34	1.55	1.61	2.27	2.28	3.67	2.93	1.86	1.99
% Chg Same Qtr Last Yr.....	3.39	3.59	2.34	2.35	1.64	1.61	1.83	2.08	2.02	1.90	1.94	1.93	3.67	2.93	1.86	1.99

Table 19: Tennessee Taxable Sales, Not Seasonally Adjusted (millions of current dollars)

January 2020

	History		Forecast Data										Annual			
	2019:2	2019:3	2019:4	2020:1	2020:2	2020:3	2020:4	2021:1	2021:2	2021:3	2021:4	2022:1	2018	2019	2020	2021
TOTAL TAXABLE SALES.....	35396	35307	38483	33598	37012	36921	40269	35176	38767	38621	42185	36862	133858	141037	147799	154749
% Chg Same Qtr Last Yr.....	5.78	6.04	5.07	5.48	4.57	4.57	4.64	4.70	4.74	4.60	4.76	4.79	6.71	5.36	4.79	4.70
AUTO DEALERS.....	3532	3555	3286	3346	3514	3569	3339	3396	3572	3639	3410	3470	13339	13647	13768	14018
% Chg Same Qtr Last Yr.....	4.28	4.20	0.07	2.17	-0.49	0.41	1.60	1.51	1.64	1.96	2.14	2.16	3.57	2.31	0.89	1.81
PURCHASES FROM MANUFACTURERS....	1534	1532	1941	1360	1588	1585	2005	1408	1643	1643	2080	1458	5963	6343	6539	6774
% Chg Same Qtr Last Yr.....	6.13	6.64	2.85	1.75	3.52	3.51	3.33	3.50	3.47	3.66	3.71	3.58	8.56	6.37	3.09	3.59
MISC DURABLE GOODS.....	6137	5945	6326	5499	6455	6233	6644	5775	6791	6547	6967	6091	22674	23619	24830	26079
% Chg Same Qtr Last Yr.....	3.26	3.42	4.57	5.54	5.17	4.84	5.03	5.03	5.21	5.03	4.85	5.47	6.06	4.17	5.13	5.03
EATING AND DRINKING PLACES.....	3888	3817	3815	3714	4066	4005	3985	3896	4265	4182	4161	4069	13697	15062	15770	16504
% Chg Same Qtr Last Yr.....	11.09	11.53	6.18	4.85	4.59	4.92	4.46	4.89	4.89	4.42	4.41	4.44	6.00	9.97	4.70	4.65
FOOD STORES.....	3238	3349	3642	3254	3388	3502	3800	3395	3534	3652	3961	3532	12788	13295	13943	14542
% Chg Same Qtr Last Yr.....	3.55	5.18	6.09	6.13	4.63	4.55	4.34	4.34	4.31	4.30	4.24	4.03	5.37	3.96	4.88	4.30
LIQUOR STORES.....	255	246	302	241	268	258	316	253	281	271	332	265	975	1038	1084	1136
% Chg Same Qtr Last Yr.....	7.49	4.35	3.47	2.86	4.88	4.88	4.88	4.87	4.87	4.87	4.87	4.86	7.34	6.38	4.42	4.87
HOTELS AND MOTELS.....	1282	1295	1197	968	1341	1354	1244	1007	1394	1408	1294	1047	3850	4749	4907	5103
% Chg Same Qtr Last Yr.....	23.40	28.63	11.24	-0.61	4.57	4.51	3.97	3.98	3.93	4.00	4.02	3.97	6.33	23.36	3.34	3.98
OTHER RETAIL AND SERVICE.....	10734	10813	12670	10590	11465	11531	13475	11293	12220	12260	14362	12040	41321	43928	47061	50135
% Chg Same Qtr Last Yr.....	6.82	6.85	7.90	9.05	6.81	6.63	6.36	6.64	6.59	6.32	6.58	6.62	8.44	6.31	7.13	6.53
MISC NONDURABLE GOODS.....	2663	2604	3114	2532	2783	2723	3256	2648	2913	2847	3405	2773	10428	10768	11295	11813
% Chg Same Qtr Last Yr.....	4.78	4.02	2.94	6.03	4.52	4.58	4.58	4.58	4.66	4.55	4.55	4.73	5.41	3.27	4.89	4.58
TRANSPORTATION, COMMUNICATION.....	2132	2151	2191	2094	2143	2162	2203	2105	2154	2172	2214	2117	8823	8588	8601	8645
% Chg Same Qtr Last Yr.....	-2.71	-3.46	-2.38	-0.94	0.52	0.50	0.53	0.56	0.51	0.46	0.50	0.57	8.78	-2.67	0.16	0.51
PER CAPITA (\$)......	5190	5166	5619	4896	5382	5358	5832	5085	5593	5561	6062	5287	19771	20656	21469	22300
% Chg Same Qtr Last Yr.....	4.89	5.14	4.20	4.61	3.71	3.72	3.79	3.86	3.91	3.77	3.94	3.97	5.78	4.47	3.94	3.87

Boyd Center for Business and Economic Research, University of Tennessee

Tennessee Econometric Model

**Table 20: Tennessee Taxable Sales, Seasonally Adjusted (millions of current dollars)**

**January 2020**

	History		Forecast Data										Annual				
	2019:1	2019:2	2019:3	2019:4	2020:1	2020:2	2020:3	2020:4	2021:1	2021:2	2021:3	2021:4	2022:1	2018	2019	2020	2021
TOTAL TAXABLE SALES.....	34417	35092	35507	35913	36305	36699	37142	37559	38019	38444	38861	39324	39851	133758	140929	147704	154648
% Chg Prev Qtr SAAR.....	2.54	8.08	4.82	4.65	4.43	4.42	4.91	4.56	5.00	4.55	4.40	4.86	5.47	6.76	5.36	4.81	4.70
% Chg Same Qtr Last Yr.....	4.71	5.75	5.98	5.01	5.49	4.58	4.60	4.58	4.72	4.75	4.63	4.70	4.82	6.76	5.36	4.81	4.70
AUTO DEALERS.....	3352	3455	3433	3404	3425	3438	3447	3458	3476	3494	3514	3532	3551	13340	13643	13767	14017
% Chg Prev Qtr SAAR.....	-5.72	12.85	-2.53	-3.31	2.46	1.56	1.03	1.34	2.12	2.08	2.31	2.05	2.18	3.62	2.27	0.91	1.82
% Chg Same Qtr Last Yr.....	0.67	4.22	4.20	0.07	2.17	-0.49	0.41	1.60	1.51	1.64	1.96	2.14	2.16	3.62	2.27	0.91	1.82
PURCHASES FROM MANUFACTURERS.....	1584	1572	1585	1600	1612	1628	1641	1653	1668	1684	1701	1714	1728	5936	6341	6533	6767
% Chg Prev Qtr SAAR.....	7.61	-2.93	3.21	3.78	3.10	4.00	3.16	3.05	3.78	3.89	3.93	3.23	3.27	8.34	6.82	3.03	3.58
% Chg Same Qtr Last Yr.....	11.77	6.42	6.64	2.85	1.75	3.52	3.51	3.33	3.50	3.47	3.66	3.71	3.58	8.34	6.82	3.03	3.58
MISC DURABLE GOODS.....	5772	5857	5950	6025	6092	6159	6238	6328	6399	6480	6552	6635	6749	22648	23604	24817	26065
% Chg Prev Qtr SAAR.....	0.74	5.98	6.51	5.16	4.54	4.48	5.18	5.91	4.56	5.18	4.49	5.18	7.03	6.02	4.22	5.14	5.03
% Chg Same Qtr Last Yr.....	5.62	3.32	3.42	4.57	5.54	5.17	4.84	5.03	5.03	5.21	5.03	4.85	5.47	6.02	4.22	5.14	5.03
EATING AND DRINKING PLACES.....	3696	3742	3784	3839	3876	3914	3970	4010	4065	4105	4145	4187	4246	13698	15061	15769	16502
% Chg Prev Qtr SAAR.....	9.26	5.05	4.51	5.94	3.90	4.00	5.86	4.11	5.59	4.02	3.97	4.07	5.72	6.00	9.95	4.70	4.65
% Chg Same Qtr Last Yr.....	11.21	11.16	11.53	6.18	4.85	4.59	4.92	4.46	4.89	4.89	4.42	4.41	4.44	6.00	9.95	4.70	4.65
FOOD STORES.....	3232	3314	3350	3390	3430	3467	3502	3537	3579	3616	3653	3688	3724	12789	13286	13937	14536
% Chg Prev Qtr SAAR.....	4.65	10.44	4.46	4.92	4.80	4.35	4.15	4.06	4.79	4.24	4.10	3.85	3.95	5.55	3.89	4.90	4.30
% Chg Same Qtr Last Yr.....	0.70	3.62	5.18	6.09	6.13	4.63	4.55	4.34	4.34	4.31	4.30	4.24	4.03	5.55	3.89	4.90	4.30
LIQUOR STORES.....	258	256	260	263	266	269	272	275	279	282	285	289	292	973	1037	1082	1135
% Chg Prev Qtr SAAR.....	7.39	-2.99	4.89	4.88	4.88	4.88	4.88	4.87	4.87	4.87	4.87	4.86	4.86	7.14	6.56	4.37	4.87
% Chg Same Qtr Last Yr.....	11.58	7.29	4.35	3.47	2.86	4.88	4.88	4.88	4.87	4.87	4.87	4.87	4.86	7.14	6.56	4.37	4.87
HOTELS AND MOTELS.....	1216	1167	1179	1196	1208	1221	1232	1244	1256	1269	1281	1294	1306	3845	4758	4905	5100
% Chg Prev Qtr SAAR.....	63.47	-15.00	4.05	5.92	4.15	4.19	3.78	3.78	4.19	3.99	4.03	3.87	3.98	6.50	23.75	3.08	3.98
% Chg Same Qtr Last Yr.....	33.76	23.63	28.63	11.24	-0.61	4.57	4.51	3.97	3.98	3.93	4.00	4.02	3.97	6.50	23.75	3.08	3.98
OTHER RETAIL AND SERVICE.....	10524	10907	11115	11310	11477	11649	11852	12028	12238	12417	12602	12820	13048	41290	43855	47006	50077
% Chg Prev Qtr SAAR.....	1.62	15.37	7.85	7.20	6.04	6.16	7.14	6.09	7.16	5.97	6.08	7.12	7.30	8.55	6.21	7.19	6.53
% Chg Same Qtr Last Yr.....	3.27	6.76	6.85	7.90	9.05	6.81	6.63	6.36	6.64	6.59	6.32	6.58	6.62	8.55	6.21	7.19	6.53
MISC NONDURABLE GOODS.....	2616	2684	2712	2744	2774	2805	2836	2870	2901	2936	2965	3000	3038	10417	10756	11285	11803
% Chg Prev Qtr SAAR.....	-7.18	10.77	4.22	4.80	4.47	4.59	4.47	4.81	4.46	4.91	4.02	4.81	5.20	5.45	3.25	4.92	4.59
% Chg Same Qtr Last Yr.....	1.26	4.80	4.02	2.94	6.03	4.52	4.58	4.58	4.58	4.66	4.55	4.55	4.73	5.45	3.25	4.92	4.59
TRANSPORTATION, COMMUNICATION.....	2166	2138	2141	2143	2145	2149	2152	2155	2157	2160	2162	2166	2169	8822	8588	8601	8645
% Chg Prev Qtr SAAR.....	-5.38	-5.03	0.67	0.39	0.31	0.70	0.62	0.50	0.42	0.49	0.43	0.66	0.69	8.93	-2.65	0.15	0.51
% Chg Same Qtr Last Yr.....	-1.97	-2.77	-3.46	-2.38	-0.94	0.52	0.50	0.53	0.56	0.51	0.46	0.50	0.57	8.93	-2.65	0.15	0.51
PER CAPITA (\$.).....	5057	5146	5196	5244	5290	5337	5390	5440	5496	5546	5595	5651	5716	19759	20642	21458	22288
% Chg Prev Qtr SAAR.....	1.67	7.18	3.95	3.79	3.58	3.57	4.07	3.73	4.16	3.72	3.59	4.04	4.65	5.84	4.47	3.95	3.87
% Chg Same Qtr Last Yr.....	3.81	4.85	5.09	4.13	4.61	3.72	3.75	3.73	3.88	3.92	3.80	3.88	4.00	5.84	4.47	3.95	3.87

**Table 1: Selected U.S. and Tennessee Economic Indicators, Seasonally Adjusted**

**January 2020**

	Forecast Data										
	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
TN GDP (Mil2012\$) SAAR.....	332842	339887	345378	351368	356615	362191	368455	375224	381707	388156	394545
Percentage change.....	2.69	2.12	1.62	1.73	1.49	1.56	1.73	1.84	1.73	1.69	1.65
US GDP (Bil2012\$) SAAR.....	19061.4	19458.0	19845.6	20164.5	20467.2	20857.9	21316.5	21782.0	22249.2	22729.0	23217.1
Percentage change.....	2.27	2.08	1.99	1.61	1.50	1.91	2.20	2.18	2.14	2.16	2.15
TN GDP (Mil\$) SAAR.....	381023	397426	412896	429707	446317	463737	482275	501955	521729	542068	563165
Percentage change.....	4.74	4.31	3.89	4.07	3.87	3.90	4.00	4.08	3.94	3.90	3.89
US GDP (Bil\$) SAAR.....	21424.0	22333.2	23298.4	24252.9	25217.4	26296.5	27484.2	28721.1	30004.5	31353.7	32766.3
Percentage change.....	4.10	4.24	4.32	4.10	3.98	4.28	4.52	4.50	4.47	4.50	4.51
TN PERSONAL INCOME (MIL2012\$) SAAR.....	304215	311695	320346	328887	335940	342443	349415	356639	363495	370240	377009
Percentage change.....	3.62	2.46	2.78	2.67	2.14	1.94	2.04	2.07	1.92	1.86	1.83
US PERSONAL INCOME (BIL2012\$) SAAR.....	17016	17351	17741	18109	18473	18904	19397	19892	20385	20896	21421
Percentage change.....	3.27	1.97	2.25	2.08	2.01	2.33	2.60	2.55	2.48	2.51	2.51
TN PERSONAL INCOME (MIL\$) SAAR.....	333927	349174	365494	383325	400109	416369	433466	451336	469265	487554	506365
Percentage change.....	5.17	4.57	4.67	4.88	4.38	4.06	4.11	4.12	3.97	3.90	3.86
US PERSONAL INCOME (BIL\$) SAAR.....	18668	19389	20185	21042	21932	22922	24018	25152	26314	27527	28787
Percentage change.....	4.77	3.86	4.11	4.24	4.23	4.52	4.78	4.72	4.62	4.61	4.58
TN NONFARM JOBS (THOUS).....	3111.2	3138.6	3153.5	3171.3	3186.7	3205.2	3228.9	3257.1	3281.6	3304.7	3328.2
Percentage change.....	1.60	0.88	0.47	0.57	0.49	0.58	0.74	0.87	0.75	0.71	0.71
US NONFARM JOBS (MIL).....	151.4	153.3	154.4	155.0	155.2	155.5	156.2	157.1	158.0	158.8	159.6
Percentage change.....	1.56	1.23	0.77	0.40	0.07	0.22	0.47	0.57	0.54	0.52	0.49
TN MFG JOBS (THOUS).....	358.2	360.5	358.6	357.8	358.0	357.9	357.0	356.7	356.1	355.0	354.1
Percentage change.....	2.13	0.63	-0.53	-0.22	0.05	-0.03	-0.23	-0.10	-0.17	-0.30	-0.25
US MFG JOBS (MIL).....	12.8	12.7	12.5	12.5	12.4	12.3	12.3	12.2	12.1	11.9	11.8
Percentage change.....	1.18	-0.69	-1.80	-0.27	-0.41	-0.78	-0.65	-0.30	-0.87	-1.36	-1.30
TN UNEMPLOYMENT RATE (%).....	3.4	3.5	3.5	3.5	3.6	3.7	3.7	3.8	3.9	4.0	4.1
US UNEMPLOYMENT RATE (%).....	3.7	3.4	3.5	3.8	4.3	4.5	4.5	4.4	4.4	4.4	4.4
CHAINED PRICE INDEX, GDP (2012=100.0).....	112.4	114.8	117.4	120.3	123.2	126.1	128.9	131.9	134.9	137.9	141.1
Percentage change.....	1.83	2.11	2.29	2.45	2.44	2.33	2.27	2.27	2.28	2.29	2.31
US PERS CONSUMP DEFL (2012=100.0).....	109.7	111.7	113.8	116.2	118.7	121.2	123.8	126.4	129.1	131.7	134.4
Percentage change.....	1.45	1.86	1.82	2.12	2.17	2.13	2.12	2.12	2.09	2.05	2.01
CONSUMER PRICE INDEX, ALL-URBAN (82-84=1.000).....	2.556	2.606	2.652	2.718	2.786	2.854	2.923	2.992	3.062	3.132	3.202
Percentage change.....	1.81	1.94	1.78	2.47	2.51	2.44	2.41	2.37	2.33	2.29	2.24
BANK PRIME INTEREST RATE (%).....	5.3	4.8	5.1	5.5	5.7	5.7	5.7	5.7	5.7	5.7	5.7
FEDERAL FUNDS RATE (% per annum).....	2.172	1.636	2.018	2.377	2.608	2.625	2.623	2.622	2.621	2.622	2.633
30-YEAR FIXED MORTGAGE RATE (%).....	3.9	3.9	4.3	4.5	4.6	4.7	4.7	4.7	4.8	4.8	4.8
TN TAXABLE SALES (MIL2012\$).....	128388	131850	135546	139406	142614	145457	148448	151303	154491	157661	160834
Percentage change.....	3.81	2.70	2.80	2.85	2.30	1.99	2.06	1.92	2.11	2.05	2.01
TN TAXABLE SALES (MIL\$).....	140929	147704	154648	162482	169855	176858	184157	191478	199446	207617	216018
Percentage change.....	5.36	4.81	4.70	5.07	4.54	4.12	4.13	3.98	4.16	4.10	4.05
TN AVG ANNUAL WAGE, NONFARM (2012\$).....	47878	48277	49046	49716	50031	50160	50329	50510	50677	50824	50933
Percentage change.....	1.84	0.83	1.59	1.37	0.63	0.26	0.34	0.36	0.33	0.29	0.21
TN AVG ANNUAL WAGE, NONFARM (\$).....	52552	54081	55957	57944	59586	60987	62434	63920	65422	66927	68407
Percentage change.....	3.36	2.91	3.47	3.55	2.83	2.35	2.37	2.38	2.35	2.30	2.21

**Table 2: Selected Per Capita U.S. and Tennessee Economic Indicators**

**January 2020**

	Forecast Data										
	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
TN GDP (2012\$) SAAR.....	48742	49356	49747	50213	50577	50992	51505	52090	52635	53174	53703
Percentage change.....	1.81	1.26	0.79	0.94	0.72	0.82	1.01	1.14	1.05	1.02	1.00
US GDP (2012\$) SAAR.....	57753	58538	59287	59825	60311	61053	61987	62933	63878	64855	65847
Percentage change.....	1.55	1.36	1.28	0.91	0.81	1.23	1.53	1.53	1.50	1.53	1.53
TN GDP (\$) SAAR.....	55798	57712	59472	61409	63299	65288	67416	69683	71943	74259	76655
Percentage change.....	3.84	3.43	3.05	3.26	3.08	3.14	3.26	3.36	3.24	3.22	3.23
US GDP (\$) SAAR.....	64911	67188	69602	71954	74309	76972	79922	82982	86144	89464	92930
Percentage change.....	3.36	3.51	3.59	3.38	3.27	3.58	3.83	3.83	3.81	3.85	3.87
TN PERSONAL INCOME (2012\$) SAAR.....	44560	45282	46169	47033	47681	48249	48881	49546	50157	50749	51340
Percentage change.....	2.74	1.62	1.96	1.87	1.38	1.19	1.31	1.36	1.23	1.18	1.17
US PERSONAL INCOME (2012\$) SAAR.....	51555	52198	52998	53726	54435	55335	56405	57472	58525	59623	60753
Percentage change.....	2.54	1.25	1.53	1.37	1.32	1.65	1.93	1.89	1.83	1.88	1.89
TN PERSONAL INCOME (\$) SAAR.....	48912	50726	52675	54818	56788	58664	60639	62701	64750	66828	68955
Percentage change.....	4.28	3.71	3.84	4.07	3.60	3.30	3.37	3.40	3.27	3.21	3.18
US PERSONAL INCOME (\$) SAAR.....	56562	58330	60302	62429	64626	67096	69843	72670	75547	78545	81646
Percentage change.....	4.02	3.13	3.38	3.53	3.52	3.82	4.09	4.05	3.96	3.97	3.95
TN TAXABLE SALES (2012\$).....	18806	19155	19535	19936	20242	20494	20767	21020	21317	21610	21902
Percentage change.....	2.93	1.86	1.99	2.05	1.53	1.25	1.33	1.22	1.42	1.38	1.35
TN TAXABLE SALES (\$).....	20642	21458	22288	23236	24108	24918	25762	26601	27520	28458	29417
Percentage change.....	4.47	3.95	3.87	4.25	3.75	3.36	3.39	3.25	3.46	3.41	3.37

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**Table 3: Tennessee Personal Income Components (millions of 2012 dollars)****January 2020**

	Forecast Data										
	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
TN PERSONAL INCOME.....	304215	311695	320346	328887	335940	342443	349415	356639	363495	370240	377009
Percentage change.....	3.62	2.46	2.78	2.67	2.14	1.94	2.04	2.07	1.92	1.86	1.83
WAGES AND SALARIES.....	149850	152410	155547	158537	160299	161626	163355	165353	167128	168778	170325
Percentage change.....	3.46	1.71	2.06	1.92	1.11	0.83	1.07	1.22	1.07	0.99	0.92
OTHER LABOR INCOME.....	31784	32823	33766	34478	35043	35644	36405	37233	38046	38860	39698
Percentage change.....	3.02	3.27	2.87	2.11	1.64	1.71	2.14	2.27	2.18	2.14	2.16
PROPRIETORS INCOME.....	41318	42346	43543	44761	45806	46455	46992	47708	48507	49294	50269
Percentage change.....	2.99	2.49	2.83	2.80	2.33	1.42	1.16	1.52	1.68	1.62	1.98
RENT, INTEREST, DIVIDENDS.....	44851	45318	46247	47473	48860	50425	52018	53393	54543	55708	56941
Percentage change.....	1.36	1.04	2.05	2.65	2.92	3.20	3.16	2.64	2.15	2.13	2.21
TRANSFER PAYMENTS.....	61726	64386	67119	69743	72152	74503	76855	79163	81498	83833	86033
Percentage change.....	6.43	4.31	4.24	3.91	3.46	3.26	3.16	3.00	2.95	2.87	2.62
LESS: PERS CONT FOR SOC INS....	23524	23771	24027	24231	24308	24290	24275	24263	24274	24268	24284
Percentage change.....	3.31	1.05	1.08	0.85	0.32	-0.08	-0.06	-0.05	0.05	-0.02	0.06
RESIDENCE ADJUSTMENT.....	-1790	-1817	-1848	-1875	-1912	-1919	-1935	-1948	-1954	-1965	-1972
Percentage change.....	5.52	1.50	1.72	1.44	2.00	0.38	0.82	0.68	0.29	0.57	0.35
PER CAPITA PERSONAL INCOME (\$)...	44560	45282	46169	47033	47681	48249	48881	49546	50157	50749	51340
Percentage change.....	2.74	1.62	1.96	1.87	1.38	1.19	1.31	1.36	1.23	1.18	1.17

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Tennessee Econometric Model

**Table 4: Tennessee Personal Income Components (millions of current dollars)**

**January 2020**

	Forecast Data										
	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
TN PERSONAL INCOME.....	333927	349174	365494	383325	400109	416369	433466	451336	469265	487554	506365
Percentage change.....	5.17	4.57	4.67	4.88	4.38	4.06	4.11	4.12	3.97	3.90	3.86
WAGES AND SALARIES.....	164483	170735	177467	184777	190915	196514	202647	209256	215757	222254	228762
Percentage change.....	5.01	3.80	3.94	4.12	3.32	2.93	3.12	3.26	3.11	3.01	2.93
OTHER LABOR INCOME.....	34888	36769	38525	40184	41737	43338	45163	47119	49117	51174	53319
Percentage change.....	4.56	5.39	4.77	4.31	3.86	3.84	4.21	4.33	4.24	4.19	4.19
PROPRIETORS INCOME.....	45354	47438	49680	52170	54555	56483	58296	60375	62622	64914	67518
Percentage change.....	4.53	4.60	4.73	5.01	4.57	3.53	3.21	3.57	3.72	3.66	4.01
RENT, INTEREST, DIVIDENDS.....	49231	50766	52764	55331	58194	61312	64532	67571	70415	73360	76478
Percentage change.....	2.87	3.12	3.94	4.86	5.17	5.36	5.25	4.71	4.21	4.18	4.25
TRANSFER PAYMENTS.....	67757	72130	76579	81288	85936	90589	95344	100185	105214	110398	115553
Percentage change.....	8.03	6.45	6.17	6.15	5.72	5.41	5.25	5.08	5.02	4.93	4.67
LESS: PERS CONT FOR SOC INS....	25821	26629	27412	28240	28950	29532	30114	30704	31337	31957	32615
Percentage change.....	4.85	3.13	2.94	3.02	2.51	2.01	1.97	1.96	2.06	1.98	2.06
RESIDENCE ADJUSTMENT.....	-1965	-2035	-2108	-2185	-2277	-2334	-2401	-2466	-2523	-2588	-2649
Percentage change.....	7.10	3.58	3.60	3.63	4.23	2.48	2.87	2.71	2.31	2.59	2.35
PER CAPITA PERSONAL INCOME (\$)...	48912	50726	52675	54818	56788	58664	60639	62701	64750	66828	68955
Percentage change.....	4.28	3.71	3.84	4.07	3.60	3.30	3.37	3.40	3.27	3.21	3.18

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Table 5: Tennessee Nonfarm Employment by Sector (thousands of jobs)

January 2020

	Forecast Data										
	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
TOTAL NONFARM.....	3111.2	3138.6	3158.2	3177.2	3191.7	3210.2	3227.9	3248.1	3268.1	3291.2	3314.4
Percentage change.....	1.60	0.88	0.62	0.60	0.46	0.58	0.55	0.63	0.61	0.71	0.70
NATURAL RESOURCES, MINING, CONSTRUCTION.....	130.8	129.5	129.7	130.9	131.5	132.2	133.6	135.6	137.6	139.8	142.2
Percentage change.....	1.22	-0.98	0.14	0.90	0.44	0.53	1.12	1.45	1.46	1.60	1.77
MANUFACTURING.....	358.2	360.5	358.6	357.8	358.0	357.9	357.0	356.7	356.1	355.0	354.1
Percentage change.....	2.13	0.63	-0.53	-0.22	0.05	-0.03	-0.23	-0.10	-0.17	-0.30	-0.25
DURABLE GOODS.....	229.9	232.0	230.7	230.2	230.7	231.2	231.1	231.3	231.3	230.8	230.3
Percentage change.....	2.51	0.91	-0.57	-0.18	0.21	0.21	-0.06	0.09	-0.01	-0.22	-0.21
NONDURABLE GOODS.....	128.3	128.5	127.9	127.6	127.2	126.6	125.9	125.4	124.8	124.2	123.8
Percentage change.....	1.45	0.15	-0.45	-0.28	-0.25	-0.48	-0.55	-0.45	-0.45	-0.45	-0.33
TRADE, TRANSPORTATION, UTILITIES.....	633.8	629.7	626.7	622.4	616.3	611.1	607.1	605.8	603.7	600.5	597.2
Percentage change.....	0.98	-0.65	-0.48	-0.69	-0.97	-0.85	-0.64	-0.23	-0.34	-0.53	-0.56
WHOLESALE TRADE.....	120.1	119.1	118.8	118.6	118.2	117.2	116.2	115.4	114.7	113.3	111.7
Percentage change.....	0.37	-0.84	-0.18	-0.19	-0.33	-0.89	-0.83	-0.70	-0.59	-1.24	-1.37
RETAIL TRADE.....	338.9	335.1	332.3	329.2	325.3	322.6	319.7	318.2	316.6	315.0	313.4
Percentage change.....	0.29	-1.13	-0.83	-0.92	-1.18	-0.85	-0.88	-0.47	-0.52	-0.50	-0.49
TRANSPORTATION & UTILITIES.....	174.8	175.6	175.5	174.5	172.7	171.3	171.2	172.1	172.4	172.2	172.0
Percentage change.....	2.76	0.42	-0.01	-0.58	-1.02	-0.83	-0.08	0.56	0.16	-0.11	-0.16
INFORMATION.....	46.1	46.4	46.3	45.9	45.6	45.8	45.7	45.6	45.4	44.9	44.2
Percentage change.....	1.30	0.47	-0.19	-0.81	-0.63	0.33	-0.08	-0.32	-0.50	-1.03	-1.45
FINANCIAL ACTIVITIES.....	167.7	169.8	170.5	171.0	171.3	171.4	171.4	171.3	171.2	171.0	170.9
Percentage change.....	3.13	1.20	0.45	0.29	0.16	0.05	0.00	-0.03	-0.10	-0.08	-0.04
PROFESSIONAL & BUSINESS SERVICES.....	422.8	435.1	446.6	455.9	460.7	467.4	474.0	480.2	487.2	496.3	504.7
Percentage change.....	1.23	2.91	2.66	2.07	1.05	1.47	1.40	1.32	1.45	1.87	1.69
EDUCATION & HEALTH SERVICES.....	438.9	446.6	454.9	462.0	469.7	479.4	487.7	495.9	504.5	514.3	524.6
Percentage change.....	0.80	1.75	1.85	1.58	1.65	2.07	1.74	1.68	1.72	1.96	2.00
LEISURE & HOSPITALITY.....	353.7	359.2	362.9	367.0	370.8	373.2	376.1	378.8	380.8	383.7	387.3
Percentage change.....	4.29	1.54	1.03	1.13	1.04	0.65	0.76	0.72	0.53	0.76	0.95
OTHER SERVICES.....	119.0	118.5	117.6	117.1	117.8	118.8	119.7	120.0	120.6	121.5	122.2
Percentage change.....	0.56	-0.45	-0.76	-0.37	0.56	0.82	0.76	0.25	0.51	0.77	0.60
GOVERNMENT.....	440.1	443.5	444.4	447.2	450.2	453.1	455.6	458.3	461.3	464.3	466.9
Percentage change.....	0.99	0.76	0.22	0.61	0.67	0.66	0.54	0.60	0.64	0.65	0.57
FEDERAL, CIVILIAN.....	50.0	52.8	51.2	51.0	50.8	50.7	50.5	50.4	50.3	50.2	50.0
Percentage change.....	1.93	5.64	-3.03	-0.42	-0.32	-0.29	-0.27	-0.26	-0.25	-0.25	-0.25
STATE & LOCAL.....	390.1	390.7	393.2	396.2	399.3	402.5	405.0	407.9	411.0	414.1	416.9
Percentage change.....	0.87	0.14	0.66	0.75	0.80	0.78	0.64	0.71	0.75	0.76	0.67

**Table 6: Tennessee Durable Goods Manufacturing Employment (thousands of jobs)**

**January 2020**

	Forecast Data										
	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
TOTAL DURABLE GOODS.....	229.4	229.9	228.9	228.1	228.5	229.4	229.4	229.8	229.8	229.5	229.2
Percentage change.....	2.29	0.21	-0.43	-0.33	0.18	0.36	0.04	0.14	0.01	-0.11	-0.13
WOOD PRODUCTS.....	12.5	12.5	12.5	12.6	12.8	13.0	13.1	13.2	13.3	13.3	13.4
Percentage change.....	-0.46	-0.14	0.41	0.51	1.80	1.49	0.82	0.84	0.13	0.57	0.49
NONMETALLIC MINERALS.....	14.8	15.2	15.4	15.5	15.6	15.7	15.7	15.8	15.9	16.0	16.0
Percentage change.....	5.14	2.57	1.09	0.91	0.85	0.34	0.36	0.40	0.48	0.49	0.58
PRIMARY METALS.....	11.7	12.1	12.0	11.9	11.9	12.0	12.1	12.2	12.3	12.1	12.0
Percentage change.....	5.85	3.20	-0.12	-1.03	0.03	0.71	0.72	0.69	0.73	-0.97	-1.01
FABRICATED METALS.....	37.7	37.4	37.0	36.8	36.8	37.0	36.8	36.6	36.3	35.8	35.3
Percentage change.....	2.97	-0.69	-1.09	-0.53	0.02	0.38	-0.48	-0.42	-0.96	-1.40	-1.34
MACHINERY.....	25.8	25.8	25.6	25.4	25.4	25.5	25.6	25.7	25.8	25.9	26.0
Percentage change.....	1.18	0.10	-0.85	-0.67	-0.04	0.45	0.29	0.43	0.41	0.48	0.18
COMPUTERS & ELECTRONICS.....	5.4	5.3	5.1	4.9	4.8	4.6	4.5	4.3	4.1	3.9	3.7
Percentage change.....	6.14	-2.71	-3.91	-2.94	-3.40	-3.28	-3.42	-3.90	-4.24	-4.73	-4.73
ELECTRICAL EQUIPMENT, APPLIANCES & COMPONENTS.....	18.8	18.8	18.6	18.6	18.6	18.6	18.4	18.3	18.2	18.1	17.9
Percentage change.....	-0.51	-0.14	-0.92	-0.30	0.34	0.01	-1.08	-0.61	-0.67	-0.68	-0.79
TRANSPORTATION EQUIPMENT.....	76.0	76.2	76.1	75.8	76.0	76.3	76.7	77.2	77.7	78.1	78.6
Percentage change.....	2.59	0.26	-0.14	-0.30	0.13	0.51	0.52	0.58	0.61	0.62	0.62
FURNITURE.....	9.5	9.5	9.5	9.5	9.5	9.5	9.3	9.2	9.1	8.9	8.8
Percentage change.....	-0.27	-0.01	-0.23	-0.13	0.14	-0.51	-1.48	-1.12	-1.42	-1.53	-1.46
MISCELLANEOUS DURABLES.....	17.2	17.2	17.1	17.1	17.1	17.2	17.2	17.3	17.3	17.4	17.4
Percentage change.....	1.95	-0.28	-0.38	-0.13	0.23	0.32	0.26	0.27	0.27	0.38	0.39

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**Table 7: Tennessee Nondurable Goods Manufacturing Employment (thousands of jobs) January 2020**

	Forecast Data										
	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
TOTAL NONDURABLE GOODS.....	128.3	128.4	127.8	127.4	127.1	126.5	125.8	125.2	124.6	124.1	123.7
Percentage change.....	1.44	0.07	-0.45	-0.29	-0.26	-0.49	-0.56	-0.45	-0.46	-0.45	-0.34
FOOD.....	35.9	36.0	36.0	36.1	36.3	36.4	36.4	36.5	36.7	36.7	36.8
Percentage change.....	0.38	0.19	0.02	0.40	0.41	0.23	0.20	0.32	0.30	0.22	0.28
BEVERAGE & TOBACCO.....	7.9	8.0	8.0	8.0	8.1	8.2	8.2	8.3	8.3	8.3	8.4
Percentage change.....	7.12	1.28	0.37	0.26	0.72	0.86	0.71	0.66	0.40	0.43	0.47
PAPER.....	12.0	12.1	12.1	12.1	12.1	12.0	11.8	11.7	11.7	11.5	11.5
Percentage change.....	0.11	0.42	0.39	0.22	-0.18	-1.05	-1.13	-0.82	-0.76	-0.94	-0.78
PRINTING & RELATED SUPPORT.....	9.0	8.9	8.8	8.6	8.5	8.4	8.3	8.2	8.0	7.9	7.8
Percentage change.....	0.19	-0.87	-1.76	-1.98	-0.78	-1.05	-1.61	-1.49	-1.51	-1.53	-1.52
CHEMICALS.....	25.7	25.2	24.6	24.1	23.8	23.5	23.1	22.7	22.3	22.0	21.7
Percentage change.....	0.55	-1.78	-2.46	-1.95	-1.52	-1.39	-1.48	-1.74	-1.60	-1.53	-1.47
PLASTICS & RUBBER.....	25.1	25.3	25.3	25.3	25.3	25.2	25.0	24.9	24.7	24.6	24.4
Percentage change.....	1.16	0.85	0.17	0.04	-0.27	-0.42	-0.59	-0.42	-0.66	-0.67	-0.53
MISCELLANEOUS NONDURABLE GOODS.....	12.7	12.9	13.0	13.1	13.1	13.0	12.9	12.9	12.9	13.0	13.1
Percentage change.....	5.81	1.50	0.58	0.64	-0.10	-0.90	-0.52	-0.12	0.17	0.45	0.81

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**Table 8: Tennessee Average Annual Wage and Salary Rate by Sector (2012 dollars)**

**January 2020**

	Forecast Data										
	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
TOTAL NONFARM.....	47878	48277	49046	49716	50031	50160	50329	50510	50677	50824	50933
Percentage change.....	1.84	0.83	1.59	1.37	0.63	0.26	0.34	0.36	0.33	0.29	0.21
NATURAL RESOURCES, MINING, CONSTRUCTION.....	56171	56171	56763	57119	57204	57209	57256	57307	57346	57372	57385
Percentage change.....	4.17	0.00	1.06	0.63	0.15	0.01	0.08	0.09	0.07	0.05	0.02
MANUFACTURING.....	55360	55840	56608	57249	57803	58284	58701	59081	59362	59629	59701
Percentage change.....	0.44	0.87	1.38	1.13	0.97	0.83	0.72	0.65	0.47	0.45	0.12
DURABLE GOODS.....	56455	57252	58287	59179	59885	60391	60865	61292	61616	61922	61980
Percentage change.....	1.74	1.41	1.81	1.53	1.19	0.84	0.79	0.70	0.53	0.50	0.09
NONDURABLE GOODS.....	53398	53292	53582	53764	54028	54437	54731	55003	55185	55372	55463
Percentage change.....	-1.95	-0.20	0.54	0.34	0.49	0.76	0.54	0.50	0.33	0.34	0.16
TRADE, TRANSPORTATION, UTILITIES.....	44098	44352	44971	45485	45753	45879	46043	46212	46407	46537	46650
Percentage change.....	1.66	0.58	1.40	1.14	0.59	0.28	0.36	0.37	0.42	0.28	0.24
WHOLESALE TRADE.....	69783	70196	71311	72290	72682	72773	72871	72948	72996	73018	73018
Percentage change.....	2.71	0.59	1.59	1.37	0.54	0.12	0.14	0.11	0.06	0.03	0.00
RETAIL TRADE.....	29463	29500	29598	29633	29573	29420	29278	29135	28987	28836	28682
Percentage change.....	-0.04	0.13	0.33	0.12	-0.20	-0.52	-0.48	-0.49	-0.51	-0.52	-0.53
TRANSPORTATION & UTILITIES.....	54829	55172	56126	57006	57706	58386	59050	59766	60603	61390	62165
Percentage change.....	2.07	0.63	1.73	1.57	1.23	1.18	1.14	1.21	1.40	1.30	1.26
INFORMATION.....	63800	64298	65311	66067	66547	67174	67761	68330	69012	69746	70339
Percentage change.....	-5.32	0.78	1.58	1.16	0.73	0.94	0.87	0.84	1.00	1.06	0.85
FINANCIAL ACTIVITIES.....	73018	74621	76831	79015	80056	80473	80860	81388	81890	82448	82962
Percentage change.....	3.92	2.19	2.96	2.84	1.32	0.52	0.48	0.65	0.62	0.68	0.62
PROFESSIONAL & BUSINESS SERVICES.....	58560	59565	61774	63931	64855	65038	65254	65460	65641	65797	65930
Percentage change.....	5.30	1.72	3.71	3.49	1.45	0.28	0.33	0.32	0.28	0.24	0.20
EDUCATION & HEALTH SERVICES.....	47859	48056	48514	48918	49147	49249	49355	49542	49741	49963	50196
Percentage change.....	1.28	0.41	0.95	0.83	0.47	0.21	0.22	0.38	0.40	0.45	0.47
LEISURE & HOSPITALITY.....	23992	23819	23763	23696	23739	23811	23949	24033	24167	24277	24386
Percentage change.....	-0.93	-0.72	-0.23	-0.28	0.18	0.31	0.58	0.35	0.56	0.46	0.45
OTHER SERVICES.....	42773	43090	43701	44250	44404	44305	44218	44123	44016	43899	43774
Percentage change.....	2.49	0.74	1.42	1.26	0.35	-0.22	-0.20	-0.21	-0.24	-0.27	-0.28
GOVERNMENT.....	43848	43977	43793	43538	43246	42980	42809	42609	42401	42242	42091
Percentage change.....	0.64	0.29	-0.42	-0.58	-0.67	-0.62	-0.40	-0.47	-0.49	-0.38	-0.36
FEDERAL, CIVILIAN.....	76982	77578	78028	78105	78085	78100	78124	78127	78101	78051	77981
Percentage change.....	1.10	0.78	0.58	0.10	-0.03	0.02	0.03	0.00	-0.03	-0.06	-0.09
STATE & LOCAL.....	39604	39436	39327	39080	38803	38548	38398	38216	38028	37896	37775
Percentage change.....	0.42	-0.42	-0.28	-0.63	-0.71	-0.66	-0.39	-0.47	-0.49	-0.35	-0.32

**Table 9: Tennessee Average Annual Wage and Salary Rate by Sector (current dollars) January 2020**

	Forecast Data										
	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
TOTAL NONFARM.....	52552	54081	55957	57944	59586	60987	62434	63920	65422	66927	68407
Percentage change.....	3.36	2.91	3.47	3.55	2.83	2.35	2.37	2.38	2.35	2.30	2.21
NATURAL RESOURCES, MINING, CONSTRUCTION.....	61649	62924	64761	66571	68128	69558	71027	72521	74031	75549	77073
Percentage change.....	5.73	2.07	2.92	2.79	2.34	2.10	2.11	2.10	2.08	2.05	2.02
MANUFACTURING.....	60765	62554	64585	66723	68843	70865	72820	74768	76634	78522	80183
Percentage change.....	1.94	2.94	3.25	3.31	3.18	2.94	2.76	2.67	2.50	2.46	2.12
DURABLE GOODS.....	61968	64135	66500	68974	71322	73426	75504	77566	79544	81540	83244
Percentage change.....	3.26	3.50	3.69	3.72	3.41	2.95	2.83	2.73	2.55	2.51	2.09
NONDURABLE GOODS.....	58609	59698	61131	62661	64347	66187	67895	69606	71241	72916	74491
Percentage change.....	-0.49	1.86	2.40	2.50	2.69	2.86	2.58	2.52	2.35	2.35	2.16
TRADE, TRANSPORTATION, UTILITIES.....	48403	49684	51308	53012	54491	55782	57117	58482	59909	61281	62655
Percentage change.....	3.19	2.65	3.27	3.32	2.79	2.37	2.39	2.39	2.44	2.29	2.24
WHOLESALE TRADE.....	76597	78636	81360	84254	86563	88480	90398	92315	94233	96151	98069
Percentage change.....	4.26	2.66	3.46	3.56	2.74	2.21	2.17	2.12	2.08	2.04	1.99
RETAIL TRADE.....	32339	33046	33768	34536	35220	35769	36319	36870	37421	37971	38522
Percentage change.....	1.46	2.19	2.19	2.27	1.98	1.56	1.54	1.52	1.49	1.47	1.45
TRANSPORTATION & UTILITIES.....	60181	61805	64035	66441	68728	70989	73254	75635	78237	80842	83493
Percentage change.....	3.60	2.70	3.61	3.76	3.44	3.29	3.19	3.25	3.44	3.33	3.28
INFORMATION.....	70028	72028	74515	76999	79257	81675	84059	86472	89092	91845	94472
Percentage change.....	-3.89	2.86	3.45	3.33	2.93	3.05	2.92	2.87	3.03	3.09	2.86
FINANCIAL ACTIVITIES.....	80150	83593	87659	92094	95345	97843	100309	102997	105716	108571	111426
Percentage change.....	5.47	4.30	4.86	5.06	3.53	2.62	2.52	2.68	2.64	2.70	2.63
PROFESSIONAL & BUSINESS SERVICES.....	64278	66728	70481	74514	77242	79077	80949	82840	84739	86643	88550
Percentage change.....	6.88	3.81	5.62	5.72	3.66	2.38	2.37	2.34	2.29	2.25	2.20
EDUCATION & HEALTH SERVICES.....	52531	53833	55350	57013	58533	59879	61226	62696	64213	65793	67418
Percentage change.....	2.80	2.48	2.82	3.01	2.66	2.30	2.25	2.40	2.42	2.46	2.47
LEISURE & HOSPITALITY.....	26334	26682	27111	27617	28272	28951	29709	30413	31198	31969	32752
Percentage change.....	0.54	1.32	1.61	1.86	2.37	2.40	2.62	2.37	2.58	2.47	2.45
OTHER SERVICES.....	46949	48270	49858	51573	52884	53868	54853	55837	56822	57806	58791
Percentage change.....	4.03	2.81	3.29	3.44	2.54	1.86	1.83	1.79	1.76	1.73	1.70
GOVERNMENT.....	48129	49263	49962	50742	51505	52256	53105	53921	54737	55625	56532
Percentage change.....	2.15	2.36	1.42	1.56	1.50	1.46	1.62	1.54	1.51	1.62	1.63
FEDERAL, CIVILIAN.....	84498	86905	89022	91030	92997	94957	96914	98869	100824	102779	104734
Percentage change.....	2.61	2.85	2.44	2.26	2.16	2.11	2.06	2.02	1.98	1.94	1.90
STATE & LOCAL.....	43469	44177	44868	45546	46213	46868	47632	48361	49091	49901	50735
Percentage change.....	1.92	1.63	1.56	1.51	1.46	1.42	1.63	1.53	1.51	1.65	1.67

**Table 10: Tennessee Civilian Labor Force and Unemployment Rate**

**January 2020**

	Forecast Data										
	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
CIVILIAN LABOR FORCE (THOUS).....	3332	3393	3420	3446	3465	3485	3510	3536	3557	3575	3594
Percentage change.....	2.70	1.83	0.81	0.76	0.56	0.58	0.70	0.74	0.60	0.52	0.52
EMPLOYED PERSONS (THOUS).....	3219	3274	3300	3324	3340	3357	3378	3400	3418	3433	3448
Percentage change.....	2.84	1.70	0.79	0.73	0.48	0.51	0.63	0.66	0.51	0.44	0.44
UNEMPLOYED PERSONS (THOUS).....	112	119	120	122	125	128	131	135	139	143	146
Percentage change.....	-1.13	5.58	1.49	1.50	2.75	2.35	2.36	2.93	2.71	2.56	2.55
PARTICIPATION RATE (PERCENT).....	60.8	61.4	61.4	61.3	61.2	61.1	61.1	61.1	61.1	61.0	60.9
Percentage change.....	1.82	0.98	-0.01	-0.03	-0.20	-0.16	-0.02	0.05	-0.08	-0.13	-0.12
UNEMPLOYMENT RATE (PERCENT).....	3.4	3.5	3.5	3.5	3.6	3.7	3.7	3.8	3.9	4.0	4.1

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Table 11: Tennessee Taxable Sales (millions of 2012 dollars)

January 2020

	Forecast Data										
	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
TOTAL TAXABLE SALES.....	128388	131850	135546	139406	142614	145457	148448	151303	154491	157661	160834
Percentage change.....	3.81	2.70	2.80	2.85	2.30	1.99	2.06	1.92	2.11	2.05	2.01
AUTO DEALERS.....	12430	12290	12286	12290	12414	12616	12782	12987	13240	13489	13736
Percentage change.....	0.77	-1.12	-0.03	0.03	1.01	1.63	1.31	1.60	1.95	1.88	1.83
PURCHASES FROM MANUFACTURERS.....	5777	5832	5932	6013	6194	6361	6522	6681	6841	7001	7138
Percentage change.....	5.26	0.95	1.71	1.37	3.02	2.69	2.53	2.44	2.40	2.33	1.97
MISC DURABLE GOODS.....	21503	22153	22846	23606	24314	25050	25823	26624	27450	28303	29196
Percentage change.....	2.68	3.02	3.13	3.33	3.00	3.03	3.09	3.10	3.10	3.11	3.15
EATING AND DRINKING PLACES.....	13721	14077	14464	14884	15275	15600	15933	16267	16600	16932	17264
Percentage change.....	8.33	2.59	2.75	2.91	2.63	2.13	2.13	2.10	2.05	2.00	1.96
FOOD STORES.....	12104	12441	12741	12970	13198	13256	13358	13546	13674	13876	13935
Percentage change.....	2.35	2.79	2.41	1.80	1.76	0.44	0.76	1.41	0.95	1.48	0.42
LIQUOR STORES.....	945	966	995	1021	1048	1076	1106	1136	1167	1199	1232
Percentage change.....	5.00	2.27	2.97	2.65	2.61	2.70	2.75	2.75	2.75	2.74	2.75
HOTELS AND MOTELS.....	4335	4378	4470	4553	4645	4767	4864	4965	5105	5250	5377
Percentage change.....	21.96	0.99	2.10	1.85	2.02	2.63	2.03	2.08	2.81	2.84	2.43
OTHER RETAIL AND SERVICE.....	39949	41960	43890	46001	47377	48538	49752	50745	51973	53082	54297
Percentage change.....	4.64	5.03	4.60	4.81	2.99	2.45	2.50	2.00	2.42	2.13	2.29
MISC NONDURABLE GOODS.....	9799	10074	10345	10611	10840	11037	11300	11484	11712	11934	12194
Percentage change.....	1.73	2.81	2.69	2.58	2.15	1.81	2.38	1.63	1.98	1.90	2.18
TRANSPORTATION, COMMUNICATION.....	7825	7678	7577	7457	7308	7155	7010	6868	6730	6596	6465
Percentage change.....	-4.08	-1.87	-1.31	-1.59	-1.99	-2.10	-2.03	-2.01	-2.01	-2.00	-1.99
PER CAPITA (\$.).....	18806	19155	19535	19936	20242	20494	20767	21020	21317	21610	21902
Percentage change.....	2.93	1.86	1.99	2.05	1.53	1.25	1.33	1.22	1.42	1.38	1.35

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**Table 12: Tennessee Taxable Sales (millions of current dollars)**

**January 2020**

	Forecast Data										
	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
TOTAL TAXABLE SALES.....	140929	147704	154648	162482	169855	176858	184157	191478	199446	207617	216018
Percentage change.....	5.36	4.81	4.70	5.07	4.54	4.12	4.13	3.98	4.16	4.10	4.05
AUTO DEALERS.....	13643	13767	14017	14323	14785	15340	15857	16435	17092	17763	18449
Percentage change.....	2.27	0.91	1.82	2.18	3.22	3.75	3.37	3.65	4.00	3.92	3.86
PURCHASES FROM MANUFACTURERS....	6341	6533	6767	7008	7378	7734	8091	8455	8832	9219	9587
Percentage change.....	6.82	3.03	3.58	3.55	5.28	4.83	4.61	4.50	4.46	4.38	4.00
MISC DURABLE GOODS.....	23604	24817	26065	27513	28959	30458	32035	33694	35438	37272	39214
Percentage change.....	4.22	5.14	5.03	5.55	5.26	5.18	5.18	5.18	5.18	5.18	5.21
EATING AND DRINKING PLACES.....	15061	15769	16502	17348	18193	18968	19766	20586	21430	22297	23187
Percentage change.....	9.95	4.70	4.65	5.13	4.87	4.26	4.21	4.15	4.10	4.05	3.99
FOOD STORES.....	13286	13937	14536	15117	15719	16118	16571	17142	17653	18273	18715
Percentage change.....	3.89	4.90	4.30	3.99	3.98	2.54	2.81	3.45	2.98	3.51	2.42
LIQUOR STORES.....	1037	1082	1135	1190	1248	1308	1372	1438	1507	1579	1655
Percentage change.....	6.56	4.37	4.87	4.86	4.85	4.84	4.83	4.82	4.81	4.80	4.79
HOTELS AND MOTELS.....	4758	4905	5100	5307	5532	5796	6034	6283	6590	6913	7222
Percentage change.....	23.75	3.08	3.98	4.04	4.25	4.77	4.10	4.14	4.88	4.90	4.47
OTHER RETAIL AND SERVICE.....	43855	47006	50077	53618	56427	59017	61720	64220	67097	69901	72928
Percentage change.....	6.21	7.19	6.53	7.07	5.24	4.59	4.58	4.05	4.48	4.18	4.33
MISC NONDURABLE GOODS.....	10756	11285	11803	12368	12911	13419	14018	14534	15119	15715	16378
Percentage change.....	3.25	4.92	4.59	4.79	4.39	3.94	4.46	3.68	4.03	3.94	4.22
TRANSPORTATION, COMMUNICATION.....	8588	8601	8645	8690	8704	8699	8695	8691	8688	8685	8683
Percentage change.....	-2.65	0.15	0.51	0.52	0.15	-0.05	-0.05	-0.04	-0.04	-0.03	-0.03
PER CAPITA (\$)......	20642	21458	22288	23236	24108	24918	25762	26601	27520	28458	29417
Percentage change.....	4.47	3.95	3.87	4.25	3.75	3.36	3.39	3.25	3.46	3.41	3.37

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Table 13: Tennessee Gross Domestic Product by Sector (millions of 2012 dollars)

January 2020

	Forecast Data											
	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
GROSS DOMESTIC PRODUCT.....	324,115	332,842	339,887	345,378	351,368	356,615	362,191	368,455	375,224	381,707	388,156	394,545
Percentage change.....	2.67	2.69	2.12	1.62	1.73	1.49	1.56	1.73	1.84	1.73	1.69	1.65
AGRICULTURE, FORESTRY, FISHING AND HUNTING.....	1,562	1,467	1,408	1,379	1,355	1,336	1,321	1,310	1,304	1,302	1,305	1,311
Percentage change.....	-6.93	-6.07	-4.03	-2.03	-1.74	-1.43	-1.12	-0.80	-0.47	-0.14	0.18	0.51
NATURAL RESOURCES AND MINING.....	2,596	2,567	2,483	2,429	2,393	2,348	2,306	2,277	2,257	2,236	2,219	2,206
Percentage change.....	1.44	-1.11	-3.28	-2.18	-1.45	-1.89	-1.81	-1.23	-0.90	-0.90	-0.77	-0.59
CONSTRUCTION.....	11,231	11,278	11,076	11,002	11,053	11,110	11,164	11,230	11,300	11,371	11,458	11,566
Percentage change.....	3.01	0.42	-1.79	-0.67	0.47	0.51	0.49	0.59	0.63	0.63	0.77	0.94
MANUFACTURING.....	49,762	50,962	51,931	52,720	53,615	54,488	55,385	56,346	57,323	58,252	59,242	60,112
Percentage change.....	2.72	2.41	1.90	1.52	1.70	1.63	1.65	1.73	1.73	1.62	1.70	1.47
DURABLE GOODS.....	28,918	29,658	30,324	30,859	31,451	32,015	32,572	33,234	33,894	34,506	35,162	35,707
Percentage change.....	2.95	2.56	2.25	1.76	1.92	1.79	1.74	2.03	1.99	1.81	1.90	1.55
NONDURABLE GOODS.....	20,844	21,304	21,606	21,861	22,164	22,473	22,813	23,112	23,429	23,746	24,080	24,405
Percentage change.....	2.40	2.20	1.42	1.18	1.39	1.39	1.51	1.31	1.37	1.35	1.41	1.35
TRADE.....	62,255	63,866	64,567	65,361	66,115	66,723	67,349	68,117	69,136	70,135	70,925	71,684
Percentage change.....	3.09	2.78	1.11	1.24	1.17	0.93	0.95	1.15	1.50	1.45	1.13	1.07
WHOLESALE TRADE.....	23,433	24,125	24,658	25,371	26,103	26,746	27,324	27,932	28,589	29,295	29,823	30,321
Percentage change.....	3.02	2.95	2.21	2.89	2.88	2.46	2.16	2.23	2.35	2.47	1.80	1.67
RETAIL TRADE.....	23,248	23,770	23,928	24,067	24,237	24,412	24,643	24,868	25,200	25,522	25,855	26,194
Percentage change.....	2.30	2.25	0.66	0.58	0.71	0.72	0.95	0.92	1.33	1.28	1.30	1.31
TRANSPORTATION AND UTILITIES.....	15,575	15,971	15,982	15,924	15,776	15,565	15,382	15,316	15,347	15,318	15,247	15,169
Percentage change.....	2.26	2.55	0.07	-0.36	-0.93	-1.33	-1.18	-0.43	0.20	-0.19	-0.46	-0.51
INFORMATION.....	11,986	12,593	13,243	13,770	14,335	14,495	14,694	14,908	15,148	15,379	15,645	15,883
Percentage change.....	4.60	5.07	5.16	3.98	4.10	1.12	1.37	1.46	1.61	1.52	1.73	1.52
FINANCIAL ACTIVITIES.....	51,435	53,909	55,441	56,530	57,592	58,617	59,600	60,567	61,532	62,469	63,429	64,433
Percentage change.....	4.08	4.81	2.84	1.96	1.88	1.78	1.68	1.62	1.59	1.52	1.54	1.58
PROFESSIONAL AND BUSINESS SERVICES.....	36,879	37,895	39,502	41,080	42,476	43,532	44,746	46,418	48,299	49,978	51,572	53,123
Percentage change.....	2.63	2.75	4.24	3.99	3.40	2.49	2.79	3.74	4.05	3.47	3.19	3.01
EDUCATION AND HEALTH SERVICES.....	36,758	37,384	38,395	39,385	40,338	41,430	42,683	43,918	45,180	46,478	47,832	49,245
Percentage change.....	2.05	1.70	2.70	2.58	2.42	2.71	3.02	2.89	2.87	2.87	2.91	2.95
LEISURE AND HOSPITALITY.....	17,010	17,835	18,193	18,383	18,677	18,934	19,145	19,380	19,609	19,804	20,047	20,332
Percentage change.....	3.50	4.85	2.01	1.04	1.60	1.37	1.11	1.23	1.18	0.99	1.23	1.42
OTHER SERVICES.....	7,392	7,307	7,150	6,974	6,830	6,762	6,701	6,636	6,539	6,460	6,398	6,327
Percentage change.....	1.48	-1.15	-2.15	-2.46	-2.07	-0.99	-0.90	-0.96	-1.46	-1.21	-0.95	-1.12
GOVERNMENT.....	35,250	35,781	36,499	36,365	36,587	36,840	37,097	37,347	37,595	37,842	38,084	38,324
Percentage change.....	1.18	1.51	2.01	-0.37	0.61	0.69	0.70	0.67	0.67	0.66	0.64	0.63
FEDERAL.....	10,309	10,562	11,224	10,948	10,967	10,996	11,029	11,065	11,102	11,139	11,177	11,215
Percentage change.....	0.59	2.45	6.26	-2.45	0.17	0.27	0.30	0.32	0.33	0.34	0.34	0.34
STATE AND LOCAL.....	24,941	25,219	25,275	25,417	25,620	25,844	26,067	26,282	26,493	26,703	26,907	27,108
Percentage change.....	1.43	1.12	0.22	0.56	0.80	0.87	0.86	0.82	0.81	0.79	0.76	0.75

**Table 14: Tennessee Durable Goods Manufacturing Gross Domestic Product (millions of 2012 dollars)**

**January 2020**

	Forecast Data											
	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
DURABLE GOODS.....	28,918	29,658	30,324	30,859	31,451	32,015	32,572	33,234	33,894	34,506	35,162	35,707
Percentage change.....	2.95	2.56	2.25	1.76	1.92	1.79	1.74	2.03	1.99	1.81	1.90	1.55
WOOD PRODUCTS.....	866	891	919	958	1,034	1,100	1,155	1,205	1,257	1,302	1,354	1,408
Percentage change.....	3.59	2.89	3.15	4.27	7.91	6.44	4.99	4.30	4.32	3.59	4.04	3.96
NONMETALLIC MINERAL PRODUCTS.....	1,353	1,379	1,409	1,437	1,462	1,487	1,508	1,532	1,557	1,584	1,611	1,641
Percentage change.....	2.04	1.92	2.17	1.94	1.74	1.70	1.44	1.58	1.65	1.73	1.73	1.82
PRIMARY METALS.....	1,867	1,918	1,974	2,018	2,066	2,099	2,128	2,160	2,194	2,229	2,257	2,299
Percentage change.....	3.20	2.77	2.92	2.21	2.37	1.58	1.42	1.49	1.56	1.62	1.25	1.86
FABRICATED METAL PRODUCTS.....	3,726	3,816	3,831	3,798	3,801	3,831	3,868	3,872	3,878	3,863	3,831	3,802
Percentage change.....	2.53	2.44	0.38	-0.86	0.06	0.80	0.97	0.10	0.16	-0.38	-0.83	-0.76
MACHINERY.....	2,880	2,920	2,962	2,990	3,019	3,038	3,061	3,083	3,106	3,130	3,154	3,179
Percentage change.....	1.53	1.40	1.45	0.94	0.97	0.63	0.73	0.73	0.76	0.76	0.77	0.80
COMPUTER & ELECTRONIC PRODUCTS.....	902	928	954	983	1013	1044	1073	1095	1115	1139	1162	1187
Percentage change.....	3.15	2.83	2.86	3.01	3.01	3.08	2.80	2.00	1.86	2.13	2.04	2.14
ELECTRICAL EQUIPMENT, APPLIANCES & COMPONENTS.....	4,283	4,464	4,644	4,772	4,916	5,059	5,223	5,377	5,529	5,695	5,868	5,981
Percentage change.....	3.85	4.24	4.02	2.76	3.01	2.92	3.25	2.93	2.83	3.00	3.05	1.92
MOTOR VEHICLES, BODIES & TRAILERS, & PARTS.....	9,040	9,240	9,430	9,627	9,785	9,930	10,068	10,355	10,647	10,893	11,205	11,432
Percentage change.....	3.04	2.21	2.06	2.09	1.64	1.48	1.39	2.85	2.82	2.31	2.87	2.02
OTHER TRANSPORTATION EQUIPMENT.....	533	541	551	556	562	568	575	582	591	601	612	623
Percentage change.....	0.48	1.52	1.81	1.00	1.00	1.06	1.23	1.36	1.54	1.68	1.76	1.78
FURNITURE.....	528	536	542	547	554	564	568	566	567	565	563	561
Percentage change.....	1.75	1.60	1.08	0.90	1.32	1.76	0.68	-0.30	0.07	-0.25	-0.37	-0.30
MISCELLANEOUS DURABLE GOODS.....	2,941	3,024	3,107	3,172	3,241	3,296	3,345	3,408	3,454	3,506	3,543	3,594
Percentage change.....	4.05	2.81	2.77	2.09	2.16	1.69	1.51	1.88	1.33	1.51	1.06	1.45

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**Table 15: Tennessee Nondurable Goods Manufacturing Gross Domestic Product (millions of 2012 dollars)** **January 2020**

	Forecast Data											
	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
NONDURABLE GOODS.....	20,844	21,304	21,606	21,861	22,164	22,473	22,813	23,112	23,429	23,746	24,080	24,405
Percentage change.....	2.40	2.20	1.42	1.18	1.39	1.39	1.51	1.31	1.37	1.35	1.41	1.35
FOOD AND BEVERAGE & TOBACCO.....	7,711	7,937	8,071	8,194	8,343	8,503	8,655	8,805	8,966	9,123	9,278	9,440
Percentage change.....	3.30	2.93	1.68	1.53	1.82	1.91	1.79	1.73	1.82	1.76	1.70	1.75
TEXTILE MILLS & TEXTILE PRODUCT MILLS	537	548	559	565	565	565	566	566	566	566	566	565
Percentage change.....	2.08	1.93	2.02	1.11	-0.04	0.06	0.13	-0.02	0.06	-0.06	0.00	-0.13
APPAREL & LEATHER PRODUCTS.....	160	159	157	156	154	151	149	146	146	145	144	144
Percentage change.....	-1.02	-0.93	-1.09	-1.01	-1.25	-1.70	-1.63	-1.50	-0.44	-0.45	-0.46	-0.51
PAPER.....	2,544	2,626	2,683	2,738	2,783	2,816	2,865	2,897	2,946	2,993	3,045	3,081
Percentage change.....	3.06	3.20	2.17	2.04	1.66	1.17	1.76	1.11	1.69	1.59	1.75	1.18
PRINTING & RELATED SUPPORT.....	1,060	1,082	1,093	1,106	1,117	1,133	1,152	1,168	1,187	1,204	1,228	1,240
Percentage change.....	3.22	2.09	1.05	1.17	1.01	1.37	1.69	1.45	1.59	1.42	1.97	1.02
CHEMICALS.....	4,931	4,985	5,015	5,011	5,034	5,079	5,131	5,179	5,214	5,256	5,302	5,352
Percentage change.....	1.16	1.09	0.59	-0.06	0.46	0.89	1.03	0.93	0.67	0.81	0.88	0.94
PLASTICS & RUBBER.....	2,432	2,481	2,520	2,559	2,608	2,649	2,686	2,719	2,757	2,789	2,821	2,857
Percentage change.....	2.09	1.98	1.60	1.55	1.90	1.57	1.41	1.23	1.40	1.15	1.14	1.28
MISCELLANEOUS NONDURABLE GOODS.....	1,468	1,487	1,509	1,532	1,560	1,578	1,609	1,631	1,648	1,670	1,697	1,726
Percentage change.....	1.20	1.29	1.49	1.55	1.81	1.14	2.00	1.36	1.04	1.34	1.57	1.73

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**Table 16: Tennessee Gross Domestic Product by Sector (millions of current dollars)**

**January 2020**

	Forecast Data											
	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
GROSS DOMESTIC PRODUCT.....	363,794	381,023	397,426	412,896	429,707	446,317	463,737	482,275	501,955	521,729	542,068	563,165
Percentage change.....	4.78	4.74	4.31	3.89	4.07	3.87	3.90	4.00	4.08	3.94	3.90	3.89
AGRICULTURE, FORESTRY, FISHING AND HUNTING.....	1,270	1,194	1,149	1,130	1,115	1,103	1,094	1,088	1,087	1,090	1,096	1,106
Percentage change.....	1.81	-5.98	-3.74	-1.68	-1.34	-1.06	-0.78	-0.54	-0.10	0.27	0.52	0.89
NATURAL RESOURCES AND MINING.....	2,061	2,070	2,027	2,023	2,047	2,062	2,077	2,103	2,136	2,169	2,205	2,246
Percentage change.....	2.95	0.45	-2.04	-0.23	1.18	0.75	0.72	1.25	1.55	1.55	1.68	1.84
CONSTRUCTION.....	14,443	14,868	14,931	15,240	15,663	16,097	16,594	17,104	17,674	18,171	18,687	19,359
Percentage change.....	7.21	2.94	0.42	2.07	2.78	2.77	3.08	3.07	3.33	2.81	2.84	3.59
MANUFACTURING.....	55,311	58,169	60,525	62,987	65,733	68,578	71,556	74,698	77,951	81,283	84,879	88,405
Percentage change.....	3.29	5.17	4.05	4.07	4.36	4.33	4.34	4.39	4.35	4.28	4.42	4.15
DURABLE GOODS.....	31,930	33,357	34,497	35,680	36,991	38,329	39,749	41,356	42,988	44,630	46,433	48,103
Percentage change.....	2.22	4.47	3.42	3.43	3.67	3.62	3.70	4.04	3.95	3.82	4.04	3.60
NONDURABLE GOODS.....	23,382	24,812	26,028	27,307	28,742	30,249	31,807	33,342	34,963	36,653	38,446	40,302
Percentage change.....	4.79	6.12	4.90	4.91	5.26	5.24	5.15	4.82	4.86	4.84	4.89	4.83
TRADE.....	67,910	71,080	73,695	76,521	79,412	82,155	85,038	88,137	91,665	95,297	98,771	102,345
Percentage change.....	5.17	4.67	3.68	3.83	3.78	3.45	3.51	3.64	4.00	3.96	3.65	3.62
WHOLESALE TRADE.....	25,297	26,791	28,258	30,024	31,866	33,652	35,370	37,163	39,087	41,158	43,061	45,002
Percentage change.....	6.00	5.90	5.48	6.25	6.13	5.60	5.11	5.07	5.18	5.30	4.62	4.51
RETAIL TRADE.....	24,114	25,053	25,692	26,236	26,834	27,420	28,203	28,973	29,889	30,835	31,842	32,912
Percentage change.....	3.33	3.89	2.55	2.12	2.28	2.18	2.86	2.73	3.16	3.17	3.26	3.36
TRANSPORTATION AND UTILITIES.....	18,499	19,237	19,746	20,260	20,711	21,083	21,464	22,001	22,689	23,304	23,868	24,431
Percentage change.....	6.49	3.99	2.65	2.60	2.23	1.79	1.81	2.50	3.13	2.71	2.42	2.36
INFORMATION.....	10,889	11,282	11,637	11,828	11,994	11,793	11,620	11,449	11,278	11,078	10,880	10,637
Percentage change.....	2.15	3.61	3.14	1.64	1.40	-1.67	-1.47	-1.47	-1.49	-1.77	-1.79	-2.23
FINANCIAL ACTIVITIES.....	61,317	65,404	68,796	71,861	75,118	78,440	81,780	85,198	88,720	92,312	96,059	99,979
Percentage change.....	7.14	6.67	5.19	4.46	4.53	4.42	4.26	4.18	4.13	4.05	4.06	4.08
PROFESSIONAL AND BUSINESS SERVICES.....	40,218	41,874	44,319	46,852	49,306	51,434	53,776	56,725	60,023	63,168	66,308	69,495
Percentage change.....	4.38	4.12	5.84	5.72	5.24	4.32	4.55	5.48	5.81	5.24	4.97	4.81
EDUCATION AND HEALTH SERVICES.....	40,483	41,807	43,831	45,848	47,844	50,059	52,568	55,117	57,800	60,549	63,453	66,601
Percentage change.....	3.66	3.27	4.84	4.60	4.36	4.63	5.01	4.85	4.87	4.76	4.80	4.96
LEISURE AND HOSPITALITY.....	20,272	21,933	23,068	23,945	25,021	26,163	27,241	28,311	29,329	30,295	31,314	32,441
Percentage change.....	5.58	8.19	5.18	3.80	4.50	4.56	4.12	3.93	3.60	3.30	3.36	3.60
OTHER SERVICES.....	8,835	8,901	8,936	8,980	9,086	9,300	9,513	9,716	9,874	10,060	10,277	10,480
Percentage change.....	4.42	0.75	0.39	0.49	1.19	2.35	2.29	2.14	1.63	1.88	2.15	1.98
GOVERNMENT.....	40,785	42,441	44,513	45,684	47,368	49,135	50,882	52,630	54,418	56,255	58,139	60,071
Percentage change.....	4.00	4.06	4.88	2.63	3.69	3.73	3.56	3.43	3.40	3.38	3.35	3.32
FEDERAL.....	11,433	11,949	12,949	12,801	13,014	13,273	13,549	13,844	14,144	14,442	14,732	15,014
Percentage change.....	2.74	4.52	8.37	-1.14	1.66	1.99	2.08	2.18	2.17	2.11	2.01	1.91
STATE AND LOCAL.....	29,353	30,492	31,563	32,883	34,355	35,862	37,334	38,785	40,274	41,813	43,406	45,057
Percentage change.....	4.50	3.88	3.51	4.18	4.48	4.39	4.10	3.89	3.84	3.82	3.81	3.80

**Table 17: Tennessee Durable Goods Manufacturing Gross Domestic Product (millions of current dollars)** **January 2020**

	Forecast Data											
	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
DURABLE GOODS.....	31,930	33,357	34,497	35,680	36,991	38,329	39,749	41,356	42,988	44,630	46,433	48,103
Percentage change.....	2.22	4.47	3.42	3.43	3.67	3.62	3.70	4.04	3.95	3.82	4.04	3.60
WOOD PRODUCTS.....	1,112	1,134	1,165	1,218	1,322	1,420	1,506	1,587	1,673	1,753	1,847	1,943
Percentage change.....	1.92	1.94	2.71	4.56	8.61	7.38	6.03	5.38	5.47	4.79	5.31	5.25
NONMETALLIC MINERAL PRODUCTS.....	1,713	1,808	1,899	2,003	2,112	2,228	2,342	2,461	2,589	2,726	2,871	3,026
Percentage change.....	2.23	5.57	5.06	5.44	5.47	5.47	5.10	5.11	5.18	5.29	5.33	5.40
PRIMARY METALS.....	1,661	1,538	1,522	1,486	1,456	1,413	1,368	1,327	1,287	1,245	1,197	1,158
Percentage change.....	9.21	-7.42	-0.99	-2.40	-2.02	-2.91	-3.22	-2.99	-3.05	-3.23	-3.86	-3.26
FABRICATED METAL PRODUCTS.....	4,085	4,352	4,549	4,706	4,910	5,155	5,410	5,618	5,835	6,027	6,199	6,378
Percentage change.....	3.48	6.54	4.53	3.44	4.35	4.99	4.95	3.84	3.86	3.29	2.85	2.88
MACHINERY.....	3,358	3,510	3,666	3,827	4,001	4,169	4,344	4,522	4,707	4,902	5,107	5,321
Percentage change.....	2.55	4.52	4.45	4.37	4.55	4.21	4.20	4.08	4.11	4.13	4.18	4.20
COMPUTER & ELECTRONIC PRODUCTS.....	786	777	766	754	746	737	730	715	702	691	679	664
Percentage change.....	-1.28	-1.17	-1.41	-1.53	-1.14	-1.22	-0.96	-2.05	-1.82	-1.54	-1.75	-2.13
ELECTRICAL EQUIPMENT, APPLIANCES & COMPONENTS.....	4,429	4,686	4,928	5,145	5,370	5,586	5,863	6,154	6,404	6,686	6,995	7,202
Percentage change.....	4.65	5.79	5.17	4.39	4.38	4.02	4.95	4.97	4.06	4.40	4.62	2.96
MOTOR VEHICLES, BODIES & TRAILERS, & PARTS.....	10,511	11,092	11,383	11,779	12,152	12,549	12,974	13,607	14,283	14,941	15,740	16,445
Percentage change.....	-0.45	5.53	2.62	3.47	3.17	3.27	3.39	4.88	4.97	4.61	5.34	4.48
OTHER TRANSPORTATION EQUIPMENT.....	589	607	626	640	654	669	685	702	720	740	761	782
Percentage change.....	1.44	3.14	3.05	2.26	2.21	2.25	2.38	2.46	2.62	2.74	2.80	2.80
FURNITURE.....	580	600	613	629	648	669	682	690	701	707	714	726
Percentage change.....	2.80	3.43	2.15	2.62	3.01	3.27	1.98	1.11	1.65	0.81	1.06	1.65
MISCELLANEOUS DURABLE GOODS.....	3,105	3,253	3,378	3,494	3,619	3,734	3,845	3,974	4,086	4,211	4,324	4,457
Percentage change.....	3.70	4.75	3.86	3.44	3.58	3.16	2.99	3.34	2.82	3.06	2.67	3.08

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**Table 18: Tennessee Nondurable Goods Manufacturing Gross Domestic Product (millions of current dollars)**

**January 2020**

	Forecast Data											
	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
NONDURABLE GOODS.....	23,382	24,812	26,028	27,307	28,742	30,249	31,807	33,342	34,963	36,653	38,446	40,302
Percentage change.....	4.79	6.12	4.90	4.91	5.26	5.24	5.15	4.82	4.86	4.84	4.89	4.83
FOOD AND BEVERAGE & TOBACCO.....	8,879	9,645	10,200	10,797	11,467	12,180	12,896	13,624	14,402	15,214	16,065	16,966
Percentage change.....	4.88	8.62	5.76	5.85	6.20	6.21	5.88	5.65	5.71	5.64	5.59	5.61
TEXTILE MILLS & TEXTILE PRODUCT MILLS	560	585	608	628	641	656	672	686	702	717	733	749
Percentage change.....	1.49	4.39	3.90	3.25	2.19	2.33	2.35	2.14	2.24	2.16	2.27	2.15
APPAREL & LEATHER PRODUCTS.....	177	177	175	175	174	173	172	171	172	174	175	177
Percentage change.....	-1.87	0.12	-0.88	-0.34	-0.43	-0.72	-0.55	-0.40	0.75	0.82	0.90	0.87
PAPER.....	3,026	3,142	3,293	3,463	3,634	3,795	3,981	4,146	4,343	4,545	4,765	4,967
Percentage change.....	7.37	3.83	4.82	5.15	4.93	4.43	4.91	4.14	4.74	4.65	4.84	4.25
PRINTING & RELATED SUPPORT.....	1,121	1,140	1,150	1,164	1,177	1,194	1,217	1,237	1,260	1,281	1,311	1,328
Percentage change.....	1.61	1.68	0.84	1.26	1.09	1.50	1.89	1.65	1.82	1.70	2.30	1.35
CHEMICALS.....	6,030	6,343	6,668	6,986	7,366	7,791	8,230	8,667	9,098	9,560	10,049	10,566
Percentage change.....	5.24	5.19	5.12	4.76	5.44	5.78	5.63	5.31	4.97	5.08	5.12	5.14
PLASTICS & RUBBER.....	2,597	2,744	2,862	2,993	3,144	3,293	3,439	3,582	3,737	3,890	4,051	4,224
Percentage change.....	3.38	5.67	4.29	4.58	5.05	4.71	4.44	4.15	4.33	4.10	4.13	4.27
MISCELLANEOUS NONDURABLE GOODS.....	991	1,036	1,071	1,101	1,139	1,167	1,201	1,228	1,250	1,274	1,298	1,326
Percentage change.....	4.28	4.52	3.39	2.83	3.42	2.48	2.91	2.25	1.79	1.90	1.91	2.12

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Table 1: Selected U.S. and Tennessee Economic Indicators, Seasonally Adjusted

January 2020

	Historical Data													Annual			
	2016:2	2016:3	2016:4	2017:1	2017:2	2017:3	2017:4	2018:1	2018:2	2018:3	2018:4	2019:1	2019:2	2019:3	2016	2017	2018
US GDP (Bil2012\$) SAAR.....	17639.4	17735.1	17824.2	17925.3	18021.0	18163.6	18322.5	18438.3	18598.1	18732.7	18783.5	18927.3	19021.9	19112.5	17688.9	18108.1	18638.2
% Chg Prev Qtr SAAR.....	1.89	2.19	2.03	2.29	2.15	3.20	3.55	2.55	3.51	2.93	1.09	3.10	2.01	1.92	1.64	2.37	2.93
% Chg Same Qtr Last Yr.....	1.34	1.56	2.03	2.10	2.16	2.42	2.80	2.86	3.20	3.13	2.52	2.65	2.28	2.03	1.64	2.37	2.93
US GDP (Bil\$) SAAR.....	18637.3	18806.7	18991.9	19190.4	19356.6	19611.7	19918.9	20163.2	20510.2	20749.8	20897.8	21098.8	21340.3	21525.8	18715.0	19519.4	20580.2
% Chg Prev Qtr SAAR.....	4.70	3.69	4.00	4.25	3.51	5.38	6.41	5.00	7.06	4.75	2.88	3.90	4.66	3.52	2.69	4.30	5.43
% Chg Same Qtr Last Yr.....	2.29	2.52	3.49	4.16	3.86	4.28	4.88	5.07	5.96	5.80	4.91	4.64	4.05	3.74	2.69	4.30	5.43
TN PERSONAL INCOME (MIL2012\$) SAAR..	277724	279645	281046	283179	283849	284392	287271	290528	292036	295578	296235	301229	303139	305432	279135	284673	293594
% Chg Prev Qtr SAAR.....	-0.58	2.80	2.02	3.07	0.95	0.77	4.11	4.61	2.09	4.94	0.89	6.92	2.56	3.06	2.47	1.98	3.13
% Chg Same Qtr Last Yr.....	2.17	2.06	1.97	1.82	2.21	1.70	2.22	2.60	2.88	3.93	3.12	3.68	3.80	3.33	2.47	1.98	3.13
US PERSONAL INCOME (BIL2012\$) SAAR..	15426	15502	15592	15760	15862	15967	16144	16332	16414	16537	16625	16859	16983	17075	15487	15933	16477
% Chg Prev Qtr SAAR.....	-0.08	1.99	2.35	4.38	2.61	2.68	4.51	4.73	2.03	3.04	2.13	5.75	2.97	2.20	1.54	2.88	3.41
% Chg Same Qtr Last Yr.....	1.35	1.19	1.41	2.15	2.83	3.00	3.54	3.63	3.48	3.57	2.98	3.23	3.46	3.25	1.54	2.88	3.41
TN PERSONAL INCOME (MIL\$) SAAR.....	288583	291793	294570	298343	299733	301550	306613	312030	315364	320445	322221	327975	332004	335910	290560	301560	317515
% Chg Prev Qtr SAAR.....	1.80	4.52	3.86	5.22	1.88	2.45	6.89	7.26	4.34	6.60	2.23	7.34	5.00	4.79	3.51	3.79	5.29
% Chg Same Qtr Last Yr.....	3.02	3.05	3.51	3.85	3.86	3.34	4.09	4.59	5.21	6.27	5.09	5.11	5.28	4.83	3.51	3.79	5.29
US PERSONAL INCOME (BIL\$) SAAR.....	16029	16176	16343	16604	16750	16930	17231	17540	17725	17929	18083	18355	18600	18772	16121	16879	17819
% Chg Prev Qtr SAAR.....	2.31	3.71	4.20	6.56	3.55	4.39	7.30	7.37	4.28	4.67	3.49	6.17	5.43	3.77	2.57	4.70	5.57
% Chg Same Qtr Last Yr.....	2.19	2.18	2.94	4.18	4.50	4.67	5.44	5.64	5.82	5.90	4.94	4.65	4.93	4.71	2.57	4.70	5.57
TN NONFARM JOBS (THOUS).....	2956.3	2975.9	2985.8	2997.6	3005.3	3016.4	3026.7	3041.1	3053.6	3068.1	3086.0	3095.6	3104.6	3119.0	2965.1	3011.5	3062.2
% Chg Prev Qtr SAAR.....	1.93	2.69	1.33	1.59	1.03	1.49	1.37	1.92	1.65	1.91	2.35	1.26	1.17	1.87	2.49	1.57	1.68
% Chg Same Qtr Last Yr.....	2.57	2.49	1.99	1.88	1.66	1.36	1.37	1.45	1.61	1.71	1.96	1.79	1.67	1.66	2.49	1.57	1.68
US NONFARM JOBS (MIL).....	144.0	144.7	145.2	145.8	146.3	146.9	147.4	148.0	148.7	149.4	150.1	150.7	151.1	151.6	144.3	146.6	149.1
% Chg Prev Qtr SAAR.....	1.54	1.98	1.50	1.63	1.40	1.46	1.48	1.75	1.89	1.80	1.75	1.65	1.17	1.36	1.78	1.57	1.67
% Chg Same Qtr Last Yr.....	1.76	1.80	1.67	1.66	1.63	1.49	1.49	1.52	1.64	1.73	1.80	1.77	1.59	1.48	1.78	1.57	1.67
TN MFG JOBS (THOUS).....	341.2	343.0	344.3	345.7	346.4	346.2	346.7	348.0	349.5	351.9	353.5	355.5	356.8	359.1	341.7	346.3	350.7
% Chg Prev Qtr SAAR.....	3.64	2.14	1.49	1.66	0.80	-0.24	0.60	1.42	1.83	2.71	1.89	2.26	1.41	2.70	3.29	1.34	1.29
% Chg Same Qtr Last Yr.....	3.51	3.42	2.93	2.23	1.52	0.93	0.70	0.64	0.90	1.64	1.96	2.17	2.07	2.06	3.29	1.34	1.29
US MFG JOBS (MIL).....	12.3	12.4	12.3	12.4	12.4	12.4	12.5	12.6	12.7	12.7	12.8	12.8	12.8	12.8	12.4	12.4	12.7
% Chg Prev Qtr SAAR.....	-0.65	0.26	-0.26	1.22	0.85	1.24	2.22	2.32	2.25	1.90	2.17	1.37	0.26	0.34	0.14	0.70	2.00
% Chg Same Qtr Last Yr.....	0.13	0.03	-0.12	0.14	0.52	0.76	1.38	1.66	2.01	2.17	2.16	1.92	1.42	1.03	0.14	0.70	2.00
TN UNEMPLOYMENT RATE (%).....	4.7	4.8	4.7	4.3	3.8	3.5	3.5	3.6	3.6	3.5	3.3	3.2	3.3	3.5	4.7	3.8	3.5
US UNEMPLOYMENT RATE (%).....	4.9	4.9	4.8	4.6	4.4	4.3	4.1	4.1	3.9	3.8	3.8	3.9	3.6	3.6	4.9	4.4	3.9

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**Table 1: Selected U.S. and Tennessee Economic Indicators, Seasonally Adjusted**

**January 2020**

	Historical Data													Annual			
	2016:2	2016:3	2016:4	2017:1	2017:2	2017:3	2017:4	2018:1	2018:2	2018:3	2018:4	2019:1	2019:2	2019:3	2016	2017	2018
CHAINED PRICE INDEX, GDP																	
((2012=100.0).....)	105.6	106.0	106.5	107.0	107.4	108.0	108.7	109.3	110.2	110.8	111.2	111.5	112.2	112.6	105.8	107.8	110.4
% Chg Prev Qtr SAAR.....	2.64	1.40	2.11	1.88	1.33	2.40	2.55	2.32	3.21	2.03	1.62	1.05	2.42	1.66	1.03	1.91	2.40
% Chg Same Qtr Last Yr.....	0.89	0.94	1.47	2.01	1.68	1.93	2.04	2.15	2.62	2.53	2.30	1.98	1.78	1.69	1.03	1.91	2.40
US PERS CONSUMP DEFL (2012=100.0)....	103.9	104.3	104.8	105.4	105.6	106.0	106.7	107.4	108.0	108.4	108.8	108.9	109.5	109.9	104.1	105.9	108.1
% Chg Prev Qtr SAAR.....	2.39	1.68	1.81	2.09	0.92	1.67	2.67	2.53	2.20	1.58	1.33	0.39	2.38	1.53	1.01	1.77	2.09
% Chg Same Qtr Last Yr.....	0.84	0.97	1.51	1.99	1.62	1.62	1.83	1.94	2.27	2.24	1.91	1.38	1.42	1.41	1.01	1.77	2.09
CONSUMER PRICE INDEX,																	
ALL-URBAN (82-84=1.000).....	2.395	2.406	2.422	2.438	2.441	2.454	2.473	2.493	2.506	2.518	2.528	2.533	2.551	2.563	2.400	2.451	2.511
% Chg Prev Qtr SAAR.....	2.90	1.88	2.62	2.78	0.39	2.15	3.14	3.24	2.15	2.01	1.49	0.88	2.92	1.79	1.27	2.14	2.44
% Chg Same Qtr Last Yr.....	1.08	1.15	1.80	2.54	1.91	1.98	2.11	2.22	2.67	2.63	2.22	1.63	1.82	1.76	1.27	2.14	2.44
BANK PRIME INTEREST RATE (%).....	3.5	3.5	3.5	3.8	4.0	4.3	4.3	4.5	4.8	5.0	5.3	5.5	5.5	5.3	3.5	4.1	4.9
FEDERAL FUNDS RATE (% per annum).....	0.373	0.397	0.450	0.700	0.950	1.153	1.203	1.447	1.737	1.923	2.220	2.403	2.397	2.190	0.395	1.002	1.832
30-YEAR FIXED MORTGAGE RATE (%).....	3.6	3.4	3.8	4.2	4.0	3.9	3.9	4.3	4.5	4.6	4.8	4.4	4.0	3.7	3.6	4.0	4.5
TN TAXABLE SALES (MIL2012\$).....	28583	28620	28846	28600	29411	29942	30311	30604	30729	30904	31443	31610	32041	32286	114785	118264	123681
% Chg Prev Qtr SAAR.....	-2.13	0.52	3.19	-3.36	11.83	7.41	5.02	3.93	1.65	2.30	7.16	2.14	5.57	3.09	4.23	3.03	4.58
% Chg Same Qtr Last Yr.....	3.88	2.45	1.84	-0.48	2.90	4.62	5.08	7.01	4.48	3.21	3.74	3.29	4.27	4.47	4.23	3.03	4.58
TN TAXABLE SALES (MIL\$).....	29700	29863	30234	30132	31057	31748	32351	32869	33184	33504	34201	34417	35092	35507	119482	125288	133758
% Chg Prev Qtr SAAR.....	0.22	2.21	5.06	-1.34	12.86	9.20	7.82	6.55	3.89	3.92	8.59	2.54	8.08	4.82	5.28	4.86	6.76
% Chg Same Qtr Last Yr.....	4.74	3.45	3.38	1.51	4.57	6.31	7.00	9.08	6.85	5.53	5.72	4.71	5.75	5.98	5.28	4.86	6.76
TN AVG ANNUAL WAGE, NONFARM																	
(2012\$).....	45618	45896	46300	46236	46368	46404	46692	47024	46836	47295	46902	47777	47922	47906	45936	46425	47014
% Chg Prev Qtr SAAR.....	-2.70	2.46	3.56	-0.55	1.15	0.31	2.50	2.88	-1.59	3.98	-3.28	7.67	1.22	-0.13	0.25	1.06	1.27
% Chg Same Qtr Last Yr.....	-0.77	0.08	0.68	0.66	1.64	1.11	0.85	1.70	1.01	1.92	0.45	1.60	2.32	1.29	0.25	1.06	1.27
TN AVG ANNUAL WAGE, NONFARM (\$).....	47402	47890	48528	48712	48963	49204	49835	50504	50577	51274	51016	52019	52485	52686	47816	49179	50843
% Chg Prev Qtr SAAR.....	-0.37	4.18	5.43	1.53	2.08	1.98	5.24	5.48	0.58	5.63	-1.99	8.09	3.63	1.54	1.27	2.85	3.38
% Chg Same Qtr Last Yr.....	0.06	1.06	2.20	2.67	3.29	2.74	2.70	3.68	3.30	4.21	2.37	3.00	3.77	2.75	1.27	2.85	3.38

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Table 2: Selected Per Capita U.S. and Tennessee Economic Indicators, Seasonally Adjusted

January 2020

	Historical Data													Annual			
	2016:2	2016:3	2016:4	2017:1	2017:2	2017:3	2017:4	2018:1	2018:2	2018:3	2018:4	2019:1	2019:2	2019:3	2016	2017	2018
US GDP (2012\$) SAAR.....	54562	54751	54939	55178	55387	55722	56126	56405	56805	57114	57166	57500	57684	57856	54664	55604	56873
% Chg Prev Qtr SAAR.....	1.18	1.40	1.38	1.75	1.52	2.45	2.93	2.01	2.86	2.19	0.37	2.36	1.29	1.20	0.92	1.72	2.28
% Chg Same Qtr Last Yr.....	0.62	0.85	1.34	1.43	1.51	1.77	2.16	2.22	2.56	2.50	1.85	1.94	1.55	1.30	0.92	1.72	2.28
US GDP (\$) SAAR.....	57649	58060	58538	59073	59492	60165	61016	61682	62645	63263	63600	64097	64715	65161	57835	59938	62799
% Chg Prev Qtr SAAR.....	3.97	2.88	3.33	3.71	2.87	4.60	5.78	4.44	6.39	4.01	2.15	3.16	3.91	2.79	1.97	3.64	4.77
% Chg Same Qtr Last Yr.....	1.56	1.80	2.79	3.47	3.20	3.63	4.23	4.42	5.30	5.15	4.24	3.92	3.30	3.00	1.97	3.64	4.77
TN PERSONAL INCOME (2012\$) SAAR.....	41802	41999	42117	42339	42346	42334	42669	43057	43187	43617	43621	44262	44449	44692	41968	42422	43370
% Chg Prev Qtr SAAR.....	-1.43	1.91	1.13	2.13	0.06	-0.12	3.20	3.69	1.21	4.04	0.03	6.01	1.70	2.20	1.60	1.08	2.24
% Chg Same Qtr Last Yr.....	1.31	1.19	1.09	0.92	1.30	0.80	1.31	1.70	1.99	3.03	2.23	2.80	2.92	2.46	1.60	1.08	2.24
US PERSONAL INCOME (2012\$) SAAR.....	47715	47858	48059	48513	48751	48984	49453	49961	50133	50420	50595	51216	51500	51689	47860	48926	50278
% Chg Prev Qtr SAAR.....	-0.78	1.20	1.69	3.83	1.97	1.93	3.89	4.17	1.39	2.31	1.40	5.00	2.24	1.48	0.82	2.23	2.76
% Chg Same Qtr Last Yr.....	0.62	0.48	0.72	1.47	2.17	2.35	2.90	2.98	2.84	2.93	2.31	2.51	2.73	2.52	0.82	2.23	2.76
TN PERSONAL INCOME (\$) SAAR.....	43436	43824	44144	44607	44716	44888	45541	46244	46637	47286	47447	48192	48682	49152	43685	44938	46904
% Chg Prev Qtr SAAR.....	0.94	3.62	2.95	4.26	0.98	1.55	5.95	6.31	3.44	5.69	1.37	6.43	4.12	3.92	2.63	2.87	4.37
% Chg Same Qtr Last Yr.....	2.16	2.17	2.61	2.93	2.95	2.43	3.17	3.67	4.30	5.34	4.18	4.21	4.38	3.94	2.63	2.87	4.37
US PERSONAL INCOME (\$) SAAR.....	49581	49937	50372	51111	51479	51939	52783	53659	54138	54662	55033	55763	56404	56827	49819	51829	54374
% Chg Prev Qtr SAAR.....	1.59	2.90	3.53	6.00	2.91	3.62	6.66	6.80	3.62	3.93	2.75	5.41	4.68	3.03	1.85	4.03	4.91
% Chg Same Qtr Last Yr.....	1.46	1.46	2.24	3.50	3.83	4.01	4.79	4.98	5.17	5.24	4.26	3.92	4.19	3.96	1.85	4.03	4.91
TN TAXABLE SALES (2012\$).....	4302	4298	4323	4276	4388	4457	4502	4536	4544	4560	4630	4645	4698	4724	17258	17623	18270
% Chg Prev Qtr SAAR.....	-2.96	-0.35	2.29	-4.25	10.85	6.47	4.11	3.02	0.77	1.42	6.25	1.28	4.68	2.23	3.36	2.11	3.67
% Chg Same Qtr Last Yr.....	3.01	1.58	0.96	-1.35	1.99	3.69	4.15	6.07	3.57	2.32	2.84	2.41	3.39	3.59	3.36	2.11	3.67
TN TAXABLE SALES (\$).....	4470	4485	4531	4505	4633	4726	4805	4871	4907	4944	5036	5057	5146	5196	17964	18669	19759
% Chg Prev Qtr SAAR.....	-0.64	1.33	4.14	-2.25	11.86	8.24	6.88	5.62	2.99	3.03	7.67	1.67	7.18	3.95	4.40	3.93	5.84
% Chg Same Qtr Last Yr.....	3.87	2.57	2.49	0.62	3.64	5.37	6.06	8.13	5.92	4.62	4.81	3.81	4.85	5.09	4.40	3.93	5.84

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**Table 3: Tennessee Personal Income Components, Seasonally Adjusted Annual Rates (millions of 2012 dollars)**

**January 2020**

	Historical Data														Annual		
	2016:1	2016:2	2016:3	2016:4	2017:1	2017:2	2017:3	2017:4	2018:1	2018:2	2018:3	2018:4	2019:1	2019:2	2016	2017	2018
TN PERSONAL INCOME.....	278126	277724	279645	281046	283179	283849	284392	287271	290528	292036	295578	296235	301229	303139	279135	284673	293594
% Chg Prev Qtr SAAR.....	3.69	-0.58	2.80	2.02	3.07	0.95	0.77	4.11	4.61	2.09	4.94	0.89	6.92	2.56	2.47	1.98	3.13
% Chg Same Qtr Last Yr.....	3.70	2.17	2.06	1.97	1.82	2.21	1.70	2.22	2.60	2.88	3.93	3.12	3.68	3.80	2.47	1.98	3.13
WAGES AND SALARIES.....	136023	135732	137446	139101	139447	140191	140818	142173	143874	143887	145986	145620	148784	149668	137075	140657	144842
% Chg Prev Qtr SAAR.....	1.65	-0.85	5.15	4.91	1.00	2.15	1.80	3.90	4.87	0.03	5.97	-1.00	8.98	2.40	2.76	2.61	2.97
% Chg Same Qtr Last Yr.....	4.01	1.80	2.56	2.68	2.52	3.28	2.45	2.21	3.17	2.64	3.67	2.42	3.41	4.02	2.76	2.61	2.97
OTHER LABOR INCOME.....	30655	30844	31139	31099	30374	30109	29927	30128	30400	30705	31149	31157	31531	31688	30934	30135	30853
% Chg Prev Qtr SAAR.....	9.97	2.48	3.89	-0.51	-9.01	-3.44	-2.40	2.71	3.66	4.07	5.91	0.11	4.89	2.00	5.75	-2.58	2.38
% Chg Same Qtr Last Yr.....	6.75	6.29	6.15	3.89	-0.92	-2.38	-3.89	-3.12	0.09	1.98	4.08	3.42	3.72	3.20	5.75	-2.58	2.38
PROPRIETORS INCOME.....	39064	38618	38612	38731	39876	39661	39591	39875	39700	39833	40280	40666	41065	41073	38756	39751	40120
% Chg Prev Qtr SAAR.....	9.57	-4.49	-0.06	1.24	12.36	-2.14	-0.70	2.90	-1.74	1.34	4.56	3.90	3.97	0.08	1.90	2.57	0.93
% Chg Same Qtr Last Yr.....	3.36	2.14	0.68	1.44	2.08	2.70	2.54	2.95	-0.44	0.43	1.74	1.98	3.44	3.11	1.90	2.57	0.93
RENT, INTEREST, DIVIDENDS.....	39396	39567	39813	40219	41255	41433	41662	42766	43576	44080	44577	44767	44318	44925	39749	41779	44250
% Chg Prev Qtr SAAR.....	3.41	1.75	2.51	4.14	10.72	1.73	2.23	11.03	7.79	4.70	4.59	1.72	-3.95	5.59	2.46	5.11	5.91
% Chg Same Qtr Last Yr.....	4.34	1.49	1.14	2.95	4.72	4.71	4.64	6.33	5.63	6.39	7.00	4.68	1.70	1.92	2.46	5.11	5.91
TRANSFER PAYMENTS.....	56035	55962	55962	55561	56028	56397	56390	56482	57380	57851	58226	58537	60698	61079	55880	56324	57998
% Chg Prev Qtr SAAR.....	3.30	-0.52	0.00	-2.84	3.40	2.66	-0.05	0.65	6.51	3.32	2.62	2.16	15.61	2.54	1.18	0.80	2.97
% Chg Same Qtr Last Yr.....	1.85	1.78	1.15	-0.04	-0.01	0.78	0.77	1.66	2.41	2.58	3.25	3.64	5.78	5.58	1.18	0.80	2.97
LESS: PERS CONT FOR SOC INS...	21400	21348	21626	21930	22185	22327	22392	22518	22749	22653	22888	22796	23396	23504	21576	22355	22772
% Chg Prev Qtr SAAR.....	2.39	-0.98	5.32	5.75	4.72	2.59	1.16	2.28	4.17	-1.69	4.22	-1.60	10.95	1.86	2.72	3.61	1.86
% Chg Same Qtr Last Yr.....	3.69	1.58	2.54	3.08	3.67	4.59	3.54	2.68	2.55	1.46	2.22	1.23	2.84	3.76	2.72	3.61	1.86
RESIDENCE ADJUSTMENT.....	-1646	-1651	-1701	-1735	-1616	-1615	-1605	-1635	-1653	-1666	-1751	-1716	-1771	-1790	-1683	-1618	-1696
% Chg Prev Qtr SAAR.....	129.16	1.21	12.66	8.26	-24.64	-0.38	-2.37	7.66	4.36	3.24	21.99	-7.63	13.37	4.45	31.53	-3.87	4.85
% Chg Same Qtr Last Yr.....	36.28	28.85	31.65	29.69	-1.79	-2.18	-5.62	-5.75	2.24	3.16	9.07	4.97	7.16	7.48	31.53	-3.87	4.85
PER CAPITA PERSONAL INCOME (\$)..	41952	41802	41999	42117	42339	42346	42334	42669	43057	43187	43617	43621	44262	44449	41968	42422	43370
% Chg Prev Qtr SAAR.....	2.79	-1.43	1.91	1.13	2.13	0.06	-0.12	3.20	3.69	1.21	4.04	0.03	6.01	1.70	1.60	1.08	2.24
% Chg Same Qtr Last Yr.....	2.85	1.31	1.19	1.09	0.92	1.30	0.80	1.31	1.70	1.99	3.03	2.23	2.80	2.92	1.60	1.08	2.24

Boyd Center for Business and Economic Research, University of Tennessee

Tennessee Econometric Model

**Table 4: Tennessee Personal Income Components, Seasonally Adjusted Annual Rates (millions of current dollars)****January 2020**

	Historical Data														Annual		
	2016:1	2016:2	2016:3	2016:4	2017:1	2017:2	2017:3	2017:4	2018:1	2018:2	2018:3	2018:4	2019:1	2019:2	2016	2017	2018
TN PERSONAL INCOME.....	287296	288583	291793	294570	298343	299733	301550	306613	312030	315364	320445	322221	327975	332004	290560	301560	317515
% Chg Prev Qtr SAAR.....	3.86	1.80	4.52	3.86	5.22	1.88	2.45	6.89	7.26	4.34	6.60	2.23	7.34	5.00	3.51	3.79	5.29
% Chg Same Qtr Last Yr.....	4.46	3.02	3.05	3.51	3.85	3.86	3.34	4.09	4.59	5.21	6.27	5.09	5.11	5.28	3.51	3.79	5.29
WAGES AND SALARIES.....	140507	141039	143416	145795	146915	148036	149313	151745	154522	155380	158268	158393	161994	163920	142689	149002	156641
% Chg Prev Qtr SAAR.....	1.83	1.52	6.91	6.80	3.11	3.09	3.50	6.67	7.52	2.24	7.64	0.32	9.41	4.84	3.80	4.42	5.13
% Chg Same Qtr Last Yr.....	4.78	2.66	3.56	4.23	4.56	4.96	4.11	4.08	5.18	4.96	6.00	4.38	4.84	5.50	3.80	4.42	5.13
OTHER LABOR INCOME.....	31666	32050	32492	32596	32000	31794	31733	32157	32650	33157	33769	33890	34331	34705	32201	31921	33367
% Chg Prev Qtr SAAR.....	10.16	4.94	5.63	1.29	-7.11	-2.55	-0.77	5.45	6.28	6.36	7.59	1.44	5.30	4.43	6.83	-0.87	4.53
% Chg Same Qtr Last Yr.....	7.54	7.18	7.19	5.46	1.06	-0.80	-2.34	-1.35	2.03	4.29	6.42	5.39	5.15	4.67	6.83	-0.87	4.53
PROPRIETORS INCOME.....	40352	40128	40289	40595	42011	41880	41980	42560	42638	43015	43668	44234	44711	44984	40341	42108	43389
% Chg Prev Qtr SAAR.....	9.75	-2.20	1.62	3.07	14.70	-1.24	0.95	5.64	0.74	3.58	6.22	5.28	4.38	2.46	2.93	4.38	3.04
% Chg Same Qtr Last Yr.....	4.12	2.99	1.65	2.97	4.11	4.37	4.20	4.84	1.49	2.71	4.02	3.93	4.86	4.58	2.93	4.38	3.04
RENT, INTEREST, DIVIDENDS.....	40695	41115	41543	42154	43465	43751	44176	45646	46801	47601	48327	48694	48253	49202	41376	44259	47856
% Chg Prev Qtr SAAR.....	3.59	4.19	4.23	6.02	13.03	2.67	3.93	13.99	10.52	7.01	6.25	3.07	-3.57	8.10	3.50	6.97	8.13
% Chg Same Qtr Last Yr.....	5.11	2.34	2.13	4.50	6.81	6.41	6.34	8.28	7.68	8.80	9.40	6.68	3.10	3.36	3.50	6.97	8.13
TRANSFER PAYMENTS.....	57882	58150	58393	58235	59028	59553	59792	60285	61626	62472	63124	63672	66087	66895	58165	59665	62723
% Chg Prev Qtr SAAR.....	3.47	1.86	1.68	-1.08	5.56	3.60	1.62	3.34	9.20	5.60	4.24	3.52	16.06	4.98	2.21	2.58	5.13
% Chg Same Qtr Last Yr.....	2.60	2.63	2.14	1.47	1.98	2.41	2.40	3.52	4.40	4.90	5.57	5.62	7.24	7.08	2.21	2.58	5.13
LESS: PERS CONT FOR SOC INS..	22106	22183	22566	22986	23373	23577	23743	24034	24433	24462	24814	24796	25473	25742	22460	23682	24626
% Chg Prev Qtr SAAR.....	2.57	1.40	7.09	7.66	6.91	3.54	2.84	5.01	6.80	0.48	5.88	-0.29	11.39	4.29	3.76	5.44	3.99
% Chg Same Qtr Last Yr.....	4.45	2.43	3.54	4.64	5.73	6.28	5.22	4.56	4.54	3.76	4.51	3.17	4.26	5.23	3.76	5.44	3.99
RESIDENCE ADJUSTMENT.....	-1700	-1715	-1775	-1818	-1703	-1705	-1702	-1745	-1775	-1799	-1898	-1867	-1928	-1961	-1752	-1714	-1835
% Chg Prev Qtr SAAR.....	129.55	3.63	14.55	10.21	-23.06	0.54	-0.74	10.53	7.00	5.52	23.93	-6.40	13.81	6.94	32.86	-2.18	7.05
% Chg Same Qtr Last Yr.....	37.29	29.93	32.93	31.64	0.17	-0.59	-4.09	-4.02	4.23	5.50	11.52	6.97	8.64	9.00	32.86	-2.18	7.05
PER CAPITA PERSONAL INCOME (\$).	43335	43436	43824	44144	44607	44716	44888	45541	46244	46637	47286	47447	48192	48682	43685	44938	46904
% Chg Prev Qtr SAAR.....	2.96	0.94	3.62	2.95	4.26	0.98	1.55	5.95	6.31	3.44	5.69	1.37	6.43	4.12	2.63	2.87	4.37
% Chg Same Qtr Last Yr.....	3.60	2.16	2.17	2.61	2.93	2.95	2.43	3.17	3.67	4.30	5.34	4.18	4.21	4.38	2.63	2.87	4.37

**Table 5: Tennessee Nonfarm Employment by Sector, Not Seasonally Adjusted (thousands of jobs)**

**January 2020**

	Historical Data													Annual			
	2016:2	2016:3	2016:4	2017:1	2017:2	2017:3	2017:4	2018:1	2018:2	2018:3	2018:4	2019:1	2019:2	2019:3	2016	2017	2018
TOTAL NONFARM.....	2956.9	2968.7	3018.9	2969.3	3004.7	3009.2	3062.0	3012.8	3052.7	3060.3	3115.3	3074.2	3105.6	3111.6	2965.3	3011.3	3060.3
% Chg Same Qtr Last Yr.....	2.54	2.50	1.92	1.80	1.62	1.36	1.43	1.46	1.60	1.70	1.74	2.04	1.73	1.68	2.48	1.55	1.63
NATURAL RESOURCES, MINING & CONSTRUCTION..	118.7	121.6	121.5	119.6	124.9	126.7	126.2	122.9	128.9	132.1	132.8	129.0	132.3	131.3	119.1	124.4	129.2
% Chg Same Qtr Last Yr.....	1.19	1.19	0.66	4.15	5.25	4.25	3.87	2.76	3.15	4.23	5.23	4.94	2.66	-0.61	1.64	4.38	3.86
MANUFACTURING.....	341.5	343.4	344.4	345.0	346.7	346.6	346.7	347.2	349.9	352.4	353.4	354.8	357.1	359.7	341.7	346.3	350.7
% Chg Same Qtr Last Yr.....	3.52	3.42	2.88	2.25	1.53	0.95	0.66	0.65	0.90	1.66	1.93	2.18	2.06	2.08	3.29	1.34	1.29
DURABLE GOODS.....	219.6	220.7	221.5	221.9	222.7	221.7	221.9	222.0	223.5	225.3	226.2	227.7	228.7	230.8	219.5	222.0	224.3
% Chg Same Qtr Last Yr.....	4.36	4.14	3.52	2.54	1.43	0.45	0.18	0.05	0.37	1.64	1.94	2.54	2.31	2.44	3.97	1.14	1.00
NONDURABLE GOODS.....	121.9	122.7	123.0	123.1	124.0	125.0	124.8	125.2	126.3	127.1	127.2	127.1	128.4	128.9	122.1	124.2	126.5
% Chg Same Qtr Last Yr.....	2.04	2.16	1.74	1.74	1.72	1.85	1.52	1.73	1.85	1.71	1.92	1.54	1.61	1.44	2.10	1.71	1.80
TRADE, TRANSPORTATION, UTILITIES.....	611.9	615.4	628.8	611.4	615.1	618.7	633.7	617.7	622.9	626.0	642.3	629.1	632.7	632.0	615.3	619.7	627.2
% Chg Same Qtr Last Yr.....	2.77	2.34	1.73	1.06	0.52	0.53	0.77	1.04	1.27	1.18	1.35	1.85	1.58	0.96	2.53	0.72	1.21
WHOLESALE TRADE.....	116.3	117.1	117.5	117.3	118.1	118.3	118.8	118.2	119.5	119.9	121.0	120.6	120.1	119.6	116.8	118.1	119.7
% Chg Same Qtr Last Yr.....	-1.11	-0.40	0.14	1.06	1.52	0.97	1.11	0.77	1.19	1.35	1.91	2.00	0.53	-0.19	-0.55	1.16	1.31
RETAIL TRADE.....	332.6	333.5	342.2	332.2	334.2	334.3	343.4	333.1	336.5	335.6	345.3	336.2	338.4	337.8	334.0	336.0	337.6
% Chg Same Qtr Last Yr.....	2.74	2.50	1.71	1.35	0.48	0.25	0.35	0.28	0.69	0.39	0.55	0.94	0.55	0.66	2.57	0.60	0.48
TRANSPORTATION & UTILITIES.....	162.9	164.8	169.2	161.9	162.7	166.1	171.5	166.4	166.8	170.5	175.9	172.3	174.2	174.6	164.5	165.6	169.9
% Chg Same Qtr Last Yr.....	5.80	4.04	2.90	0.48	-0.12	0.79	1.40	2.78	2.52	2.65	2.57	3.55	4.42	2.38	4.73	0.64	2.63
INFORMATION.....	45.9	45.3	45.9	45.5	46.3	45.8	46.7	45.3	46.2	44.6	45.8	45.1	46.2	46.6	45.6	46.1	45.5
% Chg Same Qtr Last Yr.....	3.15	0.97	0.88	0.74	0.87	1.10	1.89	-0.44	-0.22	-2.55	-1.93	-0.59	0.00	4.56	2.09	1.15	-1.28
FINANCIAL ACTIVITIES.....	152.5	154.6	155.5	155.8	158.4	159.8	160.7	159.9	162.2	164.1	163.9	165.4	167.4	168.8	153.1	158.7	162.5
% Chg Same Qtr Last Yr.....	3.48	3.90	3.53	4.07	3.91	3.36	3.30	2.63	2.38	2.67	2.01	3.42	3.21	2.84	3.42	3.66	2.42
PROFESSIONAL & BUSINESS SERVICES.....	406.6	409.4	417.6	402.4	408.9	412.5	421.9	409.1	416.0	416.9	425.4	413.4	418.9	424.8	408.1	411.4	416.9
% Chg Same Qtr Last Yr.....	3.20	2.74	1.04	0.89	0.57	0.76	1.05	1.66	1.74	1.07	0.82	1.05	0.70	1.90	2.72	0.82	1.32
EDUCATION & HEALTH SERVICES.....	421.2	423.3	431.2	428.9	428.9	428.5	437.0	434.4	433.4	434.2	440.5	435.3	435.8	437.4	423.9	430.9	435.6
% Chg Same Qtr Last Yr.....	2.20	2.35	2.16	2.15	1.84	1.23	1.36	1.27	1.05	1.31	0.80	0.21	0.55	0.74	2.24	1.64	1.11
LEISURE & HOSPITALITY.....	325.7	328.3	320.3	314.2	335.0	336.8	329.7	321.8	343.7	347.5	342.5	338.9	359.9	363.7	319.6	328.9	338.9
% Chg Same Qtr Last Yr.....	3.61	3.73	3.11	3.35	2.86	2.60	2.91	2.40	2.61	3.18	3.90	5.34	4.71	4.66	3.76	2.92	3.03
OTHER SERVICES.....	111.5	111.8	111.7	111.9	115.0	115.7	115.8	115.7	118.6	119.2	119.8	118.2	120.0	119.3	111.0	114.6	118.3
% Chg Same Qtr Last Yr.....	2.61	2.79	2.73	2.85	3.11	3.43	3.61	3.37	3.13	3.03	3.46	2.16	1.18	0.14	2.78	3.25	3.24
GOVERNMENT.....	421.5	415.6	442.0	434.4	425.4	418.0	443.6	438.7	431.0	423.3	448.9	445.1	435.3	427.8	428.0	430.4	435.5
% Chg Same Qtr Last Yr.....	0.33	0.90	0.93	0.32	0.93	0.59	0.37	1.00	1.31	1.27	1.19	1.44	1.01	1.06	0.70	0.55	1.19
FEDERAL, CIVILIAN.....	49.1	49.3	49.5	49.3	49.2	49.0	48.8	48.8	48.8	49.0	49.7	49.4	50.0	50.4	49.2	49.1	49.1
% Chg Same Qtr Last Yr.....	-0.07	0.48	0.54	0.61	0.20	-0.68	-1.42	-1.15	-0.81	0.00	1.98	1.37	2.32	2.93	0.25	-0.32	0.00
STATE & LOCAL.....	372.4	366.3	392.5	385.1	376.2	369.0	394.9	390.0	382.2	374.3	399.2	395.6	385.4	377.4	378.8	381.3	386.4
% Chg Same Qtr Last Yr.....	0.38	0.96	0.98	0.29	1.03	0.76	0.59	1.27	1.59	1.44	1.10	1.45	0.84	0.82	0.76	0.66	1.34

**Table 6: Tennessee Durable Goods Manufacturing Employment, Not Seasonally Adjusted (thousands of jobs)****January 2020**

	Historical Data													Annual			
	2016:2	2016:3	2016:4	2017:1	2017:2	2017:3	2017:4	2018:1	2018:2	2018:3	2018:4	2019:1	2019:2	2019:3	2016	2017	2018
TOTAL DURABLE GOODS.....	219.6	220.7	221.5	221.9	222.7	221.7	221.9	222.0	223.5	225.3	226.2	227.7	228.7	230.8	219.5	222.0	224.3
% Chg Same Qtr Last Yr.....	4.36	4.14	3.52	2.54	1.43	0.45	0.18	0.05	0.37	1.64	1.94	2.54	2.31	2.44	3.97	1.14	1.00
WOOD PRODUCTS.....	12.1	12.3	12.3	12.4	12.5	12.6	12.6	12.5	12.6	12.6	12.6	12.4	12.5	12.6	12.1	12.5	12.6
% Chg Same Qtr Last Yr.....	5.22	5.14	3.93	4.49	3.31	2.99	2.43	0.54	0.80	-0.53	-0.26	-0.27	-0.79	0.00	4.82	3.29	0.13
NONMETALLIC MINERAL PRODUCTS.....	13.3	13.5	13.3	13.4	13.7	13.7	13.7	13.8	14.1	14.2	14.2	14.4	14.8	15.1	13.3	13.6	14.1
% Chg Same Qtr Last Yr.....	5.56	5.21	2.56	2.03	2.76	1.73	2.75	2.98	2.93	3.65	3.89	4.34	4.98	6.10	5.20	2.32	3.36
PRIMARY METALS.....	10.7	10.4	10.7	10.7	10.7	10.7	10.8	10.9	10.9	11.1	11.2	11.4	11.6	11.8	10.7	10.7	11.0
% Chg Same Qtr Last Yr.....	2.24	-0.32	0.31	-0.62	0.31	2.56	0.93	1.24	2.18	3.74	4.01	4.91	5.79	6.31	1.75	0.78	2.80
FABRICATED METAL PRODUCTS.....	35.9	35.7	35.5	35.5	35.6	35.4	35.7	35.8	36.3	37.0	37.2	37.3	37.5	38.0	35.7	35.6	36.6
% Chg Same Qtr Last Yr.....	2.38	1.04	-0.37	-0.75	-0.84	-0.84	0.47	0.94	1.97	4.52	4.20	4.28	3.40	2.52	1.28	-0.49	2.91
MACHINERY.....	26.0	25.7	25.2	25.2	25.7	25.2	25.0	25.2	25.8	25.5	25.2	25.5	26.0	25.9	25.5	25.3	25.5
% Chg Same Qtr Last Yr.....	1.69	1.72	0.00	0.80	-1.41	-1.69	-0.79	0.26	0.65	1.19	0.80	1.06	0.65	1.31	0.76	-0.79	0.73
COMPUTER & ELECTRONIC PRODUCTS...	4.8	4.8	4.8	4.8	4.9	4.9	4.9	5.0	5.0	5.2	5.3	5.4	5.4	5.5	4.8	4.9	5.1
% Chg Same Qtr Last Yr.....	-4.67	-2.70	0.00	0.69	2.80	2.08	2.07	3.45	2.72	6.12	6.76	7.33	7.95	5.77	-3.19	1.91	4.77
ELECTRICAL EQUIPMENT, APPLIANCES & COMPONENTS.....	19.9	19.9	19.7	19.4	19.3	19.2	19.2	19.0	19.0	18.9	18.9	18.8	18.7	18.9	19.9	19.3	18.9
% Chg Same Qtr Last Yr.....	1.01	0.50	-1.34	-2.68	-3.34	-3.85	-2.37	-2.23	-1.56	-1.39	-1.91	-0.88	-1.23	-0.18	0.51	-3.06	-1.77
TRANSPORTATION EQUIPMENT.....	71.9	73.2	74.6	75.2	74.8	74.2	73.7	73.7	73.3	74.1	75.1	75.9	75.6	76.1	72.5	74.5	74.1
% Chg Same Qtr Last Yr.....	8.72	9.09	9.54	6.77	4.08	1.41	-1.25	-1.95	-1.96	-0.22	1.99	2.89	3.05	2.79	8.65	2.69	-0.55
FURNITURE.....	9.4	9.4	9.5	9.6	9.6	9.4	9.5	9.6	9.6	9.6	9.4	9.5	9.5	9.6	9.4	9.5	9.6
% Chg Same Qtr Last Yr.....	4.44	3.66	3.26	2.50	1.77	-0.71	0.00	0.00	0.70	2.14	-0.70	-0.70	-1.73	0.35	3.96	0.88	0.53
MISCELLANEOUS DURABLE GOODS.....	15.6	15.7	15.7	15.7	16.0	16.3	16.7	16.6	16.8	17.1	17.0	17.0	17.1	17.4	15.6	16.2	16.9
% Chg Same Qtr Last Yr.....	1.52	2.16	1.95	2.16	2.78	3.60	6.16	5.30	4.99	5.11	1.80	2.82	1.78	1.75	1.74	3.68	4.27

**Table 7: Tennessee Nondurable Goods Manufacturing Employment, Not Seasonally Adjusted (thousands of jobs)**

**January 2020**

	Historical Data													Annual			
	2016:2	2016:3	2016:4	2017:1	2017:2	2017:3	2017:4	2018:1	2018:2	2018:3	2018:4	2019:1	2019:2	2019:3	2016	2017	2018
	TOTAL NONDURABLE GOODS.....	121.9	122.7	123.0	123.1	124.0	125.0	124.8	125.2	126.3	127.1	127.2	127.1	128.4	128.9	122.1	124.2
% Chg Same Qtr Last Yr.....	2.04	2.16	1.74	1.74	1.72	1.85	1.52	1.73	1.85	1.71	1.92	1.54	1.61	1.44	2.10	1.71	1.80
FOOD.....	34.0	34.7	34.9	34.9	35.0	35.8	35.9	35.8	35.7	35.7	35.8	35.6	35.8	36.1	34.4	35.4	35.8
% Chg Same Qtr Last Yr.....	2.51	3.48	3.56	3.05	2.94	3.37	2.87	2.48	2.00	-0.28	-0.09	-0.56	0.19	1.12	3.00	3.06	1.01
BEVERAGE & TOBACCO.....	6.5	6.7	6.7	6.6	6.9	7.1	7.1	7.0	7.3	7.5	7.6	7.6	7.9	8.0	6.6	6.9	7.4
% Chg Same Qtr Last Yr.....	10.73	11.67	9.24	5.29	5.61	5.97	5.47	6.03	6.28	5.16	7.08	8.53	7.73	7.14	10.85	5.59	6.14
PAPER.....	12.0	12.0	12.0	11.8	12.1	12.0	11.7	11.9	12.0	12.1	12.0	11.9	12.0	12.1	11.9	11.9	12.0
% Chg Same Qtr Last Yr.....	-0.55	-0.55	-0.83	0.00	0.56	0.00	-1.95	0.85	-0.83	0.84	2.27	-0.28	0.56	0.00	-0.62	-0.35	0.77
PRINTING & RELATED SUPPORT.....	9.3	9.1	9.1	9.1	9.0	8.9	8.9	8.8	8.9	9.1	9.0	9.0	9.0	9.0	9.2	9.0	9.0
% Chg Same Qtr Last Yr.....	0.00	0.00	-0.73	-1.80	-2.88	-2.19	-2.20	-2.93	-0.74	1.87	1.50	1.89	0.75	-1.10	-0.27	-2.27	-0.09
CHEMICALS.....	25.3	25.3	25.1	24.9	25.0	25.1	25.1	25.3	25.6	25.7	25.7	25.6	25.8	25.8	25.3	25.0	25.6
% Chg Same Qtr Last Yr.....	-1.17	-1.81	-2.20	-2.10	-1.45	-0.79	0.00	1.74	2.40	2.39	2.12	1.32	0.78	0.26	-1.17	-1.09	2.16
PLASTICS & RUBBER.....	23.0	23.2	23.6	24.1	24.6	24.3	24.4	24.5	24.7	24.9	24.9	25.0	25.1	25.0	23.2	24.4	24.8
% Chg Same Qtr Last Yr.....	5.34	6.09	5.04	5.85	6.66	4.59	3.53	1.66	0.68	2.47	2.05	1.90	1.35	0.54	5.58	5.14	1.71
MISCELLANEOUS NONDURABLE GOODS.....	11.7	11.7	11.6	11.6	11.5	11.7	11.7	11.8	12.1	12.1	12.2	12.4	12.8	12.9	11.6	11.6	12.0
% Chg Same Qtr Last Yr.....	1.44	-0.57	-0.57	0.87	-1.99	0.29	0.86	1.72	4.93	3.42	4.27	5.08	6.08	6.61	0.36	0.00	3.58

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**Table 8: Tennessee Nonfarm Employment by Sector, Seasonally Adjusted (thousands of jobs) January 2020**

	Historical Data													Annual			
	2016:2	2016:3	2016:4	2017:1	2017:2	2017:3	2017:4	2018:1	2018:2	2018:3	2018:4	2019:1	2019:2	2019:3	2016	2017	2018
	TOTAL NONFARM.....	2956.3	2975.9	2985.8	2997.6	3005.3	3016.4	3026.7	3041.1	3053.6	3068.1	3086.0	3095.6	3104.6	3119.0	2965.1	3011.5
% Chg Prev Qtr SAAR.....	1.93	2.69	1.33	1.59	1.03	1.49	1.37	1.92	1.65	1.91	2.35	1.26	1.17	1.87	2.49	1.57	1.68
% Chg Same Qtr Last Yr.....	2.57	2.49	1.99	1.88	1.66	1.36	1.37	1.45	1.61	1.71	1.96	1.79	1.67	1.66	2.49	1.57	1.68
NATURAL RESOURCES, MINING																	
AND CONSTRUCTION.....	118.0	119.3	120.5	123.6	124.2	124.4	125.2	126.9	128.1	129.8	132.2	131.2	132.1	130.0	119.2	124.4	129.3
% Chg Prev Qtr SAAR.....	-2.78	4.60	3.85	10.94	1.85	0.75	2.38	5.77	3.84	5.20	7.61	-2.79	2.77	-6.21	1.66	4.36	3.93
% Chg Same Qtr Last Yr.....	1.20	1.27	0.75	4.04	5.25	4.27	3.90	2.67	3.17	4.29	5.59	3.39	3.12	0.21	1.66	4.36	3.93
MANUFACTURING.....	341.2	343.0	344.3	345.7	346.4	346.2	346.7	348.0	349.5	351.9	353.5	355.5	356.8	359.1	341.7	346.3	350.7
% Chg Prev Qtr SAAR.....	3.64	2.14	1.49	1.66	0.80	-0.24	0.60	1.42	1.83	2.71	1.89	2.26	1.41	2.70	3.29	1.34	1.29
% Chg Same Qtr Last Yr.....	3.51	3.42	2.93	2.23	1.52	0.93	0.70	0.64	0.90	1.64	1.96	2.17	2.07	2.06	3.29	1.34	1.29
DURABLE GOODS.....	219.4	220.7	221.5	222.2	222.5	221.6	222.0	222.2	223.3	225.1	226.4	227.9	228.5	230.6	219.5	222.1	224.3
% Chg Prev Qtr SAAR.....	4.95	2.41	1.46	1.26	0.59	-1.61	0.71	0.47	1.98	3.25	2.20	2.68	1.19	3.62	3.97	1.14	1.00
% Chg Same Qtr Last Yr.....	4.35	4.13	3.57	2.51	1.43	0.42	0.23	0.04	0.38	1.60	1.97	2.53	2.33	2.42	3.97	1.14	1.00
NONDURABLE GOODS.....	121.9	122.4	122.9	123.6	123.9	124.6	124.8	125.7	126.2	126.8	127.2	127.7	128.2	128.6	122.1	124.2	126.5
% Chg Prev Qtr SAAR.....	1.32	1.67	1.55	2.38	1.18	2.26	0.39	3.14	1.55	1.76	1.33	1.53	1.79	1.07	2.10	1.70	1.80
% Chg Same Qtr Last Yr.....	2.02	2.16	1.78	1.73	1.69	1.84	1.55	1.74	1.83	1.71	1.94	1.54	1.60	1.43	2.10	1.70	1.80
TRADE, TRANSPORTATION, UTILITIES.....	614.3	617.2	618.0	618.3	617.8	620.4	622.4	624.7	625.7	627.3	632.8	634.4	634.3	633.5	615.2	619.7	627.6
% Chg Prev Qtr SAAR.....	1.80	1.90	0.54	0.22	-0.34	1.69	1.32	1.46	0.66	1.01	3.58	0.99	-0.04	-0.52	2.54	0.73	1.27
% Chg Same Qtr Last Yr.....	2.74	2.37	1.82	1.11	0.58	0.52	0.72	1.03	1.28	1.11	1.67	1.55	1.37	0.99	2.54	0.73	1.27
WHOLESALE TRADE.....	116.3	116.9	117.3	117.9	118.1	118.1	118.5	118.8	119.4	119.7	120.5	121.1	120.3	119.4	116.8	118.1	119.6
% Chg Prev Qtr SAAR.....	-1.14	2.08	1.26	2.18	0.57	0.00	1.59	1.02	2.03	1.01	2.59	2.12	-2.83	-2.85	-0.53	1.17	1.26
% Chg Same Qtr Last Yr.....	-1.08	-0.34	0.17	1.09	1.52	1.00	1.08	0.79	1.16	1.41	1.66	1.94	0.70	-0.28	-0.53	1.17	1.26
RETAIL TRADE.....	333.4	335.1	335.6	336.5	335.2	336.0	336.5	337.3	337.5	337.0	339.7	339.2	338.7	339.3	334.0	336.1	337.9
% Chg Prev Qtr SAAR.....	1.74	2.01	0.56	1.12	-1.50	0.88	0.64	0.99	0.24	-0.59	3.16	-0.55	-0.59	0.75	2.59	0.61	0.55
% Chg Same Qtr Last Yr.....	2.65	2.54	1.90	1.36	0.54	0.26	0.28	0.25	0.69	0.32	0.94	0.55	0.35	0.68	2.59	0.61	0.55
TRANSPORTATION & UTILITIES.....	164.5	165.2	165.2	163.9	164.5	166.4	167.4	168.5	168.8	170.5	172.7	174.1	175.4	174.8	164.4	165.6	170.1
% Chg Prev Qtr SAAR.....	4.07	1.55	0.00	-2.95	1.39	4.62	2.51	2.74	0.55	4.25	5.10	3.28	3.02	-1.36	4.75	0.67	2.76
% Chg Same Qtr Last Yr.....	5.83	4.03	2.84	0.63	-0.02	0.73	1.35	2.81	2.59	2.50	3.15	3.28	3.91	2.48	4.75	0.67	2.76
INFORMATION.....	45.7	45.6	45.6	45.5	46.2	46.1	46.4	45.3	46.1	45.0	45.7	45.1	46.0	46.8	45.5	46.1	45.6
% Chg Prev Qtr SAAR.....	3.88	-1.45	0.00	-0.29	6.29	-0.86	2.33	-8.88	7.25	-9.20	6.36	-5.70	8.23	7.76	2.09	1.17	-1.12
% Chg Same Qtr Last Yr.....	3.08	1.11	0.81	0.52	1.09	1.24	1.83	-0.44	-0.22	-2.38	-1.44	-0.59	-0.36	4.00	2.09	1.17	-1.12
FINANCIAL ACTIVITIES.....	152.3	154.0	155.2	156.9	158.3	159.2	160.3	161.0	162.1	163.5	164.0	166.0	167.5	168.5	153.1	158.7	162.7
% Chg Prev Qtr SAAR.....	4.41	4.63	3.15	4.28	3.79	2.21	2.79	1.76	2.68	3.67	1.15	4.88	3.66	2.41	3.41	3.67	2.51
% Chg Same Qtr Last Yr.....	3.49	3.80	3.56	4.12	3.96	3.35	3.26	2.63	2.36	2.72	2.31	3.08	3.33	3.02	3.41	3.67	2.51

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**Table 8: Tennessee Nonfarm Employment by Sector, Seasonally Adjusted (thousands of jobs)**

**January 2020**

	Historical Data													Annual			
	2016:2	2016:3	2016:4	2017:1	2017:2	2017:3	2017:4	2018:1	2018:2	2018:3	2018:4	2019:1	2019:2	2019:3	2016	2017	2018
PROFESSIONAL & BUSINESS SERVICES..	407.5	410.2	409.3	409.7	410.0	413.2	413.4	416.4	417.2	417.6	419.4	418.3	419.8	424.9	408.0	411.6	417.6
% Chg Prev Qtr SAAR.....	2.22	2.68	-0.84	0.36	0.36	3.09	0.19	2.97	0.74	0.38	1.74	-1.05	1.51	4.92	2.77	0.86	1.47
% Chg Same Qtr Last Yr.....	3.28	2.73	1.09	1.09	0.63	0.73	0.99	1.64	1.74	1.06	1.45	0.45	0.64	1.76	2.77	0.86	1.47
EDUCATION & HEALTH SERVICES.....	422.5	425.9	427.6	429.0	430.6	431.3	433.1	434.4	435.2	436.5	435.6	436.4	436.8	440.1	424.0	431.0	435.4
% Chg Prev Qtr SAAR.....	2.53	3.26	1.57	1.35	1.47	0.65	1.71	1.18	0.77	1.20	-0.82	0.77	0.34	3.09	2.30	1.66	1.03
% Chg Same Qtr Last Yr.....	2.27	2.46	2.22	2.18	1.91	1.26	1.29	1.25	1.08	1.21	0.58	0.48	0.37	0.83	2.30	1.66	1.03
LEISURE & HOSPITALITY.....	318.1	320.9	323.2	326.6	327.6	329.4	332.0	334.1	336.4	340.1	346.2	350.7	352.8	355.5	319.5	328.9	339.2
% Chg Prev Qtr SAAR.....	2.99	3.65	2.86	4.32	1.23	2.22	3.19	2.55	2.70	4.47	7.41	5.34	2.42	3.06	3.76	2.96	3.12
% Chg Same Qtr Last Yr.....	3.71	3.67	3.14	3.45	3.01	2.65	2.73	2.30	2.67	3.23	4.27	4.97	4.90	4.54	3.76	2.96	3.12
OTHER SERVICES.....	110.6	111.3	112.1	113.0	114.1	115.2	116.2	116.7	117.7	118.7	120.2	119.6	119.0	118.6	111.0	114.6	118.3
% Chg Prev Qtr SAAR.....	2.95	2.43	3.03	3.01	3.95	3.91	3.52	1.97	3.24	3.68	5.15	-2.20	-1.88	-1.34	2.79	3.26	3.27
% Chg Same Qtr Last Yr.....	2.66	2.77	2.75	2.85	3.10	3.47	3.60	3.33	3.16	3.10	3.50	2.43	1.13	-0.11	2.79	3.26	3.27
GOVERNMENT.....	426.1	428.5	430.0	429.2	430.0	431.0	431.0	433.6	435.6	437.7	436.3	438.4	439.5	441.9	427.9	430.3	435.8
% Chg Prev Qtr SAAR.....	-0.87	2.27	1.41	-0.71	0.69	0.96	0.00	2.40	1.89	1.97	-1.30	1.97	0.95	2.26	0.71	0.56	1.28
% Chg Same Qtr Last Yr.....	0.39	0.80	1.00	0.52	0.91	0.58	0.23	1.01	1.31	1.56	1.23	1.12	0.89	0.96	0.71	0.56	1.28
FEDERAL, CIVILIAN.....	49.1	49.5	49.4	49.2	49.2	49.2	48.7	48.7	48.8	49.1	49.6	49.5	50.0	50.4	49.2	49.1	49.0
% Chg Prev Qtr SAAR.....	0.82	3.58	-1.07	-1.08	-0.54	0.00	-3.48	-0.55	0.82	2.76	4.14	-0.54	3.55	3.79	0.24	-0.30	-0.08
% Chg Same Qtr Last Yr.....	-0.27	0.54	0.61	0.54	0.20	-0.67	-1.28	-1.15	-0.81	-0.14	1.78	1.78	2.46	2.72	0.24	-0.30	-0.08
STATE & LOCAL.....	377.0	379.0	380.6	380.0	380.8	381.8	382.3	384.9	386.8	388.6	386.7	388.9	389.5	391.5	378.7	381.2	386.8
% Chg Prev Qtr SAAR.....	-1.09	2.10	1.74	-0.66	0.84	1.09	0.45	2.78	2.02	1.87	-1.98	2.30	0.62	2.07	0.77	0.67	1.45
% Chg Same Qtr Last Yr.....	0.48	0.83	1.05	0.51	1.00	0.75	0.43	1.29	1.58	1.78	1.16	1.04	0.69	0.74	0.77	0.67	1.45

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**Table 9: Tennessee Durable Goods Manufacturing Employment, Seasonally Adjusted (thousands of jobs)** **January 2020**

	Historical Data													Annual			
	2016:2	2016:3	2016:4	2017:1	2017:2	2017:3	2017:4	2018:1	2018:2	2018:3	2018:4	2019:1	2019:2	2019:3	2016	2017	2018
TOTAL DURABLE GOODS.....	219.4	220.7	221.5	222.2	222.5	221.6	222.0	222.2	223.3	225.1	226.4	227.9	228.5	230.6	219.5	222.1	224.3
% Chg Prev Qtr SAAR.....	4.95	2.41	1.46	1.26	0.59	-1.61	0.71	0.47	1.98	3.25	2.20	2.68	1.19	3.62	3.97	1.14	1.00
% Chg Same Qtr Last Yr.....	4.35	4.13	3.57	2.51	1.43	0.42	0.23	0.04	0.38	1.60	1.97	2.53	2.33	2.42	3.97	1.14	1.00
WOOD PRODUCTS.....	12.1	12.2	12.3	12.5	12.5	12.6	12.6	12.6	12.6	12.5	12.6	12.5	12.5	12.5	12.1	12.5	12.6
% Chg Prev Qtr SAAR.....	3.90	3.73	2.99	7.02	-0.35	2.72	0.44	-0.81	0.89	-2.44	1.29	-0.83	-1.13	0.71	4.81	3.29	0.13
% Chg Same Qtr Last Yr.....	5.23	5.30	3.90	4.40	3.32	3.06	2.42	0.49	0.80	-0.49	-0.28	-0.28	-0.79	0.00	4.81	3.29	0.13
NONMETALLIC MINERALS.....	13.2	13.4	13.4	13.5	13.6	13.6	13.8	13.9	14.0	14.1	14.3	14.5	14.7	15.0	13.3	13.6	14.1
% Chg Prev Qtr SAAR.....	-0.07	5.38	-1.10	3.60	3.30	1.08	3.46	3.82	3.38	3.85	4.78	5.22	6.06	8.39	5.20	2.31	3.36
% Chg Same Qtr Last Yr.....	5.53	5.23	2.68	1.92	2.77	1.70	2.85	2.91	2.93	3.63	3.95	4.30	4.97	6.10	5.20	2.31	3.36
PRIMARY METALS.....	10.7	10.5	10.7	10.7	10.7	10.7	10.8	10.8	10.9	11.1	11.2	11.4	11.6	11.8	10.7	10.7	11.0
% Chg Prev Qtr SAAR.....	-4.07	-7.22	8.44	0.79	0.09	1.00	2.04	1.67	4.24	6.94	3.33	5.07	8.02	8.72	1.74	0.78	2.79
% Chg Same Qtr Last Yr.....	2.29	-0.30	0.33	-0.69	0.37	2.52	0.97	1.19	2.23	3.70	4.03	4.89	5.83	6.26	1.74	0.78	2.79
FABRICATED METALS.....	35.9	35.7	35.5	35.5	35.6	35.4	35.7	35.9	36.3	37.0	37.2	37.4	37.5	37.9	35.7	35.5	36.6
% Chg Prev Qtr SAAR.....	0.75	-1.62	-2.26	0.18	0.46	-1.90	3.20	2.14	4.79	7.63	2.41	2.39	1.49	3.53	1.27	-0.50	2.91
% Chg Same Qtr Last Yr.....	2.36	1.02	-0.34	-0.75	-0.82	-0.89	0.47	0.96	2.03	4.42	4.22	4.28	3.45	2.45	1.27	-0.50	2.91
MACHINERY.....	25.7	25.7	25.4	25.3	25.3	25.2	25.3	25.4	25.5	25.5	25.5	25.7	25.6	25.8	25.5	25.3	25.5
% Chg Prev Qtr SAAR.....	10.41	-0.39	-3.60	-2.05	0.13	-1.54	0.65	2.06	1.22	0.61	-0.32	2.65	-0.37	3.23	0.77	-0.77	0.73
% Chg Same Qtr Last Yr.....	1.64	1.60	0.02	0.95	-1.49	-1.77	-0.71	0.32	0.59	1.13	0.89	1.03	0.64	1.29	0.77	-0.77	0.73
COMPUTERS & ELECTRONICS.....	4.8	4.8	4.8	4.8	4.9	4.9	4.9	5.0	5.0	5.2	5.3	5.4	5.4	5.5	4.8	4.9	5.1
% Chg Prev Qtr SAAR.....	-1.92	2.14	3.21	-0.60	6.88	-1.04	3.14	5.00	3.91	12.76	5.57	7.27	6.35	3.95	-3.19	1.91	4.77
% Chg Same Qtr Last Yr.....	-4.59	-2.73	-0.04	0.68	2.87	2.06	2.05	3.45	2.72	6.13	6.75	7.32	7.95	5.78	-3.19	1.91	4.77
ELECTRICAL EQUIPMENT, APPLIANCES & COMPONENTS.....	20.0	19.9	19.7	19.4	19.3	19.1	19.2	19.0	19.0	18.9	18.8	18.8	18.8	18.8	19.9	19.3	18.9
% Chg Prev Qtr SAAR.....	0.26	-1.50	-4.76	-4.52	-2.74	-3.16	0.86	-3.65	-0.31	-2.32	-1.42	0.63	-1.78	1.89	0.50	-3.07	-1.77
% Chg Same Qtr Last Yr.....	0.95	0.57	-1.36	-2.65	-3.39	-3.80	-2.41	-2.19	-1.58	-1.37	-1.93	-0.86	-1.23	-0.18	0.50	-3.07	-1.77
TRANSPORTATION EQUIPMENT.....	72.1	73.4	74.4	75.0	75.0	74.4	73.6	73.5	73.5	74.2	75.1	75.6	75.8	76.3	72.5	74.5	74.1
% Chg Prev Qtr SAAR.....	10.69	7.59	5.63	2.98	0.18	-3.10	-4.47	-0.52	0.36	3.75	4.66	2.79	1.01	2.68	8.64	2.68	-0.56
% Chg Same Qtr Last Yr.....	8.70	9.06	9.71	6.69	4.06	1.37	-1.15	-2.00	-1.95	-0.26	2.04	2.88	3.04	2.78	8.64	2.68	-0.56
FURNITURE.....	9.4	9.4	9.5	9.5	9.5	9.4	9.5	9.5	9.6	9.6	9.5	9.5	9.4	9.6	9.4	9.5	9.5
% Chg Prev Qtr SAAR.....	1.83	3.44	4.69	-0.08	-0.40	-6.76	7.64	-0.08	2.73	-1.50	-3.98	0.13	-1.51	7.04	3.94	0.89	0.52
% Chg Same Qtr Last Yr.....	4.62	3.74	3.12	2.45	1.89	-0.72	-0.03	-0.03	0.75	2.14	-0.74	-0.68	-1.72	0.34	3.94	0.89	0.52
MISCELLANEOUS DURABLES.....	15.6	15.6	15.7	15.8	16.0	16.2	16.7	16.7	16.8	17.0	17.0	17.1	17.2	17.3	15.6	16.2	16.9
% Chg Prev Qtr SAAR.....	2.61	0.89	1.39	3.76	5.28	3.61	12.47	0.19	4.20	3.65	-0.62	4.12	0.15	3.26	1.74	3.68	4.27
% Chg Same Qtr Last Yr.....	1.54	2.08	2.02	2.16	2.82	3.50	6.22	5.29	5.02	5.04	1.84	2.82	1.80	1.71	1.74	3.68	4.27

**Table 10: Tennessee Nondurable Goods Manufacturing Employment, Seasonally Adjusted (thousands of jobs)**

**January 2020**

	Historical Data													Annual			
	2016:2	2016:3	2016:4	2017:1	2017:2	2017:3	2017:4	2018:1	2018:2	2018:3	2018:4	2019:1	2019:2	2019:3	2016	2017	2018
TOTAL NONDURABLE GOODS.....	121.9	122.4	122.9	123.6	123.9	124.6	124.8	125.7	126.2	126.8	127.2	127.7	128.2	128.6	122.1	124.2	126.5
% Chg Prev Qtr SAAR.....	1.32	1.67	1.55	2.38	1.18	2.26	0.39	3.14	1.55	1.76	1.33	1.53	1.79	1.07	2.10	1.70	1.80
% Chg Same Qtr Last Yr.....	2.02	2.16	1.78	1.73	1.69	1.84	1.55	1.74	1.83	1.71	1.94	1.54	1.60	1.43	2.10	1.70	1.80
FOOD.....	34.2	34.5	34.8	35.0	35.2	35.7	35.7	35.9	35.9	35.6	35.7	35.7	35.9	36.0	34.4	35.4	35.8
% Chg Prev Qtr SAAR.....	2.46	4.16	2.61	2.89	2.07	5.99	0.59	1.41	0.02	-2.99	1.21	-0.42	3.03	0.71	3.00	3.05	1.02
% Chg Same Qtr Last Yr.....	2.52	3.47	3.59	3.03	2.93	3.38	2.87	2.49	1.97	-0.26	-0.10	-0.56	0.18	1.12	3.00	3.05	1.02
BEVERAGE & TOBACCO.....	6.5	6.6	6.7	6.7	6.9	7.0	7.1	7.1	7.3	7.4	7.6	7.8	7.9	7.9	6.6	6.9	7.3
% Chg Prev Qtr SAAR.....	7.33	9.05	3.44	2.05	7.87	10.18	2.23	4.37	8.49	5.22	10.51	10.12	5.17	2.77	10.86	5.59	6.14
% Chg Same Qtr Last Yr.....	10.63	11.46	9.35	5.43	5.56	5.83	5.53	6.12	6.27	5.06	7.12	8.57	7.73	7.09	10.86	5.59	6.14
PAPER.....	11.9	11.9	12.0	12.0	12.0	11.9	11.7	12.1	11.9	12.0	12.0	12.0	12.0	12.0	11.9	11.9	12.0
% Chg Prev Qtr SAAR.....	-0.78	-1.26	2.03	-0.07	1.54	-3.30	-5.76	11.69	-4.99	3.45	-0.37	0.99	-1.73	1.03	-0.64	-0.35	0.77
% Chg Same Qtr Last Yr.....	-0.56	-0.45	-0.87	-0.03	0.55	0.03	-1.94	0.82	-0.84	0.85	2.26	-0.28	0.57	-0.03	-0.64	-0.35	0.77
PRINTING & RELATED SUPPORT.....	9.2	9.1	9.1	9.1	9.0	8.9	8.9	8.8	8.9	9.1	9.0	9.0	9.0	9.0	9.2	9.0	9.0
% Chg Prev Qtr SAAR.....	-1.46	-4.10	-2.42	0.80	-5.49	-1.95	-1.84	-2.38	3.50	8.21	-2.84	-0.94	-0.97	0.16	-0.28	-2.27	-0.10
% Chg Same Qtr Last Yr.....	0.05	-0.07	-0.67	-1.81	-2.83	-2.29	-2.15	-2.93	-0.70	1.78	1.52	1.89	0.77	-1.15	-0.28	-2.27	-0.10
CHEMICALS.....	25.3	25.2	25.1	25.0	25.0	25.0	25.1	25.4	25.6	25.6	25.7	25.7	25.8	25.7	25.3	25.0	25.6
% Chg Prev Qtr SAAR.....	-2.71	-1.33	-1.77	-2.50	-0.23	1.33	1.52	4.43	2.34	1.27	0.52	1.12	0.24	-0.83	-1.17	-1.09	2.16
% Chg Same Qtr Last Yr.....	-1.19	-1.85	-2.18	-2.08	-1.46	-0.81	0.02	1.75	2.40	2.38	2.13	1.31	0.79	0.26	-1.17	-1.09	2.16
PLASTICS & RUBBER.....	23.0	23.3	23.6	24.1	24.5	24.4	24.5	24.5	24.7	25.0	25.0	25.0	25.0	25.1	23.2	24.4	24.8
% Chg Prev Qtr SAAR.....	3.34	6.22	4.81	9.14	6.41	-1.94	1.28	1.05	2.22	5.20	0.13	0.06	0.07	1.80	5.58	5.14	1.71
% Chg Same Qtr Last Yr.....	5.35	6.03	5.12	5.85	6.63	4.52	3.63	1.66	0.64	2.42	2.13	1.88	1.34	0.51	5.58	5.14	1.71
MISCELLANEOUS NONDURABLE GOODS.....	11.7	11.6	11.6	11.7	11.5	11.6	11.7	11.9	12.0	12.1	12.2	12.5	12.7	12.9	11.6	11.6	12.0
% Chg Prev Qtr SAAR.....	4.30	-3.98	0.84	2.25	-7.54	6.95	2.54	5.32	4.49	1.88	5.41	8.55	8.52	4.20	0.36	0.00	3.57
% Chg Same Qtr Last Yr.....	1.31	-0.43	-0.48	0.80	-2.19	0.48	0.91	1.66	4.81	3.55	4.27	5.06	6.06	6.65	0.36	0.00	3.57

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Tennessee Econometric Model

**Table 11: Tennessee Average Annual Wage and Salary Rate by Sector, Not Seasonally Adjusted (2012 dollars)** **January 2020**

	Historical Data														Annual		
	2016:1	2016:2	2016:3	2016:4	2017:1	2017:2	2017:3	2017:4	2018:1	2018:2	2018:3	2018:4	2019:1	2019:2	2016	2017	2018
TOTAL NONFARM.....	46332	45610	46008	45791	46677	46377	46515	46153	47466	46850	47416	46460	48109	47906	45935	46431	47048
% Chg Same Qtr Last Yr.....	0.99	-0.74	0.07	0.75	0.74	1.68	1.10	0.79	1.69	1.02	1.94	0.66	1.35	2.26	0.27	1.08	1.33
<b>NATURAL RESOURCES, MINING</b>																	
AND CONSTRUCTION.....	54820	52207	51802	54966	55977	53545	53416	55563	55960	54282	53372	52342	57975	57319	53449	54625	53989
% Chg Same Qtr Last Yr.....	3.37	-0.70	-0.30	4.26	2.11	2.56	3.12	1.09	-0.03	1.38	-0.08	-5.80	3.60	5.60	1.67	2.20	-1.16
<b>MANUFACTURING.....</b>																	
DURABLE GOODS.....	56138	55723	56116	56530	56632	56289	56225	56979	55536	55133	55415	54403	55369	55333	56127	56531	55122
% Chg Same Qtr Last Yr.....	1.06	-0.63	0.51	0.64	0.88	1.02	0.19	0.79	-1.94	-2.05	-1.44	-4.52	-0.30	0.36	0.39	0.72	-2.49
NONDURABLE GOODS.....	55120	54420	54886	55154	55279	55027	55197	55862	56073	55028	55922	54946	56270	56336	54895	55341	55492
% Chg Same Qtr Last Yr.....	3.31	-0.66	0.88	0.35	0.29	1.11	0.57	1.28	1.44	0.00	1.31	-1.64	0.35	2.38	0.95	0.81	0.27
<b>TRADE, TRANSPORTATION, UTILITIES.....</b>																	
WHOLESALE TRADE.....	57958	58068	58328	59009	59073	58555	58048	58964	54585	55317	54515	53436	53757	53545	58341	58660	54463
% Chg Same Qtr Last Yr.....	-2.45	-0.48	-0.02	1.19	1.92	0.84	-0.48	-0.08	-7.60	-5.53	-6.09	-9.38	-1.52	-3.20	-0.45	0.55	-7.15
RETAIL TRADE.....	42802	42859	43368	42073	43325	43316	43066	42441	43808	43649	43852	42346	44471	44234	42775	43037	43414
% Chg Same Qtr Last Yr.....	0.57	1.02	1.67	-0.93	1.22	1.07	-0.69	0.87	1.11	0.77	1.82	-0.22	1.52	1.34	0.58	0.61	0.88
TRANSPORTATION & UTILITIES.....	68106	68332	72280	69043	69485	68943	68370	69059	68923	68643	68157	65982	69421	70289	69441	68964	67926
% Chg Same Qtr Last Yr.....	1.53	0.12	7.64	1.60	2.02	0.89	-5.41	0.02	-0.81	-0.44	-0.31	-4.46	0.72	2.40	2.71	-0.69	-1.51
INFORMATION.....	29238	29234	28870	28583	29551	29409	29016	28890	29694	29672	30121	28523	29748	29467	28981	29216	29502
% Chg Same Qtr Last Yr.....	1.65	2.09	-2.01	0.02	1.07	0.60	0.51	1.07	0.48	0.90	3.81	-1.27	0.18	-0.69	0.42	0.81	0.98
FINANCIAL ACTIVITIES.....	52158	52486	52152	50633	52625	53282	53325	51140	54215	53940	53789	53216	55740	54949	51857	52593	53790
% Chg Same Qtr Last Yr.....	-0.60	1.53	1.15	-3.94	0.89	1.52	2.25	1.00	3.02	1.24	0.87	4.06	2.81	1.87	-0.48	1.42	2.28
PROFESSIONAL & BUSINESS SERVICES.....	60104	59785	62524	61769	67285	60500	63121	64296	69614	69201	67448	63743	63990	63168	61046	63800	67501
% Chg Same Qtr Last Yr.....	-1.22	-0.07	4.60	7.36	11.95	1.19	0.95	4.09	3.46	14.38	6.85	-0.86	-8.08	-8.72	2.61	4.51	5.80
EDUCATION & HEALTH SERVICES.....	68269	67194	66781	66995	66338	66327	67122	68013	69143	68490	73155	70468	72246	73013	67310	66950	70314
% Chg Same Qtr Last Yr.....	2.69	-0.28	0.62	-0.53	-2.83	-1.29	0.51	1.52	4.23	3.26	8.99	3.61	4.49	6.60	0.62	-0.53	5.02
LEISURE & HOSPITALITY.....	53666	51711	51584	51721	53541	52731	53134	51792	57316	54505	55739	55344	58595	58748	52170	52799	55726
% Chg Same Qtr Last Yr.....	1.64	-3.46	-1.60	2.61	-0.23	1.97	3.00	0.14	7.05	3.37	4.90	6.86	2.23	7.78	-0.24	1.21	5.54
OTHER SERVICES.....	46950	46379	47023	46712	47213	47748	47296	46560	47127	47614	46775	47402	48101	47910	46766	47204	47229
% Chg Same Qtr Last Yr.....	0.18	-1.40	-1.24	-0.04	0.56	2.95	0.58	-0.33	-0.18	-0.28	-1.10	1.81	2.07	0.62	-0.63	0.94	0.05
GOVERNMENT.....	23580	22370	22363	23498	24489	23002	23247	23839	24958	23469	24182	24402	25014	23502	22952	23644	24253
% Chg Same Qtr Last Yr.....	2.66	-0.32	0.94	-0.68	3.86	2.83	3.96	1.45	1.92	2.03	4.02	2.36	0.22	0.14	0.64	3.01	2.57
FEDERAL, CIVILIAN.....	42661	41107	41094	41533	41739	41423	41441	41695	41855	41273	41977	41894	43142	42427	41599	41575	41749
% Chg Same Qtr Last Yr.....	1.11	-1.07	-0.56	-1.75	-2.16	0.77	0.84	0.39	0.28	-0.36	1.29	0.48	3.08	2.80	-0.57	-0.06	0.42
STATE & LOCAL.....	41893	42694	43821	41806	42147	43910	44602	42475	42799	44011	45146	42529	43199	44268	42554	43284	43621
% Chg Same Qtr Last Yr.....	-0.24	0.08	-0.21	1.85	0.61	2.85	1.78	1.60	1.55	0.23	1.22	0.13	0.94	0.58	0.35	1.72	0.78
FEDERAL, CIVILIAN.....	75167	74880	74747	74431	74449	74730	75133	75160	75553	75867	76445	76405	76926	76812	74806	74868	76067
% Chg Same Qtr Last Yr.....	-1.48	-0.90	-0.42	-0.64	-0.95	-0.20	0.52	0.98	1.48	1.52	1.75	1.66	1.82	1.25	-0.86	0.08	1.60
STATE & LOCAL.....	37644	38447	39656	37694	38009	39876	40548	38439	38703	39941	41049	38309	38985	40048	38360	39218	39500
% Chg Same Qtr Last Yr.....	0.15	0.38	-0.10	2.54	0.97	3.72	2.25	1.97	1.83	0.16	1.23	-0.34	0.73	0.27	0.72	2.24	0.72

**Table 12: Tennessee Average Annual Wage and Salary Rate by Sector, Seasonally Adjusted (2012 dollars)**

**January 2020**

	Historical Data														Annual		
	2016:1	2016:2	2016:3	2016:4	2017:1	2017:2	2017:3	2017:4	2018:1	2018:2	2018:3	2018:4	2019:1	2019:2	2016	2017	2018
TOTAL NONFARM.....	45931	45618	45896	46300	46236	46368	46404	46692	47024	46836	47295	46902	47777	47922	45936	46425	47014
% Chg Prev Qtr SAAR.....	-0.48	-2.70	2.46	3.56	-0.55	1.15	0.31	2.50	2.88	-1.59	3.98	-3.28	7.67	1.22	0.25	1.06	1.27
% Chg Same Qtr Last Yr.....	1.01	-0.77	0.08	0.68	0.66	1.64	1.11	0.85	1.70	1.01	1.92	0.45	1.60	2.32	0.25	1.06	1.27
<b>NATURAL RESOURCES, MINING</b>																	
AND CONSTRUCTION.....	52975	52517	52772	55422	54151	53861	54403	56007	54182	54592	54332	52579	56973	57391	53422	54605	53921
% Chg Prev Qtr SAAR.....	-1.70	-3.42	1.96	21.66	-8.87	-2.12	4.09	12.32	-12.41	3.07	-1.90	-12.29	37.86	2.97	1.66	2.22	-1.25
% Chg Same Qtr Last Yr.....	3.59	-0.71	-0.38	4.17	2.22	2.56	3.09	1.05	0.06	1.36	-0.13	-6.12	5.15	5.13	1.66	2.22	-1.25
MANUFACTURING.....	56006	55767	56169	56549	56512	56339	56292	56973	55420	55184	55496	54382	55258	55380	56123	56529	55120
% Chg Prev Qtr SAAR.....	-1.50	-1.70	2.92	2.74	-0.26	-1.22	-0.33	4.93	-10.47	-1.69	2.28	-7.79	6.60	0.89	0.39	0.72	-2.49
% Chg Same Qtr Last Yr.....	1.11	-0.62	0.52	0.59	0.90	1.03	0.22	0.75	-1.93	-2.05	-1.41	-4.55	-0.29	0.36	0.39	0.72	-2.49
DURABLE GOODS.....	55048	54473	54887	55154	55223	55080	55217	55833	56021	55078	55966	54901	56224	56379	54891	55339	55492
% Chg Prev Qtr SAAR.....	0.42	-4.11	3.07	1.96	0.50	-1.03	1.00	4.54	1.35	-6.56	6.61	-7.40	9.99	1.10	0.95	0.82	0.28
% Chg Same Qtr Last Yr.....	3.36	-0.66	0.88	0.30	0.32	1.11	0.60	1.23	1.44	0.00	1.36	-1.67	0.36	2.36	0.95	0.82	0.28
NONDURABLE GOODS.....	57715	58095	58480	59064	58828	58599	58202	59000	54357	55372	54661	53458	53533	53601	58338	58658	54462
% Chg Prev Qtr SAAR.....	-4.57	2.66	2.68	4.05	-1.59	-1.55	-2.68	5.60	-27.95	7.68	-5.04	-8.51	0.56	0.50	-0.45	0.55	-7.15
% Chg Same Qtr Last Yr.....	-2.43	-0.47	-0.01	1.15	1.93	0.87	-0.47	-0.11	-7.60	-5.51	-6.09	-9.39	-1.52	-3.20	-0.45	0.55	-7.15
TRADE, TRANSPORTATION, UTILITIES.....	42343	42693	43246	42811	42839	43124	42948	43209	43319	43449	43761	42977	44102	44122	42773	43030	43377
% Chg Prev Qtr SAAR.....	-8.13	3.36	5.28	-3.96	0.27	2.69	-1.62	2.45	1.02	1.20	2.90	-6.97	10.89	0.18	0.57	0.60	0.80
% Chg Same Qtr Last Yr.....	0.63	1.04	1.64	-1.01	1.17	1.01	-0.69	0.93	1.12	0.75	1.89	-0.54	1.81	1.55	0.57	0.60	0.80
WHOLESALE TRADE.....	67795	68352	72424	69161	69151	68962	68486	69195	68575	68681	68233	66274	69115	70212	69433	68949	67941
% Chg Prev Qtr SAAR.....	-1.71	3.33	26.05	-16.84	-0.06	-1.09	-2.73	4.20	-3.53	0.62	-2.58	-11.00	18.28	6.50	2.70	-0.70	-1.46
% Chg Same Qtr Last Yr.....	1.58	0.09	7.58	1.58	2.00	0.89	-5.44	0.05	-0.83	-0.41	-0.37	-4.22	0.79	2.23	2.70	-0.70	-1.46
RETAIL TRADE.....	28862	29164	28729	29148	29171	29321	28873	29482	29321	29584	29993	28996	29488	29441	28976	29212	29474
% Chg Prev Qtr SAAR.....	-4.52	4.24	-5.83	5.97	0.31	2.08	-5.98	8.71	-2.17	3.64	5.64	-12.65	6.96	-0.63	0.41	0.81	0.90
% Chg Same Qtr Last Yr.....	1.75	2.18	-2.04	-0.17	1.07	0.54	0.50	1.14	0.52	0.90	3.88	-1.65	0.57	-0.48	0.41	0.81	0.90
TRANSPORTATION & UTILITIES.....	51592	51975	52047	51859	51972	52709	53250	52403	53529	53322	53789	54223	55174	54584	51869	52584	53716
% Chg Prev Qtr SAAR.....	-16.40	3.00	0.55	-1.43	0.87	5.80	4.17	-6.22	8.88	-1.54	3.55	3.27	7.20	-4.21	-0.51	1.38	2.15
% Chg Same Qtr Last Yr.....	-0.62	1.50	1.15	-3.88	0.74	1.41	2.31	1.05	3.00	1.16	1.01	3.47	3.07	2.37	-0.51	1.38	2.15
INFORMATION.....	59971	59960	62113	62176	67285	60543	62620	64758	69614	69251	66799	63882	63990	63442	61055	63801	67386
% Chg Prev Qtr SAAR.....	15.30	-0.08	15.15	0.41	37.15	-34.45	14.44	14.37	33.55	-2.07	-13.43	-16.35	0.68	-3.38	2.61	4.50	5.62
% Chg Same Qtr Last Yr.....	-1.21	-0.01	4.45	7.43	12.19	0.97	0.82	4.15	3.46	14.38	6.67	-1.35	-8.08	-8.39	2.61	4.50	5.62
FINANCIAL ACTIVITIES.....	67846	67267	67042	67125	65901	66369	67389	68169	68685	68546	73409	70425	71999	72984	67320	66957	70266
% Chg Prev Qtr SAAR.....	2.07	-3.37	-1.34	0.50	-7.10	2.87	6.29	4.71	3.06	-0.80	31.54	-15.29	9.24	5.58	0.63	-0.54	4.94
% Chg Same Qtr Last Yr.....	2.68	-0.28	0.72	-0.55	-2.87	-1.34	0.52	1.56	4.23	3.28	8.93	3.31	4.83	6.47	0.63	-0.54	4.94

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Table 12: Tennessee Average Annual Wage and Salary Rate by Sector, Seasonally Adjusted (2012 dollars)

January 2020

	Historical Data														Annual		
	2016:1	2016:2	2016:3	2016:4	2017:1	2017:2	2017:3	2017:4	2018:1	2018:2	2018:3	2018:4	2019:1	2019:2	2016	2017	2018
	PROFESSIONAL & BUSINESS SERVICES..	52823	51601	51483	52765	52596	52589	53044	52865	56311	54357	55650	56140	57913	58622	52168	52774
% Chg Prev Qtr SAAR.....	11.16	-8.94	-0.91	10.34	-1.28	-0.05	3.50	-1.34	28.73	-13.17	9.86	3.57	13.24	4.98	-0.26	1.16	5.38
% Chg Same Qtr Last Yr.....	1.64	-3.54	-1.59	2.57	-0.43	1.92	3.03	0.19	7.06	3.36	4.91	6.20	2.85	7.85	-0.26	1.16	5.38
EDUCATION & HEALTH SERVICES.....	46954	46233	46739	47106	47205	47567	46997	46983	47127	47421	46525	47939	47972	47801	46758	47188	47253
% Chg Prev Qtr SAAR.....	-1.65	-6.00	4.45	3.17	0.85	3.10	-4.71	-0.12	1.23	2.52	-7.34	12.72	0.28	-1.42	-0.68	0.92	0.14
% Chg Same Qtr Last Yr.....	0.19	-1.47	-1.34	-0.09	0.54	2.89	0.55	-0.26	-0.17	-0.31	-1.00	2.03	1.79	0.80	-0.68	0.92	0.14
LEISURE & HOSPITALITY.....	22706	22904	22876	23289	23559	23517	23769	23669	24034	23981	24713	24144	24172	23972	22944	23629	24218
% Chg Prev Qtr SAAR.....	-12.18	3.54	-0.49	7.42	4.72	-0.72	4.36	-1.67	6.31	-0.88	12.78	-8.90	0.47	-3.27	0.63	2.98	2.49
% Chg Same Qtr Last Yr.....	2.79	-0.42	0.99	-0.71	3.76	2.67	3.91	1.63	2.02	1.97	3.97	2.01	0.57	-0.04	0.63	2.98	2.49
OTHER SERVICES.....	42273	41429	41291	41384	41357	41750	41621	41552	41484	41588	42130	41731	42649	42771	41594	41570	41733
% Chg Prev Qtr SAAR.....	1.34	-7.75	-1.32	0.91	-0.27	3.86	-1.23	-0.66	-0.65	1.01	5.31	-3.73	9.09	1.15	-0.59	-0.06	0.39
% Chg Same Qtr Last Yr.....	1.10	-1.12	-0.54	-1.77	-2.17	0.78	0.80	0.40	0.31	-0.39	1.22	0.43	2.81	2.85	-0.59	-0.06	0.39
GOVERNMENT.....	42478	42233	42502	42972	42655	43447	43260	43720	43309	43546	43660	43761	43853	43852	42546	43270	43569
% Chg Prev Qtr SAAR.....	2.46	-2.29	2.57	4.50	-2.93	7.64	-1.71	4.32	-3.71	2.21	1.05	0.92	0.84	-0.01	0.36	1.70	0.69
% Chg Same Qtr Last Yr.....	-0.25	0.01	-0.11	1.78	0.42	2.87	1.78	1.74	1.53	0.23	0.93	0.09	1.26	0.70	0.36	1.70	0.69
FEDERAL, CIVILIAN.....	75269	74982	74495	74582	74601	74832	74878	75211	75708	75971	76289	76610	76770	76812	74832	74880	76144
% Chg Prev Qtr SAAR.....	0.85	-1.52	-2.57	0.47	0.10	1.24	0.25	1.79	2.67	1.40	1.69	1.69	0.84	0.22	-0.84	0.06	1.69
% Chg Same Qtr Last Yr.....	-1.48	-0.69	-0.48	-0.70	-0.89	-0.20	0.51	0.84	1.48	1.52	1.88	1.86	1.40	1.11	-0.84	0.06	1.69
STATE & LOCAL.....	38231	37972	38324	38873	38516	39394	39189	39706	39212	39459	39538	39548	39660	39623	38350	39201	39439
% Chg Prev Qtr SAAR.....	3.14	-2.69	3.76	5.86	-3.62	9.44	-2.07	5.38	-4.88	2.54	0.81	0.10	1.15	-0.37	0.72	2.22	0.61
% Chg Same Qtr Last Yr.....	0.14	0.28	0.02	2.47	0.74	3.75	2.26	2.14	1.81	0.16	0.89	-0.40	1.14	0.42	0.72	2.22	0.61

Boyd Center for Business and Economic Research, University of Tennessee

Tennessee Econometric Model

**Table 13: Tennessee Average Annual Wage and Salary Rate by Sector, Not Seasonally Adjusted (current dollars)**

**January 2020**

	Historical Data														Annual		
	2016:1	2016:2	2016:3	2016:4	2017:1	2017:2	2017:3	2017:4	2018:1	2018:2	2018:3	2018:4	2019:1	2019:2	2016	2017	2018
TOTAL NONFARM.....	47860	47393	48007	47995	49176	48973	49322	49261	50979	50592	51405	50535	52380	52468	47814	49183	50878
% Chg Same Qtr Last Yr.....	1.73	0.09	1.05	2.27	2.75	3.33	2.74	2.64	3.67	3.31	4.22	2.59	2.75	3.71	1.28	2.86	3.45
<b>NATURAL RESOURCES, MINING AND CONSTRUCTION.....</b>																	
AND CONSTRUCTION.....	56628	54248	54053	57611	58974	56541	56639	59304	60101	58618	57862	56933	63122	62777	55635	57864	58379
% Chg Same Qtr Last Yr.....	4.13	0.13	0.67	5.84	4.14	4.23	4.78	2.94	1.91	3.67	2.16	-4.00	5.03	7.10	2.70	4.01	0.89
MANUFACTURING.....	57989	57901	58554	59250	59665	59439	59617	60815	59646	59537	60077	59175	60286	60601	58424	59884	59609
% Chg Same Qtr Last Yr.....	1.81	0.20	1.49	2.16	2.89	2.66	1.82	2.64	-0.03	0.16	0.77	-2.70	1.07	1.79	1.41	2.50	-0.46
DURABLE GOODS.....	56938	56548	57271	57808	58239	58106	58527	59623	60223	59424	60627	59766	61266	61701	57141	58624	60010
% Chg Same Qtr Last Yr.....	4.07	0.17	1.86	1.86	2.29	2.75	2.19	3.14	3.41	2.27	3.59	0.24	1.73	3.83	1.97	2.59	2.36
NONDURABLE GOODS.....	59869	60338	60862	61848	62236	61832	61550	62934	58624	59736	59101	58123	58530	58643	60729	62138	58896
% Chg Same Qtr Last Yr.....	-1.73	0.35	0.95	2.72	3.95	2.48	1.13	1.76	-5.80	-3.39	-3.98	-7.64	-0.16	-1.83	0.56	2.32	-5.22
TRADE, TRANSPORTATION, UTILITIES....	44213	44534	45251	44098	45645	45740	45665	45298	47050	47135	47541	46061	48420	48446	44524	45587	46947
% Chg Same Qtr Last Yr.....	1.31	1.86	2.66	0.57	3.24	2.71	0.91	2.72	3.08	3.05	4.11	1.68	2.91	2.78	1.60	2.39	2.98
WHOLESALE TRADE.....	70352	71004	75420	72366	73206	72801	72495	73708	74024	74126	73891	71770	75584	76982	72285	73053	73453
% Chg Same Qtr Last Yr.....	2.28	0.95	8.68	3.14	4.06	2.53	-3.88	1.86	1.12	1.82	1.93	-2.63	2.11	3.85	3.76	1.06	0.55
RETAIL TRADE.....	30202	30377	30124	29959	31134	31054	30767	30835	31891	32042	32655	31025	32390	32273	30165	30947	31903
% Chg Same Qtr Last Yr.....	2.40	2.94	-1.05	1.53	3.08	2.23	2.14	2.92	2.43	3.18	6.14	0.62	1.56	0.72	1.43	2.59	3.09
TRANSPORTATION & UTILITIES.....	53878	54538	54418	53070	55443	56263	56542	54583	58228	58249	58314	57884	60689	60182	53976	55708	58169
% Chg Same Qtr Last Yr.....	0.13	2.38	2.13	-2.49	2.90	3.16	3.90	2.85	5.02	3.53	3.13	6.05	4.23	3.32	0.52	3.21	4.42
INFORMATION.....	62086	62123	65240	64741	70888	63885	66929	68625	74766	74729	73122	69334	69672	69182	63548	67582	72988
% Chg Same Qtr Last Yr.....	-0.49	0.76	5.62	8.98	14.18	2.84	2.59	6.00	5.47	16.97	9.25	1.03	-6.81	-7.42	3.66	6.35	8.00
FINANCIAL ACTIVITIES.....	70520	69821	69682	70219	69890	70039	71172	72593	74260	73961	79310	76650	78661	79966	70061	70923	76045
% Chg Same Qtr Last Yr.....	3.44	0.56	1.60	0.98	-0.89	0.31	2.14	3.38	6.25	5.60	11.43	5.59	5.93	8.12	1.64	1.23	7.22
PROFESSIONAL & BUSINESS SERVICES.....	55435	53733	53825	54209	56408	55682	56339	55279	61558	58859	60428	60199	63798	64342	54301	55927	60261
% Chg Same Qtr Last Yr.....	2.39	-2.66	-0.65	4.16	1.76	3.63	4.67	1.97	9.13	5.71	7.26	8.90	3.64	9.32	0.76	3.00	7.75
EDUCATION & HEALTH SERVICES.....	48498	48193	49065	48960	49741	50420	50150	49695	50615	51417	50710	51560	52372	52472	48679	50001	51076
% Chg Same Qtr Last Yr.....	0.91	-0.58	-0.28	1.47	2.56	4.62	2.21	1.50	1.76	1.98	1.12	3.75	3.47	2.05	0.38	2.72	2.15
LEISURE & HOSPITALITY.....	24357	23244	23334	24628	25800	24289	24650	25444	26805	25344	26217	26543	27235	25739	23891	25046	26227
% Chg Same Qtr Last Yr.....	3.42	0.51	1.92	0.82	5.92	4.49	5.64	3.31	3.89	4.34	6.36	4.32	1.60	1.56	1.66	4.83	4.72
OTHER SERVICES.....	44068	42714	42879	43531	43974	43741	43941	44503	44952	44569	45508	45569	46973	46467	43298	44040	45150
% Chg Same Qtr Last Yr.....	1.85	-0.24	0.41	-0.27	-0.21	2.41	2.48	2.23	2.22	1.89	3.57	2.40	4.49	4.26	0.44	1.71	2.52
GOVERNMENT.....	43274	44364	45725	43817	44404	46367	47293	45335	45966	47527	48944	46260	47035	48483	44295	45850	47174
% Chg Same Qtr Last Yr.....	0.49	0.92	0.76	3.39	2.61	4.52	3.43	3.46	3.52	2.50	3.49	2.04	2.33	2.01	1.37	3.51	2.89
FEDERAL, CIVILIAN.....	77645	77808	77994	78013	78436	78912	79666	80220	81144	81927	82876	83107	83756	84126	77865	79309	82264
% Chg Same Qtr Last Yr.....	-0.75	-0.07	0.55	0.86	1.02	1.42	2.14	2.83	3.45	3.82	4.03	3.60	3.22	2.68	0.15	1.85	3.73
STATE & LOCAL.....	38885	39951	41379	39508	40044	42108	42994	41027	41567	43131	44502	41670	42447	43862	39931	41543	42717
% Chg Same Qtr Last Yr.....	0.89	1.22	0.87	4.09	2.98	5.40	3.90	3.84	3.80	2.43	3.51	1.57	2.12	1.69	1.74	4.04	2.83

**Table 14: Tennessee Average Annual Wage and Salary Rate by Sector, Seasonally Adjusted (current dollars) January 2020**

	Historical Data														Annual		
	2016:1	2016:2	2016:3	2016:4	2017:1	2017:2	2017:3	2017:4	2018:1	2018:2	2018:3	2018:4	2019:1	2019:2	2016	2017	2018
	TOTAL NONFARM.....	47446	47402	47890	48528	48712	48963	49204	49835	50504	50577	51274	51016	52019	52485	47816	49179
% Chg Prev Qtr SAAR.....	-0.31	-0.37	4.18	5.43	1.53	2.08	1.98	5.24	5.48	0.58	5.63	-1.99	8.09	3.63	1.27	2.85	3.38
% Chg Same Qtr Last Yr.....	1.75	0.06	1.06	2.20	2.67	3.29	2.74	2.70	3.68	3.30	4.21	2.37	3.00	3.77	1.27	2.85	3.38
NATURAL RESOURCES, MINING AND CONSTRUCTION.....	54722	54570	55064	58089	57050	56875	57685	59778	58192	58953	58902	57191	62032	62856	55611	57847	58310
% Chg Prev Qtr SAAR.....	-1.53	-1.10	3.67	23.85	-6.97	-1.22	5.82	15.32	-10.20	5.34	-0.34	-11.12	38.40	5.42	2.69	4.02	0.80
% Chg Same Qtr Last Yr.....	4.35	0.13	0.59	5.74	4.26	4.22	4.76	2.91	2.00	3.65	2.11	-4.33	6.60	6.62	2.69	4.02	0.80
MANUFACTURING.....	57853	57947	58609	59270	59538	59492	59688	60809	59521	59592	60165	59153	60164	60654	58420	59882	59608
% Chg Prev Qtr SAAR.....	-1.33	0.66	4.65	4.59	1.82	-0.31	1.33	7.73	-8.20	0.48	3.90	-6.56	7.02	3.29	1.41	2.50	-0.46
% Chg Same Qtr Last Yr.....	1.85	0.21	1.49	2.11	2.91	2.67	1.84	2.60	-0.03	0.17	0.80	-2.72	1.08	1.78	1.41	2.50	-0.46
DURABLE GOODS.....	56863	56603	57272	57808	58180	58162	58549	59593	60167	59478	60675	59717	61217	61747	57137	58621	60009
% Chg Prev Qtr SAAR.....	0.60	-1.82	4.81	3.80	2.60	-0.12	2.68	7.33	3.91	-4.50	8.30	-6.16	10.43	3.51	1.97	2.60	2.37
% Chg Same Qtr Last Yr.....	4.12	0.17	1.86	1.81	2.32	2.75	2.23	3.09	3.41	2.26	3.63	0.21	1.74	3.82	1.97	2.60	2.37
NONDURABLE GOODS.....	59618	60366	61020	61906	61979	61878	61714	62973	58380	59795	59259	58147	58286	58704	60728	62136	58895
% Chg Prev Qtr SAAR.....	-4.41	5.12	4.40	5.93	0.47	-0.65	-1.06	8.41	-26.13	10.05	-3.54	-7.30	0.96	2.90	0.57	2.32	-5.22
% Chg Same Qtr Last Yr.....	-1.71	0.37	0.96	2.68	3.96	2.50	1.14	1.72	-5.81	-3.37	-3.98	-7.66	-0.16	-1.82	0.57	2.32	-5.22
TRADE, TRANSPORTATION, UTILITIES.....	43739	44363	45124	44871	45133	45538	45540	46118	46525	46920	47443	46747	48018	48323	44524	45582	46909
% Chg Prev Qtr SAAR.....	-7.97	5.83	7.05	-2.23	2.36	3.63	0.02	5.18	3.58	3.43	4.53	-5.73	11.32	2.57	1.59	2.38	2.91
% Chg Same Qtr Last Yr.....	1.37	1.89	2.63	0.48	3.19	2.65	0.92	2.78	3.08	3.03	4.18	1.36	3.21	2.99	1.59	2.38	2.91
WHOLESALE TRADE.....	70030	71025	75571	72489	72854	72821	72618	73854	73651	74167	73974	72087	75252	76897	72279	73037	73470
% Chg Prev Qtr SAAR.....	-1.55	5.80	28.17	-15.34	2.03	-0.18	-1.11	6.98	-1.09	2.83	-1.04	-9.82	18.75	9.04	3.74	1.05	0.59
% Chg Same Qtr Last Yr.....	2.33	0.93	8.62	3.11	4.03	2.53	-3.91	1.88	1.09	1.85	1.87	-2.39	2.17	3.68	3.74	1.05	0.59
RETAIL TRADE.....	29814	30304	29977	30551	30733	30962	30614	31467	31491	31947	32516	31540	32106	32245	30161	30944	31874
% Chg Prev Qtr SAAR.....	-4.35	6.74	-4.25	7.88	2.40	3.01	-4.41	11.61	0.31	5.92	7.32	-11.48	7.38	1.73	1.42	2.59	3.00
% Chg Same Qtr Last Yr.....	2.50	3.03	-1.09	1.34	3.08	2.17	2.13	3.00	2.47	3.18	6.21	0.23	1.95	0.93	1.42	2.59	3.00
TRANSPORTATION & UTILITIES.....	53293	54008	54308	54355	54755	55659	56463	55931	57491	57581	58314	58980	60073	59781	53991	55702	58091
% Chg Prev Qtr SAAR.....	-16.26	5.47	2.24	0.35	2.98	6.77	5.90	-3.72	11.63	0.63	5.19	4.64	7.62	-1.93	0.50	3.17	4.29
% Chg Same Qtr Last Yr.....	0.11	2.35	2.14	-2.43	2.74	3.06	3.97	2.90	5.00	3.45	3.28	5.45	4.49	3.82	0.50	3.17	4.29
INFORMATION.....	61949	62304	64811	65168	70888	63931	66397	69118	74766	74783	72418	69486	69672	69483	63558	67584	72863
% Chg Prev Qtr SAAR.....	15.50	2.31	17.09	2.22	40.01	-33.85	16.35	17.42	36.92	0.09	-12.06	-15.24	1.08	-1.08	3.66	6.33	7.81
% Chg Same Qtr Last Yr.....	-0.48	0.83	5.47	9.05	14.43	2.61	2.45	6.06	5.47	16.97	9.07	0.53	-6.81	-7.09	3.66	6.33	7.81
FINANCIAL ACTIVITIES.....	70083	69897	69954	70355	69430	70083	71455	72759	73768	74022	79585	76603	78392	79934	70072	70932	75995
% Chg Prev Qtr SAAR.....	2.24	-1.05	0.32	2.31	-5.16	3.82	8.06	7.50	5.67	1.38	33.62	-14.17	9.67	8.10	1.65	1.23	7.14
% Chg Same Qtr Last Yr.....	3.44	0.55	1.70	0.95	-0.93	0.27	2.15	3.42	6.25	5.62	11.38	5.28	6.27	7.99	1.65	1.23	7.14

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**Table 14: Tennessee Average Annual Wage and Salary Rate by Sector, Seasonally Adjusted (current dollars)**

**January 2020**

	Historical Data														Annual		
	2016:1	2016:2	2016:3	2016:4	2017:1	2017:2	2017:3	2017:4	2018:1	2018:2	2018:3	2018:4	2019:1	2019:2	2016	2017	2018
PROFESSIONAL & BUSINESS SERVICES..	54564	53619	53720	55304	55412	55532	56244	56424	60478	58699	60332	61065	63056	64204	54302	55903	60144
% Chg Prev Qtr SAAR.....	11.35	-6.75	0.76	12.33	0.79	0.87	5.23	1.29	31.99	-11.26	11.60	4.95	13.69	7.49	0.75	2.95	7.59
% Chg Same Qtr Last Yr.....	2.39	-2.73	-0.63	4.12	1.55	3.57	4.70	2.03	9.14	5.70	7.27	8.22	4.26	9.38	0.75	2.95	7.59
EDUCATION & HEALTH SERVICES.....	48502	48041	48770	49372	49733	50229	49832	50146	50615	51209	50439	52144	52232	52352	48671	49985	51102
% Chg Prev Qtr SAAR.....	-1.49	-3.75	6.21	5.04	2.95	4.05	-3.13	2.55	3.79	4.78	-5.88	14.22	0.68	0.92	0.33	2.70	2.23
% Chg Same Qtr Last Yr.....	0.92	-0.64	-0.38	1.41	2.54	4.56	2.18	1.57	1.77	1.95	1.22	3.98	3.19	2.23	0.33	2.70	2.23
LEISURE & HOSPITALITY.....	23455	23800	23870	24410	24821	24833	25203	25263	25813	25897	26792	26262	26319	26255	23883	25030	26191
% Chg Prev Qtr SAAR.....	-12.03	6.02	1.18	9.36	6.91	0.19	6.10	0.95	9.00	1.30	14.57	-7.69	0.87	-0.97	1.65	4.80	4.64
% Chg Same Qtr Last Yr.....	3.55	0.41	1.97	0.79	5.82	4.34	5.59	3.49	4.00	4.28	6.30	3.95	1.96	1.38	1.65	4.80	4.64
OTHER SERVICES.....	43666	43048	43084	43376	43572	44086	44132	44350	44554	44910	45674	45392	46436	46844	43294	44035	45133
% Chg Prev Qtr SAAR.....	1.52	-5.54	0.33	2.73	1.82	4.81	0.41	1.99	1.86	3.23	6.98	-2.45	9.52	3.56	0.42	1.71	2.49
% Chg Same Qtr Last Yr.....	1.85	-0.29	0.43	-0.29	-0.22	2.41	2.43	2.24	2.26	1.87	3.50	2.35	4.22	4.31	0.42	1.71	2.49
GOVERNMENT.....	43879	43885	44348	45040	44939	45878	45870	46664	46514	47025	47334	47600	47747	48027	44288	45838	47118
% Chg Prev Qtr SAAR.....	2.63	0.06	4.29	6.39	-0.90	8.63	-0.07	7.11	-1.28	4.47	2.65	2.27	1.24	2.37	1.38	3.50	2.79
% Chg Same Qtr Last Yr.....	0.48	0.85	0.86	3.32	2.42	4.54	3.43	3.61	3.51	2.50	3.19	2.01	2.65	2.13	1.38	3.50	2.79
FEDERAL, CIVILIAN.....	77751	77914	77731	78171	78595	79019	79396	80275	81311	82039	82707	83330	83587	84126	77892	79321	82347
% Chg Prev Qtr SAAR.....	1.02	0.84	-0.93	2.28	2.19	2.17	1.92	4.51	5.26	3.63	3.30	3.05	1.24	2.61	0.16	1.84	3.81
% Chg Same Qtr Last Yr.....	-0.75	0.14	0.48	0.80	1.09	1.42	2.14	2.69	3.46	3.82	4.17	3.81	2.80	2.54	0.16	1.84	3.81
STATE & LOCAL.....	39492	39456	39988	40743	40578	41599	41553	42379	42114	42611	42864	43017	43182	43396	39920	41527	42652
% Chg Prev Qtr SAAR.....	3.32	-0.36	5.50	7.77	-1.61	10.45	-0.44	8.19	-2.48	4.80	2.40	1.43	1.55	2.00	1.75	4.03	2.71
% Chg Same Qtr Last Yr.....	0.88	1.12	0.99	4.01	2.75	5.43	3.91	4.01	3.79	2.43	3.16	1.50	2.54	1.84	1.75	4.03	2.71

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**Table 15: Tennessee Civilian Labor Force and Unemployment Rate, Not Seasonally Adjusted** **January 2020**

	Historical Data														Annual		
	2016:2	2016:3	2016:4	2017:1	2017:2	2017:3	2017:4	2018:1	2018:2	2018:3	2018:4	2019:1	2019:2	2019:3	2016	2017	2018
CIVILIAN LABOR FORCE (THOUS).....	3127	3150	3149	3160	3187	3210	3204	3223	3253	3250	3254	3299	3364	3368	3129	3190	3245
% Chg Same Qtr Last Yr.....	1.50	3.00	2.78	2.29	1.91	1.90	1.74	1.97	2.10	1.25	1.56	2.36	3.39	3.63	2.20	1.96	1.72
EMPLOYED PERSONS (THOUS).....	2985	2992	3007	3018	3073	3092	3098	3101	3141	3131	3153	3187	3254	3247	2982	3070	3132
% Chg Same Qtr Last Yr.....	2.78	3.67	3.20	2.58	2.95	3.34	3.02	2.77	2.21	1.26	1.77	2.77	3.58	3.70	3.19	2.97	2.00
UNEMPLOYED PERSONS (THOUS).....	141	158	142	143	113	118	106	121	112	119	101	111	110	121	147	120	113
% Chg Same Qtr Last Yr.....	-19.56	-8.29	-5.48	-3.61	-19.95	-25.34	-25.31	-15.04	-0.94	0.81	-4.76	-8.05	-2.01	1.96	-14.42	-18.58	-5.55
PARTICIPATION RATE (PERCENT).....	58.9	59.2	59.0	59.0	59.3	59.6	59.3	59.5	59.9	59.7	59.6	60.4	61.4	61.4	58.9	59.3	59.7
% Chg Same Qtr Last Yr.....	0.49	1.94	1.70	1.14	0.75	0.73	0.58	0.82	0.98	0.17	0.52	1.43	2.49	2.76	1.17	0.80	0.62
UNEMPLOYMENT RATE (PERCENT).....	4.5	5.0	4.5	4.5	3.6	3.7	3.3	3.8	3.4	3.7	3.1	3.4	3.3	3.6	4.7	3.8	3.5

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Tennessee Econometric Model

**Table 16: Tennessee Civilian Labor Force and Unemployment Rate, Seasonally Adjusted**

**January 2020**

	Historical Data													Annual			
	2016:2	2016:3	2016:4	2017:1	2017:2	2017:3	2017:4	2018:1	2018:2	2018:3	2018:4	2019:1	2019:2	2019:3	2016	2017	2018
CIVILIAN LABOR FORCE (THOUS).....	3117	3143	3159	3167	3178	3200	3216	3229	3242	3249	3255	3276	3321	3356	3129	3190	3244
% Chg Prev Qtr SAAR.....	2.73	3.35	2.06	0.92	1.51	2.71	2.04	1.68	1.62	0.82	0.79	2.53	5.67	4.31	2.21	1.95	1.69
% Chg Same Qtr Last Yr.....	1.79	2.78	2.87	2.26	1.96	1.80	1.79	1.98	2.01	1.54	1.23	1.44	2.44	3.31	2.21	1.95	1.69
EMPLOYED PERSONS (THOUS).....	2971	2993	3010	3030	3058	3089	3104	3113	3125	3137	3147	3170	3212	3240	2981	3070	3130
% Chg Prev Qtr SAAR.....	2.86	3.00	2.32	2.57	3.87	4.04	2.00	1.13	1.53	1.52	1.38	2.88	5.43	3.52	3.16	2.98	1.96
% Chg Same Qtr Last Yr.....	3.02	3.52	3.21	2.69	2.94	3.20	3.11	2.75	2.17	1.54	1.39	1.82	2.79	3.29	3.16	2.98	1.96
UNEMPLOYED PERSONS (THOUS).....	146	150	149	137	120	111	112	116	118	112	108	106	109	117	148	120	114
% Chg Prev Qtr SAAR.....	0.19	10.84	-2.96	-28.32	-41.08	-27.23	3.11	17.98	4.04	-16.51	-14.48	-7.27	12.98	29.65	-13.82	-18.88	-5.23
% Chg Same Qtr Last Yr.....	-18.09	-10.01	-3.53	-6.25	-17.90	-26.10	-24.97	-15.02	-2.04	1.39	-3.24	-8.90	-7.00	3.82	-13.82	-18.88	-5.23
PARTICIPATION RATE (PERCENT).....	58.7	59.0	59.2	59.1	59.2	59.4	59.6	59.6	59.7	59.7	59.7	59.9	60.6	61.2	58.9	59.3	59.7
% Chg Prev Qtr SAAR.....	1.66	2.24	0.93	-0.35	0.37	1.57	0.92	0.49	0.58	-0.15	-0.13	1.77	4.77	3.42	1.17	0.79	0.60
% Chg Same Qtr Last Yr.....	0.78	1.73	1.78	1.12	0.80	0.63	0.63	0.84	0.89	0.46	0.20	0.52	1.55	2.44	1.17	0.79	0.60
UNEMPLOYMENT RATE (PERCENT).....	4.7	4.8	4.7	4.3	3.8	3.5	3.5	3.6	3.6	3.5	3.3	3.2	3.3	3.5	4.7	3.8	3.5

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Table 17: Tennessee Taxable Sales, Not Seasonally Adjusted (millions of 2012 dollars)

January 2020

	Historical Data													Annual			
	2016:2	2016:3	2016:4	2017:1	2017:2	2017:3	2017:4	2018:1	2018:2	2018:3	2018:4	2019:1	2019:2	2019:3	2016	2017	2018
TOTAL TAXABLE SALES.....	28870	28433	30852	26503	29680	29763	32437	28374	30986	30714	33672	29253	32318	32104	114834	118384	123745
% Chg Same Qtr Last Yr.....	3.77	2.62	1.95	-0.66	2.81	4.68	5.14	7.06	4.40	3.19	3.81	3.10	4.30	4.53	4.06	3.09	4.53
AUTO DEALERS.....	3020	3180	2967	2936	3117	3138	2967	3032	3136	3147	3019	3008	3225	3232	12124	12158	12334
% Chg Same Qtr Last Yr.....	3.47	4.33	6.02	-0.69	3.20	-1.33	0.01	3.26	0.62	0.28	1.75	-0.81	2.82	2.72	5.83	0.28	1.45
PURCHASES FROM MANUFACTURERS.....	1233	1234	1536	1095	1235	1240	1612	1112	1339	1325	1735	1228	1401	1393	5015	5182	5510
% Chg Same Qtr Last Yr.....	5.64	2.31	6.74	8.27	0.15	0.51	4.91	1.54	8.40	6.82	7.65	10.40	4.64	5.12	5.56	3.33	6.34
MISC DURABLE GOODS.....	5055	4813	5118	4499	5175	5010	5492	4592	5504	5302	5562	4785	5604	5406	19352	20176	20961
% Chg Same Qtr Last Yr.....	4.72	4.29	3.74	3.04	2.38	4.10	7.30	2.08	6.35	5.84	1.28	4.19	1.81	1.95	6.78	4.26	3.89
EATING AND DRINKING PLACES.....	3133	3073	3030	2881	3201	3098	3017	2963	3241	3157	3303	3254	3550	3471	12117	12198	12664
% Chg Same Qtr Last Yr.....	4.10	2.98	1.74	0.01	2.17	0.83	-0.42	2.82	1.24	1.88	9.47	9.82	9.53	9.94	3.74	0.67	3.81
FOOD STORES.....	2687	2754	3026	2578	2755	2936	3184	2834	2896	2937	3156	2816	2957	3045	11064	11453	11823
% Chg Same Qtr Last Yr.....	1.22	2.15	4.71	-0.72	2.55	6.60	5.21	9.96	5.10	0.04	-0.88	-0.66	2.10	3.68	2.69	3.52	3.23
LIQUOR STORES.....	241	212	252	188	217	209	245	196	220	218	268	215	233	224	933	858	902
% Chg Same Qtr Last Yr.....	7.47	-4.99	-11.55	-17.55	-10.09	-1.72	-3.06	4.37	1.51	4.44	9.52	9.94	5.99	2.86	-1.21	-8.10	5.13
HOTELS AND MOTELS.....	944	968	850	663	947	953	854	677	962	929	989	895	1171	1178	3464	3417	3558
% Chg Same Qtr Last Yr.....	11.08	9.58	6.86	-5.38	0.23	-1.60	0.41	2.12	1.64	-2.49	15.81	32.09	21.67	26.80	10.34	-1.37	4.12
OTHER RETAIL AND SERVICE.....	8659	8443	9823	8007	8767	8869	10311	8761	9305	9335	10796	8919	9801	9832	35109	35954	38197
% Chg Same Qtr Last Yr.....	3.82	2.26	-0.45	-2.17	1.25	5.04	4.98	9.41	6.14	5.26	4.69	1.80	5.33	5.32	3.35	2.41	6.24
MISC NONDURABLE GOODS.....	2366	2277	2670	2028	2403	2264	2640	2196	2354	2309	2781	2193	2432	2367	9516	9335	9639
% Chg Same Qtr Last Yr.....	4.39	2.17	-0.28	-7.90	1.53	-0.56	-1.15	8.27	-2.04	1.96	5.34	-0.11	3.31	2.54	3.34	-1.90	3.26
TRANSPORTATION, COMMUNICATION.....	1531	1479	1579	1628	1864	2047	2115	2010	2029	2055	2064	1941	1947	1956	6141	7653	8158
% Chg Same Qtr Last Yr.....	-2.03	-5.63	-1.12	4.87	21.74	38.41	33.99	23.50	8.89	0.41	-2.45	-3.43	-4.07	-4.84	-2.56	24.64	6.59
PER CAPITA (\$)......	4345	4270	4623	3963	4428	4430	4818	4205	4582	4532	4958	4298	4739	4698	17263	17639	18278
% Chg Same Qtr Last Yr.....	2.90	1.74	1.07	-1.53	1.90	3.75	4.21	6.12	3.49	2.30	2.91	2.22	3.42	3.65	3.19	2.18	3.62

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Tennessee Econometric Model

**Table 18: Tennessee Taxable Sales, Seasonally Adjusted (millions of 2012 dollars)**

**January 2020**

	Historical Data														Annual		
	2016:2	2016:3	2016:4	2017:1	2017:2	2017:3	2017:4	2018:1	2018:2	2018:3	2018:4	2019:1	2019:2	2019:3	2016	2017	2018
TOTAL TAXABLE SALES.....	28583	28620	28846	28600	29411	29942	30311	30604	30729	30904	31443	31610	32041	32286	114785	118264	123681
% Chg Prev Qtr SAAR.....	-2.13	0.52	3.19	-3.36	11.83	7.41	5.02	3.93	1.65	2.30	7.16	2.14	5.57	3.09	4.23	3.03	4.58
% Chg Same Qtr Last Yr.....	3.88	2.45	1.84	-0.48	2.90	4.62	5.08	7.01	4.48	3.21	3.74	3.29	4.27	4.47	4.23	3.03	4.58
AUTO DEALERS.....	2961	3061	3092	2994	3054	3026	3079	3100	3069	3039	3127	3078	3154	3121	12117	12153	12335
% Chg Prev Qtr SAAR.....	-5.58	14.19	4.14	-12.12	8.25	-3.51	7.13	2.76	-3.89	-3.96	12.18	-6.09	10.23	-4.14	5.90	0.29	1.50
% Chg Same Qtr Last Yr.....	3.32	4.58	5.40	-0.33	3.13	-1.12	-0.42	3.55	0.52	0.40	1.57	-0.70	2.76	2.72	5.90	0.29	1.50
PURCHASES FROM MANUFACTURERS....	1246	1259	1282	1304	1257	1277	1334	1320	1368	1371	1430	1455	1436	1441	5000	5172	5489
% Chg Prev Qtr SAAR.....	11.60	4.28	7.34	7.04	-13.52	6.23	19.30	-4.30	15.56	0.78	18.37	7.19	-5.19	1.51	5.67	3.44	6.12
% Chg Same Qtr Last Yr.....	6.42	3.32	5.69	7.53	0.89	1.36	4.07	1.20	8.81	7.39	7.17	10.26	4.93	5.12	5.67	3.44	6.12
MISC DURABLE GOODS.....	4805	4806	4892	4987	4930	5009	5237	5089	5249	5306	5297	5302	5347	5410	19345	20163	20941
% Chg Prev Qtr SAAR.....	-2.93	0.04	7.39	8.02	-4.57	6.61	19.49	-10.87	13.20	4.46	-0.72	0.35	3.51	4.75	7.08	4.23	3.86
% Chg Same Qtr Last Yr.....	5.07	4.38	3.37	3.02	2.59	4.23	7.05	2.03	6.48	5.94	1.14	4.18	1.88	1.95	7.08	4.23	3.86
EATING AND DRINKING PLACES.....	3017	3038	3047	3017	3078	3068	3037	3095	3117	3129	3324	3395	3417	3440	12117	12199	12665
% Chg Prev Qtr SAAR.....	0.22	2.76	1.30	-3.98	8.37	-1.33	-3.96	7.86	2.97	1.52	27.29	8.83	2.61	2.79	3.78	0.67	3.82
% Chg Same Qtr Last Yr.....	3.94	3.07	1.72	0.04	2.02	0.99	-0.35	2.59	1.29	2.01	9.45	9.70	9.60	9.94	3.78	0.67	3.82
FOOD STORES.....	2740	2758	2819	2719	2814	2938	2965	2989	2961	2938	2938	2969	3025	3046	11058	11436	11826
% Chg Prev Qtr SAAR.....	-0.16	2.68	9.18	-13.49	14.82	18.73	3.78	3.19	-3.59	-3.13	0.03	4.24	7.87	2.74	2.64	3.42	3.41
% Chg Same Qtr Last Yr.....	1.43	2.02	4.72	-0.80	2.72	6.52	5.18	9.92	5.22	0.00	-0.92	-0.66	2.16	3.68	2.64	3.42	3.41
LIQUOR STORES.....	245	224	219	206	219	220	213	216	221	229	233	237	234	236	936	857	900
% Chg Prev Qtr SAAR.....	-5.80	-30.08	-8.74	-21.67	27.67	1.66	-12.26	5.53	11.03	15.38	7.08	6.97	-5.25	3.15	-0.62	-8.44	4.93
% Chg Same Qtr Last Yr.....	6.87	-5.27	-11.25	-17.16	-10.62	-1.86	-2.81	4.70	1.11	4.36	9.69	10.06	5.78	2.86	-0.62	-8.44	4.93
HOTELS AND MOTELS.....	862	877	855	827	861	865	856	846	874	845	989	1117	1066	1072	3459	3408	3555
% Chg Prev Qtr SAAR.....	-1.12	7.12	-9.89	-12.36	17.40	1.83	-4.20	-4.26	13.95	-12.58	86.85	62.83	-16.97	2.33	10.64	-1.47	4.30
% Chg Same Qtr Last Yr.....	10.60	9.25	6.52	-4.37	-0.17	-1.43	0.09	2.33	1.57	-2.23	15.54	31.94	21.90	26.80	10.64	-1.47	4.30
OTHER RETAIL AND SERVICE.....	8782	8742	8743	8668	8904	9140	9195	9488	9460	9595	9636	9666	9958	10106	35096	35906	38180
% Chg Prev Qtr SAAR.....	-2.10	-1.80	0.05	-3.41	11.35	11.02	2.46	13.35	-1.17	5.84	1.72	1.22	12.68	6.07	3.58	2.31	6.33
% Chg Same Qtr Last Yr.....	4.11	1.76	-0.51	-1.82	1.39	4.55	5.17	9.46	6.25	4.99	4.80	1.87	5.27	5.32	3.58	2.31	6.33
MISC NONDURABLE GOODS.....	2385	2376	2354	2218	2422	2360	2326	2406	2372	2405	2450	2403	2451	2466	9518	9325	9632
% Chg Prev Qtr SAAR.....	-2.72	-1.62	-3.53	-21.27	42.16	-9.82	-5.67	14.43	-5.51	5.71	7.81	-7.54	8.19	2.50	3.59	-2.02	3.29
% Chg Same Qtr Last Yr.....	4.32	1.97	-0.35	-7.66	1.52	-0.66	-1.22	8.46	-2.07	1.90	5.36	-0.11	3.33	2.54	3.59	-2.02	3.29
TRANSPORTATION, COMMUNICATION....	1539	1479	1542	1661	1873	2040	2069	2057	2036	2046	2019	1989	1952	1947	6140	7643	8158
% Chg Prev Qtr SAAR.....	-9.82	-14.64	17.92	34.84	61.51	40.75	5.80	-2.28	-3.97	1.95	-5.25	-5.75	-7.24	-0.99	-2.55	24.48	6.74
% Chg Same Qtr Last Yr.....	-2.06	-6.07	-0.95	5.18	21.68	37.89	34.20	23.82	8.73	0.30	-2.43	-3.30	-4.14	-4.84	-2.55	24.48	6.74
PER CAPITA (\$)......	4302	4298	4323	4276	4388	4457	4502	4536	4544	4560	4630	4645	4698	4724	17258	17623	18270
% Chg Prev Qtr SAAR.....	-2.96	-0.35	2.29	-4.25	10.85	6.47	4.11	3.02	0.77	1.42	6.25	1.28	4.68	2.23	3.36	2.11	3.67
% Chg Same Qtr Last Yr.....	3.01	1.58	0.96	-1.35	1.99	3.69	4.15	6.07	3.57	2.32	2.84	2.41	3.39	3.59	3.36	2.11	3.67

Table 19: Tennessee Taxable Sales, Not Seasonally Adjusted (millions of current dollars)

January 2020

	Historical Data														Annual		
	2016:2	2016:3	2016:4	2017:1	2017:2	2017:3	2017:4	2018:1	2018:2	2018:3	2018:4	2019:1	2019:2	2019:3	2016	2017	2018
TOTAL TAXABLE SALES.....	29999	29668	32336	27923	31341	31559	34621	30474	33461	33298	36625	31851	35396	35307	119563	125444	133858
% Chg Same Qtr Last Yr.....	4.63	3.62	3.49	1.32	4.48	6.37	7.07	9.14	6.76	5.51	5.79	4.52	5.78	6.04	5.13	4.92	6.71
AUTO DEALERS.....	3138	3318	3110	3094	3291	3327	3167	3257	3387	3411	3284	3275	3532	3555	12620	12879	13339
% Chg Same Qtr Last Yr.....	4.33	5.34	7.62	1.29	4.87	0.27	1.85	5.27	2.90	2.53	3.70	0.56	4.28	4.20	6.90	2.05	3.57
PURCHASES FROM MANUFACTURERS....	1281	1288	1610	1154	1304	1315	1720	1194	1446	1436	1887	1337	1534	1532	5224	5493	5963
% Chg Same Qtr Last Yr.....	6.53	3.30	8.35	10.42	1.77	2.13	6.83	3.51	10.86	9.22	9.71	11.92	6.13	6.64	6.67	5.15	8.56
MISC DURABLE GOODS.....	5253	5022	5364	4740	5465	5312	5861	4932	5944	5748	6050	5210	6137	5945	20149	21378	22674
% Chg Same Qtr Last Yr.....	5.60	5.30	5.31	5.09	4.04	5.78	9.27	4.07	8.76	8.21	3.21	5.63	3.26	3.42	7.87	6.10	6.06
EATING AND DRINKING PLACES.....	3256	3206	3176	3036	3380	3285	3220	3182	3500	3422	3593	3543	3888	3817	12614	12922	13697
% Chg Same Qtr Last Yr.....	4.98	3.98	3.28	2.00	3.83	2.46	1.41	4.82	3.53	4.17	11.57	11.33	11.09	11.53	4.79	2.44	6.00
FOOD STORES.....	2792	2874	3172	2716	2910	3113	3398	3044	3127	3185	3433	3066	3238	3349	11520	12137	12788
% Chg Same Qtr Last Yr.....	2.06	3.14	6.29	1.25	4.21	8.33	7.14	12.10	7.48	2.29	1.01	0.71	3.55	5.18	3.75	5.36	5.37
LIQUOR STORES.....	250	221	264	198	229	221	261	210	237	236	291	234	255	246	971	909	975
% Chg Same Qtr Last Yr.....	8.37	-4.07	-10.22	-15.91	-8.63	-0.13	-1.28	6.40	3.81	6.78	11.61	11.45	7.49	4.35	-0.22	-6.45	7.34
HOTELS AND MOTELS.....	981	1010	891	699	1000	1010	911	728	1039	1007	1076	974	1282	1295	3607	3620	3850
% Chg Same Qtr Last Yr.....	12.01	10.64	8.48	-3.50	1.86	-0.01	2.25	4.10	3.94	-0.30	18.03	33.91	23.40	28.63	11.46	0.36	6.33
OTHER RETAIL AND SERVICE.....	8997	8810	10295	8436	9257	9404	11006	9409	10048	10121	11742	9711	10734	10813	36557	38103	41321
% Chg Same Qtr Last Yr.....	4.68	3.26	1.06	-0.22	2.89	6.74	6.90	11.54	8.54	7.62	6.69	3.20	6.82	6.85	4.41	4.23	8.44
MISC NONDURABLE GOODS.....	2459	2376	2799	2137	2537	2401	2818	2358	2542	2503	3025	2388	2663	2604	9908	9892	10428
% Chg Same Qtr Last Yr.....	5.26	3.17	1.22	-6.06	3.18	1.04	0.67	10.37	0.18	4.25	7.35	1.26	4.78	4.02	4.41	-0.16	5.41
TRANSPORTATION, COMMUNICATION....	1591	1543	1655	1715	1968	2170	2258	2159	2192	2228	2245	2113	2132	2151	6392	8111	8823
% Chg Same Qtr Last Yr.....	-1.21	-4.71	0.37	6.96	23.72	40.65	36.45	25.90	11.36	2.66	-0.59	-2.11	-2.71	-3.46	-1.58	26.90	8.78
PER CAPITA (\$)......	4515	4456	4846	4175	4676	4698	5142	4516	4948	4914	5393	4680	5190	5166	17974	18690	19771
% Chg Same Qtr Last Yr.....	3.76	2.73	2.60	0.43	3.55	5.43	6.12	8.18	5.83	4.59	4.88	3.63	4.89	5.14	4.24	3.99	5.78

Boyd Center for Business and Economic Research, University of Tennessee

Tennessee Econometric Model

**Table 20: Tennessee Taxable Sales, Seasonally Adjusted (millions of current dollars)**

**January 2020**

	Historical Data														Annual		
	2016:1	2016:2	2016:3	2016:4	2017:1	2017:2	2017:3	2017:4	2018:1	2018:2	2018:3	2018:4	2019:1	2019:2	2016	2017	2018
TOTAL TAXABLE SALES.....	29684	29700	29863	30234	30132	31057	31748	32351	32869	33184	33504	34201	34417	35092	119482	125288	133758
% Chg Prev Qtr SAAR.....	6.14	0.22	2.21	5.06	-1.34	12.86	9.20	7.82	6.55	3.89	3.92	8.59	2.54	8.08	5.28	4.86	6.76
% Chg Same Qtr Last Yr.....	9.86	4.74	3.45	3.38	1.51	4.57	6.31	7.00	9.08	6.85	5.53	5.72	4.71	5.75	5.28	4.86	6.76
AUTO DEALERS.....	3103	3077	3194	3241	3154	3224	3209	3286	3329	3315	3294	3402	3352	3455	12614	12874	13340
% Chg Prev Qtr SAAR.....	10.11	-3.31	16.11	6.02	-10.29	9.25	-1.90	9.99	5.36	-1.77	-2.44	13.68	-5.72	12.85	6.97	2.06	3.62
% Chg Same Qtr Last Yr.....	11.40	4.19	5.60	6.99	1.65	4.81	0.48	1.41	5.57	2.80	2.66	3.51	0.67	4.22	6.97	2.06	3.62
PURCHASES FROM MANUFACTURERS....	1253	1295	1314	1344	1374	1328	1354	1424	1417	1478	1486	1555	1584	1572	5206	5479	5936
% Chg Prev Qtr SAAR.....	0.06	14.27	6.04	9.28	9.27	-12.73	8.00	22.48	-1.88	18.11	2.38	19.94	7.61	-2.93	6.74	5.26	8.34
% Chg Same Qtr Last Yr.....	8.20	7.31	4.33	7.29	9.68	2.53	3.00	5.98	3.17	11.27	9.80	9.22	11.77	6.42	6.74	5.26	8.34
MISC DURABLE GOODS.....	5001	4993	5015	5128	5255	5205	5311	5590	5465	5668	5753	5762	5772	5857	20136	21361	22648
% Chg Prev Qtr SAAR.....	9.66	-0.61	1.72	9.33	10.27	-3.69	8.39	22.68	-8.61	15.70	6.11	0.60	0.74	5.98	8.15	6.08	6.02
% Chg Same Qtr Last Yr.....	17.37	5.94	5.40	4.93	5.08	4.25	5.92	9.01	4.01	8.89	8.31	3.07	5.62	3.32	8.15	6.08	6.02
EATING AND DRINKING PLACES.....	3115	3135	3170	3194	3178	3250	3253	3241	3324	3367	3393	3615	3696	3742	12613	12922	13698
% Chg Prev Qtr SAAR.....	2.79	2.62	4.49	3.13	-1.97	9.37	0.32	-1.40	10.58	5.24	3.13	28.98	9.26	5.05	4.83	2.45	6.00
% Chg Same Qtr Last Yr.....	7.33	4.81	4.07	3.26	2.04	3.68	2.62	1.48	4.58	3.58	4.30	11.54	11.21	11.16	4.83	2.45	6.00
FOOD STORES.....	2831	2847	2878	2955	2864	2972	3115	3165	3210	3198	3185	3196	3232	3314	11511	12116	12789
% Chg Prev Qtr SAAR.....	7.61	2.23	4.40	11.15	-11.68	15.88	20.71	6.55	5.79	-1.47	-1.60	1.36	4.65	10.44	3.69	5.26	5.55
% Chg Same Qtr Last Yr.....	3.18	2.28	3.01	6.30	1.17	4.39	8.25	7.11	12.06	7.60	2.25	0.98	0.70	3.62	3.69	5.26	5.55
LIQUOR STORES.....	257	255	234	229	217	231	233	227	232	239	249	254	258	256	974	908	973
% Chg Prev Qtr SAAR.....	3.39	-3.55	-28.90	-7.09	-20.03	28.85	3.35	-9.92	8.19	13.48	17.21	8.50	7.39	-2.99	0.35	-6.79	7.14
% Chg Same Qtr Last Yr.....	8.89	7.76	-4.35	-9.91	-15.51	-9.17	-0.27	-1.03	6.74	3.40	6.70	11.78	11.58	7.29	0.35	-6.79	7.14
HOTELS AND MOTELS.....	893	896	915	896	871	909	917	913	909	944	917	1075	1216	1167	3601	3610	3845
% Chg Prev Qtr SAAR.....	35.15	1.25	8.92	-8.27	-10.53	18.48	3.53	-1.64	-1.84	16.46	-11.20	89.33	63.47	-15.00	11.75	0.27	6.50
% Chg Same Qtr Last Yr.....	17.51	11.53	10.31	8.13	-2.46	1.45	0.17	1.93	4.32	3.87	-0.04	17.75	33.76	23.63	11.75	0.27	6.50
OTHER RETAIL AND SERVICE.....	9120	9125	9122	9164	9132	9402	9691	9814	10190	10216	10403	10482	10524	10907	36531	38039	41290
% Chg Prev Qtr SAAR.....	2.01	0.24	-0.14	1.86	-1.40	12.38	12.87	5.19	16.21	1.01	7.52	3.08	1.62	15.37	4.62	4.13	8.55
% Chg Same Qtr Last Yr.....	10.24	4.98	2.75	0.99	0.13	3.03	6.24	7.10	11.59	8.65	7.34	6.80	3.27	6.76	4.62	4.13	8.55
MISC NONDURABLE GOODS.....	2481	2479	2479	2468	2337	2557	2502	2482	2584	2561	2607	2665	2616	2684	9907	9879	10417
% Chg Prev Qtr SAAR.....	7.00	-0.39	0.03	-1.78	-19.62	43.47	-8.32	-3.15	17.32	-3.43	7.38	9.25	-7.18	10.77	4.63	-0.28	5.45
% Chg Same Qtr Last Yr.....	9.56	5.19	2.96	1.16	-5.82	3.17	0.95	0.59	10.57	0.15	4.19	7.37	1.26	4.80	4.63	-0.28	5.45
TRANSPORTATION, COMMUNICATION....	1631	1599	1544	1616	1750	1978	2163	2208	2209	2199	2218	2196	2166	2138	6390	8099	8822
% Chg Prev Qtr SAAR.....	6.22	-7.66	-13.21	20.05	37.66	63.00	43.09	8.62	0.19	-1.86	3.56	-3.99	-5.38	-5.03	-1.56	26.74	8.93
% Chg Same Qtr Last Yr.....	-0.38	-1.24	-5.15	0.55	7.28	23.65	40.12	36.66	26.22	11.19	2.55	-0.56	-1.97	-2.77	-1.56	26.74	8.93
PER CAPITA (\$)......	4478	4470	4485	4531	4505	4633	4726	4805	4871	4907	4944	5036	5057	5146	17964	18669	19759
% Chg Prev Qtr SAAR.....	5.22	-0.64	1.33	4.14	-2.25	11.86	8.24	6.88	5.62	2.99	3.03	7.67	1.67	7.18	4.40	3.93	5.84
% Chg Same Qtr Last Yr.....	8.96	3.87	2.57	2.49	0.62	3.64	5.37	6.06	8.13	5.92	4.62	4.81	3.81	4.85	4.40	3.93	5.84

**Table 1: Selected U.S. and Tennessee Economic Indicators, Seasonally Adjusted**

**January 2020**

	Historical Data											
	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
TN GDP (Mil2012\$) SAAR.....	271889	274626	265512	268447	276554	285078	288890	293677	304038	310029	315672	324115
Percentage change.....	-1.45	1.01	-3.32	1.11	3.02	3.08	1.34	1.66	3.53	1.97	1.82	2.67
US GDP (Bil2012\$) SAAR.....	15626.0	15604.7	15208.8	15598.8	15840.7	16197.0	16495.4	16912.0	17403.8	17688.9	18108.1	18638.2
Percentage change.....	1.88	-0.14	-2.54	2.56	1.55	2.25	1.84	2.53	2.91	1.64	2.37	2.93
TN GDP (Mil\$) SAAR.....	245981	253542	252067	257152	269366	285078	294907	305437	324239	336281	347197	363794
Percentage change.....	1.51	3.07	-0.58	2.02	4.75	5.83	3.45	3.57	6.16	3.71	3.25	4.78
US GDP (Bil\$) SAAR.....	14451.9	14712.8	14448.9	14992.1	15542.6	16197.0	16784.9	17527.3	18224.8	18715.0	19519.4	20580.2
Percentage change.....	4.61	1.81	-1.79	3.76	3.67	4.21	3.63	4.42	3.98	2.69	4.30	5.43
TN PERSONAL INCOME (MIL2012\$) SAAR.....	229616	231050	229605	236748	245296	253604	252614	259525	272415	279135	284673	293594
Percentage change.....	2.23	0.62	-0.63	3.11	3.61	3.39	-0.39	2.74	4.97	2.47	1.98	3.13
US PERSONAL INCOME (BIL2012\$) SAAR.....	13132	13211	12816	13114	13580	14009	13992	14579	15253	15487	15933	16477
Percentage change.....	2.89	0.60	-2.99	2.33	3.55	3.16	-0.12	4.19	4.62	1.54	2.88	3.41
TN PERSONAL INCOME (MIL\$) SAAR.....	209964	217599	216042	226587	240718	253613	256016	266873	280719	290560	301560	317515
Percentage change.....	4.82	3.64	-0.72	4.88	6.24	5.36	0.95	4.24	5.19	3.51	3.79	5.29
US PERSONAL INCOME (BIL\$) SAAR.....	12008	12442	12059	12552	13327	14010	14181	14992	15718	16121	16879	17819
Percentage change.....	5.50	3.62	-3.08	4.08	6.18	5.13	1.22	5.72	4.84	2.57	4.70	5.57
TN NONFARM JOBS (THOUS).....	2797.5	2774.9	2619.5	2614.9	2661.5	2715.0	2760.0	2821.5	2892.9	2965.1	3011.5	3062.2
Percentage change.....	0.53	-0.81	-5.60	-0.17	1.78	2.01	1.66	2.23	2.53	2.49	1.57	1.68
US NONFARM JOBS (MIL).....	138.0	137.2	131.3	130.4	131.9	134.2	136.4	138.9	141.8	144.3	146.6	149.1
Percentage change.....	1.13	-0.55	-4.33	-0.73	1.22	1.69	1.64	1.88	2.08	1.78	1.57	1.67
TN MFG JOBS (THOUS).....	377.6	358.6	307.0	296.9	302.4	311.2	316.2	322.8	330.8	341.7	346.3	350.7
Percentage change.....	-4.86	-5.02	-14.41	-3.28	1.85	2.92	1.60	2.07	2.49	3.29	1.34	1.29
US MFG JOBS (MIL).....	13.9	13.4	11.8	11.5	11.7	11.9	12.0	12.2	12.3	12.4	12.4	12.7
Percentage change.....	-1.97	-3.42	-11.61	-2.69	1.72	1.70	0.77	1.38	1.24	0.14	0.70	2.00
TN UNEMPLOYMENT RATE (%).....	4.7	6.6	10.5	9.6	9.0	7.8	7.7	6.6	5.6	4.7	3.8	3.5
US UNEMPLOYMENT RATE (%).....	4.6	5.8	9.3	9.6	8.9	8.1	7.4	6.2	5.3	4.9	4.4	3.9
CHAINED PRICE INDEX, GDP (2012=100.0).....	92.5	94.3	95.0	96.1	98.1	100.0	101.8	103.6	104.7	105.8	107.8	110.4
Percentage change.....	2.69	1.91	0.78	1.17	2.08	1.92	1.77	1.84	1.00	1.03	1.91	2.40
US PERS CONSUMP DEFL (2012=100.0).....	91.4	94.2	94.1	95.7	98.1	100.0	101.3	102.8	103.0	104.1	105.9	108.1
Percentage change.....	2.54	3.00	-0.09	1.71	2.53	1.91	1.35	1.46	0.21	1.01	1.77	2.09
CONSUMER PRICE INDEX, ALL-URBAN (82-84=1.000).....	2.073	2.153	2.146	2.181	2.249	2.296	2.330	2.367	2.370	2.400	2.451	2.511
Percentage change.....	2.87	3.81	-0.32	1.64	3.14	2.07	1.47	1.62	0.12	1.27	2.14	2.44
BANK PRIME INTEREST RATE (%).....	8.1	5.1	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.5	4.1	4.9
FEDERAL FUNDS RATE (% per annum).....	5.019	1.928	0.160	0.175	0.102	0.140	0.108	0.089	0.133	0.395	1.002	1.832
30-YEAR FIXED MORTGAGE RATE (%).....	6.3	6.0	5.0	4.7	4.5	3.7	4.0	4.2	3.9	3.6	4.0	4.5
TN TAXABLE SALES (MIL2012\$).....	104992	99002	91636	92358	95409	98021	99880	103534	110126	114785	118264	123681
Percentage change.....	1.00	-5.70	-7.44	0.79	3.30	2.74	1.90	3.66	6.37	4.23	3.03	4.58
TN TAXABLE SALES (MIL\$).....	95995	93235	86220	88393	93633	98018	101225	106467	113489	119482	125288	133758
Percentage change.....	3.55	-2.88	-7.52	2.52	5.93	4.68	3.27	5.18	6.60	5.28	4.86	6.76
TN AVG ANNUAL WAGE, NONFARM (2012\$).....	43409	43123	43380	44008	43814	44533	44016	44444	45822	45936	46425	47014
Percentage change.....	1.51	-0.66	0.60	1.45	-0.44	1.64	-1.16	0.97	3.10	0.25	1.06	1.27
TN AVG ANNUAL WAGE, NONFARM (\$).....	39693	40611	40819	42119	42993	44534	44608	45701	47218	47816	49179	50843
Percentage change.....	4.09	2.31	0.51	3.18	2.08	3.58	0.17	2.45	3.32	1.27	2.85	3.38

**Table 2: Selected Per Capita U.S. and Tennessee Economic Indicators**

**January 2020**

	Historical Data											
	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
TN GDP (2012\$) SAAR.....	44025	43958	42105	42240	43229	44189	44490	44899	46131	46656	47053	47875
Percentage change.....	-2.84	-0.15	-4.22	0.32	2.34	2.22	0.68	0.92	2.74	1.14	0.85	1.75
US GDP (2012\$) SAAR.....	51703	51172	49447	50307	50720	51496	52085	53014	54164	54664	55604	56873
Percentage change.....	0.88	-1.03	-3.37	1.74	0.82	1.53	1.14	1.78	2.17	0.92	1.72	2.28
TN GDP (\$) SAAR.....	39830	40584	39973	40463	42105	44189	45416	46697	49196	50607	51753	53736
Percentage change.....	0.08	1.89	-1.51	1.23	4.06	4.95	2.78	2.82	5.35	2.87	2.26	3.83
US GDP (\$) SAAR.....	47818	48247	46976	48350	49766	51496	53000	54943	56719	57835	59938	62799
Percentage change.....	3.59	0.90	-2.63	2.93	2.93	3.48	2.92	3.67	3.23	1.97	3.64	4.77
TN PERSONAL INCOME (2012\$) SAAR.....	37378	37144	36538	37243	38341	39292	38895	39654	41305	41968	42422	43370
Percentage change.....	0.71	-0.62	-1.63	1.93	2.95	2.48	-1.01	1.95	4.16	1.60	1.08	2.24
US PERSONAL INCOME (2012\$) SAAR.....	43451	43323	41668	42295	43483	44541	44182	45700	47470	47860	48926	50278
Percentage change.....	1.89	-0.29	-3.82	1.50	2.81	2.43	-0.81	3.44	3.87	0.82	2.23	2.76
TN PERSONAL INCOME (\$) SAAR.....	34177	34982	34379	35645	37625	39293	39418	40776	42564	43685	44938	46904
Percentage change.....	3.27	2.35	-1.72	3.68	5.56	4.43	0.32	3.45	4.38	2.63	2.87	4.37
US PERSONAL INCOME (\$) SAAR.....	39731	40801	39206	40480	42671	44543	44778	46995	48917	49819	51829	54374
Percentage change.....	4.47	2.69	-3.91	3.25	5.41	4.39	0.53	4.95	4.09	1.85	4.03	4.91
TN TAXABLE SALES (2012\$).....	17092	15917	14583	14529	14913	15187	15378	15819	16697	17258	17623	18270
Percentage change.....	-0.49	-6.87	-8.38	-0.37	2.64	1.84	1.26	2.87	5.55	3.36	2.11	3.67
TN TAXABLE SALES (\$).....	15627	14990	13721	13905	14635	15187	15585	16267	17207	17964	18669	19759
Percentage change.....	2.02	-4.08	-8.47	1.35	5.25	3.77	2.63	4.37	5.78	4.40	3.93	5.84

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Table 3: Tennessee Personal Income Components (millions of 2012 dollars)

January 2020

	Historical Data											
	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
TN PERSONAL INCOME.....	229616	231050	229605	236748	245296	253604	252614	259525	272415	279135	284673	293594
Percentage change.....	2.23	0.62	-0.63	3.11	3.61	3.39	-0.39	2.74	4.97	2.47	1.98	3.13
WAGES AND SALARIES.....	122468	120711	114735	116143	117548	121829	122384	126285	133395	137075	140657	144842
Percentage change.....	2.07	-1.43	-4.95	1.23	1.21	3.64	0.46	3.19	5.63	2.76	2.61	2.97
OTHER LABOR INCOME.....	27730	27921	26870	26332	26847	28776	29120	28636	29251	30934	30135	30853
Percentage change.....	2.52	0.69	-3.76	-2.00	1.96	7.19	1.20	-1.66	2.15	5.75	-2.58	2.38
PROPRIETORS INCOME.....	25414	23456	27505	29476	32506	33252	34629	36529	38034	38756	39751	40120
Percentage change.....	-9.46	-7.70	17.26	7.16	10.28	2.30	4.14	5.49	4.12	1.90	2.57	0.93
RENT, INTEREST, DIVIDENDS.....	33198	34118	31363	31698	33797	36130	34578	36708	38793	39749	41779	44250
Percentage change.....	6.96	2.77	-8.08	1.07	6.62	6.90	-4.29	6.16	5.68	2.46	5.11	5.91
TRANSFER PAYMENTS.....	41598	45409	48907	52671	52369	51888	52717	52563	55227	55880	56324	57998
Percentage change.....	7.22	9.16	7.70	7.70	-0.57	-0.92	1.60	-0.29	5.07	1.18	0.80	2.97
LESS: PERS CONT FOR SOC INS....	19170	19098	18746	18791	16996	17199	19590	20033	21005	21576	22355	22772
Percentage change.....	2.07	-0.37	-1.84	0.24	-9.55	1.20	13.90	2.26	4.85	2.72	3.61	1.86
RESIDENCE ADJUSTMENT.....	-1621	-1469	-1029	-780	-774	-1073	-1225	-1164	-1280	-1683	-1618	-1696
Percentage change.....	4.57	-9.36	-29.93	-24.18	-0.83	38.61	14.19	-4.94	9.89	31.53	-3.87	4.85
PER CAPITA PERSONAL INCOME (\$)...	37378	37144	36538	37243	38341	39292	38895	39654	41305	41968	42422	43370
Percentage change.....	0.71	-0.62	-1.63	1.93	2.95	2.48	-1.01	1.95	4.16	1.60	1.08	2.24

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**Table 4: Tennessee Personal Income Components (millions of current dollars)**

**January 2020**

	Historical Data											
	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
TN PERSONAL INCOME.....	209964	217599	216042	226587	240718	253613	256016	266873	280719	290560	301560	317515
Percentage change.....	4.82	3.64	-0.72	4.88	6.24	5.36	0.95	4.24	5.19	3.51	3.79	5.29
WAGES AND SALARIES.....	111984	113679	107955	111157	115351	121833	124032	129860	137462	142689	149002	156641
Percentage change.....	4.65	1.51	-5.04	2.97	3.77	5.62	1.80	4.70	5.85	3.80	4.42	5.13
OTHER LABOR INCOME.....	25358	26295	25281	25200	26347	28778	29512	29446	30143	32201	31921	33367
Percentage change.....	5.13	3.70	-3.86	-0.32	4.55	9.23	2.55	-0.22	2.37	6.83	-0.87	4.53
PROPRIETORS INCOME.....	23233	22089	25887	28210	31903	33253	35095	37564	39193	40341	42108	43389
Percentage change.....	-7.19	-4.92	17.20	8.97	13.09	4.23	5.54	7.03	4.34	2.93	4.38	3.04
RENT, INTEREST, DIVIDENDS.....	30359	32133	29506	30338	33168	36133	35045	37749	39976	41376	44259	47856
Percentage change.....	9.68	5.84	-8.17	2.82	9.33	8.94	-3.01	7.72	5.90	3.50	6.97	8.13
TRANSFER PAYMENTS.....	38040	42772	46020	50411	51386	51889	53428	54052	56909	58165	59665	62723
Percentage change.....	9.95	12.44	7.59	9.54	1.94	0.98	2.97	1.17	5.29	2.21	2.58	5.13
LESS: PERS CONT FOR SOC INS....	17529	17986	17639	17983	16678	17199	19853	20600	21645	22460	23682	24626
Percentage change.....	4.66	2.61	-1.93	1.95	-7.26	3.13	15.43	3.76	5.08	3.76	5.44	3.99
RESIDENCE ADJUSTMENT.....	-1482	-1383	-968	-747	-760	-1073	-1241	-1197	-1319	-1752	-1714	-1835
Percentage change.....	7.23	-6.67	-30.01	-22.86	1.70	41.25	15.71	-3.55	10.13	32.86	-2.18	7.05
PER CAPITA PERSONAL INCOME (\$)....	34177	34982	34379	35645	37625	39293	39418	40776	42564	43685	44938	46904
Percentage change.....	3.27	2.35	-1.72	3.68	5.56	4.43	0.32	3.45	4.38	2.63	2.87	4.37

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Table 5: Tennessee Nonfarm Employment by Sector (thousands of jobs)

January 2020

	Historical Data											
	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
TOTAL NONFARM.....	2797.5	2774.9	2619.5	2614.9	2661.5	2715.0	2760.0	2821.5	2892.9	2965.1	3011.5	3062.2
Percentage change.....	0.53	-0.81	-5.60	-0.17	1.78	2.01	1.66	2.23	2.53	2.49	1.57	1.68
NATURAL RESOURCES, MINING, CONSTRUCTION.....	137.8	132.5	110.0	105.1	108.7	109.0	108.0	111.0	117.2	119.2	124.4	129.3
Percentage change.....	2.54	-3.88	-16.98	-4.46	3.41	0.29	-0.92	2.78	5.62	1.66	4.36	3.93
MANUFACTURING.....	377.6	358.6	307.0	296.9	302.4	311.2	316.2	322.8	330.8	341.7	346.3	350.7
Percentage change.....	-4.86	-5.02	-14.41	-3.28	1.85	2.92	1.60	2.07	2.49	3.29	1.34	1.29
DURABLE GOODS.....	237.4	221.1	182.1	176.6	184.0	194.2	199.2	205.5	211.2	219.5	222.1	224.3
Percentage change.....	-5.82	-6.84	-17.66	-3.00	4.18	5.54	2.56	3.16	2.77	3.97	1.14	1.00
NONDURABLE GOODS.....	140.2	137.5	124.9	120.3	118.4	117.0	117.0	117.3	119.6	122.1	124.2	126.5
Percentage change.....	-3.19	-1.94	-9.18	-3.69	-1.56	-1.15	0.00	0.21	2.01	2.10	1.70	1.80
TRADE, TRANSPORTATION, UTILITIES.....	609.3	598.6	557.8	553.2	561.6	573.1	579.1	587.7	600.0	615.2	619.7	627.6
Percentage change.....	0.52	-1.77	-6.80	-0.84	1.52	2.05	1.05	1.49	2.09	2.54	0.73	1.27
WHOLESALE TRADE.....	131.3	129.6	118.8	114.5	115.6	118.3	118.5	118.0	117.4	116.8	118.1	119.6
Percentage change.....	0.72	-1.33	-8.33	-3.61	0.98	2.36	0.13	-0.45	-0.47	-0.53	1.17	1.26
RETAIL TRADE.....	330.7	325.6	307.1	307.0	309.3	312.9	315.1	320.9	325.6	334.0	336.1	337.9
Percentage change.....	0.69	-1.56	-5.66	-0.06	0.77	1.17	0.70	1.84	1.45	2.59	0.61	0.55
TRANSPORTATION & UTILITIES.....	147.3	143.4	131.9	131.7	136.7	141.8	145.5	148.8	157.0	164.4	165.6	170.1
Percentage change.....	-0.03	-2.61	-8.02	-0.15	3.73	3.77	2.58	2.31	5.48	4.75	0.67	2.76
INFORMATION.....	50.4	51.0	47.3	45.3	44.0	43.4	44.3	44.0	44.6	45.5	46.1	45.6
Percentage change.....	1.38	1.19	-7.11	-4.31	-2.89	-1.27	2.05	-0.66	1.31	2.09	1.17	-1.12
FINANCIAL ACTIVITIES.....	144.8	145.0	140.6	137.1	136.5	137.1	138.9	144.1	148.0	153.1	158.7	162.7
Percentage change.....	0.91	0.13	-3.08	-2.45	-0.44	0.44	1.29	3.79	2.69	3.41	3.67	2.51
PROFESSIONAL & BUSINESS SERVICES.....	326.5	325.0	297.4	308.1	326.9	342.7	358.3	379.7	397.1	408.0	411.6	417.6
Percentage change.....	1.04	-0.48	-8.48	3.58	6.11	4.83	4.55	5.97	4.59	2.77	0.86	1.47
EDUCATION & HEALTH SERVICES.....	352.2	361.1	367.8	375.6	386.2	395.6	401.1	405.7	414.4	424.0	431.0	435.4
Percentage change.....	2.69	2.52	1.86	2.12	2.81	2.45	1.38	1.16	2.15	2.30	1.66	1.03
LEISURE & HOSPITALITY.....	276.2	273.7	263.5	262.0	267.6	276.7	285.8	296.4	307.9	319.5	328.9	339.2
Percentage change.....	2.22	-0.88	-3.73	-0.58	2.15	3.40	3.29	3.68	3.90	3.76	2.96	3.12
OTHER SERVICES.....	104.0	104.5	102.0	101.2	102.1	104.3	105.6	106.1	108.0	111.0	114.6	118.3
Percentage change.....	2.33	0.42	-2.36	-0.82	0.86	2.17	1.25	0.48	1.78	2.79	3.26	3.27
GOVERNMENT.....	418.6	425.0	426.0	430.6	425.6	421.9	422.8	424.1	424.9	427.9	430.3	435.8
Percentage change.....	1.06	1.52	0.24	1.07	-1.15	-0.88	0.21	0.32	0.18	0.71	0.56	1.28
FEDERAL, CIVILIAN.....	48.8	49.4	50.1	52.4	50.5	50.1	49.5	48.4	49.1	49.2	49.1	49.0
Percentage change.....	-0.15	1.25	1.47	4.49	-3.45	-0.79	-1.35	-2.16	1.46	0.24	-0.30	-0.08
STATE & LOCAL.....	369.9	375.6	375.9	378.2	375.1	371.7	373.3	375.7	375.8	378.7	381.2	386.8
Percentage change.....	1.22	1.55	0.08	0.61	-0.83	-0.89	0.42	0.65	0.02	0.77	0.67	1.45

**Table 6: Tennessee Durable Goods Manufacturing Employment (thousands of jobs)**

**January 2020**

	Historical Data											
	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
TOTAL DURABLE GOODS.....	237.4	221.1	182.1	176.6	184.0	194.2	199.2	205.5	211.2	219.5	222.1	224.3
Percentage change.....	-5.82	-6.84	-17.66	-3.00	4.18	5.54	2.56	3.16	2.77	3.97	1.14	1.00
WOOD PRODUCTS.....	16.1	14.3	11.3	10.9	10.8	11.0	10.9	11.2	11.6	12.1	12.5	12.6
Percentage change.....	-10.14	-11.24	-20.84	-3.55	-1.07	2.25	-1.59	3.36	3.18	4.81	3.29	0.13
NONMETALLIC MINERALS.....	15.5	14.2	11.6	11.3	11.8	12.5	12.1	12.0	12.7	13.3	13.6	14.1
Percentage change.....	-3.52	-8.38	-18.89	-2.05	4.21	5.81	-2.66	-1.11	5.41	5.20	2.31	3.36
PRIMARY METALS.....	11.8	11.2	9.2	8.9	9.3	9.8	10.1	10.2	10.5	10.7	10.7	11.0
Percentage change.....	-0.84	-4.93	-18.60	-2.64	4.69	4.92	3.16	0.99	2.70	1.74	0.78	2.79
FABRICATED METALS.....	41.7	39.9	33.8	33.1	33.7	34.6	34.0	34.6	35.3	35.7	35.5	36.6
Percentage change.....	-4.44	-4.28	-15.46	-1.87	1.83	2.63	-1.64	1.54	2.05	1.27	-0.50	2.91
MACHINERY.....	32.0	31.2	26.0	24.8	25.1	25.5	25.4	25.4	25.3	25.5	25.3	25.5
Percentage change.....	-3.69	-2.50	-16.63	-4.79	1.46	1.65	-0.71	0.31	-0.62	0.77	-0.77	0.73
COMPUTERS & ELECTRONICS.....	8.1	7.4	6.2	5.6	5.6	5.6	5.2	5.1	5.0	4.8	4.9	5.1
Percentage change.....	-12.55	-8.26	-16.07	-10.58	0.44	0.73	-7.38	-3.02	-2.14	-3.19	1.91	4.77
ELECTRICAL EQUIPMENT, APPLIANCES & COMPONENTS.....	22.1	20.6	17.8	16.9	17.7	17.9	18.6	19.4	19.8	19.9	19.3	18.9
Percentage change.....	-4.67	-6.94	-13.43	-4.85	4.45	1.46	3.75	4.12	2.02	0.50	-3.07	-1.77
TRANSPORTATION EQUIPMENT.....	58.6	52.5	40.4	40.5	45.8	53.6	59.5	63.8	66.8	72.5	74.5	74.1
Percentage change.....	-7.99	-10.46	-22.96	0.03	13.21	17.04	11.03	7.14	4.70	8.64	2.68	-0.56
FURNITURE.....	16.0	14.2	10.8	9.7	8.9	8.7	8.8	9.0	9.1	9.4	9.5	9.5
Percentage change.....	-9.72	-11.08	-24.26	-10.21	-7.73	-2.92	1.06	2.73	0.57	3.94	0.89	0.52
MISCELLANEOUS DURABLES.....	15.4	15.5	15.0	15.0	15.2	14.9	14.5	14.8	15.3	15.6	16.2	16.9
Percentage change.....	0.18	0.98	-2.99	-0.62	1.78	-2.19	-2.25	1.77	3.61	1.74	3.68	4.27

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Table 7: Tennessee Nondurable Goods Manufacturing Employment (thousands of jobs)

January 2020

	Historical Data											
	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
TOTAL NONDURABLE GOODS.....	140.2	137.5	124.9	120.3	118.4	117.0	117.0	117.3	119.6	122.1	124.2	126.5
Percentage change.....	-3.19	-1.94	-9.18	-3.69	-1.56	-1.15	0.00	0.21	2.01	2.10	1.70	1.80
FOOD.....	32.8	32.6	32.4	32.7	33.2	33.1	32.5	32.8	33.4	34.4	35.4	35.8
Percentage change.....	-3.83	-0.62	-0.56	0.83	1.54	-0.21	-1.85	0.95	1.75	3.00	3.05	1.02
BEVERAGE & TOBACCO.....	5.1	5.1	5.1	5.0	5.0	5.2	5.3	5.5	5.9	6.6	6.9	7.3
Percentage change.....	-2.56	0.14	0.16	-1.64	0.16	3.51	2.58	3.46	7.72	10.86	5.59	6.14
PAPER.....	14.7	14.5	13.6	13.3	12.9	12.2	12.1	12.0	12.0	11.9	11.9	12.0
Percentage change.....	-4.86	-1.27	-6.47	-2.33	-2.98	-4.93	-1.09	-0.92	0.20	-0.64	-0.35	0.77
PRINTING & RELATED SUPPORT.....	17.0	15.7	13.3	11.4	10.0	9.6	9.6	9.5	9.2	9.2	9.0	9.0
Percentage change.....	-4.51	-7.53	-15.27	-13.96	-12.93	-3.44	0.09	-1.22	-2.99	-0.28	-2.27	-0.10
CHEMICALS.....	27.0	27.6	25.9	25.0	24.6	24.4	24.8	25.3	25.6	25.3	25.0	25.6
Percentage change.....	2.33	2.19	-6.18	-3.31	-1.63	-0.78	1.64	1.91	1.12	-1.17	-1.09	2.16
PLASTICS & RUBBER.....	26.6	25.4	20.4	19.9	20.5	20.0	20.2	20.8	21.9	23.2	24.4	24.8
Percentage change.....	-3.64	-4.40	-19.81	-2.49	2.89	-2.45	1.03	2.93	5.66	5.58	5.14	1.71
MISCELLANEOUS NONDURABLE GOODS.....	17.1	16.6	14.2	13.0	12.3	12.5	12.5	11.4	11.6	11.6	11.6	12.0
Percentage change.....	-6.73	-2.87	-14.28	-8.83	-5.28	1.69	0.01	-8.64	1.39	0.36	0.00	3.57

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**Table 8: Tennessee Average Annual Wage and Salary Rate by Sector (2012 dollars)**

**January 2020**

	Historical Data											
	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
TOTAL NONFARM.....	43409	43123	43380	44008	43814	44533	44016	44444	45822	45936	46425	47014
Percentage change.....	1.51	-0.66	0.60	1.45	-0.44	1.64	-1.16	0.97	3.10	0.25	1.06	1.27
NATURAL RESOURCES, MINING, CONSTRUCTION.....	48160	48003	47214	48096	47992	48601	48297	49777	52552	53422	54605	53921
Percentage change.....	2.92	-0.33	-1.64	1.87	-0.22	1.27	-0.62	3.06	5.57	1.66	2.22	-1.25
MANUFACTURING.....	51294	51504	52375	54754	54206	55207	54395	55135	55902	56123	56529	55120
Percentage change.....	1.30	0.41	1.69	4.54	-1.00	1.85	-1.47	1.36	1.39	0.39	0.72	-2.49
DURABLE GOODS.....	49926	50276	51198	53360	52620	54314	52438	53527	54373	54891	55339	55492
Percentage change.....	1.01	0.70	1.83	4.22	-1.39	3.22	-3.45	2.08	1.58	0.95	0.82	0.28
NONDURABLE GOODS.....	53600	53483	54078	56811	56666	56693	57724	57949	58600	58338	58658	54462
Percentage change.....	1.62	-0.22	1.11	5.05	-0.26	0.05	1.82	0.39	1.12	-0.45	0.55	-7.15
TRADE, TRANSPORTATION, UTILITIES.....	41436	40515	40255	40715	40927	41232	40745	41342	42532	42773	43030	43377
Percentage change.....	1.56	-2.22	-0.64	1.14	0.52	0.74	-1.18	1.47	2.88	0.57	0.60	0.80
WHOLESALE TRADE.....	61479	60891	60422	61627	62033	63524	62980	65516	67610	69433	68949	67941
Percentage change.....	1.65	-0.96	-0.77	1.99	0.66	2.40	-0.86	4.03	3.20	2.70	-0.70	-1.46
RETAIL TRADE.....	28897	27944	28023	28453	28512	28325	27686	28008	28859	28976	29212	29474
Percentage change.....	2.07	-3.30	0.28	1.54	0.21	-0.65	-2.26	1.16	3.04	0.41	0.81	0.90
TRANSPORTATION & UTILITIES.....	51719	50643	50580	51115	51183	51112	50926	50944	52132	51869	52584	53716
Percentage change.....	0.97	-2.08	-0.12	1.06	0.13	-0.14	-0.36	0.04	2.33	-0.51	1.38	2.15
INFORMATION.....	55481	53858	54218	55275	57166	58162	57054	59124	59502	61055	63801	67386
Percentage change.....	-0.80	-2.93	0.67	1.95	3.42	1.74	-1.90	3.63	0.64	2.61	4.50	5.62
FINANCIAL ACTIVITIES.....	62599	60966	60957	64062	63917	67179	65016	65825	66898	67320	66957	70266
Percentage change.....	2.46	-2.61	-0.01	5.09	-0.23	5.10	-3.22	1.24	1.63	0.63	-0.54	4.94
PROFESSIONAL & BUSINESS SERVICES.....	45862	46866	48543	49136	48275	50938	50610	49521	52306	52168	52774	55615
Percentage change.....	4.24	2.19	3.58	1.22	-1.75	5.52	-0.64	-2.15	5.62	-0.26	1.16	5.38
EDUCATION & HEALTH SERVICES.....	45111	45022	46136	46015	45277	45234	44935	45139	47078	46758	47188	47253
Percentage change.....	1.04	-0.20	2.47	-0.26	-1.60	-0.10	-0.66	0.45	4.30	-0.68	0.92	0.14
LEISURE & HOSPITALITY.....	21458	20936	20891	21300	21171	21436	21029	21680	22799	22944	23629	24218
Percentage change.....	1.71	-2.43	-0.22	1.96	-0.60	1.25	-1.90	3.10	5.16	0.63	2.98	2.49
OTHER SERVICES.....	38852	38793	39272	39170	39281	39678	39374	40886	41839	41594	41570	41733
Percentage change.....	-1.78	-0.15	1.23	-0.26	0.28	1.01	-0.77	3.84	2.33	-0.59	-0.06	0.39
GOVERNMENT.....	41780	41717	41944	41810	41923	41817	41623	42001	42396	42546	43270	43569
Percentage change.....	1.31	-0.15	0.54	-0.32	0.27	-0.25	-0.46	0.91	0.94	0.36	1.70	0.69
FEDERAL, CIVILIAN.....	69959	68175	69160	70852	73073	72052	70861	76443	75468	74832	74880	76144
Percentage change.....	1.90	-2.55	1.44	2.45	3.13	-1.40	-1.65	7.88	-1.28	-0.84	0.06	1.69
STATE & LOCAL.....	38064	38239	38317	37808	37726	37738	37749	37564	38074	38350	39201	39439
Percentage change.....	1.30	0.46	0.20	-1.33	-0.22	0.03	0.03	-0.49	1.36	0.72	2.22	0.61

Table 9: Tennessee Average Annual Wage and Salary Rate by Sector (current dollars)

January 2020

	Historical Data											
	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
TOTAL NONFARM.....	39693	40611	40819	42119	42993	44534	44608	45701	47218	47816	49179	50843
Percentage change.....	4.09	2.31	0.51	3.18	2.08	3.58	0.17	2.45	3.32	1.27	2.85	3.38
NATURAL RESOURCES, MINING, CONSTRUCTION.....	44040	45207	44421	46027	47090	48600	48948	51186	54154	55611	57847	58310
Percentage change.....	5.54	2.65	-1.74	3.62	2.31	3.21	0.72	4.57	5.80	2.69	4.02	0.80
MANUFACTURING.....	46903	48505	49294	52404	53189	55206	55126	56694	57605	58420	59882	59608
Percentage change.....	3.87	3.42	1.63	6.31	1.50	3.79	-0.14	2.84	1.61	1.41	2.50	-0.46
DURABLE GOODS.....	45650	47352	48185	51067	51633	54312	53143	55043	56031	57137	58621	60009
Percentage change.....	3.57	3.73	1.76	5.98	1.11	5.19	-2.15	3.57	1.80	1.97	2.60	2.37
NONDURABLE GOODS.....	49015	50363	50898	54375	55601	56694	58501	59585	60383	60728	62136	58895
Percentage change.....	4.20	2.75	1.06	6.83	2.25	1.97	3.19	1.85	1.34	0.57	2.32	-5.22
TRADE, TRANSPORTATION, UTILITIES.....	37886	38155	37878	38967	40162	41232	41293	42512	43828	44524	45582	46909
Percentage change.....	4.13	0.71	-0.73	2.87	3.07	2.67	0.15	2.95	3.10	1.59	2.38	2.91
WHOLESALE TRADE.....	56214	57345	56853	58981	60871	63530	63827	67371	69671	72279	73037	73470
Percentage change.....	4.22	2.01	-0.86	3.74	3.20	4.37	0.47	5.55	3.41	3.74	1.05	0.59
RETAIL TRADE.....	26422	26316	26369	27231	27980	28324	28058	28800	29739	30161	30944	31874
Percentage change.....	4.66	-0.40	0.20	3.27	2.75	1.23	-0.94	2.65	3.26	1.42	2.59	3.00
TRANSPORTATION & UTILITIES.....	47289	47690	47595	48920	50222	51112	51612	52386	53721	53991	55702	58091
Percentage change.....	3.52	0.85	-0.20	2.78	2.66	1.77	0.98	1.50	2.55	0.50	3.17	4.29
INFORMATION.....	50726	50720	51021	52900	56102	58167	57822	60796	61312	63558	67584	72863
Percentage change.....	1.70	-0.01	0.59	3.68	6.05	3.68	-0.59	5.14	0.85	3.66	6.33	7.81
FINANCIAL ACTIVITIES.....	57238	57416	57359	61318	62720	67182	65888	67685	68936	70072	70932	75995
Percentage change.....	5.05	0.31	-0.10	6.90	2.29	7.11	-1.93	2.73	1.85	1.65	1.23	7.14
PROFESSIONAL & BUSINESS SERVICES.....	41939	44134	45677	47025	47369	50942	51290	50922	53898	54302	55903	60144
Percentage change.....	6.89	5.23	3.50	2.95	0.73	7.54	0.68	-0.72	5.84	0.75	2.95	7.59
EDUCATION & HEALTH SERVICES.....	41249	42401	43412	44039	44430	45234	45539	46416	48513	48671	49985	51102
Percentage change.....	3.61	2.79	2.38	1.44	0.89	1.81	0.67	1.92	4.52	0.33	2.70	2.23
LEISURE & HOSPITALITY.....	19622	19717	19657	20385	20775	21436	21312	22294	23495	23883	25030	26191
Percentage change.....	4.29	0.48	-0.31	3.71	1.91	3.18	-0.58	4.61	5.38	1.65	4.80	4.64
OTHER SERVICES.....	35524	36533	36955	37487	38543	39678	39905	42043	43113	43294	44035	45133
Percentage change.....	0.71	2.84	1.16	1.44	2.82	2.94	0.57	5.36	2.55	0.42	1.71	2.49
GOVERNMENT.....	38202	39287	39464	40014	41139	41817	42183	43189	43687	44288	45838	47118
Percentage change.....	3.88	2.84	0.45	1.39	2.81	1.65	0.87	2.39	1.15	1.38	3.50	2.79
FEDERAL, CIVILIAN.....	63967	64202	65078	67815	71702	72050	71817	78606	77765	77892	79321	82347
Percentage change.....	4.49	0.37	1.36	4.21	5.73	0.49	-0.32	9.45	-1.07	0.16	1.84	3.81
STATE & LOCAL.....	34805	36012	36051	36183	37020	37739	38256	38627	39233	39920	41527	42652
Percentage change.....	3.87	3.47	0.11	0.37	2.31	1.94	1.37	0.97	1.57	1.75	4.03	2.71

**Table 10: Tennessee Civilian Labor Force and Unemployment Rate**

**January 2020**

	Historical Data											
	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
CIVILIAN LABOR FORCE (THOUS).....	3064	3056	3054	3090	3125	3102	3068	3025	3062	3129	3190	3244
Percentage change.....	0.93	-0.27	-0.07	1.18	1.12	-0.73	-1.10	-1.40	1.21	2.21	1.95	1.69
EMPLOYED PERSONS (THOUS).....	2921	2853	2735	2792	2844	2859	2830	2825	2890	2981	3070	3130
Percentage change.....	1.52	-2.33	-4.15	2.09	1.87	0.51	-1.00	-0.17	2.29	3.16	2.98	1.96
UNEMPLOYED PERSONS (THOUS).....	143	203	319	298	280	243	238	200	171	148	120	114
Percentage change.....	-9.73	41.84	57.41	-6.63	-5.95	-13.32	-2.21	-15.99	-14.10	-13.82	-18.88	-5.23
PARTICIPATION RATE (PERCENT).....	64.4	63.4	62.7	61.4	61.5	60.5	59.4	58.0	58.2	58.9	59.3	59.7
Percentage change.....	-0.50	-1.54	-1.03	-2.13	0.25	-1.72	-1.86	-2.27	0.28	1.17	0.79	0.60
UNEMPLOYMENT RATE (PERCENT).....	4.7	6.6	10.5	9.6	9.0	7.8	7.7	6.6	5.6	4.7	3.8	3.5

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Table 11: Tennessee Taxable Sales (millions of 2012 dollars)

January 2020

	Historical Data											
	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
TOTAL TAXABLE SALES.....	104992	99002	91636	92358	95409	98021	99880	103534	110126	114785	118264	123681
Percentage change.....	1.00	-5.70	-7.44	0.79	3.30	2.74	1.90	3.66	6.37	4.23	3.03	4.58
AUTO DEALERS.....	10394	8431	7145	8014	8589	9275	9696	10267	11442	12117	12153	12335
Percentage change.....	-1.27	-18.89	-15.25	12.16	7.17	7.99	4.54	5.89	11.44	5.90	0.29	1.50
PURCHASES FROM MANUFACTURERS....	5186	4775	3713	3819	4085	4041	4115	4337	4732	5000	5172	5489
Percentage change.....	-1.14	-7.94	-22.24	2.87	6.96	-1.07	1.81	5.41	9.11	5.67	3.44	6.12
MISC DURABLE GOODS.....	19077	17359	14610	15144	15878	16374	16582	17061	18066	19345	20163	20941
Percentage change.....	-1.14	-9.00	-15.84	3.65	4.85	3.12	1.27	2.89	5.89	7.08	4.23	3.86
EATING AND DRINKING PLACES.....	9711	9529	9395	9463	9687	10198	10436	10888	11676	12117	12199	12665
Percentage change.....	2.31	-1.88	-1.40	0.72	2.37	5.27	2.33	4.33	7.24	3.78	0.67	3.82
FOOD STORES.....	9548	9129	9376	9283	9391	9690	10113	10401	10773	11058	11436	11826
Percentage change.....	1.14	-4.39	2.70	-0.99	1.16	3.18	4.37	2.85	3.58	2.64	3.42	3.41
LIQUOR STORES.....	650	675	698	715	742	793	825	869	942	936	857	900
Percentage change.....	5.83	3.94	3.40	2.42	3.68	6.91	4.07	5.32	8.43	-0.62	-8.44	4.93
HOTELS AND MOTELS.....	2575	2457	2167	2160	2377	2488	2505	2801	3126	3459	3408	3555
Percentage change.....	3.52	-4.61	-11.81	-0.31	10.04	4.69	0.68	11.82	11.62	10.64	-1.47	4.30
OTHER RETAIL AND SERVICE.....	30956	29983	28488	28540	29302	30179	30720	31979	33882	35096	35906	38180
Percentage change.....	1.74	-3.15	-4.99	0.18	2.67	2.99	1.79	4.10	5.95	3.58	2.31	6.33
MISC NONDURABLE GOODS.....	8485	8266	7826	7988	8139	8423	8578	8799	9188	9518	9325	9632
Percentage change.....	3.76	-2.58	-5.31	2.07	1.88	3.49	1.84	2.58	4.42	3.59	-2.02	3.29
TRANSPORTATION, COMMUNICATION.....	8409	8399	8217	7231	7220	6560	6311	6133	6300	6140	7643	8158
Percentage change.....	1.97	-0.12	-2.17	-11.99	-0.15	-9.14	-3.80	-2.82	2.72	-2.55	24.48	6.74
PER CAPITA (\$)...	17092	15917	14583	14529	14913	15187	15378	15819	16697	17258	17623	18270
Percentage change.....	-0.49	-6.87	-8.38	-0.37	2.64	1.84	1.26	2.87	5.55	3.36	2.11	3.67

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**Table 12: Tennessee Taxable Sales (millions of current dollars)**

**January 2020**

	Historical Data											
	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
TOTAL TAXABLE SALES.....	95995	93235	86220	88393	93633	98018	101225	106467	113489	119482	125288	133758
Percentage change.....	3.55	-2.88	-7.52	2.52	5.93	4.68	3.27	5.18	6.60	5.28	4.86	6.76
AUTO DEALERS.....	9503	7938	6725	7671	8429	9275	9827	10558	11791	12614	12874	13340
Percentage change.....	1.21	-16.47	-15.28	14.07	9.89	10.03	5.95	7.44	11.68	6.97	2.06	3.62
PURCHASES FROM MANUFACTURERS....	4741	4496	3493	3656	4009	4042	4170	4460	4877	5206	5479	5936
Percentage change.....	1.35	-5.17	-22.31	4.65	9.66	0.82	3.18	6.95	9.34	6.74	5.26	8.34
MISC DURABLE GOODS.....	17441	16347	13747	14494	15583	16372	16805	17545	18618	20136	21361	22648
Percentage change.....	1.35	-6.27	-15.91	5.43	7.51	5.07	2.64	4.40	6.12	8.15	6.08	6.02
EATING AND DRINKING PLACES.....	8880	8973	8840	9057	9507	10198	10576	11196	12032	12613	12922	13698
Percentage change.....	4.91	1.06	-1.48	2.45	4.98	7.26	3.71	5.86	7.46	4.83	2.45	6.00
FOOD STORES.....	8731	8600	8821	8884	9216	9690	10249	10695	11101	11511	12116	12789
Percentage change.....	3.70	-1.49	2.57	0.72	3.73	5.14	5.77	4.35	3.79	3.69	5.26	5.55
LIQUOR STORES.....	594	636	657	685	728	793	836	894	971	974	908	973
Percentage change.....	8.51	7.05	3.31	4.18	6.32	8.93	5.48	6.86	8.66	0.35	-6.79	7.14
HOTELS AND MOTELS.....	2355	2313	2039	2067	2333	2488	2539	2881	3222	3601	3610	3845
Percentage change.....	6.15	-1.78	-11.87	1.40	12.85	6.66	2.04	13.46	11.86	11.75	0.27	6.50
OTHER RETAIL AND SERVICE.....	28304	28237	26805	27315	28756	30178	31134	32885	34917	36531	38039	41290
Percentage change.....	4.31	-0.24	-5.07	1.90	5.27	4.95	3.17	5.62	6.18	4.62	4.13	8.55
MISC NONDURABLE GOODS.....	7758	7784	7364	7645	7987	8423	8693	9048	9468	9907	9879	10417
Percentage change.....	6.38	0.33	-5.40	3.81	4.47	5.46	3.21	4.08	4.65	4.63	-0.28	5.45
TRANSPORTATION, COMMUNICATION.....	7689	7910	7729	6921	7085	6560	6396	6306	6492	6390	8099	8822
Percentage change.....	4.57	2.87	-2.29	-10.45	2.37	-7.41	-2.50	-1.40	2.94	-1.56	26.74	8.93
PER CAPITA (\$)......	15627	14990	13721	13905	14635	15187	15585	16267	17207	17964	18669	19759
Percentage change.....	2.02	-4.08	-8.47	1.35	5.25	3.77	2.63	4.37	5.78	4.40	3.93	5.84

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Table 13: Tennessee Gross Domestic Product by Sector (millions of 2012 dollars)

January 2020

	Historical Data											
	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
GROSS DOMESTIC PRODUCT.....	275,896	271,889	274,626	265,512	268,447	276,554	285,078	288,890	293,677	304,038	310,029	315,672
Percentage change.....	2.72	-1.45	1.01	-3.32	1.11	3.02	3.08	1.34	1.66	3.53	1.97	1.82
AGRICULTURE, FORESTRY, FISHING AND HUNTING.....	3,201	2,209	2,489	2,351	1,619	1,758	1,357	2,042	1,718	1,979	1,816	1,678
Percentage change.....	23.53	-31.00	12.69	-5.55	-31.12	8.55	-22.83	50.55	-15.87	15.20	-8.27	-7.59
NATURAL RESOURCES AND MINING.....	4,732	3,815	3,773	3,428	2,722	2,618	2,117	2,788	2,496	2,752	2,687	2,559
Percentage change.....	16.53	-19.38	-1.11	-9.14	-20.60	-3.83	-19.15	31.74	-10.47	10.25	-2.38	-4.77
CONSTRUCTION.....	11,841	11,420	10,452	9,144	8,654	8,895	9,610	9,369	9,396	9,828	10,355	10,902
Percentage change.....	-2.25	-3.55	-8.48	-12.52	-5.36	2.79	8.04	-2.51	0.29	4.60	5.36	5.29
MANUFACTURING.....	46,816	45,070	44,303	39,419	39,607	41,262	43,517	45,478	45,594	46,596	46,991	48,445
Percentage change.....	3.58	-3.73	-1.70	-11.02	0.48	4.18	5.46	4.51	0.26	2.20	0.85	3.09
DURABLE GOODS.....	26,474	23,804	24,815	20,468	19,918	22,226	24,087	24,858	25,329	26,533	27,077	28,088
Percentage change.....	3.97	-10.09	4.25	-17.52	-2.69	11.59	8.37	3.20	1.89	4.75	2.05	3.74
NONDURABLE GOODS.....	20,342	21,266	19,488	18,950	19,690	19,036	19,430	20,619	20,266	20,063	19,914	20,357
Percentage change.....	3.07	4.54	-8.36	-2.76	3.90	-3.32	2.07	6.12	-1.72	-1.00	-0.74	2.22
TRADE.....	57,317	56,731	55,755	50,550	52,856	53,612	55,044	55,347	56,234	57,888	59,806	60,702
Percentage change.....	2.11	-1.02	-1.72	-9.34	4.56	1.43	2.67	0.55	1.60	2.94	3.31	1.50
WHOLESALE TRADE.....	20,229	20,788	21,033	18,219	19,257	19,595	20,740	21,038	21,823	22,485	22,751	22,746
Percentage change.....	2.37	2.76	1.18	-13.38	5.70	1.75	5.84	1.44	3.73	3.03	1.18	-0.02
RETAIL TRADE.....	21,398	20,886	19,892	18,718	19,376	19,629	19,863	19,883	20,082	20,779	21,948	22,725
Percentage change.....	0.99	-2.39	-4.76	-5.90	3.51	1.31	1.19	0.10	1.00	3.47	5.62	3.54
TRANSPORTATION AND UTILITIES.....	15,690	15,058	14,831	13,613	14,224	14,389	14,441	14,426	14,329	14,624	15,107	15,230
Percentage change.....	3.33	-4.03	-1.51	-8.21	4.49	1.16	0.36	-0.11	-0.67	2.06	3.30	0.81
INFORMATION.....	7,919	8,659	8,975	9,558	10,028	10,137	9,644	9,034	8,912	9,923	10,712	11,459
Percentage change.....	12.21	9.34	3.64	6.50	4.92	1.08	-4.86	-6.32	-1.35	11.35	7.95	6.97
FINANCIAL ACTIVITIES.....	37,244	38,852	38,845	40,304	41,833	43,571	44,922	44,485	46,333	47,605	49,168	49,417
Percentage change.....	1.85	4.32	-0.02	3.76	3.79	4.16	3.10	-0.97	4.15	2.75	3.28	0.51
PROFESSIONAL AND BUSINESS SERVICES.....	25,233	25,888	27,567	26,015	27,346	28,303	30,463	31,793	32,784	34,205	34,734	35,933
Percentage change.....	1.32	2.59	6.49	-5.63	5.12	3.50	7.63	4.37	3.12	4.33	1.55	3.45
EDUCATION AND HEALTH SERVICES.....	25,702	25,853	28,197	30,688	31,280	32,432	32,865	33,407	34,054	36,434	36,652	36,019
Percentage change.....	3.28	0.59	9.07	8.83	1.93	3.68	1.34	1.65	1.94	6.99	0.60	-1.73
LEISURE AND HOSPITALITY.....	13,756	14,134	12,839	12,143	12,646	13,141	13,560	13,707	14,661	15,578	15,649	16,435
Percentage change.....	7.10	2.75	-9.17	-5.42	4.15	3.91	3.18	1.09	6.96	6.25	0.46	5.02
OTHER SERVICES.....	8,116	7,792	7,423	7,051	7,021	7,069	7,258	7,079	7,166	7,182	7,241	7,285
Percentage change.....	0.22	-3.99	-4.73	-5.01	-0.43	0.68	2.68	-2.46	1.23	0.21	0.83	0.60
GOVERNMENT.....	34,019	31,466	34,008	34,862	32,835	33,756	34,723	34,361	34,329	34,068	34,218	34,839
Percentage change.....	-0.37	-7.50	8.08	2.51	-5.81	2.80	2.86	-1.04	-0.10	-0.76	0.44	1.82
FEDERAL.....	9,576	9,401	8,854	9,483	9,177	9,065	8,975	9,201	9,897	10,057	10,108	10,249
Percentage change.....	-0.40	-1.82	-5.82	7.10	-3.22	-1.23	-0.99	2.51	7.57	1.62	0.50	1.40
STATE AND LOCAL.....	24,443	22,065	25,154	25,380	23,658	24,691	25,748	25,161	24,432	24,010	24,110	24,590
Percentage change.....	-0.36	-9.73	14.00	0.90	-6.78	4.37	4.28	-2.28	-2.90	-1.72	0.41	1.99

**Table 14: Tennessee Durable Goods Manufacturing Gross Domestic Product (millions of 2012 dollars)**

**January 2020**

	Historical Data											
	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
DURABLE GOODS.....	26,474	23,804	24,815	20,468	19,918	22,226	24,087	24,858	25,329	26,533	27,077	28,088
Percentage change.....	3.97	-10.09	4.25	-17.52	-2.69	11.59	8.37	3.20	1.89	4.75	2.05	3.74
WOOD PRODUCTS.....	741	825	834	629	658	721	729	661	638	731	753	836
Percentage change.....	3.78	11.33	1.07	-24.55	4.46	9.66	1.15	-9.35	-3.57	14.59	3.12	10.93
NONMETALLIC MINERAL PRODUCTS.....	1,274	1,271	1,118	881	984	1,093	1,134	1,062	1,088	1,224	1,292	1,326
Percentage change.....	-10.47	-0.22	-12.06	-21.21	11.72	11.15	3.72	-6.36	2.46	12.53	5.48	2.70
PRIMARY METALS.....	1,424	1,130	1,156	1,003	1,187	1,421	1,646	1,747	1,820	1,978	2,136	1,809
Percentage change.....	-4.83	-20.61	2.30	-13.26	18.31	19.78	15.77	6.15	4.17	8.68	8.02	-15.32
FABRICATED METAL PRODUCTS.....	4,453	4,344	3,813	3,414	3,635	3,500	3,586	3,325	3,374	3,331	3,485	3,634
Percentage change.....	7.24	-2.45	-12.23	-10.46	6.47	-3.69	2.46	-7.30	1.49	-1.28	4.64	4.26
MACHINERY.....	3,555	3,078	3,679	2,819	2,680	2,920	2,677	3,191	2,832	2,847	2,819	2,836
Percentage change.....	-6.74	-13.40	19.50	-23.36	-4.95	8.94	-8.32	19.23	-11.27	0.55	-1.00	0.63
COMPUTER & ELECTRONIC PRODUCTS.....	1,945	2,385	3,623	3,794	671	644	810	778	709	843	831	875
Percentage change.....	-4.99	22.60	51.90	4.74	-82.31	-4.13	25.86	-3.90	-8.96	18.97	-1.41	5.26
ELECTRICAL EQUIPMENT, APPLIANCES & COMPONENTS.....	3,112	2,515	3,150	2,938	2,597	2,762	3,603	3,677	3,481	4,309	3,794	4,124
Percentage change.....	8.51	-19.17	25.24	-6.75	-11.59	6.36	30.44	2.06	-5.35	23.80	-11.95	8.69
MOTOR VEHICLES, BODIES & TRAILERS, & PARTS.....	6,617	4,862	4,144	1,781	4,225	5,831	6,686	7,312	8,286	7,642	8,424	8,773
Percentage change.....	20.83	-26.51	-14.77	-57.02	137.24	38.01	14.65	9.37	13.31	-7.77	10.23	4.15
OTHER TRANSPORTATION EQUIPMENT.....	807	743	654	450	543	595	509	419	501	456	519	530
Percentage change.....	-16.08	-7.88	-12.03	-31.21	20.77	9.61	-14.50	-17.69	19.48	-8.93	13.89	2.14
FURNITURE.....	840	817	641	461	412	393	409	449	487	537	511	519
Percentage change.....	-6.10	-2.72	-21.48	-28.11	-10.69	-4.62	4.20	9.82	8.32	10.35	-4.97	1.65
MISCELLANEOUS DURABLE GOODS.....	1,707	1,833	2,004	2,299	2,327	2,345	2,298	2,237	2,116	2,636	2,513	2,827
Percentage change.....	5.44	7.34	9.33	14.74	1.22	0.79	-2.02	-2.68	-5.40	24.57	-4.64	12.47

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**Table 15: Tennessee Nondurable Goods Manufacturing Gross Domestic Product (millions of 2012 dollars)** **January 2020**

	Historical Data											
	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
NONDURABLE GOODS.....	20,342	21,266	19,488	18,950	19,690	19,036	19,430	20,619	20,266	20,063	19,914	20,357
Percentage change.....	3.07	4.54	-8.36	-2.76	3.90	-3.32	2.07	6.12	-1.72	-1.00	-0.74	2.22
FOOD AND BEVERAGE & TOBACCO.....	7,052	7,930	7,264	7,015	7,080	6,779	6,685	6,689	6,606	6,854	7,015	7,465
Percentage change.....	11.34	12.46	-8.41	-3.42	0.93	-4.26	-1.39	0.07	-1.24	3.75	2.35	6.41
TEXTILE MILLS & TEXTILE PRODUCT MILLS	758	685	690	461	394	324	355	498	492	475	511	526
Percentage change.....	8.37	-9.59	0.66	-33.14	-14.47	-17.73	9.37	40.30	-1.25	-3.32	7.57	2.91
APPAREL & LEATHER PRODUCTS.....	251	272	265	204	237	208	203	313	165	168	163	162
Percentage change.....	-18.99	8.20	-2.54	-22.98	16.27	-12.35	-2.64	54.37	-47.34	1.94	-3.16	-0.31
PAPER.....	2,784	2,378	2,470	2,691	2,847	2,603	2,773	2,842	2,765	2,518	2,627	2,469
Percentage change.....	12.42	-14.61	3.88	8.94	5.81	-8.58	6.56	2.48	-2.71	-8.96	4.35	-6.02
PRINTING & RELATED SUPPORT.....	1,219	1,191	1,170	1,034	1,016	992	944	1,064	1,040	1,010	1,039	1,027
Percentage change.....	4.18	-2.30	-1.76	-11.67	-1.72	-2.35	-4.78	12.61	-2.23	-2.89	2.90	-1.19
CHEMICALS.....	5,124	5,294	4,699	4,720	5,343	5,777	5,920	6,256	5,170	5,143	5,003	4,875
Percentage change.....	9.11	3.33	-11.25	0.46	13.19	8.13	2.46	5.69	-17.37	-0.52	-2.72	-2.56
PLASTICS & RUBBER.....	2,014	2,181	1,988	1,790	1,935	1,787	1,794	2,010	2,062	2,148	2,334	2,383
Percentage change.....	-13.22	8.27	-8.81	-10.00	8.11	-7.64	0.39	12.01	2.59	4.20	8.65	2.09
MISCELLANEOUS NONDURABLE GOODS.....	1,141	1,336	943	1,036	838	566	757	949	1,967	1,748	1,222	1,451
Percentage change.....	-34.11	17.10	-29.42	9.91	-19.15	-32.39	33.58	25.36	107.38	-11.13	-30.09	18.69

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**Table 16: Tennessee Gross Domestic Product by Sector (millions of current dollars)**

**January 2020**

	Historical Data											
	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
GROSS DOMESTIC PRODUCT.....	242,317	245,981	253,542	252,067	257,152	269,366	285,078	294,907	305,437	324,239	336,281	347,197
Percentage change.....	5.43	1.51	3.07	-0.58	2.02	4.75	5.83	3.45	3.57	6.16	3.71	3.25
AGRICULTURE, FORESTRY, FISHING AND HUNTING.....	2,123	1,729	1,933	1,523	1,216	1,707	1,357	2,103	1,628	1,576	1,255	1,247
Percentage change.....	21.75	-18.58	11.81	-21.22	-20.16	40.36	-20.50	55.02	-22.60	-3.17	-20.35	-0.66
NATURAL RESOURCES AND MINING.....	3,110	2,882	2,992	2,453	2,215	2,583	2,117	2,776	2,317	2,192	1,929	2,002
Percentage change.....	21.53	-7.33	3.83	-18.02	-9.71	16.62	-18.05	31.16	-16.55	-5.37	-12.00	3.76
CONSTRUCTION.....	10,742	10,970	10,091	8,961	8,300	8,660	9,610	9,706	10,358	11,307	12,347	13,471
Percentage change.....	6.77	2.12	-8.01	-11.20	-7.38	4.33	10.97	1.00	6.72	9.17	9.20	9.10
MANUFACTURING.....	42,103	40,164	40,261	38,434	37,854	39,531	43,517	46,263	47,177	50,545	51,894	53,549
Percentage change.....	3.03	-4.61	0.24	-4.54	-1.51	4.43	10.08	6.31	1.98	7.14	2.67	3.19
DURABLE GOODS.....	26,063	23,459	24,059	20,997	19,617	21,481	24,087	25,311	26,427	29,077	30,065	31,236
Percentage change.....	1.14	-9.99	2.56	-12.73	-6.57	9.50	12.13	5.08	4.41	10.03	3.40	3.89
NONDURABLE GOODS.....	16,040	16,705	16,202	17,437	18,236	18,050	19,430	20,952	20,750	21,468	21,829	22,313
Percentage change.....	6.26	4.14	-3.01	7.62	4.59	-1.02	7.64	7.83	-0.96	3.46	1.68	2.22
TRADE.....	49,175	49,855	50,290	47,340	49,887	51,966	55,044	56,421	58,222	61,226	63,395	64,574
Percentage change.....	5.76	1.38	0.87	-5.87	5.38	4.17	5.92	2.50	3.19	5.16	3.54	1.86
WHOLESALE TRADE.....	16,667	17,516	18,289	16,988	18,059	18,976	20,740	21,447	22,419	23,254	23,658	23,865
Percentage change.....	7.05	5.09	4.41	-7.11	6.30	5.08	9.29	3.41	4.53	3.72	1.74	0.87
RETAIL TRADE.....	18,854	19,007	18,347	17,577	18,328	18,978	19,863	20,154	20,516	21,601	22,738	23,338
Percentage change.....	3.69	0.81	-3.47	-4.20	4.27	3.54	4.66	1.47	1.80	5.29	5.26	2.64
TRANSPORTATION AND UTILITIES.....	13,653	13,332	13,654	12,775	13,500	14,012	14,441	14,820	15,286	16,370	16,999	17,372
Percentage change.....	7.15	-2.35	2.42	-6.44	5.68	3.79	3.06	2.62	3.15	7.09	3.84	2.19
INFORMATION.....	8,354	9,007	9,197	9,685	10,053	10,107	9,644	9,032	8,823	9,555	10,157	10,660
Percentage change.....	9.03	7.81	2.11	5.30	3.80	0.54	-4.59	-6.34	-2.32	8.30	6.30	4.95
FINANCIAL ACTIVITIES.....	34,911	37,096	37,409	38,570	40,326	42,510	44,922	45,600	49,025	51,962	55,574	57,231
Percentage change.....	4.36	6.26	0.84	3.10	4.55	5.42	5.67	1.51	7.51	5.99	6.95	2.98
PROFESSIONAL AND BUSINESS SERVICES.....	22,842	24,360	26,413	25,344	26,746	27,943	30,463	32,248	33,457	35,744	36,812	38,530
Percentage change.....	5.24	6.64	8.43	-4.05	5.53	4.48	9.02	5.86	3.75	6.84	2.99	4.67
EDUCATION AND HEALTH SERVICES.....	21,999	23,074	25,734	28,921	30,164	31,749	32,865	33,877	34,942	37,897	39,016	39,055
Percentage change.....	5.77	4.89	11.53	12.38	4.30	5.26	3.52	3.08	3.14	8.46	2.95	0.10
LEISURE AND HOSPITALITY.....	11,445	12,335	11,653	11,495	12,041	12,618	13,560	14,055	15,390	17,066	17,879	19,200
Percentage change.....	10.83	7.77	-5.53	-1.36	4.74	4.79	7.47	3.65	9.50	10.88	4.77	7.39
OTHER SERVICES.....	6,628	6,623	6,546	6,529	6,657	6,868	7,258	7,302	7,594	7,862	8,175	8,461
Percentage change.....	4.33	-0.08	-1.17	-0.26	1.97	3.17	5.68	0.61	4.00	3.53	3.98	3.49
GOVERNMENT.....	28,886	27,887	31,023	32,813	31,695	33,125	34,723	35,523	36,503	37,307	37,847	39,217
Percentage change.....	3.82	-3.46	11.25	5.77	-3.41	4.51	4.82	2.31	2.76	2.20	1.45	3.62
FEDERAL.....	8,365	8,519	8,211	8,985	8,935	8,999	8,975	9,287	10,223	10,615	10,769	11,128
Percentage change.....	3.56	1.84	-3.62	9.43	-0.56	0.72	-0.27	3.47	10.08	3.83	1.45	3.33
STATE AND LOCAL.....	20,520	19,368	22,812	23,828	22,761	24,126	25,748	26,237	26,280	26,692	27,078	28,089
Percentage change.....	3.93	-5.61	17.78	4.45	-4.48	6.00	6.72	1.90	0.17	1.57	1.45	3.73

**Table 17: Tennessee Durable Goods Manufacturing Gross Domestic Product (millions of current dollars)** **January 2020**

	Historical Data											
	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
DURABLE GOODS.....	26,063	23,459	24,059	20,997	19,617	21,481	24,087	25,311	26,427	29,077	30,065	31,236
Percentage change.....	1.14	-9.99	2.56	-12.73	-6.57	9.50	12.13	5.08	4.41	10.03	3.40	3.89
WOOD PRODUCTS.....	906	886	844	620	668	671	729	763	817	914	960	1,091
Percentage change.....	-3.62	-2.15	-4.73	-26.53	7.79	0.39	8.67	4.61	7.04	11.99	4.99	13.67
NONMETALLIC MINERAL PRODUCTS.....	1,295	1,287	1,069	903	976	1,050	1,134	1,109	1,179	1,449	1,620	1,675
Percentage change.....	-1.08	-0.63	-16.89	-15.52	8.01	7.60	8.01	-2.23	6.30	22.90	11.82	3.43
PRIMARY METALS.....	1,706	1,421	1,479	822	1,185	1,574	1,646	1,565	1,714	1,595	1,541	1,521
Percentage change.....	16.69	-16.69	4.09	-44.41	44.14	32.85	4.52	-4.88	9.49	-6.95	-3.37	-1.32
FABRICATED METAL PRODUCTS.....	3,682	3,677	3,361	3,503	3,472	3,338	3,586	3,442	3,491	3,655	3,906	3,948
Percentage change.....	6.78	-0.12	-8.61	4.24	-0.90	-3.85	7.44	-4.04	1.42	4.71	6.87	1.06
MACHINERY.....	3,137	2,775	3,305	2,830	2,580	2,794	2,677	3,328	3,039	3,229	3,287	3,275
Percentage change.....	-6.83	-11.54	19.11	-14.39	-8.82	8.30	-4.20	24.32	-8.68	6.25	1.80	-0.36
COMPUTER & ELECTRONIC PRODUCTS.....	2,981	3,241	4,295	4,232	710	658	810	766	683	799	762	796
Percentage change.....	-16.11	8.73	32.50	-1.45	-83.23	-7.37	23.16	-5.37	-10.93	17.05	-4.68	4.58
ELECTRICAL EQUIPMENT, APPLIANCES & COMPONENTS.....	2,627	2,217	2,851	2,910	2,499	2,615	3,603	3,725	3,538	4,479	3,930	4,232
Percentage change.....	11.71	-15.63	28.62	2.07	-14.13	4.66	37.78	3.39	-5.04	26.60	-12.25	7.69
MOTOR VEHICLES, BODIES & TRAILERS, & PARTS.....	6,627	4,760	3,764	1,966	4,305	5,518	6,686	7,461	8,802	9,114	10,254	10,558
Percentage change.....	7.72	-28.17	-20.93	-47.77	119.02	28.15	21.17	11.60	17.97	3.55	12.50	2.96
OTHER TRANSPORTATION EQUIPMENT.....	727	679	602	436	527	584	509	428	523	489	565	581
Percentage change.....	-13.79	-6.58	-11.27	-27.65	20.95	10.87	-12.90	-15.80	22.12	-6.50	15.39	2.83
FURNITURE.....	729	735	578	467	398	376	409	451	493	577	562	564
Percentage change.....	-5.52	0.80	-21.40	-19.16	-14.86	-5.36	8.71	10.14	9.41	17.10	-2.67	0.36
MISCELLANEOUS DURABLE GOODS.....	1,647	1,782	1,911	2,308	2,297	2,302	2,298	2,273	2,150	2,776	2,678	2,994
Percentage change.....	4.79	8.19	7.27	20.74	-0.45	0.21	-0.19	-1.11	-5.42	29.17	-3.53	11.79

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**Table 18: Tennessee Nondurable Goods Manufacturing Gross Domestic Product (millions of current dollars)**

**January 2020**

	Historical Data											
	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
NONDURABLE GOODS.....	16,040	16,705	16,202	17,437	18,236	18,050	19,430	20,952	20,750	21,468	21,829	22,313
Percentage change.....	6.26	4.14	-3.01	7.62	4.59	-1.02	7.64	7.83	-0.96	3.46	1.68	2.22
FOOD AND BEVERAGE & TOBACCO.....	5,414	6,038	5,987	6,756	6,773	6,263	6,685	6,802	7,027	7,687	8,256	8,466
Percentage change.....	8.59	11.54	-0.86	12.85	0.25	-7.53	6.73	1.75	3.31	9.40	7.40	2.54
TEXTILE MILLS & TEXTILE PRODUCT MILLS	633	575	573	418	369	332	355	493	496	497	548	552
Percentage change.....	10.18	-9.18	-0.33	-26.99	-11.83	-10.11	7.00	38.92	0.69	0.18	10.26	0.73
APPAREL & LEATHER PRODUCTS.....	250	269	260	209	233	201	203	319	171	181	179	180
Percentage change.....	-20.81	7.85	-3.53	-19.40	11.13	-13.45	0.55	57.48	-46.53	6.33	-1.32	0.61
PAPER.....	2,342	2,047	2,197	2,634	2,875	2,607	2,773	3,001	2,923	2,769	2,895	2,819
Percentage change.....	18.56	-12.58	7.28	19.90	9.16	-9.33	6.40	8.20	-2.59	-5.26	4.53	-2.64
PRINTING & RELATED SUPPORT.....	1,349	1,308	1,233	1,109	1,067	997	944	1,061	1,050	1,080	1,122	1,103
Percentage change.....	7.32	-3.11	-5.74	-10.04	-3.75	-6.58	-5.27	12.35	-1.03	2.87	3.84	-1.62
CHEMICALS.....	3,660	3,801	3,693	4,165	4,666	5,441	5,920	6,403	5,461	5,697	5,691	5,730
Percentage change.....	11.21	3.86	-2.83	12.78	12.02	16.59	8.80	8.16	-14.70	4.32	-0.10	0.67
PLASTICS & RUBBER.....	1,755	1,852	1,724	1,693	1,767	1,697	1,794	2,061	2,066	2,294	2,519	2,512
Percentage change.....	-5.32	5.53	-6.91	-1.81	4.39	-3.95	5.70	14.90	0.22	11.06	9.80	-0.28
MISCELLANEOUS NONDURABLE GOODS.....	638	814	536	452	486	512	757	812	1,556	1,261	618	950
Percentage change.....	-24.37	27.66	-34.16	-15.64	7.52	5.35	47.66	7.36	91.52	-18.93	-51.00	53.77

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