

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

**THE STATE'S  
ECONOMIC  
OUTLOOK  
JANUARY**

**2017**



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

---

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

PREPARED BY THE

Boyd Center for Business and Economic Research  
Haslam College of Business  
The University of Tennessee  
Knoxville, Tennessee

IN COOPERATION WITH THE

Tennessee Department of Finance and Administration  
Tennessee Department of Economic and Community Development  
Tennessee Department of Revenue  
and  
Tennessee Department of Labor and Workforce Development

THE STATE'S  
ECONOMIC  
OUTLOOK  
JANUARY **2017**

# CONTRIBUTORS

## An Economic Report to the Governor of the State of Tennessee

---

### AUTHORS

#### **UT Boyd Center for Business and Economic Research**

Matthew N. Murray, *Associate Director and Project Director*

William F. Fox, *Director*

Matthew Harris, *Assistant Professor of Economics*

Lawrence M. Kessler, *Research Assistant Professor*

Vickie C. Cunningham, *Research Associate*

Mary Elizabeth Glenn, *Graduate Research Assistant*

#### **The Agri-Industry Modeling and Analysis Group**

Kimberly Jensen, *Professor of Agricultural Economics*

Jamey Menard, *Research Leader*

Burton English, *Professor of Agricultural Economics*

#### **Department of Agricultural and Resource Economics, The University of Tennessee Institute of Agriculture**

Andrew Griffith, *Assistant Professor of Agricultural Economics*

David Hughes, *Professor of Agricultural Economics*

Aaron Smith, *Assistant Professor of Agricultural Economics*

Edward Yu, *Associate Professor of Agricultural Economics*

### PROJECT SUPPORT STAFF

#### **UT Boyd Center for Business and Economic Research**

Brittany Blair, *Business Manager*

Lydia X. McCoy, *Communications Coordinator*

---

The preparation of this report was financed in part by the following agencies: the Tennessee Department of Finance and Administration, the Tennessee Department of Economic and Community Development, the Tennessee Department of Revenue, and the Tennessee Department of Labor and Workforce Development.

This material is the result of tax-supported research and as such is not copyrightable. It may be freely reprinted with the customary crediting of the source.

UT Publication Authorization Number R01-1493-309-001-17.

## PREFACE

This 2017 volume of *An Economic Report to the Governor of the State of Tennessee* is the forty-first 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 2019 and annual forecast through 2026 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 Global Insight, Inc. Tennessee forecasts, current as of January 2017, 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 discusses presents the long-run outlook and forecast for the state. Chapter Four presents the effects of the expected coming increase in retirements in Tennessee, which is expected to increase between 80 and 100 percent over the next 15 years.

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.



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

# CONTENTS

<b>EXECUTIVE SUMMARY .....</b>	<b>ix</b>
<b>CHAPTER 1: THE U.S. ECONOMY .....</b>	<b>1</b>
1.1 Introduction.....	1
1.2. The U.S. Economy: Year in Review.....	3
<i>Components of GDP</i> .....	3
1.3. The U.S. Forecast.....	12
1.4. Alternative Scenarios .....	16
1.5. Forecast Summary and Conclusions .....	17
<b>CHAPTER 2: THE TENNESSEE ECONOMY: SHORT-TERM OUTLOOK.....</b>	<b>19</b>
2.1. Introduction .....	19
2.2. The Current Economic Environment .....	20
<i>The Labor Market</i> .....	20
<i>Income and Taxable Sales</i> .....	25
2.3. Short-Term Outlook .....	27
2.4. Tennessee Forecast at a Glance.....	31
2.5. Tennessee's Agricultural and Forest Industries and Rural Economy .....	32
<i>Introduction</i> .....	32
<i>Agriculture and Primary Forestry</i> .....	32
<i>Commodity Market Trends &amp; Outlook</i> .....	37
<i>Food, Fiber, and Forestry Manufacturing in Tennessee</i> .....	41
<i>Rural Economies and Well-Being</i> .....	44
<i>Governor's Rural Challenge</i> .....	44
<i>Summary</i> .....	46
<i>References Used</i> .....	48
<b>CHAPTER 3: THE TENNESSEE ECONOMY: LONG-TERM OUTLOOK.....</b>	<b>51</b>
3.1. Introduction.....	51
3.2. Employment .....	52
3.3. Unemployment and Population .....	58
3.4. Income and Earnings .....	63
3.5. Output.....	65
3.6. Workforce Quality (Education and Health Status) .....	68
<b>CHAPTER 4: PENDING RETIREMENTS AND EXPECTED HUMAN CAPITAL LOSSES IN TENNESSEE ....</b>	<b>75</b>
4.1. Introduction.....	75

4.2. The Occupational Distribution of Workers near Retirement Age in Tennessee .....	78
<i>Management</i> .....	78
<i>Architecture and Engineering Occupations</i> .....	82
<i>Community and Social Services</i> .....	84
<i>Specific Occupational Categories with the Highest Concentration of Older Workers</i> .....	85
<i>Differences in Occupational Concentrations of Older Workers by City</i> .....	86
4.3. Future Projections of Labor Force Participation and Workers per Retiree .....	89
4.4. Summary and Policy Discussion.....	91
4.5. References .....	93
<b>APPENDIX A: FORECAST DATA</b> .....	<b>1</b>
Quarterly History Tables .....	2
Annual History Tables .....	26
<b>APPENDIX B: HISTORICAL DATA</b> .....	<b>43</b>
Quarterly Forecast Tables.....	44
Annual Forecast Tables .....	68

## FIGURES AND TABLES

<b>CHAPTER 1: THE U.S. ECONOMY</b> .....	<b>1</b>
Figure 1.1: Inflation-Adjusted GDP Continued Growing throughout 2016 and Will Accelerate in 2017.....	2
Figure 1.2: Nonresidential Investment Fell in 2016 but is Slowly Rebounding .....	5
Figure 1.3: Housing Prices Continue Recovering but Existing House Sales and Housing Starts are Rebounding.. More Slowly .....	6
Figure 1.4: Underemployment is Declining but Remains a Source of Concern for the Economy.....	9
Figure 1.5: Productivity Gains have been Below Average during the Recovery.....	10
Figure 1.6: Interest Rates are Expected to Rise in the Next Few Years .....	14
Figure 1.7: Inflation is Expected to Reach the Fed's Target Range in 2017 .....	16
<b>CHAPTER 2: THE TENNESSEE ECONOMY: SHORT-TERM OUTLOOK</b> .....	<b>21</b>
Table 2.1: Great Recession Affects Nonfarm Employment Growth in the Southeastern States.....	21
Table 2.2: Despite Recent Short-Term Growth, Manufacturing Jobs are Down from Pre-Recession Levels .....	22
Figure 2.1: Low Unemployment Rates Prevail across most Southeastern States (November 2016).....	24
Figure 2.2: U.S. Labor Force Participation Rate Peaked in 2000.....	24
Table 2.3: Selected U.S. and Tennessee Economic Indicators, Seasonally Adjusted.....	28
Figure 2.4: Tennessee and U.S. Nonfarm Employment Growth will Slow in the Quarters Ahead.....	29
Figure 2.5: Taxable Sales Growth will Slow and Rest Below Personal Income Growth.....	31
Figure 2.6: Tennessee's Agri-Forestry Industrial Complex.....	32
Table 2.4: Tennessee Cash Farm Receipts and Share Commodity Exports, 2011-2015 .....	33
Table 2.5: Tennessee Harvested Acres, Production, and Yield for Corn, Cotton, Soybeans and Wheat, 2011-2016 .....	35
Table 2.6: Indicators of Financial Well-Being of the Tennessee Farm Sector, 2011-2015 .....	41
Table 2.7: Tennessee Food, Fiber and Forestry Manufacturing, 2014.....	42
Figure 2.8: Value of Shipments from Tennessee Agri-Forestry, 2010-2014.....	43
Figure 2.9: Tennessee Agri-Forestry Manufacturing Location Quotients (LQ), 2014.....	43
Table 2.8: Population, Household Income, Education Level, Unemployment, Poverty and Food Insecurity across Rural County Status, Tennessee .....	45
Figure 2.10: Tennessee Poverty Indicators by County.....	45
Table 2.9: Scorecard of Progress toward Governor's Rural Challenge Recommendations for Tennessee Agriculture .....	47
<b>CHAPTER 3: THE TENNESSEE ECONOMY: LONG-TERM OUTLOOK</b> .....	<b>51</b>
Table 3.1: Nonfarm Employment in Tennessee by Broad Sector (Thousands of Jobs) .....	53
Table 3.2: Manufacturing Employment in Tennessee by Sector (Thousands of Jobs).....	53

Figure 3.1: Nonfarm Employment Continues to Grow While Manufacturing Employment will Contract Towards the End of the Long Term Forecast Horizon.....54

Figure 3.2: Total Covered Employment by Region, June 2016 .....55

Figure 3.3: Largest County Workforces in Tennessee, June 2016.....56

Figure 3.4: Smallest County Workforces in Tennessee, June 2016.....56

Figure 3.5: Short Run and Long Run Employment Growth by Region .....57

Figure 3.6: Total Covered Employment Growth, June 2006 to June 2016.....58

Figure 3.7: Tennessee’s Unemployment Rate will Rest above the National Rate through Most of the Long Term Outlook Horizon.....59

Figure 3.8: Unemployment Rates in Tennessee are Lower near the Large Metro Areas, October 2015 .....60

Table 3.3: Population by Tennessee Region and Southeastern States, 2015 .....61

Figure 3.9: Ten Most Populated Counties in Tennessee, 2015 .....61

Figure 3.10: Ten Least Populated Counties in Tennessee, 2015 .....62

Figure 3.11: Ten Fastest Growing Counties in Tennessee 2014 to 2015.....62

Table 3.4: Personal Income per Capita by Tennessee Region and Southeast States, 2015 .....64

Table 3.5: Highest and Lowest County per Capita Income Levels in Tennessee, 2015.....65

Table 3.6: Tennessee Inflation-Adjusted Gross Domestic Product by Sector .....66

Table 3.7: Number of Business Establishment by Tennessee Region and Southeast States, 2014.....67

Figure 3.12: Educational Attainment in Tennessee has Improved, but still Lags the Nation.....68

Figure 3.13: Tennessee’s College Attainment Rate is Below the Southeast Average .....69

Figure 3.14: Educational Attainment Rates or Population Aged 25 or Older by Tennessee Region and County, 2015 .....70

Figure 3.15: The Adult Smoking Rate in Tennessee has Fallen but is Still above the National Average .....72

Figure 3.16: Tennessee’s Obesity Rate is Well Above the National Average and Continues to Grow.....72

Figure 3.17: Tennesseans Face Higher Prevalence of Serious Health Issues than the Average U.S. Citizen.....73

**CHAPTER 4: PENDING RETIREMENTS AND EXPECTED HUMAN CAPITAL LOSSES IN TENNESSEE .... 75**

Figure 4.1: Labor Force Participation Rates by Age.....76

Figure 4.2: Tennessee Labor Participation by Age, Normalized to U.S. Rates .....76

Figure 4.3: Occupational Choice Frequencies, U.S. and Tennessee .....79

Figure 4.4: Proportion of Workers Aged 55 to 65 by Occupation in TN, Normalized to U.S. Proportions.....80

Figure 4.5: Proportion of Workers Near Retirement Age, by Occupation.....80

Table 4.1: Most Common Specific Management Occupations .....81

Table 4.2: Most Common Specific Management Occupations .....81

Table 4.3: Most Common Architecture/Engineering Occupations .....82

Table 4.4: Specific Occupations with at least 5,000 Full Time Workers and 20 percent of Workers Aged 55 to 65 .....85



CONTENTS

Table 4.5: Specific Occupations with at least 1,000 Full Time Workers and 20 percent of Workers  
    Aged 55 to 65 .....86

Table 4.6: Percentage of Near-Retirement Workers by Geography .....87

Figure 4.6: Occupational Concentration of Older Workers by City .....88

Figure 4.7: Adults in the Labor Force per Projected Retired Person .....90

Figure 4.8: Working Adults per Retiree, Less than Full Employment.....90

**APPENDIX A: FORECAST DATA..... 1**

    Quarterly History Tables .....2

    Annual History Tables .....26

**APPENDIX B: HISTORICAL DATA ..... 43**

    Quarterly Forecast Tables.....44

    Annual Forecast Tables .....68

## EXECUTIVE SUMMARY

### The U.S. Economy

---

In 2016, the U.S. economy continued expanding, with inflation-adjusted gross domestic product (GDP) increasing by 1.6 percent. This growth is lower than in previous years, but it does indicate that the U.S. economy overall remains on a steady footing, even as growth in certain sectors has faltered. In 2017, the current forecast is for inflation-adjusted GDP to increase by 2.3 percent, assuming that the U.S. and worldwide economies do not become significantly more volatile as anti-globalization sentiments become more prominent.

As in most years, the backbone of the U.S. economy in 2016 was growth in consumer demand. Consumption spending grew by 2.7 percent in 2016, accounting for more than all of the increase in GDP (trade and investment spending were drags on the economy). This growth in consumption was fueled by a labor market approaching full employment. The labor market added 2.5 million jobs, creating a total of 144.3 million jobs in the economy. This makes 2016 the third year that post-recession nonfarm payrolls outnumbered their pre-recession peak.

Job gains have not been even across the economy: both manufacturing, as well as, natural resources and mining shed jobs, in response to both plummeting energy prices and a strong dollar amid tepid global demand growth. The natural resources and mining sector lost 121 thousand jobs, and the manufacturing sector lost 31 thousand jobs. On the other hand, education and health services, the sector which performed the best, created 639 thousand jobs in 2016. Despite these positive labor market signals, productivity in 2016 remained well below the levels recorded before the recession.

Since the labor market performed well throughout 2016 and the unemployment rate remained well below 6.5 percent, the Federal Reserve was expected to raise interest rates each quarter, following an initial interest rate hike

in December 2015. However, the Fed held off on another interest rate hike until December 2016 amid uncertainty about the U.S. economy's foothold. (Both the fourth quarter of 2015 and the first quarter of 2016 exhibited particularly disappointing growth.) Because of this, interest rates rose in 2016, but more slowly than expected. Both the 3-Month Treasury Bill rate and federal funds rate hit 0.4 percent in the fourth quarter of 2016. The 30-Year Fixed Mortgage rate actually continued falling in 2016, down to 3.7 percent in the fourth quarter. Monthly data show interest rates rising as the year closed out.

Despite the falling mortgage rate, housing growth in 2016 was lackluster compared to growth in 2015. Residential fixed investment grew by a healthy but still disappointing 4.7 percent, although housing starts hit 1.2 million, an increase from 2015. Increasing prices for both new and existing houses persisted, continuing an upward trend that began in 2011.

While employment growth has remained steady, the Fed's other charge, maintaining price stability, has been less a source of focus in recent years. Falling energy prices depressed inflation in 2016 – the Consumer Price Index grew by only 1.3 percent, well below the Fed's target range of 2 to 3 percent.

The federal deficit reached \$587.3 billion in 2016, edging the federal debt up to \$20 trillion, making 2016 the fifth year in a row that the federal debt has been larger than U.S. GDP. Overall federal spending grew by only 0.7 percent, with defense spending dropping by 0.5 percent and nondefense spending rising by 2.5 percent. State and local spending grew by 0.9 percent, but in inflation-adjusted terms still has not reached the spending levels recorded pre-recession.

Federal spending is expected to rise in 2017 with the election of President Donald Trump. Trump is expected to propose a fiscal stimulus

package, which is at odds with the Fed's current position that the U.S. economy is strong enough to withstand increasing interest rates. Congressional reaction to Trump's plan and the interaction of possibly opposing fiscal and monetary policies will be of key importance during Trump's first year in office.

U.S. GDP in 2017 and 2018 is on track to grow

steadily, with increases of 2.3 and 2.6 percent, respectively. During 2017, GDP growth is expected to be fairly consistent each quarter, with growth of 2.4, 2.3, 2.2, and 2.2 percent in the first, second, third, and fourth quarters. Inflation is expected to rise with the Consumer Price Index expected to be up 2.5 percent, well ahead of the 1.3 percent rate of growth in 2016.

## The Tennessee Economy

---

### The Short-Term Economic Outlook

The Tennessee economy performed well in 2016, despite the modest growth pull coming from the national economy. Nominal personal income growth for the state matched national growth of 3.6 percent; in 2015, income growth in Tennessee outstripped national growth by more than a percentage point. The state's labor market has been especially resilient, with nonfarm employment advancing 2.4 percent for the year compared to 1.8 percent growth for the U.S. Noteworthy was the 2.7 percent gain in manufacturing employment in Tennessee, at the same time that the nation's manufacturing sector was shedding jobs. The state unemployment rate averaged 4.6 percent in 2016, just under the 4.9 percent national unemployment rate, and well below the 5.8 percent state rate registered in 2015. In Tennessee, the number of unemployed people fell 10.3 percent in 2015 and 18.1 percent in 2016.

Stronger nominal and inflation-adjusted output and income growth is expected this year and through 2018. Tennessee's inflation-adjusted gross domestic product (GDP) is expected to be up 2.1 percent in 2017 and 2018, while the U.S. is expected to see slightly stronger growth of 2.3 percent and 2.6 percent. Somewhat stronger growth, coupled with rising energy prices, will put upward pressure on inflation. The Consumer Price Index is likely to rise 2.5 percent this year compared to only 1.3 percent growth last year. The state's nominal income growth of 4.5 percent

will align closely with the 4.6 percent growth rate expected for the nation. Nonfarm employment in Tennessee will see slower growth of 1.4 percent because of the tightening labor market; nonfarm employment for the nation is expected to advance 1.3 percent. Tennessee's unemployment rate is projected to average 4.8 percent for the year, slightly ahead of the 4.6 percent rate expected for the nation.

### Long-Term Economic Outlook

The short-term outlook presented in Chapter 2, which looks 10 quarters ahead, is built off of a cyclical forecast which concentrates on the ups and downs of the business cycle. By comparison, the long-run outlook of Chapter 3, which looks 10 years into the future, is based on a trend forecast, as the ups and downs of a business cycle typically have less impact on the long-term trend performance of the economy. For comparative purposes, the long-term chapter examines Tennessee growth patterns from 2006 to the present, as well as the state's outlook extending out to 2026. For additional context, we also examine current and historical county and regional differences across Tennessee.

Between 2006 and 2016, nonfarm employment in Tennessee grew at a sluggish pace of 0.62 percent per year (compound annual growth rate, CAGR), but still slightly outpaced national job growth of 0.56 percent (CAGR). Employment growth during this period was heavily dampened

by the Great Recession and stronger employment gains are expected over the next 10 years. In Tennessee, nonfarm employment is projected to expand by 1 percent (CAGR), which is slightly faster than the 0.9 percent (CAGR) growth rate forecasted for the national economy. All broad sectors of the Tennessee economy are projected to enjoy some job growth over the next 10 years, however job gains in the manufacturing, financial activities, and other services sectors will be relatively small (below 0.25 percent, CAGR). By comparison, job growth will be strongest in the professional and business services sector, followed by education and health services, and natural resources, mining, and construction, all of which will see job gains in excess of 1.7 percent (CAGR).

The state unemployment rate will continue its slow downward trend, as the annualized unemployment rate is projected to rest at 4.6 percent for most of the decade before falling to 4.5 percent in 2022 and remaining there throughout the forecast horizon. Over the next 10 years, population growth in the state will stand at 1 percent per year, matching the forecasted population growth rate of the nation. Despite the declining unemployment rate, the labor force participation rate, which was pegged at 60 percent in the third quarter of 2016, will continue to drift downwards and fall to 57.8 percent by 2026.

A county-level analysis of current (non-seasonally-adjusted) unemployment rates shows that Williamson County, at 3.5 percent, had the lowest unemployment rate among all Tennessee counties in October 2016, followed by Davidson County at 3.7 percent. Nine of the 10 lowest unemployment rates came from counties located in Middle Tennessee. The only non-Middle Tennessee county to reach the “top-10” was Knox County, which at 4.1 percent had the eighth lowest rate in the state. Conversely, 55 Tennessee counties had unemployment rates equal to or above 6 percent in October 2016.

Over the next 10 years, nominal personal income in Tennessee is projected to grow by 4.5

percent (CAGR). This is slightly slower than the 4.8 percent income growth forecasted for the U.S., but well above the 3.7 percent compound annual growth rate that the state registered between 2006 and 2016.

Per capita income in Tennessee was only 86.6 percent of the national average in 2016. Since national income is projected to grow faster than state income over the next 10 years, while Tennessee’s population grows faster than the nation’s, this gap is projected to expand further by 2026, when it will fall to 83 percent. Although average per capita income in Tennessee as a whole is well below the national average, there are two Tennessee counties where per capita income was above the national average of \$48,112 in 2015: Williamson County (\$87,419) and Davidson County (\$55,411).

The quality of the labor force, as measured by education, skill level, and health has a strong influence on long-term economic growth. Unfortunately, Tennessee falls well below the national average in both educational attainment and health status, which may help explain why average income levels (i.e. per capita income) in the state and unemployment rates in many Tennessee counties also lag the national average. In 2015, the percentage of Tennessean’s with a high school degree or higher was 85.5 percent which was slightly below the national average of 86.7 percent. More significantly, the percentage of Tennessean’s with a bachelor’s degree or higher was only 24.9 percent in 2015, compared to the U.S. rate of 29.8 percent. Only six Tennessee counties had bachelor attainment rates above the national average: Davidson, Knox, Rutherford, Shelby, Washington, and Williamson. Moreover, according to the 2015 edition of American Health Rankings – a state-by-state analysis of the relative health of populations across the U.S. – Tennessee currently ranks 43rd out of all U.S. states in overall health status, largely due to a high prevalence of obesity, diabetes, and smoking, a large number of poor mental health days, high rates of drug deaths and violent crime,

and low levels of physical activity. Recent initiatives such as Drive to 55, which aims to increase the educational attainment level so that 55 percent of the Tennessee population has a college degree by the year 2025, and the Tennessee Promise, which offers two years of tuition-free community college or technical college to Tennessee high school

graduates, are big steps in the right direction for improving educational attainment in the state. But initiatives to improve Tennessean's overall health status are of equal importance for Tennessee's workforce to be able to compete with the global economy.

## Pending Retirements and Expected Human Capital Losses in Tennessee

---

Chapter 4 examines the impact of the expected coming increase in retirements in Tennessee. The “baby boomer” generation is currently aged 52 to 70, with most individuals still younger than 65. Therefore, the expected number of retirees is expected to increase between 80 and 100 percent over the next 15 years. The shifting age demographics in Tennessee will have three impacts. First, some occupations (e.g., Architectural and Engineering occupations) have unusually high proportions of workers who are near-retirement age. While this stylized fact is not sufficient to raise concerns, we hope these data are useful in starting conversations between state agencies and employers to determine which skillsets most urgently require replacement. Second, the ratio

of retirees-to-working-age adults will decrease from over 3:1 to below 2:1 by 2030. Third, as the number of older people in Tennessee increases, more Tennesseans will require some sort of long term care. As most long term care is provided on an informal basis by younger relatives, this will have additional “ripple effects” on the labor force. Increases in informal care giving has been linked to decreased labor force participation, decreased engagement in the workforce, and decreased earnings for the caregiver for all subsequent years. As private home care is unaffordable for most households in the state, the expansion of public home care resources will likely help mitigate these “ripple effects” in families with relatives who require long term care.

## CHAPTER 1: THE U.S. ECONOMY

### In this chapter—

- 1.1. Introduction**
- 1.2. The U.S. Economy: Year in Review  
Components of GDP**
- 1.3. The U.S. Forecast**
- 1.4. Alternative Scenarios**
- 1.5. Forecast Summary and Conclusions**

### 1.1. Introduction

---

In 2016, the U.S. economy continued to show healthy growth, although growth was slower than in recent years of the expansion. The global economy, likewise, slowed slightly during 2016. U.S. gross domestic product (GDP) grew 1.6 percent in 2016. For comparison, the gross domestic products of Canada, the Eurozone, and China grew 1.2 percent, 1.6 percent, and 6.7 percent, respectively.

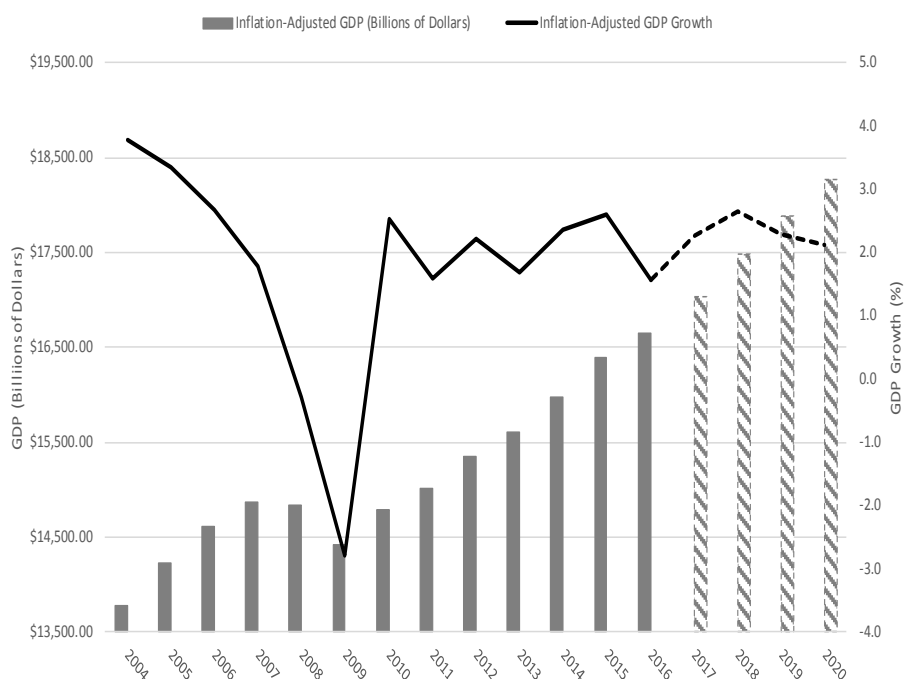
The labor market recovery continued during 2016, with slowing rates of job creation and falling unemployment rates indicating the economy is approaching full employment. The labor market now has 6.3 million more nonfarm payroll jobs than it did prior to the Great Recession; 2.5 million of those jobs were created in 2016 alone. These job gains were not even across all sectors: three service sectors—leisure and hospitality, education

and health services, and professional and business services—together made up 64 percent of the job gains. On the other hand, natural resources and mining shed 121 thousand jobs because of the continued dip in energy prices. Manufacturing also lost 31 thousand jobs, partially due to the strength of the U.S. dollar. Despite these weak spots, the overall unemployment rate fell to 4.9 percent, down from 5.3 percent in 2015. The housing market continued to grow, though more slowly than in 2015, with residential fixed investment growing 4.7 percent.

These positive signs were tempered by drags in both nonresidential investment spending and net exports (exports minus imports). Nonresidential investment spending fell by 0.2 percent in 2016, due primarily to a large inventory correction. In

## 1.1. Introduction, continued

**Figure 1.1: Inflation-Adjusted GDP Continued Growing throughout 2016 and will Accelerate in 2017**



Source: Bureau of Economic Analysis and IHS Global Insight, Inc.

addition, structures spending was down, especially for mining and petroleum, due to low energy prices. Net exports were a negative for GDP growth because a strong dollar made U.S. exports less attractive to foreign buyers and foreign imports more attractive to U.S. consumers.

This mix of positive and negative signals, along with uncertainties and anxieties over the presidential election, caused the Federal Reserve (Fed) to hold off on expected interest rate hikes earlier in the year. The Fed had raised the federal funds rate at the end of 2015, and quarterly increases were expected throughout 2016. With the election resolved and sustained growth on the horizon, the Fed implemented an interest rate hike in December, moving the federal funds rate to the 0.50-0.75 percent range.

Some of the problems of 2016 are expected to resolve themselves in 2017. Energy prices and commodity prices, for example, are expected to

recover, leading to increased employment and investment in mining as well as petroleum and manufacturing. On the other hand, the current economic forecast remains subject to considerable uncertainty. It is unclear which economic policies of President Donald Trump Congress will approve and how those economic policies will interact with the monetary policies the Fed is expected to pursue. The general expectation is lower business taxes and reduced regulations, which will help prompt stronger short-term growth. But higher interest rates and a stronger dollar are likely to follow from stronger growth, especially if it is financed via federal deficits. These forces, along with a tight labor market, will help temper the economy's growth path. Given currently available information, U.S. inflation-adjusted GDP should grow by 2.3 percent in 2017, and the economy should add 1.9 million jobs.

## 1.2. The U.S. Economy: Year in Review

The U.S. expansion continued in 2016, although more unevenly than in 2015. In the first quarter, GDP grew 0.8 percent on an annualized basis. GDP increased by 1.4, 3.5, and 1.5 percent in the second, third, and fourth quarters. This growth was the product of a labor market approaching full employment and strong consumer demand. The housing market grew but continued performing below pre-recession levels. Further, nonresidential investment spending declined and the trade deficit grew in 2016. These competing signals deferred expected federal funds rate increases, with the Fed finally implementing a quarter point increase in December, signaling its belief the recovery remains on solid footing.

Continued stable growth is expected in 2017, but this forecast should be tempered with the uncertainty looming over the policies of Trump and Congress. While some of the drags on U.S. growth seen in 2016 may dissipate in 2017, the coming year presents its own new questions. A well designed fiscal plan, coupled with new infrastructure investments, could produce stronger growth, particularly in late 2017 and 2018. On the other hand, aggressive tariffs on imports from Mexico and China could prompt a trade war that would derail domestic and international growth.

### Components of GDP

GDP is composed of personal consumption expenditures, investment, government purchases, and the balance of international trade (exports minus imports). The performance of these components of GDP shapes the economy's overall growth trajectory.

#### *Consumption*

Personal consumption expenditures are by far the largest component of U.S. GDP, accounting for 69.1 percent of spending in 2016. Inflation-adjusted consumption spending grew 2.7 percent in 2016 compared to 3.2 percent in 2015 and 2.9 percent in 2014. Consumer spending continued to be a large driver of the economy, growing 70

percent faster than the overall economy. The strongest consumption growth was recorded in the second quarter, up 4.3 percent compared to 1.6 percent in the first quarter. In the third and fourth quarters, consumption spending grew 3 and 2.5 percent, respectively.

The factors that typically help explain consumer spending include disposable income growth, consumer confidence, and the state of the labor market. Inflation-adjusted disposable income increased 2.7 percent in 2016 compared to growth of 3.5 percent in both 2015 and 2014. Strong job growth occurred over the year and the unemployment rate continued its fall downward to 4.9 percent, the lowest the unemployment rate has been since before the Great Recession. The consumer sentiment index fell to 91.8, down from 92.9 in 2015, but was still above the 84.1 figure recorded in 2014. Some of this drop is likely due to the 2016 election, which created much political uncertainty both before and immediately following it. Inflation-adjusted household net worth grew by 4.3 percent in 2016 compared to 3.6 percent in 2015 and 5 percent in 2014.

Personal consumption has three components: services, nondurable goods, and durable goods. Spending on services is the least volatile of the three components and accounted for 64.9 percent of total consumption spending last year. Services spending grew by 2.3 percent in 2016, healthy growth but lower than the 2.8 percent growth recorded in 2015. The most substantial growth in 2016 was in healthcare services, which grew by 4.3 percent, a much more rapid pace than in other categories of services spending.

Nondurable goods are the second largest category of consumption with a share of 21.7 percent. Nondurable goods include food, beverages, clothing, medical products, gas, and other similar short-lived products. Spending on nondurable goods increased 2.5 percent in 2016 compared to 2.6 percent growth in both 2015 and 2014. The categories that account for the largest portions of nondurable goods spending are food



## 1.2. The U.S. Economy: Year in Review, continued

and beverages (33.4 percent of total nondurable good consumption), clothing and footwear (14.7 percent), pharmaceutical and medical products (15.7 percent), and gasoline and other energy products (11.6 percent). These nondurable categories experienced steady growth. Food and beverages spending grew 2.9 percent in 2016, and clothing and footwear spending grew 1.4 percent. Gasoline and other energy goods ticked up 1.1 percent. Pharmaceutical and medical products grew by only 0.6 percent in 2016 compared to growing 4.6 percent and 6.9 percent in 2015 and 2014, respectively.

Personal spending on durable goods includes motor vehicles, furnishings, recreational goods, computers, and other household equipment. Spending on durable goods is by far the most volatile category of consumption. Spending on durable goods typically sinks during recessions and increases more than any other category during periods of recovery or expansion to satisfy consumers' pent-up demand for new service-providing assets. Spending growth on durables in the recovery has outpaced spending on nondurables and services, and this trend continued in 2016. In 2016, durable goods made up 13.7 percent of total consumption spending and showed 5.7 percent growth. This marks the seventh year of positive and robust spending on durable goods since the recession--every year since 2009 has seen durable goods spending increases of upwards of 5 percent. Computers and peripheral equipment had a particularly robust upswing, increasing by 16.1 percent in 2016, up from 15.4 percent in 2015 and 10.4 percent in 2014.

Vehicle purchases did not grow as strongly in 2016 as the category has in prior years. Spending on motor vehicles and parts grew only 2.8 percent compared to 5 percent and 6.3 percent in 2015 and 2014, respectively. However, this number belies a large gap in new motor vehicle sales and used vehicle sales: new motor vehicle sales fell by 1 percent, whereas net used motor vehicle sales rose by 12.2 percent. Even within the new

motor vehicle sales category, there continued to be a sharp division between the growth of new automobile and new light truck sales. New automobile sales fell 9.1 percent and new light truck sales rose by a modest 2.6 percent, with the latter being buoyed by low gasoline prices. Considering this, it is not surprising that total new light vehicle sales in 2016 plateaued with 17.4 million vehicles sold, the same number as in 2015. In inflation-adjusted dollars, \$251.5 billion was spent on new light vehicles in 2016, \$2.4 billion less than in 2015. Sales of both domestic and foreign light automobiles fell, with domestic light automobile sales falling 8.3 percent from 5.6 million in 2015 to 5.1 million in 2016, and foreign light auto sales falling 10.3 percent from 1.9 million in 2015 to 1.7 million in 2016. On the other hand, sales of both domestic and foreign light trucks rose. Domestic light truck sales grew 4.3 percent up to 8.5 million domestic light trucks sold, and foreign light truck sales grew 18.2 percent up to 2.1 million foreign light trucks sold.

### *Investment*

Investment made up 16.9 percent of U.S. inflation-adjusted GDP in 2016 and was an overall drag on GDP, pulling growth down by 0.30 percentage points. Investment includes three subcomponents: nonresidential fixed investment, residential fixed investment (new housing), and the change in business inventories. (Note that investment, as included in GDP, does not include financial instruments like stocks and bonds.) Only residential fixed investment contributed positively to GDP in 2016.

Nonresidential fixed investment, the largest subcomponent of investment spending, made up 77.9 percent of investment spending in 2016. It includes equipment purchases by firms, acquisition of intangible products such as software and licenses, and spending on structures. Nonresidential fixed investment spending fell by 0.2 percent in 2016 compared to growing by 2.1

## 1.2. The U.S. Economy: Year in Review, continued

percent in 2015 and 6 percent in 2014. Spending on mining and petroleum structures continued to fall in 2016, decreasing by 43.9 percent, following a 31.2 percent drop in 2015. Overall spending on equipment fell by 2.5 percent. Two of the areas that did experience growth were spending on commercial and healthcare structures, which grew 15.4 percent, and spending on intellectual property products, which grew 4.9 percent. This was the first year since 2011 that manufacturing structures saw a contraction, with manufacturing structures spending decreasing 4.3 percent compared to its robust gain of 30.8 percent in 2015.

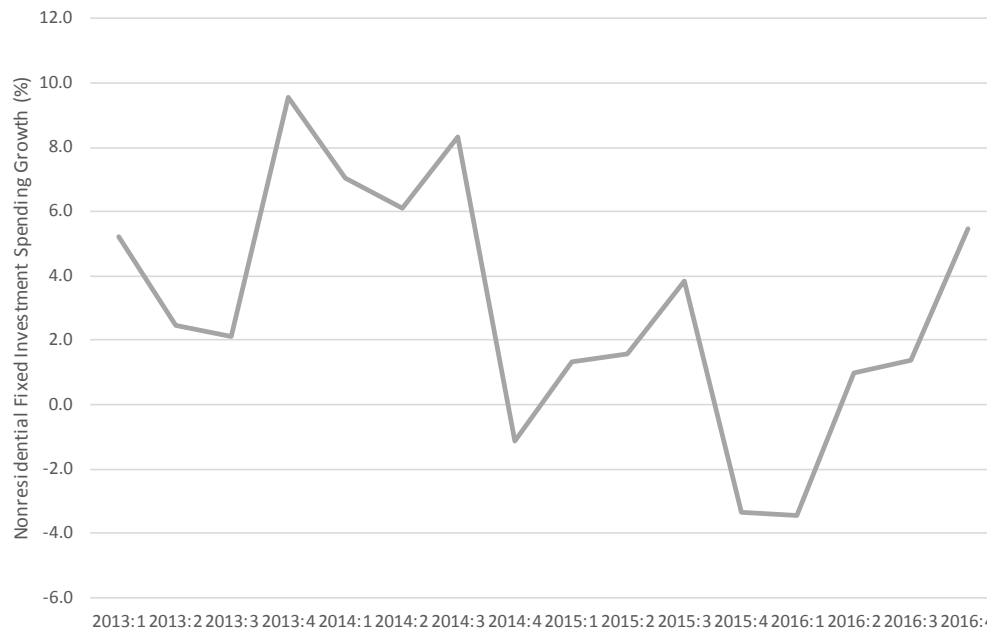
The second largest subcomponent of investment spending is residential fixed investment, which accounted for 21 percent of investment spending in 2016. Residential fixed investment grew by 4.7 percent in 2016, a modest gain after having grown by 11.7 percent in 2015. Residential investment continues to remain below its pre-recession peak, however. In 2016, inflation-adjusted residential investment increased to \$591 billion, still only 73.3 percent of its peak in 2006.

The housing market continued to recover from its dramatic setbacks during the years and immediate aftermath of the Great Recession.

The number of housing starts grew by 4.8 percent to reach 1.2 million units in 2016 compared to 1.1 million in 2015 and one million in 2014. However, it is worthwhile to note that 1.2 million housing starts remains significantly below the 1.8 million recorded in 2006. Sales of new homes increased by 11.2 percent in 2016 to reach 566 thousand units, continuing the upward trend in new home sales since 2011. Sales of existing homes grew by 4 percent.

House prices have continued ticking upward since 2012. Average and median prices of existing houses increased for the fifth consecutive year to reach \$274,800 and \$232,200, respectively. Average and median prices of new houses also rose, reaching \$364,500 and \$306,400, respectively. The Federal Housing Finance Agency (FHFA) Housing Price Purchase-Only Index also increased for the fifth year in a row.

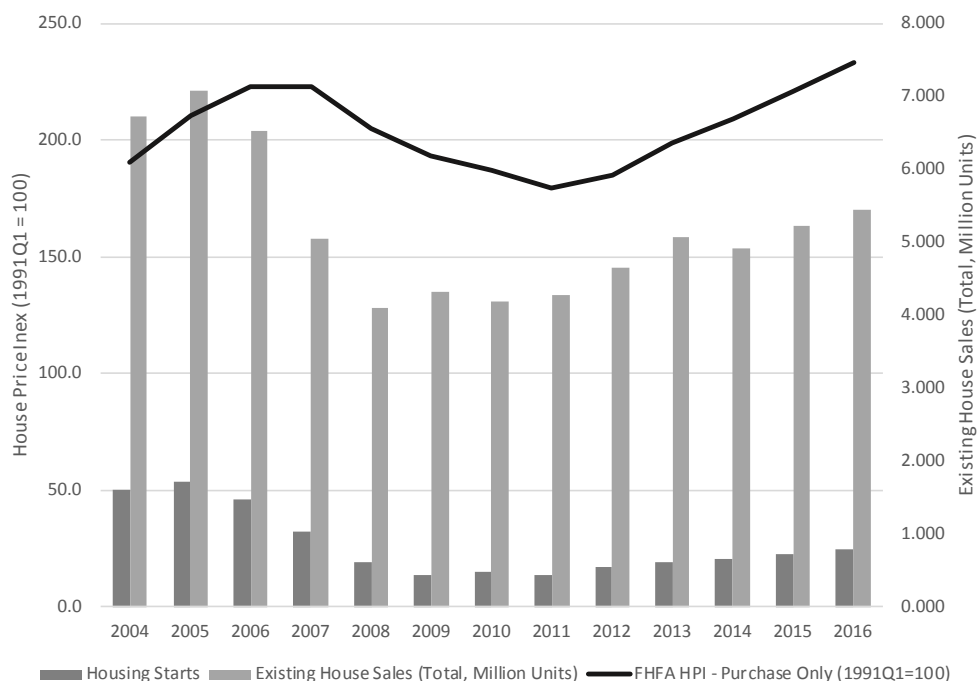
**Figure 1.2: Nonresidential Investment Fell in 2016 but is Slowly Rebounding**



Source: Bureau of Economic Analysis and IHS Global Insight, Inc.

## 1.2. The U.S. Economy: Year in Review, continued

**Figure 1.3: Housing Prices continue Recovering but Existing House Sales and Housing Starts are Rebounding More Slowly**



Source: Federal Housing Finance Agency, National Association of Realtors and the U.S. Census Bureau

As is the case for investment in general, interest rates are one of the key determinants of growth in the housing sector. Interest rates stayed extremely low throughout 2016, as the Federal Reserve eyed the recovery and attempted to determine if the economy was strong enough to withstand planned interest rate hikes. The Fed ended up delaying an interest rate hike in 2016 until December, when they raised the federal funds rate from 0.25-0.50 percent to 0.50-0.75 percent. With delayed increases on interest rates, the 30-Year Fixed Mortgage Rate actually dropped to 3.6 percent in 2016, down from 3.9 percent in 2015 and 4.2 percent in 2014. The average before the recession was above 6 percent. Both the federal funds rate and the 3-Month Treasury Bill rate are now higher than any year since 2008. The federal funds rate rose to 0.4 percent by the fourth quarter of 2016 compared to 0.2 percent in the fourth quarter of

2015. Similarly, the 3-Month Treasury Bill rate rose to 0.4 percent by the fourth quarter of 2016, up from 0.1 percent in 2015. On the other hand, the 10-Year Treasury note yield fell from 2.2 percent in 2015 to 2.1 in 2016.

Changes in business inventory, the highly cyclical component of investment, came in negative in the first, second, and fourth quarters, and contributed positively to GDP only in the third quarter. The overall effect for GDP was negative: changes in inventory pulled GDP growth down by 0.45 percentage points. Typically, the change in inventories accounts for less than 3 percent of total investment (it accounted for 0.4 percent of total investment in 2016), yet it can contribute strongly to overall GDP growth in some quarters due to its cyclical nature. Inventory investment fell by 87.4 percent in 2016 compared to growing by 45.7 percent in 2015. Both farm and nonfarm

## 1.2. The U.S. Economy: Year in Review, continued

inventory fell, with nonfarm inventory investment falling by 84.9 percent and farm inventory investment falling by 38.1 percent.

### *Government Purchases*

Government purchases, including federal, as well as, state and local spending, made up 17.5 percent of GDP in 2016. Federal purchases rose for the first year since 2010, up to \$1.1 trillion in inflation-adjusted dollars. Federal purchases rose 0.7 percent compared to plateauing in 2015 and falling by 2.5 percent in 2014. Defense spending continued a pattern of slow decline, falling by 0.5 percent in 2016 compared to dropping by 2.1 percent and 4.1 percent in 2015 and 2014, respectively. Federal nondefense spending continued to grow for the third consecutive year, increasing 2.5 percent compared to growing by 3.3 percent and 0.1 percent in 2015 and 2014, respectively. State and local purchases grew for the third year in a row and increased to \$1.8 trillion in 2016 in inflation-adjusted dollars. State and local spending grew 0.9 percent compared to growing 2.9 percent in 2015 and 0.2 percent in 2014. While federal spending has exceeded its pre-recession peak, state and local spending remains below its 2006 level.

In 2016, the federal government's deficit stood at \$587.3 billion but remained below deficits run during and immediately after the recession (when deficits topped \$1 trillion for four years in a row). Total federal debt rose to \$20 trillion, which makes 2016 the fifth year that federal debt has been larger than GDP.

### *Trade*

In 2016, the U.S. recorded a trade deficit of \$493.8 billion (or 2.7 percent of GDP). Exports amounted to \$2.2 trillion, while imports amounted to \$2.7 trillion. Typically, purchases of foreign goods and services by U.S. consumers (imports) exceed sales of goods and services produced in the U.S. and sold to other countries (exports). In 2016, import growth outpaced export growth,

with import spending growing 0.9 percent and export spending growing 0.4 percent. (A strong dollar contributed to these outcomes.) This is a slowdown of the pattern seen in previous years. In 2015, imports grew 4.6 percent and exports grew just 0.1 percent. Imports of services increased solidly in 2016, up 3 percent from 2015, and imports of goods grew more slowly, up 0.5 percent from 2015. Exports of goods grew by 0.5 percent compared to falling by 0.6 percent in 2015, and exports of services grew by 0.1 percent compared to growing by 1.6 percent in 2015. Imports of consumer goods experienced their first decline since 2009, declining by 1.6 percent. Exports of consumer goods grew by only 0.1 percent, compared to growing by 1.8 percent in 2015 and 6.6 percent in 2014.

### *Inflation and Prices*

The most popular measure of the aggregate level of prices in the economy is the Consumer Price Index, or the CPI. As measured by the CPI, overall prices rose just 1.3 percent in 2016 compared to 0.1 percent in 2015 and 1.6 percent in 2014. Low energy prices and low prices of finished goods continued to put downward pressure on price indices. If energy and food are excluded, overall prices in 2016 grew 2.2 percent. The Fed's target range for inflation is between 2 and 3 percent, so the overall inflation rate of 1.3 percent remains well below the Fed's ideal. Energy prices continued falling and declined by a significant 6.3 percent, although this is smaller than the drop of 16.7 percent recorded in 2016. Producer prices (finished good prices) also continued to fall, down 1.1 percent compared to a 3.3 percent drop in 2015 and a rise of 1.9 percent in 2014. As in 2015, continued low energy prices and falling prices of crude materials caused this drop in producer prices. Crude materials prices dropped 8.2 percent, driven mostly by continued decreasing fuels and power prices. Gas fuels, crude petroleum, and refined petroleum products continued falling

## 1.2. The U.S. Economy: Year in Review, continued

by 6.5 percent, 15.3 percent, and 18.3 percent, respectively. These are significant drops especially considering they follow declines in 2015 of 45.6 percent, 50 percent, and 36.7 percent for gas fuels, crude petroleum, and refined petroleum products.

Falling energy prices increase consumers' net disposable income but depress inflation. Maintaining both price stability and full employment is the charge of the Federal Reserve. These goals can often be at odds: price stability requires some minimal level of inflation and some yield of interest on savings. Conversely, the Fed can stimulate demand (and thus hope to increase employment) by keeping interest rates low. This is what the Fed did during the Great Recession. The Fed kept the federal funds rate low (below 0.25 percent) for 28 consecutive quarters until December 2015, when they raised the federal funds rate to 0.25-0.50 percent. Following this increase in the last quarter of 2015, the Fed was expected to incrementally raise the federal funds rate each quarter of 2016. However, economic growth and job gains were below the Fed's anticipated levels, so another federal funds rate increase was delayed until December 2016. This latest federal funds rate gain signals the Fed's continued confidence in the recovery. The Fed maintained that interest rates would stay low until the unemployment rate was below 6.5 percent and labor market indicators improved. The unemployment rate in 2016 remained steady at 4.9 percent in the first three quarters of 2016 and fell slightly to 4.7 percent in the fourth quarter.

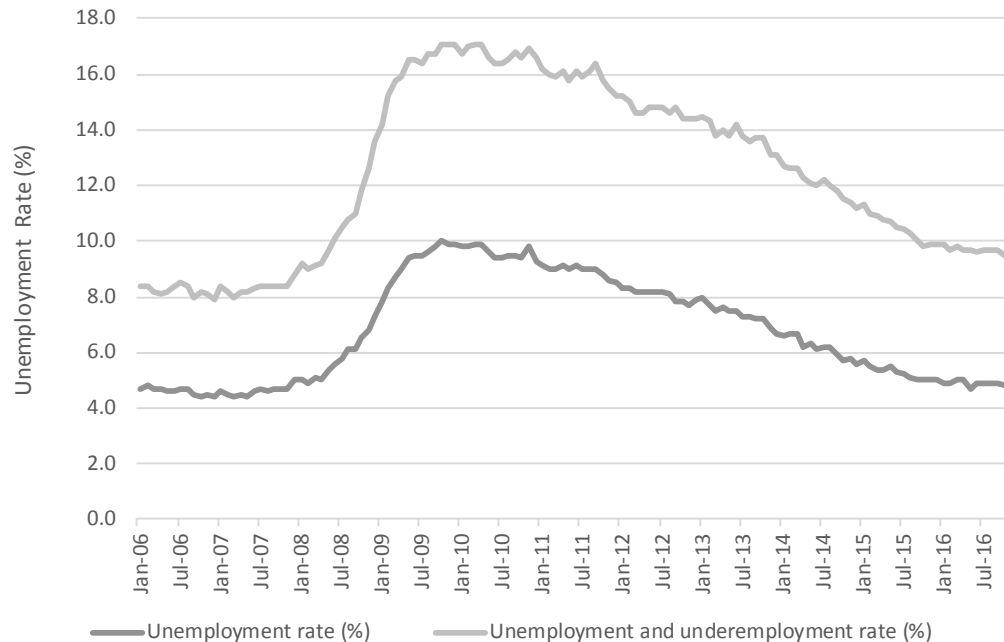
Although inflation is not an imminent concern for the U.S. economy, there are some signs that higher prices are on the horizon. Workers' wage compensation has shown improvement and oil prices are expected to begin rising once again 2017.

### *The Labor Market*

The national unemployment rate continued its slow but steady decline for the sixth year, down to 4.9 percent in 2016 compared to 5.3 percent, 6.2 percent, and 7.4 percent in 2015, 2014, and 2013, respectively. Moreover, the labor force participation rate ticked up slightly, up to 61.4 percent from 61.2 percent in 2015, but remains below its pre-recession levels. Since the recession, the labor force participation rate has fallen for those under 65 (down to 71.5 percent from 76 percent in 1997) and has risen for those 65 and older (up to 18.7 percent from 11.6 percent in 1997). While the recession created a significant shock, the labor force participation rate actually peaked in 2000 and was moving along a downward trend; for men, the labor force participation rate has been trending down since the late 1940s. In recent years, some portion of the falling participation rate may be explained by (1) fewer people between the ages of 16 and 24 working because they are in school and (2) discouraged workers. A discouraged unemployed worker is one who stops looking for work and thus is technically no longer considered unemployed. Additionally, underemployment remains a concern – the U.S. Bureau of Labor Statistics reported that 4.6 percent of the labor force was technically unemployed in November 2016. However, when those who are underemployed (i.e. those who are marginally attached to the labor force or those who work part-time for economic reasons) are included, this jumps up to 9.3 percent. This may signal that though the employment situation is improving for many workers, significant slack remains in pockets of the economy.

## 1.2. The U.S. Economy: Year in Review, continued

**Figure 1.4: Underemployment is Declining but Remains a Source of Concern for the Economy**



Source: Bureau of Labor Statistics

On the other hand, job creation continued, an encouraging sign of economic progress. In 2016, the labor market added 2.5 million nonfarm payroll jobs, a 1.7 percent increase. The total number of nonfarm jobs reached 144.3 million, making 2016 the third year that post-recession nonfarm payroll jobs surpassed their pre-recession levels. Almost all of these gains (93.9 percent) came from the private sector, which added 2.3 million jobs. The public sector added 151 thousand jobs; 115 thousand of these jobs were added at the state and local level.

Of the major sectors, it was four of the service sectors that contributed highly to job growth. Professional and business services added 574 thousand jobs, education and health services added 639 thousand jobs, and leisure and hospitality added 383 thousand jobs. In addition, the trade, transportation, and utilities sector added 421 thousand jobs. Taken together, these sectors

created 81.2 percent of the jobs gained in 2016. Natural resources and mining performed the poorest and continued to shed jobs, losing 121 thousand jobs, putting it at its lowest employment level since 2009.

### *Productivity*

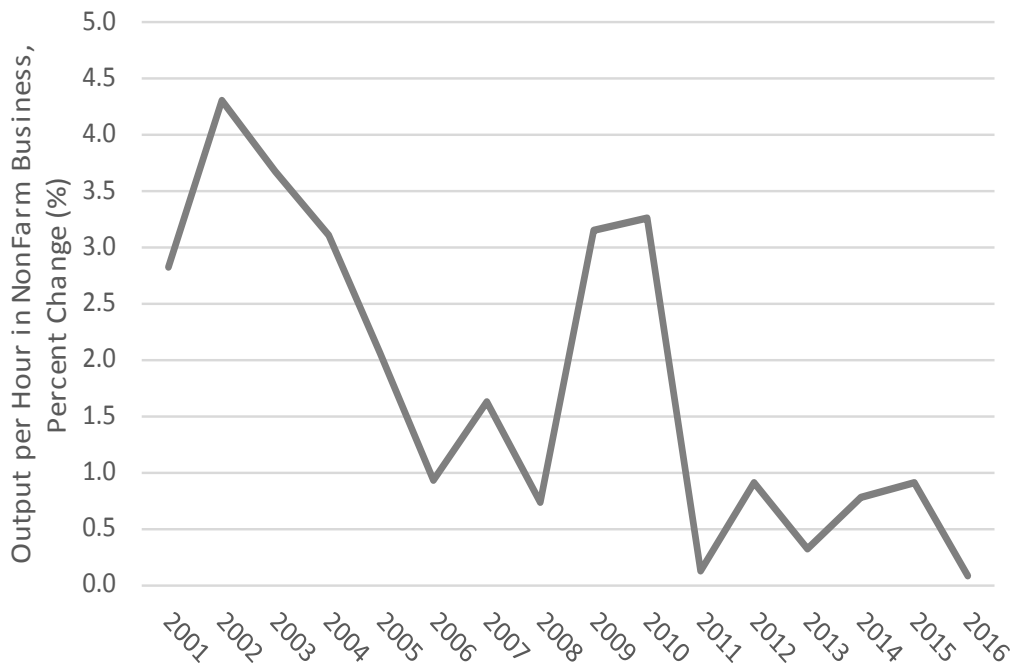
Productivity is commonly measured in terms of output per worker. It is a key factor that influences overall economic growth. Productivity growth typically arises through investments in human capital and new physical capital investments that together make a worker better able to produce output. Slower overall economic growth in recent years is due in part to slower growth in productivity. In 2016, productivity increased by only 0.1 percent, far below the levels recorded in pre-recession years. Every year between 1998

## 1.2. The U.S. Economy: Year in Review, continued

and 2005 experienced productivity gains between 2 and 3 percent. The current slowdown is well-documented but sources of the slowdown are not well understood. Some have speculated that

one source is the exhaustion of significant gains arising from the widespread adoption of computer technology in the workplace.

**Figure 1.5: Productivity Gains have been Below Average during the Recovery**



Source: IHS Global Insight, Inc.

## 1.2. The U.S. Economy: Year in Review, continued

### President Donald Trump's Economic Agenda

On November 8, 2016, Donald Trump became the President-Elect of the United States. This was a surprising turn of events: Trump's opponent, former Secretary of State Hillary Clinton, was predicted to win by both the media and polls. While Trump lost the popular vote by more than 2.5 million votes, he secured key states long considered part of the Democrat's "Blue Wall" (Michigan, Pennsylvania, and Wisconsin). Trump's economic plans for the United States are now of paramount importance.

Foremost on Trump's agenda is overhauling both the personal and business tax system. His proposed income tax plan would decrease the number of tax brackets from seven to three, increase the standard deduction, and cap itemized deductions. His plan also includes creating a childcare tax credit and dismantling the estate tax. The Trump team contends that the tax plan would benefit middle-class Americans most; however, the Tax Policy Center estimates that Trump's tax plan would mainly benefit wealthier Americans. Specifically, the Tax Policy Center calculates that almost a quarter of the tax benefits of Trump's plan would accrue to the top 0.1 percent of earners. Further, it is estimated that the lowered taxes, in combination with infrastructure spending discussed later in this report, will lead to a \$7 trillion dollar increase in the deficit over the next decade (Nunns, Burman, Rohaly, & Rosenberg, 2016). The Trump team disputes both that their plan will increase the deficit and that their plan will mostly help high earners.

Trump's business tax plan lowers the business tax by 20 percentage points, down to 15 percent from its current 35 percent rate. Trump's plan also cuts almost all business credits and he is in favor of big league levels of deregulation to spur business growth. The business community has reacted positively to these prospects. While the stock market free fell during election night as a Trump presidency became more likely, it quickly recovered as businesses recovered from the uncertainty and began taking Trump's plan into account. Carrier, a factory in Indianapolis that had planned to relocate 800 jobs to Mexico but decided to keep those jobs in the U.S., cited a more optimistic business environment as the main reason it did not outsource those jobs. Carrier's decision was also driven by generous tax concessions.

Trump and his allies, on the other hand, have posited that the real reason Carrier did not outsource jobs was Trump's promise to punish companies that relocate with a 35 percent tariff when they import their goods into the United States. Punishing companies that relocate and threatening large tariffs on those companies' goods, as well as, creating a more welcome business environment, are high on the list of ways that the president-elect has spoken about keeping jobs within the United States. Concerns immediately arose regarding whether companies would want to locate in the U.S. in the first place, since they could be punished later for placing operations abroad. In addition, Trump is considering changing the U.S.' international trade policy by imposing high tariffs on countries he believes do not "play fair." He has specifically proposed 45 percent tariffs on imports from China. This determination to get a "better deal" for the United States has also caused Trump to promise he will attempt to withdraw the U.S. from the North American Free Trade Agreement (NAFTA) and the proposed Trans-Pacific Partnership (TPP). These trade policies, if enacted, would hurt U.S. growth in the long-run, as other nations seek to retaliate against the new tariffs and a trade war begins. The Peterson Institute for International Economics has estimated that a full-scale trade war could result in job losses on the order of 4.8 million jobs in 2019. Moreover, in the full-scale trade war scenario, the U.S. is predicted to dip into a recession in 2019, with GDP falling by 0.1 percent. GDP growth would only return to normal levels once President Trump left office in 2021 (Noland, Robinson, & Moran, 2016).

In some ways, Trump's positions on taxes do not deviate far from mainline Republican positions. His business tax plan, for example, is in spirit consistent with long-standing positions within the Republican party. However, Trump's position on free trade differs sharply from his fellow Republicans. Further, many economists believe the decline in manufacturing jobs in the U.S. is due more to automation than outsourcing, and that high tariffs would be both difficult to implement and costly to the U.S. economy. Many businesses are expecting Trump to enact favorable policy changes (like lowering the corporation income tax) and back off on some of his more extreme trade rhetoric. However, there is considerable uncertainty regarding what the president-elect will actually propose and what will be approved by Congress.

*continued on page 12*



## 1.2. The U.S. Economy: Year in Review, continued

*continued from page 11*

### References

- Nolan, M., Robinson, S., & Moran, T. (2016). Impact of Clinton's and Trump's trade proposals. Peterson Institute for International Economics: PIIE Briefing 16-6. Retrieved December 10, 2016 from <https://pie.com/system/files/documents/piieb16-6.pdf>.
- Nunns, J. R., Burman, L. E., Rohaly, J., & Rosenberg, J. (2016). An analysis of Donald Trump's revised tax plan. Tax Policy Center: Research Report. Retrieved December 10, 2016 from <http://www.taxpolicycenter.org/publications/analysis-donald-trumps-revised-tax-plan>.

## 1.3. The U.S. Forecast

The U.S. economy's forecast for 2017 is currently characterized by a large degree of uncertainty. Political reality will replace political rhetoric as Trump assumes the presidency. Trump built his campaign around controversial proposals, including promises of “fair trade” that could entail high tariffs on imports from Mexico and China in particular. The reality is that high tariffs could lead to a trade war and economic contraction rather than expansion. His anti-immigration platform, if realized, would reduce growth in labor supply and dampen economic growth. Aggressive fiscal policy, including significantly greater spending on infrastructure, would lead to stronger short-term growth. But the economy has little additional capacity, especially in the labor market, so part of this growth could be reflected in wage and price level growth. A deficit-financed fiscal plan would help in the short run, but as the federal government increases its borrowing in financial markets, interest rates will rise and this will crowd out private sector investment. (Long-term interest rates have risen by nearly three-quarters of a percentage point since the election). Higher interest rates would in turn cause the dollar to

appreciate, dampening exports and economy-wide growth. Much will be learned in the first 100 days of the new presidency as Congressional reaction to Trump's plan is clarified.

The national outlook assumes that the U.S. will experience stronger near-term growth as a result of tax cuts and new infrastructure spending, but there will be no trade war or dramatic shock to immigration. Inflation-adjusted GDP is expected to grow by 2.3 percent in 2017, following 1.6 percent growth in 2016. Slightly stronger growth of 2.6 percent is expected in 2018.

### *Consumption*

Consumer spending provided the strongest foundation for GDP growth throughout 2016, and 2017 is expected to be similar. Consumer spending is expected to grow by 2.8 percent in 2017 and 3.2 percent in 2018.

Inflation-adjusted disposable income is expected to grow by 2.7 percent, the same as in 2016. Inflation-adjusted household net worth is predicted to grow by 3 percent compared to 4.3 percent in 2016. Consumption growth in 2017 is expected to be more stable than in 2016, with consumption

### 1.3. The U.S. Forecast, continued

growing by 3 percent, 2.5 percent, 2.7 percent, and 2.7 percent in the first, second, third, and fourth quarters, respectively.

Spending on durable goods should strengthen in 2017 as the job market continues to tighten. Durable goods spending is expected to increase 6.1 percent compared to 5.7 percent in 2016. Durable goods spending is expected to continue to outpace nondurable goods spending (expected to increase by 2.7 percent) and services spending (expected to increase by 2.3 percent), continuing the pattern of the recovery that began in 2010. Sales of new motor vehicles are expected to recover and increase by 6.6 percent compared to falling by 1 percent in 2016. This turnaround will be driven entirely by an increase in new light truck sales (which are expected to grow by 9.3 percent).

#### *The Labor Market*

Employment growth is expected to remain solid and the unemployment rate is expected to continue to drop through 2017 and 2018. The unemployment rate was 4.7 percent in the fourth quarter of 2016 and is expected to fall to 4.5 percent by the fourth quarter of 2017 and to 4.2 percent by the final quarter of 2018. The uptick in wage compensation seen in 2015 and 2016 is expected to continue into 2017, with a 2.5 percent increase in wage compensation. This signals that labor market tightening is finally beginning to positively impact worker paychecks and that the economy is approaching full employment. The labor force participation rate is expected to increase by 0.1 percentage points, ticking up to 61.5 percent in 2017. While this remains below the historical average, it does indicate the slow recovery is beginning to impact discouraged workers and attract them back to the labor market.

The anticipated job creation rates of 1.3 percent in 2017 and 1.2 percent in 2018 are below rates of job creation in recent years, but this is to be expected as the economy approaches full employment. The economy is expected to add 1.9 million nonfarm jobs in 2017, bringing

total nonfarm payroll employment up to 146.2 million, which would make 2017 the fourth year in a row that employment in the recovery surpassed employment before the Great Recession. Professional and business services is expected to be the largest contributor of jobs, adding 723 thousand jobs in 2017. Leisure and hospitality as well as education and health services are expected to add 224 thousand jobs and 453 thousand jobs, respectively. The natural resources and mining sector is expected to stop shedding jobs and add 16 thousand jobs. Similarly, manufacturing employment is expected to grow by 25 thousand jobs. The one sector expected to shed jobs is the information sector, which will see the loss of 1,000 jobs.

Productivity is expected to continue growing more slowly than before the recession, with only a 1 percent gain in nonfarm productivity expected in 2017. While lackluster compared to pre-recession gains, this would be significantly higher than the 0.1 percent increase seen in 2016. Productivity is a double-edged sword for workers: while it typically leads to higher wages, it may also lead to layoffs and slower hiring, at least in the short run, as more equipment and technology is brought into the workplace.

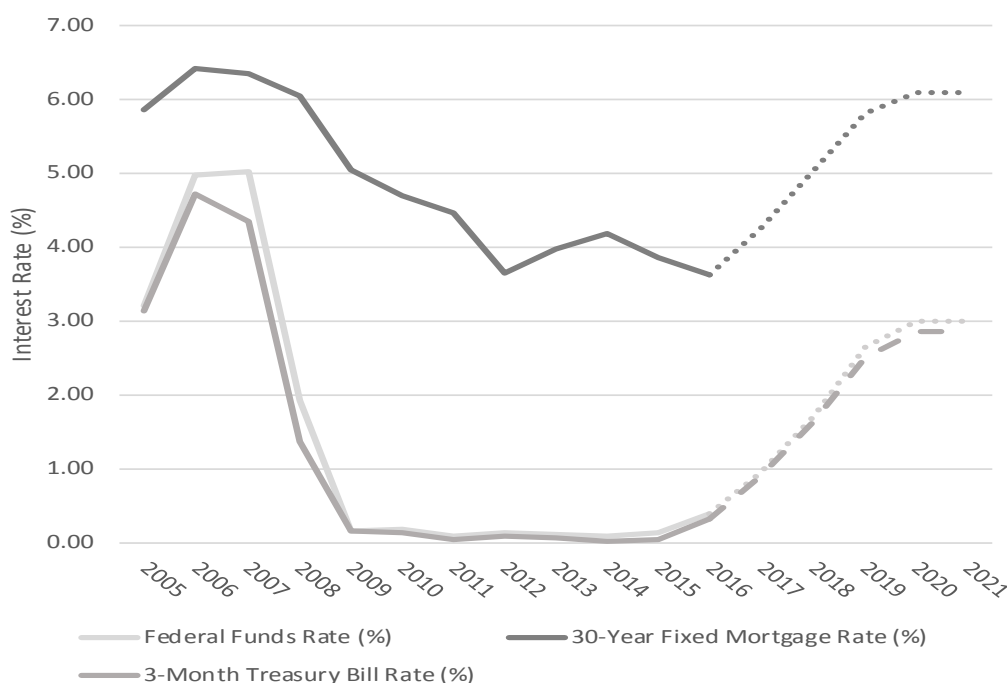
#### *Investment and Interest Rates*

The Fed raised the federal funds rate for the first time in 2016 on December 14, moving it from 0.25-0.50 percent (where it had been since the previous rate hike in 2015) to 0.50-0.75 percent. However, in 2017, the federal funds rate is expected to reach 1.3 percent by the fourth quarter. The 3-Month Treasury Bill rate is predicted to rise to 1.2 percent by the fourth quarter, and the 30-Year Mortgage rate is expected to increase to 4.6 percent, the highest it has been since the second quarter of 2011. Rates are expected to rise further in 2018, with the 30-Year Mortgage rate moving above 5 percent; the 3-Month Treasury Bill rate will reach 1.7 percent by the end of 2018.

Residential fixed investment is expected to grow

### 1.3. The U.S. Forecast, continued

**Figure 1.6: Interest Rates are Expected to Rise in the Next Few Years**



Source: Federal Reserve Board and Federal Home Loan Mortgage Corporation

by 2.7 percent in 2017, which will mark the seventh year of continued recovery for the housing market. The first quarter is expected to have particularly strong growth, with an annualized growth rate of 5 percent. Housing starts are expected to increase by 61 thousand units, up to 1.2 million, which still remains considerably below pre-recession levels (housing starts hit 1.8 million in 2006). Sales of existing homes are expected to reach 5.5 million, 16 thousand more than in 2016.

Existing housing prices are expected to continue rising in 2017: the median and average prices for existing houses are expected to increase by 3.7 percent and 4.2 percent, respectively. On the other hand, median and average prices for new houses are expected to fall by 4.3 percent and 1 percent, respectively. The FHFA Purchase-Only Price Index is expected to rise by 4.4 percent compared to increases of 5.7 percent and 5.6 percent in 2016 and 2015.

Nonresidential fixed investment is expected to grow by 4.6 percent in 2017 compared to falling by 0.2 percent in 2016. Investment in structures is

expected to experience particularly robust growth, growing by 6.6 percent compared to falling by 2.8 percent in 2016. In particular, the resurgence of oil prices is expected to lead to increased investment in mining and petroleum structures of 42.4 percent compared to a 43.9 percent decline in 2016. Likewise, equipment investment is expected to grow by 4 percent compared to its 2.5 percent decline in 2016.

Business inventories are expected to decline through the first two quarters as the inventory adjustment continues. Inventories should decline by \$8.7 million and \$4.3 million in inflation-adjusted dollars the first and second quarters of 2017 and slowly begin regaining ground in the third and fourth quarters, with inventory increases of \$3.3 million and \$14.9 million, respectively.

#### *Federal Budget*

The federal budget is expected to plateau in 2017 and grow by less than 1 percent up to \$1.1 trillion inflation-adjusted dollars, the same as in 2016. The deficit is projected to rise to \$548.6

### 1.3. The U.S. Forecast, continued

billion in 2017 and \$589 billion in 2018 compared to a deficit of \$587.3 billion in 2016. Any deficit will add to the overall U.S. debt, which is predicted to hit \$20.7 trillion in 2017. This would make 2017 the sixth year that U.S. federal debt has exceeded U.S. GDP. Rising debt, coupled with a strong economy, will contribute to rising interest rates.

Defense spending is expected to increase by 0.3 percent in 2017 compared to falling by 0.5 percent in 2016. Nondefense spending is expected to increase by 0.5 percent in 2017 compared to increasing by 2.5 percent in 2016. At the state and local level, spending is expected to grow by 0.8 percent. In 2018, both defense and nondefense spending are expected to fall 0.8 percent. The national debt, however, is predicted to continue to grow, as expected spending cuts are accompanied by tax cuts. By 2020, when Trump ends his first term, the total federal debt is expected to reach \$23.7 billion.

#### *International Trade*

Like the U.S. economy, the global economy is currently characterized by a high degree of uncertainty, which will only resolve itself with time. Chief among this uncertainty is how the election of Trump and the British exit from the European Union will impact the world economy. Trump frequently called for strong protectionist policies during his presidential campaign; these policies could hinder trade or even spark a trade war, which would be detrimental for both U.S. growth and global growth. (See the box “President Donald Trump’s Economic Agenda” in this chapter for more information). At the time this report is published, it remains to be seen if world trade will continue to recover from the recession or if the anti-globalization sentiments seen in the U.S. and

elsewhere will deter the global expansion.

An important factor impacting global trade is the exchange rate between the U.S. dollar and foreign currencies. A strong dollar translates into strong growth in imports and weak growth in exports. The U.S. exchange rate index was up 12.5 percent in 2015 and 4.7 percent in 2016; 5.3 percent growth is expected in 2017. The dollar is expected to fall in 2018 which will help the nation’s export posture.

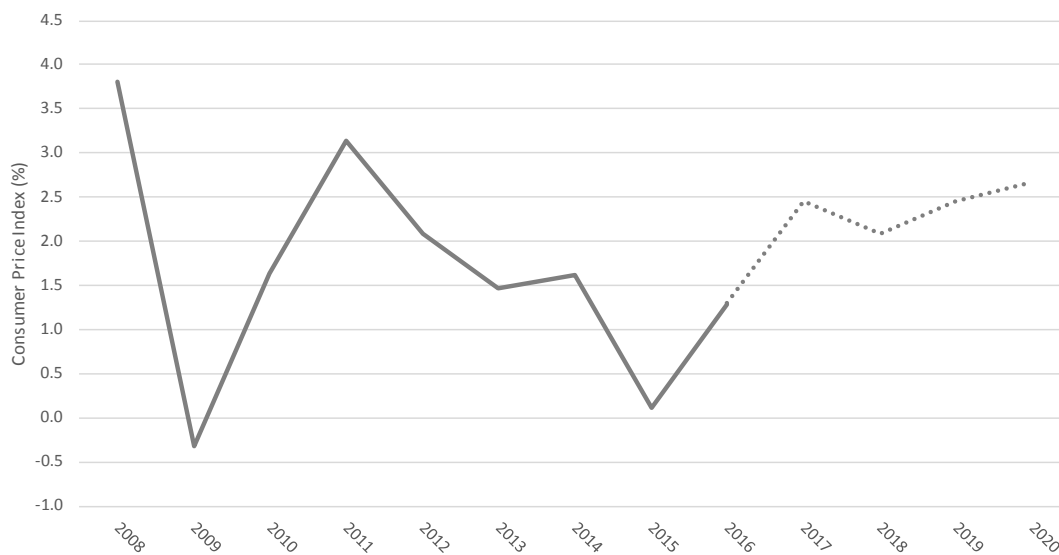
Both imports and exports are expected to increase in 2017, with imports experiencing more robust 4.4 percent growth and exports growing 1.9 percent. Exports of services are expected to be particularly strong, with a 2.9 percent increase compared to an increase in 2016 of 0.1 percent. Imports of foods, feeds, and beverages are expected to increase by 9.1 percent and imports of aircraft are expected to increase by 9.9 percent.

#### *Inflation and Prices*

Inflation is expected to begin rising in 2017 as import prices increase, the energy industry recovers, and wage growth accelerates. Consumer prices are predicted to increase 2.5 percent compared to increasing just 1.3 percent in 2016. The decline in producer prices seen the past two years is expected to end, and producer prices are expected to increase by 2.8 percent. Oil prices are expected to begin recovering and hit \$55.00 per barrel by the fourth quarter of 2017. The oil rig count began improving toward the end of 2016, which indicates that an increase in prices is foreseen by producers. If inflation hits 2.5 percent in 2017, it will be the first year that inflation has been within the Fed’s target range of 2 to 3 percent since 2012.

### 1.3. The U.S. Forecast, continued

**Figure 1.7: Inflation is Expected to Reach the Fed's Target Range in 2017**



Source: Bureau of Labor Statistics and IHS Global Insight, Inc.

### 1.4. Alternative Scenarios

The forecast presented here is based upon the most recent economic data and current policy environment. Alternative economic outlooks are possible. In the pessimistic scenario (20 percent probability), Trump's aggressive talk on tariffs results in strained trade relations with China and Mexico. As the U.S. imports less from both, the two countries retaliate by importing less from the U.S. This fall in U.S. exports leads to slower growth, which in turn hurts both consumer and business confidence. As business confidence falls, businesses invest less in capital, leading to falling productivity. Falling productivity hurts wage growth, which depresses consumer demand. This

combination of trade tension, falling consumer demand, and falling investment results in a stock market crash and a recession.

In the optimistic scenario (15 percent probability), Trump's twin policy prescriptions of regulation rollback and lower business taxes result in an increase in nonresidential investment. This rising investment boosts productivity, which in turn helps incomes rise. Increasing income, consumer confidence, and business confidence all help the economy to grow faster than predicted, leading to a boom in the stock market. In addition, the overall renewed confidence in the economy leads to a much stronger housing sector.

## 1.5. Forecast Summary and Conclusions

---

- Inflation-adjusted GDP will grow 2.3 percent in 2017 and 2.6 percent in 2018 compared to 1.6 percent in 2016.
- The Fed will continue raising interest rates. The federal funds rate is expected to reach 1.3 percent by the fourth quarter of 2017, and the 30-Year Fixed Mortgage rate is expected to reach 4.6 percent. Interest rates will generally rise through 2018.
- Consumer spending will remain the backbone of the economy and grow by 2.8 percent in 2017 in response to a tightening labor market.
- Inflation will begin to recover because of rising energy costs and wages, reaching 2.5 percent in 2017.
- Investment will improve as the inventory adjustment dissipates. Nonresidential fixed investment will grow 4.6 percent.
- The housing market will continue its slow growth and residential fixed investment will increase by 2.7 percent in 2017 and 3.1 percent in 2018.



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

### In this chapter—

- |   |  |
|---|--|
| <p><b>2.1. Introduction</b></p> <p><b>2.2. The Current Economic Environment</b><br/>The Labor Market<br/>Income and Taxable Sales</p> <p><b>2.3. Short-Term Outlook</b></p> <p><b>2.4. Tennessee Forecast at a Glance</b></p> | <p><b>2.5. Tennessee’s Agricultural and Forest Industries and Rural Economy</b><br/>Introduction<br/>Agriculture and Primary Forestry<br/>Commodity Market Trends and Outlook<br/>Food, Fiber, and Forestry<br/>Manufacturing in Tennessee<br/>Rural Economies and Well-Being<br/>Governor’s Rural Challenge<br/>Summary<br/>References Used</p> |
|---|--|

### 2.1. Introduction

The Tennessee economy slowed some in 2016, but still performed well for the year. The slower performance was due largely to weaker growth for the national economy. Nominal personal income, which includes all income from all sources earned by Tennesseans, was up 3.6 percent, matching the rate of growth for the nation. In 2015, income growth in Tennessee outstripped national growth by more than a percentage point. The state’s labor market has shown continued momentum. Nonfarm employment was up 2.4 percent for the year compared to 1.8 percent growth for the U.S. The state’s manufacturing sector showed robust 2.7 percent growth while the nation’s manufacturing sector lost jobs in 2016. The state unemployment rate averaged 4.6 percent in 2016, just under the 4.9 percent national unemployment rate, and well

below the 5.8 percent state rate registered in 2015. In Tennessee, the number of unemployed people fell 10.3 percent in 2015 and 18.1 percent in 2016. Unfortunately, the state unemployment rate rose as year unfolded, moving up from the remarkable 4.1 percent rates that were recorded in May and June.

Stronger nominal and inflation-adjusted output and income growth is expected this year and through 2018. Tennessee’s inflation-adjusted gross domestic product (GDP) is expected to be up 2.1 percent in 2017 and 2018, while the U.S. is expected to see slightly stronger growth of 2.3 percent and 2.6 percent. Somewhat stronger growth, coupled with rising energy prices, will put upward pressure on inflation. The Consumer Price Index is likely to rise 2.5 percent this year compared to only 1.3 percent growth last year.



## 2.1. Introduction

---

The state's nominal income growth of 4.5 percent will align closely with the 4.6 percent growth rate expected for the nation. Nonfarm employment in Tennessee will see slower growth of 1.4 percent because of the tightening labor market; nonfarm

employment for the nation is expected to advance 1.3 percent. Tennessee's unemployment rate is projected to average 4.8 percent for the year, slightly ahead of the 4.6 percent rate expected for the nation.

## 2.2. The Current Economic Environment

---

### The Labor Market

State and national labor markets are showing signs of tightening on the heels of several years of strong job growth. December represented the 75<sup>th</sup> consecutive month of employment gains for the national economy with the creation of 156 thousand new jobs. Average hourly earnings were up 2.9 percent on a year-over-year basis for the month which is especially encouraging to workers who have seen stagnant earnings growth in recent years. The nation's unemployment rested at a remarkably low 4.7 percent in December. Tennessee saw another strong year of job growth in 2016, with nonfarm payrolls expanding an estimated 2.4 percent, reflecting 69,500 new jobs. The state unemployment rate stood at 4.8 percent in December.

Accompanying these broad-based improvements in the labor market are two problems. First, there is growing anecdotal evidence suggesting that employers are finding it hard to fill vacancies. This is especially the case in metropolitan areas where labor markets are particularly tight, as evidenced by exceptionally low unemployment rates. Rising labor costs are a substantive example of labor market tightness. On the other hand, underemployment remains a problem for some workers, unemployment rates are high for some demographic groups of the population and the number of discouraged workers (individuals who have withdrawn from the labor force because of bleak employment prospects) remains elevated. Unfortunately, there is little concrete evidence on these problems in Tennessee. Nationally, teenage individuals aged 16 to 19 confronted an unemployment rate of 14.7 percent in December; for Blacks or African-Americans, the unemployment rate for this cohort was

25.7 percent. High school graduates faced an unemployment rate of 5.1 percent while those with a college degree had an unemployment rate of only 2.5 percent. The U-6 measure of unemployment, which accounts for underemployed and discouraged workers, was 9.2 percent in December. While elevated, this broad measure of unemployment has seen marked improvement since the depths of the Great Recession.<sup>1</sup>

Momentum is slowing in the labor market, which is to be expected in light of years of strong job growth numbers and currently-low unemployment rates. The number of new job openings for the national economy appears to have plateaued and monthly U.S. job gains have begun to slow. State and national unemployment rates have likely bottomed out for the current cycle. Tennessee continues to see healthy job gains but these will slow. Nonfarm payrolls expanded by 2.4 percent in 2016 compared to 1.7 percent job growth for the nation; the state saw 1.9 percent year-over-year job growth in December.

The state's 2.4 percent rate of nonfarm employment growth last year was down only slightly from the 2.5 percent pace of 2015. Nonfarm employment in Tennessee has now grown for six consecutive years. Education and health services racked up 4 percent growth for the year. Wholesale trade was up 3.1 percent and professional and business services grew 2.9 percent. The state and local government sector was the only area of contraction in 2016, with jobs slipping by 0.01 percent.

The state's manufacturing sector has also seen six years of job growth, including four years of growth in nondurable goods manufacturing. The

<sup>1</sup> For additional detail on the national labor market patterns discussed here, see the U.S. Bureau of Labor Statistics, *The Employment Situation – December 2016*. Available at <https://www.bls.gov/news.release/pdf/empisit.pdf>

## 2.2. The Current Economic Environment, continued

state's manufacturing sector posted a 2.7 percent gain in 2016, with jobs up 2.8 percent in the durable goods sector and up 2.7 percent in the nondurable goods sector. The transportation equipment sector showed the strongest growth, advancing 6.8 percent. (This sector alone accounted for one-third of all jobs in durable goods manufacturing in 2016). Electrical equipment and primary metals also had strong growth for the year.

Within nondurable goods manufacturing, the beverage and tobacco sector showed the strongest growth, with job gains of 7.7 percent; this sector accounted for only 5 percent of all nondurable goods jobs in 2016. Miscellaneous nondurable goods, which accounted for only 2.6 percent of all nondurable goods employment, saw employment spike 71.4 percent.

The economy has made significant strides since the onset of the Great Recession in December 2007. Table 2.1 places the state's performance in context by presenting nonfarm employment growth trends for the southeastern states since 2007. Overall employment for the national

economy was up just 5.2 percent, a figure that is depressed by the jobs losses that transpired over the Great Recession. Tennessee, Florida, Georgia and South Carolina are the only states in the region to show stronger growth than the national average. Tennessee placed first among the regional states with 6.6 percent growth. Alabama and Mississippi have seen declines in employment over this relatively long time frame.

Table 2.2 provides similar pre-recession and post-recession data for the region's manufacturing sector. While the nation has experienced several years of job growth in manufacturing, this has been insufficient to overwhelm the dramatic losses that took place because of the recession. The net effect for the nation is 11.7 percent job erosion. Even the best-performing states in the region—South Carolina and Kentucky—suffered employment losses between December 2007 and December 2016. Tennessee placed 23<sup>rd</sup> among all states with a 10.6 percent setback in manufacturing employment. The worst performance was in West Virginia where manufacturing jobs are down 21 percent.

**Table 2.1: Great Recession Affects Nonfarm Employment Growth in the Southeastern States**

Area	Employment (thous)		Growth 2007 to Nov-16	Rank in the U.S.
	2007	Nov-16		
United States	137,999.0	145,147.0	5.2%	x
Tennessee	2,797.4	2,983.0	6.6%	1
Alabama	2,005.7	1,976.1	-1.5%	13
Arkansas	1,204.5	1,229.0	2.0%	10
Florida	7,998.3	8,465.0	5.8%	4
Georgia	4,166.4	4,422.9	6.2%	3
Kentucky	1,856.2	1,917.5	3.3%	8
Louisiana	1,915.8	1,975.3	3.1%	9
Mississippi	1,154.2	1,139.7	-1.3%	12
North Carolina	4,141.2	4,353.2	5.1%	6
South Carolina	1,945.0	2,070.8	6.5%	2
Virginia	3,769.5	3,933.7	4.4%	7
West Virginia	764.0	771.9	1.0%	11

Source: U.S. Bureau of Labor Statistics

## 2.2. The Current Economic Environment, continued

**Table 2.2: Despite Recent Short-Term Growth, Manufacturing Jobs are Down from Pre-Recession Levels**

Area	Employment (thous)		Growth 2007 to Nov-16	Rank in the U.S.
	2007	Nov-16		
United States	13,879.0	12,258.0	-11.7%	x
Tennessee	380.0	339.9	-10.6%	23
Alabama	296.3	265.0	-10.6%	24
Arkansas	190.6	153.4	-19.5%	46
Florida	399.0	358.6	-10.1%	21
Georgia	431.2	387.6	-10.1%	20
Kentucky	255.7	244.5	-4.4%	10
Louisiana	157.2	134.0	-14.8%	33
Mississippi	169.5	143.0	-15.6%	37
North Carolina	538.5	463.3	-14.0%	29
South Carolina	249.0	241.9	-2.9%	6
Virginia	277.8	229.0	-17.6%	42
West Virginia	59.0	46.6	-21.0%	48

Source: U.S. Bureau of Labor Statistics

Strong employment growth has contributed to a falling and now stabilizing state unemployment rate. The state rate has actually inched back upwards to 4.8 percent from the exceptionally-low 4.1 percent rates that were recorded in May and June 2016. Tennessee's 4.8 percent rate is now slightly above the 4.6 percent rate for the U.S. (December).

The number of unemployed people is volatile on a quarterly and monthly basis. For example, the second quarter of 2016 produced a 47.5 percent seasonally-adjusted decline in the number of unemployed while the subsequent quarter produced a 28.5 percent spike upwards. On an annual basis, the number of unemployed people fell 10.3 percent in 2015 and estimates for 2016 suggest another large drop of 18.1 percent.

Unemployment rates for the southeastern

states for November 2016 are shown in Figure 2.1. Tennessee's 4.8 percent rate for the month placed it fifth among the states, with a tie against neighboring Kentucky. The lowest rate in the region was in Arkansas (4 percent) and the highest rate was in West Virginia (6 percent).

The labor force participation rate had been a major concern during and in the aftermath of the Great Recession as discouraged workers left the labor market in large numbers. There is now evidence of a modest turnaround, including December's state labor market report which showed a 0.4 percent gain for Tennessee. (The U.S., on the other hand, experienced a slight setback of 0.1 percent for the month). In 2015, the state's labor force participation rate was up 1 percent, the first growth since 2011. The number of employed people grew 1.7 percent in 2015

## 2.2. The Current Economic Environment, continued

### Prescription Opioids and the Labor Market: Is There a Connection?

The use of prescription opioids has sharply increased across the U.S. The magnitude of opioid use in Tennessee is nothing less than alarming with the state in the top two for both total prescriptions and the number of high-dose prescriptions. A 2014 report showed that more than 50 percent of publicly-funded substance abuse treatment admissions in Tennessee were attributable to opioids, compared to a 16 percent national average. A remarkable 4.56 percent of the state population was classified as addicts or risky users in need of early intervention. Among young people (aged 18 to 25), the rate of use of prescription opioids was 30 percent higher in Tennessee than the national average.

The legitimate use of prescription opioids alleviates pain and helps patients cope with their health problems. But legitimate and illegitimate use of opioids can also affect an individual's engagement with the labor market. Individuals might lose or quit their jobs, or cease looking for a job. This will have potentially grave financial and psychic consequences for the individual and the family. Impacts might also surface in local labor markets leading to adverse effects on economic development. If prescription opioid use affects the availability of workers and expected workplace productivity, allocating additional funds for preventing opioid use may positively affect wages, the path of economic development, and the expected future tax base. This may be especially important for those in rural communities where opioid use is often highly prevalent.

Researchers at the Boyd Center for Business and Economic Research are actively involved in a research agenda to determine the extent to which prescription opioid use is associated with adverse labor market outcomes. Their initial research explores county-level opioid prescriptions and the consequences for county labor markets, as measured by unemployment rates, labor force participation rates and employment-to-population ratios. They are using data generously provided by the Tennessee Department of Health and health agencies in a number of other states around the country.

Preliminary research findings indicate that when counties are characterized by higher opioid prescriptions, unemployment rates are higher, labor force participation rates are lower and employment-to-population ratios are lower. These findings should materially affect the public health discussion regarding the nature and consequences of opioid use in Tennessee. Broader prevention, mitigation and treatment efforts may be warranted due to the scope of the problem and the costs that are borne by individuals, families and society at large.

#### Reference:

Tennessee Department of Mental Health and Substance Abuse. *Prescription for Success: Statewide Strategies to Prevent and Treat the Prescription Drug Abuse Epidemic in Tennessee*, Summer 2014. Available at: [https://www.tn.gov/assets/entities/behavioral-health/sa/attachments/Prescription\\_For\\_Success\\_Full\\_Report.pdf](https://www.tn.gov/assets/entities/behavioral-health/sa/attachments/Prescription_For_Success_Full_Report.pdf)

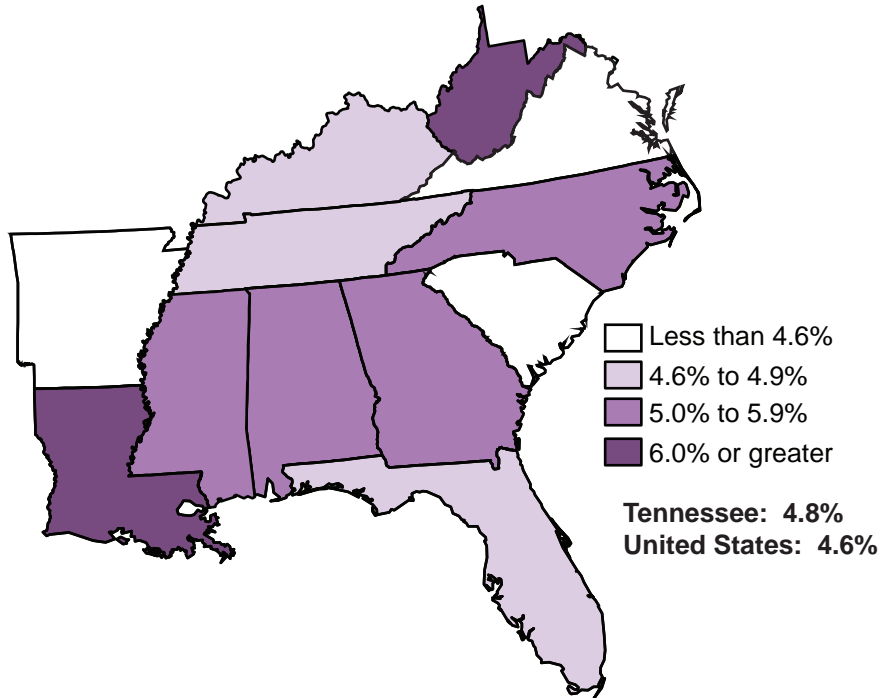
and much stronger growth is expected for 2016. Growth in employed people in 2015 was also the strongest since 2011.

A longer-term perspective on participation rates is offered by Figure 2.2, which shows the history for adult men and women dating back to 1948 for the national economy. It is especially striking that the labor force participation rate of adult men has been in decline since 1948. Rising labor force

participation rates for women were pivotal to the growth of overall participation rates up to 2000. While it is clear that the Great Recession impacted participation rates, it is also clear that the recession was not the sole source or primary source of decline. Even if we see a short-term rebound in participation rates, the data shown in Figure 2.2 suggests that such a rebound would be short lived.

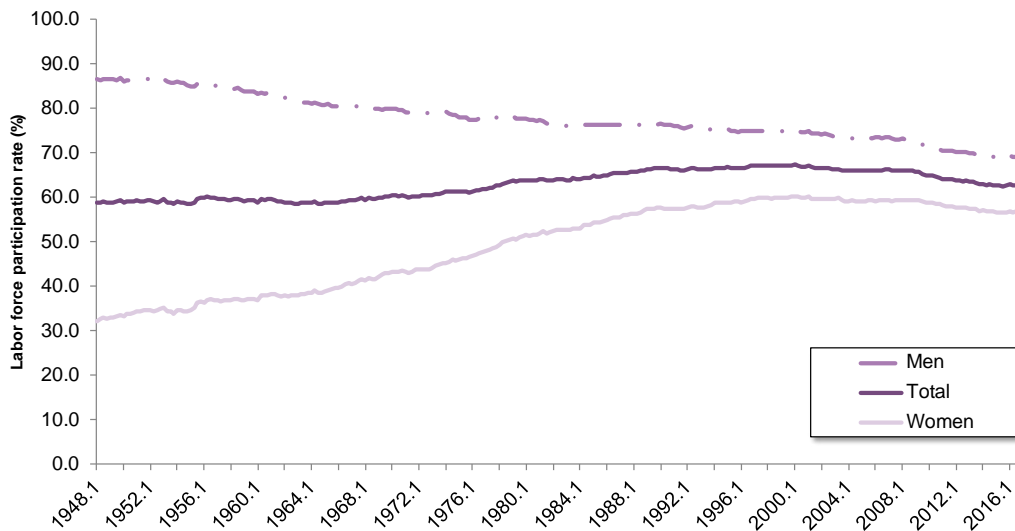
## 2.2. The Current Economic Environment, continued

**Figure 2.1: Low Unemployment Rates Prevail across most Southeastern States (November 2016)**



Note: Data are seasonally adjusted.  
Source: U.S. Bureau of Labor Statistics

**Figure 2.2: U.S. Labor Force Participation Rate Peaked in 2000**



Source: U.S. Bureau of Labor Statistics

## 2.2. The Current Economic Environment, continued

### Income and Taxable Sales

Nominal personal income growth has been restrained in part because of relatively low inflation. Tennessee's nominal personal income still grew at a healthy 5.5 percent rate in 2015, largely because of strong growth in wage and salary income which was up 5.8 percent and proprietors' income which jumped 10.9 percent. U.S. personal income advanced only 4.4 percent in 2015. Income growth is estimated to have slowed in 2016, with Tennessee likely to see a smaller gain of just 3.6 percent compared to the same growth for the national economy. In Tennessee, slower growth took place in wage and salary income, proprietors' income, rent/interest/dividend income and transfer income. The only growth was in the other labor income category, which includes employer contributions to pensions and health insurance, and employer contributions to social insurance.

Per capita income growth also slowed in Tennessee in 2016. Following 4.4 percent growth in 2015, nominal personal income was up only 2.5 percent in 2016. Tennessee's per capita income stood at \$42,740 last year compared to \$49,329 for the national economy. This means that Tennessee's income is 86.6 percent of the national average.

Over the long-term, Tennessee has seen improvement in its per capita income standing among the southeastern states but has not seen the same movement with respect to national average per capita income. Figure 2.3 illustrates Tennessee's standing across the southeastern

states for 2015. Tennessee's per capita income was \$42,094 for the year, well below the national average of \$48,112. Only three states in the region had higher per capita incomes: Virginia, North Carolina and Florida. Virginia held the top spot (\$52,052) while the bottom spot was held by Mississippi (\$34,771).

Taxable sales showed exceptionally strong growth in 2015, especially with respect to the prime underlying driver of sales, personal income. While taxable sales were up 6.6 percent, personal income advanced at the respectable, but considerably slower pace of 5.5 percent. This was the fifth year in a row with sales growth exceeding income growth. Taxable sales growth for 2016 is projected to be 5.1 percent compared to income growth of just 3.6 percent.

Automobile dealer sales were a major impetus for overall taxable sales growth in 2015, with a gain of 11.7 percent. While sales fell on a seasonally-adjusted basis in the first quarter of 2016, growth was restored in the second quarter and the third quarter produced a 11.9 percent spike in sales. Light trucks are the source of the gains, benefiting from low gasoline prices. Hotels and motels saw double-digit growth in 2014 and 2015, and a double-digit gain is also expected for 2016. Strong labor market conditions and low gasoline prices have been instrumental in promoting this tourism-related growth. (The leisure and hospitality services sector experienced job growth in excess of 3 percent in 2013, 2014 and 2015; job growth slowed to 1.8 percent in 2016).

## 2.2. The Current Economic Environment, continued

### Transportation Infrastructure and Economic Growth

At one level, the connection between transportation infrastructure and economic growth is clear. Without good quality roads, we could not easily shop or get to work, while business supply chains and wholesaling activities would be hampered. Transportation infrastructure and economic growth necessarily go hand in hand. But formally measuring these linkages and the effects on economic growth is in practice difficult. The problem is that while transportation infrastructure leads to more growth, more growth also leads to more roads. Separating out causality is the challenge when conducting research. Ultimately we would like to know how greater road expenditures directly affect economic growth, as measured by income, output and employment.

Hundreds of studies have sought to answer this question. Much of this work emerged in the 1980s when the nation was concerned about a national productivity slowdown. Similar growth concerns have surfaced more recently and the finger has often been pointed to stagnant state gasoline and diesel tax rates as part of the problem.

Investments in transportation infrastructure can affect economic growth in a number of ways.

- **Time costs.** “Time is money,” as the old adage goes. Time costs are important to commuters, shoppers and travelers, as well as businesses that must connect to supply chains (just-in-time inventory systems in particular) and get finished products to wholesalers, retailers and ultimately consumers. Lower time costs mean lower input and final product prices.
- **Congestion costs.** Poor quality roads can create congestion that delays traffic and raises time costs.
- **Vehicle wear and tear.** Rough roadways impose costs on light vehicles and heavy trucks that are borne directly by households and businesses. These costs rise in congested environments due to stop and go traffic.
- **Life and limb.** Sound investments in transportation infrastructure can help protect people from injury and death. For example, poor road drainage and signage, along with congestion, place drivers and others at risk.
- **Productivity.** Good roads can improve the productivity of the economy and the inputs used for production, including private capital investments and labor. Firms that are especially interested in low transportation costs may bring processes, technologies and skill requirements that create agglomeration economies for a region that enhances its competitiveness.

Research on the linkage between transportation infrastructure and economic growth has produced a range of findings from very large impacts to inconsequential impacts. How does one distill all of this into some basic conclusions? One approach takes all of the research and applies what is called meta-analysis. In practice, this is nothing more than applying statistical methods to a range of statistical findings from disparate research. A recent study has done just this, focused on transportation infrastructure rather than other forms of public investment.

The punchline?

- Roads are more important for larger regions. The practical reason is that larger regions connect more commerce. This finding helps explain why the federal government plays such a large role in financing the interstate highway system.
- Transportation infrastructure has differential consequences for different sectors of the economy. Manufacturing benefits the most while the service sector benefits the least.
- Investments in roads provide a greater return than investments in other forms of infrastructure, including air, rail and water.
- On average, a 10 percent increase in investment leads to a 0.5 percent increase in economic output. While this gain is modest, it represents an annual flow of returns to increased investment in the stock of transportation infrastructure.

Reference:

Patricia C. Melo, Daniel J. Graham and Ruben Brage-Ardao. “The Productivity of Transportation Infrastructure: A Meta-Analysis.” *Regional Science and Urban Economics* 43 (2013): 695-706.

### 2.3. Short-Term Outlook

Table 2.3 provides a detailed summary of the short-term economic outlook for Tennessee and the U.S. The state is expected to see 1.4 percent and 1.2 percent gains in nonfarm payrolls in 2017 and 2018, while job growth for the U.S. should come in at 1.3 percent and 1.2 percent in the same years. The state unemployment rate will hold at 4.8 percent this year compared to a 4.6 percent national unemployment rate. Nominal personal income for Tennessee and the U.S. will see some acceleration in growth due to inflation and a modest increase in average hourly earnings. Expect the state's nominal personal income to be up 4.5 percent in 2017 with national income growth coming in a bit higher at 4.8 percent.

The labor market is expected to see decent albeit slower growth in 2017 and 2018. This is not a sign of any fundamental weaknesses in the economy, instead it is simply a signal of the labor market's approximate return to *full employment*. Most broad sectors will realize slower growth moving from 2016 to 2017. Natural resources, mining and construction, information, professional and business services, education and health services, leisure and hospitality services, and other services will all show growth above the nonfarm average of 1.4 percent in 2017. Nonfarm job growth will slow further to 1.2 percent in 2018. The outlook for the state and national labor markets is shown in Figure 2.4.

Manufacturing has seen surprisingly robust growth with annual job gains in excess of 2 percent dating back to 2014. Of particular note is the respectable job growth in the nondurable

goods manufacturing sector, a sector that was shrinking rapidly before the onset of the Great Recession. Unfortunately, growth will slow significantly in 2017 and 2018 relative to recent trends. Overall manufacturing employment will be up 0.8 percent in 2017 and 0.9 percent in 2018, compared to 2.7 percent growth last year. The slight improvement in 2018 is built on the assumption that the U.S. dollar will depreciate in international currency markets, improving the attractiveness of domestically-produced goods. The nation's manufacturing is expected to see job growth of 0.2 percent in 2017 and 0.9 percent in 2018. Advances in durable goods employment will slow to 1.2 percent and 1.4 percent in 2017 and 2018; nondurable goods will see employment growth slow to 0.3 percent and then be flat in the same years. Within durable goods, all sectors will see growth in the next two years other than fabricated metals, machinery and computers and electronics. Within nondurable goods, printing and chemicals will suffer from setbacks in 2017 and 2018; textile mills will see a setback in 2018.

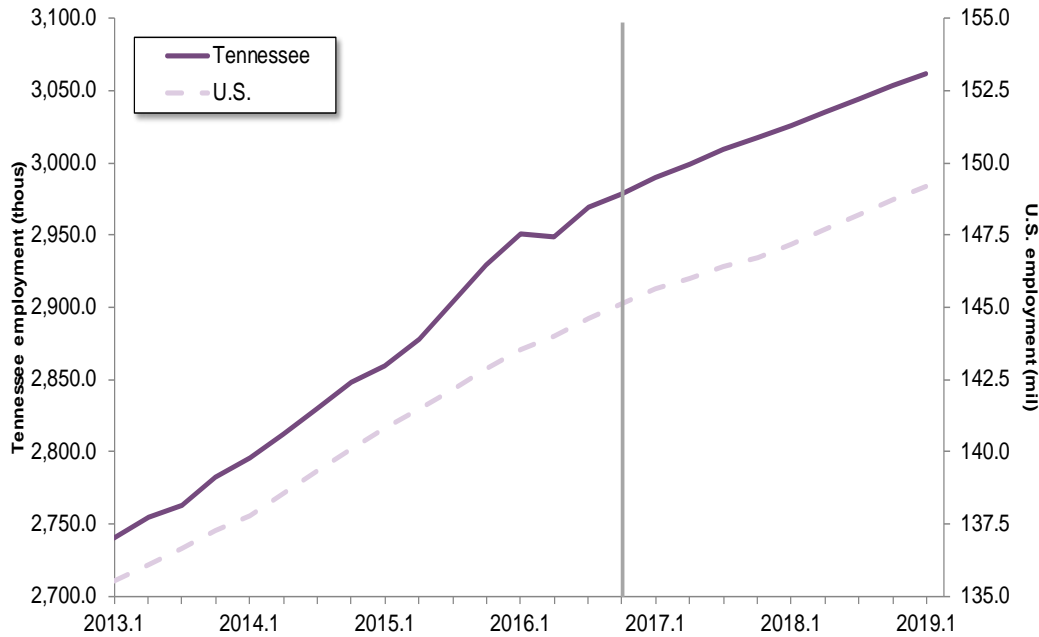
A healthy state labor market should produce growth in the labor force through the short-term forecast horizon. However, the labor force participation rate will return to its long-term trend in 2018 after just two years of improvement. Growth in the number of employed people will slow to 1.4 percent this year from the exceptionally strong 4.2 percent growth rate registered in 2016. The state unemployment rate will hover between 4.6 and 4.8 percent in 2017 and 2018, a sign of a sustained labor market strength.





### 2.3. Short-Term Outlook, continued

Figure 2.4: Tennessee and U.S. Nonfarm Employment Growth will Slow in the Quarters Ahead



Source: U.S. Bureau of Labor Statistics, Boyd CBER and IHS, Inc.

### Funding Transportation Infrastructure in Tennessee

The Tennessee Department of Transportation (TDOT) funds highways and roads with a mix of revenue sources. The federal government contributes nearly one-half of all TDOT revenue. State revenue sources, in order of importance, include the gasoline tax, motor vehicle registration fees and the motor fuel (diesel) tax; relatively modest revenues come from the sales, gross receipts, beer and special petroleum products taxes. To place the figures in perspective, the gasoline and diesel fuel taxes accounted for 72 percent of state contributions in the 2014/15 fiscal year.

The state's gasoline tax rate, inclusive of the one cent petroleum and 0.4 percent environmental assurance fees, stands at 21.4 cents per gallon, the same rate that prevailed in 1989. The diesel tax rate is 17 cents per gallon, or 18.4 cents per gallon when the petroleum and environmental fees are added in; the rate has been unchanged since 1990. These *per unit* levies are not adjusted for inflation, while the costs of road construction generally rise from year to year. Moreover, improved fuel economy for all classes of vehicles has reduced the productivity of the user fees intended to support transportation infrastructure. From 1989 to 2013, light vehicles have seen 20 percent improvement in miles per gallon. Since the gas and diesel levies are per unit excise taxes, improved fuel economy means less demand for fuel and less revenue for a given vehicle. Federal government corporate average fuel economy (CAFE) standards will likely translate into outright declines in overall gasoline consumption by the early stages of the next decade. Over the next two decades, this will mean a one-third reduction in fuel-related revenue per mile driven.

As the productivity of traditional fuel levies erodes, the state will see ongoing population pressures and rising costs due to inflation. Projections indicate that the state's population will grow by 9.9 percent between 2016 and 2025. Much of this population growth will take place in metropolitan areas where road construction costs are relatively high and congestion is prevalent. The Consumer Price Index (CPI) is expected to reflect inflation running at about 2.5 percent per year over the

*continued on page 30*

## 2.3. Short-Term Outlook, continued

*continued from page 29*

same period of time. These forces will further strain the state's capacity to fund roads.

The state has any of a number of policy options it may pursue to help shore up transportation funding. Rates could be increased, subject to ongoing inflation-adjustment, or adjusted for improvements in fuel efficiency. Other alternatives include imposing the sales tax on fuel purchases or introducing a new vehicle miles traveled (VMT) tax. These are some of the more popular paths considered and/or chosen by other states in recent years.

Each of the policy alternatives has its strengths and weaknesses. For example, raising rates builds on the existing system of gas and diesel fuel tax administration and collection. A VMT tax, on the other hand, would require a new mechanism for reporting mileage and payment of tax, and thus new administration and compliance costs. A sales tax would be straightforward to implement, but gas prices tend to be volatile so revenues would become much more volatile than is the case with the existing excise taxes. Policymakers and the public should carefully consider the strengths and weaknesses of each of the alternatives before implementing any changes to the current system.

For Further Reading:

Tennessee Comptroller of the Treasury, Offices of Research and Education Accountability. *Tennessee Transportation Funding: Challenges and Options*, January 2015. Retrieved from <http://www.comptroller.tn.gov/OREA/PublicationDetails?ReportKey=57b20768-f541-4531-bfac-4746da14d85c>

Mark L. Burton, David L. Greene and Matthew N. Murray. *The Future of Roadway Funding in Tennessee*, November 24, 2015. Policy Brief 4.15, Howard H. Baker Jr. Center for Public Policy, The University of Tennessee, Knoxville. Retrieved from <http://bakercenter.utk.edu/wp-content/uploads/2015/11/PolicyBrief-4-15-Gas.11.24.15.pdf>

Mark L. Burton, Matthew N. Murray, Emily K. Pratt and Jilleah G. Welch. *Tax Policies and Alternative Revenue Sources: State Responses to Declining Purchasing Power of Roadway Funding*, November 30, 2016. Policy Brief 5.16, Howard H. Baker Jr. Center for Public Policy, The University of Tennessee, Knoxville. Retrieved from [http://bakercenter.utk.edu/wp-content/uploads/2016/12/PolicyBrief-5-16-Burton.Gas\\_.Tax\\_.12.5.pdf](http://bakercenter.utk.edu/wp-content/uploads/2016/12/PolicyBrief-5-16-Burton.Gas_.Tax_.12.5.pdf)

Rebecca J. Davis, Matthew N. Murray and Jilleah G. Welch. *How Much Should Hybrids and Electric Vehicles Contribute to Roadway Funding?* January 3, 2017. Policy Brief 1.17, Howard H. Baker Jr. Center for Public Policy, The University of Tennessee, Knoxville. Retrieved from <http://bakercenter.utk.edu/wp-content/uploads/2017/01/PolicyBrief.1.17.RoadwayFunding.pdf>

The outlook for nominal personal income and taxable sales is summarized in Figure 2.5. Tennessee's nominal personal income growth slowed appreciably to just 3.6 percent in 2016, but stronger 4.5 percent growth is expected in 2017, with growth accelerating to 5.1 percent in 2018. Nominal income for the national economy will be up 4.6 percent in 2017 and 5.2 percent in 2018. While average wages are expected to experience more robust growth in 2017 and 2018, a slower pace of job creation will offset this growth yielding slower growth in overall wage and salary income. Proprietors' income should advance 4.9 percent

and 6.6 percent in 2017 and 2018. Rent, interest and dividend income will be up 4.8 percent this year and up 6 percent next year. On a fiscal year basis, nominal personal income should be up 4.8 percent in 2017/18.

Nominal per capita income growth in Tennessee is projected to be 3.5 percent in 2017, producing a per capita income figure of \$44,217. Per capita income will rise a further 4 percent in 2018.

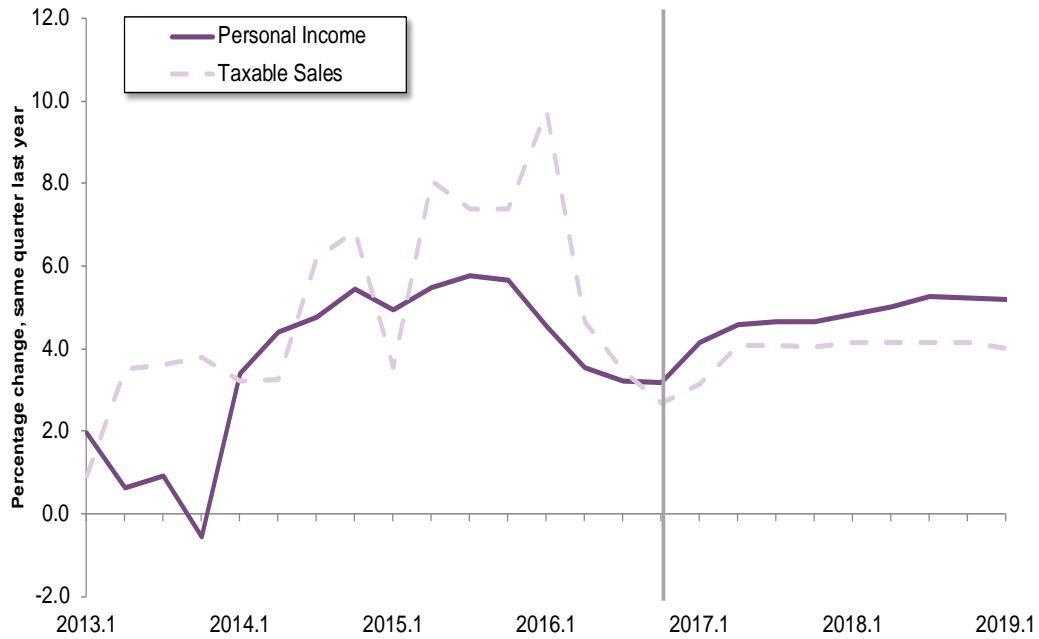
Taxable sales are expected to slow from the strong rates that were recorded in 2015 and 2016 (see Figure 2.5). Overall nominal sales should see 3.8 percent growth in 2017 and slightly stronger

### 2.3. Short-Term Outlook, continued

4.2 percent growth in 2018. Hotels and motels will experience especially strong growth rates of 8.2 percent and 6.4 percent in 2017 and 2018. The value of automobile dealer sales is projected to grow 5 percent this year and 4 percent next year, reflecting a modest slowdown from 2016.

(Nationally, light vehicle sales will be down in 2017 and then show very modest growth in 2018.) Taxable sales will rise 4.1 percent in fiscal year 2017/18.

**Figure 2.5: Taxable Sales Growth will Slow and Rest Below Personal Income Growth**



Source: Tennessee Department of Revenue; U.S. Bureau of Economic Analysis and Boyd CBER

### 2.4. Tennessee Forecast at a Glance

- Nominal personal income in Tennessee should grow 4.5 percent in 2017, followed by 5.1 percent growth in 2018.
- Nonfarm jobs should be up 1.4 percent and 1.2 percent in 2017 and 2018. Manufacturing will see job gains of 0.8 percent and 0.9 percent.
- The unemployment rate will average 4.8 percent in 2017 and 4.6 percent in 2018.
- Nominal taxable sales should be up 3.8 percent and 4.2 percent in 2017 and 2018, respectively.

## 2.5 Tennessee’s Agricultural and Forest Industries and Rural Economy

### Introduction

Tennessee’s agri-forestry industrial complex is comprised of farming, first-stage forestry (e.g., timber removal and sawmills), the production of agricultural inputs such as agricultural machinery, fertilizers, soil amendments and herbicides, and the manufacturing of food and fiber goods (i.e., food and beverage products, textiles and textile products, wood, paper and furniture products) as shown in Figure 2.6. This section of the report focuses on economic indicators for three main areas related to the agri-forestry industrial complex:<sup>1</sup> 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)

<sup>1</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.

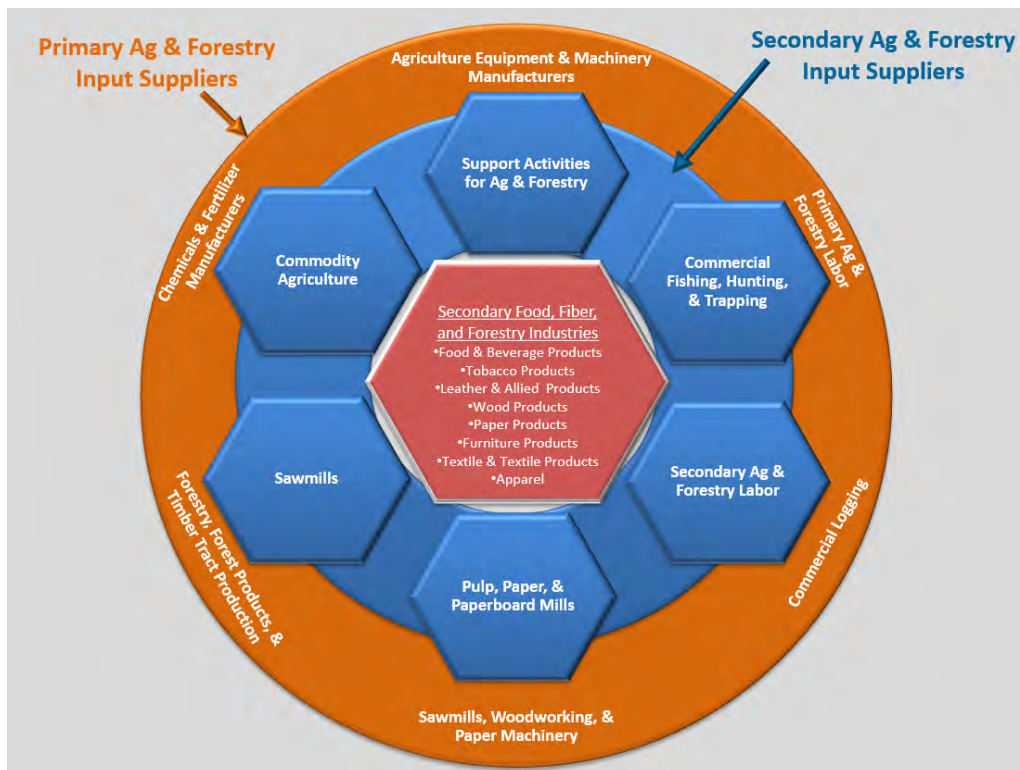
well-being indicators for rural communities, which provide important infrastructural, resource, and labor support for these industries. Indicators of progress toward recommendations made in the Governor’s Rural Challenge a 10-Year Strategic Plan: Increasing Rural Tennessee’s Capacity to Produce are also discussed (TDA 2013).

### Agriculture and Primary Forestry

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

In 2015, farming operations occupied 10.9 million acres in Tennessee, or a little more than 40 percent of the state’s nearly 27 million acres of land area (USDA/NASS 2016g). Approximately 49 percent of the farmland in Tennessee was operated as cropland in 2012 (USDA/NASS 2012). Tennessee’s farming industry is characterized by two types of farming operations: larger farms that rely primarily on farm income, and small farms,

Figure 2.6 :Tennessee’s Agri-Forestry Industrial Complex



## 2.5. Tennessee's Agricultural and Forest Industries and Rural Economy, continued

many of which are operated by part-time farmers. Of Tennessee's 67,300 farming operations, average farm size in 2015 was 162 acres, smaller than the U.S. average of 441 acres (USDA/NASS 2016g). Tennessee ranks 11th in the U.S. in terms of the number of farming operations (TDA 2016).

### *Tennessee's Crops and Livestock*

The 2015 value of cash farm receipts from crops and livestock in Tennessee was just under \$3.7 billion, with \$1.6 billion from animals and \$2.1 billion from crops (Table 2.4). Overall, Tennessee ranks 32nd in the U.S. in cash farm receipts – a rank held since 2011 (USDA/ERS 2016c). The top 10 Tennessee agricultural products in value of cash farm receipts are listed in Table 2.4, along with the state's ranking for each product. In 2015, 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, dairy products, wheat, hay, tobacco, and vegetables and melons. The top 10 commodities in the state accounted for about 84.8 percent of 2015 cash farm receipts. Tennessee ranks in the top 10 states in value of cash farm receipts from tobacco and cotton.

Table 2.4 also shows cash farm receipts over the past five years. Cash farm receipts from soybeans, wheat, and vegetables and melons each exhibited more than 10 percent average annual growth from 2011 to 2015. Only cotton and dairy products experienced an overall decline in cash farm receipts from 2011 to 2015. Over this time period, the value of cash farm receipts from all commodities in Tennessee grew by an annual average of 3.4 percent, exceeding the average annual growth for the country as a whole of 1.2 percent. U.S. average annual change in cash farm receipts for all crops was actually negative at just about -1.0 percent from 2011 to 2015, while Tennessee's crop sector cash farm receipts grew by an average of 3.7 percent during this time. Average growth in cash receipts from the livestock sector was slightly lower for Tennessee at 3.3 percent compared with 4.1 percent for the U.S. Tennessee's soybean cash farm receipts experienced a 13.2 percent average annual growth compared with the U.S. average of 3.3 percent. While cotton experienced an average 15.7 percent annual decline in value of cash receipts in Tennessee from 2011 to 2015, U.S. average decline in value of cash receipts from cotton was around 7.1 percent. Also, although cash receipts

**Table 2.4: Tennessee Cash Farm Receipts and Share Commodity Exports, 2011-2015**

	Value of Cash Receipts (million \$)					Avg. Annual Growth (2011-2015)	Ranking in U.S. 2015	Share of Commodity Exports 2015
	2011	2012	2013	2014	2015			
<b>All Commodities</b>	3,290	3,743	4,092	4,255	3,675	3.4%	32	
<b>Crops</b>	1,881	2,225	2,542	2,449	2,109	3.7%	27	86.6%
<b>Animals &amp; Animal Products</b>	1,409	1,518	1,550	1,806	1,566	3.3%	32	13.4%
<b>Tennessee's Top 10 in 2015</b>								
<b>Soybeans</b>	471	575	815	835	721	13.2%	16	26.1%
<b>Cattle &amp; Calves</b>	588	746	626	813	704	6.8%	24	3.9%
<b>Broilers</b>	454	436	576	598	528	5.1%	16	3.8%
<b>Corn</b>	418	532	573	487	425	1.8%	17	5.0%
<b>Cotton</b>	311	357	284	236	141	-15.7%	10	7.5%
<b>Dairy Prod, Milk</b>	175	157	163	191	139	-4.1%	30	1.4%
<b>Wheat</b>	104	147	227	215	138	13.7%	18	5.3%
<b>Hay</b>	91	102	119	126	128	9.1%	20	n/a
<b>Tobacco</b>	96	111	111	115	117	5.2%	3	5.7%
<b>Vegetables &amp; Melons<sup>a</sup></b>	48	41	54	76	77	14.8%	26	0.7%
<b>Exports of All Commodities</b>	1,478	1,481	1,712	1,748	1,464	<1%	29	

<sup>a</sup>Ranking and shares of exports are for vegetables only.  
Source: (USDA/ERS 2016c) and (USDA/ERS 2016h)

## 2.5. Tennessee's Agricultural and Forest Industries and Rural Economy, continued

from dairy declined by an average of just below 1 percent per year from 2011 to 2015 for the U.S., declines for Tennessee's dairy industry averaged 4.1 percent annually.

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

Based on cash receipts, cattle and calves remain the leading livestock industry in Tennessee followed by broilers, dairy products and milk, chicken eggs, and hogs (USDA/ERS 2016c). Market prices received by producers of livestock and livestock products in the state of Tennessee are greatly influenced by national and international market forces, which influence production of commodities in the state and, thus, cash receipts by commodity.

Many of the stated industries have experienced tremendous price declines for the commodities produced. Calf and feeder cattle prices declined by 37 and 35 percent, respectively, from 2015 to 2016 (USDA/AMS 2016e). Tennessee milk prices through the first 10 months of 2016 are 9 percent and 11 percent lower than 2015 for the Appalachian and Southeast Federal Milk Marketing Orders, respectively (USDA/AMS 2016a). Lower prices for most livestock and livestock products were driven in large part by national red meat, poultry, dairy, and egg production increases from 2015 to 2016.

Tennessee ranked 15th nationally in terms of total cattle and calve inventory as of January 1, 2016 (1.83 million head including 896,000 beef cows and 44,000 milk cows). However, since 2011, the state has declined from 9th in total beef cows to 12th, a reduction of 94,000 head. The state is ranked second nationally in meat goat numbers at 117,000 head (TDA 2016).

In 2014 and 2015, the national beef cattle herd expanded at one of its fastest rates in 70 years (USDA/NASS 2016c). This expansion continued into 2016 but has begun to slow as heifer and cow slaughter rates have increased in the second half of 2016 (USDA/NASS 2016c).

The slowdown in expansion is producers' response to lower cattle prices and reduced profitability in the industry (USDA/ERS 2016f). The broiler industry has continued to grow both nationally and in Tennessee as the poultry industry continues to experience positive profit margins (USDA/NASS 2016a). The U.S. pork industry has also expanded production rapidly. Slaughter levels in the last quarter of 2016 bumped up against national slaughter capacity. The increased hog and pork production has resulted in the construction or retooling of several harvest facilities that are expected to come online in 2017. The increased production has forced pork and cash traded hog prices lower. While on a cash basis, hog producers appear to be losing money, it should be noted that very few hogs are traded on a cash basis, rather they are traded on some form of negotiated or formula pricing mechanism. Following one of the most profitable years ever (2014), the U.S. dairy industry struggled through 2015 and 2016. Increased production and slowdowns on the export side of the market have stressed dairy margins (USDA/ERS 2016b). Additionally, the federal Dairy Margin Protection Program (MPP-Dairy) has provided little support to dairy farmers through depressed milk prices. Evidence of positive price movements occurred late in 2016, but these were not sustained.

### *Row Crop Production*

In terms of harvested acreage, Tennessee's four largest row crops are corn, cotton, soybeans, and wheat. Based on 2015 national cash receipts by commodity, Tennessee ranks: 17th in corn production (0.8 percent of U.S. total); 10th in cotton production (2.9 percent of U.S. total); 15th in soybean production (2.2 percent of U.S. total); and 18th in wheat production (1.4 percent of U.S. total) (USDA/ERS 2016c). Harvested acreage, production, and yield from 2011 to 2016 for the four principle row crops are shown in Table 2.5. In 2016, harvested acreage for Tennessee row

## 2.5. Tennessee's Agricultural and Forest Industries and Rural Economy, continued

crops was estimated to be 1.64 million acres of soybeans, 800,000 acres of corn, 360,000 acres of wheat, and 250,000 acres of cotton. Soybean acreage was down 5 percent from 2015 but was 11 percent above the previous 5-year average; corn acreage was up 10 percent compared to 2015 but 2 percent lower than the 5-year average; cotton acreage was up 79 percent from last year's all-time low but 17 percent lower than the 5-year average; and wheat acreage was down 15 percent from 2015 and 19 percent lower than the 5-year average (USDA/NASS 2016b). State average wheat and cotton yields for 2016 were estimated to be an all-time record at 73 bu/acre and 1,075 lbs/acre, respectively. Corn (148 bu/acre) and soybean (44 bu/acre) yields are the lowest since 2012 as a result of abnormally dry conditions across the state from August through November. The late summer and fall drought affected east and southern Tennessee more than other regions of the state, however, most of Tennessee had varying levels of drought in the fall. Compared to 2015, 2016 total production levels of corn and cotton in Tennessee were increased by 1 and 84, respectively. Cotton acreage rebounded from all-time lows due to improved global prices. Increased corn acreage was partially offset by lower yields. Total soybean

and wheat production decreased due to reduced harvested acreage (Table 2.5; (USDA/NASS 2016b)).

Prices received by Tennessee producers are influenced by local, national, and global market forces. Nationally, U.S. producers have had four consecutive record or near record harvests. Record crop production has been achieved through higher yields, as a result of improved production technologies and farm management, and beneficial growing conditions for most of the U.S.'s primary row crop production regions. In recent years, global production of corn, cotton, soybeans, and wheat has outpaced demand. As a result, substantial global reserves have been built depressing global prices. In spite of large global supplies, U.S. exports continue to be a major factor in determining farm gate prices for U.S. row crop producers. For the 2016-2017 marketing year, exports are projected to be 15 percent, 74 percent, 47 percent, and 15 percent of total U.S. corn, cotton, soybean, and wheat production, respectively (USDA/OCE 2016).

Compared to peak prices during 2011-2013, 2016 Tennessee marketing year average farm gate prices for corn, cotton, soybean, and wheat are down 120 percent, 40 percent, 59 percent, and 89

**Table 2.5: Tennessee Harvested Acres, Production, and Yield for Corn, Cotton, Soybeans and Wheat, 2011-2016**

	2011	2012	2013	2014	2015	2016*	Change 5- Year Avg. to 2016	Change 2015- 2016
<b>Corn</b>								
Harv Ac (mill)	0.74	0.96	0.81	0.84	0.73	0.8	0.82	-2%
Prod (mill bu)	96.3	81.6	126.4	141.1	116.8	118.4	112.4	5%
Yield (bu/acre)	131	85	156	168	160	148	140	6%
<b>Cotton</b>								
Harv Acres(mill)	0.49	0.377	0.233	0.27	0.14	0.25	0.3	-17%
Prod (480,000 lb bales)	813	743	414	494	305	560	553.8	1%
Yield (lbs/acre)	796	946	853	878	1,046	1,075	904	19%
<b>Soybeans</b>								
Harv Ac (mill)	1.26	1.23	1.55	1.61	1.72	1.64	1.47	11%
Prod (mill bu)	40.3	46.7	72.1	74.1	79.1	72.2	62.5	16%
Yield (bu/acre)	32	38	46.5	46	46	44	42	6%
<b>Wheat</b>								
Harv Ac (mill)	0.31	0.33	0.58	0.48	0.4	0.36	0.42	-19%
Prod (mill bu)	20.7	20.8	40.8	31.4	26.9	24.5	28.1	-13%
Yield (bu/acre)	68	63	71	66	68	73	67	9%

Source: Bureau of Labor Statistics and IHS Global Insight Inc.



## 2.5. Tennessee's Agricultural and Forest Industries and Rural Economy, continued

percent, respectively (USDA/AMS 2016d). These price decreases are also indicative of national price trends. Since 2014 row crop profit margins have tightened substantially with many producers suffering from low or negative profits.

The Agricultural Act of 2014 provided dramatic changes to the three key components of the federal government's safety net for row crop farmers - commodity programs, conservation programs, and crop insurance.

Commodity program payments to Tennessee producers for the 2015 crop year (payments received by producers in the 2016 calendar year) were \$39.7 million from Agriculture Risk Coverage (ARC) and \$3.5 million from Price Loss Coverage (PLC), up substantially from 2014 (\$7.1 million for

ARC and \$0.2 million for PLC). The increase in payments to producers is indicative of the dramatic decreases in commodity prices and producer profitability compared to the previous five years (USDA/FSA 2016a)

Conservation programs provide producers with options on how to manage land and environmental resources on their farms. The two most utilized conservation programs in Tennessee are the Conservation Reserve Program (CRP) and the Environmental Quality Incentives Program (EQIP). For 2016 through 2030, Tennessee has 140,355 acres enrolled in the CRP program. The counties with the most acres enrolled are Fayette (13,337), Haywood (10,649), and Carroll (9,649) (USDA/FSA 2016b). In 2015, the EQIP program

### The 2014 Farm Bill

The Agricultural Act of 2014 (2014 Farm Bill) dramatically altered the structure of the Commodity Programs, Conservation Programs, and Crop Insurance that form the base for the domestic farm safety net. Highlights of these changes are:

- a) Commodity Programs-The 2014 Farm Bill repealed Direct Payment (DP), Countercyclical Payment (CCP), and Average Crop Revenue Election (ACRE) programs which provided payments to producers. Two new programs were implemented to replace the repealed programs administered by Farm Service Agency (FSA): a) Price Loss Coverage (PLC) and b) Agriculture Risk Coverage (ARC). The Marketing Assistance Loan Program was left largely unchanged.
- b) Conservation Programs – Continues support for conservation practices on agricultural land. To remain eligible for nearly all agriculture-related farm program benefits (i.e. crop insurance premium subsidies and commodity program payments), farmers cropping highly erodible land are required to implement an approved conservation plan and to be in compliance with wetland conservation provisions. Producers may also participate in voluntary incentive programs to address natural resource issues. Environmental Quality Incentives Program (EQIP) and the Conservation Stewardship Program (CSP) provide assistance to adopt conservation practices on land in production. Other programs, including the Conservation Reserve Program (CRP) and the Agricultural Conservation Easement Program remove environmentally sensitive land from production, establishing long-term, resource-conserving cover, or easements for preservation of wetlands and the protection of agricultural land from nonagricultural development.
- c) Crop Insurance – Two new programs were implemented along with minor changes to traditional crop insurance. The new crop insurance programs were a) the Supplemental Coverage Option (SCO) and b) the Stacked Income Protection Plan (STAX). For the first time the commodity and crop insurance programs have interactions - ARC and SCO are alternative options—producers who elect ARC for a given crop on a given farm cannot also purchase SCO for the same crop on the same farm. STAX is available only to upland cotton producers. Crop insurance is administered by the U.S. Department of Agriculture's Risk Management Agency (RMA). Source: (USDA/ERS 2016a)

## 2.5. Tennessee's Agricultural and Forest Industries and Rural Economy, continued

had total obligations (payments and cost share) to Tennessee producers of \$26.9 million up 5.5 percent from 2014. (USDA/NRCS 2016)

Federal crop insurance continues to be an important risk management tool for Tennessee producers. For the 2016 crop year 23,961 policies were sold covering liabilities of \$846.7 million. Total crop insurance premiums were \$94.1 million (\$62.6 million paid by the federal government and \$31.5 million paid by producers) (USDA Risk Management Agency 2016). Crop insurance is an essential risk management tool used by producers to protect against price, revenue, and production risk during the growing season.

Looking towards 2017, 2016 crop year commodity program payments are likely to increase from 2015 as a result of declining/negative margins and continued low prices. Conservation program payments are likely to remain flat to increasing with reductions in CRP acreage offset by increases in EQIP cost share and payments. Crop insurance participation is projected to remain close to current participation levels.

Substantial changes in domestic farm policy in 2017 are unlikely. However, negotiations for the next Farm Bill (the current bill expires in 2018) are likely to intensify in 2017. Contentious issues that could directly affect Tennessee producers and are likely to emerge in the forthcoming negotiations are: 1) separating nutrition from other Farm Bill titles; 2) interactions between the commodity program, crop insurance, and conservation titles; 3) means testing for crop insurance premium subsidies and/or commodity program payments; and 4) inclusion of cotton in commodity programs. A great deal of uncertainty in agricultural policy will remain until a new U.S. Department of Agriculture Secretary is named and a policy agenda is formulated.

### *Exports*

Exports of agricultural products from Tennessee were valued at just under \$1.5 billion in

2015, with the majority of this coming from crops (86.6 percent). Over 26 percent of the 2015 export value came from soybeans, followed by cotton at 7.5 percent, tobacco at 5.7 percent, wheat at just under 5.3 percent, and corn at 5 percent (Table 2.4). Also, soybean meal exports grew at an annual rate of 6.6 percent. In 2015, major U.S. export destinations by product included: China, Mexico, Indonesia, Japan, and Taiwan for soybeans; China, Vietnam, Turkey, Mexico and Indonesia for cotton; Mexico, The Philippines, Thailand, Canada and Columbia for soybean meal; Switzerland, China, Dominican Republic, Indonesia and Germany for tobacco; Japan, Mexico, Nigeria, The Philippines and South Korea for wheat; and Mexico, Japan, Columbia, South Korea and Taiwan for corn (USDA/FAS 2016).

### **Commodity Market Trends and Outlook**

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

U.S. meat protein production will continue to increase in 2017 from the beef, pork, and poultry industries. Increased domestic production will result in an increased reliance on the export market to support prices as the domestic market will be saturated with meat protein. At this time, the Trans Pacific Partnership could have positive implications on meat trade, but it faces fierce opposition. Regardless, the export market will be integral to growth or contraction in meat protein and dairy product industries.

Prices are expected to be lower across the meat and dairy complex in 2017. High cost and some medium cost producers in the nation's beef and dairy industries will likely exit the market due to reduced profitability and inability to cash flow. These exits will slow production growth in the market which should support prices heading into 2018 and 2019. Poultry is likely to continue expanding in the first half of the year, but then slow in the second half of 2017. In order to maintain positive profits, producers in the state

## 2.5. Tennessee's Agricultural and Forest Industries and Rural Economy, continued

will have to increase marketing flexibility, perform value added production practices, and manage production and overhead costs.

### *Row Crops Outlook*

Looking towards 2017, prices and producer profitability are unlikely to improve substantially without a major production disruption, at home or abroad. For the 2017 crop, Tennessee farm-gate prices are projected to be: \$4.00-\$5.00 for wheat; \$3.10-\$4.20 for corn; \$9.10-\$10.90 for soybeans; and \$0.65-\$0.80 for cotton. Key factors for producer profitability in 2017 include: herbicide resistant weeds, adverse weather events, access to financing, interest rates, exchange rates, regulations and policies, and global economic growth. Given two 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.

### *Agricultural Trade Policy Outlook*

According to the U.S. Department of Agriculture (USDA), in 2015, the U.S. exported \$4.8 billion of soybeans and soybean products to Southeast Asia. The U.S., as the world's largest cotton exporter, currently ships \$1.2 billion of cotton into Southeast Asia and U.S. cotton exports would likely benefit from a reduction in trade barriers and preferential tariff treatment. Japan is the largest market for U.S. wheat and U.S. exports, which reached almost \$1 billion in 2014. U.S. exports of wheat to Japan face high tariffs and restrictive tariff-rate quotas (USDA/FAS 2015)

New trade agreements have the potential to provide the U.S. with improved market access and lower tariffs, thus increasing the competitiveness of U.S. agricultural exports to the region. Many exporting countries (Brazil, Argentina, Australia, Canada, and Russia) that compete with U.S. agricultural exports have trade agreements or are

in the process of negotiating trade agreements with countries in this region to improve market access and or lower tariffs on agricultural exports. Notably, China and India have already ratified preferential trade agreements with several countries. Should the U.S. not pursue similar trade agreements, U.S. producers and agricultural exporters could have a substantial competitive disadvantage.

Any changes to existing trade agreements and/or new trade agreements negotiated by the incoming administration could have important implications for Tennessee's agricultural exports. Currently, there is a great deal of uncertainty about the new administration's trade agenda and its potential impacts on agriculture. Overall, U.S. agriculture relies heavily on export markets as a demand draw for raw and processed agricultural products. As such, reduced tariffs on agricultural products make U.S. commodities and products more competitive in foreign markets. Particularly important to U.S. agricultural exports are countries with large populations and an emerging middle class, i.e., China, India, Indonesia, and potentially several countries in Sub-Saharan Africa.

### *Infrastructure*

On-farm infrastructure is an indicator for grain storage capacity. In 2015, Tennessee's on-farm grain storage capacity was 90.0 million bushels, increasing from 75.0 million bushels in 2011 (USDA/NASS 2016e). In addition, off-farm facilities provided 66 million bushels of storage capacity for crops in 2015. Cumulatively from 2011 to 2015, the Tennessee Agricultural Enhancement Program (TAEP) invested more than \$74.6 million in 25,286 farm projects ranging from genetics and livestock equipment to commodity storage and specialty crops (TDA 2015). These investments were matched with farmer investments to total nearly \$194 million over this timeframe. Two TAEP focus areas aimed at helping build hay and grain storage have invested \$26.3 million

## 2.5. Tennessee's Agricultural and Forest Industries and Rural Economy, continued

in hay storage and \$7.9 million in grain storage cumulatively from 2011 to 2015. Coupled with matching farmer investment in projects for hay and grain storage through TAEP, investment totaled \$65.9 million for hay storage and \$30.4 million for grain storage. However, a recent estimate shows that Tennessee's total storage capacity in 2015 was still short by 0.06 billion bushels for its crop production and stocks, making Tennessee's rank ninth in terms of storage shortage (USDA/AMS 2016c).

The shortage of storage capacity implies greater reliance on efficient transportation networks to bring those crops to markets for the agricultural sector in Tennessee. Truck utilization for grain and oilseed transportation remains strong in the nation, which accounted for more than 64 percent of total grain and oilseed shipment in 2013 (Sparger and Marathon 2015). The American Society of Civil Engineering 2016 Report Card for Tennessee's Infrastructure gave the state's roadways a grade of "C+" and estimated \$475 million annually will be required to maintain the current state of the state-maintained roadways. The inland waterways received a grade of "C-" due to frequent barge delays at Tennessee locks caused by numerous repairs. The Fixing America's Surface Transportation (FAST) Act, signed into law in December 2015, made modest increases in the investment in federal highway and transit system. However, an extensive increase in state or local transportation funding for numerous projects is still warranted to improve and expand Tennessee's roads, highways, bridges and transit systems (TRIP 2016). It is estimated that nearly \$6.1 billion is needed to finish the backlog of Tennessee Department of Transportation (TDOT) projects, and more than \$5.3 billion needed for new projects proposed by TDOT. While the future for federal transportation funding is uncertain, federal policies that expand funding for transportation improvements and expansion could help ameliorate these shortfalls.

In 2014, a total of 19 grain and oilseed milling

firms generated \$121 million payroll in Tennessee (U.S. Census Bureau 2015b). In addition, five cotton ginning companies in Tennessee paid nearly \$2.1 million in payroll.

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

The "local foods" movement, along with technical and financial assistance provided by the USDA, TDA, University of Tennessee Institute of Agriculture, and other agencies, have helped increase direct marketing by farmers. An important component of direct marketing is sales through farmers' markets. Tennessee has undergone a rapid expansion in the number of farmers markets, increasing from 99 in 2013 to 130 in 2016 (USDA/AMS 2016b). In 2007, 3,581 Tennessee farms had sales of agricultural products directly to consumers, while 3,679 farms did in 2012. The value of direct farm sales increased from \$15.4 million to \$19.2 million between these two years (USDA/NASS 2012).

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. Food hubs serve as a means of aggregating production by local growers and providing appropriate marketing functions, such as storage and quality standards. Hence, food hubs can fill a gap between producers and consumers by serving as a means of coordinating and processing supply between small local producers and typically institutional buyers (such as grocery store chains) that require larger and attribute-specific lots of agricultural products (Hardy, et al. 2016).

## 2.5. Tennessee's Agricultural and Forest Industries and Rural Economy, continued

Tennessee lags behind the U.S. in the development of food hubs with one in Nashville and one in Memphis. According to the USDA's National Community-Supported Agriculture directory, the state has 19 CSAs, primarily in the Nashville area and to a lesser extent in the Knoxville and Memphis areas (USDA/AMS 2014).

Other new or nontraditional agriculture ventures also continue to grow in Tennessee. According to the 2012 Census of Agriculture, the state has 616 agritourism venues, up from 510 in 2007. Analysis of the most recent data (2016) released by the U.S. Bureau of Labor Statistics (US Bureau Labor Statistics (BLS) 2016a) indicates that the Tennessee wine and grape industry continues to show strong growth. Direct hired jobs in the Tennessee winery industry has grown to 435 workers in the first quarter of 2016, an increase of more than 20 percent from the same time last year. The state now has 72 bonded wineries, including several cideries (where hard cider is produced). The craft beer industry in Tennessee is also growing rapidly, with several farmers starting to produce hops and other inputs for that industry.

The green industry (ornamental horticulture including nursery and turfgrass producers) remains an important component of Tennessee agriculture, especially in middle Tennessee. However, the industry is still recovering from the economic downturn in 2008, with nursery sales valued at \$128.7 million in 2014 down by 27.4 percent from sales of \$177.2 million in 2007 (USDA/NASS 2016f) and the number of establishments decreasing from 793 to 547 (a 31 percent decline) in that period.

### *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 2.6 presents financial data from 2011-2015 for the Tennessee farming sector. The value of farm production declined from \$4.9

billion in 2014 to \$4.6 billion in 2015, mirroring the U.S. decline from \$473.3 billion in 2014 to \$428.7 billion in 2015 (USDA/ERS 2016d). Net cash farm income was just over \$729 million in 2015 (up from \$694 million in 2014), averaging \$10,839 per operation. Net cash farm income on a per acre basis was \$66.92. The net farm income ratio (net farm income/value of production) during 2011 to 2015 ranged from 14 to 28 percent efficiency in converting production to net farm income, with a slight uptick from 14 percent in 2014 to 16 percent in 2015.<sup>2</sup> The interest expense ratios for the farming sector 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 2015 the value was 4.46. The state's capital consumption ratio, or the percent of production needed to cover the sector's capital consumption, was relatively low for the 2011 to 2015 period, ranging between 10 and 19 percent. In 2015, the state's farming sector had an operating expense ratio of 0.64, suggesting 64 percent of the value of production was used to cover operating expenses. The 2015 estimated market value of land and buildings on farms was \$39.8 billion or around \$591,159 per farm in Tennessee. The 2015 overall value is up from the 2011 value of \$37.9 billion.

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 2016h). According to the 2012 Census of Agriculture, just under 42 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

<sup>2</sup> USDA's Economic Research definitions of farm sector financial ratios were used. A description of these can be found at <http://www.ers.usda.gov/data-products/farm-income-and-wealth-statistics/documentation-for-the-farm-sector-financial-ratios/>

## 2.5. Tennessee's Agricultural and Forest Industries and Rural Economy, continued

Table 2.6: Indicators of Financial Well-Being of the Tennessee Farm Sector, 2011-2015

	2011	2012	2013	2014	2015
<b>Value of Production (mill \$)</b>	\$4,343	\$4,370	\$5,099	\$4,885	\$4,581
<b>Net Farm Income (mill \$)</b>	\$1,180	\$752	\$1,414	\$694	\$729
<b>Interest Expense (mill \$)</b>	\$250	\$240	\$191	\$201	\$211
<b>Market Value of Farmland, Buildings, and Equipment (mill \$)</b>	\$37,908	\$38,368	\$38,913	\$39,240	\$39,785
<b>Capital Consumption (mill \$)</b>	\$427	\$637	\$697	\$920	\$768
<b>Total Expenses (mill \$)</b>	\$3,303	\$3,794	\$3,834	\$4,313	\$3,916
	<b>Ratios</b>				
<b>Net Farm Income Ratio</b>	0.27	0.17	0.28	0.14	0.16
<b>Capital Consumption Ratio</b>	0.1	0.15	0.14	0.19	0.17
<b>Operating Expense Ratio</b>	0.6	0.67	0.58	0.65	0.64
<b>Interest Expense Ratio</b>	0.06	0.05	0.04	0.04	0.05
<b>Times Interest Earned</b>	5.72	4.13	8.4	4.45	4.46

Source: USDA/ERS 2016d)

is 57 years old. More than 30 percent of farmers are 65 and older. Less than 8 percent of principle operators are beginning farmers having less than five years of farming experience. More than 77 percent of principle operators had 10 years or more of farming experience.

### *Primary Forestry in Tennessee*

In 2014, the state's 140 sawmill establishments employed 2,035 workers with a total payroll of \$69.8 million, while the state's 136 logging establishments employed 761 workers with a total payroll of \$23.1 million (U.S. Census Bureau 2015b). From 2010 through 2014, average annual growth rates in employees, payroll, and establishments for sawmills (NAICS 321113) were 1.7 percent, 7.7 percent, and -5.2 percent, respectively. For logging (NAICS 1133), the average annual growth rates over the same period were 2.5 percent, 3.7 percent, and -0.9 percent, respectively, for employees, payroll, and establishments. According to the U.S. Forest

Service's Forest Inventory and Analysis Program, an estimated 1.4 billion board feet of sawtimber trees were removed from Tennessee (international ¼ inch rule) in 2013 (USFS 2016). Between 2009 and 2013, the average annual change in sawtimber removals was -2.2 percent. Roughly 85.7 percent of the removals were from privately-owned lands. The predominant hardwood species removed were red and white oak, yellow poplar, and hickory.

## Food, Fiber, and Forestry Manufacturing in Tennessee

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

The state's 1,622 food and fiber processing and manufacturing facilities employed 76,806 workers with a payroll of \$3.3 billion in 2014 (Table 2.7). The value of shipments originating from these industries was \$35.3 billion (U.S. Census Bureau 2015a). By comparison, the state's overall

## 2.5. Tennessee's Agricultural and Forest Industries and Rural Economy, continued

**Table 2.7: Tennessee Food, Fiber and Forestry Manufacturing, 2014**

Manufacturing Industry (NAICS)	Employees	Payroll	Establishments	Value of Shipments
	(number)	(mill \$)	(number)	(mill \$)
<b>Food (311)</b>	34,666	\$1,504	333	\$18,445
<b>Animal Slaughtering/Processing (3116)</b>	10,628	\$334	58	\$3,460
<b>Beverage &amp; Tobacco Products (312)</b>	3,141	\$185	102	\$5,317
<b>Textile Mills (313)</b>	2,442	\$117	47	\$978
<b>Textile Product Mills (314)</b>	2,234	\$76	140	\$585
<b>Apparel (315)</b>	2,924	\$83	93	D
<b>Leather &amp; Allied Products (316)</b>	484	\$15	30	D
<b>Wood Products (321)</b>	10,434	\$364	451	\$2,406
<b>Paper (322)</b>	10,392	\$606	130	\$5,739
<b>Furniture &amp; Related Products (337)</b>	10,089	\$361	296	\$1,789
<b>Total</b>	<b>76,806</b>	<b>\$3,311</b>	<b>1,622</b>	<b>\$35,259</b>

<sup>a</sup> Values for animal slaughtering and processing are imbedded in food manufacturing (311) values and D = Data not disclosed  
Source: U.S. Census Bureau

manufacturing employment was 290,226 workers in 2014 and the value of shipments was \$146.8 billion. Thus, food and fiber related manufacturing in Tennessee employed more than one in four manufacturing workers and generated nearly \$1 out of every \$4 in manufacturing shipments. Food processing accounted for 52.3 percent of the values of food and fiber-related manufacturing shipments, followed by paper products at 16.3 percent and beverage and tobacco products at 15.1 percent.

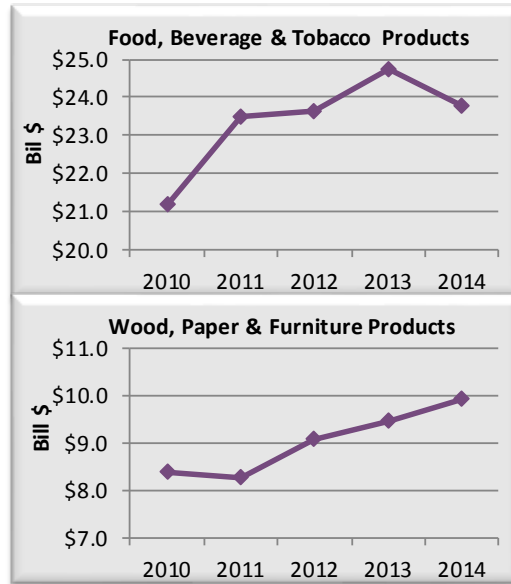
Figure 2.8 displays the growth in value of shipments from 2010 through 2014 for Tennessee's food, beverage, and tobacco products manufacturing (NAICS 311 and 312 combined) and wood, paper, and furniture products (NAICS 321, 322, and 337 combined). Food, beverage and tobacco products experienced growth until 2014, when the value of shipments declined by 3.9 percent. From 2010 to 2014, this industry grouping realized 3.1 percent average annual growth. During this same timeframe, forest products manufacturing experienced an average annual growth of 4.4 percent.

The location quotients (LQ) displayed in Figure 2.9 reflect the concentration of Tennessee's agri-forestry manufacturing compared with the U.S. based upon 2014 value of shipments and labor.<sup>3</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 (1.46), textile mills (1.24), wood products (1.01), paper (1.23), and furniture (1.03) compared to the U.S. However, for food manufacturing the LQ is less than one (0.96). For labor, only the wood products, paper, and furniture industries have LQs greater than one, suggesting that Tennessee's manufacturing industries' labor is more concentrated toward these industries than the U.S. It should be noted that the values of shipments for textile mills, textile product mills, wood products, and furniture in Tennessee declined from 2007 to 2014. In the case of textile mills and textile

<sup>3</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.

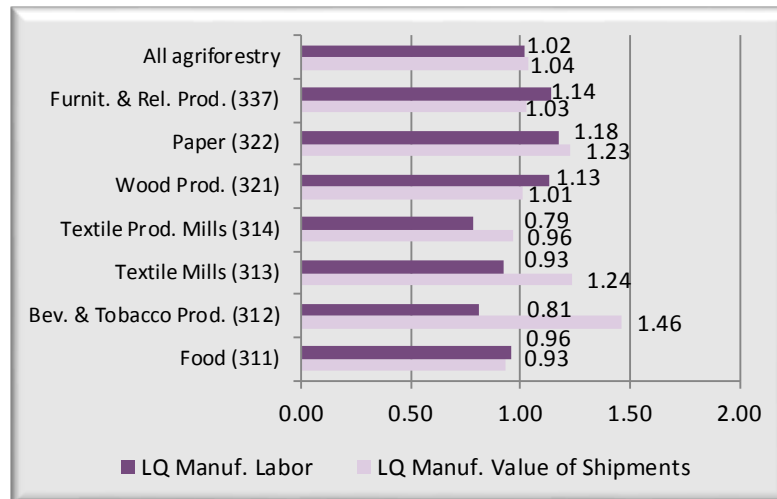
## 2.5. Tennessee’s Agricultural and Forest Industries and Rural Economy, continued

Figure 2.8: Value of Shipments from Tennessee Agri-Forestry, 2010-2014



Source: U.S. Census Bureau 2015a

Figure 2.9: Tennessee Agri-Forestry Manufacturing Location Quotients (LQ), 2014



Source: U.S. Census Bureau 2015a



## 2.5. Tennessee's Agricultural and Forest Industries and Rural Economy, continued

product mills, the decline was sharp, exceeding 30 percent for both industries.

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

In 2013, the agri-forestry industrial complex directly contributed (without multiplier effects) \$49 billion in economic activity to the state's economy, adding 179.7 thousand jobs (Menard, English and Jensen 2016). The agri-forestry industrial complex contributed \$13.9 billion in value-added. When accounting for multiplier effects, the agri-forestry industrial complex added \$74.8 billion to Tennessee's economy, or 12.8 percent of the state's economic activity, and accounting for 349.4 thousand jobs, or 9.4 percent of all jobs. Agriculture, with multiplier effects, accounted for 9 percent of the state's economy and generated \$52.6 billion in output, adding 254,000 jobs, with 109,000 employed (both full- and part-time) directly in agricultural production.

### Rural Economies and Well-Being

Rural communities and their resources are important contributors to the health of the agri-forestry industrial complex. In 2015, about 23.2 percent of Tennessee's population lived in counties classified as rural.<sup>4</sup> As classified here, rural counties had 2015 populations of 14,889 on average, while counties not classified as rural had average populations of 85,928 (Table 2.8). While rural counties experienced population decline, counties not classified as rural had 1.84 percent growth on average from 2010 to 2015. The data in Table 2.8 show that rural counties had lower household incomes, lower percentages of college graduates, and higher unemployment, poverty, and food insecurity rates.

Figure 2.10 shows the sum of the several poverty indicators: low education, low

4 This study defines rural using the ERS/USDA Rural/Urban Continuum categories of a) nonmetro-urban population of 2,500 to 19,999, not adjacent to a metro area; b) nonmetro-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 2016g).

employment, persistent related child poverty, greater than 15 percent food insecurity, and less than median household income for Tennessee's counties.<sup>5</sup> If a county is scored as a 5, then they exhibit all five indicators. Counties with the line pattern are classified as rural. Counties with a cross-hatch pattern are classified as non-metro, but not rural (nonmetro-urban population of 20,000 or more, not adjacent to a metro area or nonmetro-urban population of 2,500 to 19,999, adjacent to a metro area). Notably, major metro areas around Memphis, Nashville, Chattanooga, and Knoxville tend to only exhibit 0-2 indicators. However, rural counties (those with line pattern) are more likely to exhibit 4 or 5 poverty indicators.

### Governor's Rural Challenge

Four recommendations were made as part of The Governor's Rural Challenge for Tennessee agriculture (TDA 2013). These recommendations were:

1. Advance agriculture, natural resources, and rural infrastructure as Tennessee business priorities.
2. Ensure a positive and predictable policy and regulatory environment.
3. Expand market opportunities for Tennessee producers and encourage new production.
4. Increase the scope and depth of a skilled and educated workforce through career, technical, and higher education.

Several indicators of progress toward meeting these recommendations are listed in Table 2.9. For Recommendation 1, indicators exhibiting positive movement included reduction in the percentage of cropland that is idled (comparing 2012 to

5 *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 2008-12. *Low-employment county*-Less than 65 percent of residents age 25 to 64 were employed in 2008-12. *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 5-year estimates for 2007-11 (USDA/ERS 2015b).

## 2.5. Tennessee’s Agricultural and Forest Industries and Rural Economy, continued

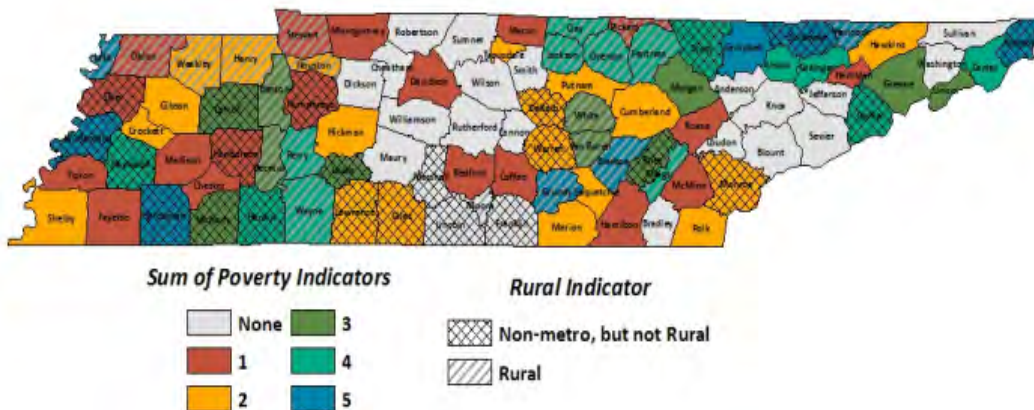
**Table 2.8: Population, Household Income, Education Level, Unemployment, Poverty, and Food Insecurity across Rural County Status, Tennessee**

Measure	Rural	Not Rural
2015 Population	14,889	85,928
2010-2015 Population Change	-0.32	1.84
Median Household Income (2014\$)	\$35,143	\$42,304
2010-2014 Education Level, Persons 25 and Over (5-Yr Avg) (Percent)		
Completed High School Only	43.6	39
Completed College	11.9	17
2015 Unemployment Rates (Percent)	7.8	6.4
2014 Poverty Rate (Percent)	22.9	18.8
Food Insecurity Rate <sup>a</sup> (2014)	16.2	15.35

<sup>a</sup> Food insecurity is limited or uncertain availability of nutritionally adequate and safe foods or limited or uncertain ability to acquire acceptable foods in socially acceptable ways.

Sources: (USDA/ERS 2016g); (USDA/ERS 2015b); (USDA/ERS 2016e); (USDA/ERS 2015a)

**Figure 2.10: Tennessee Poverty Indicators by County**



Sources: (USDA/ERS 2016g); (USDA/ERS 2015b)

## 2.5. Tennessee's Agricultural and Forest Industries and Rural Economy, continued

2007 Census of Agriculture), a nearly 22 percent growth in an index of major crop yields from 2011 to 2015, and a 20 percent increase in grain storage capacity. Compared with 2011, investment in the TAEP to assist with technological and infrastructural improvements in the state's agriculture is 19.17 percent higher and more than 13 percent higher when adjusted for inflation (see Recommendation 2).

Positive indicators toward Recommendation 3 include growth in economic activity from farming and associated activities by 16.95 percent (when inflation adjusted) between 2013 and 2011, and economic activity from the food and beverage processing industries growing by 11.51 percent in real terms. The share of agricultural commodities exported out of state declined by 1.71 percent between 2013 and 2011, however the percentage of imported inputs used in food and beverage processing increased by 7.97 percent. Under Recommendation 4, two indicators reflect positive progress toward building a skilled and educated agricultural workforce. The Master Producer programs have certified, in total, more than 18,000 producers since 1993. Four-year agricultural degrees awarded increased from 516 per year in 2008/2009 to 670 in 2013/2014, a 29.84 percent increase.

### Summary

The agri-forestry industrial complex encompasses industries that produce food and fiber and those adding value to these commodities. This industrial complex is important to the state's economy, particularly to rural areas within the state. These industries add \$49 billion directly to the state's economy and, with multiplier effects, \$74.8 billion in total. This constitutes nearly 13 percent of the state's economic activity.

In 2015, the commodities drawing the highest cash receipts were soybeans, followed by cattle and

calves, broilers, then corn, and cotton. The farming sector, by virtue of its diversity of products, is somewhat shielded from large profitability swings of any one commodity. However, this also means that the state's agricultural sector, in many cases, is heavily influenced by national and/or international market conditions. The state's top rankings in terms of cash receipts are tobacco (third in the nation) and cotton (10th in the nation). Soybean exports comprised greater than one out of every four commodity export dollars from the state. In 2015, while the value of commodity production fell compared with 2014, so did the total expenses, hence net farm income rose. The net farm income ratio increased from 14 percent in 2014 to 16 percent in 2015, suggesting a small but positive increase in efficiency in converting production to net farm income.

Food and beverage manufacturing value of shipments took a downturn of 3.9 percent after increasing several years in a row. The value of shipments from the forest products sector, however, increased for the third year in a row. From 2010 to 2014, the food and beverage industry grouping realized 3.1 percent growth overall and forest products manufacturing experienced an overall average growth of 4.4 percent. Location quotients reveal that the state's manufacturing sector tends to be more specialized in agriforestry manufacturing than the U.S. overall. However, the state is still less specialized in food manufacturing than the U.S. overall.

Rural counties and their communities provide important resources, including land, labor, and infrastructure, that help support the state's agriforestry industrial complex. Yet, persistent gaps between rural and urban areas exist, with lower incomes and educational attainment and higher unemployment, poverty, and food insecurity rates occurring in rural counties.

## 2.5. Tennessee's Agricultural and Forest Industries and Rural Economy, continued

**Table 2.9: Scorecard of Progress toward Governor's Rural Challenge Recommendations for Tennessee Agriculture**

Indicator	Comparison Year	Base Year	Percent Change	Goal	Strategic Plan Recommendation
	<b>2012</b>	<b>2007</b>			
Percent of Cropland that is Idled (%)	6.06%	6.88%	-0.82%	<i>Decrease</i>	1
	<b>2015</b>	<b>2011</b>			
Index of Crop Yield Per Acre (6 major crops) <sup>a</sup>	121.89	100	21.89%	<i>Increase</i>	1
	<b>2015</b>	<b>2011</b>			
Storage Capacity (mill bu)	90	75	20.00%	<i>Increase</i>	1
Tennessee Ag Enhancement Program Expenditures (TAEP) (mill \$)	\$16.85	\$14.14	19.17%	<i>Increase</i>	2
Inflation Adjusted Values by CPI (1982-1984=100)	\$16.01	\$14.10	13.20%	<i>Increase</i>	
	<b>2013</b>	<b>2011</b>			
Economic Activity from Farming and Associated Activities (Million \$)	\$4,694	\$3,870	21.29%	<i>Increase</i>	3
Inflation Adjusted Values <sup>b</sup>	\$4,526	\$3,870	16.95%	<i>Increase</i>	
Economic Activity from Food and Beverage Processing (Million \$)	\$24,411	\$21,110	15.64%	<i>Increase</i>	3
Inflation Adjusted Values	\$23,539	\$21,110	11.51%	<i>Increase</i>	
	<b>2013</b>	<b>2011</b>			
Percent of Agricultural Commodity Exports to Out-of-State (%)	53.42%	55.13%	-1.71%	<i>Decrease</i>	3
Percent of Food and Beverage Processing Inputs Imported from Out of State (%)	73.49%	65.52%	7.97%	<i>Decrease</i>	3
	<b>2013</b>				
Graduates of Master Producer Programs (Cumulative total since 1993)	18,067			<i>Increase</i>	4
	<b>2013-2014</b>	<b>2008-2009</b>			
Four Year Agricultural Degrees Awarded (No./Yr.) <sup>c</sup>	670	516	29.84%	<i>Increase</i>	4

<sup>a</sup> Corn, Cotton, Hay, Soybeans, Tobacco, and Wheat (USDA/NASS 2016d). Yield ratios of 2015 to 2011 for each crop were share weighted by 2015 acres harvested of each crop.

<sup>b</sup> The Southern Region CPI values for second year value (Year2 \$Value) were adjusted to the dollars of 2011 by the following formula- Adjusted Year2 \$Value=Year2 \$Value/CPI Ratio. CPI Ratio=CPI (1982-84=100)Year2/CPI (1982-84=100)Year1. The CPI values for 2015, 2013, and 2011 were 230.15, 226.72, and 218.62 respectively for the Southeast Region using 1982-1984 as the base value. The values for the CPI were obtained from The Bureau of Labor Statistics (US Bureau of Labor Statistics (BLS) 2016b).

<sup>c</sup> Source: Tennessee Department of Higher Education 2016 (Tennessee Dept. of Higher Education 2016).

## 2.5. Tennessee’s Agricultural and Forest Industries and Rural Economy, continued

### References Used

- Bureau of Economic Analysis (BEA). 2016. “What are location quotients (LQs).” U.S. Department of Commerce . [http://www.bea.gov/faq/index.cfm?faq\\_id=478](http://www.bea.gov/faq/index.cfm?faq_id=478).
- Demuth, S. 1993. Defining Community Supported Agriculture. Alternative Farming Systems Information Center, National Agricultural Library, Agricultural Research Service, USDA.
- Hardy, J., M. Hamm, R. Pirog, J. Fisk, J. Farbman, and M. Fischer. 2016. Findings of the 2015 National Food Hub Survey. East Lansing, MI: Michigan State University Center for Regional Food Systems & The Wallace Center at Winrock International. <http://foodsystems.msu.edu/resources/2015-food-hub-survey>.
- Menard, R., B. English, and K. Jensen. 2016. Economic Contributions of Agriculture and Forestry in Tennessee, 2013. Agri-Industry Modeling & Analysis Group Report, Department of Ag. and Resource Economics, The University of Tennessee, Knoxville. [http://aimag.ag.utk.edu/pubs/Bi\\_Annual\\_2013.pdf](http://aimag.ag.utk.edu/pubs/Bi_Annual_2013.pdf).
- Sparger, A., and N. Marathon. 2015. “Transportation of U.S. Grains: A Modal Share Analysis.” USDA/AMS. <https://www.ams.usda.gov/services/transportation-analysis/modal>.
- TDA. 2013. Governor’s Rural Challenge a 10-Year Strategic Plan: Increasing Rural Tennessee’s Capacity to Produce. Tennessee Department of Agriculture.
- TDA. 2015. “TAEP Program Summary FY11-FY2015.”
- TDA. 2016. “Tennessee Agriculture 2015.” <https://www.tn.gov/assets/entities/agriculture/attachments/annualreport15.pdf>.
- Tennessee Dept. of Higher Education. 2016. “Tennessee Department of Higher Education Fact Book 2015-2016.” [http://tennessee.gov/assets/entities/thec/attachments/2015-2016\\_Fact\\_Book.pdf](http://tennessee.gov/assets/entities/thec/attachments/2015-2016_Fact_Book.pdf).
- TRIP. 2016. “Tennessee Transportation by the Numbers: Meeting the State’s Need for Safe, Smooth and Efficient Mobility.” [http://www.tcoftn.org/uploads/4/4/9/8/44980111/\\_trip\\_tennessee\\_by\\_the\\_numbers\\_final\\_1-14-15.pdf](http://www.tcoftn.org/uploads/4/4/9/8/44980111/_trip_tennessee_by_the_numbers_final_1-14-15.pdf).
- U.S. Bureau Labor Statistics (BLS). 2016a. “Quarterly Census of Employment and Wages.” [http://www.bls.gov/cew/apps/data\\_views/data\\_views.htm](http://www.bls.gov/cew/apps/data_views/data_views.htm).
- U.S. Bureau of Labor Statistics (BLS). 2016b. “Consumer Price Index - All Urban Consumers. Southern Region.” <http://www.bls.gov/data/#prices>.
- U.S. Census Bureau. 2015a. “Annual Survey of Manufacturers, Geographic Area Statistics, Tennessee.” <http://www.census.gov/manufacturing/asm/>.
- U.S. Census Bureau. 2015b. “County Business Patterns, 2014.” <https://www.census.gov/data/datasets/2014/econ/cbp/2014-cbp.html>.
- USDA Risk Management Agency. 2016. “Summary of Business Reports and Data – National Summary by State.” <http://www.rma.usda.gov/data/sob.html>.
- USDA/AMS. 2016a. “Class I Milk Price-Monthly and Year-to-Date, 2016 Various Issues.” [https://www.ams.usda.gov/sites/default/files/media/Milk\\_Price\\_YTD\\_2016\\_dairy.pdf](https://www.ams.usda.gov/sites/default/files/media/Milk_Price_YTD_2016_dairy.pdf).
- USDA/AMS. 2016b. “Farmers Markets and Direct-to-Consumer Marketing. Farmers Market Directory Data.” <https://apps.ams.usda.gov/FarmersMarketsExport/ExcelExport.aspx>.
- USDA/AMS. 2016c. “Grain Transportation Report.” <https://www.ams.usda.gov/sites/default/files/media/GTR%20-%202010-06-16.pdf#page=2>.
- USDA/AMS. 2016d. “Market News – Custom Report.” <https://marketnews.usda.gov/mnp/ls-report-config>.
- USDA/AMS. 2016e. “Tennessee Feeder Cattle Weekly Summary, 2016 Various Issues.” [https://www.ams.usda.gov/mnreports/nv\\_ls145.txt](https://www.ams.usda.gov/mnreports/nv_ls145.txt).

## 2.5. Tennessee’s Agricultural and Forest Industries and Rural Economy, continued

- USDA/AMS. 2014. “USDA’s Community Supported Agriculture (CSA) Enterprise Directory Update System.” [http://www.usdalocafooddirectories.com/csaonfarmdirectoryupdate/csa\\_portal\\_public.asx](http://www.usdalocafooddirectories.com/csaonfarmdirectoryupdate/csa_portal_public.asx).
- USDA/ERS. 2015a. “County Level Data Sets.” <http://www.ers.usda.gov/data-products/county-level-data-sets/>.
- USDA/ERS. 2015b. “County Typology Codes.” <http://www.ers.usda.gov/data-products/county-typology-codes/>.
- USDA/ERS. 2016a. “Crop Commodity Program Provisions-Title I.” <https://www.ers.usda.gov/topics/farm-economy/farm-commodity-policy/crop-commodity-program-provisions-title-i/>.
- USDA/ERS. 2016b. “Dairy Data.” <http://www.ers.usda.gov/data-products/dairy-data/tp://usda.mannlib.cornell.edu/usda/current/PoulProdVa/PoulProdVa-04-28-2016.pdf>.
- USDA/ERS. 2016c. “Farm Income and Wealth Statistics-Cash Receipts.” <http://www.ers.usda.gov/data-products/farm-income-and-wealth-statistics/cash-receipts-by-commodity.aspx>.
- USDA/ERS. 2016d. “Farm Income and Wealth Statistics-Farm and Wealth Indicators.” [http://www.ers.usda.gov/data-products/farm-income-and-wealth-statistics/farm-finance-indicators-state-ranking.x#P7026ab87f420460ebfb73e2a2d2739b4\\_4\\_186iT0R0x16](http://www.ers.usda.gov/data-products/farm-income-and-wealth-statistics/farm-finance-indicators-state-ranking.x#P7026ab87f420460ebfb73e2a2d2739b4_4_186iT0R0x16).
- USDA/ERS. 2016e. “Food Security in the U.S.: Measurement.” <http://www.ers.usda.gov/topics/food-nutrition-assistance/food-security-in-the-us/measurement.aspx>.
- USDA/ERS. 2016f. “Livestock, Dairy, and Poultry Outlook. LDP-M-268.” <http://usda.mannlib.cornell.edu/usda/current/LDP-M/LDP-M-10-18-2016.pdf>.
- USDA/ERS. 2016g. “Rural Urban Continuum.” <http://www.ers.usda.gov/data-products/rural-urban-continuum-codes.aspx>.
- USDA/ERS. 2016h. “State Export Data.” <http://www.ers.usda.gov/data-products/state-export-data/>.
- USDA/FAS. 2015. “Fact Sheet-The Trans-Pacific Partnership: Benefits for US Agriculture.” [https://www.fas.usda.gov/sites/default/files/2015-03/tpp\\_agriculture\\_fact\\_sheet\\_april\\_2015.pdf](https://www.fas.usda.gov/sites/default/files/2015-03/tpp_agriculture_fact_sheet_april_2015.pdf).
- USDA/FAS. 2016. “Global Agricultural Trade System. BICO Export and Import Data.” <http://apps.fas.usda.gov/gats/default.aspx>.
- USDA/FSA. 2016a. “ARC/PLC Program – 2015 ARC/PLC Payments as of November 8, 2016 & 2014 ARC/PLC Payments as of September 30, 2016.” [https://www.fsa.usda.gov/programs-and-services/arcplc\\_program/](https://www.fsa.usda.gov/programs-and-services/arcplc_program/).
- USDA/FSA. 2016b. “Conservation Reserve Program Statistics – CRP Contract Expirations by County 2016-2030.” <https://www.fsa.usda.gov/programs-and-services/conservation-programs/reports-and-statistics/conservation-reserve-program-statistics/index>.
- USDA/NASS. 2012. “Census of Agriculture, Tennessee.” <http://www.agcensus.usda.gov/Publications/2012/>.
- USDA/NASS. 2016a. “Poultry-Production and Value: 2015 Summary.” <http://usda.mannlib.cornell.edu/usda/current/PoulProdVa/PoulProdVa-04-28-2016.pdf>.
- USDA/NASS. 2016b. “Quick Stats. Corn, Cotton, Soybeans and Wheat Harvested Acres, Yield, and Production for Tennessee.” <https://quickstats.nass.usda.gov/>.
- USDA/NASS. 2016c. “QuickStats: Cattle Inventory.” <http://quickstats.nass.usda.gov>.
- USDA/NASS. 2016d. “QuickStats: Crop Yields per Acre.” <https://quickstats.nass.usda.gov/>.
- USDA/NASS. 2016e. “QuickStats: Grain Storage Capacity.” <http://quickstats.nass.usda.gov/>.
- USDA/NASS. 2016f. “QuickStats: Nursery Total Sales, Tennessee.” <https://quickstats.nass.usda.gov/results/9BADD85A-C6EC-3DFE-B672-8E51D33D2194>.
- USDA/NASS. 2016g. “QuickStats: Tennessee Agricultural Overview.” [http://www.nass.usda.gov/Quick\\_Stats/Ag\\_Overview/](http://www.nass.usda.gov/Quick_Stats/Ag_Overview/)

## 2.5. Tennessee’s Agricultural and Forest Industries and Rural Economy, continued

---

- stateOverview.php?state=TENNESSEE.
- USDA/NASS. 2016h. “QuickStats: Tennessee Farm Operations by Economic Class.” <https://quickstats.nass.usda.gov/>.
- USDA/NRCS. 2016. Environmental Quality Incentives Program (EQIP) – Total Obligations by Fiscal Year. [https://www.nrcs.usda.gov/Internet/NRCS\\_RCA/reports/fb08\\_cp\\_eqip.html](https://www.nrcs.usda.gov/Internet/NRCS_RCA/reports/fb08_cp_eqip.html).
- USDA/OCE. 2016. “World Agricultural Supply and Demand Estimates Report (WASDE).” <http://www.usda.gov/oce/commodity/wasde/>.
- USFS. 2016. “Forest Inventory Analysis.” <http://apps.fs.fed.us/fia/fido/index.html>.
- Zhaniser, S., S. Angadjivand, T. Hertz L. Kuberka, and A. Santos. 2015. NAFTA at 20: North America’s Free-Trade Area and Its Impact on Agriculture. USDA/ERS. [https://www.ers.usda.gov/webdocs/publications/wrs1501/51265\\_wrs-15-01.pdf](https://www.ers.usda.gov/webdocs/publications/wrs1501/51265_wrs-15-01.pdf).

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

### In this chapter—

- 3.1. Introduction
- 3.2. Employment
- 3.3. Unemployment and Population
- 3.4. Income and Earnings
- 3.5. Output
- 3.6. Workforce Quality (Education and Health Status)

### 3.1. Introduction

Previous chapters have focused on the short-term outlook for the national and state economies. This chapter provides a longer-term view (10 years ahead) of economic growth in Tennessee as compared to the nation. The chapter pays particularly close attention to Tennessee's growth from 2006 to the present, as well as a forecast extending out to 2026. Recessions are not built into the long-term outlook as they are unpredictable by nature. However, since the Great Depression in 1929, the longest gap between two recessions has been 10 years (a U.S. recession ended in March 1991 and the next one began in March 2001). It is therefore conceivable if not likely that a recession will occur at some point during the long-term 10-year outlook horizon. In addition to presenting a retrospective on the state economy, we also examine some current and historical county and regional differences across Tennessee.

Between 2006 and 2016, inflation-adjusted personal income in Tennessee grew at a 2.1 percent compound annual growth rate (CAGR) and outpaced national income growth of 1.9 percent (CAGR) per year. Looking ahead 10 years,

inflation-adjusted personal income is projected to expand by 2.3 percent (CAGR) between 2016 and 2026, while U.S. personal income will expand at a slightly faster clip of 2.6 percent per year. As a result, Tennessee's per capita (nominal) personal income of \$42,740 in 2016 will fall from 86.6 percent of the national average in 2016 down to only 83 percent in 2026. Over the last 10 years, inflation-adjusted state gross domestic product (GDP) advanced by 1 percent (CAGR) which was slightly slower than the national GDP growth rate of 1.3 percent (CAGR) between 2006 and 2016. However, both were affected by the Great Recession. By comparison, inflation-adjusted GDP in both Tennessee and the U.S. are projected to increase by 2.1 percent (CAGR) between 2016 and 2026.

Overall employment growth was sluggish over the last 10 years for both Tennessee and the nation. From 2006 to 2016, nonfarm employment in Tennessee grew by only 0.62 percent (CAGR), and slightly outpaced national employment growth of 0.56 percent (CAGR). Stronger employment growth is projected over the next 10 years, as



### 3.1. Introduction, continued

---

Tennessee will see nonfarm employment growth of 1 percent (CAGR), which will slightly outpace the projected national job growth rate of 0.9 percent (CAGR). These employment gains are projected to occur despite sluggish expected growth from the manufacturing sector over the next 10 years. In Tennessee, manufacturing

employment is projected to grow by a meager 0.2 percent (CAGR) between 2016 and 2026, while in the U.S. manufacturing employment will expand at a slightly faster, albeit still sluggish, 0.5 percent (CAGR).

### 3.2. Employment

---

Between 2006 and 2016, nonfarm jobs in Tennessee grew by 6.4 percent. This is equivalent to a paltry 0.6 percent compound annual growth rate. Nonetheless, employment in Tennessee grew slightly faster than job growth for the nation, which expanded by 5.8 percent over the same period, yielding a 0.6 percent CAGR. The sluggish employment growth over this period was largely due to the Great Recession which began in the fourth quarter of 2007 and continued up until the second quarter of 2009. During this period, employment in Tennessee peaked in 2007 before facing contractions in 2008, 2009, and 2010. Since then the state has seen steady employment gains.

Table 3.1 provides a snapshot of Tennessee's historical employment profile as well as a forecast of the state's employment outlook 10 years into the future. Much of the sluggish job growth over the last 10 years can be traced back to the state's manufacturing sector, which faced major job losses. From 2006 to 2016, manufacturing employment fell by 14.4 percent (equivalent to a -1.5 percent compound annual growth rate), representing a loss of more than 57,000 jobs. The nation's manufacturing sector saw job losses similar to those in Tennessee, as manufacturing employment in the U.S. fell by 1.4 percent (CAGR) over the same 10 year period. In Tennessee the only other broad sector to face employment losses between 2006 and 2016 was the natural resources, mining, and construction sector, where employment fell by 0.8 percent (CAGR) per year, representing a loss of 10,600 jobs over the 10-year period.

On the other side of the spectrum were some

bright spots in the Tennessee economy, with employment in the professional and business services sector growing by 2.4 percent (CAGR) and adding 84,900 jobs between 2006 and 2016, and employment in the education and health services sector expanding by 2.3 percent (CAGR) and adding 87,900 new jobs over the same 10 year period. The leisure and hospitality sector also netted 43,200 new jobs, and grew by 1.5 percent (CAGR).

Table 3.2 provides a more detailed examination of the employment situation in the state's manufacturing sector. Between 2006 and 2016 employment in durable goods manufacturing fell by 1.5 percent (CAGR) or 35,200 jobs, and employment in nondurable goods manufacturing contracted by 1.6 percent (CAGR) or 22,300 jobs. All subsectors of manufacturing faced employment contractions over this 10 year period except for miscellaneous durables which grew by 0.2 percent (CAGR) representing an increase of 300 jobs, and beverage and tobacco manufacturing where employment expanded by 1.9 percent (CAGR) or 1,100 jobs.

Overall, nonfarm employment is projected to increase by 10.4 percent between 2016 and 2026, representing a compound annual growth rate of 1 percent or 308.9 thousand jobs. This is slightly above the projected 0.9 percent compound annual growth rate expected for the nation as a whole. Over the next 10 years, employment in the professional and business services sector will see the strongest growth, advancing 2.4 percent (CAGR), followed by the education and health

## 3.2. Employment, continued

services sector (up 2 percent, CAGR) and the natural resources, mining, and construction sector (up 1.7 percent, CAGR). Employment in the state's manufacturing sector will see minor improvements

over the next 10 years, growing by 0.2 percent (CAGR) or 8,300 jobs. This is well below the national projection of 0.6 percent compound annual growth in U.S. manufacturing employment.

**Table 3.1: Nonfarm Employment in Tennessee by Broad Sector (Thousands of Jobs)**

	Employment			Growth Rate*	
	2006	2016	2026	2006 to 2016	2016 to 2026
<b>Total Nonfarm</b>	<b>2783.0</b>	<b>2961.8</b>	<b>3270.7</b>	<b>0.62%</b>	<b>1.00%</b>
Natural Resources, Mining & Construction	134.4	123.8	147.1	-0.82%	1.74%
<b>Manufacturing</b>	<b>399.4</b>	<b>341.8</b>	<b>350.2</b>	<b>-1.54%</b>	<b>0.24%</b>
Trade, Transportation, Utilities	607.4	616.9	639.6	0.16%	0.36%
Information	49.6	44.7	46.4	-1.04%	0.39%
Financial Activities	143.6	151.4	154.2	0.53%	0.18%
Professional & Business Services	319.2	404.1	512.2	2.39%	2.40%
Education & Health Services	343.5	431.4	523.8	2.31%	1.96%
Leisure & Hospitality	270.1	313.3	340.1	1.49%	0.82%
Other Services	101.7	110.0	111.0	0.79%	0.09%
Government	414.2	424.5	446.0	0.24%	0.50%
<b>U.S. nonfarm (in millions)</b>	<b>136.5</b>	<b>144.3</b>	<b>157.8</b>	<b>0.56%</b>	<b>0.89%</b>
<b>U.S. manufacturing (in millions)</b>	<b>14.2</b>	<b>12.3</b>	<b>13.0</b>	<b>-1.41%</b>	<b>0.58%</b>

\*Compound Annual Growth Rate

Source: Bureau of Labor Statistics; IHS Global Insight, Inc. and and Boyd CBER-UT.

**Table 3.2: Manufacturing Employment in Tennessee by Sector (Thousands of Jobs)**

	Employment			Growth Rate*	
	2006	2016	2026	2006 to 2016	2016 to 2026
<b>Manufacturing</b>	<b>399.4</b>	<b>341.8</b>	<b>350.2</b>	<b>-1.54%</b>	<b>0.24%</b>
<b>Total Durable Goods</b>	<b>251.8</b>	<b>216.5</b>	<b>230.5</b>	<b>-1.50%</b>	<b>0.63%</b>
Wood Products	17.9	11.7	12.7	-4.19%	0.81%
Nonmetallic Minerals	16.1	12.8	13.4	-2.30%	0.48%
Primary Metals	11.8	10.6	10.7	-1.08%	0.07%
Fabricated Metals	43.4	34.4	34.8	-2.30%	0.10%
Machinery	33.2	25.3	25.7	-2.69%	0.14%
Computers & Electronics	9.3	4.8	3.1	-6.37%	-4.28%
Electrical Equipment, Appliances & Components	23.2	20.7	23.2	-1.14%	1.17%
Transportation Equipment	63.7	71.4	82.4	1.15%	1.44%
Furniture	17.7	9.2	8.8	-6.36%	-0.39%
Miscellaneous Durables	15.3	15.6	15.7	0.20%	0.07%
<b>Total Nondurable Goods</b>	<b>147.6</b>	<b>125.3</b>	<b>119.6</b>	<b>-1.62%</b>	<b>-0.46%</b>
Food	34.0	33.7	33.8	-0.09%	0.02%
Beverage & Tobacco	5.2	6.3	6.5	1.94%	0.39%
Textile Mills, Textile Mill Products & Apparel	16.1	10.2	9.5	-4.47%	-0.74%
Paper	18.3	14.6	14.1	-2.26%	-0.35%
Printing & Related Support	17.8	9.1	8.6	-6.49%	-0.54%
Chemicals	26.3	25.7	22.5	-0.24%	-1.34%
Plastics & Rubber	27.6	22.5	22.4	-2.02%	-0.05%
Miscellaneous Nondurable Goods	2.3	3.3	2.3	3.41%	-3.39%

\*Compound Annual Growth Rate

Source: Bureau of Labor Statistics; IHS Global Insight, Inc.; and Boyd CBER-UT.

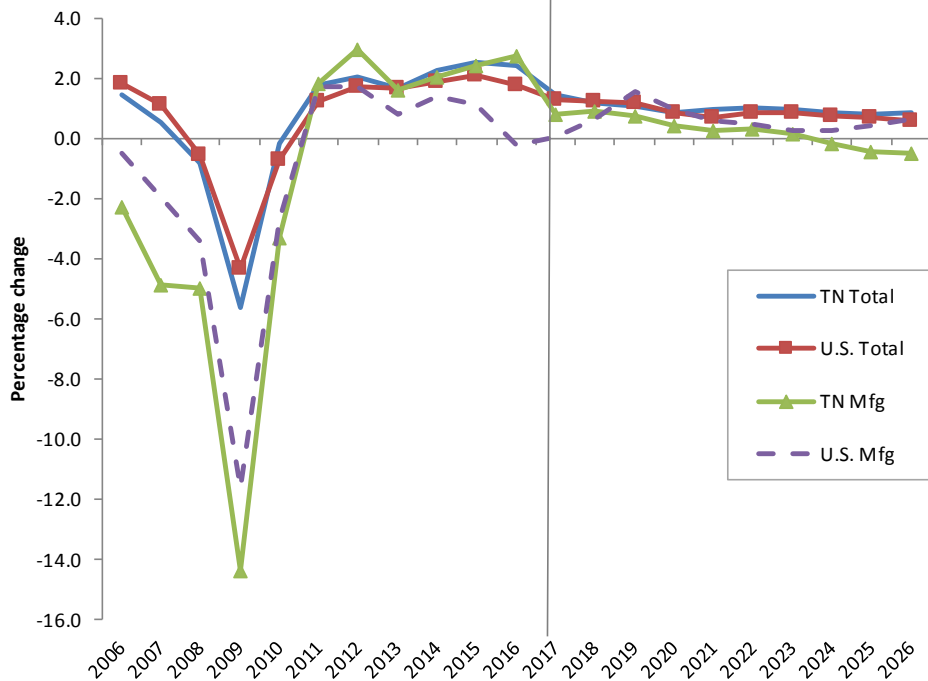
### 3.2. Employment, continued

Figure 3.1 depicts state and national employment growth patterns over the long-term forecast horizon. Nonfarm employment growth in Tennessee is projected to (slightly) outpace national employment growth in almost every year over the next 10 years, but they will both follow similar trends. Manufacturing employment growth in the U.S. is projected to remain positive throughout the forecast horizon, whereas in Tennessee manufacturing employment will see some gains throughout most of the forecast horizon, but will face losses towards the end of the 10-year window.

Within Tennessee, different patterns of employment and employment growth present themselves at the more micro regional and county-levels. Figure 3.2 shows total employment in each of Tennessee’s three grand divisions as well as the

weighted-average employment level in the counties of each region for June 2016, as measured by the Bureau of Labor Statistics’ Quarterly Census of Employment and Wages (QCEW). Among the three regions, Middle Tennessee had the largest workforce with 1.2 million workers, representing roughly 41 percent of the Tennessee workforce in the June 2016 QCEW. East Tennessee had one million workers, while West Tennessee with 0.7 million workers had the smallest workforce. However, from a population standpoint, the West Tennessee region is also the smallest of the three regions. The weighted average employment level was highest in the Middle Tennessee region, where the average county had 90.7 thousand workers. At 39.5 thousand workers per county, the East Tennessee region had the lowest weighted average

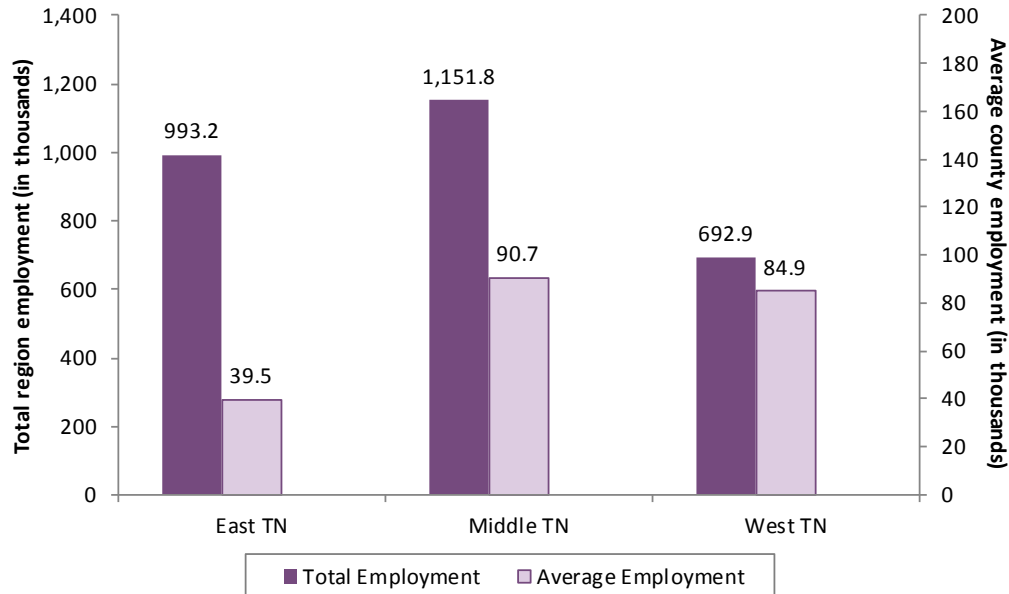
**Figure 3.1: Nonfarm Employment Continues to Grow While Manufacturing Employment will Contract Towards the End of the Long Term Forecast Horizon**



Source: Bureau of Labor Statistics, IHS Global Insight Inc., and Boyd CBER-UT.

## 3.2. Employment, continued

Figure 3.2: Total Covered Employment by Region, June 2016



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

employment level among the three regions.

Figure 3.3 displays the 10 counties with the highest employment levels in the state. The largest workforce is in Shelby County in West Tennessee, with 491.5 thousand workers, followed by Davidson County in Middle Tennessee with 470 thousand workers. Knox County in East Tennessee is in a distant third with 234.9 thousand workers, and Hamilton County, also in East Tennessee, is in fourth with 198.1 thousand. All four of the aforementioned counties house a large Tennessee city (Memphis, Nashville, Knoxville, and Chattanooga respectively). Conversely, Figure 3.4 presents the 10 counties with the smallest workforces in Tennessee. At the bottom are Van Buren County in Middle Tennessee and Hancock County in East Tennessee, each with less than 900 workers.

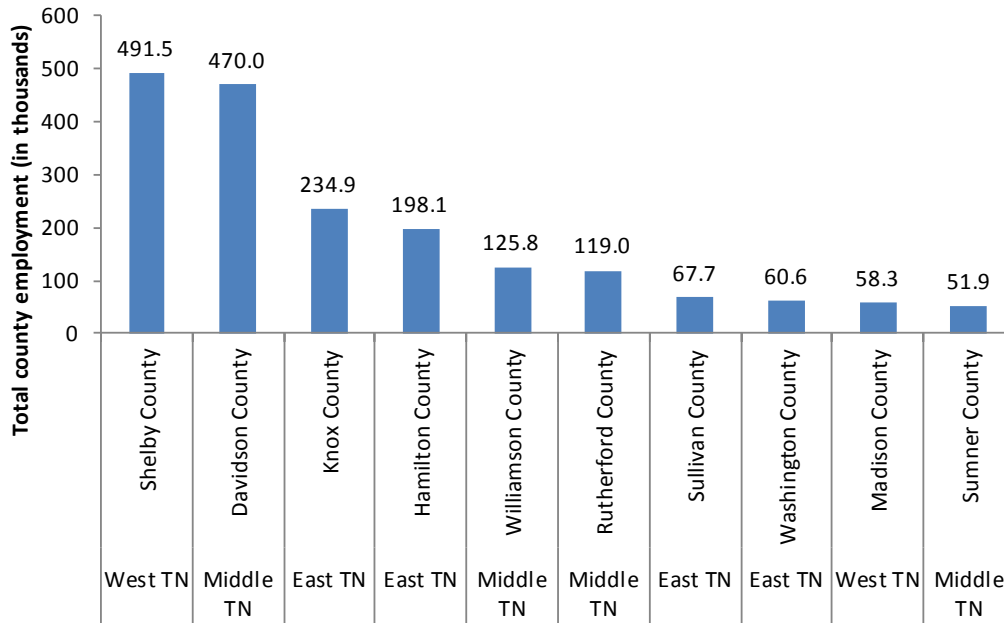
Year-over-year job gains were strongest in the East Tennessee region, where employment grew by 2.2 percent between June 2015 and June 2016

(Figure 3.5). The Middle Tennessee region saw 1.7 percent job growth, while employment in West Tennessee shrunk by 0.5 percent. Figure 3.5 also reports long-run employment growth by region, comparing employment levels in June 2006 to those in June 2016. Over the long run, the Middle Tennessee region saw the strongest job gains on average, growing by 6.7 percent, which was slightly above the 5.5 percent growth rate registered for the state as a whole. Over this same period, the labor force expanded by 3.5 percent in East Tennessee, but shrunk by 1.6 percent in West Tennessee.

Figure 3.6 presents employment growth patterns across all Tennessee counties between 2006 and 2016. There were 57 counties that experienced employment expansion over the last 10 years. Lake County, which has one of the smallest workforces in the state, also saw the largest rate of growth, expanding by 76.9 percent between 2006 and 2016. Though due to its small size, this only represented an increase of 811 jobs. The second largest growth

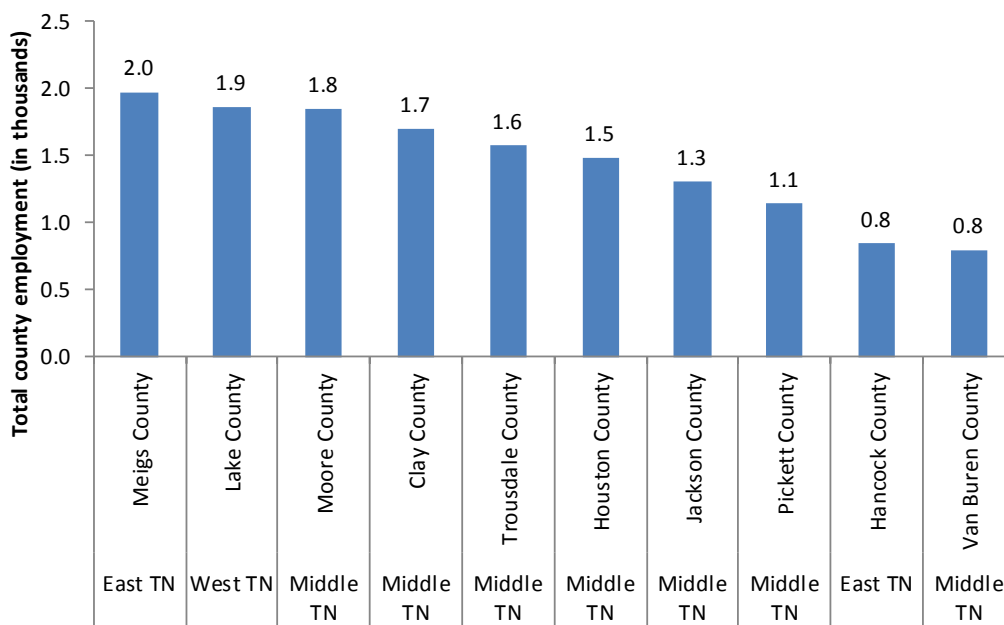
### 3.2. Employment, continued

**Figure 3.3: Largest County Workforces in Tennessee, June 2016**



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

**Figure 3.4: Smallest County Workforces in Tennessee, June 2016**



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

### 3.2. Employment, continued

rate was found in Williamson County (which has the fifth largest workforce in the state) which saw employment growth of 56.4 percent or an additional 45.4 thousand jobs. Conversely, there were 38 counties to experience employment contractions over the last 10 years. McNairy

County saw the steepest job losses, contracting by 29.5 percent or 2.3 thousand jobs. However, the number of job losses was much more extreme in Shelby County where employment fell by 3.2 percent or 16.2 thousand jobs over the last 10 years.

**Figure 3.5: Short Run and Long Run Employment Growth by Region**

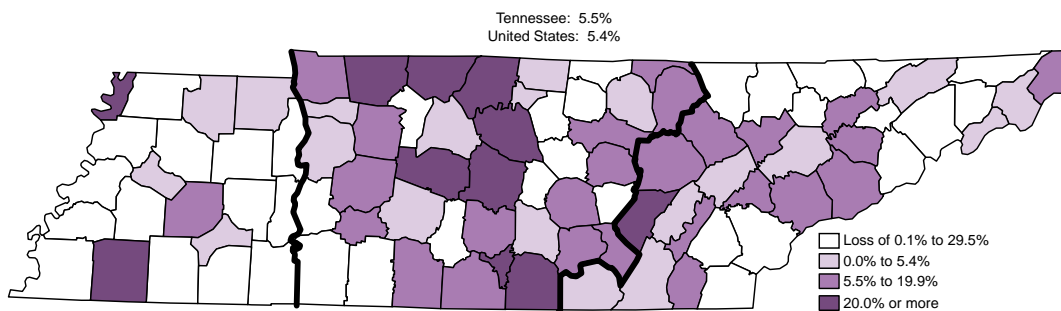


Source: Bureau of Labor Statistics, Quarterly Census of Employment and Wages

Notes: Short run growth rate is measured from June 2015 to June 2016. Long run growth rate is measured comparing June 2006 to June 2016.

### 3.2. Employment, continued

Figure 3.6: Total Covered Employment Growth, June 2006 to June 2016



Source: Bureau of Labor Statistics, Quarterly Census of Employment and Wages  
 Note: Total county employment covered by the state unemployment insurance program

### 3.3. Unemployment and Population

In general, the annualized unemployment rate in Tennessee has rested above the national rate over the last 10 years. This changed in 2016, when the state unemployment rate fell to 4.6 percent, its lowest annual rate since 2001, while the national rate was pegged at 4.9 percent. The Tennessee unemployment rate is projected to rest at 4.6 percent through much of the second half of the decade before falling to 4.5 percent in 2022 and remaining there throughout the forecast horizon (see Figure 3.7).

Figure 3.8 reports unemployment rates across all Tennessee counties for October 2016 (not seasonally adjusted) as well as the weighted average unemployment rates in each Tennessee region. At 4.3 percent, the Middle Tennessee region had the lowest unemployment rate among the three regions, and was also well below the state and

national unemployment rates of 4.8 percent and 4.7 percent, respectively. In East Tennessee, the average unemployment rate was 5.3 percent, and West Tennessee had a 5.8 percent unemployment rate in October 2016. Among all Tennessee counties, Williamson County had the lowest unemployment rate at 3.5 percent, followed by Davidson County at 3.7 percent. In fact, nine of the 10 lowest unemployment rates came from counties located in Middle Tennessee. The only non-Middle Tennessee county to reach the “top-10” was Knox County which at 4.1 percent had the eighth lowest rate in the state. In contrast, Lake County in West Tennessee, which also had the ninth smallest workforce in the state, had the highest unemployment rate among all Tennessee counties at 8 percent. Tied with the second highest rate, Lauderdale County in West Tennessee and

### 3.3. Unemployment and Population, continued

Hancock County in East Tennessee both had unemployment rates of 7.7 percent.

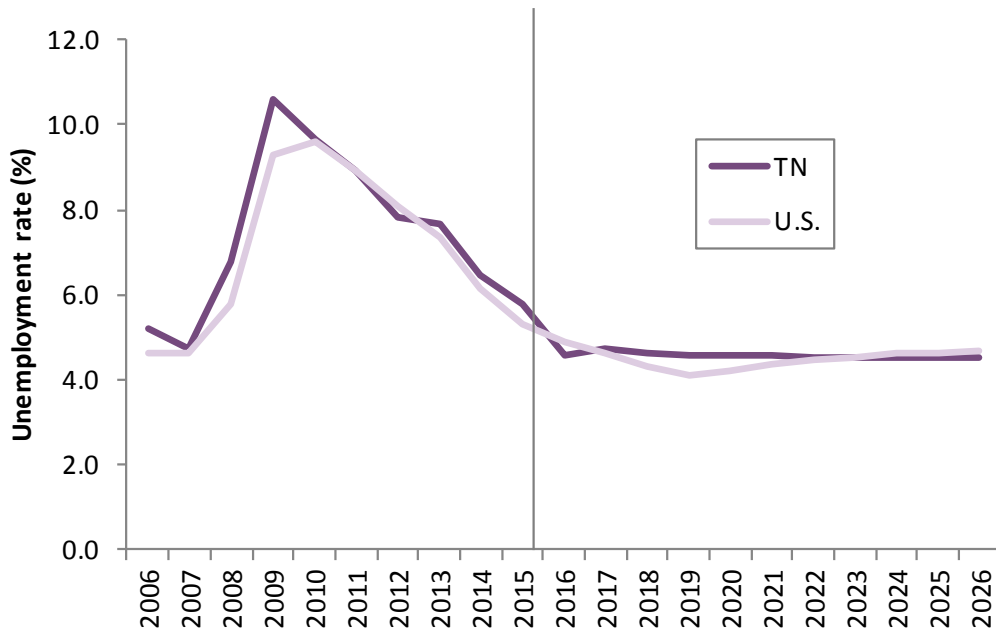
In the short term, changes in the labor market are driven by fluctuations in the business cycle. Over the longer-term, changes in population have a stronger impact on the overall level of employment and economic activity. From 2005 to 2015, population in Tennessee grew by 10.2 percent or 1 percent on a compound annual basis. By comparison, the U.S. grew at a slower rate of 8.8 percent, equivalent to a compound annual growth rate of 0.8 percent. Between 2016 and 2026, population growth patterns in both the state and nation are projected to hold steady, with the Tennessee population continuing its growth pattern of 1 percent per year and national population growth averaging 0.8 percent per year.

Within the state of Tennessee, there are a number of interesting regional differences in population that are also worth examining. In 2015, Middle Tennessee was the largest region in the

state, as measured by total population, with 2.6 million residents, followed by East Tennessee with 2.4 million. West Tennessee was the smallest of the three with 1.6 million residents. Population statistics for each region of Tennessee as well as all 12 southeast states (Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, South Carolina, Tennessee, Virginia, and West Virginia), and the U.S. are presented in Table 3.3. While Middle Tennessee had the largest population, it was also the least densely populated, with an average county population of 64.5 thousand residents in 2015. By comparison, the West Tennessee region had an average county population of 74.6 thousand, and the East Tennessee counties averaged 72.4 thousand residents. In 2015, Florida had the highest population among all 12 southeastern states, with 20.3 million people, followed by Georgia with 10.2 million, and North Carolina with 10.0 million.

Table 3.3 also displays population growth rates

**Figure 3.7: Tennessee’s Unemployment Rate will Rest above the National Rate through Most of the Long Term Outlook Horizon**

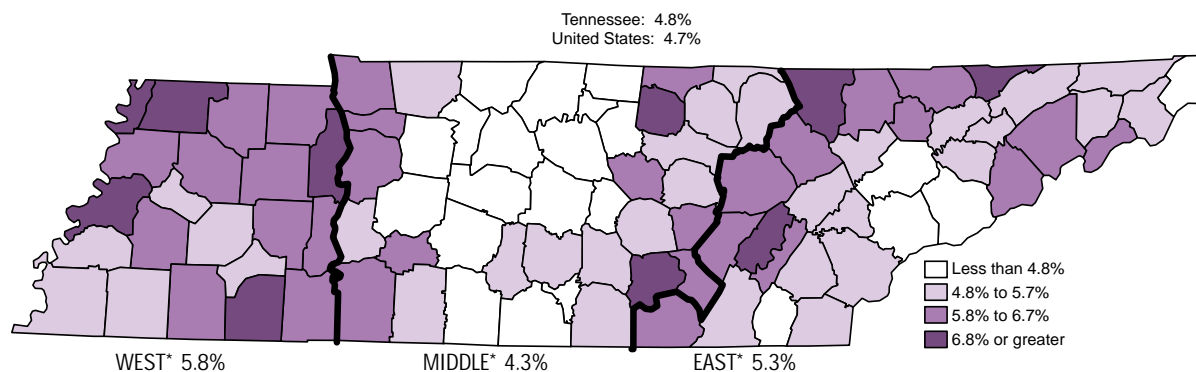


Source: Bureau of Labor Statistics, IHS Global Insight, Inc.; and Boyd CBER-UT



### 3.3. Unemployment and Population, continued

**Figure 3.8: Unemployment Rates in Tennessee are Lower near the Large Metro Areas, October 2015**



Source: Bureau of Labor Statistics, County-level data, not seasonally adjusted  
 \*Weighted average regional rate

for the three Tennessee regions and southeastern states from 2014 to 2015 as well as compound annual growth rates from 2000 to 2015. Within the state, the Middle Tennessee region enjoyed the fastest rate of population growth in both the short and long run, expanding by a robust 1.7 percent between 2014 and 2015, and averaging 1.6 percent compound annual growth from 2000 to 2015. Next was East Tennessee, which grew by 0.5 percent from 2014 to 2015, but saw a faster long-run compound annual growth rate of 0.8 percent from 2000 to 2015. From 2014 to 2015, the West Tennessee region saw its population shrink by 0.2 percent. However, over the long run, population growth averaged 0.3 percent per year. Over the long run, population growth in Middle Tennessee outpaced population growth in all 12 of the southeastern states, as well as, the U.S. as a whole.

Among the three Tennessee regions, West Tennessee housed the largest county (in terms of population) with 938.1 thousand residents in Shelby County in 2015. Davidson County had the second largest population, at 678.9 thousand followed by Knox County with a population of 451.3 thousand. Conversely, Picket County of Middle Tennessee had the lowest population

among Tennessee counties with 5,100 people. Tennessee's 10 most populated and least populated counties are presented in Figures 3.9 and 3.10, respectively. The Middle Tennessee region had the most top 10 counties, with six (Davidson, Rutherford, Williamson, Montgomery, Sumner, and Wilson), but also had eight of the 10 smallest counties in Tennessee (Jackson, Houston, Trousdale, Perry, Clay, Moore, Van Buren, and Pickett). This is largely a metropolitan versus rural phenomenon, as the counties surrounding Nashville are some of the largest in the state (in terms of population), but outside of the Nashville metro area, much of Middle Tennessee is still rural.

From 2014 to 2015, the 10 fastest growing counties were all in Middle Tennessee (Figure 3.11). Rutherford County saw the strongest growth at 3.3 percent, followed by Williamson with 3.1 percent growth, and Wilson at 2.8 percent. All 10 of these Middle Tennessee counties experienced population growth that greatly outpaced the state's 0.8 percent growth rate. Given the strong population growth seen in and around the Nashville metro area, robust population growth in the Middle Tennessee region is likely to persist into the future.

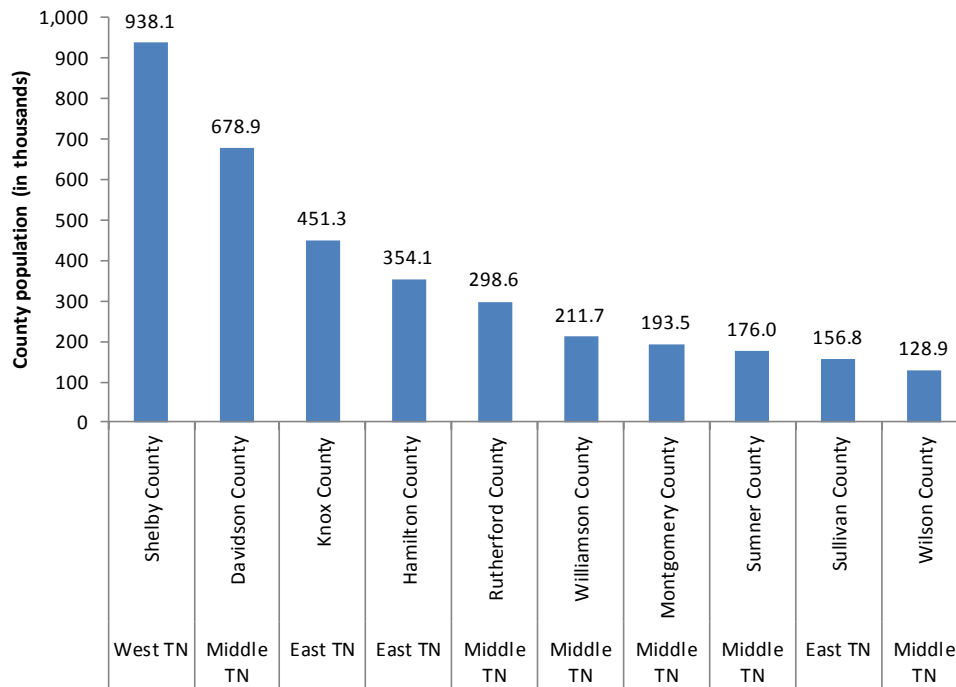
### 3.3. Unemployment and Population, continued

**Table 3.3: Population by Tennessee Region and Southeastern States, 2015**

Region	Total Population (in millions)	Total Population Growth 2014 to 2015	Long Run	Average County Population (in thousands)
			Population Growth 2000 to 2015 (CAGR)	
<b>Tennessee</b>				
East Tennessee	2.4	0.50%	0.82%	72.4
Middle Tennessee	2.6	1.66%	1.58%	64.5
West Tennessee	1.6	-0.16%	0.28%	74.6
<b>Southeast States</b>				
Alabama	4.9	0.26%	0.58%	72.5
Arkansas	3.0	0.38%	0.71%	39.7
Florida	20.3	1.84%	1.57%	302.6
Georgia	10.2	1.17%	1.45%	64.2
Kentucky	4.4	0.28%	0.59%	36.9
Louisiana	4.4	0.28%	-0.07%	73.0
Mississippi	3.0	-0.04%	0.33%	36.5
North Carolina	10.0	1.03%	1.46%	100.4
South Carolina	4.9	1.39%	1.32%	106.4
<b>Tennessee</b>	<b>6.6</b>	<b>0.80%</b>	<b>0.98%</b>	<b>69.5</b>
Virginia	8.4	0.66%	1.13%	63.0
West Virginia	1.8	-0.25%	0.14%	22.2
<b>Southeast</b>				
Southeast	81.9	0.99%	1.11%	82.2
<b>United States</b>				
United States	321.4	0.79%	0.87%	--

Source: U.S. Census Bureau  
CAGR=Compound Annual Growth Rate

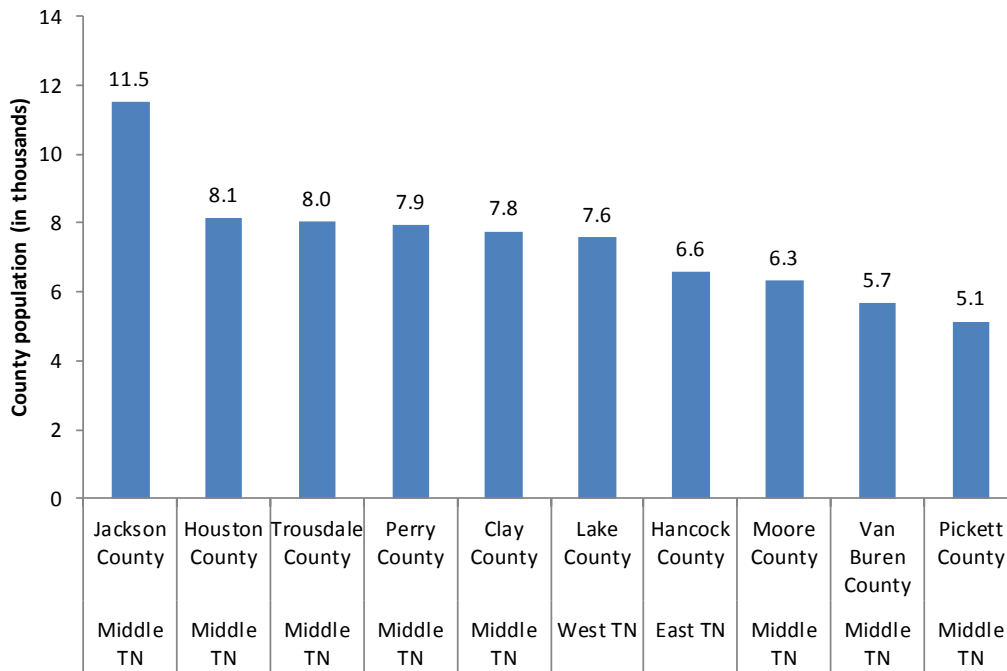
**Figure 3.9: Ten Most Populated Counties in Tennessee, 2015**



Source: U.S. Census Bureau

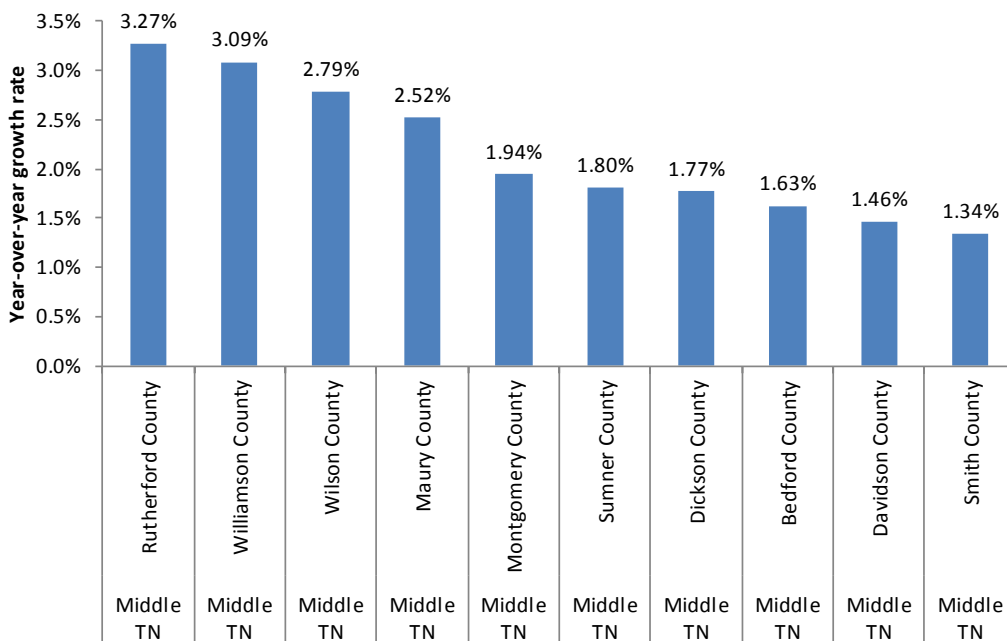
### 3.3. Unemployment and Population, continued

Figure 3.10: Ten Least Populated Counties in Tennessee, 2015



Source: U.S. Census Bureau

Figure 3.11: Ten Fastest Growing Counties in Tennessee, 2014 to 2015



Source: U.S. Census Bureau

### 3.4. Income and Earnings

As the state economy continues to grow, personal income growth will also continue to improve. Between 2016 and 2026, personal income is projected to advance by 4.5 percent (CAGR). This is slightly slower than the 4.8 percent income growth forecasted for the U.S., but well above the 3.7 percent compound annual growth rate that the state registered between 2006 and 2016.

In Tennessee, the strongest component of personal income growth between 2016 and 2026 will be transfer payments, which are projected to increase by 5.3 percent (CAGR). This will largely be driven by the increasing number of people from the Baby Boomer generation retiring and collecting social security. Rent, interest, and dividend income will also expand by 5 percent (CAGR), proprietors' income will grow by 4.9 percent (CAGR), and wages and salaries (i.e. total wage and salary income) will see 3.7 percent growth (CAGR).

Per capita income in Tennessee, which was \$42,094 per person in 2015, was only 86.6 percent of the national average in 2016. Since national income is projected to grow faster than state income over the next 10 years, while Tennessee's population grows faster than the nation's, this gap is projected to expand further by 2026, when it will fall to 83 percent. While average per capita income in Tennessee as a whole is well below the national average, there are a couple Tennessee counties with per capita income above the national average of \$48,112 in 2015: Williamson County (\$87,419) and Davidson County (\$55,411). Among the three Tennessee regions, only Middle Tennessee (where both Williamson and Davidson Counties are located) had an average per capita personal income (weighted by county population) that was higher than the national average, at \$60,932 per person (see Table 3.4). Like the state as a whole, per capita personal income in East Tennessee (\$32,047) and West Tennessee (\$31,937) were also well below the national average.

For comparative purposes, per capita income levels among all 12 southeastern states are presented in the bottom panel of Table 3.4. The

state of Virginia had the highest per capita income level at \$52,052, and was the only southeast state with a per capita income level above the national average of \$48,112. Florida had the second highest per capita income level at \$44,429, followed by Louisiana (\$42,947), and Tennessee (\$42,094). Conversely, Mississippi had the lowest per capita income level, at \$34,771, followed by West Virginia (\$36,758).

Table 3.4 also reports short-run per capita personal income growth rates for each Tennessee region and all 12 southeast states from 2014 to 2015, as well as long-run compound annual growth rates from 2005 to 2015. From 2014 to 2015, the West Tennessee region saw the strongest growth in per capita income among the three Tennessee regions, advancing 6.2 percent, but this was driven by a small basis for comparison, as per capita income in 2014 was only \$30,077 in the West Tennessee region. Nonetheless, West Tennessee enjoyed faster per capita income growth than all 12 of the southeastern states, which averaged 3.3 percent growth, as well as the nation with a growth rate of 3.7 percent. The East Tennessee region also saw robust per capita income growth of 4.1 percent from 2014 to 2015, which was faster than all southeastern states except for Tennessee as a whole, which saw per capita income gains of 4.6 percent, and Kentucky where per capita income also grew at 4.1 percent. Among the three Tennessee regions, Middle Tennessee saw the slowest rate of per capita income growth, advancing by a still healthy 3.6 percent from 2014 to 2015. Finding slightly slower income growth in Middle Tennessee is not surprising given that the base for comparison was already quite high in this region, as per capita income was \$58,807 in 2014. Nonetheless, average income in Middle Tennessee still grew to \$60,932 per person one year later. Among the southeast states, short-run per capita income growth was slowest in Arkansas (up 1.8 percent) followed by Mississippi (up 1.9 percent).

In the long run, West Tennessee saw an average income growth rate of 3.6 percent from 2005

### 3.4. Income and Earnings, continued

to 2015, which was well above both the national growth rate of 3 percent and the southeast average of 2.7 percent. The East Tennessee region saw a compound annual growth rate of 2.6 percent, while Middle Tennessee experienced average per capita income growth of 2.5 percent. Among the southeast states, Louisiana enjoyed the fastest long-run per capita income growth, averaging 3.9 percent growth per year from 2005 to 2015, while Georgia had the lowest compound annual growth rate, at 1.9 percent.

Table 3.5 presents the 10 counties with the highest (top panel) and lowest (bottom panel) per

capita income levels in Tennessee. As mentioned above, per capita income was highest in Williamson County at \$87,419, followed by Davidson County with a per capita income of \$55,411 at a distant second. Ranked third was Fayette County (\$47,649), while Hamilton County (\$46,460 per person) and Shelby County (\$45,153 per person) round out the top five. On the other end of the spectrum, Bledsoe County had the lowest per capita income level among all Tennessee counties, at \$20,719 per capita, followed by Hancock (\$23,733) and Lake (\$24,256).

**Table 3.4: Personal Income per Capita by Tennessee Region and Southeast States, 2015**

<b>Region</b>	<b>Per Capita Personal Income, 2015</b>	<b>Growth Rate 2014 to 2015</b>	<b>Long Run Growth 2005 to 2015 (CAGR)</b>
<b>East Tennessee</b>	\$32,047	4.13%	2.64%
<b>Middle Tennessee</b>	\$60,932	3.61%	2.53%
<b>West Tennessee</b>	\$31,937	6.18%	3.55%
<b>Southeast States</b>			
Alabama	\$38,030	2.98%	2.47%
Arkansas	\$38,252	1.78%	3.19%
Florida	\$44,429	3.64%	2.05%
Georgia	\$40,306	3.79%	1.94%
Kentucky	\$38,588	4.13%	2.89%
Louisiana	\$42,947	2.72%	3.85%
Mississippi	\$34,771	1.85%	2.72%
North Carolina	\$40,759	3.54%	2.37%
South Carolina	\$38,302	3.91%	2.84%
Tennessee	\$42,094	4.63%	2.96%
Virginia	\$52,052	3.89%	2.59%
West Virginia	\$36,758	2.74%	3.29%
<b>Southeast</b>	\$40,607	3.33%	2.74%
<b>United States</b>	\$48,112	3.66%	2.97%

Source: Bureau of Economic Analysis; CAGR=Compound Annual Growth Rate  
Regional averages are weighted by their respective county populations.

### 3.4. Income and Earnings, continued

**Table 3.5: Highest and Lowest County per Capita Income Levels in Tennessee, 2015**

County	Region	Per Capita Personal Income
<b>Top Ten Counties</b>		
Williamson County	Middle TN	\$87,419
Davidson County	Middle TN	\$55,411
Fayette County	West TN	\$47,649
Hamilton County	East TN	\$46,460
Shelby County	West TN	\$45,153
Knox County	East TN	\$44,849
Wilson County	Middle TN	\$43,458
Sumner County	Middle TN	\$43,079
Loudon County	East TN	\$42,971
Montgomery County	Middle TN	\$39,400
<b>Bottom Ten Counties</b>		
Jackson County	Middle TN	\$28,256
Wayne County	Middle TN	\$28,134
Hardeman County	West TN	\$27,400
Morgan County	East TN	\$27,329
Scott County	East TN	\$27,231
Van Buren County	Middle TN	\$26,693
Lauderdale County	West TN	\$26,617
Lake County	West TN	\$24,256
Hancock County	East TN	\$23,733
Bledsoe County	East TN	\$20,719

Source: Bureau of Economic Analysis

### 3.5. Output

Between 2006 and 2016, a period encompassing the Great Recession, inflation-adjusted state gross domestic product (GDP) grew by a meager 1 percent (CAGR) compared to a still sluggish 1.3 percent for the nation. Table 3.6 reports inflation-adjusted state GDP by sector in 2006, 2016, and 2026. Over the last 10 years, Tennessee's construction sector was hit pretty hard, with inflation-adjusted output declining by 1.5 percent (CAGR). Output growth in the manufacturing sector was only 0.7 percent (CAGR), but has now remained above pre-recession peak levels (from 2006) for three consecutive years. Conversely, production in the financial activities sector, professional and business services sector, and education and health services sector have all expanded by at least 2.7 percent per year since

2006. Looking ahead 10 years, inflation-adjusted state GDP growth should keep pace with national output growth, as both are projected to increase by 2.1 percent (CAGR) between 2016 and 2026. The state manufacturing sector is projected to advance 2.5 percent (CAGR) as output in the durable goods manufacturing sector will expand by 3 percent and production in nondurable goods manufacturing will increase by 1.6 percent. The professional and business services sector will continue to enjoy robust output growth, expanding by 3.8 percent (CAGR), and output in both the financial services and education and health services sectors are projected to increase by 2.3 percent. Conversely, output in the agriculture, forestry, fishing, and hunting sector will fall by 4.3 percent (CAGR) over the next 10 years, and the other services sector will

### 3.5. Output, continued

see a 1.4 percent (CAGR) contraction.

Table 3.7 presents data on the number of business establishments operating in Tennessee, as well as each Tennessee region, and for comparative purposes each of the other 12 southeast states and the nation as a whole in 2014. Among the three regions, Middle Tennessee had the largest number of establishments with 53,598, followed by East Tennessee with 46,834, while West Tennessee had the fewest, with 30,612. In total there were 131,044 business establishments operating in 2014 in Tennessee. Between 2013 and 2014, the number of business establishments in Tennessee grew by 0.2 percent. But among the three Tennessee regions, Middle Tennessee saw a healthy 1.3 percent growth rate in the number of establishments. Conversely, the number of business establishments remained flat in the East Tennessee region and fell by 0.3 percent in West Tennessee. By comparison, all but two of the southeastern states saw an increase in the number of establishments from 2013 to 2014, ranging from 0.1 percent in Alabama up to 1.9 percent in Florida.

The table also reports long-run compound annual growth rates on the number of

establishments from 2005 to 2014 – a period that encompasses the Great Recession. Not surprisingly the state of Tennessee and two of the three Tennessee regions saw a drop in the number of establishments during this period. Middle Tennessee was the only region to experience growth in the number of business establishments between 2005 and 2014. Among the 12 southeastern states, seven also saw the number of establishments decline over this period (Alabama, Arkansas, Kentucky, Mississippi, South Carolina, Tennessee, and West Virginia), four enjoyed increases (Florida, Louisiana, North Carolina, and Virginia), while the number of establishments in Georgia remained flat over this 10-year period.

Finally, the last column in Table 3.7 shows the average number of establishments in each county. Among the Tennessee regions, West Tennessee had the most establishments per county, with 1,458, and Middle Tennessee had the fewest, with 1,307. Among the southeast states, Florida, by a wide margin, had the most establishments per county with 7,747. At a distant second was South Carolina with 2,215, while West Virginia had the fewest with only 675.

**Table 3.6: Tennessee Inflation-Adjusted Gross Domestic Product by Sector**

	Level			Growth Rate*	
	(millions of 2009 dollars)			2006 to 2016	2016 to 2026
	2006	2016	2026		
Real Gross State Product	259,825	286,011	350,649	0.96%	2.06%
Natural Resources & Mining	3,617	2,218	2,344	-4.77%	0.56%
Construction	11,585	9,926	10,850	-1.53%	0.89%
Manufacturing	45,680	48,979	62,589	0.70%	2.48%
Durable Goods	27,096	29,660	39,876	0.91%	3.00%
Nondurable Goods	18,584	19,319	22,714	0.39%	1.63%
Trade, Transportation, Utilities	53,975	52,201	61,660	-0.33%	1.68%
Wholesale Trade	18,974	20,639	28,780	0.84%	3.38%
Retail Trade	20,229	20,300	24,666	0.04%	1.97%
Transportation & Utilities	14,772	14,095	15,220	-0.47%	0.77%
Information	7,551	8,106	10,538	0.71%	2.66%
Financial Activities	35,332	46,132	57,878	2.70%	2.29%
Professional & Business Services	24,441	33,848	49,261	3.31%	3.82%
Education & Health Services	23,299	30,412	38,144	2.70%	2.29%
Leisure & Hospitality	12,473	13,539	16,804	0.82%	2.18%
Agriculture, Forestry, Fishing & Hunting	2,305	1,308	840	-5.51%	-4.34%
Other Services	7,422	6,713	5,848	-1.00%	-1.37%
Government	32,145	32,631	33,893	0.15%	0.38%
Federal	8,778	8,515	7,552	-0.30%	-1.19%
State & Local	23,367	24,117	26,341	0.32%	0.89%

Source: Bureau of Economic Analysis and Boyd CBER-UT

\*Compound Annual Growth Rate

### 3.5. Output, continued

**Table 3.7: Number of Business Establishments by Tennessee Region and Southeast States, 2014**

Region	Total Number of Establishments	Growth 2013 to 2014	Long Run Growth 2005 to 2014 (CAGR)	Average Number of Establishments in Each County
<b>Region</b>				
East Tennessee	46,834	0.04%	-0.40%	1,419
Middle Tennessee	53,598	1.33%	0.45%	1,307
West Tennessee	30,612	-0.29%	-0.79%	1,458
<b>Southeast States</b>				
Alabama	97,714	0.14%	-0.43%	1,453
Arkansas	64,670	-0.16%	-0.21%	859
Florida	519,875	1.86%	0.30%	7,747
Georgia	220,605	1.40%	0.00%	1,384
Kentucky	91,418	0.82%	-0.08%	759
Louisiana	104,976	0.58%	0.21%	1,634
Mississippi	58,541	0.18%	-0.34%	711
North Carolina	219,897	0.74%	0.13%	2,194
South Carolina	102,297	0.74%	-0.11%	2,215
<b>Tennessee</b>	<b>131,044</b>	<b>0.17%</b>	<b>-0.16%</b>	<b>1,379</b>
Virginia	195,639	0.89%	0.13%	1,456
West Virginia	37,354	-0.58%	-0.86%	675
<b>Southeast</b>	<b>1,844,030</b>	<b>0.99%</b>	<b>0.04%</b>	<b>1,872</b>
<b>United States</b>	<b>7,563,085</b>	<b>1.00%</b>	<b>0.08%</b>	<b>--</b>

Source: U.S. Census Bureau, County Business Patterns



### 3.6. Workforce Quality (Education and Health Status)

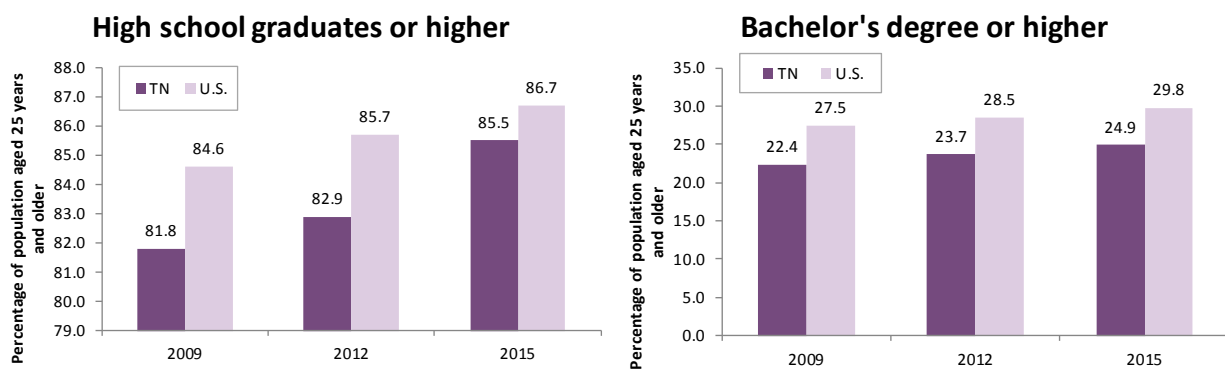
Workforce quality, as measured by education, skill level, and health has an impact on long-term economic growth through its impact on a region's ability to produce goods and services. In general, a more educated or more skilled labor force can produce goods and services more efficiently and of higher quality, while healthier individuals will be more attached to the labor market and have the ability to work more intensely when needed and produce a larger quantity of goods and services. On average, more educated workers also earn higher wages and have the ability to purchase more goods and services, thereby stimulating further economic activity and growth. Tennessee falls well below the national average in both educational attainment and health status, which may help explain why average income levels (i.e. per capita income) and unemployment rates in many Tennessee counties also lag the national average. Recent initiatives such as *Drive to 55*, which aims to increase the educational attainment level so that 55 percent of the Tennessee population has a college degree by the year 2025, and *Tennessee Promise*, which offers two years of tuition-free community

college or technical college to Tennessee high school graduates, are big steps in the right direction for improving educational attainment in the state, and if sustained could have a positive long-term impact.

Figure 3.12 presents educational attainment rates for the U.S. and Tennessee from 2009, 2012, and 2015. The first panel shows the percentage of the population (25 years of age or older) with a high school degree or higher. We see that while Tennessee's high school (or higher) attainment rate is still slightly below the national average, the state has made large improvements since 2009, and with a high school attainment rate of 85.5 percent in 2015, the state has nearly caught up to the national average of 86.7 percent.

The second panel of Figure 3.12 shows the percentage of the population with a bachelor's degree or higher, hereafter referred to as college attainment rate. This picture is not as encouraging. While both Tennessee and the U.S. have both shown some improvements in their respective college attainment rates from 2009 to 2015, Tennessee is not catching up in this case. This

**Figure 3.12: Educational Attainment in Tennessee has Improved, but still Lags the Nation**



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

### 3.6. Workforce Quality (Education and Health Status), continued

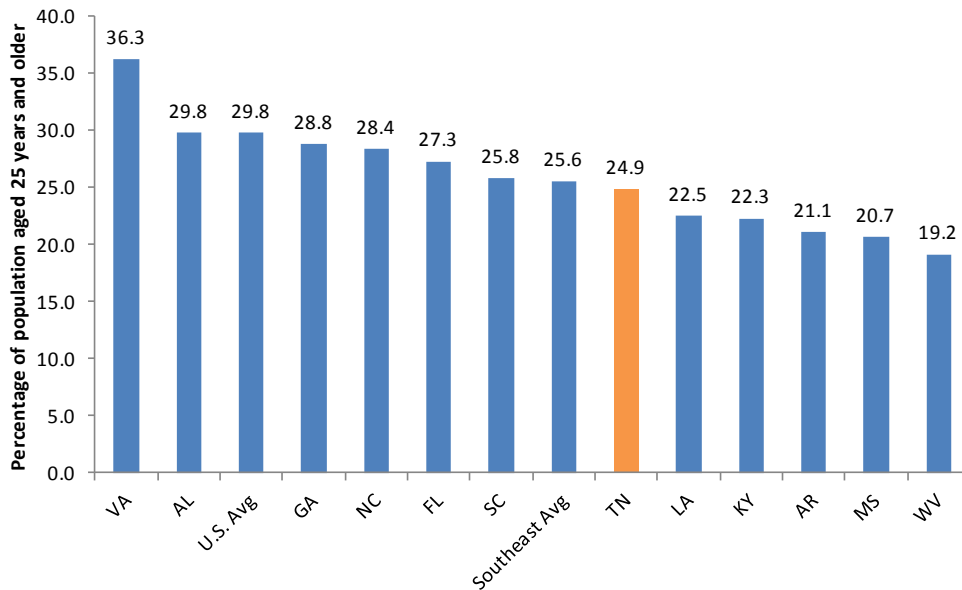
is not unique to Tennessee, as the majority of southeast states have lower college attainment rates than the national average (see Figure 3.13). In fact, Virginia is the only state with a college attainment rate above the national average of 29.8 percent, while Alabama’s rate is equal to the U.S. average. However, at only 24.9 percent, Tennessee’s rate is in the bottom half of all southeast states, and is slightly below the southeast average of 25.6 percent. In order to attract more high paying jobs into the state, Tennessee will need to make further improvements in college education attainment rates, which should make this a pressing concern.

Figure 3.14 shows how educational attainment rates vary by Tennessee county and region. Counties and regions with higher levels of attainment show better economic outcomes. Among the three Tennessee regions, East Tennessee had the highest high school attainment rate at 87.4 percent, followed by Middle Tennessee at 86.8 percent, both of which were above the national average of 86.7 percent. The West Tennessee region had the lowest high school attainment rate at 85.2 percent. Among the

Tennessee counties, 15 had high school attainment rates above the national average. Of these, four were from East Tennessee (Blount, Hamilton, Knox, and Washington), eight were from Middle Tennessee (Davidson, Maury, Montgomery, Rutherford, Stewart, Sumner, Williamson, and Wilson), and three were from West Tennessee (Fayette, Madison, and Shelby). Williamson County had the highest high school attainment rate with an impressive 95.3 percent, followed by Montgomery at 91.9 percent. The three counties with the highest high school attainment rates were all located in Middle Tennessee: Williamson (94.8 percent), Montgomery (91.0 percent), and Rutherford (90.2 percent). However, Middle Tennessee also has 18 counties with high school attainment rates below 80 percent. In total there were 10 Tennessee counties with high school attainment rates below 75 percent. At the bottom was Grundy County at 71.1 percent, followed by Lake County at 71.5 percent.

The bottom panel of Figure 3.14 shows the percentage of adults (i.e. 16 years and older) with a bachelor’s degree or higher. At 27.9 percent,

**Figure 3.13: Tennessee’s College Attainment Rate is Below the Southeast Average**



Source: U.S. Census Bureau 5-year American Community Survey

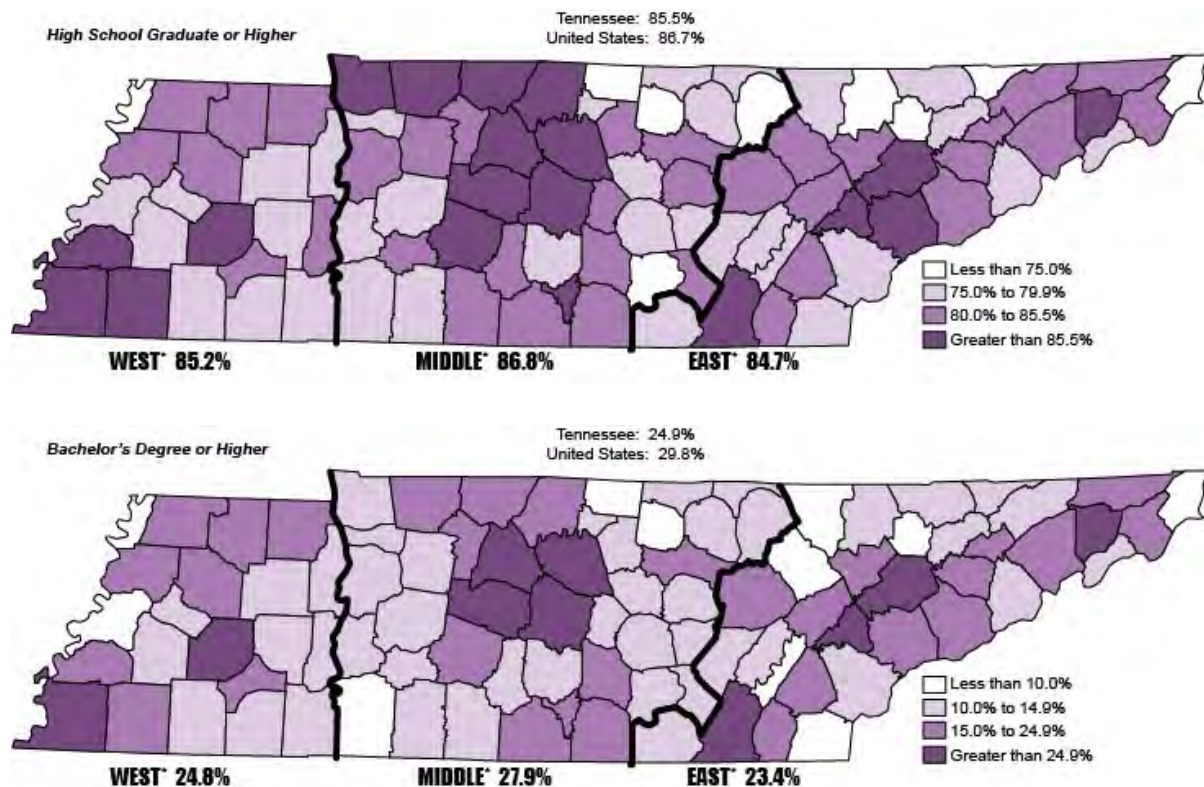
### 3.6. Workforce Quality (Education and Health Status), continued

Middle Tennessee had the highest college attainment rate among the three Tennessee regions. However, all three regions had college attainment rates below the national average of 29.8 percent. Within the state, the higher educational attainment rates in Middle Tennessee seem to be consistent with much of this section’s earlier findings, as Middle Tennessee was also the top Tennessee region with regards to a number of economic indicators including employment, population, personal income, and the number of business establishments. Among all Tennessee counties, Williamson had the highest college attainment rate at a remarkable 54.1 percent. In a distant second was Davidson County at 36.5 percent, followed by Knox County at 34.5 percent. Only six Tennessee counties had college attainment rates above the

national average, of which two were located in East Tennessee (Knox and Washington), three were in Middle Tennessee (Davidson, Rutherford, and Williamson), and one was in West Tennessee (Shelby). In contrast, the two counties with the lowest college education attainment rates were both located in East Tennessee: Morgan County (7.3 percent) and Meigs County (7.8 percent). In addition to these two counties, there were nine more Tennessee counties with college attainment rates below 10 percent (Campbell, Cocke, Grundy, Hardeman, Jackson, Lake, Macon, Union, and Wayne), all of which were either small or rural, as the largest county in this list was Campbell in Middle Tennessee with a population of 39.8 thousand residents in 2015.

Another component of workforce quality

**Figure 3.14: Educational Attainment Rates or Population Aged 25 or Older by Tennessee Region and County, 2015**



Source: U.S. Census Bureau, 2015 5-Year American Community Survey  
 Note: Regional attainment rates are weighted by their respective county populations

### 3.6. Workforce Quality (Education and Health Status), continued

is overall health status, as a healthier worker is more likely to be in the labor force. However, data suggests that Tennesseans, on average, have lower health status and engage in more unhealthy behaviors than the average American.

According to the 2015 annual report of American Health Rankings -- a state-by-state analysis of the relative health of populations across the U.S. -- Tennessee currently ranks 43<sup>rd</sup> in overall health status.<sup>1</sup> This is a slight improvement to the 45<sup>th</sup> ranking received in 2014, but is still a grim outcome. Only Kentucky, Oklahoma, Alabama, West Virginia, Arkansas, Mississippi, and Louisiana rank more poorly. Tennessee continues to receive a low ranking due to a high prevalence of obesity, diabetes, and smoking, a large number of poor mental health days, high rates of drug deaths and violent crime, and low levels of physical activity. Notice, however, that aside from Oklahoma, all other poorly ranked states are also located in the southeast region. Thus, patterns of unhealthy behavior and outcomes appear to be an issue for the southeast region as a whole.

As of 2015, Tennessee had the eighth-highest adult smoking rate in the country at 21.9 percent. However this is great improvement compared to the 24.2 percent smoking rate recorded just one year prior. By comparison, the adult smoking rate was only 17.5 percent for the nation and eight states even had smoking rates below 15 percent. Figure 3.15 presents trend data showing how the adult smoking rate in Tennessee and the U.S. has changed between 2011 and 2015.<sup>2</sup> While the smoking rate in Tennessee has rested well above the national rate in each of the last five years, Tennessee has seen great improvement over the last year, a pattern which can hopefully be sustained into the future.

Obesity rates, as measured by a body mass index (BMI) above 30 are also higher in Tennessee than they are in the nation. In 2015, Tennessee's obesity

rate was 33.8 percent, compared to 29.8 percent for the nation (see Figure 3.16). Since 2011 the national and state obesity rates have both been on an upward trend, though Tennessee saw a temporary reduction between 2013 and 2014.<sup>3</sup> In 2015, Louisiana had the highest obesity rate in the country at 36.2 percent, but Tennessee was not far behind with the ninth highest rate. Conversely, Colorado had the lowest obesity rate at 20.2 percent.

Finally, we examined data on chronic health indicators which show that more Tennesseans suffer from serious health issues than the average U.S. citizen. Figure 3.17 presents prevalence data for Tennessee and the nation on a number of serious health issues. Aside from other types of cancer, the prevalence of all serious health issues is higher in Tennessee than the nation. For example, 4.3 percent of Tennesseans reportedly were told by a doctor that they had suffered a stroke in the past versus 3 percent for the nation, and 12.7 percent of Tennesseans were diagnosed with diabetes versus 9.9 percent for the U.S. as a whole.

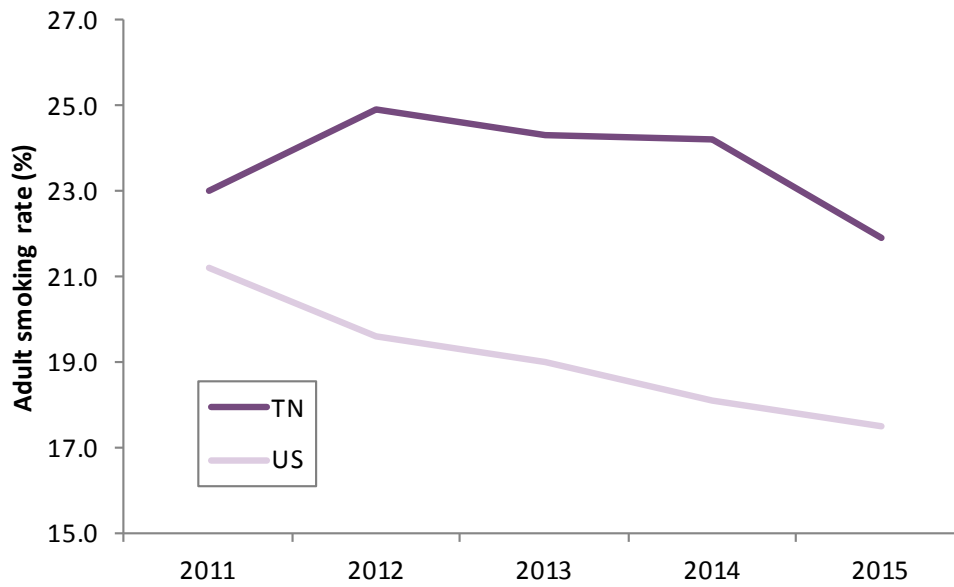
<sup>1</sup> Retrieved at <http://www.americashealthrankings.org/>

<sup>2</sup> The most recent tobacco use data (2011 to 2015) from the Behavioral Risk Factor Surveillance Survey (BRFSS) is not directly comparable to BRFSS data from previous years because of changes in weighting and sampling methodology. As a result, we are unable to examine more long term trends in adult tobacco use.

<sup>3</sup> As with the tobacco data, the most recent obesity data (2011 to 2015) from BRFSS is not directly comparable to BRFSS data from previous years due to changes in weighting and sampling methodology.

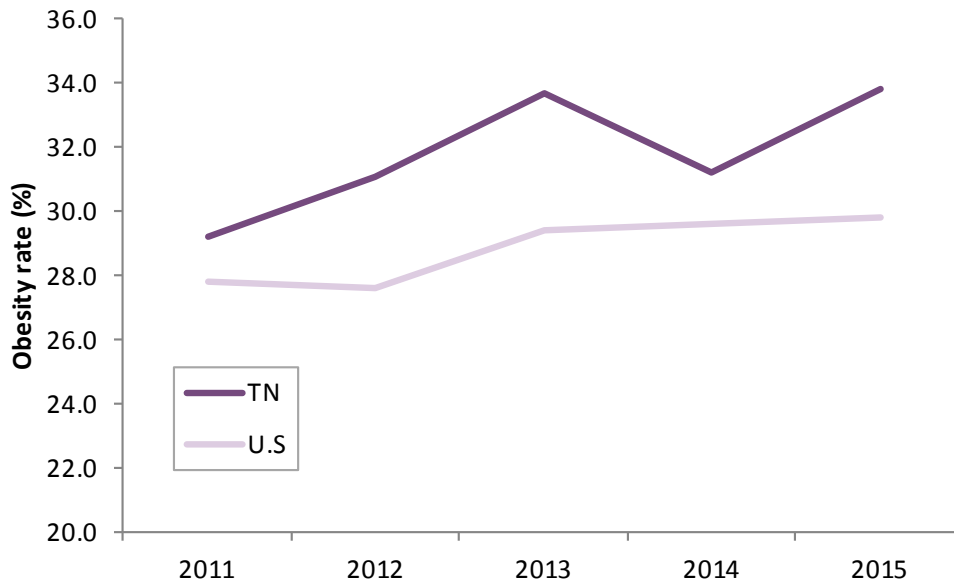
### 3.6. Workforce Quality (Education and Health Status), continued

**Figure 3.15: The Adult Smoking Rate in Tennessee has Fallen but is Still above the National Average**



Source: Center for Disease Control and Prevention, Behavioral Risk Factor Surveillance Survey, 2015

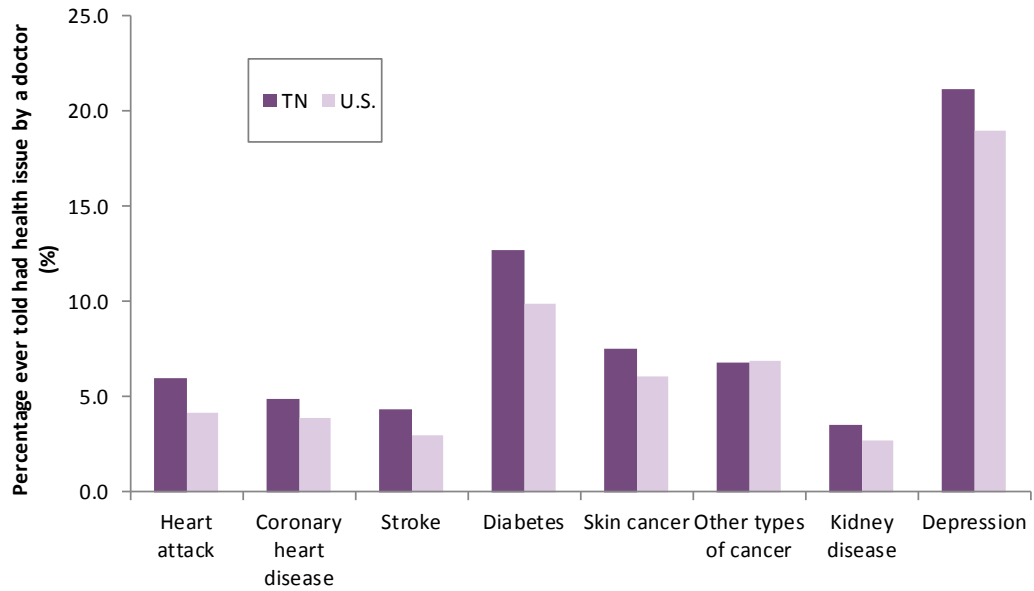
**Figure 3.16: Tennessee's Obesity Rate is Well Above the National Average and Continues to Grow**



Source: Center for Disease Control and Prevention, Behavioral Risk Factor Surveillance Survey, 2015

### 3.6. Workforce Quality (Education and Health Status), continued

**Figure 3.17: Tennesseans Face Higher Prevalence of Serious Health Issues than the Average U.S. Citizen**



Source: Center for Disease Control and Prevention, Behavioral Risk Factor Surveillance Survey, 2015



## CHAPTER 4: PENDING RETIREMENTS AND EXPECTED HUMAN CAPITAL LOSSES IN TENNESSEE

<p><b>In this chapter—</b></p> <p><b>4.1. Introduction</b></p> <p><b>4.2. The Occupational Distribution of workers near Retirement Age in Tennessee</b>  <b>Management</b>  <b>Architecture and Engineering Occupations</b>  <b>Community and Social Services</b>  <b>Specific Occupational Categories with the Highest Concentration of Older Workers</b>  <b>Differences in Occupational</b></p>	<p><b>Concentrations of Older Workers by City</b></p> <p><b>4.3. Future Projections of Labor Force Participation and Workers per Retiree</b></p> <p><b>4.4. Summary and Policy Discussion</b></p> <p><b>4.5. References</b></p>
--	---

### 4.1. Introduction

It is well known that from 1946 to 1964, the U.S. and Tennessee exhibited historically large numbers of births. Birth rates from 1946 to 1964 were the highest of any years since before the World War I. More live births occurred in 1957 (4.3 million) than any year since, except 2007. This “baby boom” cohort is now aged 52 to 70, meaning that this sizeable share of the population is now at or near retirement age. Figure 4.1 documents labor force participation rates by age. In both the U.S. and Tennessee, labor force participation declines slightly from age 40 to age 55, then sharply from age 55 to 70.

While the U.S. as a nation is expecting a sharp increase in the number of retirements; retirements in Tennessee may increase sooner than the national average. Figure 4.2 presents the same data as Figure 4.1, but rather than plotting the U.S.

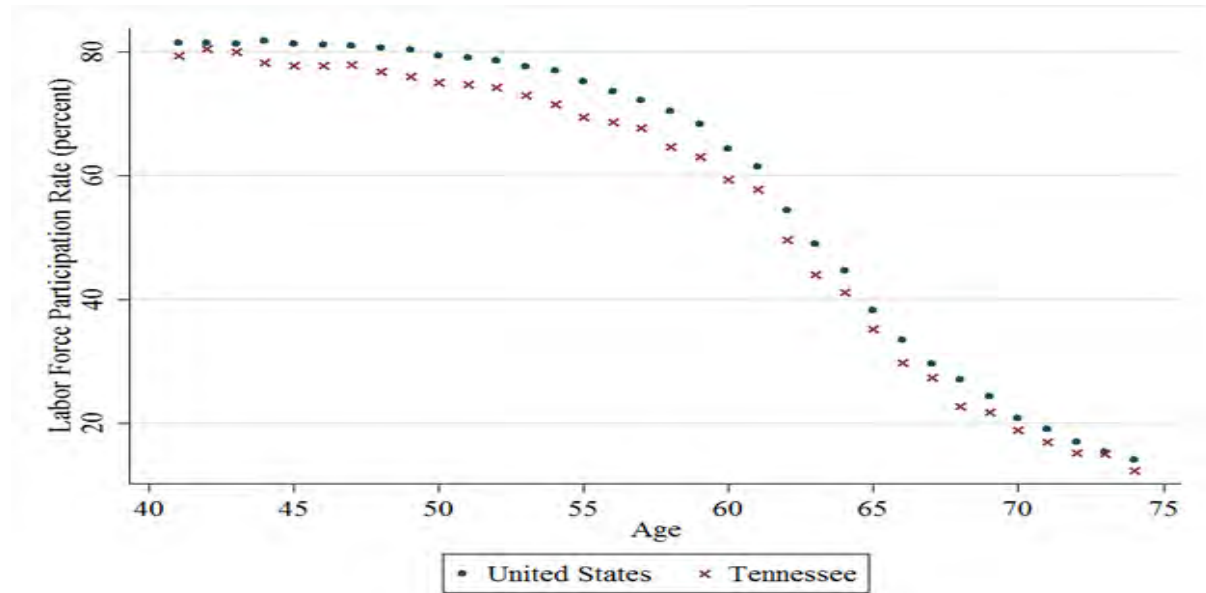
and Tennessee labor force participation rates as separate series, Tennessee labor force participation rates are normalized to those of the U.S. What we learn from this second figure is that while the absolute *difference* in labor force participation rates between the U.S. and Tennessee shrinks with age, Tennesseans exit the labor force more quickly as they age than their national counterparts. Therefore, the increase in retirements in Tennessee is likely to precede the increase in the U.S.

The expected increase in retirements over the next decade raises several important questions. First, which sectors of the workforce are likely to be most affected? If individuals in the “boomer” generation select into different occupations than younger workers, Tennessee may be at risk for shortages of skilled workers in certain occupational categories. How prepared is the state to address



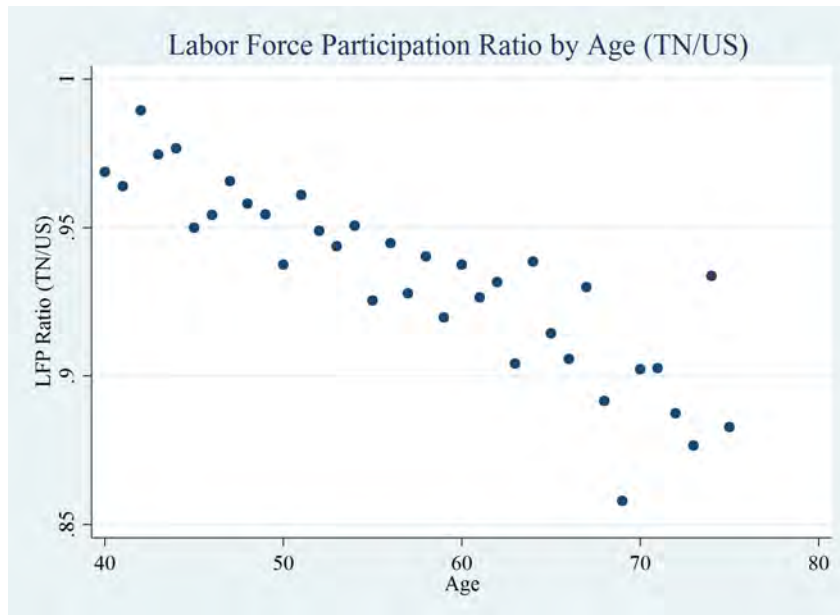
## 4.1. Introduction, continued

Figure 4.1: Labor Force Participation Rates by Age



Source: U.S. Census Bureau, American Community Survey, 2012-2015 1-Year Estimates

Figure 4.2: Tennessee Labor Force Participation by Age, Normalized to U.S. Rates



Source: U.S. Census Bureau, American Community Survey, 2012-2015 1-Year Estimates

## 4.1. Introduction, continued

any prospective shortage in human capital so that it can continue to attract and retain employers? Second, the expected increase in the number of retirees is likely to be doubly sharp due to low numbers of births from 1929 to 1945. The “baby boom” was preceded by four years of World War II and the Great Depression before that. While expected increases in the number of retirees has garnered considerable attention, it is less often emphasized that the numbers of retirees have until recently been quite small, due to the low numbers of live births in the 1930s and 1940s. (The Great Recession may also be a contributing factor). Sharp changes in the ratio of workers-to-retirees will have significant effects on families, but also have ripple effects on the labor market due to the burdens of providing informal care for older relatives. More generally, the proportion of workers-to-retirees has implications for both the size of the tax base and the way that the state should allocate its resources to meet the needs of the populace. While the increase in the number of older individuals will require additional resources be devoted to health services and other categories, investment in human capital for the next generation of workers cannot be compromised.

The rest of this chapter presents descriptive evidence on the prospective loss of workers in each occupational sector and expected changes in the worker-to-retiree relationship. Data from the American Community Survey (ACS) indicate that relatively large shares of the architecture/engineering, management, and community/social services professions are likely to retire over the next decade. Supplementary data from Tennessee Higher Education Commission (THEC) reports indicate that Tennessee is likely not training enough individuals to replace these retirees. We also examine which major (aggregate) occupational categories have the largest proportions of workers near retirement age in each identifiable metropolitan area in Tennessee. In addition, we document the specific occupational categories that more than 5,000 Tennesseans hold that have more than 20 percent of its workers aged 55 to 65.

These results are meant to start conversations

rather than sound alarm bells. There are several reasons an occupation may have a high concentration of workers at or near retirement age. Many of these require no policy intervention whatsoever. First, declining demand for certain professions may be leading younger workers to not select into certain occupations. Alternatively, declining demand for some occupations may lead younger, more mobile workers to select out of certain occupations with greater frequency than their more senior counterparts. Second, due to preferences or other factors related to life stages, older workers may be selecting into certain occupations. This is particularly true for management professions which are more frequently held by individuals with some seniority. Finally, it is possible that an increase in retirements will lead to shortages of important skills in key sectors. Our hope is that these results can start conversations between the Tennessee Department of Labor and Workforce Development, Tennessee Department of Economic and Community Development (TDECD), THEC, key employers, Chambers of Commerce and so on to identify the areas where pending retirements *are* likely to result in shortages of vital, skilled labor.

We also use population forecast data from the Boyd Center for Business and Economic Research to forecast the expected ratio of workers to retirees out to 2040. In 2010, there was a ratio of labor force participants to retirees that was greater than 3:1. By 2030, that ratio is expected to shrink to less than 2:1, but remain relatively stable at 1.8:1 out to 2050. These changes may happen more quickly than projected in the event of another recession. While the older portion of the boomer cohort has reached retirement age, the relatively healthy post-recession labor market has had two positive effects. First, labor force participants have been working. Second, a tight labor market may have been keeping individuals near retirement age in the labor force. An economic downturn is likely to quickly affect both of these. The chapter concludes with a short discussion of a few prospective policies that may soften the adjustment as the population of Tennessee continues to age.

## 4.2. The Occupational Distribution of Workers near Retirement Age in TN

Figure 4.3 depicts the occupational choice frequencies in the U.S. and in Tennessee for two groups of workers: those near typical retirement age (aged 55-65) and workers younger than 55. Occupations are aggregated into one of 18 categories as delineated by the ACS. As is frequently the case with labor data, Tennessee is highly representative of the overall U.S. labor market. In both the U.S. and Tennessee, workers near retirement age are more likely to be employed in management, education and training, community and social sciences, and office and administrative support. Workers younger than age 55 are more likely to be employed in sales, construction, food preparation and service, and computer and mathematical occupations.

Figure 4.3 is useful in characterizing the differences between near-retirement and other workers in their occupational choices. However, simply because older workers are more (less) likely to have a given occupation does not necessarily mean that this occupation is disproportionately vulnerable to pending retirements. Some occupations (e.g., management) are often populated by more experienced workers; a pipeline may exist to funnel more junior workers into positions of management. Other occupational groups have specific occupations which are frequently held by semi-retired workers, such as the non-clergy religious workers in the community and social services category.

One way to characterize the occupations in Tennessee which are disproportionately exposed to large numbers of retirements is to normalize the proportion of workers aged 55 to 65 in each occupation to the same proportion in the U.S. as a whole. Figure 4.4 presents these normalized ratios for each occupation group. There are four occupation groups for which Tennessee has a proportion of workers near retirement age considerably greater than the national average: Architecture and Engineering (which stands out in all subsequent cross-cuts of the data); Protective Services; Farming, Fishing, and Forestry; and Extraction. Extraction may be less of a concern, as much of Tennessee's legacy of extraction is related

to coal, which is likely to continue to contract. Protective Services (i.e., police, fire, EMS, etc.) is an interesting case. In subsequent cross sections of the data, it contains only an average, or representative, proportion of older workers in Tennessee. However, Figure 4.4 implies that while Protective Services may contain an average proportion of older workers in Tennessee, it is a younger-than-average profession in most of the U.S.

Figure 4.5 more directly presents which occupations have the highest proportion of workers near retirement age in Tennessee. At the aggregate level, workers aged 55 to 65 comprise 15.8 percent of the workforce in Tennessee, which is depicted as the dashed horizontal line in Figure 4.5. From Figure 4.5, we see that several occupational categories have larger than average proportions of workers near retirement age and are therefore likely to see relatively large numbers of retirements over the next decade. However, there are three occupational categories in particular that are most heavily comprised of workers near retirement age and warrant further examination: Management (19.9 percent near retirement), Architecture and Engineering (22.3 percent), and Community/Social Services (19.6 percent).

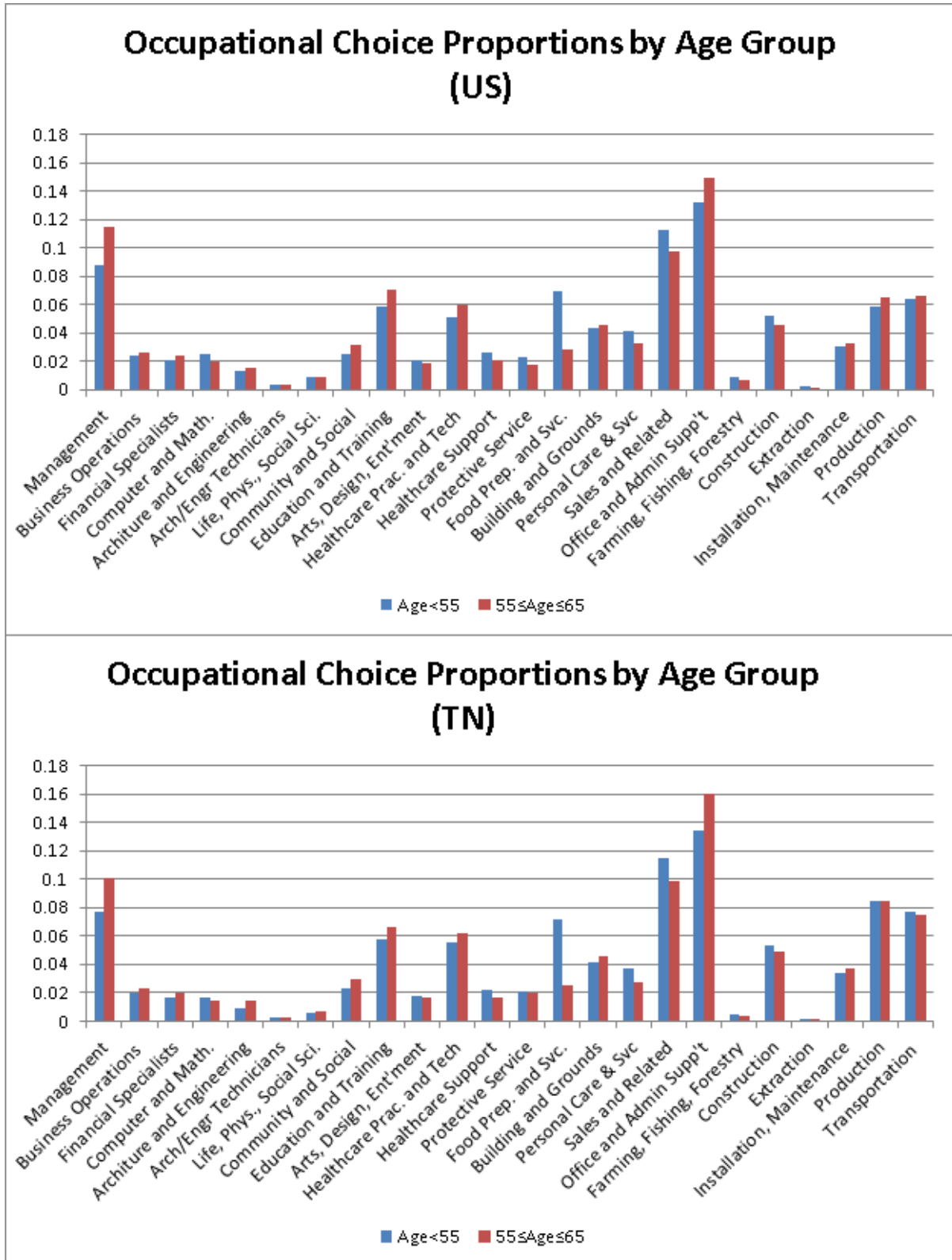
### *Management*

Management is a fairly broad category, comprised of several functional areas (e.g., Human Resources, Purchasing) and industrial designations (e.g., Food Service and Lodging, Medical and Health Service Managers). Table 4.1 reports the most common specific management occupations that comprise the management group, and two residual categories.<sup>1</sup> Table 4.2 contains the top five most common management occupations held by individuals in the near-retirement group and individuals less than 55 years of age. There are some key differences. For example, Education Administration is the second most common occupation in the management category for individuals near retirement, but only the fifth

<sup>1</sup> The U.S. Census Bureau includes a residual catch-all for management occupations for which they have no specific code (N.E.C. = Not Elsewhere Classified). We also report the sum of all management occupations that make up less than 5 percent of the total (Small Specified Categories).

## 4.2. The Occupational Distribution of Workers near Retirement Age in TN, continued

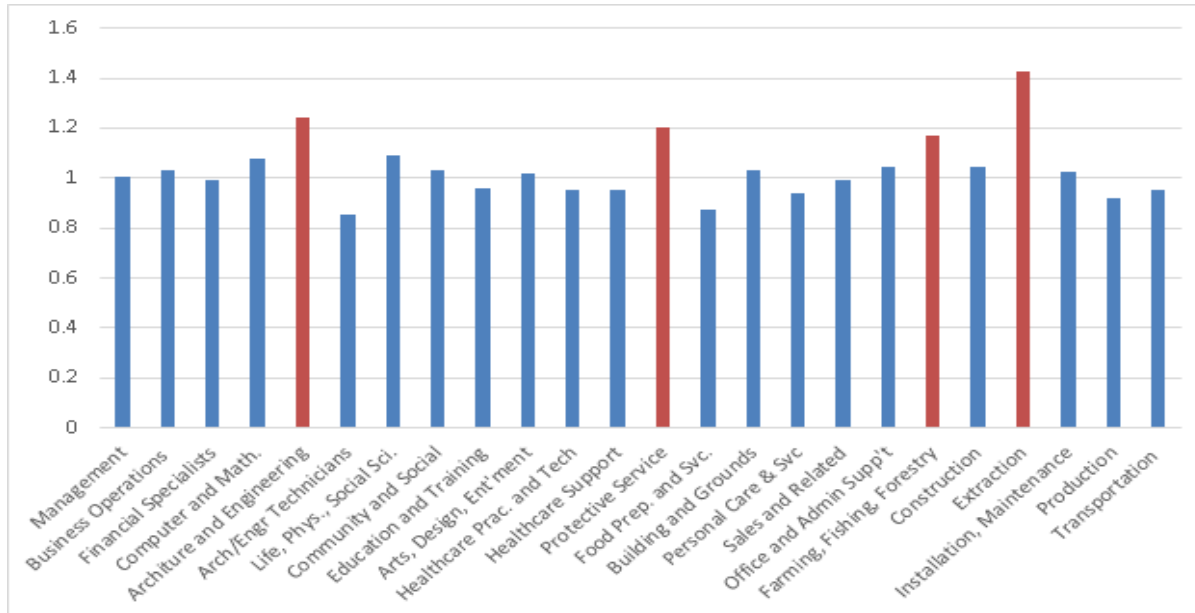
Figure 4.3: Occupational Choice Frequencies, U.S. and Tennessee



Source: U.S. Census Bureau, American Community Survey, 2012-2015 1-Year Estimates

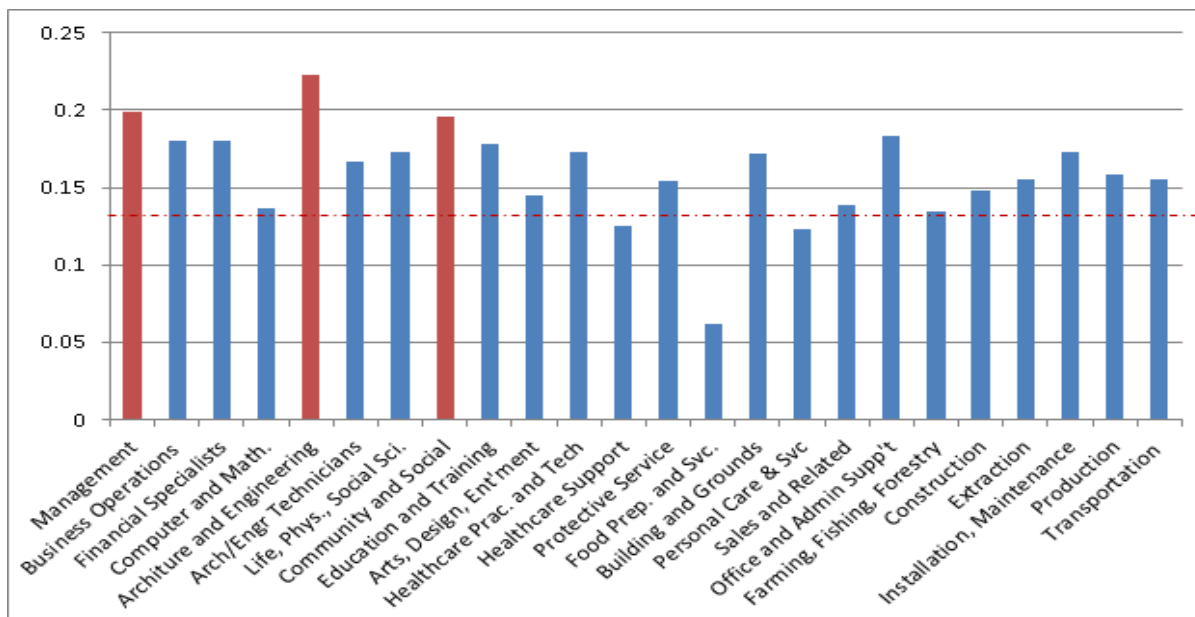
## 4.2. The Occupational Distribution of Workers near Retirement Age in TN, continued

**Figure 4.4: Proportion of Workers Aged 55 to 65 by Occupation in TN, Normalized to U.S. Proportions**



Source: U.S. Census Bureau, American Community Survey, 2012-2015 1-Year Estimates

**Figure 4.5: Proportion of Workers Near Retirement Age, by Occupation**



Source: U.S. Census Bureau, American Community Survey, 2012-2015 1-Year Estimates

## 4.2. The Occupational Distribution of Workers near Retirement Age in TN, continued

**Table 4.1: Most Common Specific Management Occupations**

Specific Occupational Category	Percent of Total Managers
Chief Executives and Public Admin.	7
General and Operations Managers	7
Financial Managers	6.5
Education Administrators	6.4
Hospitality Mgmt.	7.8
Medical and Health Service Mgmt.	5.2
Human Resources Mgmt.	6.2
Small Specified Categories	29.4
Reported N.E.C. Managers	24.5

Source: U.S. Census Bureau, American Community Survey, 2012-2015 1-Year Estimates

**Table 4.2: Most Common Specific Management Occupations**

Near Retirement		Workers Under Age 55	
Occupation	Percent	Occupation	Percent
Chief Executives and Public Admin.	8.9	Hospitality Mgmt.	9
Education Administrators	8	General and Operations Managers	7.3
General and Operations Managers	6.8	Human Resources Management	7.2
Medical and Health Service Mgmt.	5.9	Financial Managers	6.8
Agricultural Managers	5.8	Chief Executives and Public Admin.	5.9

Source: U.S. Census Bureau, American Community Survey, 2012-2015 1-Year Estimates

## 4.2. The Occupational Distribution of Workers near Retirement Age in TN, continued

most common among workers younger than 55.<sup>2</sup> Conversely, Hospitality Management is the most common management occupation among younger workers, but not in the top five for workers near retirement age.

The economic impact of retirement of managers is difficult to quantify. On one hand, knowledge loss is a by-product of any retirement, including managers. On the other hand, retirements by older managers can simply open doors for natural progression and advancement for younger and mid-career workers. The occupations where we can expect retirements to lead to talent shortages are those specific management occupations which require both soft skills *and* hard skills, or specific domain knowledge. Two examples are Architectural and Engineering Managers and Agricultural Managers. Workers in the near-retirement group make comprise more than 25 percent of each of these occupations.

<sup>2</sup> In fact, more than 25 percent of education administrators are comprised of workers over age 55.

### *Architecture and Engineering Occupations*

Due to the detailed technological knowledge required to perform job duties, engineers and architects are considerably more difficult to replace. Table 4.3 breaks down the most common specific engineering/architecture occupations in Tennessee. Among the major categories, only 17.9 percent of civil engineers (bridges, roads, structures, etc.) and 18.1 percent of architects are in the near-retirement age group. Conversely, 22.8 percent of electrical engineers, 21 percent of industrial engineers, and 21.1 percent of mechanical engineers are near retirement age. Greater concentrations of workers near retirement age are found in groups with relatively few employees, including chemical engineers (27.8 percent), environmental engineers (27.4 percent), and petroleum engineers (38.9 percent). While these last three groups add up to less than 1,500 workers across the state, to the extent that their knowledge is useful in skilled manufacturing

**Table 4.3: Most Common Architecture/Engineering Occupations**

Specific Occupational Category	Percent of Total
Civil Engineers	16.3
Industrial Engineers (incl. Health/Safety)	12.2
Mechanical Engineers	12.1
Electrical Engineers	10.1
Architects	6.1
Reported N.E.C. Engineers	22.6

Source: U.S. Census Bureau, American Community Survey, 2012-2015 1-Year Estimates

## 4.2. The Occupational Distribution of Workers near Retirement Age in TN, continued

### Automation, Retirement and the Future of the Workforce

While “income inequality” has become a political talking point (and lightning rod) during the last few election cycles, economists have treated increasing inequality in wages as a stylized fact for the last 30 years. Beginning in the late 1980s, economists noticed that while median wages had stagnated, wages among highly educated workers were continuing to grow steadily. Several complementary hypotheses for the observed changes were put forth, including the decline of unions (DiNardo, Fortin, and Lemieux, 1996), globalization (Wood, 1994), and changes in the supply of educated workers (Katz and Murphy, 1992). While all of these factors have certainly contributed, the theory that has emerged as the primary determinant of the observed increased dispersion of earnings, and therefore the most crucial for subsequent workforce development initiatives is one of skill-biased technical change (Autor, Katz, and Krueger, 2002; Autor, Levy, and Murnane, 2003).

The premise behind skill-biased technical change (SBTC) is fairly straightforward: technology (computers and computerized equipment) is neither a pure complement nor substitute to labor. Rather, it is a substitute for some kinds of labor, and a complement (productivity enhancer) for others. Specifically, the literature on SBTC usually characterizes occupations as falling into one of four groups:

	Physical	Cognitive/Mental
Non-Routine	Janitor House Painter Installation/Repair Custom/Field Welder	Attorney Engineer Accountant
Routine	Line Worker Machine Operator Fabricating Welder	Data Entry Clerical Tasks Customer Service

For occupations in the top-right quadrant, characterized by non-routine cognitive tasks, the proliferation of technology has greatly enhanced productivity. Accountants, attorneys, engineers, data scientists, etc., are able to produce more output of greater quality than in years past. Consider the productivity of an architect or an engineer working with a slide-rule versus a state-of-the-art CAD package.

Technological progress has not been kind to individuals with occupations in the lower quadrants. While often requiring great skill, knowledge, and precision, technology is often a substitute for workers in these occupations. Machines are faster and more precise at canning, torqueing cylinder-head bolts, etc., than human hands, and can do the work at a much lower marginal cost. Similarly, while many professionals used to employ multiple secretaries, bookkeepers, etc., they now employ one such person equipped with a personal computer and multiple software packages; in some instances, there are no such staff support positions and the task is done by the worker.

*continued on page 84*



## 4.2. The Occupational Distribution of Workers near Retirement Age in TN, continued

Continued from page 83

Physical non-routine tasks have been less affected by SBTC than the other categories. However, SBTC presents additional challenges from a societal perspective. If one were to order the above occupational groups by prestige/socioeconomic status, it would typically look like:

Lowest Paying			Highest Paying
Physical	Cognitive	Physical	Cognitive
Non-Routine	Routine	Routine	Non-Routine

with the positioning of the second and third categories arguably being interchangeable. Technology and automation, via SBTC, have increased the earnings of the top occupations, while reducing the number of jobs available for individuals in the “routine” occupations.

In the *2015 Economic Report to the Governor of Tennessee*, we documented further evidence of this process taking place during the Great Recession. During the Great Recession, many jobs were lost in construction, manufacturing, and executive assistant occupations. During the recovery, we observe the creation of additional lower-paying jobs and wage increases for the higher paying jobs.

Automation, and by extension SBTC, must also be factored in to the consequences of the likely increase in retirements, as the extent to which the tasks in a given occupation are “routine” may have strong predictive power about the necessity of replacing those skills. Certain occupations (e.g., sewing machine operator, postal service clerks, travel agents, and bookkeeping clerks) may be increasingly susceptible to automation by virtue of the routine nature of the work. Other occupations (e.g., cost estimators, purchasing managers, and wastewater plant operators) may have more ambiguous relationships with technology. Technology may make these individuals more productive, but for a fixed level of demand, fewer such individuals may be required. For other occupations (dentists, engineers, and supervisors of protective services) whose capabilities are either enhanced or relatively unaffected by technology, ensuring replacement or succession is much higher priority.

In the face of coming retirements, determining which occupations should receive the most attention and resources in training/attracting new workers will be a complex process. However, a great starting point might simply be to revisit the Department of Economic and Community Development’s report on automation. The occupations for which technology is “good news,” or productivity enhancing, should be given precedence, as they will be of greater importance in tomorrow’s workforce.

(among other applications), it will need to be captured and/or replaced.

### *Community and Social Services*

While the Community and Social Services occupations are a relatively small share of total employment (approx. 58,500 workers) they serve a vital role in the health and security of low-income Tennesseans. The major specific occupations in

this group are counselors (29.6 percent), social workers (24.6 percent), and clergy (26.2 percent). While counselors are a relatively young group, workers in the near-retirement group comprise 18.4 percent of social workers, 22 percent of community and social service specialists, and 21 percent of clergy. Given that Tennessee (particularly in the east region) will continue to struggle with one of the worst prescription opioid

## 4.2. The Occupational Distribution of Workers near Retirement Age in TN, continued

addiction rates in the country for the foreseeable future, a large retirement among social workers could put considerable strain on the safety net for those seeking help.

### *Specific Occupational Categories with the Highest Concentrations of Older Workers*

The aggregated occupational categories are necessary to systematically examine the full set of available occupations. However, as the preceding sections show, there is considerable variation within these occupations in terms of the proportion of the workforce near retirement, the number of employees, etc. To better understand which specific occupations have the greatest proportion of employees at or near retirement age, Table 4.4 lists the specific occupations which meet two criteria:

- At least 5,000 Tennesseans reported working in this occupation in the ACS.
- More than 20 percent of individuals

working in these occupations are near retirement age.

The occupations in Table 4.4 are a bit of a mixed group. Some occupations, such as chief executives and public administrators, are commonly held by more seasoned workers. Other occupations (e.g., Agricultural, Farm, and Fishing Managers) may have higher concentrations of workers aged 55 to 65 due to continued urbanization and migration to the cities by younger workers. While some of the occupations on the list below are due to changes in the demand side of the labor market, some are jobs that TDECD identified in its 2015 Labor and Education Alignment Program (LEAP) report as occupations in which shortages of skilled workers exist (e.g., workers and supervisors in Installation, Maintenance, and Repair). These data indicate that the shortage of skilled tradesmen may be expected to worsen over the next decade, in the absence of successful interventions such as LEAP to encourage younger workers to acquire skills that

**Table 4.4: Specific Occupations with at least 5,000 Full Time Workers and 20 percent of Workers Aged 55 to 65**

Title	Proportion Aged 55-65	Number Employed
Agricultural, Farm, and Fishing Manager	0.308	7,645
Clergy	0.259	10,741
Chief Exec Public Admin	0.259	17,227
Clinical Lab Technicians	0.256	5,630
Education Administrators	0.250	14,150
Supervisors of Mechanics, Installers, and Repairment	0.250	6,034
Secretaries and Admins	0.249	51,498
Postal Service Mail Carriers	0.248	5,051
Janitors and Building Cleaners	0.242	34,138
Bookkeeping, Accounting, and Auditing Clerks	0.234	20,567
Paralegals	0.224	5,880
Production, planning, and Expediting Clerks	0.222	5,609
Physicians and Surgeons	0.220	15,543
Postsecondary Teachers	0.215	21,451
Real Estate Brokers and Sales Agents	0.214	9,630
Non-Farm Purchasing Agents	0.211	4,830
Medical and Health Service Managers	0.211	13,674
Construction Managers	0.209	10,584
Maintenance and Repair Workers, General	0.207	10,777
First Line Supervisors of Office and Administrative Support workers	0.206	24,449
Lawyers, Judges and Magistrates	0.203	14,798
Security Guards	0.202	14,826
Insurance Sales Agents	0.201	10,277

Source: U.S. Census Bureau, American Community Survey, 2012-2015 1-Year Estimates

## 4.2. The Occupational Distribution of Workers near Retirement Age in TN, continued

are in highest demand.

Table 4.5 lists those occupations that meet two criteria:

- At least 1,000 Tennesseans reported working in this occupation in the ACS.
- More than 20 percent of individuals working in these occupations are near retirement age.

Many of the jobs on this list require specific skills that will require some training before individuals are capable of filling the needs created by retirement (e.g., cost estimators, dental assistants, molding and machine setters, etc.). For

other occupations on this list, while smaller in number than those in Table 4.5, many require at least a bachelor's degree and a considerable amount of experience. This is particularly the case in STEM occupations (i.e., Engineering) where both the managers and the prospective management-candidate pool have high proportions over age 55.

### *Differences in Occupational Concentration of Older Workers by City*

There are considerable differences across the state both in the concentration of workers

**Table 4.5: Specific Occupations with at least 1,000 Full Time Workers and 20 percent of Workers Aged 55 to 65**

Title	Proportion Aged 55-65	Number Employed
Administrative Services Managers	0.319	1,782
Purchasing Managers	0.255	3,266
Architectural and Engineering Managers	0.317	2,336
Social and Community Service Managers	0.224	4,337
Compliance Officers, Except Agriculture	0.202	3,021
Cost Estimators	0.304	2,282
Appraisers and Assessors of Real Estate	0.235	1,759
Tax Examiners and Collectors, Revenue Agents	0.354	1,190
Tax Preparers	0.243	1,380
Architects, Except Naval	0.222	1,836
Chemical Engineers	0.238	1,226
Electrical Engineers	0.227	3,069
Industrial Engineers, Including Health and Safety	0.213	4,046
Mechanical Engineers	0.205	4,127
Surveying and Mapping Technicians	0.219	1,216
Chemists and Material Sciences	0.275	1,307
Psychologists	0.219	2,101
Chemical Technicians	0.202	1,635
Religious Workers, N.E.C.	0.251	1,179
Librarians	0.308	2,564
Dentists	0.280	2,261
Dietitians and Nutritionists	0.213	1,280
Medical Records and Health Information Technicians	0.218	3,298
Dental Assistants	0.320	1,171
Medical Assistants and Other Healthcare Support, N.E.C.	0.303	2,409
Supervisors, Protective Workers, Non-Police, Fire, C.O.	0.215	1,375
Travel Agents	0.247	1,091
Court, Municipal, and License Clerks	0.249	1,841
Interviewers, Except Eligibility and Loan	0.241	2,120
Library Assistants, Clerical	0.342	1,065
Human Resource Assistants, Excl. Payroll and Time	0.304	1,185
Postal Service Clerks	0.327	2,328
Computer Operators	0.271	1,639
Non-Postal Service Mail Clerks and Machine Operators	0.223	1,145
Logging Workers	0.221	1,826
Highway Maintenance Workers	0.235	1,998
Molders and Molding Machine Setters	0.305	1,044
Sewing Machine Operators	0.220	4,463
Stationary Engineers and Boiler Operators	0.365	1,418
Water Wastewater Treatment Plant Operators	0.250	2,169
Supervisors of Transportation and Material Moving	0.200	3,638
Aircraft Pilots and Flight Engineers	0.238	3,592
Bus Drivers	0.280	5,395

Source: U.S. Census Bureau, American Community Survey, 2012-2015 1-Year Estimates

## 4.2. The Occupational Distribution of Workers near Retirement Age in TN, continued

**Table 4.6: Percentage of Near-Retirement Workers by Geography**

<b>Geography</b>	<b>Percent of Workers Aged 66-65</b>
Nashville	14.6
Memphis	15.6
Knoxville	17
Chattanooga	16
Clarksville	11.8
Non-Metro	17.1
<b>Tennessee</b>	<b>15.9</b>

Source: U.S. Census Bureau, American Community Survey, 2012-2015 1-Year Estimates

near retirement age and the concentration of older-workers within occupation groups. Table 4.6 reports the proportion of workers in the near-retirement group for each of the five main metropolitan areas of Tennessee reported in the ACS (Nashville, Memphis, Knoxville, Chattanooga, and Clarksville) and a composite “Outside Metro Areas” designation.

While Knoxville and non-metropolitan areas have a higher proportion of workers near retirement age than the state average, Nashville and Clarksville each have a substantially lower proportion.

Figure 4.6 contains graphs similar to Figure 4.5 for each identifiable geographic area. Results from each are discussed in turn. As the patterns in most geographic regions track fairly well with the overall state trends, we focus on the differences. In Nashville, as in the state as a whole, Management (18 percent), Architecture and Engineering (17.7 percent), and Community and Social Services (18.4 percent) have the highest proportion of workers near-retirement. However, in Nashville, these three occupations are most closely followed by Financial Specialists (16.9 percent), Office and Administrative Support (16.9 percent), and

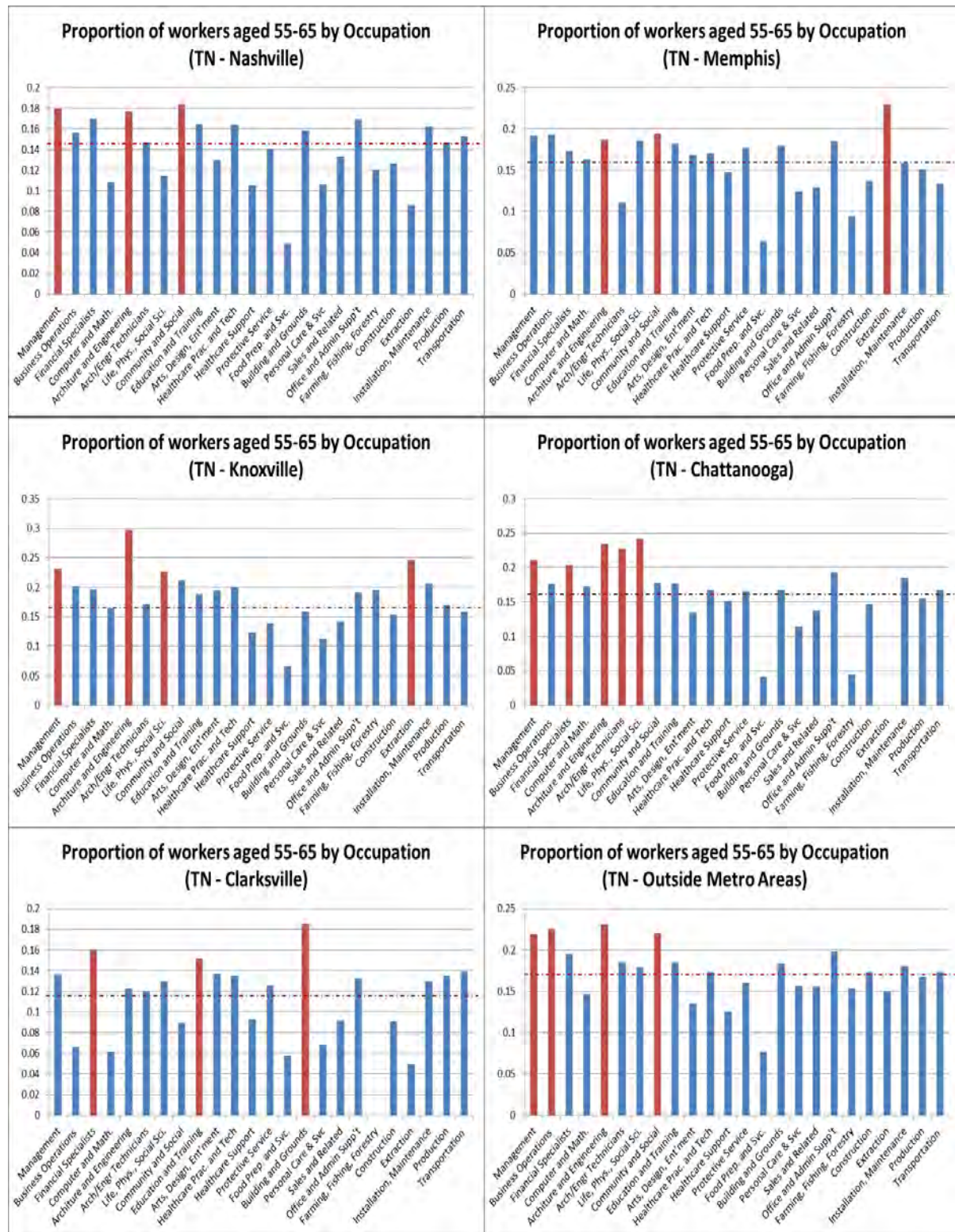
Installation and Maintenance Occupations (16.2 percent).

In Memphis, the occupation with the largest proportion of near-retirement workers is extraction (23 percent), although it is a tiny fraction of the labor market, employing approximately 100 people. Architecture and Engineering (18.6 percent), Community and Social Services (19.4 percent), Management (19.2 percent), and Office and Administrative Support (18.4 percent) again have high concentrations of workers near retirement age. However, the differences between occupational categories in terms of concentrations of older workers are far less pronounced than most of the other areas.

In Knoxville, nearly 30 percent (29.7) of Architecture and Engineering workers are near retirement age. Similarly, 24.6 percent of Extraction workers, 23.1 percent of Managers and 21.1 percent of Community and Social Services workers are near retirement age. In Knoxville, Life, Physical, and Social Sciences are a major occupational category, due to the presence of the University of Tennessee and Oak Ridge National Laboratory. Approximately 22.5 percent

## 4.2. The Occupational Distribution of Workers near Retirement Age in TN, continued

Figure 4.6: Occupational Concentration of Older Workers by City



Source: U.S. Census Bureau, American Community Survey, 2012-2015 1-Year Estimates

## 4.2. The Occupational Distribution of Workers near Retirement Age in TN, continued

of workers in this industry are near retirement age. Business Operations and Installation and Maintenance Occupations also have more than 20 percent of workers aged 55 to 65.

In Chattanooga, five occupational categories have at least 20 percent of workers in the near-retirement group: Life, Physical, and Social Sciences (24.2 percent), Architecture and Engineering (23.4 percent), Architecture and Engineering Technicians (22.7 percent), Managers (21.1 percent), and Financial Specialists (20.3 percent).

In Clarksville, the occupations with the largest concentrations of near retirement workers are: Building and Grounds Maintenance (18.6 percent), Education and Training (15.2 percent), and Financial Specialists (15.2 percent).

Finally, in areas outside metropolitan

designations, Architecture and Engineering (22.5 percent), Business Operations (21.9 percent), Community and Social Services (21.9 percent), and Management (21.9 percent) have the highest concentrations of workers near retirement age.

At both the metropolitan and non-metropolitan levels, these results should be treated as a starting point to assess potential skill shortages rather than as a mandate to train new people. For example, some of the concentration of older workers in non-metropolitan areas may be attributable to overall contraction of rural economies as urbanization continues. Also, certain areas of the state have been repeatedly featured as retirement/pre-retirement destinations. Some of the jobs will naturally be filled by the immigration of individuals who possess the requisite skills.

## 4.3. Future Projections of Labor Force Participation and Workers per Retiree

In addition to expected shortages of specific skills, increased retirement rates may also have ripple effects on the labor force participation rate and the burdens placed upon working individuals. Using projections from BCBER's population forecast for the state, there is expected to be an 80 percent increase in the number of "retirees" in Tennessee by 2030.

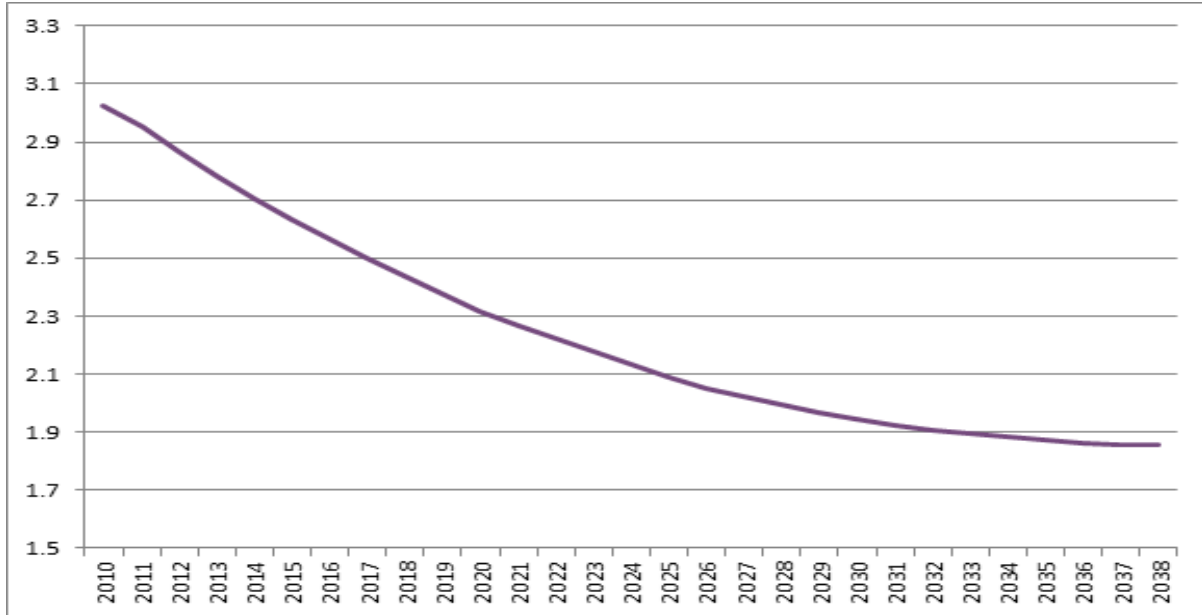
Consequently, under the assumption that labor force participation rates will remain constant within age groups (i.e., the labor force participation rate for 40 to 45 year olds will remain at approximately 78 percent), the labor force participation rate is expected to decline from 61 percent to 55.5 percent by 2030. This will likely have several consequences for the state. There will be proportionally fewer individuals earning money to support family members of all ages.

There will also be proportionally fewer individuals earning money as part of the state's tax base. More generally, the worker-to-retiree ratio is used as a barometer of the health of the economy. Additionally, older individuals require different resources (i.e., health services) than younger individuals (e.g., education). With fewer individuals earning to contribute to the overall size of the economy, the state may face some challenges in balancing the needs of older residents while maintaining appropriate investments for the next generation of Tennesseans.

To evaluate how this relationship is projected to evolve over the next 15 years, Figure 4.7 plots the expected ratio of adults in the labor force per retiree in Tennessee by year. In 2010, there were more than three adults in the labor force per retiree (defined as an individual over age 55 who

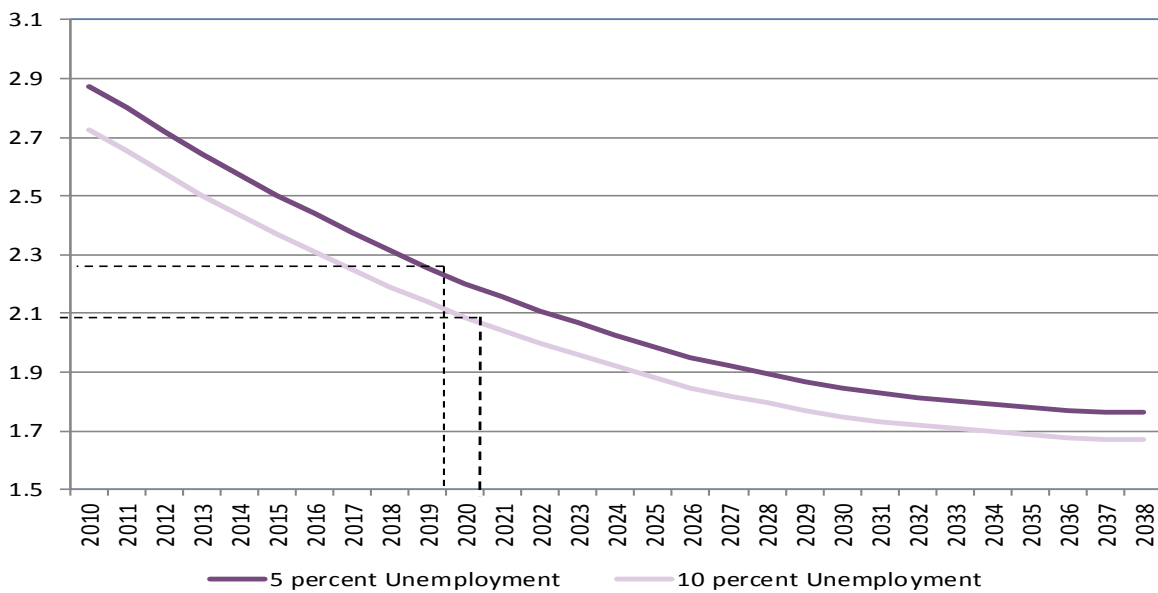
### 4.3. Future Projections of Labor Force Participation and Workers per Retiree, continued

Figure 4.7: Adults in the Labor Force per Projected Retired Person



Source: U.S. Census Bureau, American Community Survey, 2012-2015 1-Year Estimates

Figure 4.8: Working Adults per Retiree, Less than Full Employment



Source: U.S. Census Bureau, American Community Survey, 2012-2015 1-Year Estimates

### 4.3. Future Projections of Labor Force Participation and Workers per Retiree, continued

is not in the labor force). By 2030, as the “baby boomer” cohort ages out, there is projected to be approximately 1.9 adults in the labor force per retiree.

These changes may happen more rapidly if there is another economic downturn. Figure 4.8 plots projections for worker-to-retiree ratios under less-than-perfect employment. The blue-line represents the worker-to-retiree ratio at 5 percent unemployment, which is both our approximate current rate of unemployment and generally considered the lowest sustainable rate. The red line plots the worker-to-retiree ratio at 10 percent unemployment, which was the unemployment rate in October 2009. The dashed lines highlight the precipitous drop in workers per retiree in the event of a hypothetical sharp recession in 2020. We include this graph to illustrate that shifts in the worker-to-retiree ratio may happen more suddenly than expect.

The aging population will also likely have ripple

effects on labor force participation and the worker-to-retiree ratio because of informal caregiving. Across the U.S., 65.2 million informal and family caregivers provide care to someone who is ill, disabled, or aged. Two-thirds of older people who receive long-term care get all their care from family members (AARP, 2015). Additionally, it has been shown that, particularly for women, providing informal care can affect labor force participation. Estimates of the effect on labor force participation are wide-ranging (0 to .3 female caregivers selecting out of the labor force for every new person requiring care). Insofar as informal care giving leads to temporary (or extended) selection out of the labor force, the long-run consequences far exceed the short run economic effects. In other words, temporarily leaving the labor force to provide care for an older relative reduces *all* subsequent expected lifetime earnings, not just foregone earnings while they are providing care.

### 4.4. Summary and Policy Discussion

Over the next 15 years, the “baby boomer” generation will age from 52 to 70 to 67 to 85. This will affect the labor market and the overall economy of Tennessee in several important ways:

- Relatively large numbers of managers, engineers, community and social service workers are expected to leave the workforce.
- There are several specific occupations that require specialized training (wastewater treatment operators, heavy truck drivers, etc.) that are likely to see 20 to 35 percent of the workers in that occupation retire.
- The overall number of retirees is expected to increase 80 to 100 percent, depending on

the proportion of workers aged 55 to 70 who are permanently out of the labor force.

- Overall, the number of individuals aged 75+ and 85+ is expected to increase by a factor of 2.20 and 2.05, respectively.
- These increases are likely to put substantial strain on the families of those elderly individuals who are disabled or require substantial informal care. Among the likely costs of providing informal care is selection out of, or reduced engagement in the labor force. These consequences have been almost entirely borne by female caregivers.



#### 4.4. Summary and Policy Discussion, continued

While the pending retirements are a stylized fact of the data, it is less clear which occupations most urgently require the training of younger replacements. While the existence of these jobs demonstrates the need for these skills in the short term, it does not imply that these skills will be in demand for the next two-to-three decades. However, a survey or series of conversations with employers across the state may provide additional insight on which skillsets are most needed for the long term.

As those skill needs are identified, *Drive to 55* and the *Tennessee Promise* may provide avenues to train new workers for those occupations most in need. For example, the program may highlight specific career paths, may encourage selection into key occupations through the mentorship channel, may establish formal partnerships with key employers to encourage selection, or offer some sort of financial prizes or inducements.

Net migration is another factor in exacerbating or alleviating any shortages of skilled workers. If Tennessee is not producing enough workers with a given skillset, firms may simply hire them from out of state. However, tracking the geographic mobility of workers with specific skills/training is prohibitively difficult without very restricted microdata. If surveys/conversations are ongoing with key employers about the prospective skill shortages they face, these interactions would also be singular opportunities to learn about key employers' efforts to attract talent from outside Tennessee. What do prospective immigrants find most appealing about Tennessee? What are the issues they raise when deciding whether or not to relocate? There are two sides to every market, including the labor market. Attracting the right people to Tennessee is arguably as important for growth and prosperity as attracting employers/jobs.

However, net migration not just a function of attracting skilled workers, but retaining them. For example, both the data from the ACS used

in this study and data from the U.S. Bureau of Labor Statistics Occupational Employment Statistics (OES) indicate that approximately 10,000 architects, engineers, and engineering technicians will retire in the next 10 years. The THEC Factbook reports that there were 11,000 engineering majors enrolled across the state in 2012-2013. In 2011, Tennessee graduated 1,251 engineers with bachelor's degrees, 518 with associate degrees, and 272 with certificates. If all of these individuals remain in state and in the labor force (which they will not), Tennessee is producing nearly twice the number of engineers necessary to backfill the retirees.

There are also potential policies that can ease the burden on workers who are providing substantial amounts of informal care to older relatives. If workers were allowed some amount of leave to care for older relatives for certain spells, that could reduce the number of careers permanently altered by health events in the family. Even for health events with long lasting effects, such a policy could provide family members a reasonable amount of time to make additional care arrangements, as possible, going forward.

However, some additional measures or relief may be needed for families whose members are providing considerable amounts of informal care. First, many families cannot afford formal care. The average wage of home care workers (\$18/hour) exceeds the median wage in Tennessee (\$15.02/hour). Therefore more than half the working population will find it infeasible to get professional care without additional resources. Second, any available public assistance for home care is already in short supply. There is currently a waitlist of 7,000 to 10,000 individuals for Home and Community Based Services, which provides meals, homemaker, and personal care services. Expected wait time to receive these services is six years – and this is *before* the coming silver boom. In the current environment, we would expect that increases in numbers of elderly who require

#### 4.4. Summary and Policy Discussion, continued

---

informal care would strongly affect the labor market, which would in turn affect the expected future tax base.

The full scope of the consequences of the aging population will of course not be known until they

occur. However, the descriptive data indicate that crucial conversations and some timely policy measures may soften what looks to be a substantial adjustment.

#### 4.5. References

---

- Autor, D. H., Katz, L. F., & Krueger, A. B. (1998). Computing Inequality: Have Computers Changed the Labor Market? *Quarterly Journal of Economics*, 1169-1213.
- Autor, D. H., Levy, F., & Murnane, R. J. (2003). The Skill Content of recent Technological Change: An Empirical Explanation. *Quarterly Journal of Economics*, 118(4), 1279-1333.
- Dinardo, J., Fortin, N. M., & Lemieux, T. (1996). Labor Market Institutions and the Distribution of Wages, 1973-1992: A Semiparametric Approach. *Econometrica*, 64(5), 1001-1044.
- Katz, L. F., & Murphy, K. M. (1992). Changes in Relative Wages, 1963-1987: Supply and Demand Factors. *Quarterly Journal of Economics*, 107(1), 35-78.
- Wood, A. (1994). *North-South Trade, Employment, and Inequality*. Oxford: Clarendon Press.



## APPENDIX A: FORECAST DATA

In this section—

### Appendix A: Forecast Data

Quarterly      pages 2–25 (2016:4 to 2019:1)  
Annual          pages 26–40 (2016 to 2026)

### Quarterly Forecast Tables

Table 1:	Selected U.S. and Tennessee Economic Indicators, Seasonally Adjusted .....	2
Table 2:	Selected Per Capita U.S. and Tennessee Economic Indicators .....	4
Table 3:	Tennessee Personal Income Components, Seasonally Adjusted Annual Rates (millions of 2009 dollars) .....	5
Table 4:	Tennessee Personal Income Components, Seasonally Adjusted Annual Rates (millions of current dollars) .....	6
Table 5:	Tennessee Nonfarm Employment by Sector, Not Seasonally Adjusted (thousands of jobs) .....	7
Table 6:	Tennessee Durable Goods Manufacturing Employment, Not Seasonally Adjusted (thousands of jobs) .....	8
Table 7:	Tennessee Nondurable Goods Manufacturing Employment, Not Seasonally Adjusted (thousands of jobs) .....	9
Table 8:	Tennessee Nonfarm Employment by Sector, Seasonally Adjusted (thousands of jobs) .....	10
Table 9:	Tennessee Durable Goods Manufacturing Employment, Seasonally Adjusted (thousands of jobs) .....	12
Table 10:	Tennessee Nondurable Goods Manufacturing Employment, Seasonally Adjusted (thousands of jobs) .....	13
Table 11:	Tennessee Average Annual Wage and Salary Rate by Sector, Not Seasonally Adjusted (2009 dollars) .....	14
Table 12:	Tennessee Average Annual Wage and Salary Rate by Sector, Seasonally Adjusted (2009 dollars) .....	15
Table 13:	Tennessee Average Annual Wage and Salary Rate by Sector, Not Seasonally Adjusted (current dollars) .....	17
Table 14:	Tennessee Average Annual Wage and Salary Rate by Sector, Seasonally Adjusted (current dollars) .....	18
Table 15:	Tennessee Civilian Labor Force and Unemployment Rate, Not Seasonally Adjusted .....	20
Table 16:	Tennessee Civilian Labor Force and Unemployment Rate, Seasonally Adjusted .....	21
Table 17:	Tennessee Taxable Sales, Not Seasonally Adjusted (millions of 2009 dollars) .....	22
Table 18:	Tennessee Taxable Sales, Seasonally Adjusted (millions of 2009 dollars) .....	23
Table 19:	Tennessee Taxable Sales, Not Seasonally Adjusted (millions of current dollars) .....	24
Table 20:	Tennessee Taxable Sales, Seasonally Adjusted (millions of current dollars) .....	25

### Annual Forecast Tables

Table 1:	Selected U.S. and Tennessee Economic Indicators, Seasonally Adjusted .....	26
Table 2:	Selected Per Capita U.S. and Tennessee Economic Indicators .....	27
Table 3:	Tennessee Personal Income Components (millions of 2009 dollars) .....	28
Table 4:	Tennessee Personal Income Components (millions of current dollars) .....	29
Table 5:	Tennessee Nonfarm Employment by Sector, Seasonally Adjusted (thousands of jobs) .....	30
Table 6:	Tennessee Durable Goods Manufacturing Employment (thousands of jobs) .....	31
Table 7:	Tennessee Nondurable Goods Manufacturing Employment (thousands of jobs) .....	32
Table 8:	Tennessee Average Annual Wage and Salary Rate by Sector (2009 dollars) .....	33
Table 9:	Tennessee Average Annual Wage and Salary Rate by Sector (current dollars) .....	34
Table 10:	Tennessee Civilian Labor Force and Unemployment Rate .....	35
Table 11:	Tennessee Taxable Sales (millions of 2009 dollars) .....	36
Table 12:	Tennessee Taxable Sales (millions of current dollars) .....	37
Table 13:	Tennessee Gross Domestic Product by Sector (millions of 2009 dollars) .....	38
Table 14:	Tennessee Gross Domestic Product by Sector (millions of current dollars) .....	40

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

January 2017

	History		Forecast 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	2015	2016	2017	2018
US GDP (Bil2009\$) SAAR.....	16583.1	16727.0	16789.2	16889.8	16986.8	17081.1	17175.8	17307.5	17429.8	17545.0	17649.0	17749.1	16397.2	16656.1	17033.4	17482.8
% Chg Prev Qtr SAAR.....	1.41	3.52	1.50	2.42	2.32	2.24	2.24	3.10	2.86	2.67	2.39	2.29	2.60	1.58	2.27	2.64
% Chg Same Qtr Last Yr.....	1.28	1.65	1.81	2.21	2.43	2.12	2.30	2.47	2.61	2.72	2.76	2.55	2.60	1.58	2.27	2.64
US GDP (Bil\$) SAAR.....	18450.1	18675.3	18851.1	19106.8	19324.7	19535.2	19746.9	20003.3	20250.2	20489.4	20718.2	20950.9	18036.7	18564.5	19428.4	20365.3
% Chg Prev Qtr SAAR.....	3.74	4.97	3.82	5.54	4.64	4.43	4.41	5.29	5.03	4.81	4.54	4.57	3.70	2.93	4.65	4.82
% Chg Same Qtr Last Yr.....	2.51	2.94	3.45	4.51	4.74	4.60	4.75	4.69	4.79	4.88	4.92	4.74	3.70	2.93	4.65	4.82
TN PERSONAL INCOME (MIL2009\$) SAAR...	258759	260499	262346	264140	266008	267594	269948	272114	274281	276540	278691	280419	253644	259933	266923	275406
% Chg Prev Qtr SAAR.....	0.98	2.72	2.87	2.76	2.86	2.41	3.57	3.25	3.22	3.33	3.15	2.50	5.10	2.48	2.69	3.18
% Chg Same Qtr Last Yr.....	2.55	2.17	1.64	2.33	2.80	2.72	2.90	3.02	3.11	3.34	3.24	3.05	5.10	2.48	2.69	3.18
US PERSONAL INCOME (BIL2009\$) SAAR....	14413	14516	14577	14673	14798	14919	15045	15189	15319	15444	15570	15711	14113	14455	14859	15381
% Chg Prev Qtr SAAR.....	2.83	2.89	1.69	2.67	3.45	3.30	3.41	3.90	3.45	3.31	3.31	3.67	4.02	2.42	2.79	3.51
% Chg Same Qtr Last Yr.....	2.45	2.45	2.10	2.52	2.67	2.77	3.21	3.52	3.52	3.52	3.49	3.43	4.02	2.42	2.79	3.51
TN PERSONAL INCOME (MIL\$) SAAR.....	285977	288930	292633	295697	299044	302377	306270	309959	314066	318267	322321	326027	277832	287851	300847	316153
% Chg Prev Qtr SAAR.....	3.01	4.19	5.23	4.25	4.61	4.53	5.25	4.91	5.41	5.46	5.19	4.68	5.46	3.61	4.51	5.09
% Chg Same Qtr Last Yr.....	3.53	3.22	3.17	4.17	4.57	4.65	4.66	4.82	5.02	5.26	5.24	5.18	5.46	3.61	4.51	5.09
US PERSONAL INCOME (BIL\$) SAAR.....	15929	16102	16257	16435	16638	16835	17037	17261	17493	17720	17950	18206	15459	16007	16736	17606
% Chg Prev Qtr SAAR.....	4.90	4.40	3.91	4.45	5.03	4.82	4.89	5.38	5.48	5.30	5.28	5.83	4.38	3.55	4.55	5.20
% Chg Same Qtr Last Yr.....	3.42	3.51	3.61	4.41	4.45	4.55	4.80	5.03	5.14	5.26	5.36	5.47	4.38	3.55	4.55	5.20
TN NONFARM JOBS (THOUS).....	2948.3	2969.0	2978.7	2989.8	2999.4	3008.9	3017.6	3025.5	3034.6	3044.2	3053.7	3061.8	2892.3	2961.8	3003.9	3039.5
% Chg Prev Qtr SAAR.....	-0.38	2.83	1.31	1.50	1.30	1.27	1.16	1.05	1.22	1.27	1.25	1.07	2.51	2.40	1.42	1.19
% Chg Same Qtr Last Yr.....	2.47	2.26	1.70	1.31	1.73	1.34	1.31	1.19	1.17	1.17	1.20	1.20	2.51	2.40	1.42	1.19
US NONFARM JOBS (MIL).....	144.0	144.6	145.1	145.6	146.0	146.4	146.7	147.2	147.7	148.2	148.7	149.2	141.8	144.3	146.2	148.0
% Chg Prev Qtr SAAR.....	1.27	1.75	1.45	1.43	1.03	1.00	0.96	1.24	1.41	1.42	1.37	1.15	2.08	1.75	1.30	1.21
% Chg Same Qtr Last Yr.....	1.77	1.73	1.58	1.47	1.41	1.23	1.10	1.06	1.15	1.26	1.36	1.34	2.08	1.75	1.30	1.21
TN MFG JOBS (THOUS).....	342.6	342.5	342.3	343.2	344.2	345.1	346.1	346.8	347.5	348.1	348.8	349.5	332.7	341.8	344.6	347.8
% Chg Prev Qtr SAAR.....	3.04	-0.11	-0.18	1.04	1.15	1.10	1.09	0.85	0.81	0.72	0.81	0.80	2.39	2.74	0.82	0.92
% Chg Same Qtr Last Yr.....	3.40	2.57	1.79	0.94	0.47	0.78	1.10	1.05	0.96	0.87	0.80	0.79	2.39	2.74	0.82	0.92
US MFG JOBS (MIL).....	12.3	12.3	12.3	12.3	12.3	12.3	12.4	12.4	12.4	12.4	12.5	12.6	12.3	12.3	12.3	12.4
% Chg Prev Qtr SAAR.....	-0.92	-0.36	-0.56	-0.23	1.72	0.87	0.67	0.87	0.77	0.89	1.79	2.08	1.10	-0.26	0.20	0.93
% Chg Same Qtr Last Yr.....	-0.26	-0.35	-0.44	-0.52	0.14	0.44	0.75	1.03	0.80	0.80	1.08	1.38	1.10	-0.26	0.20	0.93
TN UNEMPLOYMENT RATE (%).....	4.2	4.4	4.8	4.8	4.8	4.7	4.7	4.7	4.7	4.6	4.6	4.6	5.8	4.6	4.8	4.6
US UNEMPLOYMENT RATE (%).....	4.9	4.9	4.7	4.7	4.6	4.6	4.5	4.4	4.3	4.2	4.2	4.1	5.3	4.9	4.6	4.3

(CONTINUED ON NEXT PAGE)

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

January 2017

	History		Forecast 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	2015	2016	2017	2018
CHAINED PRICE INDEX, GDP (2009=100.0).....	111.3	111.7	112.3	113.1	113.8	114.4	115.0	115.6	116.2	116.8	117.4	118.0	110.0	111.5	114.1	116.5
% Chg Prev Qtr SAAR.....	2.31	1.42	2.24	3.04	2.27	2.14	2.12	2.13	2.11	2.08	2.10	2.23	1.07	1.33	2.33	2.13
% Chg Same Qtr Last Yr.....	1.22	1.26	1.61	2.25	2.24	2.42	2.39	2.17	2.13	2.11	2.11	2.13	1.07	1.33	2.33	2.13
US PERS CONSUMP DEFL (2009=100.0).....	110.5	110.9	111.5	112.0	112.4	112.8	113.2	113.6	114.2	114.7	115.3	115.9	109.5	110.7	112.6	114.5
% Chg Prev Qtr SAAR.....	2.02	1.46	2.19	1.74	1.53	1.47	1.43	1.42	1.96	1.93	1.91	2.09	0.35	1.10	1.71	1.63
% Chg Same Qtr Last Yr.....	0.96	1.04	1.48	1.85	1.73	1.73	1.54	1.46	1.57	1.68	1.80	1.97	0.35	1.10	1.71	1.63
CONSUMER PRICE INDEX, ALL-URBAN (82-84=1.000).....	2.394	2.404	2.424	2.440	2.454	2.466	2.477	2.489	2.504	2.518	2.532	2.548	2.370	2.400	2.459	2.511
% Chg Prev Qtr SAAR.....	2.53	1.63	3.49	2.65	2.23	1.97	1.88	1.84	2.47	2.31	2.23	2.52	0.12	1.28	2.46	2.09
% Chg Same Qtr Last Yr.....	1.08	1.15	1.82	2.57	2.50	2.58	2.18	1.98	2.04	2.13	2.21	2.38	0.12	1.28	2.46	2.09
BANK PRIME INTEREST RATE (%).....	3.5	3.5	3.5	3.8	3.8	4.0	4.3	4.5	4.5	4.8	5.0	5.3	3.3	3.5	4.0	4.7
FEDERAL FUNDS RATE (% per annum).....	0.373	0.397	0.440	0.694	0.774	1.033	1.287	1.497	1.533	1.783	2.037	2.280	0.133	0.393	0.947	1.712
30-YEAR FIXED MORTGAGE RATE (%).....	3.6	3.4	3.7	4.0	4.2	4.3	4.6	4.8	4.9	5.2	5.3	5.4	3.9	3.6	4.3	5.0
TN TAXABLE SALES (MIL2009\$).....	26628	26798	26913	27075	27245	27374	27530	27716	27857	27990	28126	28247	103022	107056	109223	111688
% Chg Prev Qtr SAAR.....	-1.32	2.59	1.72	2.43	2.53	1.91	2.30	2.73	2.05	1.93	1.95	1.73	6.24	3.92	2.02	2.26
% Chg Same Qtr Last Yr.....	3.65	2.43	1.16	1.34	2.32	2.15	2.29	2.37	2.25	2.25	2.16	1.92	6.24	3.92	2.02	2.26
TN TAXABLE SALES (MIL\$).....	29429	29723	30020	30310	30628	30932	31234	31570	31897	32214	32529	32841	112852	118552	123104	128210
% Chg Prev Qtr SAAR.....	0.67	4.06	4.06	3.91	4.27	4.03	3.97	4.38	4.21	4.03	3.97	3.89	6.62	5.05	3.84	4.15
% Chg Same Qtr Last Yr.....	4.64	3.49	2.68	3.17	4.08	4.07	4.04	4.16	4.14	4.14	4.14	4.02	6.62	5.05	3.84	4.15
TN AVG ANNUAL WAGE, NONFARM (2009\$).....	43373	43523	43584	43713	43820	43894	44039	44208	44317	44433	44548	44621	43096	43400	43866	44377
% Chg Prev Qtr SAAR.....	2.36	1.39	0.57	1.18	0.99	0.67	1.33	1.54	0.99	1.05	1.04	0.65	2.90	0.71	1.07	1.16
% Chg Same Qtr Last Yr.....	0.80	0.80	-0.39	1.37	1.03	0.85	1.04	1.13	1.13	1.23	1.16	0.93	2.90	0.71	1.07	1.16
TN AVG ANNUAL WAGE, NONFARM (\$)......	47936	48273	48616	48935	49262	49599	49965	50357	50745	51138	51522	51878	47205	48061	49440	50941
% Chg Prev Qtr SAAR.....	4.42	2.85	2.87	2.65	2.70	2.76	2.98	3.17	3.12	3.13	3.04	2.79	3.27	1.81	2.87	3.03
% Chg Same Qtr Last Yr.....	1.76	1.84	1.11	3.20	2.77	2.75	2.77	2.90	3.01	3.10	3.12	3.02	3.27	1.81	2.87	3.03

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 2017

	History		Forecast 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	2015	2016	2017	2018
US GDP (2009\$) SAAR.....	51163	51493	51580	51784	51977	52160	52344	52640	52906	53150	53359	53555	50927	51329	52067	53014
% Chg Prev Qtr SAAR.....	0.64	2.60	0.68	1.60	1.50	1.42	1.42	2.28	2.04	1.86	1.58	1.48	1.81	0.79	1.44	1.82
% Chg Same Qtr Last Yr.....	0.50	0.88	1.03	1.38	1.59	1.30	1.48	1.65	1.79	1.90	1.94	1.74	1.81	0.79	1.44	1.82
US GDP (\$) SAAR.....	56923	57490	57914	58581	59130	59654	60180	60839	61467	62069	62638	63216	56018	57211	59388	61755
% Chg Prev Qtr SAAR.....	2.95	4.05	2.98	4.69	3.80	3.59	3.57	4.45	4.19	3.98	3.71	3.74	2.90	2.13	3.81	3.99
% Chg Same Qtr Last Yr.....	1.73	2.16	2.65	3.66	3.88	3.76	3.91	3.85	3.95	4.05	4.08	3.91	2.90	2.13	3.81	3.99
TN PERSONAL INCOME (2009\$) SAAR....	38471	38631	38805	38971	39148	39282	39527	39745	39961	40190	40402	40552	38052	38596	39232	40075
% Chg Prev Qtr SAAR.....	-0.05	1.67	1.82	1.72	1.82	1.38	2.53	2.22	2.20	2.31	2.13	1.50	4.00	1.43	1.65	2.15
% Chg Same Qtr Last Yr.....	1.49	1.12	0.61	1.29	1.76	1.69	1.86	1.98	2.08	2.31	2.21	2.03	4.00	1.43	1.65	2.15
US PERSONAL INCOME (2009\$) SAAR....	44468	44687	44784	44989	45281	45558	45850	46198	46499	46785	47073	47405	43832	44546	45420	46639
% Chg Prev Qtr SAAR.....	2.04	1.99	0.87	1.84	2.62	2.47	2.59	3.07	2.63	2.49	2.49	2.85	3.22	1.63	1.96	2.68
% Chg Same Qtr Last Yr.....	1.66	1.67	1.31	1.68	1.83	1.95	2.38	2.69	2.69	2.69	2.67	2.61	3.22	1.63	1.96	2.68
TN PERSONAL INCOME (\$) SAAR.....	42518	42847	43285	43627	44009	44387	44846	45272	45758	46255	46727	47148	41680	42740	44217	46003
% Chg Prev Qtr SAAR.....	1.96	3.13	4.16	3.20	3.55	3.48	4.19	3.86	4.36	4.41	4.15	3.65	4.37	2.54	3.46	4.04
% Chg Same Qtr Last Yr.....	2.47	2.16	2.12	3.11	3.51	3.60	3.61	3.77	3.97	4.21	4.20	4.14	4.37	2.54	3.46	4.04
US PERSONAL INCOME (\$) SAAR.....	49146	49568	49944	50389	50909	51408	51921	52500	53098	53681	54268	54933	48011	49329	51158	53388
% Chg Prev Qtr SAAR.....	4.10	3.48	3.07	3.61	4.19	3.98	4.05	4.54	4.64	4.46	4.44	5.00	3.58	2.75	3.71	4.36
% Chg Same Qtr Last Yr.....	2.64	2.72	2.81	3.56	3.59	3.71	3.96	4.19	4.30	4.42	4.52	4.64	3.58	2.75	3.71	4.36
TN TAXABLE SALES (2009\$).....	3959	3974	3981	3995	4009	4018	4031	4048	4059	4068	4077	4085	15455	15896	16054	16252
% Chg Prev Qtr SAAR.....	-2.33	1.54	0.69	1.39	1.49	0.88	1.28	1.70	1.04	0.92	0.94	0.73	5.13	2.86	0.99	1.24
% Chg Same Qtr Last Yr.....	2.58	1.38	0.13	0.31	1.28	1.11	1.26	1.34	1.22	1.23	1.15	0.91	5.13	2.86	0.99	1.24
TN TAXABLE SALES (\$).....	4375	4408	4440	4472	4507	4541	4573	4611	4647	4682	4716	4749	16929	17603	18093	18656
% Chg Prev Qtr SAAR.....	-0.36	3.00	3.00	2.86	3.22	2.98	2.92	3.34	3.17	3.00	2.94	2.87	5.51	3.98	2.79	3.11
% Chg Same Qtr Last Yr.....	3.56	2.42	1.63	2.11	3.02	3.01	3.00	3.11	3.10	3.11	3.11	2.99	5.51	3.98	2.79	3.11

Boyd Center for Business and Economic Research, University of Tennessee

Tennessee Econometric Model

**Table 3: Tennessee Personal Income Components, Seasonally Adjusted Annual Rates (millions of 2009 dollars)****January 2017**

	History		Forecast 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	2015	2016	2017	2018
TN PERSONAL INCOME.....	258759	260499	262346	264140	266008	267594	269948	272114	274281	276540	278691	280419	253644	259933	266923	275406
% Chg Prev Qtr SAAR.....	0.98	2.72	2.87	2.76	2.86	2.41	3.57	3.25	3.22	3.33	3.15	2.50	5.10	2.48	2.69	3.18
% Chg Same Qtr Last Yr.....	2.55	2.17	1.64	2.33	2.80	2.72	2.90	3.02	3.11	3.34	3.24	3.05	5.10	2.48	2.69	3.18
WAGES AND SALARIES.....	128675	130018	130617	131483	132225	132859	133676	134533	135267	136042	136812	137393	125457	129344	132561	135664
% Chg Prev Qtr SAAR.....	1.92	4.24	1.86	2.68	2.28	1.93	2.48	2.59	2.20	2.31	2.28	1.71	5.43	3.10	2.49	2.34
% Chg Same Qtr Last Yr.....	3.25	3.06	1.30	2.67	2.76	2.19	2.34	2.32	2.30	2.40	2.35	2.13	5.43	3.10	2.49	2.34
OTHER LABOR INCOME.....	27896	28100	28193	28347	28564	28762	28998	29223	29415	29640	29807	29955	27400	28005	28668	29521
% Chg Prev Qtr SAAR.....	0.94	2.96	1.32	2.21	3.10	2.80	3.33	3.13	2.66	3.09	2.28	2.00	0.91	2.21	2.37	2.98
% Chg Same Qtr Last Yr.....	2.32	2.34	1.48	1.86	2.40	2.35	2.86	3.09	2.98	3.05	2.79	2.51	0.91	2.21	2.37	2.98
PROPRIETORS INCOME.....	34993	35198	35369	35685	36088	36401	36856	37333	37743	38168	38596	39003	34182	35165	36257	37960
% Chg Prev Qtr SAAR.....	-1.21	2.36	1.96	3.62	4.59	3.52	5.09	5.29	4.46	4.59	4.56	4.29	10.51	2.88	3.11	4.70
% Chg Same Qtr Last Yr.....	3.33	2.22	1.18	1.67	3.13	3.42	4.20	4.62	4.59	4.85	4.72	4.47	10.51	2.88	3.11	4.70
RENT, INTEREST, DIVIDENDS.....	35859	35933	36641	36820	37041	37150	37555	38038	38473	38851	39263	39644	35649	36056	37142	38656
% Chg Prev Qtr SAAR.....	0.75	0.83	8.12	1.97	2.43	1.18	4.43	5.24	4.66	3.98	4.31	3.95	2.95	1.14	3.01	4.08
% Chg Same Qtr Last Yr.....	0.33	0.00	2.92	2.87	3.30	3.39	2.49	3.31	3.87	4.58	4.55	4.22	2.95	1.14	3.01	4.08
TRANSFER PAYMENTS.....	52995	53082	53350	53672	53973	54309	54778	54987	55370	55813	56175	56437	52181	53103	54183	55586
% Chg Prev Qtr SAAR.....	0.07	0.66	2.04	2.44	2.26	2.51	3.50	1.54	2.81	3.24	2.62	1.88	4.67	1.77	2.03	2.59
% Chg Same Qtr Last Yr.....	2.01	1.48	1.64	1.30	1.85	2.31	2.68	2.45	2.59	2.77	2.55	2.64	4.67	1.77	2.03	2.59
LESS: PERS CONT FOR SOC INS...	20237	20385	20384	20430	20449	20458	20489	20579	20570	20562	20555	20611	19838	20305	20457	20567
% Chg Prev Qtr SAAR.....	0.47	2.97	-0.03	0.92	0.37	0.17	0.61	1.76	-0.16	-0.16	-0.14	1.10	4.87	2.35	0.75	0.54
% Chg Same Qtr Last Yr.....	2.49	2.41	0.80	1.07	1.05	0.36	0.52	0.73	0.59	0.51	0.32	0.16	4.87	2.35	0.75	0.54
RESIDENCE ADJUSTMENT.....	-1423	-1446	-1440	-1437	-1434	-1429	-1425	-1422	-1417	-1412	-1408	-1403	-1387	-1435	-1431	-1415
% Chg Prev Qtr SAAR.....	-2.49	6.81	-1.62	-0.80	-1.03	-1.39	-0.95	-0.92	-1.41	-1.35	-1.27	-1.40	6.75	3.49	-0.27	-1.16
% Chg Same Qtr Last Yr.....	3.45	2.77	-0.55	0.41	0.78	-1.21	-1.04	-1.07	-1.17	-1.16	-1.24	-1.35	6.75	3.49	-0.27	-1.16
PER CAPITA PERSONAL INCOME (\$)...	38471	38631	38805	38971	39148	39282	39527	39745	39961	40190	40402	40552	38052	38596	39232	40075
% Chg Prev Qtr SAAR.....	-0.05	1.67	1.82	1.72	1.82	1.38	2.53	2.22	2.20	2.31	2.13	1.50	4.00	1.43	1.65	2.15
% Chg Same Qtr Last Yr.....	1.49	1.12	0.61	1.29	1.76	1.69	1.86	1.98	2.08	2.31	2.21	2.03	4.00	1.43	1.65	2.15

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 2017**

	History											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	2015	2016	2017	2018
TN PERSONAL INCOME.....	285977	288930	292633	295697	299044	302377	306270	309959	314066	318267	322321	326027	277832	287851	300847	316153
% Chg Prev Qtr SAAR.....	3.01	4.19	5.23	4.25	4.61	4.53	5.25	4.91	5.41	5.46	5.19	4.68	5.46	3.61	4.51	5.09
% Chg Same Qtr Last Yr.....	3.53	3.22	3.17	4.17	4.57	4.65	4.66	4.82	5.02	5.26	5.24	5.18	5.46	3.61	4.51	5.09
WAGES AND SALARIES.....	142210	144208	145696	147191	148646	150128	151662	153244	154888	156570	158231	159739	137424	143236	149407	155733
% Chg Prev Qtr SAAR.....	3.97	5.74	4.19	4.17	4.01	4.05	4.15	4.24	4.36	4.42	4.31	3.87	5.80	4.23	4.31	4.23
% Chg Same Qtr Last Yr.....	4.24	4.12	2.82	4.52	4.53	4.11	4.09	4.11	4.20	4.29	4.33	4.24	5.80	4.23	4.31	4.23
OTHER LABOR INCOME.....	30830	31167	31447	31734	32112	32500	32900	33287	33682	34112	34474	34827	30012	31012	32311	33889
% Chg Prev Qtr SAAR.....	2.98	4.44	3.65	3.69	4.85	4.93	5.01	4.79	4.83	5.21	4.31	4.16	1.26	3.33	4.19	4.88
% Chg Same Qtr Last Yr.....	3.29	3.40	3.00	3.69	4.16	4.28	4.62	4.89	4.89	4.96	4.78	4.63	1.26	3.33	4.19	4.88
PROPRIETORS INCOME.....	38674	39040	39452	39948	40569	41133	41814	42526	43217	43928	44639	45347	37442	38941	40866	43577
% Chg Prev Qtr SAAR.....	0.78	3.83	4.30	5.12	6.37	5.67	6.80	6.98	6.67	6.74	6.63	6.50	10.90	4.01	4.94	6.63
% Chg Same Qtr Last Yr.....	4.31	3.27	2.70	3.49	4.90	5.36	5.99	6.45	6.53	6.79	6.75	6.63	10.90	4.01	4.94	6.63
RENT, INTEREST, DIVIDENDS.	39631	39855	40871	41219	41642	41979	42608	43328	44054	44713	45409	46092	39047	39929	41862	44376
% Chg Prev Qtr SAAR.....	2.78	2.28	10.60	3.44	4.17	3.28	6.13	6.93	6.87	6.12	6.38	6.15	3.30	2.26	4.84	6.01
% Chg Same Qtr Last Yr.....	1.29	1.03	4.47	4.72	5.07	5.33	4.25	5.12	5.79	6.51	6.57	6.38	3.30	2.26	4.84	6.01
TRANSFER PAYMENTS.....	58569	58875	59510	60085	60676	61368	62148	62635	63402	64235	64970	65616	57156	58805	61069	63810
% Chg Prev Qtr SAAR.....	2.09	2.10	4.38	3.92	3.99	4.64	5.19	3.17	4.99	5.36	4.65	4.04	5.04	2.89	3.85	4.49
% Chg Same Qtr Last Yr.....	2.98	2.53	3.17	3.12	3.60	4.23	4.43	4.24	4.49	4.67	4.54	4.76	5.04	2.89	3.85	4.49
LESS: PERS CONT FOR SOC I	22365	22610	22737	22871	22989	23117	23246	23441	23554	23665	23773	23964	21730	22485	23056	23608
% Chg Prev Qtr SAAR.....	2.50	4.45	2.26	2.38	2.08	2.25	2.25	3.39	1.95	1.90	1.84	3.24	5.24	3.48	2.54	2.40
% Chg Same Qtr Last Yr.....	3.47	3.47	2.31	2.89	2.79	2.24	2.24	2.49	2.46	2.37	2.27	2.23	5.24	3.48	2.54	2.40
RESIDENCE ADJUSTMENT.....	-1572	-1604	-1607	-1609	-1612	-1614	-1617	-1620	-1623	-1625	-1628	-1631	-1519	-1589	-1613	-1624
% Chg Prev Qtr SAAR.....	-0.52	8.35	0.63	0.64	0.65	0.66	0.66	0.67	0.68	0.68	0.69	0.69	7.14	4.62	1.50	0.67
% Chg Same Qtr Last Yr.....	4.43	3.83	0.94	2.21	2.51	0.65	0.65	0.66	0.67	0.67	0.68	0.69	7.14	4.62	1.50	0.67
PER CAPITA PERSONAL INCOME	42518	42847	43285	43627	44009	44387	44846	45272	45758	46255	46727	47148	41680	42740	44217	46003
% Chg Prev Qtr SAAR.....	1.96	3.13	4.16	3.20	3.55	3.48	4.19	3.86	4.36	4.41	4.15	3.65	4.37	2.54	3.46	4.04
% Chg Same Qtr Last Yr.....	2.47	2.16	2.12	3.11	3.51	3.60	3.61	3.77	3.97	4.21	4.20	4.14	4.37	2.54	3.46	4.04

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

**January 2017**

	History		Forecast 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	2015	2016	2017	2018
TOTAL NONFARM.....	2952.1	2960.4	3009.1	2962.4	3003.3	3001.7	3048.4	2997.6	3038.6	3037.0	3085.0	3033.5	2891.9	2961.4	3003.9	3039.6
% Chg Same Qtr Last Yr.....	2.51	2.22	1.70	1.31	1.73	1.39	1.31	1.19	1.17	1.18	1.20	1.20	2.47	2.41	1.44	1.1856
NATURAL RESOURCES, MINING & CONSTRUCTION..	121.6	126.5	125.8	120.8	127.1	128.9	128.7	123.4	129.8	131.9	131.8	126.3	117.7	123.8	126.4	129.2
% Chg Same Qtr Last Yr.....	3.61	5.12	2.82	-0.39	4.47	1.87	2.30	2.18	2.16	2.32	2.46	2.35	6.12	5.19	2.06	2.2826
MANUFACTURING.....	342.6	342.2	343.1	342.6	344.2	344.9	346.8	346.2	347.5	347.9	349.6	348.9	332.7	341.8	344.6	347.8
% Chg Same Qtr Last Yr.....	3.38	2.52	1.80	0.94	0.47	0.79	1.10	1.05	0.96	0.87	0.80	0.79	2.40	2.74	0.82	0.9203
DURABLE GOODS.....	217.2	216.8	217.1	217.3	218.6	219.3	220.8	220.9	221.9	222.2	223.5	223.6	210.7	216.5	219.0	222.1
% Chg Same Qtr Last Yr.....	3.46	2.49	1.81	1.07	0.65	1.17	1.72	1.67	1.52	1.34	1.21	1.21	2.71	2.77	1.15	1.4363
NONDURABLE GOODS.....	125.4	125.4	126.0	125.3	125.6	125.6	126.0	125.3	125.6	125.7	126.2	125.3	122.0	125.3	125.6	125.7
% Chg Same Qtr Last Yr.....	3.24	2.56	1.79	0.70	0.15	0.15	0.03	-0.03	-0.02	0.04	0.09	0.04	1.86	2.69	0.25	0.021
TRADE, TRANSPORTATION, UTILITIES.....	615.3	615.0	626.6	612.3	619.6	620.8	631.5	616.0	623.9	625.5	637.3	621.8	603.0	616.9	621.1	625.7
% Chg Same Qtr Last Yr.....	2.84	1.52	1.04	0.28	0.70	0.94	0.79	0.60	0.68	0.77	0.91	0.95	2.22	2.30	0.68	0.7422
WHOLESALE TRADE.....	125.3	125.3	126.2	125.3	126.0	126.8	127.2	126.4	127.3	127.9	128.2	127.4	121.6	125.2	126.3	127.4
% Chg Same Qtr Last Yr.....	3.78	2.82	1.41	0.92	0.61	1.15	0.81	0.86	0.99	0.91	0.78	0.82	1.09	2.98	0.87	0.8872
RETAIL TRADE.....	332.8	332.3	339.6	328.9	334.6	334.0	341.2	329.6	335.8	335.7	343.9	332.4	325.4	333.5	334.7	336.2
% Chg Same Qtr Last Yr.....	2.72	1.85	1.58	-0.08	0.56	0.51	0.48	0.21	0.34	0.52	0.79	0.86	1.42	2.49	0.37	0.4673
TRANSPORTATION & UTILITIES.....	157.3	157.4	160.8	158.1	159.0	160.0	163.1	160.0	160.8	161.9	165.2	162.0	156.0	158.2	160.1	162.0
% Chg Same Qtr Last Yr.....	2.34	-0.15	-0.36	0.56	1.07	1.68	1.42	1.21	1.16	1.18	1.26	1.24	4.87	1.38	1.18	1.2041
INFORMATION.....	44.5	45.0	45.4	45.4	45.7	45.2	45.3	45.1	45.4	45.2	45.4	45.4	43.8	44.6	45.4	45.3
% Chg Same Qtr Last Yr.....	0.98	2.20	3.66	3.98	2.74	0.41	-0.31	-0.55	-0.54	0.03	0.29	0.52	0.11	1.83	1.68	-0.193
FINANCIAL ACTIVITIES.....	150.8	151.9	152.5	151.3	152.3	152.9	153.4	152.0	153.1	153.6	154.0	152.5	148.1	151.4	152.5	153.2
% Chg Same Qtr Last Yr.....	2.35	2.01	1.41	0.66	0.96	0.68	0.54	0.49	0.53	0.46	0.39	0.33	2.74	2.23	0.71	0.4676
PROFESSIONAL & BUSINESS SERVICES.....	399.4	402.6	415.6	404.9	412.3	414.8	426.6	415.7	423.3	425.9	438.1	427.0	392.6	403.6	414.7	425.7
% Chg Same Qtr Last Yr.....	2.51	2.01	2.11	2.01	3.23	3.04	2.65	2.66	2.65	2.67	2.70	2.71	4.55	2.81	2.73	2.6702
EDUCATION & HEALTH SERVICES.....	429.2	431.2	440.0	439.0	439.9	440.6	448.6	447.4	448.3	449.0	457.3	456.1	414.9	431.4	442.0	450.5
% Chg Same Qtr Last Yr.....	4.30	4.40	3.74	3.21	2.51	2.18	1.94	1.91	1.89	1.92	1.94	1.94	2.14	3.97	2.46	1.9176
LEISURE & HOSPITALITY.....	319.2	323.1	312.7	303.6	325.0	326.8	317.1	307.1	328.9	330.5	320.7	310.3	307.9	313.4	318.1	321.8
% Chg Same Qtr Last Yr.....	1.60	1.71	1.15	1.62	1.83	1.14	1.40	1.14	1.20	1.13	1.14	1.05	3.84	1.81	1.50	1.1528
OTHER SERVICES.....	110.8	110.9	110.8	110.4	113.2	112.7	111.9	111.0	113.4	112.6	111.5	110.6	107.3	110.0	112.1	112.1
% Chg Same Qtr Last Yr.....	2.56	2.69	3.10	2.53	2.17	1.61	1.02	0.56	0.11	-0.11	-0.38	-0.39	1.14	2.56	1.83	0.0432
GOVERNMENT.....	418.7	412.1	436.7	432.1	423.9	414.1	438.6	433.7	425.0	414.9	439.3	434.7	423.9	424.4	427.2	428.2
% Chg Same Qtr Last Yr.....	0.18	0.52	-0.18	0.43	1.26	0.50	0.44	0.38	0.26	0.19	0.16	0.22	-0.07	0.12	0.65	0.248
FEDERAL, CIVILIAN.....	49.3	49.5	48.9	48.1	48.3	48.9	48.9	47.7	47.8	48.2	48.1	47.0	49.1	49.2	48.5	47.9
% Chg Same Qtr Last Yr.....	0.20	0.81	-0.64	-2.03	-1.95	-1.19	-0.12	-0.71	-1.15	-1.43	-1.62	-1.63	1.50	0.13	-1.32	-1.228
STATE & LOCAL.....	369.4	362.6	387.8	384.0	375.6	365.2	389.8	386.1	377.3	366.6	391.3	387.8	374.8	375.2	378.7	380.3
% Chg Same Qtr Last Yr.....	0.17	0.48	-0.12	0.76	1.69	0.72	0.51	0.52	0.45	0.40	0.38	0.46	-0.28	0.12	0.92	0.4379

Boyd Center for Business and Economic Research, University of Tennessee

Tennessee Econometric Model

**Table 6: Tennessee Durable Goods Manufacturing Employment, Not Seasonally Adjusted (thousands of jobs) January 2017**

	History		Forecast 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	2015	2016	2017	2018
TOTAL DURABLE GOODS.....	217.2	216.8	217.1	217.3	218.6	219.3	220.8	220.9	221.9	222.2	223.5	223.6	210.7	216.5	219.0	222.1
% Chg Same Qtr Last Yr.....	3.46	2.49	1.81	1.07	0.65	1.17	1.72	1.67	1.52	1.34	1.21	1.21	2.71	2.77	1.15	1.44
WOOD PRODUCTS.....	11.7	11.7	11.7	11.6	11.7	11.9	11.9	11.7	11.9	12.0	12.0	11.9	11.5	11.7	11.8	11.9
% Chg Same Qtr Last Yr.....	1.45	0.57	-0.35	-0.56	0.44	1.49	1.40	1.35	1.31	1.26	1.22	1.20	2.82	1.14	0.70	1.28
NONMETALLIC MINERAL PRODUCTS.....	12.9	12.9	12.8	12.7	12.9	13.0	12.9	12.8	13.1	13.1	13.1	12.9	12.6	12.8	12.9	13.0
% Chg Same Qtr Last Yr.....	2.12	0.52	1.39	1.47	0.46	0.86	0.69	0.84	1.01	1.11	1.20	1.10	4.72	1.54	0.87	1.04
PRIMARY METALS.....	10.6	10.6	10.7	10.7	10.7	10.7	10.8	10.7	10.8	10.8	10.9	10.8	10.3	10.6	10.7	10.8
% Chg Same Qtr Last Yr.....	2.58	2.57	2.47	1.59	1.21	0.98	0.78	0.77	0.87	0.96	0.98	0.86	2.48	2.72	1.14	0.90
FABRICATED METAL PRODUCTS.....	34.5	34.0	33.9	33.8	33.9	33.9	34.1	34.0	33.9	33.8	33.9	34.0	34.9	34.4	33.9	33.9
% Chg Same Qtr Last Yr.....	-0.86	-2.77	-3.12	-4.14	-1.72	-0.16	0.32	0.43	-0.06	-0.39	-0.45	-0.07	1.40	-1.40	-1.45	-0.12
MACHINERY.....	25.7	25.2	24.9	25.4	25.6	25.2	24.9	25.3	25.6	25.1	25.0	25.4	25.3	25.3	25.3	25.2
% Chg Same Qtr Last Yr.....	0.39	-0.13	-0.72	0.09	-0.54	-0.19	0.05	-0.18	-0.11	-0.02	0.09	0.18	-0.72	0.15	-0.15	-0.05
COMPUTER & ELECTRONIC PRODUCTS.....	4.9	4.8	4.7	4.6	4.6	4.6	4.5	4.5	4.5	4.4	4.4	4.3	5.0	4.8	4.6	4.4
% Chg Same Qtr Last Yr.....	-2.00	-3.38	-3.84	-3.56	-5.96	-4.46	-4.04	-3.21	-2.93	-2.77	-2.50	-3.04	-1.49	-3.63	-4.52	-2.85
ELECTRICAL EQUIPMENT, APPLIANCES & COMPONENTS.....	20.6	20.8	20.9	21.0	21.1	21.3	21.5	21.7	21.8	21.9	22.1	22.2	19.8	20.7	21.2	21.9
% Chg Same Qtr Last Yr.....	4.75	5.23	3.87	3.09	2.45	2.42	2.99	3.15	3.20	3.03	2.69	2.23	2.29	4.61	2.74	3.01
TRANSPORTATION EQUIPMENT.....	71.4	71.8	72.7	72.8	73.1	73.7	75.3	75.3	75.4	75.8	77.2	77.2	66.9	71.4	73.7	76.0
% Chg Same Qtr Last Yr.....	8.02	7.05	5.89	4.27	2.41	2.63	3.67	3.45	3.21	2.84	2.50	2.46	4.89	6.81	3.24	2.99
FURNITURE.....	9.3	9.3	9.1	9.2	9.3	9.3	9.1	9.2	9.3	9.3	9.2	9.3	9.0	9.2	9.2	9.3
% Chg Same Qtr Last Yr.....	4.12	1.82	0.78	0.75	0.05	-0.17	0.37	0.41	0.50	0.58	0.72	0.78	-0.09	2.23	0.25	0.55
MISCELLANEOUS DURABLE GOODS.....	15.7	15.7	15.6	15.5	15.6	15.8	15.8	15.6	15.7	15.8	15.7	15.6	15.4	15.6	15.7	15.7
% Chg Same Qtr Last Yr.....	1.73	0.64	0.30	-0.35	-0.18	0.50	0.89	0.78	0.48	0.10	-0.08	0.08	4.39	1.26	0.22	0.32

**Table 7: Tennessee Nondurable Goods Manufacturing Employment, Not Seasonally Adjusted (thousands of jobs) January 2017**

	History		Forecast 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	2015	2016	2017	2018
TOTAL NONDURABLE GOODS.....	125.4	125.4	126.0	125.3	125.6	125.6	126.0	125.3	125.6	125.7	126.2	125.3	122.0	125.3	125.6	125.7
% Chg Same Qtr Last Yr.....	3.24	2.56	1.79	0.70	0.15	0.15	0.03	-0.03	-0.02	0.04	0.09	0.04	1.86	2.69	0.25	0.02
FOOD.....	33.5	33.8	34.0	33.7	33.7	33.9	34.0	33.8	33.8	34.0	34.2	33.9	33.3	33.7	33.8	34.0
% Chg Same Qtr Last Yr.....	1.01	1.40	1.43	0.82	0.71	0.26	0.19	0.29	0.29	0.33	0.33	0.25	1.55	1.29	0.50	0.31
BEVERAGE & TOBACCO.....	6.2	6.4	6.5	6.4	6.5	6.5	6.6	6.5	6.6	6.6	6.7	6.6	5.8	6.3	6.5	6.6
% Chg Same Qtr Last Yr.....	10.06	6.67	6.02	5.12	4.30	2.02	1.99	1.89	1.86	1.77	1.71	1.69	6.37	7.70	3.33	1.81
TEXTILE MILLS, TEXTILE MILL PRODUCTS & APPAREL.....	10.2	10.3	10.3	10.1	10.2	10.3	10.3	10.0	10.1	10.2	10.2	9.9	10.0	10.2	10.2	10.1
% Chg Same Qtr Last Yr.....	1.67	1.64	0.96	1.09	0.58	-0.30	-0.31	-0.59	-0.77	-0.96	-1.04	-1.18	0.25	1.65	0.26	-0.84
PAPER.....	14.6	14.8	14.5	14.5	14.7	14.8	14.6	14.5	14.7	14.8	14.6	14.5	14.6	14.6	14.6	14.6
% Chg Same Qtr Last Yr.....	-0.23	0.91	0.20	0.29	0.54	-0.02	0.25	0.05	0.03	0.19	0.06	-0.07	-0.11	0.22	0.27	0.08
PRINTING & RELATED SUPPORT.....	9.1	9.0	9.0	8.9	8.9	8.8	8.9	8.7	8.8	8.7	8.7	8.6	9.2	9.1	8.9	8.7
% Chg Same Qtr Last Yr.....	-1.44	-1.82	-2.16	-2.36	-2.38	-1.93	-1.99	-1.91	-1.74	-1.61	-1.40	-1.31	-2.72	-1.80	-2.16	-1.67
CHEMICALS.....	25.7	25.7	25.7	25.6	25.6	25.6	25.4	25.3	25.3	25.3	25.3	25.2	25.5	25.7	25.5	25.3
% Chg Same Qtr Last Yr.....	0.78	0.65	0.65	0.04	-0.29	-0.68	-1.15	-1.24	-1.22	-0.89	-0.53	-0.41	0.73	0.88	-0.52	-0.97
PLASTICS & RUBBER.....	22.5	22.6	22.9	22.9	22.9	23.0	23.2	23.3	23.3	23.3	23.5	23.5	21.7	22.5	23.0	23.3
% Chg Same Qtr Last Yr.....	3.69	3.99	3.71	3.18	2.14	1.69	1.63	1.50	1.52	1.34	1.20	1.06	4.70	3.62	2.16	1.39
MISCELLANEOUS NONDURABLE GOODS.....	3.7	2.8	3.2	3.1	3.1	2.7	3.1	3.1	3.0	2.7	3.1	3.0	1.9	3.3	3.0	3.0
% Chg Same Qtr Last Yr.....	122.00	66.00	16.81	-10.53	-17.52	-1.13	-1.98	-1.82	-1.63	-1.42	-1.24	-1.42	31.43	71.14	-8.46	-1.53

Boyd Center for Business and Economic Research, University of Tennessee

Tennessee Econometric Model

**Table 8: Tennessee Nonfarm Employment by Sector, Seasonally Adjusted (thousands of jobs)** **January 2017**

	History		Forecast 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	2015	2016	2017	2018
TOTAL NONFARM.....	2948.3	2969.0	2978.7	2989.8	2999.4	3008.9	3017.6	3025.5	3034.6	3044.2	3053.7	3061.8	2892.3	2961.8	3003.9	3039.5
% Chg Prev Qtr SAAR.....	-0.38	2.83	1.31	1.50	1.30	1.27	1.16	1.05	1.22	1.27	1.25	1.07	2.51	2.40	1.42	1.19
% Chg Same Qtr Last Yr.....	2.47	2.26	1.70	1.31	1.73	1.34	1.31	1.19	1.17	1.17	1.20	1.20	2.51	2.40	1.42	1.19
NATURAL RESOURCES, MINING AND CONSTRUCTION.....	120.6	124.6	124.2	125.2	126.0	126.6	127.1	127.9	128.7	129.5	130.2	130.9	117.6	123.8	126.2	129.1
% Chg Prev Qtr SAAR.....	-15.27	13.95	-1.05	3.07	2.49	2.01	1.63	2.59	2.44	2.65	2.16	2.18	5.97	5.20	1.97	2.28
% Chg Same Qtr Last Yr.....	3.73	5.39	2.82	-0.39	4.47	1.62	2.30	2.18	2.16	2.32	2.46	2.35	5.97	5.20	1.97	2.28
MANUFACTURING.....	342.6	342.5	342.3	343.2	344.2	345.1	346.1	346.8	347.5	348.1	348.8	349.5	332.7	341.8	344.6	347.8
% Chg Prev Qtr SAAR.....	3.04	-0.11	-0.18	1.04	1.15	1.10	1.09	0.85	0.81	0.72	0.81	0.80	2.39	2.74	0.82	0.92
% Chg Same Qtr Last Yr.....	3.40	2.57	1.79	0.94	0.47	0.78	1.10	1.05	0.96	0.87	0.80	0.79	2.39	2.74	0.82	0.92
DURABLE GOODS.....	217.1	217.0	216.7	217.5	218.5	219.5	220.5	221.2	221.8	222.4	223.1	223.8	210.7	216.5	219.0	222.1
% Chg Prev Qtr SAAR.....	3.47	-0.12	-0.48	1.45	1.78	1.84	1.78	1.27	1.23	1.10	1.23	1.30	2.71	2.77	1.15	1.44
% Chg Same Qtr Last Yr.....	3.49	2.52	1.80	1.07	0.66	1.15	1.71	1.67	1.53	1.34	1.21	1.21	2.71	2.77	1.15	1.44
NONDURABLE GOODS.....	125.5	125.5	125.6	125.7	125.7	125.6	125.6	125.6	125.7	125.7	125.7	125.7	122.0	125.3	125.6	125.7
% Chg Prev Qtr SAAR.....	2.30	-0.11	0.34	0.33	0.06	-0.18	-0.10	0.11	0.09	0.06	0.08	-0.08	1.85	2.69	0.26	0.02
% Chg Same Qtr Last Yr.....	3.24	2.66	1.77	0.71	0.15	0.14	0.03	-0.03	-0.02	0.04	0.09	0.04	1.85	2.69	0.26	0.02
TRADE, TRANSPORTATION, UTILITIES.....	616.2	616.2	617.5	619.4	620.5	621.6	622.3	623.1	624.8	626.4	628.0	629.0	603.2	616.9	621.0	625.6
% Chg Prev Qtr SAAR.....	-0.95	0.00	0.83	1.27	0.71	0.72	0.46	0.50	1.06	1.06	1.03	0.65	2.28	2.27	0.66	0.74
% Chg Same Qtr Last Yr.....	2.69	1.58	1.04	0.28	0.70	0.88	0.79	0.60	0.68	0.77	0.91	0.95	2.28	2.27	0.66	0.74
WHOLESALE TRADE.....	125.3	125.5	125.8	125.9	126.0	126.4	126.8	127.0	127.3	127.6	127.8	128.0	121.6	125.3	126.3	127.4
% Chg Prev Qtr SAAR.....	1.61	0.85	0.90	0.32	0.39	1.24	1.31	0.52	0.90	0.92	0.78	0.67	1.09	3.09	0.76	0.89
% Chg Same Qtr Last Yr.....	3.96	3.26	1.41	0.92	0.61	0.71	0.81	0.86	0.99	0.91	0.78	0.82	1.09	3.09	0.76	0.89
RETAIL TRADE.....	332.8	332.9	333.2	334.2	334.6	334.9	334.8	334.9	335.8	336.6	337.4	337.8	325.6	333.3	334.6	336.2
% Chg Prev Qtr SAAR.....	-2.06	0.12	0.36	1.28	0.48	0.33	-0.15	0.18	1.00	1.06	0.93	0.44	1.50	2.39	0.39	0.46
% Chg Same Qtr Last Yr.....	2.41	1.74	1.58	-0.08	0.56	0.61	0.48	0.21	0.34	0.52	0.79	0.86	1.50	2.39	0.39	0.46
TRANSPORTATION & UTILITIES.....	158.2	157.8	158.5	159.3	159.9	160.3	160.7	161.2	161.7	162.2	162.8	163.2	156.0	158.2	160.0	162.0
% Chg Prev Qtr SAAR.....	-0.59	-0.92	1.76	2.02	1.47	1.13	1.07	1.16	1.30	1.19	1.41	1.06	4.93	1.39	1.16	1.20
% Chg Same Qtr Last Yr.....	2.28	-0.06	-0.36	0.56	1.07	1.59	1.42	1.21	1.16	1.18	1.26	1.24	4.93	1.39	1.16	1.20
INFORMATION.....	44.2	45.4	45.4	45.3	45.4	45.3	45.2	45.1	45.2	45.3	45.4	45.3	43.8	44.7	45.3	45.2
% Chg Prev Qtr SAAR.....	5.94	10.97	-0.29	-0.26	0.98	-1.69	-0.25	-1.21	1.00	0.57	0.81	-0.30	0.08	1.88	1.49	-0.19
% Chg Same Qtr Last Yr.....	0.84	2.95	3.66	3.98	2.74	-0.32	-0.31	-0.55	-0.54	0.03	0.29	0.52	0.08	1.88	1.49	-0.19
FINANCIAL ACTIVITIES.....	150.9	151.6	151.9	152.2	152.3	152.5	152.7	152.9	153.1	153.2	153.3	153.4	148.0	151.4	152.4	153.1
% Chg Prev Qtr SAAR.....	-0.79	1.87	0.90	0.68	0.39	0.48	0.62	0.46	0.57	0.19	0.34	0.21	2.65	2.31	0.69	0.47
% Chg Same Qtr Last Yr.....	2.56	2.09	1.41	0.66	0.96	0.61	0.54	0.49	0.53	0.46	0.39	0.33	2.65	2.31	0.69	0.47

(CONTINUED ON NEXT PAGE)

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

**January 2017**

	History		Forecast 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	2015	2016	2017	2018
PROFESSIONAL & BUSINESS SERVICES..	400.5	405.1	408.0	410.7	413.4	416.1	418.9	421.6	424.4	427.2	430.2	433.0	392.7	404.1	414.8	425.8
% Chg Prev Qtr SAAR.....	-2.07	4.64	2.98	2.63	2.69	2.60	2.68	2.67	2.66	2.66	2.81	2.71	4.71	2.89	2.65	2.67
% Chg Same Qtr Last Yr.....	2.57	2.32	2.11	2.01	3.23	2.72	2.65	2.66	2.65	2.67	2.70	2.71	4.71	2.89	2.65	2.67
EDUCATION & HEALTH SERVICES.....	430.0	434.0	436.4	438.8	440.8	442.8	444.9	447.2	449.2	451.3	453.5	455.8	414.8	431.4	441.8	450.3
% Chg Prev Qtr SAAR.....	4.72	3.77	2.18	2.21	1.89	1.79	1.89	2.08	1.82	1.90	1.98	2.07	2.15	3.99	2.42	1.92
% Chg Same Qtr Last Yr.....	4.30	4.57	3.74	3.21	2.51	2.02	1.94	1.91	1.89	1.92	1.94	1.94	2.15	3.99	2.42	1.92
LEISURE & HOSPITALITY.....	311.9	314.4	315.4	316.6	317.6	318.9	319.8	320.2	321.4	322.5	323.5	323.6	307.8	313.3	318.2	321.9
% Chg Prev Qtr SAAR.....	0.43	3.29	1.25	1.54	1.25	1.69	1.14	0.50	1.48	1.39	1.19	0.12	3.86	1.80	1.57	1.15
% Chg Same Qtr Last Yr.....	1.78	1.42	1.15	1.62	1.83	1.43	1.40	1.14	1.20	1.13	1.14	1.05	3.86	1.80	1.57	1.15
OTHER SERVICES.....	109.5	110.5	111.1	111.6	111.9	112.1	112.3	112.2	112.0	112.0	111.9	111.8	107.3	110.0	112.0	112.0
% Chg Prev Qtr SAAR.....	2.47	3.70	2.35	1.59	1.07	0.89	0.54	-0.27	-0.72	0.03	-0.55	-0.30	1.10	2.53	1.79	0.04
% Chg Same Qtr Last Yr.....	2.24	2.82	3.10	2.53	2.17	1.47	1.02	0.56	0.11	-0.11	-0.38	-0.39	1.10	2.53	1.79	0.04
GOVERNMENT.....	421.9	424.7	426.4	426.8	427.2	427.8	428.3	428.4	428.4	428.6	428.9	429.3	424.3	424.5	427.5	428.6
% Chg Prev Qtr SAAR.....	-2.79	2.68	1.57	0.37	0.43	0.56	0.40	0.14	-0.05	0.27	0.26	0.40	0.04	0.04	0.71	0.25
% Chg Same Qtr Last Yr.....	-0.13	0.29	-0.18	0.43	1.26	0.73	0.44	0.38	0.26	0.19	0.16	0.22	0.04	0.04	0.71	0.25
FEDERAL, CIVILIAN.....	49.8	48.4	48.8	48.9	48.9	48.8	48.7	48.5	48.3	48.1	47.9	47.7	49.0	49.2	48.8	48.2
% Chg Prev Qtr SAAR.....	-0.27	-11.02	2.96	0.82	0.08	-0.43	-0.93	-1.55	-1.67	-1.57	-1.70	-1.59	1.20	0.40	-0.83	-1.23
% Chg Same Qtr Last Yr.....	1.01	-1.22	-0.64	-2.03	-1.95	0.85	-0.12	-0.71	-1.15	-1.43	-1.62	-1.63	1.20	0.40	-0.83	-1.23
STATE & LOCAL.....	372.1	376.3	377.6	377.9	378.4	379.0	379.6	379.9	380.1	380.5	381.0	381.6	375.3	375.3	378.7	380.4
% Chg Prev Qtr SAAR.....	-3.13	4.63	1.39	0.31	0.47	0.69	0.57	0.36	0.16	0.50	0.51	0.65	-0.12	-0.01	0.92	0.44
% Chg Same Qtr Last Yr.....	-0.29	0.49	-0.12	0.76	1.68	0.71	0.51	0.52	0.45	0.40	0.38	0.45	-0.12	-0.01	0.92	0.44
STATISTICAL DISCREPANCY (%).....	0.00	0.02											0.00	0.00		

Boyd Center for Business and Economic Research, University of Tennessee

Tennessee Econometric Model

**Table 9: Tennessee Durable Goods Manufacturing Employment, Seasonally Adjusted (thousands of jobs)** **January 2017**

	History		Forecast 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	2015	2016	2017	2018
TOTAL DURABLE GOODS.....	217.1	217.0	216.7	217.5	218.5	219.5	220.5	221.2	221.8	222.4	223.1	223.8	210.7	216.5	219.0	222.1
% Chg Prev Qtr SAAR.....	3.47	-0.12	-0.48	1.45	1.78	1.84	1.78	1.27	1.23	1.10	1.23	1.30	2.71	2.77	1.15	1.44
% Chg Same Qtr Last Yr.....	3.49	2.52	1.80	1.07	0.66	1.15	1.71	1.67	1.53	1.34	1.21	1.21	2.71	2.77	1.15	1.44
WOOD PRODUCTS.....	11.7	11.6	11.7	11.7	11.7	11.8	11.8	11.9	11.9	11.9	12.0	12.0	11.5	11.7	11.8	11.9
% Chg Prev Qtr SAAR.....	-2.57	-2.54	1.50	1.46	1.42	1.41	1.33	1.25	1.24	1.21	1.18	1.18	2.81	1.14	0.68	1.28
% Chg Same Qtr Last Yr.....	1.49	0.62	-0.35	-0.56	0.44	1.45	1.40	1.35	1.31	1.26	1.22	1.20	2.81	1.14	0.68	1.28
NONMETALLIC MINERALS.....	12.8	12.8	12.8	12.8	12.9	12.9	12.9	13.0	13.0	13.0	13.1	13.1	12.6	12.8	12.9	13.0
% Chg Prev Qtr SAAR.....	4.69	-0.55	1.20	0.63	0.58	0.94	0.62	1.21	1.27	1.34	0.98	0.83	4.71	1.55	0.86	1.04
% Chg Same Qtr Last Yr.....	2.10	0.54	1.39	1.47	0.46	0.84	0.69	0.84	1.01	1.11	1.20	1.10	4.71	1.55	0.86	1.04
PRIMARY METALS.....	10.6	10.6	10.7	10.7	10.7	10.7	10.7	10.8	10.8	10.8	10.9	10.9	10.3	10.6	10.7	10.8
% Chg Prev Qtr SAAR.....	2.28	1.47	1.33	1.27	0.78	0.53	0.54	1.24	1.17	0.89	0.64	0.74	2.48	2.72	1.14	0.90
% Chg Same Qtr Last Yr.....	2.59	2.57	2.47	1.59	1.21	0.98	0.78	0.77	0.87	0.96	0.98	0.86	2.48	2.72	1.14	0.90
FABRICATED METALS.....	34.5	34.0	33.9	33.8	33.9	34.0	34.0	34.0	33.9	33.8	33.8	33.9	34.9	34.4	33.9	33.9
% Chg Prev Qtr SAAR.....	-8.20	-5.54	-1.78	-0.86	1.42	0.52	0.23	-0.42	-0.58	-0.79	-0.01	1.09	1.40	-1.41	-1.46	-0.12
% Chg Same Qtr Last Yr.....	-0.80	-2.74	-3.12	-4.14	-1.72	-0.18	0.32	0.43	-0.06	-0.39	-0.45	-0.07	1.40	-1.41	-1.46	-0.12
MACHINERY.....	25.4	25.3	25.2	25.3	25.3	25.3	25.2	25.2	25.2	25.2	25.3	25.3	25.3	25.3	25.3	25.2
% Chg Prev Qtr SAAR.....	2.33	-1.74	-1.02	0.86	-0.25	-0.22	-0.17	-0.06	0.01	0.13	0.30	0.30	-0.73	0.15	-0.14	-0.05
% Chg Same Qtr Last Yr.....	0.44	-0.16	-0.72	0.09	-0.54	-0.16	0.05	-0.18	-0.11	-0.02	0.09	0.18	-0.73	0.15	-0.14	-0.05
COMPUTERS & ELECTRONICS.....	4.9	4.8	4.7	4.6	4.6	4.6	4.5	4.5	4.5	4.4	4.4	4.4	5.0	4.8	4.6	4.4
% Chg Prev Qtr SAAR.....	6.69	-9.21	-5.37	-5.64	-3.54	-3.25	-3.72	-2.32	-2.40	-2.63	-2.65	-4.48	-1.48	-3.62	-4.52	-2.85
% Chg Same Qtr Last Yr.....	-2.00	-3.38	-3.84	-3.56	-5.96	-4.46	-4.04	-3.21	-2.93	-2.77	-2.50	-3.04	-1.48	-3.62	-4.52	-2.85
ELECTRICAL EQUIPMENT, APPLIANCES & COMPONENTS.....	20.64	20.81	20.86	21.00	21.14	21.31	21.49	21.66	21.82	21.95	22.07	22.14	19.76	20.67	21.23	21.87
% Chg Prev Qtr SAAR.....	5.32	3.48	0.97	2.66	2.71	3.21	3.40	3.27	2.91	2.55	2.03	1.44	2.28	4.60	2.73	3.01
% Chg Same Qtr Last Yr.....	4.76	5.26	3.87	3.09	2.45	2.38	2.99	3.15	3.20	3.03	2.69	2.23	2.28	4.60	2.73	3.01
TRANSPORTATION EQUIP.....	71.64	72.21	72.12	72.74	73.37	74.07	74.77	75.25	75.72	76.18	76.64	77.10	66.88	71.43	73.74	75.95
% Chg Prev Qtr SAAR.....	11.26	3.22	-0.49	3.46	3.51	3.90	3.82	2.57	2.55	2.44	2.43	2.42	4.89	6.81	3.23	3.00
% Chg Same Qtr Last Yr.....	8.01	7.11	5.89	4.27	2.41	2.58	3.67	3.45	3.21	2.84	2.50	2.46	4.89	6.81	3.23	3.00
FURNITURE.....	9.21	9.24	9.20	9.21	9.22	9.23	9.24	9.25	9.27	9.28	9.30	9.32	9.00	9.20	9.22	9.28
% Chg Prev Qtr SAAR.....	3.16	1.26	-1.70	0.32	0.35	0.40	0.42	0.49	0.70	0.71	0.98	0.73	-0.08	2.22	0.25	0.55
% Chg Same Qtr Last Yr.....	4.21	1.81	0.78	0.75	0.05	-0.16	0.37	0.41	0.50	0.58	0.72	0.78	-0.08	2.22	0.25	0.55
MISCELLANEOUS DURABLES.....	15.68	15.61	15.60	15.61	15.65	15.69	15.73	15.73	15.72	15.70	15.72	15.74	15.44	15.64	15.67	15.72
% Chg Prev Qtr SAAR.....	0.39	-1.73	-0.37	0.34	1.07	0.98	1.18	-0.12	-0.13	-0.52	0.44	0.53	4.40	1.27	0.22	0.32
% Chg Same Qtr Last Yr.....	1.75	0.64	0.30	-0.35	-0.18	0.50	0.89	0.78	0.48	0.10	-0.08	0.08	4.40	1.27	0.22	0.32

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

January 2017

	History		Forecast 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	2015	2016	2017	2018
TOTAL NONDURABLE GOODS.....	125.5	125.5	125.6	125.7	125.7	125.6	125.6	125.6	125.7	125.7	125.7	125.7	122.0	125.3	125.6	125.7
% Chg Prev Qtr SAAR.....	2.30	-0.11	0.34	0.33	0.06	-0.18	-0.10	0.11	0.09	0.06	0.08	-0.08	1.85	2.69	0.26	0.02
% Chg Same Qtr Last Yr.....	3.24	2.66	1.77	0.71	0.15	0.14	0.03	-0.03	-0.02	0.04	0.09	0.04	1.85	2.69	0.26	0.02
FOOD.....	33.6	33.8	33.8	33.8	33.8	33.9	33.9	33.9	33.9	34.0	34.0	34.0	33.2	33.7	33.8	34.0
% Chg Prev Qtr SAAR.....	0.72	1.89	0.59	0.11	0.26	0.13	0.27	0.49	0.27	0.31	0.26	0.15	1.55	1.29	0.50	0.31
% Chg Same Qtr Last Yr.....	1.02	1.39	1.43	0.82	0.71	0.27	0.19	0.29	0.29	0.33	0.33	0.25	1.55	1.29	0.50	0.31
BEVERAGE & TOBACCO.....	6.2	6.4	6.4	6.5	6.5	6.5	6.5	6.6	6.6	6.6	6.7	6.7	5.8	6.3	6.5	6.6
% Chg Prev Qtr SAAR.....	5.25	11.38	2.03	2.09	2.02	1.97	1.88	1.69	1.90	1.62	1.65	1.58	6.37	7.72	3.33	1.81
% Chg Same Qtr Last Yr.....	10.09	6.66	6.02	5.12	4.30	2.03	1.99	1.89	1.86	1.77	1.71	1.69	6.37	7.72	3.33	1.81
TEXTILE MILLS, TEXTILE MILL																
PRODUCTS & APPAREL.....	10.2	10.3	10.2	10.2	10.2	10.2	10.2	10.2	10.2	10.1	10.1	10.1	10.0	10.2	10.2	10.1
% Chg Prev Qtr SAAR.....	1.89	3.09	-0.89	0.31	-0.15	-0.44	-0.94	-0.81	-0.87	-1.23	-1.24	-1.38	0.23	1.66	0.26	-0.84
% Chg Same Qtr Last Yr.....	1.69	1.63	0.96	1.09	0.58	-0.29	-0.31	-0.59	-0.77	-0.96	-1.04	-1.18	0.23	1.66	0.26	-0.84
PAPER.....	14.6	14.6	14.6	14.6	14.6	14.6	14.6	14.6	14.6	14.6	14.6	14.6	14.6	14.6	14.6	14.6
% Chg Prev Qtr SAAR.....	-0.70	1.73	-0.84	1.00	0.28	-0.50	0.24	0.17	0.20	0.14	-0.27	-0.35	-0.13	0.21	0.27	0.08
% Chg Same Qtr Last Yr.....	-0.20	0.91	0.20	0.29	0.54	-0.02	0.25	0.05	0.03	0.19	0.06	-0.07	-0.13	0.21	0.27	0.08
PRINTING & RELATED SUPPORT.....	9.1	9.0	9.0	8.9	8.9	8.9	8.8	8.8	8.7	8.7	8.7	8.7	9.2	9.1	8.9	8.7
% Chg Prev Qtr SAAR.....	-1.96	-3.63	-1.88	-1.95	-2.05	-1.92	-2.02	-1.65	-1.37	-1.41	-1.15	-1.32	-2.72	-1.80	-2.17	-1.67
% Chg Same Qtr Last Yr.....	-1.42	-1.80	-2.16	-2.36	-2.38	-1.95	-1.99	-1.91	-1.74	-1.61	-1.40	-1.31	-2.72	-1.80	-2.17	-1.67
CHEMICALS.....	25.7	25.7	25.7	25.7	25.6	25.5	25.4	25.4	25.3	25.3	25.3	25.2	25.5	25.7	25.5	25.3
% Chg Prev Qtr SAAR.....	0.37	-0.06	0.38	-0.55	-0.94	-1.59	-1.51	-0.91	-0.87	-0.28	-0.07	-0.41	0.72	0.88	-0.52	-0.97
% Chg Same Qtr Last Yr.....	0.77	0.65	0.65	0.04	-0.29	-0.68	-1.15	-1.24	-1.22	-0.89	-0.53	-0.41	0.72	0.88	-0.52	-0.97
PLASTICS & RUBBER.....	22.5	22.7	22.8	22.9	23.0	23.1	23.1	23.2	23.3	23.4	23.4	23.5	21.7	22.5	23.0	23.3
% Chg Prev Qtr SAAR.....	5.57	3.22	2.00	1.98	1.37	1.61	1.55	1.48	1.45	0.88	0.97	0.93	4.70	3.62	2.17	1.39
% Chg Same Qtr Last Yr.....	3.79	3.94	3.71	3.18	2.14	1.74	1.63	1.50	1.52	1.34	1.20	1.06	4.70	3.62	2.17	1.39
MISCELLANEOUS NONDURABLE GOODS.....	3.6	3.1	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	2.9	2.9	1.9	3.3	3.0	3.0
% Chg Prev Qtr SAAR.....	35.86	-50.86	-2.09	-1.95	-1.91	-2.04	-2.00	-1.31	-1.17	-1.18	-1.28	-2.05	31.06	71.39	-8.51	-1.53
% Chg Same Qtr Last Yr.....	121.97	67.46	16.81	-10.53	-17.52	-2.00	-1.98	-1.82	-1.63	-1.42	-1.24	-1.42	31.06	71.39	-8.51	-1.53

Boyd Center for Business and Economic Research, University of Tennessee

Tennessee Econometric Model



Table 11: Tennessee Average Annual Wage and Salary Rate by Sector, Not Seasonally Adjusted (2009 dollars)

January 2017

	History		Forecast 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	2015	2016	2017	2018
TOTAL NONFARM.....	43317	43648	43143	44117	43763	43999	43593	44618	44260	44538	44096	45037	43103	43407	43868	44378
% Chg Same Qtr Last Yr.....	0.75	0.84	-0.39	1.37	1.03	0.80	1.04	1.14	1.13	1.23	1.15	0.94	2.94	0.71	1.06	1.16
NATURAL RESOURCES, MINING																
AND CONSTRUCTION.....	47678	46013	46237	48683	46672	46275	46639	49150	47171	46775	47120	49491	49219	47394	47067	47554
% Chg Same Qtr Last Yr.....	-2.19	-6.12	-7.17	-1.94	-2.11	0.57	0.87	0.96	1.07	1.08	1.03	0.69	4.52	-3.71	-0.69	1.03
MANUFACTURING.....	53199	53620	53542	54028	54168	54348	54405	54861	54924	55168	55223	55553	52344	53183	54237	55044
% Chg Same Qtr Last Yr.....	1.58	2.59	0.04	3.16	1.82	1.36	1.61	1.54	1.40	1.51	1.50	1.26	1.37	1.60	1.98	1.49
DURABLE GOODS.....	52384	52928	52866	53188	53295	53465	53530	53918	54020	54338	54458	54714	51363	52643	53369	54183
% Chg Same Qtr Last Yr.....	2.03	3.05	0.08	1.51	1.74	1.01	1.26	1.37	1.36	1.63	1.73	1.48	1.54	2.49	1.38	1.53
NONDURABLE GOODS.....	54611	54816	54707	55485	55687	55889	55938	56525	56522	56635	56579	57050	54039	54116	55750	56565
% Chg Same Qtr Last Yr.....	0.85	1.84	-0.02	6.03	1.97	1.96	2.25	1.87	1.50	1.33	1.14	0.93	1.13	0.14	3.02	1.46
TRADE, TRANSPORTATION, UTILITIES...	40628	40919	40372	41516	41204	41300	40789	42032	41727	41836	41280	42462	39779	40467	41202	41719
% Chg Same Qtr Last Yr.....	2.68	2.86	0.17	3.93	1.42	0.93	1.03	1.24	1.27	1.30	1.20	1.02	2.44	1.73	1.82	1.25
WHOLESALE TRADE.....	60528	61185	61012	61870	61803	61841	62074	62775	62668	62691	62825	63448	61427	60786	61897	62740
% Chg Same Qtr Last Yr.....	-2.37	-0.05	-0.05	2.40	2.11	1.07	1.74	1.46	1.40	1.37	1.21	1.07	1.42	-1.04	1.83	1.36
RETAIL TRADE.....	27875	28022	27457	28513	28106	28202	27668	28761	28358	28492	27944	29008	27194	27668	28122	28389
% Chg Same Qtr Last Yr.....	3.06	1.56	-0.27	4.37	0.83	0.64	0.77	0.87	0.90	1.03	1.00	0.86	2.82	1.74	1.64	0.95
TRANSPORTATION & UTILITIES.....	51763	52012	51452	52429	52445	52363	51640	52977	53065	53024	52329	53555	49144	51360	52219	52849
% Chg Same Qtr Last Yr.....	7.08	7.39	1.33	4.41	1.32	0.67	0.37	1.05	1.18	1.26	1.33	1.09	2.45	4.51	1.67	1.21
INFORMATION.....	59525	59617	59091	59198	58846	59227	59272	59469	59293	59768	59726	59788	56912	59451	59136	59564
% Chg Same Qtr Last Yr.....	5.16	5.40	2.53	-0.63	-1.14	-0.65	0.31	0.46	0.76	0.91	0.77	0.54	1.47	4.46	-0.53	0.72
FINANCIAL ACTIVITIES.....	63968	64646	64884	65942	65870	65846	65983	66994	66798	66786	66907	67754	62777	64145	65910	66871
% Chg Same Qtr Last Yr.....	2.16	3.26	1.80	4.53	2.97	1.86	1.69	1.60	1.41	1.43	1.40	1.14	1.24	2.18	2.75	1.46
PROFESSIONAL & BUSINESS SERVICES	49567	49930	48774	50538	50082	50219	49318	51165	50746	50948	50041	51753	49745	49886	50039	50725
% Chg Same Qtr Last Yr.....	-1.53	-0.03	1.07	-1.43	1.04	0.58	1.11	1.24	1.32	1.45	1.47	1.15	5.37	0.28	0.31	1.37
EDUCATION & HEALTH SERVICES.....	43168	43531	42901	43383	43593	43783	43425	43935	44160	44461	43988	44414	44145	43226	43546	44136
% Chg Same Qtr Last Yr.....	-1.48	-2.56	-3.65	0.18	0.99	0.58	1.22	1.27	1.30	1.55	1.30	1.09	3.88	-2.08	0.74	1.36
LEISURE & HOSPITALITY.....	21508	21581	22359	23155	21719	21752	22571	23437	22055	22113	22951	23791	21506	22088	22299	22639
% Chg Same Qtr Last Yr.....	2.18	3.06	-0.98	1.10	0.98	0.79	0.95	1.22	1.55	1.66	1.68	1.51	6.06	2.70	0.96	1.52
OTHER SERVICES.....	39314	39646	39883	40227	39384	39713	40131	40615	39845	40223	40661	41062	39648	39896	39864	40336
% Chg Same Qtr Last Yr.....	0.83	-0.13	-2.29	-1.26	0.18	0.17	0.62	0.97	1.17	1.28	1.32	1.10	2.81	0.63	-0.08	1.18
GOVERNMENT.....	40631	41597	39399	39893	40717	41707	39426	39889	40651	41626	39302	39705	40010	40280	40436	40367
% Chg Same Qtr Last Yr.....	0.66	0.32	1.26	1.02	0.21	0.26	0.07	-0.01	-0.16	-0.20	-0.32	-0.46	1.08	0.67	0.39	-0.17
FEDERAL, CIVILIAN.....	71308	71683	73111	74669	74457	73538	73589	75185	74876	73926	73889	75383	70978	71781	74063	74469
% Chg Same Qtr Last Yr.....	0.17	1.68	4.41	5.13	4.42	2.59	0.65	0.69	0.56	0.53	0.41	0.26	-1.45	1.13	3.18	0.55
STATE & LOCAL.....	36539	37490	35146	35535	36377	37447	35142	35519	36318	37385	35049	35376	35952	36152	36125	36068
% Chg Same Qtr Last Yr.....	0.78	-0.07	0.52	0.29	-0.44	-0.11	-0.01	-0.04	-0.16	-0.17	-0.27	-0.40	1.55	0.56	-0.07	-0.16

**Table 12: Tennessee Average Annual Wage and Salary Rate by Sector, Seasonally Adjusted (2009 dollars)**

**January 2017**

	History		Forecast 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	2015	2016	2017	2018
TOTAL NONFARM.....	43373	43523	43584	43713	43820	43894	44039	44208	44317	44433	44548	44621	43096	43400	43866	44377
% Chg Prev Qtr SAAR.....	2.36	1.39	0.57	1.18	0.99	0.67	1.33	1.54	0.99	1.05	1.04	0.65	2.90	0.71	1.07	1.16
% Chg Same Qtr Last Yr.....	0.80	0.80	-0.39	1.37	1.03	0.85	1.04	1.13	1.13	1.23	1.16	0.93	2.90	0.71	1.07	1.16
NATURAL RESOURCES, MINING																
AND CONSTRUCTION.....	48100	46740	46811	46979	47084	47123	47218	47429	47589	47632	47705	47758	49225	47390	47101	47589
% Chg Prev Qtr SAAR.....	1.61	-10.84	0.61	1.44	0.90	0.33	0.81	1.80	1.35	0.37	0.61	0.45	4.71	-3.73	-0.61	1.04
% Chg Same Qtr Last Yr.....	-2.31	-6.36	-7.17	-1.94	-2.11	0.82	0.87	0.96	1.07	1.08	1.03	0.69	4.71	-3.73	-0.61	1.04
MANUFACTURING.....	53206	53579	53662	53936	54171	54316	54529	54768	54925	55135	55350	55460	52344	53183	54238	55045
% Chg Prev Qtr SAAR.....	7.25	2.84	0.62	2.06	1.76	1.07	1.58	1.77	1.15	1.54	1.57	0.79	1.38	1.60	1.98	1.49
% Chg Same Qtr Last Yr.....	1.56	2.54	0.05	3.16	1.81	1.38	1.62	1.54	1.39	1.51	1.51	1.26	1.38	1.60	1.98	1.49
DURABLE GOODS.....	52408	52870	52944	53134	53317	53418	53613	53864	54039	54290	54546	54660	51361	52641	53371	54185
% Chg Prev Qtr SAAR.....	0.52	3.57	0.56	1.44	1.39	0.76	1.47	1.88	1.31	1.87	1.90	0.84	1.55	2.49	1.39	1.53
% Chg Same Qtr Last Yr.....	2.00	3.02	0.09	1.52	1.73	1.04	1.26	1.37	1.35	1.63	1.74	1.48	1.55	2.49	1.39	1.53
NONDURABLE GOODS.....	54585	54805	54901	55324	55656	55885	56137	56360	56489	56631	56779	56884	54041	54119	55750	56565
% Chg Prev Qtr SAAR.....	19.71	1.63	0.70	3.12	2.42	1.65	1.82	1.60	0.92	1.01	1.05	0.74	1.14	0.14	3.01	1.46
% Chg Same Qtr Last Yr.....	0.85	1.75	-0.01	6.02	1.96	1.97	2.25	1.87	1.50	1.34	1.14	0.93	1.14	0.14	3.01	1.46
TRADE, TRANSPORTATION, UTILITIES.....	40569	40839	40969	41038	41144	41241	41392	41549	41666	41776	41890	41974	39764	40466	41204	41720
% Chg Prev Qtr SAAR.....	11.41	2.69	1.28	0.68	1.03	0.95	1.47	1.53	1.12	1.06	1.09	0.80	2.39	1.76	1.82	1.25
% Chg Same Qtr Last Yr.....	2.83	2.81	0.17	3.93	1.42	0.98	1.03	1.24	1.27	1.30	1.20	1.02	2.39	1.76	1.82	1.25
WHOLESALE TRADE.....	60528	61088	61176	61573	61803	62011	62241	62473	62668	62862	62994	63143	61434	60730	61907	62749
% Chg Prev Qtr SAAR.....	2.69	3.75	0.58	2.62	1.50	1.35	1.49	1.50	1.25	1.25	0.84	0.95	1.42	-1.14	1.94	1.36
% Chg Same Qtr Last Yr.....	-2.53	-0.49	-0.05	2.40	2.11	1.51	1.74	1.46	1.40	1.37	1.21	1.07	1.42	-1.14	1.94	1.36
RETAIL TRADE.....	27875	27974	27987	28058	28106	28125	28203	28302	28358	28414	28484	28545	27179	27680	28123	28389
% Chg Prev Qtr SAAR.....	15.57	1.43	0.19	1.02	0.68	0.26	1.11	1.42	0.79	0.79	0.99	0.87	2.74	1.84	1.60	0.95
% Chg Same Qtr Last Yr.....	3.37	1.67	-0.27	4.37	0.83	0.54	0.77	0.87	0.90	1.03	1.00	0.86	2.74	1.84	1.60	0.95
TRANSPORTATION & UTILITIES.....	51468	51869	52217	52042	52147	52263	52408	52587	52763	52924	53108	53161	49141	51350	52215	52845
% Chg Prev Qtr SAAR.....	13.68	3.15	2.71	-1.33	0.81	0.89	1.11	1.37	1.35	1.22	1.40	0.40	2.43	4.50	1.69	1.21
% Chg Same Qtr Last Yr.....	7.14	7.29	1.33	4.41	1.32	0.76	0.37	1.05	1.18	1.26	1.33	1.09	2.43	4.50	1.69	1.21
INFORMATION.....	59839	59092	59136	59243	59156	59138	59318	59514	59605	59677	59772	59834	56912	59421	59214	59642
% Chg Prev Qtr SAAR.....	1.50	-4.90	0.30	0.72	-0.58	-0.13	1.22	1.33	0.61	0.48	0.63	0.42	1.51	4.41	-0.35	0.72
% Chg Same Qtr Last Yr.....	5.32	4.63	2.53	-0.63	-1.14	0.08	0.31	0.46	0.76	0.91	0.77	0.54	1.51	4.41	-0.35	0.72
FINANCIAL ACTIVITIES.....	63954	64788	65158	65563	65856	66039	66261	66610	66783	66981	67190	67366	62837	64155	65930	66891
% Chg Prev Qtr SAAR.....	8.11	5.32	2.30	2.51	1.80	1.12	1.36	2.12	1.05	1.19	1.25	1.06	1.33	2.10	2.77	1.46
% Chg Same Qtr Last Yr.....	1.95	3.19	1.80	4.53	2.97	1.93	1.69	1.60	1.41	1.43	1.40	1.14	1.33	2.10	2.77	1.46

(CONTINUED ON NEXT PAGE)

**Table 12: Tennessee Average Annual Wage and Salary Rate by Sector, Seasonally Adjusted (2009 dollars)** **January 2017**

	History		Forecast 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	2015	2016	2017	2018
PROFESSIONAL & BUSINESS SERVICES..	49435	49622	49674	49827	49949	50063	50227	50445	50610	50790	50964	51025	49711	49821	50016	50702
% Chg Prev Qtr SAAR.....	-8.55	1.52	0.42	1.24	0.98	0.91	1.32	1.74	1.32	1.42	1.38	0.48	5.20	0.22	0.39	1.37
% Chg Same Qtr Last Yr.....	-1.60	-0.34	1.07	-1.43	1.04	0.89	1.11	1.24	1.32	1.45	1.47	1.15	5.20	0.22	0.39	1.37
EDUCATION & HEALTH SERVICES.....	43081	43243	43258	43407	43505	43565	43786	43959	44071	44240	44354	44438	44155	43227	43566	44156
% Chg Prev Qtr SAAR.....	-2.26	1.52	0.14	1.39	0.91	0.55	2.05	1.59	1.03	1.54	1.04	0.76	3.87	-2.10	0.78	1.35
% Chg Same Qtr Last Yr.....	-1.48	-2.72	-3.65	0.18	0.99	0.74	1.22	1.27	1.30	1.55	1.30	1.09	3.87	-2.10	0.78	1.35
LEISURE & HOSPITALITY.....	22009	22176	22166	22204	22225	22287	22376	22474	22569	22657	22752	22814	21500	22078	22273	22613
% Chg Prev Qtr SAAR.....	0.86	3.07	-0.18	0.69	0.39	1.12	1.60	1.76	1.70	1.57	1.69	1.08	6.07	2.69	0.88	1.53
% Chg Same Qtr Last Yr.....	2.00	3.35	-0.98	1.10	0.98	0.50	0.95	1.22	1.55	1.66	1.68	1.51	6.07	2.69	0.88	1.53
OTHER SERVICES.....	39793	39789	39747	39796	39863	39910	39995	40180	40330	40422	40523	40622	39652	39908	39891	40364
% Chg Prev Qtr SAAR.....	-4.98	-0.04	-0.42	0.49	0.68	0.47	0.85	1.86	1.51	0.92	1.00	0.99	2.85	0.65	-0.04	1.18
% Chg Same Qtr Last Yr.....	1.14	-0.26	-2.29	-1.26	0.18	0.30	0.62	0.97	1.17	1.28	1.32	1.10	2.85	0.65	-0.04	1.18
GOVERNMENT.....	40316	40357	40352	40387	40402	40371	40380	40384	40337	40292	40252	40197	39945	40251	40385	40316
% Chg Prev Qtr SAAR.....	3.40	0.40	-0.05	0.35	0.15	-0.31	0.08	0.04	-0.46	-0.44	-0.40	-0.55	0.97	0.77	0.33	-0.17
% Chg Same Qtr Last Yr.....	0.97	0.55	1.26	1.02	0.21	0.04	0.07	-0.01	-0.16	-0.20	-0.32	-0.46	0.97	0.77	0.33	-0.17
FEDERAL, CIVILIAN.....	70498	73312	73360	73471	73610	73688	73839	73979	74024	74077	74140	74174	71137	71763	73652	74055
% Chg Prev Qtr SAAR.....	3.56	16.95	0.26	0.61	0.76	0.42	0.82	0.76	0.24	0.29	0.34	0.18	-1.16	0.88	2.63	0.55
% Chg Same Qtr Last Yr.....	-0.63	3.78	4.41	5.13	4.42	0.51	0.65	0.69	0.56	0.53	0.41	0.26	-1.16	0.88	2.63	0.55
STATE & LOCAL.....	36274	36118	36091	36110	36114	36081	36087	36094	36055	36020	35991	35949	35872	36122	36098	36040
% Chg Prev Qtr SAAR.....	3.02	-1.71	-0.31	0.22	0.04	-0.36	0.07	0.08	-0.43	-0.38	-0.32	-0.47	1.38	0.70	-0.07	-0.16
% Chg Same Qtr Last Yr.....	1.25	-0.08	0.52	0.29	-0.44	-0.10	-0.01	-0.05	-0.16	-0.17	-0.27	-0.40	1.38	0.70	-0.07	-0.16

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 2017**

	History		Forecast 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	2015	2016	2017	2018
TOTAL NONFARM.....	47874	48412	48124	49388	49198	49718	49459	50824	50680	51258	51000	52362	47212	48067	49441	50940
% Chg Same Qtr Last Yr.....	1.72	1.88	1.11	3.20	2.77	2.70	2.77	2.91	3.01	3.10	3.12	3.03	3.30	1.81	2.86	3.03
NATURAL RESOURCES, MINING																
AND CONSTRUCTION.....	52693	51035	51575	54499	52468	52289	52914	55986	54013	53833	54497	57541	53910	52475	53043	54582
% Chg Same Qtr Last Yr.....	-1.26	-5.16	-5.78	-0.18	-0.43	2.46	2.60	2.73	2.95	2.95	2.99	2.78	4.89	-2.66	1.08	2.90
MANUFACTURING.....	58795	59472	59723	60483	60895	61412	61725	62491	62891	63492	63869	64588	57336	58896	61129	63186
% Chg Same Qtr Last Yr.....	2.55	3.65	1.55	5.02	3.57	3.26	3.35	3.32	3.28	3.39	3.47	3.36	1.73	2.72	3.79	3.36
DURABLE GOODS.....	57895	58704	58969	59542	59914	60414	60732	61416	61855	62537	62984	63612	56262	58296	60151	62198
% Chg Same Qtr Last Yr.....	3.01	4.11	1.58	3.34	3.49	2.91	2.99	3.15	3.24	3.51	3.71	3.58	1.90	3.62	3.18	3.40
NONDURABLE GOODS.....	60355	60799	61022	62114	62603	63154	63465	64386	64720	65181	65437	66329	59192	59931	62834	64931
% Chg Same Qtr Last Yr.....	1.81	2.89	1.49	7.93	3.72	3.87	4.00	3.66	3.38	3.21	3.11	3.02	1.49	1.25	4.84	3.34
TRADE, TRANSPORTATION, UTILITIES...	44902	45385	45033	46476	46321	46668	46277	47878	47779	48148	47742	49368	43571	44812	46435	47887
% Chg Same Qtr Last Yr.....	3.67	3.92	1.67	5.80	3.16	2.83	2.76	3.02	3.15	3.17	3.17	3.11	2.80	2.85	3.62	3.13
WHOLESALE TRADE.....	66895	67863	68056	69262	69478	69879	70426	71506	71758	72150	72661	73767	67282	67314	69761	72019
% Chg Same Qtr Last Yr.....	-1.44	0.98	1.46	4.24	3.86	2.97	3.48	3.24	3.28	3.25	3.17	3.16	1.77	0.05	3.64	3.24
RETAIL TRADE.....	30807	31080	30627	31919	31596	31868	31391	32761	32471	32791	32319	33726	29788	30639	31694	32586
% Chg Same Qtr Last Yr.....	4.05	2.60	1.23	6.24	2.56	2.54	2.50	2.64	2.77	2.90	2.96	2.94	3.18	2.86	3.44	2.81
TRANSPORTATION & UTILITIES.....	57208	57688	57392	58692	58959	59169	58588	60345	60763	61025	60521	62265	53830	56877	58852	60664
% Chg Same Qtr Last Yr.....	8.11	8.49	2.85	6.29	3.06	2.57	2.08	2.82	3.06	3.14	3.30	3.18	2.82	5.66	3.47	3.08
INFORMATION.....	65786	66124	65913	66270	66154	66926	67248	67740	67893	68786	69077	69513	62338	65833	66649	68374
% Chg Same Qtr Last Yr.....	6.17	6.49	4.07	1.16	0.56	1.21	2.02	2.22	2.63	2.78	2.72	2.62	1.82	5.61	1.24	2.59
FINANCIAL ACTIVITIES.....	70697	71701	72374	73820	74051	74405	74860	76311	76487	76863	77381	78774	68762	71036	74284	76761
% Chg Same Qtr Last Yr.....	3.14	4.33	3.33	6.41	4.74	3.77	3.44	3.38	3.29	3.30	3.37	3.23	1.59	3.31	4.57	3.33
PROFESSIONAL & BUSINESS SERVICES	54781	55380	54405	56576	56302	56747	55954	58281	58106	58636	57876	60170	54485	55238	56395	58225
% Chg Same Qtr Last Yr.....	-0.59	1.00	2.59	0.34	2.78	2.47	2.85	3.01	3.20	3.33	3.43	3.24	5.73	1.38	2.09	3.25
EDUCATION & HEALTH SERVICES.....	47708	48281	47854	48566	49007	49473	49267	50045	50565	51170	50875	51638	48354	47866	49079	50664
% Chg Same Qtr Last Yr.....	-0.54	-1.55	-2.20	1.99	2.72	2.47	2.95	3.04	3.18	3.43	3.26	3.18	4.25	-1.01	2.53	3.23
LEISURE & HOSPITALITY.....	23770	23936	24941	25922	24417	24579	25608	26696	25254	25449	26544	27661	23557	24458	25131	25986
% Chg Same Qtr Last Yr.....	3.16	4.12	0.51	2.92	2.72	2.69	2.68	2.99	3.43	3.54	3.65	3.61	6.44	3.83	2.75	3.40
OTHER SERVICES.....	43450	43973	44487	45033	44275	44875	45531	46264	45625	46292	47027	47741	43429	44178	44929	46302
% Chg Same Qtr Last Yr.....	1.79	0.90	-0.82	0.51	1.90	2.05	2.35	2.73	3.05	3.16	3.28	3.19	3.17	1.73	1.70	3.06
GOVERNMENT.....	44905	46137	43947	44659	45774	47128	44731	45437	46548	47907	45454	46163	43825	44604	45573	46336
% Chg Same Qtr Last Yr.....	1.62	1.35	2.78	2.83	1.94	2.15	1.78	1.74	1.69	1.65	1.62	1.60	1.44	1.78	2.17	1.68
FEDERAL, CIVILIAN.....	78809	79506	81552	83590	83704	83096	83490	85642	85736	85081	85457	87644	77741	79493	83470	85479
% Chg Same Qtr Last Yr.....	1.13	2.73	5.98	7.02	6.21	4.52	2.38	2.46	2.43	2.39	2.36	2.34	-1.11	2.25	5.00	2.41
STATE & LOCAL.....	40383	41582	39203	39781	40895	42315	39870	40459	41586	43026	40536	41130	39380	40033	40715	41402
% Chg Same Qtr Last Yr.....	1.75	0.96	2.03	2.10	1.27	1.76	1.70	1.71	1.69	1.68	1.67	1.66	1.91	1.66	1.70	1.69

**Table 14: Tennessee Average Annual Wage and Salary Rate by Sector, Seasonally Adjusted (current dollars)****January 2017**

	History												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	2015	2016	2017	2018
	TOTAL NONFARM.....	47936	48273	48616	48935	49262	49599	49965	50357	50745	51138	51522	51878	47205	48061	49440
% Chg Prev Qtr SAAR.....	4.42	2.85	2.87	2.65	2.70	2.76	2.98	3.17	3.12	3.13	3.04	2.79	3.27	1.81	2.87	3.03
% Chg Same Qtr Last Yr.....	1.76	1.84	1.11	3.20	2.77	2.75	2.77	2.90	3.01	3.10	3.12	3.02	3.27	1.81	2.87	3.03
NATURAL RESOURCES, MINING & CONSTRUCTION.....	53159	51841	52215	52591	52932	53248	53571	54026	54491	54819	55174	55526	53921	52475	53086	54628
% Chg Prev Qtr SAAR.....	3.66	-9.55	2.92	2.91	2.62	2.41	2.45	3.44	3.49	2.43	2.61	2.58	5.08	-2.68	1.16	2.90
% Chg Same Qtr Last Yr.....	-1.38	-5.39	-5.78	-0.18	-0.43	2.71	2.60	2.73	2.95	2.95	2.99	2.78	5.08	-2.68	1.16	2.90
MANUFACTURING.....	58802	59427	59857	60379	60899	61376	61866	62385	62892	63454	64016	64480	57336	58895	61130	63187
% Chg Prev Qtr SAAR.....	9.41	4.31	2.93	3.54	3.49	3.17	3.23	3.40	3.29	3.63	3.59	2.93	1.74	2.72	3.79	3.36
% Chg Same Qtr Last Yr.....	2.53	3.60	1.56	5.02	3.57	3.28	3.36	3.32	3.27	3.39	3.47	3.36	1.74	2.72	3.79	3.36
DURABLE GOODS.....	57921	58640	59057	59482	59939	60361	60827	61355	61878	62481	63085	63550	56260	58294	60152	62200
% Chg Prev Qtr SAAR.....	2.55	5.06	2.87	2.91	3.11	2.85	3.12	3.52	3.45	3.96	3.92	2.98	1.91	3.62	3.19	3.40
% Chg Same Qtr Last Yr.....	2.98	4.08	1.60	3.34	3.48	2.93	3.00	3.15	3.23	3.51	3.71	3.58	1.91	3.62	3.19	3.40
NONDURABLE GOODS.....	60327	60787	61239	61933	62568	63148	63690	64199	64683	65177	65668	66136	59194	59935	62835	64931
% Chg Prev Qtr SAAR.....	22.12	3.09	3.01	4.61	4.16	3.76	3.47	3.23	3.05	3.09	3.05	2.88	1.50	1.25	4.84	3.34
% Chg Same Qtr Last Yr.....	1.81	2.80	1.50	7.92	3.72	3.89	4.00	3.66	3.38	3.21	3.11	3.02	1.50	1.25	4.84	3.34
TRADE, TRANSPORTATION, UTILITIES.....	44836	45296	45699	45941	46253	46602	46961	47328	47709	48080	48448	48801	43557	44814	46439	47891
% Chg Prev Qtr SAAR.....	13.65	4.17	3.60	2.14	2.75	3.05	3.12	3.16	3.26	3.14	3.10	2.94	2.75	2.89	3.63	3.13
% Chg Same Qtr Last Yr.....	3.82	3.87	1.67	5.80	3.16	2.88	2.76	3.02	3.15	3.17	3.17	3.11	2.75	2.89	3.63	3.13
WHOLESALE TRADE.....	66895	67755	68239	68929	69478	70071	70615	71162	71758	72348	72856	73413	67289	67253	69773	72031
% Chg Prev Qtr SAAR.....	4.76	5.24	2.89	4.11	3.23	3.46	3.14	3.13	3.39	3.33	2.84	3.09	1.77	-0.05	3.75	3.24
% Chg Same Qtr Last Yr.....	-1.60	0.54	1.46	4.24	3.86	3.42	3.48	3.24	3.28	3.25	3.17	3.16	1.77	-0.05	3.75	3.24
RETAIL TRADE.....	30807	31027	31218	31410	31596	31780	31997	32239	32471	32701	32943	33188	29772	30654	31696	32588
% Chg Prev Qtr SAAR.....	17.90	2.89	2.49	2.49	2.39	2.35	2.76	3.05	2.92	2.86	2.99	3.01	3.10	2.96	3.40	2.82
% Chg Same Qtr Last Yr.....	4.36	2.71	1.23	6.24	2.56	2.43	2.50	2.64	2.77	2.90	2.95	2.94	3.10	2.96	3.40	2.82
TRANSPORTATION & UTILITIES.....	56882	57530	58246	58260	58623	59057	59460	59901	60417	60909	61422	61807	53827	56868	58850	60662
% Chg Prev Qtr SAAR.....	15.97	4.63	5.07	0.10	2.52	2.99	2.76	3.00	3.49	3.30	3.41	2.53	2.80	5.65	3.49	3.08
% Chg Same Qtr Last Yr.....	8.17	8.40	2.85	6.29	3.06	2.65	2.08	2.82	3.06	3.14	3.30	3.18	2.80	5.65	3.49	3.08
INFORMATION.....	66133	65541	65964	66321	66503	66824	67299	67791	68251	68682	69129	69566	62338	65799	66737	68463
% Chg Prev Qtr SAAR.....	3.55	-3.53	2.60	2.18	1.10	1.95	2.87	2.96	2.74	2.55	2.63	2.55	1.86	5.55	1.42	2.59
% Chg Same Qtr Last Yr.....	6.32	5.71	4.07	1.16	0.56	1.96	2.02	2.22	2.63	2.78	2.72	2.62	1.86	5.55	1.42	2.59
FINANCIAL ACTIVITIES.....	70681	71859	72680	73396	74034	74622	75177	75874	76470	77088	77708	78323	68829	71048	74308	76785
% Chg Prev Qtr SAAR.....	10.28	6.83	4.65	4.00	3.52	3.21	3.01	3.76	3.18	3.27	3.26	3.20	1.69	3.22	4.59	3.33
% Chg Same Qtr Last Yr.....	2.93	4.25	3.33	6.41	4.74	3.85	3.44	3.38	3.29	3.30	3.37	3.23	1.69	3.22	4.59	3.33

(CONTINUED ON NEXT PAGE)

**Table 14: Tennessee Average Annual Wage and Salary Rate by Sector, Seasonally Adjusted (current dollars) January 2017**

	History											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	2015	2016	2017	2018
PROFESSIONAL & BUSINESS SERVICES.....	54635	55038	55408	55780	56152	56570	56985	57461	57951	58453	58943	59323	54449	55168	56372	58202
% Chg Prev Qtr SAAR.....	-6.70	2.98	2.72	2.71	2.70	3.01	2.97	3.38	3.46	3.51	3.39	2.61	5.57	1.32	2.18	3.25
% Chg Same Qtr Last Yr.....	-0.65	0.69	2.59	0.34	2.78	2.78	2.85	3.01	3.20	3.33	3.43	3.24	5.57	1.32	2.18	3.25
EDUCATION & HEALTH SERVICES.....	47612	47963	48252	48593	48908	49227	49677	50073	50464	50915	51298	51666	48366	47868	49101	50687
% Chg Prev Qtr SAAR.....	-0.29	2.98	2.43	2.86	2.62	2.63	3.71	3.22	3.16	3.63	3.04	2.90	4.24	-1.03	2.58	3.23
% Chg Same Qtr Last Yr.....	-0.54	-1.71	-2.20	1.99	2.72	2.64	2.95	3.04	3.18	3.43	3.26	3.18	4.24	-1.03	2.58	3.23
LEISURE & HOSPITALITY.....	24324	24596	24725	24857	24986	25184	25386	25600	25842	26076	26314	26524	23551	24449	25103	25958
% Chg Prev Qtr SAAR.....	2.89	4.55	2.11	2.15	2.09	3.22	3.25	3.40	3.85	3.66	3.71	3.23	6.45	3.81	2.68	3.41
% Chg Same Qtr Last Yr.....	2.97	4.42	0.51	2.92	2.72	2.39	2.68	2.99	3.43	3.54	3.65	3.61	6.45	3.81	2.68	3.41
OTHER SERVICES.....	43979	44132	44336	44550	44814	45098	45376	45768	46180	46522	46867	47229	43434	44192	44960	46334
% Chg Prev Qtr SAAR.....	-3.06	1.40	1.86	1.95	2.39	2.56	2.49	3.50	3.65	2.99	3.00	3.13	3.22	1.74	1.74	3.06
% Chg Same Qtr Last Yr.....	2.11	0.77	-0.82	0.51	1.90	2.19	2.35	2.73	3.05	3.16	3.28	3.19	3.22	1.74	1.74	3.06
GOVERNMENT.....	44557	44761	45010	45212	45420	45619	45813	46000	46188	46372	46554	46735	43753	44574	45516	46278
% Chg Prev Qtr SAAR.....	5.48	1.85	2.25	1.80	1.85	1.76	1.71	1.65	1.64	1.61	1.58	1.56	1.33	1.88	2.11	1.68
% Chg Same Qtr Last Yr.....	1.94	1.58	2.78	2.83	1.94	1.92	1.78	1.74	1.69	1.65	1.62	1.60	1.33	1.88	2.11	1.68
FEDERAL, CIVILIAN.....	77913	81313	81829	82249	82752	83266	83774	84268	84761	85254	85747	86238	77915	79476	83010	85008
% Chg Prev Qtr SAAR.....	5.65	18.63	2.56	2.07	2.47	2.51	2.46	2.38	2.36	2.35	2.33	2.31	-0.82	2.00	4.45	2.41
% Chg Same Qtr Last Yr.....	0.32	4.85	5.98	7.02	6.21	2.40	2.38	2.46	2.43	2.39	2.36	2.34	-0.82	2.00	4.45	2.41
STATE & LOCAL.....	40090	40060	40257	40424	40599	40770	40942	41114	41285	41456	41626	41796	39291	40000	40684	41370
% Chg Prev Qtr SAAR.....	5.10	-0.29	1.98	1.67	1.74	1.70	1.70	1.69	1.67	1.66	1.65	1.64	1.74	1.80	1.71	1.69
% Chg Same Qtr Last Yr.....	2.21	0.95	2.03	2.10	1.27	1.77	1.70	1.71	1.69	1.68	1.67	1.66	1.74	1.80	1.71	1.69

Boyd Center for Business and Economic Research, University of Tennessee

Tennessee Econometric Model

**Table 15: Tennessee Civilian Labor Force and Unemployment Rate, Not Seasonally Adjusted** **January 2017**

	History		Forecast 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	2015	2016	2017	2018
CIVILIAN LABOR FORCE (THOUS).....	3143	3173	3192	3173	3194	3206	3201	3179	3201	3218	3213	3195	3063	3152	3194	3203
% Chg Same Qtr Last Yr.....	2.13	3.53	4.12	2.40	1.64	1.02	0.30	0.19	0.20	0.39	0.37	0.48	0.53	2.90	1.33	0.29
EMPLOYED PERSONS (THOUS).....	3010	3016	3046	3034	3040	3049	3059	3044	3049	3064	3072	3060	2886	3008	3045	3057
% Chg Same Qtr Last Yr.....	3.86	4.46	4.96	2.51	0.99	1.09	0.41	0.34	0.31	0.47	0.45	0.52	1.34	4.22	1.24	0.39
UNEMPLOYED PERSONS (THOUS).....	133	157	146	140	154	157	143	135	151	155	141	135	177	144	148	146
% Chg Same Qtr Last Yr.....	-25.83	-11.58	-10.78	0.09	16.38	-0.30	-1.89	-2.95	-2.02	-1.25	-1.24	-0.39	-11.12	-18.69	3.24	-1.85
PARTICIPATION RATE (PERCENT).....	60.3	60.7	60.8	60.3	60.6	60.6	60.4	59.8	60.0	60.2	59.9	59.4	59.3	60.3	60.5	60.0
% Chg Same Qtr Last Yr.....	1.03	2.40	2.98	1.24	0.51	-0.09	-0.79	-0.90	-0.88	-0.69	-0.70	-0.58	-0.48	1.79	0.21	-0.79
UNEMPLOYMENT RATE (PERCENT).....	4.2	5.0	4.6	4.4	4.8	4.9	4.5	4.3	4.7	4.8	4.4	4.2	5.8	4.6	4.6	4.5

Boyd Center for Business and Economic Research, University of Tennessee

Tennessee Econometric Model

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

**January 2017**

	History		Forecast 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	2015	2016	2017	2018
CIVILIAN LABOR FORCE (THOUS).....	3142	3137	3188	3192	3193	3193	3198	3198	3200	3206	3209	3213	3056	3146	3194	3203
% Chg Prev Qtr SAAR.....	3.19	-0.69	6.75	0.47	0.18	0.00	0.54	-0.01	0.26	0.78	0.44	0.44	0.95	2.94	1.53	0.28
% Chg Same Qtr Last Yr.....	2.84	2.76	4.07	2.39	1.63	1.81	0.30	0.18	0.20	0.39	0.37	0.48	0.95	2.94	1.53	0.28
EMPLOYED PERSONS (THOUS).....	3011	2997	3035	3038	3041	3043	3047	3048	3051	3057	3061	3064	2880	3002	3042	3054
% Chg Prev Qtr SAAR.....	6.56	-1.83	5.12	0.42	0.40	0.18	0.63	0.14	0.29	0.84	0.52	0.43	1.73	4.23	1.35	0.39
% Chg Same Qtr Last Yr.....	4.62	4.03	4.96	2.51	0.99	1.51	0.41	0.34	0.31	0.47	0.45	0.52	1.73	4.23	1.35	0.39
UNEMPLOYED PERSONS (THOUS).....	131	139	153	154	152	151	150	149	149	149	148	149	176	144	152	149
% Chg Prev Qtr SAAR.....	-47.53	28.49	46.74	1.47	-4.10	-3.58	-1.27	-2.84	-0.35	-0.51	-1.26	0.57	-10.30	-18.10	5.24	-1.87
% Chg Same Qtr Last Yr.....	-26.10	-18.62	-10.78	0.09	16.38	8.32	-1.89	-2.95	-2.02	-1.25	-1.24	-0.39	-10.30	-18.10	5.24	-1.87
PARTICIPATION RATE (PERCENT).....	60.2	60.0	60.8	60.7	60.5	60.4	60.3	60.1	60.0	60.0	59.9	59.8	59.2	60.2	60.5	60.0
% Chg Prev Qtr SAAR.....	2.01	-1.82	5.53	-0.63	-0.92	-1.09	-0.55	-1.07	-0.81	-0.29	-0.62	-0.63	-0.06	1.84	0.40	-0.79
% Chg Same Qtr Last Yr.....	1.73	1.64	2.93	1.23	0.50	0.69	-0.80	-0.91	-0.88	-0.68	-0.70	-0.59	-0.06	1.84	0.40	-0.79
UNEMPLOYMENT RATE (PERCENT).....	4.2	4.4	4.8	4.8	4.8	4.7	4.7	4.7	4.7	4.6	4.6	4.6	5.8	4.6	4.8	4.6

Boyd Center for Business and Economic Research, University of Tennessee

Tennessee Econometric Model



**Table 17: Tennessee Taxable Sales, Not Seasonally Adjusted (millions of 2009 dollars)** **January 2017**

	History		Forecast 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	2015	2016	2017	2018
TOTAL TAXABLE SALES.....	26990	26595	28571	25248	27622	27170	29222	25839	28248	27785	29854	26330	103192	107069	109262	111725
% Chg Same Qtr Last Yr.....	3.66	2.57	1.10	1.34	2.34	2.16	2.28	2.34	2.27	2.26	2.16	1.90	6.30	3.76	2.05	2.25
AUTO DEALERS.....	2840	2992	2694	2883	2963	3060	2760	2949	3028	3123	2815	3000	10778	11303	11666	11915
% Chg Same Qtr Last Yr.....	3.35	4.27	2.48	3.80	4.35	2.28	2.45	2.31	2.18	2.06	1.97	1.72	11.35	4.88	3.21	2.13
PURCHASES FROM MANUFACTURERS....	1159	1161	1360	959	1177	1187	1397	984	1206	1216	1426	1002	4469	4630	4720	4833
% Chg Same Qtr Last Yr.....	5.52	2.25	0.58	0.98	1.48	2.23	2.76	2.57	2.51	2.49	2.06	1.86	8.81	3.61	1.94	2.38
MISC DURABLE GOODS.....	4753	4528	4668	4076	4885	4651	4797	4193	5023	4781	4923	4297	17049	18050	18409	18921
% Chg Same Qtr Last Yr.....	4.60	4.23	0.71	-0.62	2.78	2.73	2.76	2.89	2.83	2.79	2.63	2.46	5.92	5.87	1.99	2.78
EATING AND DRINKING PLACES.....	2944	2889	2846	2763	3005	2956	2925	2839	3087	3042	3011	2921	10982	11383	11648	11980
% Chg Same Qtr Last Yr.....	3.98	2.92	1.77	2.15	2.06	2.33	2.77	2.75	2.75	2.91	2.97	2.91	7.08	3.65	2.33	2.85
FOOD STORES.....	2445	2507	2703	2404	2514	2540	2742	2438	2546	2575	2778	2466	9809	10015	10199	10338
% Chg Same Qtr Last Yr.....	1.10	2.09	2.84	1.85	2.81	1.31	1.45	1.43	1.31	1.36	1.34	1.15	3.40	2.10	1.84	1.36
LIQUOR STORES.....	227	200	251	201	209	205	256	205	212	208	260	208	889	891	872	886
% Chg Same Qtr Last Yr.....	7.35	-5.04	-6.29	-5.79	-7.60	2.58	1.97	1.68	1.44	1.64	1.69	1.57	8.32	0.30	-2.19	1.62
HOTELS AND MOTELS.....	888	911	824	711	944	960	871	752	990	1000	900	771	2954	3282	3486	3641
% Chg Same Qtr Last Yr.....	10.95	9.52	10.24	8.02	6.30	5.42	5.61	5.70	4.84	4.16	3.33	2.51	11.63	11.10	6.23	4.45
OTHER RETAIL AND SERVICE.....	8072	7876	9209	7736	8261	8034	9416	7931	8456	8222	9636	8088	31678	32780	33447	34245
% Chg Same Qtr Last Yr.....	3.71	2.22	0.24	1.49	2.34	2.00	2.25	2.52	2.36	2.35	2.34	1.97	5.91	3.48	2.04	2.39
MISC NONDURABLE GOODS.....	2223	2141	2538	2094	2254	2171	2591	2136	2297	2222	2649	2180	8656	8969	9110	9303
% Chg Same Qtr Last Yr.....	4.26	2.12	0.91	1.34	1.38	1.42	2.09	1.98	1.90	2.32	2.24	2.07	4.38	3.61	1.58	2.11
TRANSPORTATION, COMMUNICATION.....	1439	1391	1478	1420	1411	1406	1467	1411	1402	1395	1455	1397	5929	5766	5704	5663
% Chg Same Qtr Last Yr.....	-2.14	-5.68	-1.51	-2.63	-2.00	1.09	-0.70	-0.62	-0.58	-0.78	-0.85	-1.00	2.51	-2.75	-1.08	-0.71
PER CAPITA (\$)......	4013	3944	4226	3725	4065	3988	4279	3774	4116	4038	4328	3808	15478	15896	16057	16255
% Chg Same Qtr Last Yr.....	2.59	1.51	0.07	0.31	1.30	1.13	1.25	1.31	1.24	1.24	1.15	0.89	5.19	2.70	1.01	1.23

Boyd Center for Business and Economic Research, University of Tennessee

Tennessee Econometric Model

**Table 18: Tennessee Taxable Sales, Seasonally Adjusted (millions of 2009 dollars)**

**January 2017**

	History		Forecast 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	2015	2016	2017	2018
TOTAL TAXABLE SALES.....	26628	26798	26913	27075	27245	27374	27530	27716	27857	27990	28126	28247	103022	107056	109223	111688
% Chg Prev Qtr SAAR.....	-1.32	2.59	1.72	2.43	2.53	1.91	2.30	2.73	2.05	1.93	1.95	1.73	6.24	3.92	2.02	2.26
% Chg Same Qtr Last Yr.....	3.65	2.43	1.16	1.34	2.32	2.15	2.29	2.37	2.25	2.25	2.16	1.92	6.24	3.92	2.02	2.26
AUTO DEALERS.....	2790	2860	2868	2892	2912	2925	2938	2959	2975	2985	2996	3009	10778	11304	11667	11915
% Chg Prev Qtr SAAR.....	0.60	10.35	1.09	3.43	2.77	1.85	1.75	2.87	2.24	1.39	1.40	1.84	11.33	4.88	3.21	2.13
% Chg Same Qtr Last Yr.....	3.33	4.22	2.48	3.80	4.35	2.28	2.45	2.31	2.18	2.06	1.97	1.72	11.33	4.88	3.21	2.13
PURCHASES FROM MANUFACTURERS....	1158	1157	1159	1168	1175	1182	1191	1198	1205	1212	1215	1220	4451	4630	4716	4830
% Chg Prev Qtr SAAR.....	0.71	-0.55	0.78	3.02	2.72	2.44	2.86	2.27	2.46	2.38	1.15	1.45	8.96	4.01	1.86	2.41
% Chg Same Qtr Last Yr.....	5.73	2.11	0.58	0.98	1.48	2.23	2.76	2.57	2.51	2.49	2.06	1.86	8.96	4.01	1.86	2.41
MISC DURABLE GOODS.....	4463	4490	4523	4554	4587	4612	4648	4685	4717	4741	4770	4801	17003	18058	18401	18913
% Chg Prev Qtr SAAR.....	-10.06	2.47	2.97	2.78	2.91	2.24	3.13	3.27	2.68	2.08	2.49	2.60	5.75	6.20	1.90	2.78
% Chg Same Qtr Last Yr.....	4.62	4.12	0.71	-0.62	2.78	2.73	2.76	2.89	2.83	2.79	2.63	2.46	5.75	6.20	1.90	2.78
EATING AND DRINKING PLACES.....	2844	2854	2862	2882	2903	2921	2941	2961	2983	3006	3029	3047	10975	11382	11647	11978
% Chg Prev Qtr SAAR.....	3.29	1.41	1.11	2.80	2.94	2.46	2.88	2.72	2.93	3.12	3.10	2.47	7.07	3.70	2.33	2.85
% Chg Same Qtr Last Yr.....	3.92	2.90	1.77	2.15	2.06	2.33	2.77	2.75	2.75	2.91	2.97	2.91	7.07	3.70	2.33	2.85
FOOD STORES.....	2476	2520	2525	2536	2546	2553	2562	2572	2579	2587	2596	2602	9808	10012	10197	10335
% Chg Prev Qtr SAAR.....	-2.18	7.19	0.83	1.78	1.58	1.04	1.40	1.69	1.11	1.24	1.31	0.93	3.43	2.08	1.85	1.36
% Chg Same Qtr Last Yr.....	1.14	2.02	2.84	1.85	2.81	1.31	1.45	1.43	1.31	1.36	1.34	1.15	3.43	2.08	1.85	1.36
LIQUOR STORES.....	236	213	215	217	218	218	219	220	221	222	223	224	887	893	872	886
% Chg Prev Qtr SAAR.....	10.13	-33.48	3.94	3.45	1.91	1.06	1.46	2.30	0.94	1.86	1.68	1.79	8.30	0.70	-2.41	1.61
% Chg Same Qtr Last Yr.....	7.44	-5.09	-6.29	-5.79	-7.60	2.58	1.97	1.68	1.44	1.64	1.69	1.57	8.30	0.70	-2.41	1.61
HOTELS AND MOTELS.....	814	831	841	852	865	876	888	901	907	913	918	924	2944	3275	3482	3638
% Chg Prev Qtr SAAR.....	13.12	8.76	4.82	5.58	6.09	5.18	5.61	5.92	2.69	2.48	2.25	2.61	11.44	11.26	6.32	4.49
% Chg Same Qtr Last Yr.....	10.78	9.27	10.24	8.02	6.30	5.42	5.61	5.70	4.84	4.16	3.33	2.51	11.44	11.26	6.32	4.49
OTHER RETAIL AND SERVICE.....	8148	8218	8243	8284	8338	8383	8428	8493	8535	8579	8625	8660	31607	32770	33432	34231
% Chg Prev Qtr SAAR.....	-0.69	3.49	1.21	2.01	2.65	2.16	2.17	3.11	1.99	2.12	2.12	1.65	5.82	3.68	2.02	2.39
% Chg Same Qtr Last Yr.....	3.77	2.12	0.24	1.49	2.34	2.00	2.25	2.52	2.36	2.35	2.34	1.97	5.82	3.68	2.02	2.39
MISC NONDURABLE GOODS.....	2244	2246	2246	2261	2275	2278	2293	2305	2318	2331	2344	2353	8641	8967	9106	9298
% Chg Prev Qtr SAAR.....	2.38	0.44	-0.15	2.72	2.53	0.60	2.53	2.28	2.20	2.27	2.19	1.62	4.30	3.78	1.56	2.11
% Chg Same Qtr Last Yr.....	4.23	2.05	0.91	1.34	1.38	1.42	2.09	1.98	1.90	2.32	2.24	2.07	4.30	3.78	1.56	2.11
TRANSPORTATION, COMMUNICATION.....	1455	1410	1433	1430	1426	1425	1423	1421	1418	1414	1411	1407	5928	5766	5704	5663
% Chg Prev Qtr SAAR.....	-3.63	-11.86	6.67	-0.79	-1.11	-0.21	-0.69	-0.48	-0.95	-1.01	-0.94	-1.11	2.60	-2.74	-1.08	-0.71
% Chg Same Qtr Last Yr.....	-2.03	-5.75	-1.51	-2.63	-2.00	1.09	-0.70	-0.62	-0.58	-0.78	-0.85	-1.00	2.60	-2.74	-1.08	-0.71
PER CAPITA (\$)......	3959	3974	3981	3995	4009	4018	4031	4048	4059	4068	4077	4085	15455	15896	16054	16252
% Chg Prev Qtr SAAR.....	-2.33	1.54	0.69	1.39	1.49	0.88	1.28	1.70	1.04	0.92	0.94	0.73	5.13	2.86	0.99	1.24
% Chg Same Qtr Last Yr.....	2.58	1.38	0.13	0.31	1.28	1.11	1.26	1.34	1.22	1.23	1.15	0.91	5.13	2.86	0.99	1.24

**Table 19: Tennessee Taxable Sales, Not Seasonally Adjusted (millions of current dollars)****January 2017**

	History		Forecast 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	2015	2016	2017	2018
TOTAL TAXABLE SALES.....	29829	29497	31869	28264	31052	30702	33154	29432	32345	31977	34528	30612	113052	118593	123173	128282
% Chg Same Qtr Last Yr.....	4.65	3.62	2.62	3.17	4.10	4.08	4.03	4.13	4.16	4.15	4.14	4.01	6.68	4.90	3.86	4.15
AUTO DEALERS.....	3138	3318	3006	3227	3331	3458	3132	3360	3467	3594	3256	3488	11806	12516	13148	13676
% Chg Same Qtr Last Yr.....	4.33	5.34	4.02	5.66	6.14	4.20	4.20	4.10	4.07	3.95	3.95	3.82	11.75	6.02	5.05	4.02
PURCHASES FROM MANUFACTURERS....	1281	1288	1517	1074	1323	1341	1586	1121	1381	1400	1650	1165	4897	5131	5323	5551
% Chg Same Qtr Last Yr.....	6.53	3.30	2.09	2.80	3.22	4.16	4.52	4.37	4.41	4.39	4.04	3.97	9.20	4.77	3.75	4.29
MISC DURABLE GOODS.....	5253	5022	5207	4563	5492	5256	5443	4777	5752	5502	5694	4996	18679	19992	20753	21725
% Chg Same Qtr Last Yr.....	5.60	5.30	2.23	1.17	4.55	4.66	4.52	4.69	4.74	4.69	4.62	4.58	6.30	7.03	3.81	4.68
EATING AND DRINKING PLACES.....	3254	3204	3174	3093	3378	3340	3318	3234	3535	3501	3483	3396	12030	12606	13129	13753
% Chg Same Qtr Last Yr.....	4.98	3.98	3.30	3.99	3.82	4.25	4.53	4.55	4.65	4.82	4.97	5.03	7.46	4.79	4.15	4.75
FOOD STORES.....	2702	2781	3015	2691	2826	2870	3111	2777	2916	2963	3213	2867	10745	11093	11498	11870
% Chg Same Qtr Last Yr.....	2.06	3.14	4.39	3.68	4.58	3.21	3.19	3.20	3.19	3.23	3.30	3.24	3.76	3.24	3.65	3.23
LIQUOR STORES.....	250	221	280	226	235	231	291	233	243	240	301	242	974	987	983	1017
% Chg Same Qtr Last Yr.....	8.37	-4.07	-4.88	-4.10	-6.01	4.51	3.71	3.46	3.32	3.52	3.66	3.67	8.71	1.40	-0.43	3.50
HOTELS AND MOTELS.....	981	1010	919	796	1061	1085	988	857	1133	1151	1040	896	3237	3635	3930	4181
% Chg Same Qtr Last Yr.....	12.01	10.64	11.90	9.97	8.13	7.40	7.42	7.55	6.79	6.09	5.33	4.63	12.03	12.32	8.11	6.38
OTHER RETAIL AND SERVICE.....	8922	8735	10273	8660	9287	9078	10683	9034	9682	9463	11145	9403	34707	36311	37708	39324
% Chg Same Qtr Last Yr.....	4.70	3.27	1.74	3.32	4.10	3.92	4.00	4.32	4.26	4.24	4.32	4.08	6.29	4.62	3.85	4.28
MISC NONDURABLE GOODS.....	2457	2375	2830	2345	2534	2454	2939	2433	2630	2557	3063	2535	9484	9935	10271	10683
% Chg Same Qtr Last Yr.....	5.26	3.17	2.43	3.16	3.12	3.32	3.84	3.77	3.79	4.21	4.22	4.18	4.75	4.76	3.38	4.01
TRANSPORTATION, COMMUNICATION.....	1591	1543	1648	1589	1586	1589	1665	1607	1606	1606	1683	1624	6494	6385	6429	6501
% Chg Same Qtr Last Yr.....	-1.21	-4.71	-0.03	-0.88	-0.31	2.99	1.00	1.12	1.26	1.05	1.08	1.05	2.87	-1.68	0.68	1.13
PER CAPITA (\$)......	4435	4374	4714	4170	4570	4507	4855	4299	4712	4647	5006	4427	16957	17607	18102	18664
% Chg Same Qtr Last Yr.....	3.57	2.56	1.57	2.12	3.04	3.03	2.98	3.09	3.12	3.12	3.11	2.98	5.56	3.83	2.81	3.11

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 2017**

	History		Forecast 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	2015	2016	2017	2018
TOTAL TAXABLE SALES.....	29429	29723	30020	30310	30628	30932	31234	31570	31897	32214	32529	32841	112852	118552	123104	128210
% Chg Prev Qtr SAAR.....	0.67	4.06	4.06	3.91	4.27	4.03	3.97	4.38	4.21	4.03	3.97	3.89	6.62	5.05	3.84	4.15
% Chg Same Qtr Last Yr.....	4.64	3.49	2.68	3.17	4.08	4.07	4.04	4.16	4.14	4.14	4.14	4.02	6.62	5.05	3.84	4.15
AUTO DEALERS.....	3084	3172	3199	3237	3273	3305	3333	3370	3407	3436	3465	3499	11806	12519	13149	13678
% Chg Prev Qtr SAAR.....	2.63	11.94	3.41	4.93	4.51	3.97	3.41	4.52	4.40	3.47	3.41	4.00	11.73	6.03	5.04	4.02
% Chg Same Qtr Last Yr.....	4.31	5.29	4.02	5.66	6.14	4.20	4.20	4.10	4.07	3.95	3.95	3.82	11.73	6.03	5.04	4.02
PURCHASES FROM MANUFACTURERS.....	1280	1283	1293	1307	1321	1336	1351	1364	1380	1395	1406	1418	4876	5127	5316	5544
% Chg Prev Qtr SAAR.....	2.74	0.88	3.09	4.51	4.46	4.57	4.53	3.91	4.62	4.49	3.16	3.60	9.34	5.15	3.68	4.30
% Chg Same Qtr Last Yr.....	6.74	3.16	2.09	2.80	3.22	4.16	4.52	4.37	4.41	4.39	4.04	3.97	9.34	5.15	3.68	4.30
MISC DURABLE GOODS.....	4932	4980	5045	5098	5156	5212	5273	5337	5401	5456	5517	5582	18627	19996	20740	21711
% Chg Prev Qtr SAAR.....	-8.25	3.94	5.34	4.27	4.66	4.36	4.81	4.93	4.85	4.18	4.52	4.78	6.13	7.35	3.72	4.68
% Chg Same Qtr Last Yr.....	5.62	5.19	2.23	1.17	4.55	4.66	4.52	4.69	4.74	4.69	4.62	4.58	6.13	7.35	3.72	4.68
EATING AND DRINKING PLACES.....	3143	3166	3193	3226	3263	3300	3337	3373	3415	3459	3503	3543	12022	12604	13127	13750
% Chg Prev Qtr SAAR.....	5.38	2.87	3.43	4.29	4.69	4.59	4.55	4.37	5.11	5.24	5.15	4.64	7.44	4.84	4.15	4.75
% Chg Same Qtr Last Yr.....	4.91	3.96	3.30	3.99	3.82	4.25	4.53	4.55	4.65	4.82	4.97	5.03	7.44	4.84	4.15	4.75
FOOD STORES.....	2737	2795	2817	2839	2862	2885	2906	2930	2954	2978	3002	3025	10743	11087	11492	11864
% Chg Prev Qtr SAAR.....	-0.21	8.73	3.14	3.26	3.30	3.14	3.05	3.32	3.25	3.32	3.32	3.07	3.79	3.20	3.66	3.23
% Chg Same Qtr Last Yr.....	2.11	3.07	4.39	3.68	4.58	3.21	3.19	3.20	3.19	3.23	3.30	3.24	3.79	3.20	3.66	3.23
LIQUOR STORES.....	260	236	240	243	245	247	248	251	253	255	258	260	971	989	982	1017
% Chg Prev Qtr SAAR.....	12.35	-32.53	6.32	4.95	3.64	3.16	3.11	3.94	3.07	3.95	3.70	3.95	8.68	1.78	-0.65	3.49
% Chg Same Qtr Last Yr.....	8.47	-4.12	-4.88	-4.10	-6.01	4.51	3.71	3.46	3.32	3.52	3.66	3.67	8.68	1.78	-0.65	3.49
HOTELS AND MOTELS.....	899	922	938	954	973	990	1008	1026	1039	1050	1061	1074	3225	3627	3925	4177
% Chg Prev Qtr SAAR.....	15.40	10.32	7.23	7.11	7.89	7.36	7.33	7.62	4.86	4.59	4.28	4.79	11.84	12.48	8.20	6.42
% Chg Same Qtr Last Yr.....	11.84	10.39	11.90	9.97	8.13	7.40	7.42	7.55	6.79	6.09	5.33	4.63	11.84	12.48	8.20	6.42
OTHER RETAIL AND SERVICE.....	9005	9115	9194	9273	9374	9472	9562	9674	9773	9874	9975	10069	34623	36289	37681	39295
% Chg Prev Qtr SAAR.....	1.31	4.98	3.53	3.49	4.39	4.28	3.83	4.77	4.14	4.22	4.15	3.81	6.20	4.81	3.84	4.28
% Chg Same Qtr Last Yr.....	4.76	3.17	1.74	3.32	4.10	3.92	4.00	4.32	4.26	4.24	4.32	4.08	6.20	4.81	3.84	4.28
MISC NONDURABLE GOODS.....	2480	2492	2505	2531	2557	2574	2601	2626	2654	2683	2711	2736	9465	9930	10263	10674
% Chg Prev Qtr SAAR.....	4.44	1.88	2.14	4.21	4.27	2.69	4.20	3.92	4.36	4.37	4.22	3.78	4.67	4.91	3.36	4.00
% Chg Same Qtr Last Yr.....	5.23	3.10	2.43	3.16	3.12	3.32	3.84	3.77	3.79	4.21	4.22	4.18	4.67	4.91	3.36	4.00
TRANSPORTATION, COMMUNICATION.....	1608	1564	1598	1601	1603	1610	1614	1619	1623	1627	1632	1636	6493	6385	6428	6501
% Chg Prev Qtr SAAR.....	-1.69	-10.59	9.12	0.65	0.57	1.87	0.93	1.11	1.14	1.03	1.03	0.99	2.96	-1.68	0.68	1.13
% Chg Same Qtr Last Yr.....	-1.09	-4.78	-0.03	-0.88	-0.31	2.99	1.00	1.12	1.26	1.05	1.08	1.05	2.96	-1.68	0.68	1.13
PER CAPITA (\$).....	4375	4408	4440	4472	4507	4541	4573	4611	4647	4682	4716	4749	16929	17603	18093	18656
% Chg Prev Qtr SAAR.....	-0.36	3.00	3.00	2.86	3.22	2.98	2.92	3.34	3.17	3.00	2.94	2.87	5.51	3.98	2.79	3.11
% Chg Same Qtr Last Yr.....	3.56	2.42	1.63	2.11	3.02	3.01	3.00	3.11	3.10	3.11	3.11	2.99	5.51	3.98	2.79	3.11

Boyd Center for Business and Economic Research, University of Tennessee

**Table 1: Selected U.S. and Tennessee Economic Indicators, Seasonally Adjusted** **January 2017**

	2016	2017	2018	2019	Forecast Data						
					2020	2021	2022	2023	2024	2025	2026
TN GDP (Mil2009\$) SAAR.....	284702.9	290674.4	296825.7	302968.7	309511.8	315352.9	321924.2	328773.3	335546.4	342445.8	349809.3
Percentage change.....	1.93	2.10	2.12	2.07	2.16	1.89	2.08	2.13	2.06	2.06	2.15
US GDP (Bil2009\$) SAAR.....	16656.1	17033.4	17482.8	17883.3	18263.2	18661.4	19058.2	19447.9	19823.9	20188.7	20543.3
Percentage change.....	1.58	2.27	2.64	2.29	2.12	2.18	2.13	2.04	1.93	1.84	1.76
TN GDP (Mil\$) SAAR.....	324688.8	339426.8	356412.0	373712.4	390729.3	406913.2	424138.7	441942.3	459970.0	478653.7	498727.1
Percentage change.....	4.19	4.54	5.00	4.85	4.55	4.14	4.23	4.20	4.08	4.06	4.19
US GDP (Bil\$) SAAR.....	18564.5	19428.4	20365.3	21269.3	22181.1	23161.4	24182.7	25243.8	26327.9	27439.8	28567.9
Percentage change.....	2.93	4.65	4.82	4.44	4.29	4.42	4.41	4.39	4.29	4.22	4.11
TN PERSONAL INCOME (MIL2009\$) SAAR.....	259933	266923	275406	282856	289323	295393	301579	307859	314108	320334	327058
Percentage change.....	2.48	2.69	3.18	2.70	2.29	2.10	2.09	2.08	2.03	1.98	2.10
US PERSONAL INCOME (BIL2009\$) SAAR.....	14455	14859	15381	15866	16279	16665	17057	17446	17837	18232	18633
Percentage change.....	2.42	2.79	3.51	3.16	2.60	2.37	2.35	2.28	2.24	2.22	2.20
TN PERSONAL INCOME (MIL\$) SAAR.....	287851	300847	316153	331530	346714	362051	378038	394728	411852	429524	448415
Percentage change.....	3.61	4.51	5.09	4.86	4.58	4.42	4.42	4.41	4.34	4.29	4.40
US PERSONAL INCOME (BIL\$) SAAR.....	16007	16736	17606	18534	19444	20367	21335	22340	23375	24449	25557
Percentage change.....	3.55	4.55	5.20	5.27	4.91	4.75	4.75	4.71	4.63	4.60	4.53
TN NONFARM JOBS (THOUS).....	2961.8	3003.9	3039.5	3072.5	3098.7	3128.0	3159.1	3190.1	3217.7	3243.0	3270.7
Percentage change.....	2.40	1.42	1.19	1.09	0.85	0.95	1.00	0.98	0.86	0.79	0.85
US NONFARM JOBS (MIL).....	144.3	146.2	148.0	149.7	151.0	152.1	153.3	154.6	155.7	156.7	157.6
Percentage change.....	1.75	1.30	1.21	1.18	0.89	0.68	0.82	0.81	0.72	0.65	0.58
TN MFG JOBS (THOUS).....	341.8	344.6	347.8	350.4	351.9	352.7	353.8	354.2	353.5	351.9	350.2
Percentage change.....	2.74	0.82	0.92	0.74	0.43	0.24	0.30	0.12	-0.20	-0.46	-0.48
US MFG JOBS (MIL).....	12.3	12.3	12.4	12.6	12.7	12.7	12.8	12.8	12.8	12.9	12.9
Percentage change.....	-0.26	0.20	0.93	1.61	0.70	0.20	0.33	0.16	0.19	0.36	0.55
TN UNEMPLOYMENT RATE (%).....	4.6	4.8	4.6	4.6	4.6	4.6	4.5	4.5	4.5	4.5	4.5
US UNEMPLOYMENT RATE (%).....	4.9	4.6	4.3	4.1	4.2	4.3	4.5	4.5	4.6	4.6	4.7
CHAINED PRICE INDEX, GDP (2009=100.0).....	111.5	114.1	116.5	118.9	121.4	124.1	126.9	129.8	132.8	135.9	139.1
Percentage change.....	1.33	2.33	2.13	2.10	2.12	2.19	2.24	2.30	2.32	2.34	2.31
US PERS CONSUMP DEFL (2009=100.0).....	110.7	112.6	114.5	116.8	119.4	122.2	125.1	128.0	131.0	134.1	137.2
Percentage change.....	1.10	1.71	1.63	2.05	2.25	2.32	2.35	2.37	2.34	2.33	2.29
CONSUMER PRICE INDEX, ALL-URBAN (82-84=1.000)....	2.400	2.459	2.511	2.572	2.641	2.712	2.785	2.862	2.941	3.021	3.101
Percentage change.....	1.28	2.46	2.09	2.45	2.67	2.68	2.70	2.78	2.74	2.72	2.66
BANK PRIME INTEREST RATE (%).....	3.5	4.0	4.7	5.7	6.0	6.0	6.0	6.0	6.0	6.0	6.0
FEDERAL FUNDS RATE (% per annum).....	0.393	0.947	1.712	2.648	2.997	2.997	2.997	2.997	2.997	2.997	2.997
30-YEAR FIXED MORTGAGE RATE (%).....	3.6	4.3	5.0	5.8	6.1	6.1	6.1	6.1	6.1	6.1	6.1
TN TAXABLE SALES (MIL2009\$).....	107056	109223	111688	113662	115128	116674	118173	119493	120838	122229	123696
Percentage change.....	3.92	2.02	2.26	1.77	1.29	1.34	1.29	1.12	1.13	1.15	1.20
TN TAXABLE SALES (MIL\$).....	118552	123104	128210	133220	137963	143000	148132	153207	158438	163890	169591
Percentage change.....	5.05	3.84	4.15	3.91	3.56	3.65	3.59	3.43	3.41	3.44	3.48
TN AVG ANNUAL WAGE, NONFARM (2009\$).....	43400	43866	44377	44706	44900	45033	45163	45282	45381	45459	45519
Percentage change.....	0.71	1.07	1.16	0.74	0.43	0.30	0.29	0.26	0.22	0.17	0.13
TN AVG ANNUAL WAGE, NONFARM (\$).....	48061	49440	50941	52397	53804	55193	56612	58058	59501	60953	62407
Percentage change.....	1.81	2.87	3.03	2.86	2.68	2.58	2.57	2.55	2.49	2.44	2.39

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

**January 2017**

	Forecast Data										
	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
US GDP (2009\$) SAAR.....	51329	52067	53014	53800	54514	55273	56019	56736	57407	58041	58640
Percentage change.....	0.79	1.44	1.82	1.48	1.33	1.39	1.35	1.28	1.18	1.10	1.03
US GDP (\$) SAAR.....	57211	59388	61755	63987	66208	68601	71082	73645	76242	78887	81546
Percentage change.....	2.13	3.81	3.99	3.61	3.47	3.61	3.62	3.61	3.53	3.47	3.37
TN PERSONAL INCOME (2009\$) SAAR.....	38596	39232	40075	40754	41281	41743	42214	42692	43159	43618	44140
Percentage change.....	1.43	1.65	2.15	1.69	1.29	1.12	1.13	1.13	1.09	1.06	1.20
US PERSONAL INCOME (2009\$) SAAR.....	44546	45420	46639	47731	48591	49360	50135	50897	51652	52417	53187
Percentage change.....	1.63	1.96	2.68	2.34	1.80	1.58	1.57	1.52	1.48	1.48	1.47
TN PERSONAL INCOME (\$) SAAR.....	42740	44217	46003	47766	49468	51162	52916	54738	56589	58485	60518
Percentage change.....	2.54	3.46	4.04	3.83	3.56	3.42	3.43	3.44	3.38	3.35	3.48
US PERSONAL INCOME (\$) SAAR.....	49329	51158	53388	55758	58039	60326	62710	65173	67690	70289	72953
Percentage change.....	2.75	3.71	4.36	4.44	4.09	3.94	3.95	3.93	3.86	3.84	3.79
TN TAXABLE SALES (2009\$).....	15896	16054	16252	16376	16427	16488	16542	16571	16604	16643	16694
Percentage change.....	2.86	0.99	1.24	0.77	0.31	0.37	0.33	0.17	0.20	0.24	0.31
TN TAXABLE SALES (\$).....	17603	18093	18656	19194	19684	20208	20735	21246	21770	22316	22888
Percentage change.....	3.98	2.79	3.11	2.88	2.55	2.66	2.61	2.46	2.47	2.51	2.56

Boyd Center for Business and Economic Research, University of Tennessee

Tennessee Econometric Model

**Table 3: Tennessee Personal Income Components (millions of 2009 dollars)****January 2017**

	Forecast Data										
	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
TN PERSONAL INCOME.....	259933	266923	275406	282856	289323	295393	301579	307859	314108	320334	327058
Percentage change.....	2.48	2.69	3.18	2.70	2.29	2.10	2.09	2.08	2.03	1.98	2.10
WAGES AND SALARIES.....	129344	132561	135664	138129	139885	141607	143411	145179	146735	148128	149571
Percentage change.....	3.10	2.49	2.34	1.82	1.27	1.23	1.27	1.23	1.07	0.95	0.97
OTHER LABOR INCOME.....	28005	28668	29521	30159	30603	30901	31205	31541	32080	32587	33100
Percentage change.....	2.21	2.37	2.98	2.16	1.47	0.97	0.98	1.08	1.71	1.58	1.57
PROPRIETORS INCOME.....	35165	36257	37960	39365	40281	41102	42031	42944	43845	44825	45863
Percentage change.....	2.88	3.11	4.70	3.70	2.33	2.04	2.26	2.17	2.10	2.24	2.32
RENT, INTEREST, DIVIDENDS.....	36056	37142	38656	40229	41740	42839	43788	44691	45612	46569	47625
Percentage change.....	1.14	3.01	4.08	4.07	3.76	2.63	2.21	2.06	2.06	2.10	2.27
TRANSFER PAYMENTS.....	53103	54183	55586	56949	58719	60784	62885	65145	67360	69617	72132
Percentage change.....	1.77	2.03	2.59	2.45	3.11	3.52	3.46	3.59	3.40	3.35	3.61
LESS: PERS CONT FOR SOC INS.....	20305	20457	20567	20580	20532	20487	20408	20328	20229	20117	19975
Percentage change.....	2.35	0.75	0.54	0.07	-0.23	-0.22	-0.38	-0.40	-0.48	-0.56	-0.70
RESIDENCE ADJUSTMENT.....	-1435	-1431	-1415	-1395	-1374	-1354	-1333	-1313	-1294	-1275	-1257
Percentage change.....	3.49	-0.27	-1.16	-1.38	-1.49	-1.51	-1.50	-1.50	-1.47	-1.46	-1.45
PER CAPITA PERSONAL INCOME (\$),.....	38596	39232	40075	40754	41281	41743	42214	42692	43159	43618	44140
Percentage change.....	1.43	1.65	2.15	1.69	1.29	1.12	1.13	1.13	1.09	1.06	1.20

Boyd Center for Business and Economic Research, University of Tennessee

Tennessee Econometric Model

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

**January 2017**

	Forecast Data										
	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
TN PERSONAL INCOME.....	287851	300847	316153	331530	346714	362051	378038	394728	411852	429524	448415
Percentage change.....	3.61	4.51	5.09	4.86	4.58	4.42	4.42	4.41	4.34	4.29	4.40
WAGES AND SALARIES.....	143236	149407	155733	161896	167630	173559	179767	186142	192392	198616	205066
Percentage change.....	4.23	4.31	4.23	3.96	3.54	3.54	3.58	3.55	3.36	3.24	3.25
OTHER LABOR INCOME.....	31012	32311	33889	35349	36673	37874	39116	40441	42062	43694	45381
Percentage change.....	3.33	4.19	4.88	4.31	3.75	3.27	3.28	3.39	4.01	3.88	3.86
PROPRIETORS INCOME.....	38941	40866	43577	46140	48271	50377	52687	55062	57488	60104	62881
Percentage change.....	4.01	4.94	6.63	5.88	4.62	4.36	4.59	4.51	4.41	4.55	4.62
RENT, INTEREST, DIVIDENDS.....	39929	41862	44376	47153	50020	52507	54890	57301	59805	62443	65297
Percentage change.....	2.26	4.84	6.01	6.26	6.08	4.97	4.54	4.39	4.37	4.41	4.57
TRANSFER PAYMENTS.....	58805	61069	63810	66749	70369	74502	78831	83529	88323	93349	98900
Percentage change.....	2.89	3.85	4.49	4.60	5.42	5.87	5.81	5.96	5.74	5.69	5.95
LESS: PERS CONT FOR SOC INS.....	22485	23056	23608	24121	24604	25109	25582	26062	26523	26972	27386
Percentage change.....	3.48	2.54	2.40	2.17	2.00	2.05	1.88	1.88	1.77	1.69	1.53
RESIDENCE ADJUSTMENT.....	-1589	-1613	-1624	-1635	-1647	-1659	-1671	-1684	-1697	-1710	-1723
Percentage change.....	4.62	1.50	0.67	0.69	0.71	0.73	0.74	0.75	0.76	0.77	0.77
PER CAPITA PERSONAL INCOME (\$) Percentage change.....	42740 2.54	44217 3.46	46003 4.04	47766 3.83	49468 3.56	51162 3.42	52916 3.43	54738 3.44	56589 3.38	58485 3.35	60518 3.48

Boyd Center for Business and Economic Research, University of Tennessee

Tennessee Econometric Model



Table 5: Tennessee Nonfarm Employment by Sector, Seasonally Adjusted (thousands of jobs) January 2017

	Forecast Data										
	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
TOTAL NONFARM.....	2961.8	3003.9	3039.5	3072.5	3098.7	3128.0	3159.1	3190.1	3217.7	3243.0	3270.7
Percentage change.....	2.40	1.42	1.19	1.09	0.85	0.95	1.00	0.98	0.86	0.79	0.85
NATURAL RESOURCES, MINING AND CONSTRUCTION.....	123.8	126.2	129.1	131.9	134.3	136.9	139.6	142.1	144.1	145.7	147.1
Percentage change.....	5.20	1.97	2.28	2.20	1.78	1.94	2.01	1.77	1.42	1.12	0.96
MANUFACTURING.....	341.8	344.6	347.8	350.4	351.9	352.7	353.8	354.2	353.5	351.9	350.2
Percentage change.....	2.74	0.82	0.92	0.74	0.43	0.24	0.30	0.12	-0.20	-0.46	-0.48
DURABLE GOODS.....	216.5	219.0	222.1	224.7	226.4	227.8	229.7	231.0	231.2	231.0	230.5
Percentage change.....	2.77	1.15	1.44	1.14	0.76	0.65	0.80	0.57	0.11	-0.11	-0.19
NONDURABLE GOODS.....	125.3	125.6	125.7	125.7	125.5	124.9	124.1	123.2	122.3	120.9	119.7
Percentage change.....	2.69	0.26	0.02	0.02	-0.16	-0.48	-0.62	-0.70	-0.77	-1.13	-1.04
TRADE, TRANSPORTATION, UTILITIES.....	616.9	621.0	625.6	630.3	632.3	634.9	636.9	637.4	638.4	638.8	639.6
Percentage change.....	2.27	0.66	0.74	0.75	0.33	0.41	0.31	0.07	0.16	0.08	0.12
WHOLESALE TRADE.....	125.3	126.3	127.4	128.2	128.6	129.2	129.6	129.8	129.9	129.5	129.3
Percentage change.....	3.09	0.76	0.89	0.60	0.33	0.47	0.29	0.15	0.07	-0.26	-0.14
RETAIL TRADE.....	333.3	334.6	336.2	338.4	339.2	340.6	341.8	341.7	341.9	342.3	343.0
Percentage change.....	2.39	0.39	0.46	0.65	0.25	0.41	0.36	-0.04	0.07	0.11	0.19
TRANSPORTATION & UTILITIES.....	158.2	160.0	162.0	163.7	164.5	165.1	165.5	165.9	166.6	167.0	167.3
Percentage change.....	1.39	1.16	1.20	1.07	0.49	0.35	0.23	0.25	0.41	0.27	0.19
INFORMATION.....	44.7	45.3	45.2	45.3	45.4	45.4	45.6	46.0	46.3	46.4	46.4
Percentage change.....	1.88	1.49	-0.19	0.23	0.05	0.17	0.41	0.76	0.65	0.32	0.05
FINANCIAL ACTIVITIES.....	151.4	152.4	153.1	153.4	153.3	153.5	153.9	153.8	153.9	153.9	154.2
Percentage change.....	2.31	0.69	0.47	0.17	-0.04	0.11	0.23	-0.01	0.05	-0.01	0.19
PROFESSIONAL & BUSINESS SERVICES..	404.1	414.8	425.8	435.6	441.1	449.8	461.6	475.8	487.4	499.4	512.2
Percentage change.....	2.89	2.65	2.67	2.29	1.27	1.97	2.61	3.09	2.43	2.47	2.56
EDUCATION & HEALTH SERVICES.....	431.4	441.8	450.3	459.0	467.6	476.3	485.2	494.5	504.2	514.0	523.8
Percentage change.....	3.99	2.42	1.92	1.93	1.87	1.87	1.86	1.91	1.97	1.94	1.91
LEISURE & HOSPITALITY.....	313.3	318.2	321.9	325.2	329.5	333.3	335.5	336.9	338.2	338.6	340.1
Percentage change.....	1.80	1.57	1.15	1.03	1.33	1.13	0.67	0.41	0.40	0.11	0.44
OTHER SERVICES.....	110.0	112.0	112.0	111.8	111.6	111.6	111.4	111.2	111.0	110.9	111.0
Percentage change.....	2.53	1.79	0.04	-0.22	-0.11	-0.08	-0.10	-0.17	-0.21	-0.11	0.12
GOVERNMENT.....	424.5	427.5	428.6	429.6	431.6	433.5	435.7	438.2	440.7	443.4	446.0
Percentage change.....	0.04	0.71	0.25	0.25	0.45	0.46	0.49	0.59	0.56	0.61	0.60
FEDERAL, CIVILIAN.....	49.2	48.8	48.2	47.4	46.8	46.4	46.0	45.7	45.4	45.1	44.8
Percentage change.....	0.40	-0.83	-1.23	-1.65	-1.35	-0.85	-0.92	-0.62	-0.60	-0.60	-0.61
STATE & LOCAL.....	375.3	378.7	380.4	382.2	384.8	387.2	389.7	392.6	395.3	398.2	401.2
Percentage change.....	-0.01	0.92	0.44	0.49	0.67	0.62	0.66	0.73	0.69	0.75	0.73
STATISTICAL DISCREPANCY (%).....	0.00										

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

**January 2017**

	Forecast Data										
	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
TOTAL DURABLE GOODS.....	216.5	219.0	222.1	224.7	226.4	227.8	229.7	231.0	231.2	231.0	230.5
Percentage change.....	2.77	1.15	1.44	1.14	0.76	0.65	0.80	0.57	0.11	-0.11	-0.19
WOOD PRODUCTS.....	11.7	11.8	11.9	12.0	12.1	12.3	12.4	12.6	12.6	12.7	12.7
Percentage change.....	1.14	0.68	1.28	1.15	0.71	1.30	1.28	1.14	0.37	0.21	-0.05
NONMETALLIC MINERALS.....	12.8	12.9	13.0	13.1	13.2	13.3	13.4	13.5	13.5	13.4	13.4
Percentage change.....	1.55	0.86	1.04	0.88	0.66	0.65	0.71	0.56	0.10	-0.35	-0.36
PRIMARY METALS.....	10.6	10.7	10.8	10.9	10.9	10.9	10.8	10.8	10.8	10.7	10.7
Percentage change.....	2.72	1.14	0.90	0.78	0.28	-0.63	-0.24	-0.24	-0.31	-0.39	-0.54
FABRICATED METALS.....	34.4	33.9	33.9	34.0	34.3	34.4	34.7	34.9	35.0	34.9	34.8
Percentage change.....	-1.41	-1.46	-0.12	0.40	0.70	0.49	0.87	0.55	0.27	-0.23	-0.43
MACHINERY.....	25.3	25.3	25.2	25.3	25.5	25.6	25.9	26.0	25.9	25.8	25.7
Percentage change.....	0.15	-0.14	-0.05	0.27	0.56	0.67	0.91	0.56	-0.30	-0.54	-0.48
COMPUTERS & ELECTRONICS.....	4.8	4.6	4.4	4.3	4.1	3.9	3.7	3.6	3.4	3.3	3.1
Percentage change.....	-3.62	-4.52	-2.85	-3.74	-4.53	-4.38	-4.24	-4.51	-4.47	-4.50	-5.03
ELECTRICAL EQUIPMENT, APPLIANCES & COMPONENTS.....	20.7	21.2	21.9	22.2	22.4	22.6	22.9	23.1	23.2	23.2	23.2
Percentage change.....	4.60	2.73	3.01	1.50	1.06	0.83	1.14	0.88	0.65	-0.15	0.10
TRANSPORTATION EQUIPMENT.....	71.4	73.7	75.9	77.7	79.0	80.0	80.9	81.6	81.9	82.2	82.4
Percentage change.....	6.81	3.23	3.00	2.38	1.57	1.25	1.13	0.94	0.39	0.33	0.28
FURNITURE.....	9.2	9.2	9.3	9.3	9.3	9.2	9.2	9.2	9.1	9.0	8.8
Percentage change.....	2.22	0.25	0.55	0.53	-0.28	-0.52	-0.17	-0.61	-1.00	-1.27	-1.35
MISCELLANEOUS DURABLES.....	15.6	15.7	15.7	15.7	15.6	15.6	15.7	15.7	15.7	15.8	15.7
Percentage change.....	1.27	0.22	0.32	-0.15	-0.70	0.05	0.54	0.22	-0.10	0.45	-0.20

Boyd Center for Business and Economic Research, University of Tennessee

Tennessee Econometric Model

**Table 7: Tennessee Nondurable Goods Manufacturing Employment (thousands of jobs) January 2017**

	Forecast Data										
	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
TOTAL NONDURABLE GOODS.....	125.3	125.6	125.7	125.7	125.5	124.9	124.1	123.2	122.3	120.9	119.6
Percentage change.....	2.69	0.26	0.02	0.02	-0.18	-0.48	-0.62	-0.70	-0.77	-1.13	-1.04
FOOD.....	33.7	33.8	34.0	34.0	34.1	34.1	34.1	34.1	34.0	33.9	33.8
Percentage change.....	1.29	0.50	0.31	0.20	0.12	0.10	0.11	-0.14	-0.13	-0.50	-0.32
BEVERAGE & TOBACCO.....	6.3	6.5	6.6	6.7	6.7	6.7	6.7	6.6	6.6	6.6	6.5
Percentage change.....	7.72	3.33	1.81	1.49	-0.06	-0.53	-0.32	-0.36	-0.31	-0.51	-0.59
TEXTILE MILLS, TEXTILE MILL PRODUCTS & APPAREL.....	10.2	10.2	10.1	10.0	9.9	9.8	9.8	9.8	9.7	9.6	9.5
Percentage change.....	1.66	0.26	-0.84	-1.35	-1.31	-0.78	-0.43	-0.04	-0.30	-1.15	-1.49
PAPER.....	14.6	14.6	14.6	14.6	14.6	14.6	14.5	14.5	14.4	14.2	14.1
Percentage change.....	0.21	0.27	0.08	0.00	-0.16	-0.30	-0.34	-0.51	-0.49	-1.07	-0.95
PRINTING & RELATED SUPPORT.....	9.1	8.9	8.7	8.6	8.7	8.7	8.8	8.8	8.8	8.7	8.6
Percentage change.....	-1.80	-2.17	-1.67	-1.01	0.27	0.38	0.60	0.31	-0.24	-1.01	-0.86
CHEMICALS.....	25.7	25.5	25.3	25.2	25.0	24.5	24.1	23.7	23.2	22.8	22.5
Percentage change.....	0.88	-0.52	-0.97	-0.36	-0.94	-1.76	-1.90	-1.67	-1.78	-1.86	-1.58
PLASTICS & RUBBER.....	22.5	23.0	23.3	23.6	23.7	23.7	23.5	23.3	23.0	22.7	22.4
Percentage change.....	3.62	2.17	1.39	0.96	0.74	0.02	-0.87	-1.01	-1.06	-1.33	-1.39
MISCELLANEOUS NONDURABLE GOODS.....	3.3	3.0	3.0	2.9	2.8	2.8	2.7	2.6	2.5	2.4	2.3
Percentage change.....	71.39	-8.51	-1.53	-1.69	-2.19	-2.92	-3.01	-3.88	-3.70	-3.16	-3.15

Boyd Center for Business and Economic Research, University of Tennessee

Tennessee Econometric Model

**Table 8: Tennessee Average Annual Wage and Salary Rate by Sector (2009 dollars)**

**January 2017**

	Forecast Data										
	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
TOTAL NONFARM.....	43400	43866	44377	44706	44900	45033	45163	45282	45381	45459	45519
Percentage change.....	0.71	1.07	1.16	0.74	0.43	0.30	0.29	0.26	0.22	0.17	0.13
NATURAL RESOURCES, MINING AND CONSTRUCTION.....	47390	47101	47589	47820	48114	48402	48650	48886	49100	49281	49425
Percentage change.....	-3.73	-0.61	1.04	0.49	0.61	0.60	0.51	0.48	0.44	0.37	0.29
MANUFACTURING.....	53183	54238	55045	55593	55850	56005	56136	56239	56336	56413	56480
Percentage change.....	1.60	1.98	1.49	1.00	0.46	0.28	0.23	0.18	0.17	0.14	0.12
DURABLE GOODS.....	52641	53371	54185	54804	55143	55377	55594	55788	55977	56148	56310
Percentage change.....	2.49	1.39	1.53	1.14	0.62	0.42	0.39	0.35	0.34	0.31	0.29
NONDURABLE GOODS.....	54119	55750	56565	57001	57125	57153	57138	57085	57016	56920	56807
Percentage change.....	0.14	3.01	1.46	0.77	0.22	0.05	-0.03	-0.09	-0.12	-0.17	-0.20
TRADE, TRANSPORTATION, UTILITIES.....	40466	41204	41720	42071	42372	42609	42813	43016	43203	43351	43486
Percentage change.....	1.76	1.82	1.25	0.84	0.71	0.56	0.48	0.47	0.43	0.34	0.31
WHOLESALE TRADE.....	60730	61907	62749	63477	64054	64402	64691	64924	65131	65303	65451
Percentage change.....	-1.14	1.94	1.36	1.16	0.91	0.54	0.45	0.36	0.32	0.26	0.23
RETAIL TRADE.....	27680	28123	28389	28531	28668	28834	28983	29114	29238	29351	29458
Percentage change.....	1.84	1.60	0.95	0.50	0.48	0.58	0.52	0.45	0.43	0.39	0.37
TRANSPORTATION & UTILITIES.....	51350	52215	52845	53299	53679	53970	54252	54514	54775	55020	55257
Percentage change.....	4.50	1.69	1.21	0.86	0.71	0.54	0.52	0.48	0.48	0.45	0.43
INFORMATION.....	59421	59214	59642	59837	60228	60728	61226	61706	62180	62633	63073
Percentage change.....	4.41	-0.35	0.72	0.33	0.65	0.83	0.82	0.78	0.77	0.73	0.70
FINANCIAL ACTIVITIES.....	64155	65930	66891	67647	68246	68684	69087	69448	69791	70099	70385
Percentage change.....	2.10	2.77	1.46	1.13	0.88	0.64	0.59	0.52	0.49	0.44	0.41
PROFESSIONAL & BUSINESS SERVICES..	49821	50016	50702	51104	51377	51640	51880	52088	52283	52451	52601
Percentage change.....	0.22	0.39	1.37	0.79	0.53	0.51	0.46	0.40	0.37	0.32	0.29
EDUCATION & HEALTH SERVICES.....	43227	43566	44156	44570	44861	45017	45138	45225	45295	45342	45375
Percentage change.....	-2.10	0.78	1.35	0.94	0.65	0.35	0.27	0.19	0.16	0.10	0.07
LEISURE & HOSPITALITY.....	22078	22273	22613	22948	23111	23162	23206	23239	23269	23291	23308
Percentage change.....	2.69	0.88	1.53	1.48	0.71	0.22	0.19	0.14	0.13	0.09	0.07
OTHER SERVICES.....	39908	39891	40364	40750	41023	41162	41322	41489	41670	41852	42038
Percentage change.....	0.65	-0.04	1.18	0.96	0.67	0.34	0.39	0.40	0.44	0.44	0.44
GOVERNMENT.....	40251	40385	40316	40107	39830	39544	39241	38930	38616	38289	37957
Percentage change.....	0.77	0.33	-0.17	-0.52	-0.69	-0.72	-0.77	-0.79	-0.80	-0.85	-0.87
FEDERAL, CIVILIAN.....	71763	73652	74055	74204	74202	74130	74023	73874	73709	73513	73298
Percentage change.....	0.88	2.63	0.55	0.20	0.00	-0.10	-0.14	-0.20	-0.22	-0.27	-0.29
STATE & LOCAL.....	36122	36098	36040	35877	35652	35401	35140	34865	34587	34299	34006
Percentage change.....	0.70	-0.07	-0.16	-0.45	-0.63	-0.70	-0.74	-0.78	-0.80	-0.83	-0.85

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

January 2017

	Forecast Data										
	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
TOTAL NONFARM.....	48061	49440	50941	52397	53804	55193	56612	58058	59501	60953	62407
Percentage change.....	1.81	2.87	3.03	2.86	2.68	2.58	2.57	2.55	2.49	2.44	2.39
NATURAL RESOURCES, MINING & CONST	52475	53086	54628	56047	57656	59322	60983	62679	64377	66077	67762
Percentage change.....	-2.68	1.16	2.90	2.60	2.87	2.89	2.80	2.78	2.71	2.64	2.55
MANUFACTURING.....	58895	61130	63187	65157	66926	68641	70366	72106	73865	75640	77434
Percentage change.....	2.72	3.79	3.36	3.12	2.71	2.56	2.51	2.47	2.44	2.40	2.37
DURABLE GOODS.....	58294	60152	62200	64234	66079	67871	69687	71528	73394	75285	77202
Percentage change.....	3.62	3.19	3.40	3.27	2.87	2.71	2.68	2.64	2.61	2.58	2.55
NONDURABLE GOODS.....	59935	62835	64931	66808	68454	70047	71622	73190	74755	76319	77882
Percentage change.....	1.25	4.84	3.34	2.89	2.46	2.33	2.25	2.19	2.14	2.09	2.05
TRADE, TRANSPORTATION, UTILITIES.....	44814	46439	47891	49309	50775	52222	53667	55153	56646	58126	59620
Percentage change.....	2.89	3.63	3.13	2.96	2.97	2.85	2.77	2.77	2.71	2.61	2.57
WHOLESALE TRADE.....	67253	69773	72031	74399	76758	78933	81089	83241	85396	87560	89735
Percentage change.....	-0.05	3.75	3.24	3.29	3.17	2.83	2.73	2.65	2.59	2.53	2.48
RETAIL TRADE.....	30654	31696	32588	33439	34354	35340	36330	37328	38335	39355	40388
Percentage change.....	2.96	3.40	2.82	2.61	2.74	2.87	2.80	2.75	2.70	2.66	2.62
TRANSPORTATION & UTILITIES.....	56868	58850	60662	62469	64324	66147	68004	69895	71818	73772	75759
Percentage change.....	5.65	3.49	3.08	2.98	2.97	2.83	2.81	2.78	2.75	2.72	2.69
INFORMATION.....	65799	66737	68463	70131	72173	74430	76747	79115	81528	83981	86474
Percentage change.....	5.55	1.42	2.59	2.44	2.91	3.13	3.11	3.09	3.05	3.01	2.97
FINANCIAL ACTIVITIES.....	71048	74308	76785	79287	81781	84180	86600	89042	91505	93991	96499
Percentage change.....	3.22	4.59	3.33	3.26	3.15	2.93	2.87	2.82	2.77	2.72	2.67
PROFESSIONAL & BUSINESS SERVICES..	55168	56372	58202	59896	61566	63292	65031	66784	68550	70327	72117
Percentage change.....	1.32	2.18	3.25	2.91	2.79	2.80	2.75	2.70	2.64	2.59	2.54
EDUCATION & HEALTH SERVICES.....	47868	49101	50687	52239	53758	55174	56580	57984	59388	60795	62209
Percentage change.....	-1.03	2.58	3.23	3.06	2.91	2.63	2.55	2.48	2.42	2.37	2.32
LEISURE & HOSPITALITY.....	24449	25103	25958	26897	27694	28388	29089	29796	30509	31229	31955
Percentage change.....	3.81	2.68	3.41	3.62	2.96	2.51	2.47	2.43	2.39	2.36	2.33
OTHER SERVICES.....	44192	44960	46334	47761	49159	50449	51797	53194	54635	56116	57634
Percentage change.....	1.74	1.74	3.06	3.08	2.93	2.62	2.67	2.70	2.71	2.71	2.71
GOVERNMENT.....	44574	45516	46278	47007	47728	48465	49188	49912	50631	51338	52038
Percentage change.....	1.88	2.11	1.68	1.57	1.54	1.54	1.49	1.47	1.44	1.40	1.36
FEDERAL, CIVILIAN.....	79476	83010	85008	86971	88917	90854	92786	94715	96642	98567	100492
Percentage change.....	2.00	4.45	2.41	2.31	2.24	2.18	2.13	2.08	2.03	1.99	1.95
STATE & LOCAL.....	40000	40684	41370	42049	42722	43388	44047	44701	45347	45988	46622
Percentage change.....	1.80	1.71	1.69	1.64	1.60	1.56	1.52	1.48	1.45	1.41	1.38

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

**January 2017**

	Forecast Data										
	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
CIVILIAN LABOR FORCE (THOUS).....	3146	3194	3203	3217	3228	3248	3268	3289	3309	3327	3343
Percentage change.....	2.94	1.53	0.28	0.42	0.36	0.60	0.63	0.64	0.60	0.56	0.46
EMPLOYED PERSONS (THOUS).....	3002	3042	3054	3069	3081	3099	3120	3140	3159	3176	3191
Percentage change.....	4.23	1.35	0.39	0.49	0.38	0.60	0.66	0.66	0.60	0.54	0.46
UNEMPLOYED PERSONS (THOUS).....	144	152	149	148	147	148	148	149	149	151	152
Percentage change.....	-18.10	5.24	-1.87	-0.90	-0.12	0.57	0.11	0.09	0.59	0.90	0.51
PARTICIPATION RATE (PERCENT).....	60.2	60.5	60.0	59.6	59.2	58.9	58.7	58.5	58.3	58.1	57.8
Percentage change.....	1.84	0.40	-0.79	-0.64	-0.69	-0.43	-0.39	-0.37	-0.36	-0.35	-0.44
UNEMPLOYMENT RATE (PERCENT).....	4.6	4.8	4.6	4.6	4.6	4.6	4.5	4.5	4.5	4.5	4.5

Boyd Center for Business and Economic Research, University of Tennessee

Tennessee Econometric Model

Table 11: Tennessee Taxable Sales (millions of 2009 dollars)

January 2017

	Forecast Data										
	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
TOTAL TAXABLE SALES.....	107056	109223	111688	113662	115128	116674	118173	119493	120838	122229	123696
Percentage change.....	3.92	2.02	2.26	1.77	1.29	1.34	1.29	1.12	1.13	1.15	1.20
AUTO DEALERS.....	11304	11667	11915	12104	12228	12419	12521	12657	12851	13070	13235
Percentage change.....	4.88	3.21	2.13	1.59	1.02	1.57	0.82	1.08	1.53	1.71	1.26
PURCHASES FROM MANUFACTURERS....	4630	4716	4830	4909	4981	5058	5146	5186	5255	5341	5422
Percentage change.....	4.01	1.86	2.41	1.63	1.48	1.55	1.74	0.78	1.34	1.63	1.51
MISC DURABLE GOODS.....	18058	18401	18913	19362	19734	20082	20452	20831	21196	21563	21962
Percentage change.....	6.20	1.90	2.78	2.37	1.92	1.77	1.84	1.86	1.75	1.73	1.85
EATING AND DRINKING PLACES.....	11382	11647	11978	12297	12585	12888	13204	13527	13840	14154	14495
Percentage change.....	3.70	2.33	2.85	2.66	2.34	2.41	2.45	2.44	2.31	2.27	2.41
FOOD STORES.....	10012	10197	10335	10449	10498	10564	10636	10649	10655	10660	10672
Percentage change.....	2.08	1.85	1.36	1.11	0.47	0.63	0.68	0.12	0.06	0.04	0.11
LIQUOR STORES.....	893	872	886	900	909	917	930	943	951	968	980
Percentage change.....	0.70	-2.41	1.61	1.59	1.03	0.89	1.41	1.37	0.92	1.70	1.29
HOTELS AND MOTELS.....	3275	3482	3638	3728	3813	3880	3942	4013	4082	4146	4222
Percentage change.....	11.26	6.32	4.49	2.46	2.29	1.74	1.60	1.80	1.73	1.57	1.83
OTHER RETAIL AND SERVICE.....	32770	33432	34231	34847	35263	35701	36119	36423	36714	37008	37348
Percentage change.....	3.68	2.02	2.39	1.80	1.19	1.24	1.17	0.84	0.80	0.80	0.92
MISC NONDURABLE GOODS.....	8967	9106	9298	9465	9591	9718	9847	9975	10095	10213	10344
Percentage change.....	3.78	1.56	2.11	1.79	1.34	1.33	1.32	1.30	1.20	1.17	1.28
TRANSPORTATION, COMMUNICATION.....	5766	5704	5663	5602	5527	5445	5377	5288	5199	5107	5015
Percentage change.....	-2.74	-1.08	-0.71	-1.09	-1.34	-1.47	-1.27	-1.65	-1.69	-1.76	-1.80
PER CAPITA (\$)......	15896	16054	16252	16376	16427	16488	16542	16571	16604	16643	16694
Percentage change.....	2.86	0.99	1.24	0.77	0.31	0.37	0.33	0.17	0.20	0.24	0.31

Boyd Center for Business and Economic Research, University of Tennessee

Tennessee Econometric Model

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

**January 2017**

	Forecast Data										
	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
TOTAL TAXABLE SALES.....	118552	123104	128210	133220	137963	143000	148132	153207	158438	163890	169591
Percentage change.....	5.05	3.84	4.15	3.91	3.56	3.65	3.59	3.43	3.41	3.44	3.48
AUTO DEALERS.....	12519	13149	13678	14187	14653	15222	15696	16228	16849	17525	18146
Percentage change.....	6.03	5.04	4.02	3.72	3.28	3.88	3.12	3.39	3.83	4.01	3.54
PURCHASES FROM MANUFACTURERS....	5127	5316	5544	5753	5969	6199	6451	6649	6891	7161	7433
Percentage change.....	5.15	3.68	4.30	3.77	3.75	3.86	4.05	3.08	3.63	3.93	3.80
MISC DURABLE GOODS.....	19996	20740	21711	22694	23648	24614	25637	26709	27792	28912	30111
Percentage change.....	7.35	3.72	4.68	4.53	4.20	4.08	4.16	4.18	4.06	4.03	4.15
EATING AND DRINKING PLACES.....	12604	13127	13750	14413	15081	15797	16552	17344	18146	18979	19874
Percentage change.....	4.84	4.15	4.75	4.82	4.63	4.75	4.78	4.78	4.62	4.59	4.72
FOOD STORES.....	11087	11492	11864	12247	12580	12947	13332	13653	13971	14293	14631
Percentage change.....	3.20	3.66	3.23	3.23	2.72	2.92	2.97	2.41	2.33	2.31	2.37
LIQUOR STORES.....	989	982	1017	1054	1089	1124	1166	1209	1247	1297	1344
Percentage change.....	1.78	-0.65	3.49	3.72	3.30	3.19	3.72	3.69	3.20	4.00	3.57
HOTELS AND MOTELS.....	3627	3925	4177	4369	4569	4755	4941	5145	5352	5559	5788
Percentage change.....	12.48	8.20	6.42	4.61	4.59	4.06	3.91	4.13	4.03	3.87	4.12
OTHER RETAIL AND SERVICE.....	36289	37681	39295	40843	42257	43757	45275	46700	48137	49621	51206
Percentage change.....	4.81	3.84	4.28	3.94	3.46	3.55	3.47	3.15	3.08	3.08	3.19
MISC NONDURABLE GOODS.....	9930	10263	10674	11093	11493	11911	12343	12790	13236	13694	14181
Percentage change.....	4.91	3.36	4.00	3.93	3.61	3.64	3.63	3.62	3.49	3.46	3.56
TRANSPORTATION, COMMUNICATION.....	6385	6428	6501	6565	6623	6674	6739	6780	6816	6848	6876
Percentage change.....	-1.68	0.68	1.13	0.99	0.87	0.77	0.98	0.60	0.53	0.47	0.41
PER CAPITA (\$)	17603	18093	18656	19194	19684	20208	20735	21246	21770	22316	22888
Percentage change.....	3.98	2.79	3.11	2.88	2.55	2.66	2.61	2.46	2.47	2.51	2.56

Boyd Center for Business and Economic Research, University of Tennessee

Tennessee Econometric Model



Table 13: Tennessee Gross Domestic Product by Sector (millions of 2009 dollars)

January 2017

	Forecast Data										
	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
GROSS DOMESTIC PRODUCT.....	286,011	291,933	298,021	304,115	310,611	316,406	322,933	329,738	336,468	343,325	350,649
Percentage change.....	1.95	2.07	2.09	2.04	2.14	1.87	2.06	2.11	2.04	2.04	2.13
AGRICULTURE, FORESTRY, FISHING & HUNTING.....	1,308	1,259	1,196	1,147	1,099	1,053	1,009	965	922	880	840
Percentage change.....	7.64	-3.74	-5.03	-4.11	-4.13	-4.16	-4.20	-4.36	-4.51	-4.57	-4.53
NATURAL RESOURCES & MINING.....	2,218	2,261	2,283	2,303	2,314	2,328	2,344	2,355	2,357	2,353	2,344
Percentage change.....	2.93	1.95	0.96	0.88	0.47	0.62	0.69	0.45	0.11	-0.19	-0.35
CONSTRUCTION.....	9,926	10,127	10,259	10,385	10,469	10,569	10,678	10,763	10,812	10,828	10,850
Percentage change.....	1.39	2.03	1.30	1.22	0.81	0.96	1.03	0.80	0.45	0.15	0.21
MANUFACTURING.....	48,979	50,236	51,561	52,994	54,430	55,795	57,166	58,472	59,749	61,114	62,589
Percentage change.....	2.64	2.57	2.64	2.78	2.71	2.51	2.46	2.29	2.18	2.29	2.41
DURABLE GOODS.....	29,660	30,639	31,639	32,641	33,699	34,724	35,752	36,739	37,694	38,737	39,876
Percentage change.....	3.46	3.30	3.26	3.17	3.24	3.04	2.96	2.76	2.60	2.77	2.94
WOOD PRODUCTS.....	598	616	634	646	659	669	679	688	694	698	702
Percentage change.....	2.01	3.06	2.84	1.98	1.89	1.61	1.50	1.33	0.82	0.60	0.58
NONMETALLIC MINERAL PRODUCTS.....	1,083	1,097	1,119	1,140	1,152	1,165	1,178	1,189	1,196	1,196	1,197
Percentage change.....	1.97	1.29	1.96	1.91	1.08	1.07	1.13	0.98	0.52	0.06	0.06
PRIMARY METALS.....	1,278	1,318	1,355	1,382	1,409	1,429	1,442	1,455	1,469	1,483	1,498
Percentage change.....	1.97	3.14	2.83	1.98	1.93	1.44	0.90	0.92	0.97	0.90	1.05
FABRICATED METAL PRODUCTS.....	3,783	3,860	3,940	3,981	4,034	4,079	4,141	4,190	4,227	4,244	4,253
Percentage change.....	2.01	2.04	2.08	1.04	1.33	1.12	1.51	1.19	0.90	0.40	0.20
MACHINERY.....	2,878	2,936	2,989	3,043	3,077	3,125	3,160	3,192	3,220	3,251	3,288
Percentage change.....	2.83	2.02	1.79	1.81	1.12	1.55	1.12	1.03	0.88	0.96	1.13
COMPUTER & ELECTRONIC PRODUCTS.....	1,336	1,388	1,439	1,494	1,547	1,605	1,652	1,690	1,734	1,788	1,855
Percentage change.....	3.04	3.86	3.67	3.87	3.55	3.69	2.94	2.33	2.57	3.14	3.72
ELECTRICAL EQUIPMENT, APPLIANCES & COMPONENTS....	4,040	4,166	4,290	4,426	4,559	4,653	4,773	4,886	5,010	5,121	5,250
Percentage change.....	2.82	3.12	2.98	3.17	3.00	2.07	2.58	2.36	2.54	2.22	2.53
MOTOR VEHICLES, BODIES & TRAILERS, & PARTS.....	11,159	11,659	12,167	12,720	13,351	13,997	14,631	15,251	15,870	16,596	17,397
Percentage change.....	4.83	4.48	4.36	4.54	4.96	4.84	4.53	4.24	4.06	4.57	4.83
OTHER TRANSPORTATION EQUIPMENT.....	531	555	579	603	625	647	662	677	688	699	710
Percentage change.....	8.15	4.54	4.29	4.27	3.55	3.53	2.41	2.21	1.66	1.60	1.55
FURNITURE.....	517	525	536	546	552	557	560	564	565	565	567
Percentage change.....	3.57	1.56	2.08	1.90	1.06	1.00	0.42	0.70	0.30	0.02	0.21
MISCELLANEOUS DURABLE GOODS.....	2,458	2,519	2,592	2,659	2,735	2,799	2,875	2,957	3,020	3,096	3,159
Percentage change.....	2.45	2.50	2.88	2.60	2.85	2.32	2.72	2.86	2.14	2.50	2.04
NONDURABLE GOODS.....	19,319	19,597	19,922	20,353	20,731	21,071	21,414	21,733	22,055	22,377	22,714
Percentage change.....	1.41	1.44	1.66	2.17	1.86	1.64	1.63	1.49	1.48	1.46	1.50
FOOD AND BEVERAGE & TOBACCO.....	6,451	6,520	6,606	6,754	6,885	7,011	7,142	7,261	7,382	7,480	7,590
Percentage change.....	1.22	1.07	1.31	2.25	1.93	1.83	1.88	1.66	1.67	1.33	1.47
TEXTILE MILLS & TEXTILE PRODUCT MILLS	446	445	445	445	445	446	447	449	450	452	454
Percentage change.....	-0.27	-0.18	-0.05	-0.05	0.10	0.20	0.27	0.35	0.35	0.45	0.47
APPAREL & LEATHER PRODUCTS.....	175	171	167	164	160	157	154	151	148	145	142
Percentage change.....	-2.02	-2.08	-2.14	-2.14	-2.04	-1.94	-1.99	-2.10	-1.91	-1.78	-2.02

(CONTINUED ON NEXT PAGE)

**Table 13: Tennessee Gross Domestic Product by Sector (millions of 2009 dollars)**

**January 2017**

	Forecast Data										
	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
PAPER.....	2,661	2,711	2,767	2,818	2,866	2,932	2,998	3,033	3,068	3,127	3,164
Percentage change.....	1.97	1.90	2.04	1.86	1.71	2.29	2.25	1.16	1.15	1.95	1.16
PRINTING & RELATED SUPPORT.....	1,088	1,094	1,091	1,089	1,088	1,086	1,086	1,087	1,088	1,090	1,092
Percentage change.....	0.48	0.54	-0.23	-0.19	-0.15	-0.14	0.04	0.06	0.13	0.13	0.16
CHEMICALS.....	5,792	5,936	6,119	6,345	6,546	6,694	6,835	6,995	7,151	7,304	7,482
Percentage change.....	2.35	2.50	3.07	3.71	3.17	2.25	2.10	2.34	2.23	2.14	2.44
PLASTICS & RUBBER.....	1,921	1,937	1,949	1,962	1,966	1,972	1,978	1,985	1,993	2,002	2,012
Percentage change.....	0.56	0.83	0.61	0.64	0.22	0.30	0.32	0.34	0.42	0.44	0.49
MISCELLANEOUS NONDURABLE GOODS.....	786	782	779	777	775	774	773	773	774	776	778
Percentage change.....	-0.50	-0.46	-0.44	-0.25	-0.20	-0.14	-0.11	-0.02	0.12	0.24	0.26
TRADE.....	52,201	52,660	53,295	54,099	55,341	56,161	57,125	58,234	59,396	60,496	61,660
Percentage change.....	4.17	2.55	2.61	2.54	2.15	2.24	2.14	1.95	2.00	1.86	1.93
WHOLESALE TRADE.....	20,639	21,294	22,162	22,978	23,876	24,723	25,555	26,376	27,203	27,963	28,780
Percentage change.....	3.03	3.17	4.08	3.68	3.91	3.55	3.36	3.21	3.13	2.80	2.92
RETAIL TRADE.....	20,300	20,703	21,134	21,615	22,168	22,617	23,064	23,426	23,819	24,229	24,666
Percentage change.....	2.09	1.98	2.08	2.27	2.56	2.03	1.97	1.57	1.68	1.72	1.80
TRANSPORTATION & UTILITIES.....	14,095	14,269	14,433	14,609	14,776	14,947	14,995	15,047	15,123	15,178	15,220
Percentage change.....	1.19	1.23	1.15	1.22	1.14	1.16	0.32	0.35	0.50	0.36	0.28
INFORMATION.....	8,106	8,353	8,544	8,794	9,058	9,250	9,479	9,685	9,947	10,243	10,538
Percentage change.....	2.27	3.05	2.28	2.93	3.00	2.12	2.48	2.17	2.71	2.97	2.88
FINANCIAL ACTIVITIES.....	46,132	47,418	48,812	49,904	50,915	52,023	53,219	54,312	55,458	56,599	57,878
Percentage change.....	3.04	2.79	2.94	2.24	2.03	2.18	2.30	2.05	2.11	2.06	2.26
PROFESSIONAL & BUSINESS SERVICES.....	33,848	35,223	36,631	37,955	39,275	40,568	42,166	44,030	45,684	47,418	49,261
Percentage change.....	4.14	4.06	4.00	3.61	3.48	3.29	3.94	4.42	3.76	3.80	3.89
EDUCATION & HEALTH SERVICES.....	30,412	31,222	31,990	32,806	33,639	34,338	35,048	35,790	36,569	37,353	38,144
Percentage change.....	3.09	2.67	2.46	2.55	2.54	2.08	2.07	2.12	2.17	2.15	2.12
LEISURE & HOSPITALITY.....	13,539	13,864	14,177	14,529	14,858	15,065	15,388	15,725	16,078	16,430	16,804
Percentage change.....	2.08	2.40	2.26	2.48	2.27	1.39	2.15	2.19	2.24	2.19	2.28
OTHER SERVICES.....	6,713	6,735	6,639	6,528	6,425	6,326	6,227	6,125	6,023	5,928	5,848
Percentage change.....	1.06	0.34	-1.42	-1.68	-1.58	-1.55	-1.56	-1.63	-1.67	-1.57	-1.35
GOVERNMENT.....	32,631	32,575	32,634	32,674	32,788	32,932	33,084	33,282	33,474	33,684	33,893
Percentage change.....	0.29	-0.17	0.18	0.12	0.35	0.44	0.46	0.60	0.58	0.63	0.62
FEDERAL.....	8,515	8,384	8,262	8,109	7,982	7,897	7,807	7,741	7,678	7,615	7,552
Percentage change.....	-0.09	-1.54	-1.44	-1.86	-1.57	-1.07	-1.13	-0.84	-0.82	-0.82	-0.82
STATE & LOCAL.....	24,117	24,191	24,372	24,565	24,806	25,035	25,277	25,541	25,796	26,069	26,341
Percentage change.....	0.4236	0.31	0.7455	0.7935	0.9808	0.9243	0.9666	1.0427	1.0003	1.0579	1.0409

Table 14: Tennessee Gross Domestic Product by Sector (millions of current dollars)

January 2017

	Forecast Data										
	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
GROSS DOMESTIC PRODUCT.....	326,292	340,951	357,851	375,090	392,051	408,182	425,357	443,110	461,087	479,722	499,750
Percentage change.....	4.20	4.49	4.96	4.82	4.52	4.11	4.21	4.17	4.06	4.04	4.17
AGRICULTURE, FORESTRY, FISHING & HUNTING.....	1,603	1,524	1,439	1,378	1,322	1,269	1,218	1,167	1,117	1,069	1,023
Percentage change.....	5.76	-4.92	-5.59	-4.24	-4.07	-4.02	-4.00	-4.15	-4.29	-4.34	-4.29
NATURAL RESOURCES & MINING.....	2,896	3,059	3,178	3,299	3,412	3,533	3,663	3,789	3,904	4,008	4,107
Percentage change.....	7.69	5.65	3.88	3.80	3.44	3.56	3.68	3.44	3.02	2.68	2.47
CONSTRUCTION.....	12,061	12,786	13,494	14,180	14,823	15,523	16,259	16,989	17,687	18,364	19,069
Percentage change.....	4.21	6.02	5.54	5.08	4.54	4.72	4.74	4.49	4.11	3.83	3.84
MANUFACTURING.....	54,812	57,331	60,373	63,678	66,807	69,543	72,361	75,205	78,002	80,997	84,247
Percentage change.....	4.42	4.60	5.31	5.47	4.91	4.09	4.05	3.93	3.72	3.84	4.01
DURABLE GOODS.....	31,543	33,227	35,188	37,202	39,271	40,988	42,711	44,470	46,198	48,055	50,045
Percentage change.....	5.30	5.34	5.90	5.72	5.56	4.37	4.21	4.12	3.88	4.02	4.14
WOOD PRODUCTS.....	808	841	883	919	938	958	978	997	1,013	1,027	1,041
Percentage change.....	3.03	4.06	5.00	4.11	2.07	2.05	2.09	2.02	1.56	1.38	1.39
NONMETALLIC MINERAL PRODUCTS.....	1,191	1,236	1,292	1,348	1,395	1,447	1,503	1,560	1,611	1,657	1,704
Percentage change.....	2.80	3.76	4.57	4.32	3.50	3.71	3.90	3.77	3.29	2.85	2.83
PRIMARY METALS.....	1,598	1,631	1,668	1,693	1,699	1,699	1,667	1,646	1,622	1,599	1,582
Percentage change.....	0.92	2.04	2.30	1.49	0.35	0.02	-1.86	-1.30	-1.41	-1.47	-1.02
FABRICATED METAL PRODUCTS.....	4,028	4,271	4,511	4,714	4,938	5,164	5,418	5,680	5,937	6,162	6,390
Percentage change.....	5.06	6.03	5.62	4.49	4.76	4.57	4.93	4.84	4.52	3.78	3.72
MACHINERY.....	3,205	3,365	3,523	3,679	3,811	3,944	4,069	4,198	4,316	4,449	4,589
Percentage change.....	4.98	4.98	4.71	4.42	3.58	3.50	3.18	3.16	2.82	3.07	3.15
COMPUTER & ELECTRONIC PRODUCTS.....	1,215	1,212	1,231	1,252	1,252	1,253	1,241	1,220	1,200	1,181	1,167
Percentage change.....	-0.42	-0.22	1.56	1.72	0.03	0.02	-0.89	-1.71	-1.70	-1.52	-1.25
ELECTRICAL EQUIPMENT, APPLIANCES & COMPONENTS....	4,515	4,773	5,063	5,383	5,705	5,970	6,280	6,579	6,914	7,237	7,596
Percentage change.....	5.95	5.71	6.08	6.33	5.99	4.63	5.20	4.77	5.09	4.67	4.95
MOTOR VEHICLES, BODIES & TRAILERS, & PARTS.....	11,158	11,911	12,792	13,750	14,838	15,631	16,399	17,185	17,956	18,872	19,867
Percentage change.....	7.17	6.75	7.40	7.49	7.91	5.34	4.92	4.79	4.49	5.10	5.27
OTHER TRANSPORTATION EQUIPMENT.....	623	672	728	786	841	902	955	1,010	1,062	1,117	1,172
Percentage change.....	11.42	7.82	8.36	7.88	7.11	7.14	5.95	5.76	5.16	5.10	5.01
FURNITURE.....	551	576	607	640	663	690	713	737	758	775	798
Percentage change.....	6.69	4.49	5.46	5.36	3.72	4.02	3.38	3.32	2.84	2.19	2.96
MISCELLANEOUS DURABLE GOODS.....	2,650	2,740	2,889	3,039	3,190	3,332	3,486	3,657	3,807	3,980	4,138
Percentage change.....	3.00	3.39	5.43	5.19	4.98	4.45	4.63	4.90	4.10	4.53	3.99
NONDURABLE GOODS.....	23,269	24,105	25,186	26,476	27,536	28,555	29,650	30,734	31,804	32,942	34,202
Percentage change.....	3.26	3.59	4.48	5.13	4.00	3.70	3.84	3.66	3.48	3.58	3.83
FOOD AND BEVERAGE & TOBACCO.....	7,500	7,729	8,025	8,447	8,797	9,139	9,579	9,982	10,354	10,723	11,176
Percentage change.....	3.16	3.06	3.82	5.27	4.13	3.90	4.82	4.21	3.72	3.57	4.23
TEXTILE MILLS & TEXTILE PRODUCT MILLS	483	486	492	498	503	510	517	525	533	542	551
Percentage change.....	0.01	0.70	1.18	1.14	1.14	1.29	1.40	1.52	1.54	1.68	1.71
APPAREL & LEATHER PRODUCTS.....	173	167	163	158	154	150	146	143	139	136	132
Percentage change.....	-3.62	-3.18	-2.64	-2.72	-2.60	-2.49	-2.56	-2.68	-2.50	-2.41	-2.65

(CONTINUED ON NEXT PAGE)

**Table 14: Tennessee Gross Domestic Product by Sector (millions of current dollars)**

**January 2017**

	Forecast Data										
	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
PAPER.....	3,054	3,183	3,357	3,538	3,681	3,853	4,014	4,146	4,274	4,449	4,595
Percentage change.....	4.10	4.20	5.49	5.36	4.05	4.67	4.19	3.29	3.07	4.11	3.26
PRINTING & RELATED SUPPORT.....	1,041	1,052	1,059	1,066	1,061	1,056	1,053	1,050	1,047	1,045	1,043
Percentage change.....	0.99	1.01	0.68	0.69	-0.49	-0.47	-0.30	-0.29	-0.22	-0.24	-0.21
CHEMICALS.....	7,359	7,705	8,202	8,782	9,263	9,675	10,081	10,537	11,007	11,486	12,029
Percentage change.....	3.77	4.70	6.44	7.08	5.48	4.44	4.20	4.52	4.46	4.36	4.72
PLASTICS & RUBBER.....	2,155	2,208	2,267	2,322	2,367	2,418	2,458	2,501	2,548	2,599	2,657
Percentage change.....	1.42	2.47	2.67	2.40	1.97	2.13	1.67	1.72	1.88	2.04	2.21
MISCELLANEOUS NONDURABLE GOODS.....	1,505	1,574	1,621	1,666	1,710	1,755	1,802	1,851	1,904	1,962	2,020
Percentage change.....	5.87	4.63	2.98	2.76	2.65	2.62	2.66	2.75	2.84	3.03	3.00
TRADE.....	62,193	65,122	68,674	72,336	75,838	79,284	82,672	86,018	89,492	92,887	96,591
Percentage change.....	3.94	4.71	5.45	5.33	4.84	4.54	4.27	4.05	4.04	3.79	3.99
WHOLESALE TRADE.....	23,500	24,926	26,727	28,469	30,368	32,310	34,304	36,383	38,457	40,469	42,684
Percentage change.....	5.09	6.07	7.23	6.51	6.67	6.40	6.17	6.06	5.70	5.23	5.47
RETAIL TRADE.....	22,208	23,127	24,324	25,639	26,624	27,503	28,380	29,162	30,025	30,893	31,834
Percentage change.....	3.23	4.14	5.18	5.40	3.84	3.30	3.19	2.76	2.96	2.89	3.05
TRANSPORTATION & UTILITIES.....	16,485	17,070	17,622	18,229	18,846	19,471	19,989	20,473	21,010	21,525	22,074
Percentage change.....	3.29	3.55	3.23	3.45	3.39	3.31	2.66	2.42	2.62	2.45	2.55
INFORMATION.....	7,954	8,156	8,307	8,500	8,711	8,851	9,027	9,175	9,366	9,601	9,842
Percentage change.....	1.83	2.53	1.85	2.32	2.48	1.60	2.00	1.64	2.08	2.51	2.51
FINANCIAL ACTIVITIES.....	52,735	55,281	58,266	60,909	63,653	66,166	68,857	71,484	74,256	77,104	80,225
Percentage change.....	4.95	4.83	5.40	4.54	4.51	3.95	4.07	3.81	3.88	3.84	4.05
PROFESSIONAL & BUSINESS SERVICES.....	37,002	39,481	42,234	45,059	47,658	50,322	53,470	57,089	60,561	64,293	68,310
Percentage change.....	5.80	6.70	6.97	6.69	5.77	5.59	6.26	6.77	6.08	6.16	6.25
EDUCATION & HEALTH SERVICES.....	33,763	35,171	36,887	38,750	40,626	42,426	44,259	46,161	48,165	50,239	52,381
Percentage change.....	4.33	4.17	4.88	5.05	4.84	4.43	4.32	4.30	4.34	4.31	4.26
LEISURE & HOSPITALITY.....	15,741	16,519	17,389	18,343	19,296	20,091	21,081	22,139	23,264	24,426	25,663
Percentage change.....	4.53	4.94	5.27	5.48	5.19	4.12	4.93	5.02	5.08	5.00	5.07
OTHER SERVICES.....	7,955	8,149	8,267	8,389	8,498	8,605	8,714	8,824	8,930	9,035	9,157
Percentage change.....	3.12	2.43	1.46	1.48	1.30	1.26	1.26	1.26	1.21	1.17	1.35
GOVERNMENT.....	37,575	38,371	39,343	40,268	41,407	42,569	43,775	45,070	46,344	47,700	49,134
Percentage change.....	1.92	2.12	2.53	2.35	2.83	2.81	2.83	2.96	2.83	2.93	3.01
FEDERAL.....	9,729	9,735	9,732	9,721	9,749	9,826	9,895	9,988	10,078	10,167	10,256
Percentage change.....	1.30	0.06	-0.03	-0.11	0.29	0.79	0.70	0.94	0.90	0.88	0.87
STATE & LOCAL.....	27,846	28,636	29,611	30,547	31,658	32,743	33,880	35,082	36,265	37,532	38,879
Percentage change.....	2.1414	2.8378	3.4051	3.1622	3.6366	3.4272	3.4706	3.5485	3.3739	3.4933	3.5872



## APPENDIX B: HISTORICAL DATA

In this section—

### Appendix B: Historical Data

Quarterly	pages 44–67 (2013:2 to 2016:3)
Annual	pages 68–82 (2004 to 2015)

### Quarterly History Tables

Table 1:	Selected U.S. and Tennessee Economic Indicators, Seasonally Adjusted	44
Table 2:	Selected Per Capita U.S. and Tennessee Economic Indicators, Seasonally Adjusted	46
Table 3:	Tennessee Personal Income Components, Seasonally Adjusted Annual Rates (millions of 2009 dollars)	47
Table 4:	Tennessee Personal Income Components, Seasonally Adjusted Annual Rates (millions of current dollars)	48
Table 5:	Tennessee Nonfarm Employment by Sector, Not Seasonally Adjusted (thousands of jobs)	49
Table 6:	Tennessee Durable Goods Manufacturing Employment, Not Seasonally Adjusted (thousands of jobs)	50
Table 7:	Tennessee Nondurable Goods Manufacturing Employment, Not Seasonally Adjusted (thousands of jobs)	51
Table 8:	Tennessee Nonfarm Employment by Sector, Seasonally Adjusted (thousands of jobs)	52
Table 9:	Tennessee Durable Goods Manufacturing Employment, Seasonally Adjusted (thousands of jobs)	54
Table 10:	Tennessee Nondurable Goods Manufacturing Employment, Seasonally Adjusted (thousands of jobs)	55
Table 11:	Tennessee Average Annual Wage and Salary Rate by Sector, Not Seasonally Adjusted (2009 dollars)	56
Table 12:	Tennessee Average Annual Wage and Salary Rate by Sector, Seasonally Adjusted (2009 dollars)	57
Table 13:	Tennessee Average Annual Wage and Salary Rate by Sector, Not Seasonally Adjusted (current dollars)	59
Table 14:	Tennessee Average Annual Wage and Salary Rate by Sector, Seasonally Adjusted (current dollars)	60
Table 15:	Tennessee Civilian Labor Force and Unemployment Rate, Not Seasonally Adjusted	62
Table 16:	Tennessee Civilian Labor Force and Unemployment Rate, Seasonally Adjusted	63
Table 17:	Tennessee Taxable Sales, Not Seasonally Adjusted (millions of 2009 dollars)	64
Table 18:	Tennessee Taxable Sales, Seasonally Adjusted (millions of 2009 dollars)	65
Table 19:	Tennessee Taxable Sales, Not Seasonally Adjusted (millions of current dollars)	66
Table 20:	Tennessee Taxable Sales, Seasonally Adjusted (millions of current dollars)	67

### Annual History Tables

Table 1:	Selected U.S. and Tennessee Economic Indicators	68
Table 2:	Selected Per Capita U.S. and Tennessee Economic Indicators	69
Table 3:	Tennessee Personal Income Components (millions of 2009 dollars)	70
Table 4:	Tennessee Personal Income Components (millions of current dollars)	71
Table 5:	Tennessee Nonfarm Employment by Sector, Seasonally adjusted (thousands of jobs)	72
Table 6:	Tennessee Durable Goods Manufacturing Employment (thousands of jobs)	73
Table 7:	Tennessee Nondurable Goods Manufacturing Employment (thousands of jobs)	74
Table 8:	Tennessee Average Annual Wage and Salary Rate by Sector (2009 dollars)	75
Table 9:	Tennessee Average Annual Wage and Salary Rate by Sector (current dollars)	76
Table 10:	Tennessee Civilian Labor Force and Unemployment Rate	77
Table 11:	Tennessee Taxable Sales (millions of 2009 dollars)	78
Table 12:	Tennessee Taxable Sales (millions of current dollars)	79
Table 13:	Tennessee Gross Domestic Product by Sector (millions of 2009 dollars)	80
Table 14:	Tennessee Gross Domestic Product by Sector (millions of current dollars)	82

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

January 2017

	Historical Data														Annual		
	2013:2	2013:3	2013:4	2014:1	2014:2	2014:3	2014:4	2015:1	2015:2	2015:3	2015:4	2016:1	2016:2	2016:3	2013	2014	2015
US GDP (Bil2009\$) SAAR.....	15521.6	15641.3	15793.9	15747.0	15900.8	16094.5	16186.7	16269.0	16374.2	16454.9	16490.7	16525.0	16583.1	16727.0	15612.2	15982.3	16397.2
% Chg Prev Qtr SAAR.....	0.77	3.12	3.96	-1.18	3.96	4.96	2.31	2.05	2.61	1.99	0.87	0.83	1.41	3.52	1.68	2.37	2.60
% Chg Same Qtr Last Yr.....	1.04	1.69	2.66	1.65	2.44	2.90	2.49	3.31	2.98	2.24	1.88	1.57	1.28	1.65	1.68	2.37	2.60
US GDP (Bil\$) SAAR.....	16541.4	16749.3	16999.9	17025.2	17285.6	17569.4	17692.2	17783.6	17998.3	18141.9	18222.8	18281.6	18450.1	18675.3	16691.5	17393.1	18036.7
% Chg Prev Qtr SAAR.....	1.61	5.12	6.12	0.60	6.26	6.73	2.83	2.08	4.92	3.23	1.80	1.30	3.74	4.97	3.32	4.20	3.70
% Chg Same Qtr Last Yr.....	2.60	3.21	4.31	3.34	4.50	4.90	4.07	4.45	4.12	3.26	3.00	2.80	2.51	2.94	3.32	4.20	3.70
TN PERSONAL INCOME (MIL2009\$) SAAR.....	233944	234776	235517	238242	239964	241880	245300	249175	252324	254977	258102	258129	258759	260499	234431	241346	253644
% Chg Prev Qtr SAAR.....	0.78	1.43	1.27	4.71	2.92	3.23	5.78	6.47	5.15	4.27	4.99	0.04	0.98	2.72	-0.60	2.95	5.10
% Chg Same Qtr Last Yr.....	-0.62	-0.39	-1.75	2.04	2.57	3.03	4.15	4.59	5.15	5.41	5.22	3.59	2.55	2.17	-0.60	2.95	5.10
US PERSONAL INCOME (BIL2009\$) SAAR.....	13072	13134	13172	13337	13486	13642	13805	13935	14069	14170	14278	14313	14413	14516	13088	13568	14113
% Chg Prev Qtr SAAR.....	3.12	1.90	1.18	5.10	4.54	4.69	4.89	3.80	3.92	2.89	3.09	0.99	2.83	2.89	-0.18	3.67	4.02
% Chg Same Qtr Last Yr.....	0.20	0.61	-1.73	2.81	3.17	3.87	4.81	4.48	4.32	3.87	3.42	2.72	2.45	2.45	-0.18	3.67	4.02
TN PERSONAL INCOME (MIL\$) SAAR.....	250856	252678	254568	258781	261879	264677	268412	271548	276224	279924	283633	283862	285977	288930	252091	263437	277832
% Chg Prev Qtr SAAR.....	0.95	2.94	3.03	6.79	4.88	4.34	5.77	4.76	7.07	5.47	5.41	0.32	3.01	4.19	0.72	4.50	5.46
% Chg Same Qtr Last Yr.....	0.65	0.91	-0.57	3.40	4.39	4.75	5.44	4.93	5.48	5.76	5.67	4.53	3.53	3.22	0.72	4.50	5.46
US PERSONAL INCOME (BIL\$) SAAR.....	14017	14135	14238	14487	14718	14928	15106	15186	15402	15556	15690	15740	15929	16102	14074	14810	15459
% Chg Prev Qtr SAAR.....	3.29	3.41	2.94	7.19	6.53	5.81	4.88	2.13	5.81	4.07	3.49	1.28	4.90	4.40	1.14	5.23	4.38
% Chg Same Qtr Last Yr.....	1.47	1.93	-0.55	4.19	5.00	5.60	6.10	4.82	4.65	4.21	3.87	3.65	3.42	3.51	1.14	5.23	4.38
TN NONFARM JOBS (THOUS).....	2754.3	2762.7	2782.8	2795.4	2812.2	2829.7	2848.4	2859.6	2877.4	2903.2	2928.8	2951.1	2948.3	2969.0	2760.0	2821.4	2892.3
% Chg Prev Qtr SAAR.....	2.07	1.23	2.95	1.82	2.43	2.51	2.66	1.59	2.50	3.64	3.58	3.08	-0.38	2.83	1.65	2.23	2.51
% Chg Same Qtr Last Yr.....	1.50	1.63	1.97	2.02	2.11	2.43	2.35	2.30	2.32	2.60	2.82	3.20	2.47	2.26	1.65	2.23	2.51
US NONFARM JOBS (MIL).....	136.1	136.6	137.3	137.8	138.6	139.3	140.1	140.8	141.5	142.2	142.9	143.5	144.0	144.6	136.4	138.9	141.8
% Chg Prev Qtr SAAR.....	1.72	1.63	1.80	1.51	2.32	2.18	2.26	2.10	1.87	1.91	2.05	1.86	1.27	1.75	1.65	1.88	2.08
% Chg Same Qtr Last Yr.....	1.61	1.70	1.78	1.67	1.81	1.95	2.07	2.21	2.10	2.03	1.98	1.92	1.77	1.73	1.65	1.88	2.08
TN MFG JOBS (THOUS).....	317.2	318.6	321.2	322.8	323.3	325.9	327.8	329.4	331.3	333.9	336.3	340.0	342.6	342.5	318.5	324.9	332.7
% Chg Prev Qtr SAAR.....	0.32	1.80	3.39	1.93	0.62	3.35	2.28	1.97	2.32	3.16	2.92	4.50	3.04	-0.11	1.62	2.04	2.39
% Chg Same Qtr Last Yr.....	1.10	1.11	1.64	1.85	1.93	2.32	2.04	2.05	2.48	2.43	2.59	3.22	3.40	2.57	1.62	2.04	2.39
US MFG JOBS (MIL).....	12.0	12.0	12.1	12.1	12.2	12.2	12.3	12.3	12.3	12.3	12.3	12.3	12.3	12.3	12.0	12.2	12.3
% Chg Prev Qtr SAAR.....	0.27	0.20	2.08	1.35	1.35	1.71	2.18	1.48	0.23	-0.02	-0.19	0.09	-0.92	-0.36	0.77	1.37	1.10
% Chg Same Qtr Last Yr.....	0.62	0.41	0.96	0.97	1.24	1.62	1.65	1.68	1.40	0.96	0.37	0.02	-0.26	-0.35	0.77	1.37	1.10
TN UNEMPLOYMENT RATE (%).....	7.9	7.6	7.1	6.6	6.5	6.5	6.3	6.0	5.8	5.6	5.6	4.9	4.2	4.4	7.7	6.5	5.8
US UNEMPLOYMENT RATE (%).....	7.5	7.3	6.9	6.7	6.2	6.1	5.7	5.6	5.4	5.2	5.0	4.9	4.9	4.9	7.4	6.2	5.3

(CONTINUED ON NEXT PAGE)

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

**January 2017**

	Historical Data														Annual		
	2013:2	2013:3	2013:4	2014:1	2014:2	2014:3	2014:4	2015:1	2015:2	2015:3	2015:4	2016:1	2016:2	2016:3	2013	2014	2015
<b>CHAINED PRICE INDEX, GDP</b>																	
(2009=100.0).....	106.6	107.1	107.7	108.1	108.7	109.2	109.3	109.3	109.9	110.3	110.5	110.6	111.3	111.7	106.9	108.8	110.0
% Chg Prev Qtr SAAR.....	0.93	2.07	2.12	1.74	2.14	1.72	0.52	-0.05	2.27	1.27	0.84	0.50	2.31	1.42	1.61	1.80	1.07
% Chg Same Qtr Last Yr.....	1.56	1.48	1.64	1.71	2.02	1.93	1.53	1.08	1.11	1.00	1.08	1.21	1.22	1.26	1.61	1.80	1.07
<b>US PERS CONSUMP DEFL (2009=100.0)...</b>																	
	107.2	107.6	108.1	108.6	109.1	109.4	109.4	109.0	109.5	109.8	109.9	110.0	110.5	110.9	107.5	109.2	109.5
% Chg Prev Qtr SAAR.....	0.17	1.49	1.74	1.98	1.90	1.07	-0.01	-1.61	1.82	1.14	0.39	0.28	2.02	1.46	1.33	1.51	0.35
% Chg Same Qtr Last Yr.....	1.27	1.31	1.20	1.34	1.78	1.67	1.23	0.33	0.31	0.33	0.43	0.91	0.96	1.04	1.33	1.51	0.35
<b>CONSUMER PRICE INDEX,</b>																	
ALL-URBAN (82-84=1.000).....	2.320	2.332	2.343	2.357	2.368	2.373	2.371	2.354	2.368	2.376	2.381	2.379	2.394	2.404	2.330	2.367	2.370
% Chg Prev Qtr SAAR.....	-0.49	2.05	1.85	2.35	1.91	0.91	-0.31	-2.86	2.44	1.38	0.77	-0.31	2.53	1.63	1.47	1.61	0.12
% Chg Same Qtr Last Yr.....	1.40	1.50	1.25	1.43	2.04	1.76	1.21	-0.10	0.03	0.14	0.41	1.06	1.08	1.15	1.47	1.61	0.12
<b>BANK PRIME INTEREST RATE (%).....</b>																	
	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.5	3.5	3.5	3.3	3.3	3.3
<b>FEDERAL FUNDS RATE (% per annum).....</b>																	
	0.117	0.083	0.087	0.073	0.093	0.090	0.100	0.110	0.123	0.137	0.160	0.360	0.373	0.397	0.108	0.089	0.133
<b>30-YEAR FIXED MORTGAGE RATE (%).....</b>																	
	3.7	4.4	4.3	4.4	4.2	4.1	4.0	3.7	3.8	4.0	3.9	3.7	3.6	3.4	4.0	4.2	3.9
<b>TN TAXABLE SALES (MIL2009\$).....</b>																	
	23507	23399	23573	23805	23846	24440	24878	24564	25691	26162	26604	26716	26628	26798	93853	96970	103022
% Chg Prev Qtr SAAR.....	2.29	-1.82	3.02	4.00	0.69	10.33	7.37	-4.95	19.64	7.55	6.93	1.69	-1.32	2.59	1.60	3.32	6.24
% Chg Same Qtr Last Yr.....	2.22	2.29	2.55	1.85	1.45	4.45	5.54	3.19	7.73	7.05	6.94	8.76	3.65	2.43	1.60	3.32	6.24
<b>TN TAXABLE SALES (MIL\$).....</b>																	
	25206	25183	25480	25858	26024	26743	27222	26770	28124	28722	29236	29380	29429	29723	100922	105848	112852
% Chg Prev Qtr SAAR.....	2.46	-0.37	4.80	6.06	2.60	11.52	7.36	-6.48	21.82	8.78	7.35	1.98	0.67	4.06	2.95	4.88	6.62
% Chg Same Qtr Last Yr.....	3.52	3.63	3.79	3.21	3.25	6.20	6.84	3.53	8.07	7.40	7.40	9.75	4.64	3.49	2.95	4.88	6.62
<b>TN AVG ANNUAL WAGE, NONFARM</b>																	
(2009\$).....	41478	41456	41468	41918	41629	41725	42246	42421	43030	43177	43754	43121	43373	43523	41505	41880	43096
% Chg Prev Qtr SAAR.....	-1.31	-0.21	0.12	4.41	-2.73	0.93	5.09	1.66	5.87	1.37	5.46	-5.66	2.36	1.39	-1.10	0.90	2.90
% Chg Same Qtr Last Yr.....	-1.17	-0.71	-2.09	0.73	0.36	0.65	1.88	1.20	3.37	3.48	3.57	1.65	0.80	0.80	-1.10	0.90	2.90
<b>TN AVG ANNUAL WAGE, NONFARM (\$)....</b>																	
	44477	44617	44823	45531	45431	45658	46227	46230	47106	47402	48083	47420	47936	48273	44630	45712	47205
% Chg Prev Qtr SAAR.....	-1.14	1.27	1.85	6.48	-0.88	2.01	5.08	0.03	7.80	2.53	5.87	-5.40	4.42	2.85	0.21	2.42	3.27
% Chg Same Qtr Last Yr.....	0.08	0.59	-0.91	2.08	2.14	2.33	3.13	1.53	3.69	3.82	4.01	2.57	1.76	1.84	0.21	2.42	3.27

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 2017**

	Historical Data													Annual			
	2013:2	2013:3	2013:4	2014:1	2014:2	2014:3	2014:4	2015:1	2015:2	2015:3	2015:4	2016:1	2016:2	2016:3	2013	2014	2015
US GDP (2009\$) SAAR.....	49006	49274	49658	49431	49817	50311	50526	50700	50906	51043	51055	51081	51163	51493	49235	50022	50927
% Chg Prev Qtr SAAR.....	0.04	2.20	3.15	-1.81	3.16	4.02	1.72	1.39	1.64	1.08	0.09	0.20	0.64	2.60	0.94	1.60	1.81
% Chg Same Qtr Last Yr.....	0.31	0.95	1.90	0.88	1.66	2.11	1.75	2.57	2.19	1.46	1.05	0.75	0.50	0.88	0.94	1.60	1.81
US GDP (\$) SAAR.....	52226	52764	53449	53444	54156	54921	55225	55420	55955	56276	56418	56511	56923	57490	52639	54438	56018
% Chg Prev Qtr SAAR.....	0.87	4.19	5.30	-0.04	5.44	5.78	2.23	1.42	3.92	2.31	1.01	0.66	2.95	4.05	2.57	3.42	2.90
% Chg Same Qtr Last Yr.....	1.86	2.46	3.53	2.56	3.70	4.09	3.32	3.70	3.32	2.47	2.16	1.97	1.73	2.16	2.57	3.42	2.90
TN PERSONAL INCOME (2009\$) SAAR.....	35890	35922	35941	36261	36427	36621	37042	37529	37904	38204	38572	38476	38471	38631	35917	36588	38052
% Chg Prev Qtr SAAR.....	-0.28	0.36	0.20	3.61	1.84	2.15	4.68	5.36	4.06	3.19	3.91	-0.98	-0.05	1.67	-1.64	1.87	4.00
% Chg Same Qtr Last Yr.....	-1.67	-1.45	-2.78	0.96	1.50	1.95	3.06	3.50	4.06	4.32	4.13	2.52	1.49	1.12	-1.64	1.87	4.00
US PERSONAL INCOME (2009\$) SAAR.....	41273	41374	41416	41867	42253	42644	43093	43426	43740	43955	44204	44244	44468	44687	41274	42465	43832
% Chg Prev Qtr SAAR.....	2.37	0.99	0.40	4.44	3.73	3.75	4.28	3.13	2.93	1.97	2.29	0.36	2.04	1.99	-0.91	2.89	3.22
% Chg Same Qtr Last Yr.....	-0.53	-0.12	-2.46	2.04	2.37	3.07	4.05	3.72	3.52	3.07	2.58	1.89	1.66	1.67	-0.91	2.89	3.22
TN PERSONAL INCOME (\$) SAAR.....	38484	38661	38848	39387	39754	40073	40532	40899	41495	41941	42387	42312	42518	42847	38622	39936	41680
% Chg Prev Qtr SAAR.....	-0.11	1.85	1.94	5.66	3.78	3.25	4.66	3.67	5.96	4.38	4.32	-0.71	1.96	3.13	-0.34	3.40	4.37
% Chg Same Qtr Last Yr.....	-0.42	-0.15	-1.61	2.32	3.30	3.65	4.34	3.84	4.38	4.66	4.58	3.46	2.47	2.16	-0.34	3.40	4.37
US PERSONAL INCOME (\$) SAAR.....	44256	44529	44766	45477	46112	46663	47153	47325	47883	48255	48577	48655	49146	49568	44383	46352	48011
% Chg Prev Qtr SAAR.....	2.54	2.49	2.14	6.51	5.70	4.87	4.27	1.47	4.81	3.14	2.69	0.64	4.10	3.48	0.40	4.44	3.58
% Chg Same Qtr Last Yr.....	0.74	1.19	-1.29	3.40	4.19	4.79	5.33	4.06	3.84	3.41	3.02	2.81	2.64	2.72	0.40	4.44	3.58
TN TAXABLE SALES (2009\$).....	3606	3580	3597	3623	3620	3700	3757	3700	3859	3920	3976	3982	3959	3974	14379	14700	15455
% Chg Prev Qtr SAAR.....	1.21	-2.86	1.94	2.91	-0.36	9.18	6.25	-5.94	18.40	6.44	5.83	0.65	-2.33	1.54	0.52	2.23	5.13
% Chg Same Qtr Last Yr.....	1.14	1.21	1.47	0.77	0.38	3.36	4.43	2.11	6.61	5.94	5.83	7.64	2.58	1.38	0.52	2.23	5.13
TN TAXABLE SALES (\$).....	3867	3853	3888	3936	3951	4049	4111	4032	4225	4303	4369	4379	4375	4408	15462	16046	16929
% Chg Prev Qtr SAAR.....	1.38	-1.41	3.70	4.95	1.53	10.35	6.24	-7.46	20.56	7.66	6.25	0.93	-0.36	3.00	1.86	3.78	5.51
% Chg Same Qtr Last Yr.....	2.43	2.54	2.69	2.13	2.16	5.08	5.72	2.45	6.94	6.28	6.28	8.62	3.56	2.42	1.86	3.78	5.51

**Table 3: Tennessee Personal Income Components, Seasonally Adjusted Annual Rates (millions of 2009 dollars)**

**January 2017**

	Historical Data													Annual			
	2013:2	2013:3	2013:4	2014:1	2014:2	2014:3	2014:4	2015:1	2015:2	2015:3	2015:4	2016:1	2016:2	2016:3	2013	2014	2015
TN PERSONAL INCOME.....	233944	234776	235517	238242	239964	241880	245300	249175	252324	254977	258102	258129	258759	260499	234431	241346	253644
% Chg Prev Qtr SAAR.....	0.78	1.43	1.27	4.71	2.92	3.23	5.78	6.47	5.15	4.27	4.99	0.04	0.98	2.72	-0.60	2.95	5.10
% Chg Same Qtr Last Yr.....	-0.62	-0.39	-1.75	2.04	2.57	3.03	4.15	4.59	5.15	5.41	5.22	3.59	2.55	2.17	-0.60	2.95	5.10
WAGES AND SALARIES.....	115096	115384	116245	118018	117904	118902	121168	122110	124619	126159	128943	128065	128675	130018	115405	118998	125457
% Chg Prev Qtr SAAR.....	0.70	1.01	3.02	6.24	-0.38	3.43	7.84	3.15	8.48	5.03	9.12	-2.69	1.92	4.24	0.50	3.11	5.43
% Chg Same Qtr Last Yr.....	0.30	0.89	-0.19	2.72	2.44	3.05	4.24	3.47	5.70	6.10	6.42	4.88	3.25	3.06	0.50	3.11	5.43
OTHER LABOR INCOME.....	27634	27706	27769	26992	27023	27171	27427	27095	27265	27457	27783	27831	27896	28100	27631	27153	27400
% Chg Prev Qtr SAAR.....	3.21	1.05	0.91	-10.73	0.47	2.21	3.81	-4.75	2.53	2.85	4.83	0.69	0.94	2.96	-0.46	-1.73	0.91
% Chg Same Qtr Last Yr.....	-0.47	-0.99	-1.33	-1.55	-2.21	-1.93	-1.23	0.38	0.89	1.05	1.30	2.72	2.32	2.34	-0.46	-1.73	0.91
PROPRIETORS INCOME.....	28539	28673	28287	30373	30847	30946	31560	33468	33867	34435	34958	35100	34993	35198	28541	30932	34182
% Chg Prev Qtr SAAR.....	-1.75	1.89	-5.28	32.93	6.39	1.29	8.18	26.45	4.86	6.88	6.21	1.64	-1.21	2.36	3.75	8.38	10.51
% Chg Same Qtr Last Yr.....	3.93	3.81	1.42	5.96	8.09	7.93	11.57	10.19	9.79	11.27	10.76	4.88	3.33	2.22	3.75	8.38	10.51
RENT, INTEREST, DIVIDENDS.....	32702	32999	33160	33768	34539	35005	35201	35322	35740	35932	35602	35792	35859	35933	32903	34628	35649
% Chg Prev Qtr SAAR.....	-0.60	3.68	1.96	7.54	9.45	5.51	2.25	1.39	4.82	2.16	-3.62	2.15	0.75	0.83	-3.52	5.24	2.95
% Chg Same Qtr Last Yr.....	-3.16	-2.23	-7.24	3.10	5.62	6.08	6.15	4.60	3.48	2.65	1.14	1.33	0.33	0.00	-3.52	5.24	2.95
TRANSFER PAYMENTS.....	49711	49811	50004	49163	49692	50062	50488	51978	51953	52307	52488	52985	52995	53082	49733	49851	52181
% Chg Prev Qtr SAAR.....	2.50	0.81	1.55	-6.56	4.37	3.01	3.45	12.34	-0.19	2.76	1.39	3.85	0.07	0.66	1.54	0.24	4.67
% Chg Same Qtr Last Yr.....	1.47	1.25	2.03	-0.49	-0.04	0.50	0.97	5.73	4.55	4.48	3.96	1.94	2.01	1.48	1.54	0.24	4.67
LESS: PERS CONT FOR SOC INS...	18449	18493	18599	18773	18767	18917	19210	19481	19745	19905	20222	20213	20237	20385	18471	18917	19838
% Chg Prev Qtr SAAR.....	2.31	0.96	2.32	3.80	-0.13	3.23	6.34	5.75	5.53	3.28	6.54	-0.19	0.47	2.97	13.90	2.41	4.87
% Chg Same Qtr Last Yr.....	13.69	14.93	13.67	2.34	1.73	2.29	3.28	3.77	5.21	5.22	5.27	3.76	2.49	2.41	13.90	2.41	4.87
RESIDENCE ADJUSTMENT.....	-1289	-1305	-1348	-1298	-1274	-1290	-1334	-1316	-1375	-1407	-1448	-1432	-1423	-1446	-1311	-1299	-1387
% Chg Prev Qtr SAAR.....	-3.88	4.93	13.82	-13.87	-7.16	5.02	14.17	-5.03	19.08	9.63	12.21	-4.54	-2.49	6.81	16.47	-0.90	6.75
% Chg Same Qtr Last Yr.....	15.39	16.70	13.40	-0.28	-1.15	-1.12	-1.05	1.40	7.91	9.08	8.61	8.75	3.45	2.77	16.47	-0.90	6.75
PER CAPITA PERSONAL INCOME (\$)...	35890	35922	35941	36261	36427	36621	37042	37529	37904	38204	38572	38476	38471	38631	35917	36588	38052
% Chg Prev Qtr SAAR.....	-0.28	0.36	0.20	3.61	1.84	2.15	4.68	5.36	4.06	3.19	3.91	-0.98	-0.05	1.67	-1.64	1.87	4.00
% Chg Same Qtr Last Yr.....	-1.67	-1.45	-2.78	0.96	1.50	1.95	3.06	3.50	4.06	4.32	4.13	2.52	1.49	1.12	-1.64	1.87	4.00

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 2017**

	Historical Data													Annual			
	2013:2	2013:3	2013:4	2014:1	2014:2	2014:3	2014:4	2015:1	2015:2	2015:3	2015:4	2016:1	2016:2	2016:3	2013	2014	2015
TN PERSONAL INCOME.....	250856	252678	254568	258781	261879	264677	268412	271548	276224	279924	283633	283862	285977	288930	252091	263437	277832
% Chg Prev Qtr SAAR.....	0.95	2.94	3.03	6.79	4.88	4.34	5.77	4.76	7.07	5.47	5.41	0.32	3.01	4.19	0.72	4.50	5.46
% Chg Same Qtr Last Yr.....	0.65	0.91	-0.57	3.40	4.39	4.75	5.44	4.93	5.48	5.76	5.67	4.53	3.53	3.22	0.72	4.50	5.46
WAGES AND SALARIES.....	123416	124183	125648	128192	128673	130109	132584	133074	136423	138502	141698	140832	142210	144208	124099	129889	137424
% Chg Prev Qtr SAAR.....	0.87	2.51	4.80	8.35	1.51	4.54	7.83	1.48	10.45	6.24	9.55	-2.42	3.97	5.74	1.84	4.67	5.80
% Chg Same Qtr Last Yr.....	1.57	2.22	1.01	4.10	4.26	4.77	5.52	3.81	6.02	6.45	6.87	5.83	4.24	4.12	1.84	4.67	5.80
OTHER LABOR INCOME.....	29631	29819	30015	29319	29491	29732	30011	29528	29847	30143	30531	30605	30830	31167	29713	29638	30012
% Chg Prev Qtr SAAR.....	3.38	2.55	2.66	-8.96	2.37	3.31	3.80	-6.29	4.40	4.02	5.25	0.98	2.98	4.44	0.86	-0.25	1.26
% Chg Same Qtr Last Yr.....	0.80	0.31	-0.15	-0.23	-0.47	-0.29	-0.01	0.71	1.21	1.38	1.73	3.65	3.29	3.40	0.86	-0.25	1.26
PROPRIETORS INCOME.....	30602	30859	30575	32992	33665	33863	34534	36473	37075	37804	38416	38600	38674	39040	30690	33763	37442
% Chg Prev Qtr SAAR.....	-1.59	3.40	-3.64	35.57	8.41	2.38	8.16	24.41	6.77	8.10	6.63	1.93	0.78	3.83	5.12	10.01	10.90
% Chg Same Qtr Last Yr.....	5.24	5.17	2.64	7.38	10.01	9.73	12.95	10.55	10.13	11.64	11.24	5.83	4.31	3.27	5.12	10.01	10.90
RENT, INTEREST, DIVIDENDS.....	35067	35515	35842	36679	37693	38304	38517	38493	39125	39447	39124	39360	39631	39855	35382	37798	39047
% Chg Prev Qtr SAAR.....	-0.44	5.22	3.73	9.67	11.53	6.64	2.24	-0.25	6.73	3.33	-3.24	2.44	2.78	2.28	-2.25	6.83	3.30
% Chg Same Qtr Last Yr.....	-1.94	-0.94	-6.12	4.48	7.49	7.85	7.46	4.95	3.80	2.98	1.57	2.25	1.29	1.03	-2.25	6.83	3.30
TRANSFER PAYMENTS.....	53304	53609	54049	53401	54230	54780	55245	56645	56874	57425	57680	58267	58569	58875	53479	54414	57156
% Chg Prev Qtr SAAR.....	2.67	2.31	3.32	-4.70	6.35	4.12	3.44	10.53	1.63	3.93	1.79	4.14	2.09	2.10	2.89	1.75	5.04
% Chg Same Qtr Last Yr.....	2.76	2.57	3.25	0.84	1.74	2.18	2.21	6.07	4.88	4.83	4.41	2.86	2.98	2.53	2.89	1.75	5.04
LESS: PERS CONT FOR SOC INS.....	19782	19903	20104	20392	20481	20700	21020	21230	21615	21852	22223	22228	22365	22610	19863	20648	21730
% Chg Prev Qtr SAAR.....	2.48	2.46	4.10	5.85	1.77	4.34	6.33	4.05	7.45	4.46	6.96	0.09	2.50	4.45	15.41	3.96	5.24
% Chg Same Qtr Last Yr.....	15.14	16.44	15.04	3.72	3.53	4.01	4.56	4.11	5.53	5.56	5.72	4.70	3.47	3.47	15.41	3.96	5.24
RESIDENCE ADJUSTMENT.....	-1382	-1404	-1457	-1410	-1391	-1412	-1459	-1435	-1505	-1545	-1592	-1574	-1572	-1604	-1410	-1418	-1519
% Chg Prev Qtr SAAR.....	-3.72	6.49	15.79	-12.17	-5.39	6.15	14.16	-6.55	21.25	10.88	12.66	-4.27	-0.52	8.35	18.01	0.59	7.14
% Chg Same Qtr Last Yr.....	16.85	18.23	14.77	1.05	0.61	0.53	0.17	1.74	8.25	9.44	9.07	9.73	4.43	3.83	18.01	0.59	7.14
PER CAPITA PERSONAL INCOME (\$) .....	38484	38661	38848	39387	39754	40073	40532	40899	41495	41941	42387	42312	42518	42847	38622	39936	41680
% Chg Prev Qtr SAAR.....	-0.11	1.85	1.94	5.66	3.78	3.25	4.66	3.67	5.96	4.38	4.32	-0.71	1.96	3.13	-0.34	3.40	4.37
% Chg Same Qtr Last Yr.....	-0.42	-0.15	-1.61	2.32	3.30	3.65	4.34	3.84	4.38	4.66	4.58	3.46	2.47	2.16	-0.34	3.40	4.37

Boyd Center for Business and Economic Research, University of Tennessee

Tennessee Econometric Model

**Table 5: Tennessee Nonfarm Employment by Sector, Not Seasonally Adjusted (thousands of jobs)****January 2017**

	Historical Data														Annual		
	2013:2	2013:3	2013:4	2014:1	2014:2	2014:3	2014:4	2015:1	2015:2	2015:3	2015:4	2016:1	2016:2	2016:3	2013	2014	2015
TOTAL NONFARM.....	2756.5	2755.2	2816.5	2769.6	2813.5	2821.8	2883.8	2832.7	2879.8	2896.1	2958.9	2924.1	2952.1	2960.4	2760.0	2822.2	2891.9
% Chg Same Qtr Last Yr.....	1.51	1.59	2.03	2.14	2.07	2.41	2.39	2.28	2.36	2.63	2.60	3.23	2.51	2.22	1.66	2.25	2.47
NATURAL RESOURCES, MINING & CONSTRUCTION.	108.3	110.1	109.5	105.0	111.0	113.1	114.6	110.7	117.4	120.4	122.3	121.3	121.6	126.5	107.9	110.9	117.7
% Chg Same Qtr Last Yr.....	-0.91	-1.08	0.21	1.35	2.49	2.66	4.66	5.43	5.73	6.46	6.78	9.58	3.61	5.12	-0.93	2.81	6.12
MANUFACTURING.....	317.4	318.8	321.8	321.8	323.4	326.0	328.4	328.6	331.4	333.8	337.0	339.4	342.6	342.2	318.4	324.9	332.7
% Chg Same Qtr Last Yr.....	1.13	1.02	1.64	1.93	1.91	2.26	2.05	2.11	2.46	2.38	2.62	3.29	3.38	2.52	1.61	2.04	2.40
DURABLE GOODS.....	197.9	199.2	201.7	203.0	204.2	205.7	207.6	208.1	209.9	211.5	213.2	215.0	217.2	216.8	198.9	205.1	210.7
% Chg Same Qtr Last Yr.....	2.03	1.56	2.52	3.26	3.15	3.26	2.92	2.51	2.81	2.84	2.68	3.33	3.46	2.49	2.54	3.15	2.71
NONDURABLE GOODS.....	119.4	119.7	120.1	118.9	119.3	120.4	120.8	120.6	121.5	122.3	123.8	124.4	125.4	125.4	119.6	119.8	122.0
% Chg Same Qtr Last Yr.....	-0.33	0.14	0.19	-0.25	-0.14	0.58	0.58	1.43	1.87	1.61	2.51	3.21	3.24	2.56	0.11	0.20	1.86
TRADE, TRANSPORTATION, UTILITIES.....	577.6	579.7	594.8	577.8	585.8	590.0	605.9	587.7	598.3	605.8	620.1	610.6	615.3	615.0	581.0	589.9	603.0
% Chg Same Qtr Last Yr.....	0.88	0.96	1.06	1.01	1.42	1.78	1.88	1.71	2.14	2.68	2.34	3.89	2.84	1.52	1.04	1.52	2.22
WHOLESALE TRADE.....	121.0	121.1	121.0	119.7	120.5	120.5	120.4	119.4	120.7	121.9	124.4	124.2	125.3	125.3	120.7	120.3	121.6
% Chg Same Qtr Last Yr.....	0.28	0.14	-0.14	-0.08	-0.39	-0.50	-0.50	-0.25	0.14	1.19	3.29	3.96	3.78	2.82	0.27	-0.37	1.09
RETAIL TRADE.....	312.1	313.9	325.1	313.9	318.7	320.5	330.1	316.9	324.0	326.3	334.3	329.2	332.8	332.3	314.9	320.8	325.4
% Chg Same Qtr Last Yr.....	0.10	0.90	1.22	1.70	2.13	2.09	1.56	0.95	1.64	1.81	1.26	3.88	2.72	1.85	0.67	1.87	1.42
TRANSPORTATION & UTILITIES.....	144.5	144.7	148.7	144.2	146.5	149.0	155.4	151.4	153.7	157.6	161.4	157.2	157.3	157.4	145.4	148.8	156.0
% Chg Same Qtr Last Yr.....	3.14	1.81	1.69	0.44	1.41	2.99	4.51	5.02	4.87	5.75	3.90	3.85	2.34	-0.15	2.53	2.36	4.87
INFORMATION.....	44.3	44.0	44.2	43.7	43.9	43.7	43.8	43.4	44.0	44.0	43.8	43.6	44.5	45.0	44.1	43.8	43.8
% Chg Same Qtr Last Yr.....	1.45	3.13	1.45	-0.15	-0.90	-0.61	-0.91	-0.61	0.30	0.69	0.08	0.46	0.98	2.20	1.99	-0.64	0.11
FINANCIAL ACTIVITIES.....	138.1	140.1	141.3	141.6	143.9	145.2	145.9	145.7	147.4	148.9	150.4	150.3	150.8	151.9	138.9	144.2	148.1
% Chg Same Qtr Last Yr.....	0.56	2.11	3.06	4.12	4.18	3.62	3.25	2.87	2.43	2.57	3.08	3.16	2.35	2.01	1.30	3.79	2.74
PROFESSIONAL & BUSINESS SERVICES.....	349.3	353.3	372.3	361.3	372.7	376.4	391.6	379.1	389.7	394.6	407.0	396.9	399.4	402.6	354.0	375.5	392.6
% Chg Same Qtr Last Yr.....	3.42	4.13	6.50	5.88	6.70	6.55	5.18	4.93	4.54	4.83	3.93	4.71	2.51	2.01	4.58	6.06	4.55
EDUCATION & HEALTH SERVICES.....	400.7	399.0	406.3	404.3	403.4	404.8	412.6	411.1	411.5	413.0	424.1	425.3	429.2	431.2	401.5	406.3	414.9
% Chg Same Qtr Last Yr.....	1.62	0.87	1.09	1.02	0.68	1.44	1.55	1.69	2.00	2.03	2.80	3.46	4.30	4.40	1.36	1.17	2.14
LEISURE & HOSPITALITY.....	291.8	294.6	286.5	280.0	302.4	305.7	297.8	290.5	314.1	317.7	309.1	298.8	319.2	323.1	285.9	296.5	307.9
% Chg Same Qtr Last Yr.....	3.02	3.76	3.22	3.41	3.63	3.77	3.94	3.74	3.88	3.91	3.82	2.86	1.60	1.71	3.28	3.69	3.84
OTHER SERVICES.....	106.7	106.5	105.3	105.0	106.9	106.5	106.0	105.7	108.1	108.0	107.4	107.7	110.8	110.9	105.6	106.1	107.3
% Chg Same Qtr Last Yr.....	1.52	1.40	1.25	1.16	0.19	-0.03	0.60	0.67	1.06	1.44	1.38	1.89	2.56	2.69	1.29	0.47	1.14
GOVERNMENT.....	422.3	409.1	434.6	429.2	420.0	410.4	437.3	430.3	417.9	409.9	437.5	430.2	418.7	412.1	422.6	424.2	423.9
% Chg Same Qtr Last Yr.....	0.93	0.42	0.53	1.08	-0.54	0.33	0.63	0.26	-0.49	-0.12	0.05	-0.02	0.18	0.52	0.23	0.38	-0.07
FEDERAL, CIVILIAN.....	49.6	49.3	49.2	48.9	48.2	48.2	48.3	49.0	49.2	49.1	49.2	49.1	49.3	49.5	49.5	48.4	49.1
% Chg Same Qtr Last Yr.....	-1.06	-1.46	-1.99	-1.48	-2.89	-2.23	-1.90	0.20	2.08	1.80	1.93	0.14	0.20	0.81	-1.36	-2.12	1.50
STATE & LOCAL.....	372.7	359.7	385.3	380.3	371.8	362.2	389.0	381.3	368.8	360.8	388.3	381.1	369.4	362.6	373.2	375.8	374.8
% Chg Same Qtr Last Yr.....	1.20	0.68	0.86	1.41	-0.22	0.69	0.95	0.26	-0.82	-0.38	-0.19	-0.03	0.17	0.48	0.44	0.71	-0.28

**Table 6: Tennessee Durable Goods Manufacturing Employment, Not Seasonally Adjusted (thousands of jobs)** **January 2017**

	Historical Data														Annual		
	2013:2	2013:3	2013:4	2014:1	2014:2	2014:3	2014:4	2015:1	2015:2	2015:3	2015:4	2016:1	2016:2	2016:3	2013	2014	2015
TOTAL DURABLE GOODS.....	197.9	199.2	201.7	203.0	204.2	205.7	207.6	208.1	209.9	211.5	213.2	215.0	217.2	216.8	198.9	205.1	210.7
% Chg Same Qtr Last Yr.....	2.03	1.56	2.52	3.26	3.15	3.26	2.92	2.51	2.81	2.84	2.68	3.33	3.46	2.49	2.54	3.15	2.71
WOOD PRODUCTS.....	10.8	10.9	11.0	11.0	11.1	11.4	11.4	11.3	11.5	11.6	11.7	11.6	11.7	11.7	10.9	11.2	11.5
% Chg Same Qtr Last Yr.....	-2.11	-3.25	-0.30	2.49	2.77	4.89	3.33	3.04	3.29	1.75	3.23	2.95	1.45	0.57	-1.59	3.38	2.82
NONMETALLIC MINERAL PRODUCTS.....	12.2	12.1	11.9	11.8	12.0	12.1	12.2	12.2	12.6	12.8	12.7	12.5	12.9	12.9	12.1	12.0	12.6
% Chg Same Qtr Last Yr.....	-2.14	-4.99	-5.80	-5.11	-1.91	0.00	2.80	3.97	5.29	6.08	3.54	2.18	2.12	0.52	-2.67	-1.10	4.72
PRIMARY METALS.....	9.9	10.0	10.1	10.0	10.0	10.1	10.2	10.2	10.3	10.4	10.4	10.5	10.6	10.6	10.0	10.1	10.3
% Chg Same Qtr Last Yr.....	2.41	1.70	3.07	1.01	1.01	1.34	0.99	1.67	2.99	2.64	2.62	3.28	2.58	2.57	3.19	1.09	2.48
FABRICATED METAL PRODUCTS.....	33.9	33.9	34.0	34.1	34.4	34.4	34.8	34.9	34.8	34.9	35.0	35.3	34.5	34.0	33.9	34.4	34.9
% Chg Same Qtr Last Yr.....	-2.31	-2.02	-0.68	0.79	1.57	1.47	2.35	2.45	1.06	1.55	0.57	1.15	-0.86	-2.77	-1.67	1.55	1.40
MACHINERY.....	25.7	25.2	24.9	25.4	25.4	25.4	25.6	25.1	25.6	25.2	25.1	25.3	25.7	25.2	25.4	25.4	25.3
% Chg Same Qtr Last Yr.....	-1.40	-1.18	-1.32	-1.04	-1.42	0.93	2.82	-1.44	1.05	-0.66	-1.83	1.06	0.39	-0.13	-0.69	0.30	-0.72
COMPUTER & ELECTRONIC PRODUCTS....	5.3	5.2	5.1	5.0	5.0	5.1	5.1	5.1	5.0	4.9	4.9	4.8	4.9	4.8	5.2	5.1	5.0
% Chg Same Qtr Last Yr.....	-9.66	-6.02	-4.38	-5.03	-5.66	-2.56	0.00	0.66	0.00	-2.63	-3.92	-5.26	-2.00	-3.38	-7.25	-3.35	-1.49
ELECTRICAL EQUIPMENT, APPLIANCES & COMPONENTS.....	18.3	18.9	19.2	19.5	19.2	19.5	19.1	19.5	19.7	19.8	20.1	20.4	20.6	20.8	18.6	19.3	19.8
% Chg Same Qtr Last Yr.....	2.23	5.19	6.07	9.16	4.92	3.17	-0.69	0.17	2.43	1.37	5.24	4.62	4.75	5.23	3.48	4.04	2.29
TRANSPORTATION EQUIPMENT.....	58.3	59.8	62.2	62.8	63.3	63.7	65.2	65.7	66.1	67.1	68.6	69.8	71.4	71.8	59.5	63.8	66.9
% Chg Same Qtr Last Yr.....	11.19	8.47	8.62	8.53	8.63	6.58	4.93	4.67	4.32	5.34	5.21	6.29	8.02	7.05	11.00	7.13	4.89
FURNITURE.....	8.8	8.7	8.9	9.1	9.1	9.0	8.8	8.9	8.9	9.1	9.0	9.1	9.3	9.3	8.8	9.0	9.0
% Chg Same Qtr Last Yr.....	-0.38	-1.14	5.93	5.43	3.02	3.83	-1.12	-1.47	-2.20	1.11	2.26	2.24	4.12	1.82	1.06	2.76	-0.09
MISCELLANEOUS DURABLE GOODS.....	14.6	14.6	14.4	14.4	14.6	15.0	15.2	15.2	15.4	15.6	15.6	15.6	15.7	15.7	14.5	14.8	15.4
% Chg Same Qtr Last Yr.....	-2.01	-1.79	-2.04	-0.69	0.00	2.51	5.31	5.56	5.48	4.23	2.41	2.41	1.73	0.64	-2.24	1.78	4.39

Boyd Center for Business and Economic Research, University of Tennessee

Tennessee Econometric Model

**Table 7: Tennessee Nondurable Goods Manufacturing Employment, Not Seasonally Adjusted (thousands of jobs)****January 2017**

	Historical Data													Annual			
	2013:2	2013:3	2013:4	2014:1	2014:2	2014:3	2014:4	2015:1	2015:2	2015:3	2015:4	2016:1	2016:2	2016:3	2013	2014	2015
TOTAL NONDURABLE GOODS.....	119.4	119.7	120.1	118.9	119.3	120.4	120.8	120.6	121.5	122.3	123.8	124.4	125.4	125.4	119.6	119.8	122.0
% Chg Same Qtr Last Yr.....	-0.33	0.14	0.19	-0.25	-0.14	0.58	0.58	1.43	1.87	1.61	2.51	3.21	3.24	2.56	0.11	0.20	1.86
FOOD.....	32.2	32.5	32.8	32.5	32.4	33.0	33.1	33.0	33.1	33.4	33.5	33.4	33.5	33.8	32.4	32.7	33.3
% Chg Same Qtr Last Yr.....	-2.72	-1.52	0.20	1.04	0.62	1.64	0.92	1.64	2.16	1.11	1.31	1.31	1.01	1.40	-1.89	1.05	1.55
BEVERAGE & TOBACCO.....	5.3	5.3	5.3	5.3	5.5	5.5	5.7	5.6	5.6	6.0	6.1	6.1	6.2	6.4	5.3	5.5	5.8
% Chg Same Qtr Last Yr.....	2.58	3.23	1.27	1.27	3.14	3.13	6.25	5.62	3.05	9.09	7.65	8.28	10.06	6.67	2.58	3.45	6.37
TEXTILE MILLS, TEXTILE MILL PRODUCTS & APPAREL.....	10.4	10.5	10.5	10.2	10.0	10.0	9.9	9.8	10.0	10.2	10.2	10.0	10.2	10.3	10.5	10.0	10.0
% Chg Same Qtr Last Yr.....	-2.80	-1.86	-1.87	-2.24	-4.47	-5.38	-5.41	-4.25	0.33	2.01	3.03	2.39	1.67	1.64	-1.95	-4.38	0.25
PAPER.....	14.8	14.7	14.6	14.4	14.6	14.8	14.5	14.5	14.6	14.6	14.5	14.5	14.6	14.8	14.7	14.6	14.6
% Chg Same Qtr Last Yr.....	-0.45	-0.90	-0.45	-1.59	-1.13	0.45	-0.91	0.23	0.23	-1.13	0.23	0.00	-0.23	0.91	-0.17	-0.79	-0.11
PRINTING & RELATED SUPPORT.....	9.7	9.6	9.6	9.5	9.5	9.5	9.5	9.3	9.3	9.2	9.2	9.1	9.1	9.0	9.6	9.5	9.2
% Chg Same Qtr Last Yr.....	0.35	-0.35	0.00	-0.69	-1.38	-1.05	-1.73	-2.45	-2.80	-3.17	-2.46	-1.79	-1.44	-1.82	0.09	-1.21	-2.72
CHEMICALS.....	24.6	24.9	25.1	25.2	25.3	25.4	25.2	25.2	25.5	25.6	25.5	25.6	25.7	25.7	24.8	25.3	25.5
% Chg Same Qtr Last Yr.....	1.23	1.91	2.31	2.30	2.84	2.01	0.53	0.26	0.66	0.79	1.19	1.45	0.78	0.65	1.67	1.92	0.73
PLASTICS & RUBBER.....	20.3	20.0	20.0	20.2	20.4	20.9	21.6	21.5	21.7	21.7	22.0	22.2	22.5	22.6	20.2	20.8	21.7
% Chg Same Qtr Last Yr.....	0.83	0.50	-1.48	-1.31	0.49	4.67	8.01	6.78	6.21	3.82	2.16	3.10	3.69	3.99	1.04	2.93	4.70
MISCELLANEOUS NONDURABLE GOODS....	2.1	2.2	2.2	1.6	1.5	1.3	1.4	1.6	1.7	1.7	2.7	3.5	3.7	2.8	2.1	1.5	1.9
% Chg Same Qtr Last Yr.....	12.50	16.07	4.76	-22.95	-26.98	-38.46	-36.36	4.26	8.70	25.00	92.86	114.29	122.00	66.00	12.33	-31.37	31.43

Boyd Center for Business and Economic Research, University of Tennessee

Tennessee Econometric Model

**Table 8: Tennessee Nonfarm Employment by Sector, Seasonally Adjusted (thousands of jobs) January 2017**

	Historical Data														Annual		
	2013:2	2013:3	2013:4	2014:1	2014:2	2014:3	2014:4	2015:1	2015:2	2015:3	2015:4	2016:1	2016:2	2016:3	2013	2014	2015
<b>TOTAL NONFARM.....</b>	2754.3	2762.7	2782.8	2795.4	2812.2	2829.7	2848.4	2859.6	2877.4	2903.2	2928.8	2951.1	2948.3	2969.0	2760.0	2821.4	2892.3
% Chg Prev Qtr SAAR.....	2.07	1.23	2.95	1.82	2.43	2.51	2.66	1.59	2.50	3.64	3.58	3.08	-0.38	2.83	1.65	2.23	2.51
% Chg Same Qtr Last Yr.....	1.50	1.63	1.97	2.02	2.11	2.43	2.35	2.30	2.32	2.60	2.82	3.20	2.47	2.26	1.65	2.23	2.51
<b>NATURAL RESOURCES, MINING</b>																	
<b>AND CONSTRUCTION.....</b>	107.93	107.57	108.00	109.53	110.57	110.70	113.27	115.30	116.23	118.20	120.83	125.67	120.57	124.57	107.91	111.02	117.64
% Chg Prev Qtr SAAR.....	-0.74	-1.35	1.62	5.80	3.83	0.48	9.60	7.38	3.28	6.94	9.21	16.99	-15.27	13.95	-0.90	2.88	5.97
% Chg Same Qtr Last Yr.....	-0.80	-0.80	0.22	1.29	2.44	2.91	4.88	5.26	5.13	6.78	6.68	8.99	3.73	5.39	-0.90	2.88	5.97
<b>MANUFACTURING.....</b>	317.2	318.6	321.2	322.8	323.3	325.9	327.8	329.4	331.3	333.9	336.3	340.0	342.6	342.5	318.5	324.9	332.7
% Chg Prev Qtr SAAR.....	0.32	1.80	3.39	1.93	0.62	3.35	2.28	1.97	2.32	3.16	2.92	4.50	3.04	-0.11	1.62	2.04	2.39
% Chg Same Qtr Last Yr.....	1.10	1.11	1.64	1.85	1.93	2.32	2.04	2.05	2.48	2.43	2.59	3.22	3.40	2.57	1.62	2.04	2.39
<b>DURABLE GOODS.....</b>	197.8	199.0	201.5	203.4	204.0	205.7	207.4	208.4	209.7	211.7	212.9	215.2	217.1	217.0	198.9	205.1	210.7
% Chg Prev Qtr SAAR.....	1.27	2.62	5.12	3.73	1.18	3.43	3.28	1.95	2.62	3.73	2.37	4.42	3.47	-0.12	2.54	3.15	2.71
% Chg Same Qtr Last Yr.....	1.99	1.66	2.52	3.18	3.15	3.36	2.90	2.46	2.82	2.89	2.66	3.28	3.49	2.52	2.54	3.15	2.71
<b>NONDURABLE GOODS.....</b>	119.4	119.5	119.7	119.4	119.3	120.2	120.4	121.0	121.6	122.2	123.4	124.8	125.5	125.5	119.6	119.8	122.0
% Chg Prev Qtr SAAR.....	-1.23	0.44	0.55	-1.05	-0.33	3.21	0.60	2.01	1.82	2.18	3.87	4.63	2.30	-0.11	0.11	0.19	1.85
% Chg Same Qtr Last Yr.....	-0.33	0.21	0.20	-0.32	-0.10	0.58	0.60	1.37	1.91	1.65	2.47	3.12	3.24	2.66	0.11	0.19	1.85
<b>TRADE, TRANSPORTATION, UTILITIES.....</b>	580.1	581.2	583.6	584.7	588.5	591.4	594.4	595.0	600.1	606.6	611.1	617.7	616.2	616.2	581.2	589.7	603.2
% Chg Prev Qtr SAAR.....	0.07	0.74	1.69	0.73	2.67	1.94	2.07	0.38	3.47	4.45	2.98	4.37	-0.95	0.00	1.07	1.47	2.28
% Chg Same Qtr Last Yr.....	1.03	0.97	0.98	0.80	1.45	1.76	1.85	1.76	1.96	2.58	2.81	3.82	2.69	1.58	1.07	1.47	2.28
<b>WHOLESALE TRADE.....</b>	120.7	120.8	120.7	120.5	120.3	120.2	120.1	120.2	120.5	121.6	124.1	124.8	125.3	125.5	120.7	120.3	121.6
% Chg Prev Qtr SAAR.....	0.11	0.33	-0.44	-0.44	-0.77	-0.33	-0.33	0.44	0.89	3.59	8.48	2.28	1.6127	0.8542	0.24	-0.35	1.09
% Chg Same Qtr Last Yr.....	0.22	0.11	-0.14	-0.11	-0.33	-0.50	-0.47	-0.25	0.17	1.14	3.30	3.77	3.9557	3.263	0.24	-0.35	1.09
<b>RETAIL TRADE.....</b>	313.6	315.2	317.0	318.9	320.3	321.5	322.2	322.2	324.9	327.2	328.0	334.5	332.8	332.9	315.0	320.8	325.6
% Chg Prev Qtr SAAR.....	-0.51	1.97	2.39	2.38	1.81	1.51	0.87	-0.08	3.48	2.78	0.98	8.21	-2.06	0.12	0.69	1.84	1.50
% Chg Same Qtr Last Yr.....	0.25	0.87	1.15	1.55	2.14	2.02	1.64	1.02	1.44	1.75	1.78	3.83	2.41	1.74	0.69	1.84	1.50
<b>TRANSPORTATION &amp; UTILITIES.....</b>	145.8	145.2	145.9	145.2	147.9	149.6	152.1	152.6	154.6	157.9	159.1	158.4	158.2	157.8	145.5	148.7	156.0
% Chg Prev Qtr SAAR.....	1.29	-1.55	1.94	-1.82	7.55	4.77	6.67	1.32	5.53	8.72	2.99	-1.67	-0.59	-0.92	2.61	2.18	4.93
% Chg Same Qtr Last Yr.....	3.48	1.92	1.55	-0.05	1.46	3.05	4.23	5.05	4.55	5.52	4.60	3.82	2.28	-0.06	2.61	2.18	4.93
<b>INFORMATION.....</b>	44.2	44.2	44.0	43.8	43.8	43.9	43.7	43.6	43.9	44.1	43.8	43.6	44.2	45.4	44.1	43.8	43.8
% Chg Prev Qtr SAAR.....	2.45	-0.30	-1.50	-1.81	0.00	0.92	-2.11	-0.91	2.78	2.14	-2.99	-1.51	5.94	10.97	2.01	-0.64	0.08
% Chg Same Qtr Last Yr.....	1.38	3.11	1.46	-0.30	-0.90	-0.60	-0.76	-0.53	0.15	0.46	0.23	0.08	0.84	2.95	2.01	-0.64	0.08
<b>FINANCIAL ACTIVITIES.....</b>	138.1	139.7	141.0	142.4	143.9	144.7	145.6	146.5	147.1	148.5	149.8	151.2	150.9	151.6	139.0	144.1	148.0
% Chg Prev Qtr SAAR.....	3.25	4.62	3.97	3.84	4.47	2.05	2.61	2.40	1.74	3.77	3.64	3.70	-0.79	1.87	1.33	3.74	2.65
% Chg Same Qtr Last Yr.....	0.75	2.12	3.02	3.92	4.22	3.58	3.24	2.88	2.20	2.63	2.88	3.21	2.56	2.09	1.33	3.74	2.65

(CONTINUED ON NEXT PAGE)

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

**January 2017**

	Historical Data														Annual		
	2013:2	2013:3	2013:4	2014:1	2014:2	2014:3	2014:4	2015:1	2015:2	2015:3	2015:4	2016:1	2016:2	2016:3	2013	2014	2015
PROFESSIONAL & BUSINESS SERVICES..	349.4	354.9	364.0	366.6	372.9	378.0	382.7	384.9	390.5	395.9	399.6	402.6	400.5	405.1	353.8	375.1	392.7
% Chg Prev Qtr SAAR.....	2.72	6.41	10.74	2.85	7.09	5.58	5.03	2.35	5.88	5.65	3.83	3.04	-2.07	4.64	4.48	6.00	4.71
% Chg Same Qtr Last Yr.....	3.15	4.10	6.42	5.63	6.74	6.53	5.13	5.00	4.70	4.72	4.42	4.59	2.57	2.32	4.48	6.00	4.71
EDUCATION & HEALTH SERVICES.....	401.3	400.8	403.1	404.5	404.2	406.7	409.0	411.3	412.3	415.1	420.6	425.1	430.0	434.0	401.5	406.1	414.8
% Chg Prev Qtr SAAR.....	0.57	-0.53	2.35	1.36	-0.33	2.53	2.28	2.24	1.01	2.71	5.47	4.32	4.72	3.77	1.35	1.14	2.15
% Chg Same Qtr Last Yr.....	1.59	0.95	1.04	0.93	0.71	1.47	1.46	1.67	2.01	2.06	2.84	3.36	4.30	4.57	1.35	1.14	2.15
LEISURE & HOSPITALITY.....	284.6	286.9	289.0	291.9	295.1	297.8	300.5	302.8	306.4	310.0	311.8	311.6	311.9	314.4	285.8	296.3	307.8
% Chg Prev Qtr SAAR.....	2.62	3.27	2.91	4.17	4.41	3.76	3.63	3.10	4.89	4.78	2.34	-0.34	0.43	3.29	3.27	3.69	3.86
% Chg Same Qtr Last Yr.....	3.02	3.79	3.19	3.24	3.69	3.81	3.99	3.72	3.84	4.10	3.77	2.90	1.78	1.42	3.27	3.69	3.86
OTHER SERVICES.....	105.8	106.0	105.9	106.0	106.0	106.0	106.5	106.7	107.1	107.5	107.8	108.8	109.5	110.5	105.6	106.1	107.3
% Chg Prev Qtr SAAR.....	4.01	0.89	-0.50	0.63	-0.25	0.00	1.90	1.01	1.38	1.38	1.25	3.89	2.47	3.70	1.27	0.49	1.10
% Chg Same Qtr Last Yr.....	1.41	1.44	1.28	1.24	0.19	-0.03	0.57	0.66	1.07	1.42	1.25	1.97	2.24	2.82	1.27	0.49	1.10
GOVERNMENT.....	425.7	423.0	423.0	423.2	424.0	424.6	425.0	424.2	422.5	423.5	427.2	424.9	421.9	424.7	422.6	424.2	424.3
% Chg Prev Qtr SAAR.....	6.62	-2.51	0.00	0.25	0.69	0.60	0.35	-0.72	-1.59	0.95	3.51	-2.07	-2.79	2.68	0.20	0.37	0.04
% Chg Same Qtr Last Yr.....	0.93	0.54	0.34	1.03	-0.40	0.39	0.47	0.23	-0.35	-0.26	0.52	0.17	-0.13	0.29	0.20	0.37	0.04
FEDERAL, CIVILIAN.....	50.4	49.2	48.9	48.6	48.9	48.1	48.0	48.7	49.3	49.0	49.1	49.9	49.8	48.4	49.5	48.4	49.0
% Chg Prev Qtr SAAR.....	8.35	-8.70	-2.95	-1.90	2.49	-6.38	-0.83	5.38	5.59	-2.68	0.55	6.68	-0.27	-11.02	-1.22	-2.07	1.20
% Chg Same Qtr Last Yr.....	-0.53	-1.40	-2.14	-1.49	-2.85	-2.23	-1.71	0.07	0.82	1.80	2.15	2.47	1.01	-1.22	-1.22	-2.07	1.20
STATE & LOCAL.....	375.3	373.7	374.1	374.6	375.0	376.5	376.9	375.5	373.2	374.5	378.1	375.1	372.1	376.3	373.2	375.8	375.3
% Chg Prev Qtr SAAR.....	6.39	-1.66	0.39	0.54	0.46	1.54	0.50	-1.48	-2.50	1.44	3.90	-3.17	-3.13	4.63	0.39	0.69	-0.12
% Chg Same Qtr Last Yr.....	1.13	0.80	0.67	1.37	-0.07	0.73	0.76	0.25	-0.50	-0.52	0.31	-0.12	-0.29	0.49	0.39	0.69	-0.12
STATISTICAL DISCREPANCY (%).....	0.00	0.01	0.00	0.00	0.00	0.01	0.00	0.00	-0.01	0.02	0.00	-0.02	0.00	0.02	0.00	0.01	0.00

Boyd Center for Business and Economic Research, University of Tennessee

Tennessee Econometric Model



**Table 9: Tennessee Durable Goods Manufacturing Employment, Seasonally Adjusted (thousands of jobs)** **January 2017**

	Historical Data														Annual		
	2013:2	2013:3	2013:4	2014:1	2014:2	2014:3	2014:4	2015:1	2015:2	2015:3	2015:4	2016:1	2016:2	2016:3	2013	2014	2015
TOTAL DURABLE GOODS.....	197.8	199.0	201.5	203.4	204.0	205.7	207.4	208.4	209.7	211.7	212.9	215.2	217.1	217.0	198.9	205.1	210.7
% Chg Prev Qtr SAAR.....	1.27	2.62	5.12	3.73	1.18	3.43	3.28	1.95	2.62	3.73	2.37	4.42	3.47	-0.12	2.54	3.15	2.71
% Chg Same Qtr Last Yr.....	1.99	1.66	2.52	3.18	3.15	3.36	2.90	2.46	2.82	2.89	2.66	3.28	3.49	2.52	2.54	3.15	2.71
WOOD PRODUCTS.....	10.8	10.8	11.0	11.1	11.1	11.3	11.3	11.4	11.5	11.5	11.7	11.8	11.7	11.6	10.9	11.2	11.5
% Chg Prev Qtr SAAR.....	-1.20	-2.11	6.87	5.79	0.81	6.96	0.01	3.75	2.80	0.85	5.52	2.30	-2.57	-2.54	-1.59	3.36	2.81
% Chg Same Qtr Last Yr.....	-2.14	-3.10	-0.23	2.26	2.77	5.07	3.34	2.84	3.35	1.84	3.22	2.85	1.49	0.62	-1.59	3.36	2.81
NONMETALLIC MINERALS.....	12.1	12.0	11.9	11.9	11.9	12.0	12.2	12.4	12.5	12.7	12.6	12.7	12.8	12.8	12.1	12.0	12.6
% Chg Prev Qtr SAAR.....	-12.68	-5.60	-2.79	0.99	-0.15	2.33	8.11	5.69	4.99	5.77	-2.13	0.28	4.69	-0.55	-2.66	-1.12	4.71
% Chg Same Qtr Last Yr.....	-2.17	-4.86	-5.85	-5.16	-1.92	0.08	2.77	3.95	5.26	6.13	3.53	2.18	2.10	0.54	-2.66	-1.12	4.71
PRIMARY METALS.....	9.9	10.0	10.0	10.0	10.0	10.1	10.1	10.2	10.3	10.4	10.4	10.5	10.6	10.6	10.0	10.1	10.3
% Chg Prev Qtr SAAR.....	-0.44	1.56	2.84	-0.06	-0.41	3.03	1.60	2.39	4.97	1.55	1.72	4.84	2.28	1.47	3.19	1.08	2.48
% Chg Same Qtr Last Yr.....	2.31	1.66	3.20	0.97	0.97	1.34	1.03	1.65	2.99	2.62	2.65	3.26	2.59	2.57	3.19	1.08	2.48
FABRICATED METALS.....	33.9	33.9	34.0	34.1	34.4	34.4	34.8	34.9	34.8	35.0	35.0	35.3	34.5	34.0	33.9	34.4	34.9
% Chg Prev Qtr SAAR.....	-0.16	0.47	1.08	1.43	3.42	0.48	3.92	1.47	-1.14	2.21	-0.26	3.46	-8.20	-5.54	-1.67	1.55	1.40
% Chg Same Qtr Last Yr.....	-2.32	-1.94	-0.71	0.70	1.59	1.60	2.30	2.31	1.16	1.60	0.56	1.05	-0.80	-2.74	-1.67	1.55	1.40
MACHINERY.....	25.4	25.3	25.2	25.3	25.0	25.5	25.9	25.0	25.3	25.3	25.4	25.3	25.4	25.3	25.4	25.4	25.3
% Chg Prev Qtr SAAR.....	-3.46	-1.83	-0.77	2.12	-5.02	7.89	6.41	-13.34	4.97	0.64	1.21	-2.37	2.33	-1.74	-0.70	0.31	-0.73
% Chg Same Qtr Last Yr.....	-1.49	-1.11	-1.38	-1.01	-1.41	0.95	2.73	-1.41	1.09	-0.65	-1.89	1.08	0.44	-0.16	-0.70	0.31	-0.73
COMPUTERS & ELECTRONICS.....	5.3	5.2	5.1	5.0	5.0	5.1	5.1	5.1	5.0	4.9	4.9	4.8	4.9	4.8	5.2	5.0	5.0
% Chg Prev Qtr SAAR.....	-0.31	-6.52	-7.97	-4.65	-3.66	6.57	1.94	-1.54	-6.73	-3.90	-3.56	-6.70	6.69	-9.21	-7.24	-3.34	-1.48
% Chg Same Qtr Last Yr.....	-9.71	-6.03	-4.45	-4.90	-5.71	-2.57	-0.05	0.76	-0.06	-2.61	-3.95	-5.24	-2.00	-3.38	-7.24	-3.34	-1.48
ELECTRICAL EQUIPMENT, APPLIANCES & COMPONENTS.....	18.3	18.9	19.2	19.5	19.2	19.5	19.1	19.5	19.7	19.8	20.1	20.4	20.6	20.8	18.6	19.3	19.8
% Chg Prev Qtr SAAR.....	11.12	11.68	7.42	5.86	-4.85	5.32	-8.16	8.90	4.35	1.51	6.51	5.77	5.32	3.48	3.48	4.04	2.28
% Chg Same Qtr Last Yr.....	2.11	5.33	6.18	8.99	4.85	3.32	-0.65	0.06	2.39	1.45	5.28	4.52	4.76	5.26	3.48	4.04	2.28
TRANSPORTATION EQUIPMENT.....	58.6	59.9	61.7	62.8	63.6	63.9	64.7	65.7	66.3	67.4	68.1	69.8	71.6	72.2	59.5	63.8	66.9
% Chg Prev Qtr SAAR.....	4.92	9.41	12.39	7.14	5.54	2.04	5.05	5.87	4.11	6.75	4.18	10.01	11.26	3.22	11.02	7.13	4.89
% Chg Same Qtr Last Yr.....	11.11	8.61	8.63	8.43	8.59	6.71	4.93	4.62	4.26	5.44	5.22	6.23	8.01	7.11	11.02	7.13	4.89
FURNITURE.....	8.8	8.6	9.0	9.1	9.0	9.0	8.9	9.0	8.8	9.1	9.1	9.1	9.2	9.2	8.8	9.0	9.0
% Chg Prev Qtr SAAR.....	6.79	-5.74	19.33	2.42	-2.20	-2.56	-2.14	0.90	-4.74	11.14	2.40	0.45	3.16	1.26	1.07	2.73	-0.08
% Chg Same Qtr Last Yr.....	-0.50	-1.10	6.05	5.32	3.03	3.88	-1.14	-1.51	-2.16	1.12	2.27	2.15	4.21	1.81	1.07	2.73	-0.08
MISCELLANEOUS DURABLES.....	14.6	14.5	14.4	14.5	14.6	14.9	15.2	15.3	15.4	15.5	15.5	15.7	15.7	15.6	14.5	14.8	15.4
% Chg Prev Qtr SAAR.....	0.20	-2.00	-2.95	2.11	3.11	7.92	8.26	2.99	3.02	2.67	0.98	2.96	0.39	-1.73	-2.25	1.78	4.40
% Chg Same Qtr Last Yr.....	-1.95	-1.86	-2.04	-0.68	0.04	2.48	5.32	5.54	5.52	4.21	2.41	2.41	1.75	0.64	-2.25	1.78	4.40

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

**January 2017**

	Historical Data														Annual		
	2013:2	2013:3	2013:4	2014:1	2014:2	2014:3	2014:4	2015:1	2015:2	2015:3	2015:4	2016:1	2016:2	2016:3	2013	2014	2015
TOTAL NONDURABLE GOODS.....	119.4	119.5	119.7	119.4	119.3	120.2	120.4	121.0	121.6	122.2	123.4	124.8	125.5	125.5	119.6	119.8	122.0
% Chg Prev Qtr SAAR.....	-1.23	0.44	0.55	-1.05	-0.33	3.21	0.60	2.01	1.82	2.18	3.87	4.63	2.30	-0.11	0.11	0.19	1.85
% Chg Same Qtr Last Yr.....	-0.33	0.21	0.20	-0.32	-0.10	0.58	0.60	1.37	1.91	1.65	2.47	3.12	3.24	2.66	0.11	0.19	1.85
FOOD.....	32.4	32.4	32.6	32.6	32.6	32.9	32.9	33.1	33.3	33.3	33.3	33.5	33.6	33.8	32.4	32.7	33.2
% Chg Prev Qtr SAAR.....	1.36	0.51	2.36	-0.15	-0.24	4.64	-0.38	2.56	1.88	0.40	0.43	2.53	0.72	1.89	-1.90	1.05	1.55
% Chg Same Qtr Last Yr.....	-2.73	-1.52	0.24	1.02	0.62	1.63	0.95	1.62	2.16	1.11	1.31	1.31	1.02	1.39	-1.90	1.05	1.55
BEVERAGE & TOBACCO.....	5.3	5.3	5.3	5.4	5.5	5.5	5.6	5.7	5.6	6.0	6.1	6.1	6.2	6.4	5.3	5.5	5.8
% Chg Prev Qtr SAAR.....	0.72	1.02	-1.33	4.87	8.64	0.71	10.63	2.87	-1.44	26.38	4.55	5.61	5.25	11.38	2.58	3.46	6.37
% Chg Same Qtr Last Yr.....	2.62	3.36	1.06	1.29	3.23	3.15	6.15	5.63	3.09	9.12	7.58	8.29	10.09	6.66	2.58	3.46	6.37
TEXTILE MILLS, TEXTILE MILL PRODUCTS & APPAREL.....	10.4	10.5	10.4	10.3	10.0	9.9	9.8	9.9	10.0	10.1	10.1	10.1	10.2	10.3	10.5	10.0	10.0
% Chg Prev Qtr SAAR.....	-5.55	0.89	-1.48	-2.87	-13.44	-3.13	-1.95	2.12	4.73	3.31	1.80	-0.22	1.89	3.09	-1.95	-4.37	0.23
% Chg Same Qtr Last Yr.....	-2.74	-1.82	-1.94	-2.28	-4.39	-5.36	-5.47	-4.28	0.39	2.02	2.98	2.39	1.69	1.63	-1.95	-4.37	0.23
PAPER.....	14.7	14.6	14.6	14.6	14.6	14.7	14.5	14.6	14.6	14.5	14.6	14.6	14.6	14.6	14.7	14.6	14.6
% Chg Prev Qtr SAAR.....	-3.39	-4.06	2.15	-1.77	-0.84	2.73	-3.36	1.93	-0.17	-2.67	2.00	0.63	-0.70	1.73	-0.16	-0.82	-0.13
% Chg Same Qtr Last Yr.....	-0.53	-0.81	-0.29	-1.80	-1.16	0.55	-0.84	0.09	0.25	-1.09	0.26	-0.07	-0.20	0.91	-0.16	-0.82	-0.13
PRINTING & RELATED SUPPORT.....	9.6	9.6	9.6	9.6	9.5	9.5	9.4	9.3	9.2	9.2	9.2	9.2	9.1	9.0	9.6	9.5	9.2
% Chg Prev Qtr SAAR.....	-0.70	-1.83	0.03	-0.71	-2.69	-0.57	-3.06	-3.74	-3.60	-2.14	-0.39	-1.18	-1.96	-3.63	0.08	-1.21	-2.72
% Chg Same Qtr Last Yr.....	0.42	-0.31	-0.01	-0.80	-1.30	-0.99	-1.76	-2.52	-2.75	-3.14	-2.48	-1.83	-1.42	-1.80	0.08	-1.21	-2.72
CHEMICALS.....	24.6	24.8	25.1	25.2	25.3	25.3	25.2	25.3	25.5	25.5	25.5	25.7	25.7	25.7	24.8	25.3	25.5
% Chg Prev Qtr SAAR.....	-0.50	3.11	4.33	2.30	1.54	-0.13	-1.36	0.99	3.10	0.45	0.36	1.93	0.37	-0.06	1.68	1.91	0.72
% Chg Same Qtr Last Yr.....	1.20	1.89	2.38	2.29	2.81	2.00	0.58	0.25	0.64	0.78	1.22	1.45	0.77	0.65	1.68	1.91	0.72
PLASTICS & RUBBER.....	20.2	20.1	19.9	20.2	20.4	21.0	21.5	21.5	21.7	21.8	22.0	22.2	22.5	22.7	20.2	20.8	21.7
% Chg Prev Qtr SAAR.....	-4.17	-2.86	-3.40	5.23	3.93	13.41	9.52	0.51	2.57	2.63	2.90	4.10	5.57	3.22	1.03	2.93	4.70
% Chg Same Qtr Last Yr.....	0.93	0.53	-1.55	-1.37	0.65	4.62	7.96	6.72	6.37	3.75	2.15	3.05	3.79	3.94	1.03	2.93	4.70
MISCELLANEOUS NONDURABLE GOODS.....	2.1	2.3	2.1	1.5	1.5	1.4	1.4	1.6	1.6	1.8	2.6	3.4	3.6	3.1	2.1	1.5	1.9
% Chg Prev Qtr SAAR.....	11.36	45.95	-22.03	-73.60	-5.23	-20.10	-20.18	87.94	15.22	51.68	313.55	184.85	35.86	-50.86	12.55	-31.45	31.06
% Chg Same Qtr Last Yr.....	12.42	18.46	4.03	-23.95	-26.95	-37.17	-36.80	3.24	8.41	27.25	91.98	113.01	121.97	67.46	12.55	-31.45	31.06

Boyd Center for Business and Economic Research, University of Tennessee

Tennessee Econometric Model

	Historical Data														January 2017		
															Annual		
	2013:2	2013:3	2013:4	2014:1	2014:2	2014:3	2014:4	2015:1	2015:2	2015:3	2015:4	2016:1	2016:2	2016:3	2013	2014	2015
TOTAL NONFARM.....	41445	41568	40973	42309	41610	41843	41728	42824	42994	43283	43310	43520	43317	43648	41510	41872	43103
% Chg Same Qtr Last Yr.....	-1.18	-0.67	-2.16	0.61	0.40	0.66	1.84	1.22	3.33	3.44	3.79	1.62	0.75	0.84	-1.11	0.87	2.94
NATURAL RESOURCES, MINING AND CONSTRUCTION.....	45152	44629	45467	48747	46808	46115	46692	49303	48748	49014	49809	49646	47678	46013	45695	47091	49219
% Chg Same Qtr Last Yr.....	-0.06	1.28	0.75	2.56	3.67	3.33	2.69	1.14	4.14	6.29	6.68	0.69	-2.19	-6.12	-0.60	3.05	4.52
MANUFACTURING.....	50552	50804	50570	52103	51216	51244	51978	51223	52371	52264	53519	52371	53199	53620	50915	51635	52344
% Chg Same Qtr Last Yr.....	-5.13	1.09	-2.14	0.71	1.31	0.87	2.79	-1.69	2.26	1.99	2.96	2.24	1.58	2.59	-1.46	1.41	1.37
DURABLE GOODS.....	49141	49333	49266	50282	50289	50402	51355	49923	51341	51363	52824	52394	52384	52928	49511	50582	51363
% Chg Same Qtr Last Yr.....	-8.66	0.02	-3.11	-0.05	2.34	2.17	4.24	-0.71	2.09	1.91	2.86	4.95	2.03	3.05	-3.42	2.16	1.54
NONDURABLE GOODS.....	52891	53252	52761	55211	52802	52683	53050	53466	54151	53823	54717	52331	54611	54816	53248	53437	54039
% Chg Same Qtr Last Yr.....	0.83	2.83	-0.52	2.07	-0.17	-1.07	0.55	-3.16	2.56	2.16	3.14	-2.12	0.85	1.84	1.73	0.35	1.13
TRADE, TRANSPORTATION, UTILITIES.....	38792	38478	37420	39198	38519	38643	38967	39463	39566	39781	40305	39947	40628	40919	38333	38832	39779
% Chg Same Qtr Last Yr.....	-0.48	-0.03	-2.78	1.44	-0.70	0.43	4.14	0.68	2.72	2.94	3.43	1.23	2.68	2.86	-1.15	1.30	2.44
WHOLESALE TRADE.....	58549	58362	58304	60494	59283	60622	61882	61452	61998	61218	61041	60419	60528	61185	58272	60570	61427
% Chg Same Qtr Last Yr.....	0.27	2.39	-5.49	4.53	1.25	3.87	6.14	1.58	4.58	0.98	-1.36	-1.68	-2.37	-0.05	-0.97	3.94	1.42
RETAIL TRADE.....	26363	26255	25288	26689	26222	26063	26824	26606	27047	27591	27532	27320	27875	28022	26141	26450	27194
% Chg Same Qtr Last Yr.....	-2.75	-1.43	-1.90	0.12	-0.53	-0.73	6.07	-0.31	3.14	5.86	2.64	2.68	3.06	1.56	-2.19	1.18	2.82
TRANSPORTATION & UTILITIES.....	49094	48356	46943	48745	48188	47928	47009	49026	48340	48435	50777	50215	51763	52012	48187	47968	49144
% Chg Same Qtr Last Yr.....	0.86	-0.68	-0.48	0.81	-1.85	-0.89	0.14	0.58	0.32	1.06	8.01	2.43	7.08	7.39	-0.33	-0.46	2.45
INFORMATION.....	54353	54410	54150	56290	56088	56047	55932	56853	56603	56561	57632	59571	59525	59617	54105	56089	56912
% Chg Same Qtr Last Yr.....	-0.13	-1.87	-3.20	5.20	3.19	3.01	3.29	1.00	0.92	0.92	3.04	4.78	5.16	5.40	-1.83	3.67	1.47
FINANCIAL ACTIVITIES.....	61130	60723	61371	63093	61290	61354	62306	62152	62616	62602	63738	63082	63968	64646	61287	62011	62777
% Chg Same Qtr Last Yr.....	-5.62	-3.35	-4.84	1.89	0.26	1.04	1.52	-1.49	2.16	2.03	2.30	1.50	2.16	3.26	-3.21	1.18	1.24
PROFESSIONAL & BUSINESS SERVICES.....	48253	48320	47179	47877	46937	47106	46928	50441	50340	49945	48256	51273	49567	49930	48305	47212	49745
% Chg Same Qtr Last Yr.....	2.40	-0.94	-4.30	-3.22	-2.73	-2.51	-0.53	5.35	7.25	6.03	2.83	1.65	-1.53	-0.03	-0.63	-2.26	5.37
EDUCATION & HEALTH SERVICES.....	42465	42679	41673	42566	42550	42713	42155	43562	43818	44672	44527	43304	43168	43531	42290	42496	44145
% Chg Same Qtr Last Yr.....	0.26	-0.07	-2.07	0.52	0.20	0.08	1.16	2.34	2.98	4.59	5.63	-0.59	-1.48	-2.56	-0.67	0.49	3.88
LEISURE & HOSPITALITY.....	19324	19452	20013	20875	19700	19845	20688	21454	21049	20941	22582	22903	21508	21581	19834	20277	21506
% Chg Same Qtr Last Yr.....	-1.99	-1.12	-0.53	1.60	1.95	2.02	3.37	2.77	6.85	5.52	9.15	6.75	2.18	3.06	-1.95	2.23	6.06
OTHER SERVICES.....	36489	37282	37732	39175	37886	38229	38971	39086	38992	39695	40816	40741	39314	39646	37186	38565	39648
% Chg Same Qtr Last Yr.....	-4.02	0.41	0.70	5.19	3.83	2.54	3.28	-0.23	2.92	3.84	4.74	4.23	0.83	-0.13	-0.84	3.71	2.81
GOVERNMENT.....	39423	40111	38257	39116	39989	41019	38200	39303	40365	41466	38908	39491	40631	41597	39255	39581	40010
% Chg Same Qtr Last Yr.....	0.38	-2.23	-0.10	-0.28	1.44	2.26	-0.15	0.48	0.94	1.09	1.85	0.48	0.66	0.32	-0.22	0.83	1.08
FEDERAL, CIVILIAN.....	66578	65940	68606	71211	72169	72515	72187	72207	71187	70498	70022	71023	71308	71683	66811	72020	70978
% Chg Same Qtr Last Yr.....	-1.20	-1.28	4.12	7.69	8.40	9.97	5.22	1.40	-1.36	-2.78	-3.00	-1.64	0.17	1.68	-0.32	7.80	-1.45
STATE & LOCAL.....	35809	36569	34379	34989	35821	36824	33980	35074	36255	37515	34963	35432	36539	37490	35606	35404	35952
% Chg Same Qtr Last Yr.....	1.02	-2.26	-0.83	-1.90	0.03	0.70	-1.16	0.24	1.21	1.88	2.89	1.02	0.78	-0.07	0.00	-0.57	1.55

Boyd Center for Business and Economic Research, University of Tennessee

Tennessee Econometric Model

**Table 12: Tennessee Average Annual Wage and Salary Rate by Sector, Seasonally Adjusted (2009 dollars)**

**January 2017**

	Historical Data													Annual			
	2013:2	2013:3	2013:4	2014:1	2014:2	2014:3	2014:4	2015:1	2015:2	2015:3	2015:4	2016:1	2016:2	2016:3	2013	2014	2015
TOTAL NONFARM.....	41478	41456	41468	41918	41629	41725	42246	42421	43030	43177	43754	43121	43373	43523	41505	41880	43096
% Chg Prev Qtr SAAR.....	-1.31	-0.21	0.12	4.41	-2.73	0.93	5.09	1.66	5.87	1.37	5.46	-5.66	2.36	1.39	-1.10	0.90	2.90
% Chg Same Qtr Last Yr.....	-1.17	-0.71	-2.09	0.73	0.36	0.65	1.88	1.20	3.37	3.48	3.57	1.65	0.80	0.80	-1.10	0.90	2.90
<b>NATURAL RESOURCES, MINING</b>																	
AND CONSTRUCTION.....	45319	45694	46085	46715	47006	47101	47227	47322	49237	49913	50428	47908	48100	46740	45656	47012	49225
% Chg Prev Qtr SAAR.....	-1.80	3.35	3.46	5.58	2.52	0.81	1.07	0.81	17.19	5.60	4.19	-18.54	1.61	-10.84	-0.58	2.97	4.71
% Chg Same Qtr Last Yr.....	-0.18	1.00	0.75	2.61	3.72	3.08	2.48	1.30	4.75	5.97	6.78	1.24	-2.31	-6.36	-0.58	2.97	4.71
MANUFACTURING.....	50586	50846	50659	51952	51242	51258	52075	51104	52388	52252	53633	52283	53206	53579	50909	51631	52344
% Chg Prev Qtr SAAR.....	-7.23	2.07	-1.46	10.60	-5.36	0.13	6.53	-7.25	10.43	-1.03	11.00	-9.69	7.25	2.84	-1.47	1.42	1.38
% Chg Same Qtr Last Yr.....	-5.11	1.00	-2.14	0.79	1.30	0.81	2.79	-1.63	2.24	1.94	2.99	2.31	1.56	2.54	-1.47	1.42	1.38
DURABLE GOODS.....	49185	49364	49314	50177	50333	50389	51417	49846	51380	51322	52896	52340	52408	52870	49506	50579	51361
% Chg Prev Qtr SAAR.....	-7.57	1.47	-0.41	7.19	1.25	0.45	8.41	-11.67	12.89	-0.45	12.84	-4.14	0.52	3.57	-3.42	2.17	1.55
% Chg Same Qtr Last Yr.....	-8.63	-0.08	-3.11	0.03	2.33	2.07	4.26	-0.66	2.08	1.85	2.88	5.00	2.00	3.02	-3.42	2.17	1.55
NONDURABLE GOODS.....	52907	53314	52925	54975	52796	52745	53208	53271	54127	53862	54904	52185	54585	54805	53241	53431	54041
% Chg Prev Qtr SAAR.....	-6.61	3.11	-2.88	16.41	-14.93	-0.39	3.56	0.48	6.59	-1.94	7.96	-18.39	19.71	1.63	1.73	0.36	1.14
% Chg Same Qtr Last Yr.....	0.82	2.76	-0.52	2.15	-0.21	-1.07	0.53	-3.10	2.52	2.12	3.19	-2.04	0.85	1.75	1.73	0.36	1.14
TRADE, TRANSPORTATION, UTILITIES.....	38625	38379	38136	38737	38340	38552	39724	38981	39452	39724	40901	39488	40569	40839	38312	38838	39764
% Chg Prev Qtr SAAR.....	5.51	-2.53	-2.51	6.46	-4.04	2.22	12.73	-7.27	4.91	2.79	12.39	-13.12	11.41	2.69	-1.18	1.37	2.39
% Chg Same Qtr Last Yr.....	-0.63	-0.04	-2.70	1.64	-0.74	0.45	4.16	0.63	2.90	3.04	2.96	1.30	2.83	2.81	-1.18	1.37	2.39
WHOLESALE TRADE.....	58695	58491	58481	60092	59398	60756	62054	61043	62101	61386	61205	60129	60528	61088	58285	60575	61434
% Chg Prev Qtr SAAR.....	8.76	-1.38	-0.07	11.48	-4.54	9.47	8.82	-6.36	7.11	-4.52	-1.18	-6.85	2.69	3.75	-0.94	3.93	1.42
% Chg Same Qtr Last Yr.....	0.32	2.42	-5.49	4.55	1.20	3.87	6.11	1.58	4.55	1.04	-1.37	-1.50	-2.53	-0.49	-0.94	3.93	1.42
RETAIL TRADE.....	26234	26150	25929	26271	26091	25977	27481	26169	26966	27515	28064	26884	27875	27974	26129	26455	27179
% Chg Prev Qtr SAAR.....	0.48	-1.28	-3.33	5.38	-2.71	-1.74	25.26	-17.78	12.76	8.40	8.22	-15.78	15.57	1.43	-2.22	1.25	2.74
% Chg Same Qtr Last Yr.....	-2.90	-1.41	-1.82	0.26	-0.54	-0.66	5.99	-0.39	3.35	5.92	2.12	2.73	3.37	1.67	-2.22	1.25	2.74
TRANSPORTATION & UTILITIES.....	48667	48190	47833	48387	47742	47736	48029	48651	48037	48343	51532	49845	51468	51869	48114	47974	49141
% Chg Prev Qtr SAAR.....	7.76	-3.87	-2.92	4.71	-5.23	-0.06	2.48	5.28	-4.95	2.57	29.12	-12.47	13.68	3.15	-0.40	-0.29	2.43
% Chg Same Qtr Last Yr.....	0.53	-0.79	-0.35	1.30	-1.90	-0.94	0.41	0.54	0.62	1.27	7.29	2.45	7.14	7.29	-0.40	-0.29	2.43
INFORMATION.....	54476	54205	54355	56162	56216	55835	56060	56679	56818	56476	57676	59616	59839	59092	54085	56068	56912
% Chg Prev Qtr SAAR.....	9.09	-1.98	1.11	13.97	0.39	-2.68	1.62	4.49	0.99	-2.39	8.77	14.15	1.50	-4.90	-1.85	3.67	1.51
% Chg Same Qtr Last Yr.....	-0.06	-1.86	-3.21	5.36	3.19	3.01	3.14	0.92	1.07	1.15	2.88	5.18	5.32	4.63	-1.85	3.67	1.51
FINANCIAL ACTIVITIES.....	61130	60912	61502	62768	61261	61566	62449	61826	62730	62785	64008	62720	63954	64788	61257	62011	62837
% Chg Prev Qtr SAAR.....	-2.30	-1.42	3.93	8.49	-9.26	2.01	5.86	-3.93	5.97	0.35	8.02	-7.81	8.11	5.32	-3.25	1.23	1.33
% Chg Same Qtr Last Yr.....	-5.81	-3.35	-4.80	2.08	0.22	1.07	1.54	-1.50	2.40	1.98	2.50	1.45	1.95	3.19	-3.25	1.23	1.33

(CONTINUED ON NEXT PAGE)

**Table 12: Tennessee Average Annual Wage and Salary Rate by Sector, Seasonally Adjusted (2009 dollars)** **January 2017**

	Historical Data													Annual			
	2013:2	2013:3	2013:4	2014:1	2014:2	2014:3	2014:4	2015:1	2015:2	2015:3	2015:4	2016:1	2016:2	2016:3	2013	2014	2015
PROFESSIONAL & BUSINESS SERVICES..	48243	48107	48250	47181	46912	46906	48015	49672	50237	49789	49146	50552	49435	49622	48308	47253	49711
% Chg Prev Qtr SAAR.....	-3.16	-1.13	1.19	-8.57	-2.26	-0.05	9.79	14.54	4.62	-3.52	-5.07	11.94	-8.55	1.52	-0.58	-2.18	5.20
% Chg Same Qtr Last Yr.....	2.67	-0.92	-4.23	-2.99	-2.76	-2.50	-0.49	5.28	7.09	6.15	2.36	1.77	-1.60	-0.34	-0.58	-2.18	5.20
EDUCATION & HEALTH SERVICES.....	42394	42491	41997	42541	42469	42510	42523	43544	43730	44450	44898	43328	43081	43243	42291	42511	44155
% Chg Prev Qtr SAAR.....	1.08	0.92	-4.57	5.29	-0.68	0.39	0.12	9.96	1.71	6.75	4.09	-13.27	-2.26	1.52	-0.66	0.52	3.87
% Chg Same Qtr Last Yr.....	0.30	-0.15	-2.02	0.62	0.18	0.05	1.25	2.36	2.97	4.56	5.58	-0.50	-1.48	-2.72	-0.66	0.52	3.87
LEISURE & HOSPITALITY.....	19813	19974	19840	20022	20187	20369	20500	20580	21578	21457	22386	21962	22009	22176	19825	20269	21500
% Chg Prev Qtr SAAR.....	2.85	3.30	-2.66	3.72	3.35	3.64	2.60	1.58	20.84	-2.23	18.49	-7.37	0.86	3.07	-1.91	2.24	6.07
% Chg Same Qtr Last Yr.....	-1.98	-1.14	-0.51	1.77	1.89	1.98	3.33	2.79	6.89	5.34	9.20	6.71	2.00	3.35	-1.91	2.24	6.07
OTHER SERVICES.....	36823	37458	37542	38780	38232	38410	38788	38695	39344	39892	40677	40304	39793	39789	37180	38552	39652
% Chg Prev Qtr SAAR.....	-0.80	7.08	0.90	13.87	-5.54	1.88	4.00	-0.95	6.88	5.69	8.11	-3.62	-4.98	-0.04	-0.83	3.69	2.85
% Chg Same Qtr Last Yr.....	-3.91	0.37	0.67	5.10	3.83	2.54	3.32	-0.22	2.91	3.86	4.87	4.16	1.14	-0.26	-0.83	3.69	2.85
GOVERNMENT.....	39108	38793	39306	39665	39615	39650	39309	39865	39928	40137	39850	39981	40316	40357	39242	39560	39945
% Chg Prev Qtr SAAR.....	-6.41	-3.19	5.39	3.70	-0.50	0.35	-3.40	5.77	0.64	2.11	-2.83	1.32	3.40	0.40	-0.17	0.81	0.97
% Chg Same Qtr Last Yr.....	0.38	-2.35	0.09	-0.24	1.30	2.21	0.01	0.50	0.79	1.23	1.38	0.29	0.97	0.55	-0.17	0.81	0.97
FEDERAL, CIVILIAN.....	65564	66074	69120	71601	71038	72665	72588	72701	70947	70642	70259	69884	70498	73312	66810	71973	71137
% Chg Prev Qtr SAAR.....	-5.40	3.15	19.76	15.15	-3.11	9.48	-0.43	0.62	-9.31	-1.71	-2.15	-2.12	3.56	16.95	-0.45	7.73	-1.16
% Chg Same Qtr Last Yr.....	-1.73	-1.34	4.28	7.70	8.35	9.98	5.02	1.54	-0.13	-2.78	-3.21	-3.88	-0.63	3.78	-0.45	7.73	-1.16
STATE & LOCAL.....	35558	35199	35411	35518	35515	35429	35068	35609	35828	36146	35903	36005	36274	36118	35590	35383	35872
% Chg Prev Qtr SAAR.....	-6.83	-3.97	2.43	1.21	-0.03	-0.97	-4.01	6.32	2.48	3.60	-2.66	1.14	3.02	-1.71	0.07	-0.58	1.38
% Chg Same Qtr Last Yr.....	1.09	-2.38	-0.64	-1.86	-0.12	0.65	-0.97	0.26	0.88	2.02	2.38	1.11	1.25	-0.08	0.07	-0.58	1.38

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)**

	Historical Data															Annual		
	2013:2	2013:3	2013:4	2014:1	2014:2	2014:3	2014:4	2015:1	2015:2	2015:3	2015:4	2016:1	2016:2	2016:3	2013	2014	2015	
TOTAL NONFARM.....	44441	44738	44287	45956	45410	45786	45659	46669	47066	47518	47594	47858	47874	48412	44635	45703	47212	
% Chg Same Qtr Last Yr.....	0.08	0.64	-0.98	1.96	2.18	2.34	3.10	1.55	3.65	3.78	4.24	2.55	1.72	1.88	0.21	2.39	3.30	
<b>NATURAL RESOURCES, MINING</b>																		
AND CONSTRUCTION.....	48416	48032	49145	52950	51083	50462	51091	53730	53365	53810	54737	54595	52693	51035	49135	51396	53910	
% Chg Same Qtr Last Yr.....	1.21	2.61	1.96	3.93	5.51	5.06	3.96	1.47	4.47	6.63	7.14	1.61	-1.26	-5.16	0.73	4.60	4.89	
MANUFACTURING.....	54206	54677	54660	56595	55893	56074	56875	55822	57332	57378	58813	57592	58795	59472	54749	56359	57336	
% Chg Same Qtr Last Yr.....	-3.93	2.42	-0.96	2.06	3.11	2.55	4.05	-1.36	2.57	2.33	3.41	3.17	2.55	3.65	-0.15	2.94	1.73	
DURABLE GOODS.....	52693	53094	53251	54617	54882	55152	56194	54405	56204	56388	58049	57618	57895	58704	53240	55211	56262	
% Chg Same Qtr Last Yr.....	-7.50	1.33	-1.95	1.29	4.15	3.88	5.53	-0.39	2.41	2.24	3.30	5.90	3.01	4.11	-2.13	3.70	1.90	
NONDURABLE GOODS.....	56714	57312	57028	59971	57625	57649	58048	58267	59281	59090	60129	57548	60355	60799	57258	58323	59192	
% Chg Same Qtr Last Yr.....	2.11	4.18	0.68	3.44	1.61	0.59	1.79	-2.84	2.87	2.50	3.59	-1.23	1.81	2.89	3.08	1.86	1.49	
TRADE, TRANSPORTATION, UTILITIES.....	41596	41412	40447	42577	42037	42285	42639	43007	43314	43673	44292	43929	44902	45385	41218	42385	43571	
% Chg Same Qtr Last Yr.....	0.78	1.28	-1.61	2.80	1.06	2.11	5.42	1.01	3.04	3.28	3.88	2.15	3.67	3.92	0.16	2.83	2.80	
WHOLESALE TRADE.....	62781	62813	63020	65709	64697	66335	67713	66970	67870	67208	67079	66443	66895	67863	62662	66113	67282	
% Chg Same Qtr Last Yr.....	1.54	3.73	-4.36	5.93	3.05	5.61	7.45	1.92	4.90	1.32	-0.94	-0.79	-1.44	0.98	0.34	5.51	1.77	
RETAIL TRADE.....	28268	28257	27334	28990	28617	28520	29351	28995	29609	30291	30256	30043	30807	31080	28108	28869	29788	
% Chg Same Qtr Last Yr.....	-1.52	-0.14	-0.72	1.46	1.23	0.93	7.38	0.02	3.47	6.21	3.08	3.61	4.05	2.60	-0.89	2.71	3.18	
TRANSPORTATION & UTILITIES.....	52643	52043	50740	52948	52589	52445	51438	53428	52918	53174	55799	55221	57208	57688	51814	52355	53830	
% Chg Same Qtr Last Yr.....	2.14	0.62	0.72	2.16	-0.10	0.77	1.38	0.91	0.63	1.39	8.48	3.36	8.11	8.49	1.00	1.04	2.82	
INFORMATION.....	58282	58559	58530	61143	61210	61330	61202	61957	61964	62095	63333	65509	65786	66124	58180	61221	62338	
% Chg Same Qtr Last Yr.....	1.13	-0.59	-2.04	6.61	5.02	4.73	4.57	1.33	1.23	1.25	3.48	5.73	6.17	6.49	-0.53	5.23	1.82	
FINANCIAL ACTIVITIES.....	65549	65353	66335	68532	66887	67137	68177	67732	68547	68727	70043	69370	70697	71701	65902	67683	68762	
% Chg Same Qtr Last Yr.....	-4.43	-2.08	-3.70	3.25	2.04	2.73	2.78	-1.17	2.48	2.37	2.74	2.42	3.14	4.33	-1.93	2.70	1.59	
PROFESSIONAL & BUSINESS SERVICES.....	51741	52005	50995	52005	51223	51545	51349	54970	55108	54831	53030	56385	54781	55380	51941	51531	54485	
% Chg Same Qtr Last Yr.....	3.70	0.36	-3.15	-1.92	-1.00	-0.88	0.69	5.70	7.58	6.37	3.27	2.57	-0.59	1.00	0.68	-0.79	5.73	
EDUCATION & HEALTH SERVICES.....	45535	45933	45044	46235	46436	46739	46127	47473	47969	49043	48932	47621	47708	48281	45475	46384	48354	
% Chg Same Qtr Last Yr.....	1.54	1.24	-0.89	1.87	1.98	1.75	2.40	2.68	3.30	4.93	6.08	0.31	-0.54	-1.55	0.65	2.00	4.25	
LEISURE & HOSPITALITY.....	20721	20935	21632	22675	21499	21715	22637	23380	23042	22990	24815	25186	23770	23936	21328	22132	23557	
% Chg Same Qtr Last Yr.....	-0.75	0.18	0.66	2.96	3.76	3.72	4.65	3.11	7.18	5.87	9.62	7.72	3.16	4.12	-0.63	3.77	6.44	
OTHER SERVICES.....	39127	40125	40784	42552	41346	41832	42643	42595	42686	43579	44854	44802	43450	43973	39988	42093	43429	
% Chg Same Qtr Last Yr.....	-2.80	1.73	1.91	6.60	5.67	4.26	4.56	0.10	3.24	4.18	5.19	5.18	1.79	0.90	0.49	5.26	3.17	
GOVERNMENT.....	42273	43170	41351	42488	43642	44885	41800	42832	44188	45523	42757	43428	44905	46137	42210	43204	43825	
% Chg Same Qtr Last Yr.....	1.65	-0.95	1.11	1.05	3.24	3.97	1.08	0.81	1.25	1.42	2.29	1.39	1.62	1.35	1.11	2.35	1.44	
FEDERAL, CIVILIAN.....	71390	70968	74155	77350	78760	79349	78989	78690	77930	77396	76948	78104	78809	79506	71847	78612	77741	
% Chg Same Qtr Last Yr.....	0.06	0.01	5.38	9.14	10.32	11.81	6.52	1.73	-1.05	-2.46	-2.58	-0.75	1.13	2.73	1.02	9.42	-1.11	
STATE & LOCAL.....	38398	39358	37160	38005	39092	40295	37182	38223	39689	41185	38422	38964	40383	41582	38286	38644	39380	
% Chg Same Qtr Last Yr.....	2.30	-0.98	0.37	-0.59	1.81	2.38	0.06	0.57	1.53	2.21	3.33	1.94	1.75	0.96	1.32	0.93	1.91	

Table 14: Tennessee Average Annual Wage and Salary Rate by Sector, Seasonally Adjusted (current dollars) January 2017

	Historical Data													Annual			
	2013:2	2013:3	2013:4	2014:1	2014:2	2014:3	2014:4	2015:1	2015:2	2015:3	2015:4	2016:1	2016:2	2016:3	2013	2014	2015
TOTAL NONFARM.....	44477	44617	44823	45531	45431	45658	46227	46230	47106	47402	48083	47420	47936	48273	44630	45712	47205
% Chg Prev Qtr SAAR.....	-1.14	1.27	1.85	6.48	-0.88	2.01	5.08	0.03	7.80	2.53	5.87	-5.40	4.42	2.85	0.21	2.42	3.27
% Chg Same Qtr Last Yr.....	0.08	0.59	-0.91	2.08	2.14	2.33	3.13	1.53	3.69	3.82	4.01	2.57	1.76	1.84	0.21	2.42	3.27
NATURAL RESOURCES, MINING & CONSTRUCTION.....	48595	49178	49813	50742	51299	51541	51677	51571	53901	54796	55416	52684	53159	51841	49096	51315	53921
% Chg Prev Qtr SAAR.....	-1.63	4.89	5.26	7.68	4.46	1.90	1.06	-0.82	19.33	6.81	4.60	-18.31	3.66	-9.55	0.74	4.52	5.08
% Chg Same Qtr Last Yr.....	1.08	2.32	1.96	3.99	5.56	4.80	3.74	1.63	5.07	6.32	7.24	2.16	-1.38	-5.39	0.74	4.52	5.08
MANUFACTURING.....	54243	54723	54757	56430	55922	56089	56981	55693	57350	57364	58938	57495	58802	59427	54743	56355	57336
% Chg Prev Qtr SAAR.....	-7.07	3.59	0.25	12.79	-3.56	1.20	6.52	-8.74	12.45	0.10	11.43	-9.44	9.41	4.31	-0.16	2.95	1.74
% Chg Same Qtr Last Yr.....	-3.91	2.33	-0.96	2.14	3.09	2.50	4.06	-1.31	2.55	2.27	3.43	3.24	2.53	3.60	-0.16	2.95	1.74
DURABLE GOODS.....	52741	53128	53303	54503	54929	55138	56261	54321	56247	56344	58129	57558	57921	58640	53235	55208	56260
% Chg Prev Qtr SAAR.....	-7.41	2.97	1.32	9.32	3.17	1.53	8.40	-13.09	14.95	0.69	13.29	-3.87	2.55	5.06	-2.13	3.71	1.91
% Chg Same Qtr Last Yr.....	-7.47	1.23	-1.94	1.37	4.15	3.78	5.55	-0.33	2.40	2.19	3.32	5.96	2.98	4.08	-2.13	3.71	1.91
NONDURABLE GOODS.....	56731	57379	57207	59714	57618	57716	58221	58054	59254	59132	60335	57387	60327	60787	57250	58318	59194
% Chg Prev Qtr SAAR.....	-6.45	4.65	-1.20	18.72	-13.32	0.68	3.55	-1.14	8.53	-0.82	8.39	-18.16	22.12	3.09	3.08	1.86	1.50
% Chg Same Qtr Last Yr.....	2.10	4.11	0.67	3.52	1.56	0.59	1.77	-2.78	2.84	2.45	3.63	-1.15	1.81	2.80	3.08	1.86	1.50
TRADE, TRANSPORTATION, UTILITIES.....	41417	41305	41220	42077	41842	42185	43466	42481	43188	43611	44947	43424	44836	45296	41198	42393	43557
% Chg Prev Qtr SAAR.....	5.69	-1.08	-0.82	8.57	-2.21	3.32	12.71	-8.76	6.82	3.97	12.83	-12.88	13.65	4.17	0.13	2.90	2.75
% Chg Same Qtr Last Yr.....	0.63	1.27	-1.53	3.01	1.03	2.13	5.45	0.96	3.22	3.38	3.41	2.22	3.82	3.87	0.13	2.90	2.75
WHOLESALE TRADE.....	62938	62951	63212	65273	64822	66482	67900	66524	67983	67392	67259	66123	66895	67755	62676	66119	67289
% Chg Prev Qtr SAAR.....	8.95	0.09	1.66	13.69	-2.73	10.64	8.81	-7.87	9.06	-3.43	-0.79	-6.59	4.76	5.24	0.37	5.49	1.77
% Chg Same Qtr Last Yr.....	1.60	3.76	-4.36	5.96	2.99	5.61	7.42	1.92	4.88	1.37	-0.94	-0.60	-1.60	0.54	0.37	5.49	1.77
RETAIL TRADE.....	28130	28144	28026	28536	28474	28425	30071	28518	29521	30208	30840	29564	30807	31027	28096	28876	29772
% Chg Prev Qtr SAAR.....	0.65	0.19	-1.65	7.47	-0.86	-0.69	25.24	-19.10	14.82	9.64	8.64	-15.55	17.90	2.89	-0.92	2.78	3.10
% Chg Same Qtr Last Yr.....	-1.67	-0.11	-0.64	1.61	1.22	1.00	7.29	-0.06	3.68	6.27	2.56	3.67	4.36	2.71	-0.92	2.78	3.10
TRANSPORTATION & UTILITIES.....	52185	51864	51703	52559	52103	52235	52555	53019	52587	53073	56630	54814	56882	57530	51737	52363	53827
% Chg Prev Qtr SAAR.....	7.94	-2.44	-1.24	6.79	-3.43	1.02	2.47	3.58	-3.22	3.74	29.63	-12.22	15.97	4.63	0.92	1.21	2.80
% Chg Same Qtr Last Yr.....	1.81	0.51	0.85	2.66	-0.16	0.71	1.65	0.88	0.93	1.60	7.75	3.39	8.17	8.40	0.92	1.21	2.80
INFORMATION.....	58414	58338	58752	61003	61350	61097	61342	61768	62200	62002	63381	65560	66133	65541	58159	61198	62338
% Chg Prev Qtr SAAR.....	9.27	-0.52	2.87	16.24	2.29	-1.64	1.61	2.81	2.83	-1.27	9.20	14.47	3.55	-3.53	-0.55	5.23	1.86
% Chg Same Qtr Last Yr.....	1.21	-0.57	-2.05	6.77	5.03	4.73	4.41	1.25	1.39	1.48	3.32	6.14	6.32	5.71	-0.55	5.23	1.86
FINANCIAL ACTIVITIES.....	65549	65556	66477	68179	66856	67369	68333	67378	68672	68928	70339	68973	70681	71859	65871	67684	68829
% Chg Prev Qtr SAAR.....	-2.14	0.05	5.74	10.64	-7.54	3.10	5.85	-5.48	7.91	1.50	8.45	-7.55	10.28	6.83	-1.98	2.75	1.69
% Chg Same Qtr Last Yr.....	-4.61	-2.09	-3.66	3.45	1.99	2.76	2.79	-1.17	2.72	2.31	2.94	2.37	2.93	4.25	-1.98	2.75	1.69

(CONTINUED ON NEXT PAGE)

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

**January 2017**

	Historical Data														Annual		
	2013:2	2013:3	2013:4	2014:1	2014:2	2014:3	2014:4	2015:1	2015:2	2015:3	2015:4	2016:1	2016:2	2016:3	2013	2014	2015
PROFESSIONAL & BUSINESS SERVICES.....	51731	51775	52153	51248	51196	51327	52539	54132	54995	54660	54007	55591	54635	55038	51946	51578	54449
% Chg Prev Qtr SAAR.....	-3.00	0.34	2.95	-6.76	-0.41	1.03	9.78	12.69	6.53	-2.41	-4.69	12.26	-6.70	2.98	0.74	-0.71	5.57
% Chg Same Qtr Last Yr.....	3.97	0.38	-3.07	-1.68	-1.03	-0.87	0.74	5.63	7.42	6.49	2.80	2.70	-0.65	0.69	0.74	-0.71	5.57
EDUCATION & HEALTH SERVICES.....	45459	45731	45394	46209	46348	46517	46530	47454	47872	48799	49339	47647	47612	47963	45476	46401	48366
% Chg Prev Qtr SAAR.....	1.25	2.41	-2.91	7.37	1.21	1.47	0.11	8.19	3.57	7.98	4.50	-13.03	-0.29	2.98	0.66	2.03	4.24
% Chg Same Qtr Last Yr.....	1.57	1.16	-0.84	1.97	1.95	1.72	2.50	2.70	3.29	4.91	6.04	0.41	-0.54	-1.71	0.66	2.03	4.24
LEISURE & HOSPITALITY.....	21245	21497	21445	21748	22031	22289	22431	22428	23621	23556	24601	24151	24324	24596	21319	22125	23551
% Chg Prev Qtr SAAR.....	3.03	4.83	-0.97	5.78	5.31	4.76	2.59	-0.06	23.04	-1.11	18.96	-7.11	2.89	4.55	-0.60	3.78	6.45
% Chg Same Qtr Last Yr.....	-0.74	0.15	0.69	3.13	3.70	3.68	4.60	3.13	7.22	5.69	9.67	7.68	2.97	4.42	-0.60	3.78	6.45
OTHER SERVICES.....	39485	40314	40579	42124	41723	42030	42442	42170	43071	43796	44701	44322	43979	44132	39981	42080	43434
% Chg Prev Qtr SAAR.....	-0.64	8.67	2.65	16.12	-3.75	2.97	3.98	-2.54	8.83	6.90	8.53	-3.35	-3.06	1.40	0.49	5.25	3.22
% Chg Same Qtr Last Yr.....	-2.69	1.69	1.89	6.51	5.67	4.26	4.59	0.11	3.23	4.20	5.32	5.10	2.11	0.77	0.49	5.25	3.22
GOVERNMENT.....	41936	41751	42485	43084	43233	43387	43013	43444	43711	44064	43792	43966	44557	44761	42198	43179	43753
% Chg Prev Qtr SAAR.....	-6.25	-1.75	7.22	5.76	1.39	1.43	-3.41	4.07	2.48	3.28	-2.45	1.61	5.48	1.85	1.16	2.33	1.33
% Chg Same Qtr Last Yr.....	1.65	-1.07	1.30	1.09	3.09	3.92	1.24	0.84	1.10	1.56	1.81	1.20	1.94	1.58	1.16	2.33	1.33
FEDERAL, CIVILIAN.....	70304	71112	74712	77774	77526	79514	79427	79229	77667	77554	77209	76851	77913	81313	71846	78560	77915
% Chg Prev Qtr SAAR.....	-5.24	4.68	21.84	17.43	-1.27	10.66	-0.44	-1.00	-7.66	-0.58	-1.76	-1.85	5.65	18.63	0.88	9.35	-0.82
% Chg Same Qtr Last Yr.....	-0.48	-0.05	5.53	9.15	10.27	11.82	6.31	1.87	0.18	-2.47	-2.79	-3.00	0.32	4.85	0.88	9.35	-0.82
STATE & LOCAL.....	38129	37883	38276	38580	38759	38768	38372	38807	39221	39682	39455	39594	40090	40060	38270	38620	39291
% Chg Prev Qtr SAAR.....	-6.67	-2.55	4.21	3.22	1.86	0.09	-4.02	4.60	4.35	4.79	-2.27	1.42	5.10	-0.29	1.40	0.91	1.74
% Chg Same Qtr Last Yr.....	2.37	-1.10	0.56	-0.55	1.65	2.34	0.25	0.59	1.19	2.36	2.82	2.03	2.21	0.95	1.40	0.91	1.74

Boyd Center for Business and Economic Research, University of Tennessee

Tennessee Econometric Model



**Table 15: Tennessee Civilian Labor Force and Unemployment Rate, Not Seasonally Adjusted****January 2017**

	Historical Data														Annual		
	2013:2	2013:3	2013:4	2014:1	2014:2	2014:3	2014:4	2015:1	2015:2	2015:3	2015:4	2016:1	2016:2	2016:3	2013	2014	2015
CIVILIAN LABOR FORCE (THOUS).....	3103	3082	3041	3025	3050	3059	3052	3043	3077	3065	3065	3099	3143	3173	3077	3047	3063
% Chg Same Qtr Last Yr.....	-0.26	-0.93	-2.04	-1.83	-1.72	-0.75	0.36	0.59	0.89	0.20	0.44	1.83	2.13	3.53	-0.84	-0.99	0.53
EMPLOYED PERSONS (THOUS).....	2856	2841	2830	2818	2854	2848	2870	2856	2898	2887	2902	2959	3010	3016	2838	2848	2886
% Chg Same Qtr Last Yr.....	-0.43	-0.79	-1.61	-0.22	-0.06	0.26	1.42	1.33	1.54	1.39	1.12	3.62	3.86	4.46	-0.79	0.35	1.34
UNEMPLOYED PERSONS (THOUS).....	247	242	211	207	196	211	182	187	179	178	163	139	133	157	239	199	177
% Chg Same Qtr Last Yr.....	1.74	-2.56	-7.49	-19.48	-20.88	-12.58	-13.81	-9.50	-8.54	-15.84	-10.23	-25.50	-25.83	-11.58	-1.46	-16.85	-11.12
PARTICIPATION RATE (PERCENT).....	61.3	60.8	59.8	59.4	59.7	59.7	59.4	59.1	59.6	59.3	59.1	59.6	60.3	60.7	60.7	59.6	59.3
% Chg Same Qtr Last Yr.....	-1.12	-1.77	-2.90	-2.71	-2.63	-1.69	-0.61	-0.40	-0.11	-0.82	-0.58	0.79	1.03	2.40	-1.71	-1.92	-0.48
UNEMPLOYMENT RATE (PERCENT).....	8.0	7.8	6.9	6.8	6.4	6.9	6.0	6.1	5.8	5.8	5.3	4.5	4.2	5.0	7.8	6.5	5.8

Boyd Center for Business and Economic Research, University of Tennessee

Tennessee Econometric Model

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

**January 2017**

	Historical Data														Annual		
	2013:2	2013:3	2013:4	2014:1	2014:2	2014:3	2014:4	2015:1	2015:2	2015:3	2015:4	2016:1	2016:2	2016:3	2013	2014	2015
CIVILIAN LABOR FORCE (THOUS).....	3070	3053	3031	3022	3022	3027	3040	3054	3055	3052	3063	3117	3142	3137	3059	3027	3056
% Chg Prev Qtr SAAR.....	-1.70	-2.30	-2.83	-1.16	-0.04	0.64	1.73	1.88	0.19	-0.37	1.46	7.25	3.19	-0.69	-1.04	-1.05	0.95
% Chg Same Qtr Last Yr.....	-0.55	-1.31	-2.02	-2.00	-1.59	-0.86	0.29	1.05	1.11	0.85	0.79	2.09	2.84	2.76	-1.04	-1.05	0.95
EMPLOYED PERSONS (THOUS).....	2828	2819	2815	2823	2825	2829	2847	2869	2878	2881	2892	2964	3011	2997	2825	2831	2880
% Chg Prev Qtr SAAR.....	-1.39	-1.22	-0.58	1.11	0.26	0.64	2.56	3.11	1.27	0.43	1.45	10.36	6.56	-1.83	-0.87	0.21	1.73
% Chg Same Qtr Last Yr.....	-0.58	-1.17	-1.35	-0.52	-0.11	0.36	1.14	1.63	1.89	1.84	1.56	3.30	4.62	4.03	-0.87	0.21	1.73
UNEMPLOYED PERSONS (THOUS).....	242	233	216	199	197	197	192	185	177	171	172	154	131	139	234	196	176
% Chg Prev Qtr SAAR.....	-5.24	-14.28	-27.13	-27.48	-4.22	0.73	-9.68	-15.06	-15.47	-12.66	1.57	-35.94	-47.53	28.49	-3.04	-16.22	-10.30
% Chg Same Qtr Last Yr.....	-0.24	-2.99	-10.01	-19.06	-18.84	-15.50	-10.84	-7.24	-10.10	-13.25	-10.66	-16.75	-26.10	-18.62	-3.04	-16.22	-10.30
PARTICIPATION RATE (PERCENT).....	60.7	60.2	59.6	59.3	59.2	59.1	59.2	59.3	59.2	59.0	59.1	59.9	60.2	60.0	60.4	59.2	59.2
% Chg Prev Qtr SAAR.....	-2.44	-3.23	-3.83	-2.01	-0.90	-0.41	0.61	0.94	-0.73	-1.46	0.32	6.21	2.01	-1.82	-1.90	-1.97	-0.06
% Chg Same Qtr Last Yr.....	-1.42	-2.15	-2.88	-2.88	-2.50	-1.80	-0.69	0.05	0.10	-0.16	-0.23	1.04	1.73	1.64	-1.90	-1.97	-0.06
UNEMPLOYMENT RATE (PERCENT).....	7.9	7.6	7.1	6.6	6.5	6.5	6.3	6.0	5.8	5.6	5.6	4.9	4.2	4.4	7.7	6.5	5.8

Boyd Center for Business and Economic Research, University of Tennessee

Tennessee Econometric Model

**Table 17: Tennessee Taxable Sales, Not Seasonally Adjusted (millions of 2009 dollars)** **January 2017**

	Historical Data												Annual				
	2013:2	2013:3	2013:4	2014:1	2014:2	2014:3	2014:4	2015:1	2015:2	2015:3	2015:4	2016:1	2016:2	2016:3	2013	2014	2015
TOTAL TAXABLE SALES.....	23870	23130	24977	22297	24187	24186	26406	22965	26038	25929	28259	24913	26990	26595	93888	97077	103192
% Chg Same Qtr Last Yr.....	2.12	2.25	2.73	1.76	1.33	4.57	5.72	2.99	7.65	7.21	7.02	8.48	3.66	2.57	1.67	3.40	6.30
AUTO DEALERS.....	2310	2416	2181	2339	2425	2543	2372	2532	2748	2869	2629	2777	2840	2992	9147	9679	10778
% Chg Same Qtr Last Yr.....	3.98	6.45	7.03	4.38	4.97	5.25	8.80	8.25	13.30	12.84	10.82	9.71	3.35	4.27	4.59	5.81	11.35
PURCHASES FROM MANUFACTURERS....	990	969	1126	818	1007	1036	1246	883	1099	1135	1352	950	1159	1161	3891	4107	4469
% Chg Same Qtr Last Yr.....	1.62	4.28	0.58	1.47	1.72	6.88	10.71	7.92	9.12	9.60	8.50	7.66	5.52	2.25	1.70	5.55	8.81
MISC DURABLE GOODS.....	4183	3937	4028	3505	4243	4120	4227	3526	4544	4344	4635	4101	4753	4528	15638	16096	17049
% Chg Same Qtr Last Yr.....	2.57	5.24	3.41	0.41	1.44	4.67	4.96	0.60	7.08	5.42	9.65	16.32	4.60	4.23	1.52	2.93	5.92
EATING AND DRINKING PLACES.....	2553	2483	2449	2424	2607	2616	2609	2548	2831	2807	2796	2705	2944	2889	9836	10256	10982
% Chg Same Qtr Last Yr.....	3.80	2.50	2.66	3.08	2.09	5.37	6.55	5.09	8.61	7.30	7.17	6.17	3.98	2.92	2.36	4.26	7.08
FOOD STORES.....	2327	2291	2504	2209	2329	2367	2582	2307	2418	2456	2628	2360	2445	2507	9373	9486	9809
% Chg Same Qtr Last Yr.....	3.29	0.58	1.86	-1.84	0.08	3.31	3.08	4.42	3.84	3.77	1.79	2.32	1.10	2.09	2.65	1.21	3.40
LIQUOR STORES.....	184	187	230	186	193	195	247	199	211	210	268	214	227	200	778	820	889
% Chg Same Qtr Last Yr.....	0.62	7.39	4.96	4.56	5.25	3.93	7.36	7.26	9.15	8.05	8.69	7.34	7.35	-5.04	4.13	5.40	8.32
HOTELS AND MOTELS.....	630	626	600	534	713	730	670	574	800	832	748	659	888	911	2359	2646	2954
% Chg Same Qtr Last Yr.....	-1.23	-0.12	3.13	6.21	13.11	16.60	11.62	7.58	12.31	13.90	11.65	14.74	10.95	9.52	0.68	12.19	11.63
OTHER RETAIL AND SERVICE.....	7178	6884	8065	6908	7331	7138	8534	7002	7784	7705	9188	7622	8072	7876	28828	29910	31678
% Chg Same Qtr Last Yr.....	1.51	1.38	2.64	3.08	2.12	3.69	5.82	1.36	6.18	7.94	7.66	8.86	3.71	2.22	1.47	3.75	5.91
MISC NONDURABLE GOODS.....	1995	1912	2285	1888	2044	1984	2377	1913	2132	2097	2515	2067	2223	2141	8085	8293	8656
% Chg Same Qtr Last Yr.....	1.77	2.14	2.88	-0.27	2.47	3.75	4.05	1.32	4.31	5.68	5.79	8.07	4.26	2.12	1.89	2.58	4.38
TRANSPORTATION, COMMUNICATION.....	1520	1426	1511	1488	1295	1458	1542	1483	1471	1475	1500	1458	1439	1391	5954	5784	5929
% Chg Same Qtr Last Yr.....	-1.09	-6.15	-1.82	-0.62	-14.79	2.28	2.09	-0.36	13.58	1.15	-2.72	-1.68	-2.14	-5.68	-3.82	-2.86	2.51
PER CAPITA (\$)......	3662	3539	3812	3394	3672	3662	3988	3459	3911	3885	4223	3713	4013	3944	14383	14715	15478
% Chg Same Qtr Last Yr.....	1.04	1.17	1.65	0.69	0.26	3.47	4.62	1.92	6.53	6.09	5.91	7.36	2.59	1.51	0.60	2.31	5.19

**Table 18: Tennessee Taxable Sales, Seasonally Adjusted (millions of 2009 dollars)**

**January 2017**

	Historical Data													Annual			
	2013:2	2013:3	2013:4	2014:1	2014:2	2014:3	2014:4	2015:1	2015:2	2015:3	2015:4	2016:1	2016:2	2016:3	2013	2014	2015
TOTAL TAXABLE SALES.....	23507	23399	23573	23805	23846	24440	24878	24564	25691	26162	26604	26716	26628	26798	93853	96970	103022
% Chg Prev Qtr SAAR.....	2.29	-1.82	3.02	4.00	0.69	10.33	7.37	-4.95	19.64	7.55	6.93	1.69	-1.32	2.59	1.60	3.32	6.24
% Chg Same Qtr Last Yr.....	2.22	2.29	2.55	1.85	1.45	4.45	5.54	3.19	7.73	7.05	6.94	8.76	3.65	2.43	1.60	3.32	6.24
AUTO DEALERS.....	2255	2319	2331	2337	2379	2436	2528	2535	2701	2744	2798	2786	2790	2860	9143	9680	10778
% Chg Prev Qtr SAAR.....	3.25	11.85	2.03	1.07	7.25	10.07	16.00	1.02	28.84	6.61	8.14	-1.72	0.60	10.35	4.60	5.87	11.33
% Chg Same Qtr Last Yr.....	4.63	6.49	6.39	4.46	5.46	5.04	8.46	8.45	13.54	12.64	10.68	9.92	3.33	4.22	4.60	5.87	11.33
PURCHASES FROM MANUFACTURERS....	974	967	975	985	998	1036	1066	1071	1095	1133	1152	1156	1158	1157	3878	4085	4451
% Chg Prev Qtr SAAR.....	5.70	-2.87	3.43	3.96	5.56	15.87	12.31	1.78	9.44	14.33	7.05	1.38	0.71	-0.55	1.82	5.35	8.96
% Chg Same Qtr Last Yr.....	2.39	4.82	-1.26	2.50	2.47	7.09	9.32	8.74	9.73	9.36	8.06	7.95	5.73	2.11	1.82	5.35	8.96
MISC DURABLE GOODS.....	3915	3915	3913	3907	3978	4096	4099	3935	4265	4312	4491	4582	4463	4490	15630	16079	17003
% Chg Prev Qtr SAAR.....	2.84	-0.06	-0.18	-0.63	7.46	12.50	0.22	-15.08	38.12	4.48	17.62	8.41	-10.06	2.47	1.29	2.87	5.75
% Chg Same Qtr Last Yr.....	2.66	5.40	3.12	0.48	1.59	4.64	4.75	0.71	7.24	5.27	9.57	16.47	4.62	4.12	1.29	2.87	5.75
EATING AND DRINKING PLACES.....	2472	2455	2471	2515	2523	2585	2627	2652	2737	2774	2812	2821	2844	2854	9832	10251	10975
% Chg Prev Qtr SAAR.....	6.05	-2.71	2.62	7.44	1.21	10.28	6.65	3.83	13.42	5.48	5.69	1.27	3.29	1.41	2.31	4.26	7.07
% Chg Same Qtr Last Yr.....	3.62	2.66	2.46	3.28	2.08	5.33	6.34	5.44	8.49	7.28	7.04	6.38	3.92	2.90	2.31	4.26	7.07
FOOD STORES.....	2350	2309	2337	2334	2354	2383	2411	2434	2449	2470	2455	2490	2476	2520	9377	9483	9808
% Chg Prev Qtr SAAR.....	-5.32	-6.78	4.95	-0.49	3.56	5.00	4.74	3.84	2.44	3.54	-2.36	5.81	-2.18	7.19	2.69	1.13	3.43
% Chg Same Qtr Last Yr.....	3.40	0.59	1.93	-2.02	0.20	3.23	3.18	4.28	4.00	3.64	1.83	2.31	1.14	2.02	2.69	1.13	3.43
LIQUOR STORES.....	190	200	197	200	201	207	211	214	219	224	229	230	236	213	778	819	887
% Chg Prev Qtr SAAR.....	-1.85	20.88	-5.42	6.23	1.73	14.22	7.18	6.17	9.71	9.24	9.33	1.30	10.13	-33.48	4.11	5.28	8.30
% Chg Same Qtr Last Yr.....	0.75	7.44	4.86	4.49	5.43	3.95	7.25	7.23	9.27	8.07	8.60	7.34	7.44	-5.09	4.11	5.28	8.30
HOTELS AND MOTELS.....	580	579	608	634	655	671	681	686	735	761	763	789	814	831	2362	2641	2944
% Chg Prev Qtr SAAR.....	-10.20	-0.80	21.77	18.49	13.89	10.15	5.98	2.71	31.90	14.90	1.19	14.51	13.12	8.76	0.71	11.84	11.44
% Chg Same Qtr Last Yr.....	-1.41	-0.22	3.40	6.48	12.99	15.99	12.03	8.10	12.14	13.33	12.03	15.12	10.78	9.27	0.71	11.84	11.44
OTHER RETAIL AND SERVICE.....	7229	7198	7245	7367	7390	7460	7652	7484	7852	8048	8223	8162	8148	8218	28821	29869	31607
% Chg Prev Qtr SAAR.....	4.54	-1.74	2.63	6.95	1.22	3.85	10.70	-8.48	21.14	10.36	9.02	-2.96	-0.69	3.49	1.34	3.64	5.82
% Chg Same Qtr Last Yr.....	1.45	1.47	2.66	3.05	2.22	3.64	5.62	1.59	6.25	7.88	7.47	9.05	3.77	2.12	1.34	3.64	5.82
MISC NONDURABLE GOODS.....	2015	2014	2023	2030	2065	2085	2104	2061	2153	2201	2225	2231	2244	2246	8083	8284	8641
% Chg Prev Qtr SAAR.....	-3.13	-0.30	1.80	1.41	7.02	4.10	3.70	-7.97	19.03	9.28	4.46	0.99	2.38	0.44	1.83	2.49	4.30
% Chg Same Qtr Last Yr.....	1.68	1.95	2.93	-0.07	2.45	3.56	4.04	1.54	4.28	5.55	5.75	8.23	4.23	2.05	1.83	2.49	4.30
TRANSPORTATION, COMMUNICATION.....	1526	1445	1475	1496	1305	1479	1498	1493	1485	1496	1455	1468	1455	1410	5948	5778	5928
% Chg Prev Qtr SAAR.....	6.38	-19.70	8.55	5.96	-42.15	65.07	5.33	-1.45	-2.07	2.94	-10.57	3.85	-3.63	-11.86	-3.78	-2.86	2.60
% Chg Same Qtr Last Yr.....	-0.40	-6.20	-2.48	-0.44	-14.50	2.38	1.61	-0.22	13.81	1.14	-2.91	-1.63	-2.03	-5.75	-3.78	-2.86	2.60
PER CAPITA (\$) .....	3606	3580	3597	3623	3620	3700	3757	3700	3859	3920	3976	3982	3959	3974	14379	14700	15455
% Chg Prev Qtr SAAR.....	1.21	-2.86	1.94	2.91	-0.36	9.18	6.25	-5.94	18.40	6.44	5.83	0.65	-2.33	1.54	0.52	2.23	5.13
% Chg Same Qtr Last Yr.....	1.14	1.21	1.47	0.77	0.38	3.36	4.43	2.11	6.61	5.94	5.83	7.64	2.58	1.38	0.52	2.23	5.13

**Table 19: Tennessee Taxable Sales, Not Seasonally Adjusted (millions of current dollars)****January 2017**

	Historical Data													Annual			
	2013:2	2013:3	2013:4	2014:1	2014:2	2014:3	2014:4	2015:1	2015:2	2015:3	2015:4	2016:1	2016:2	2016:3	2013	2014	2015
TOTAL TAXABLE SALES.....	25596	24894	26997	24220	26396	26466	28894	25027	28505	28466	31055	27396	29829	29497	100972	105976	113052
% Chg Same Qtr Last Yr.....	3.41	3.59	3.97	3.13	3.12	6.32	7.03	3.33	7.99	7.56	7.48	9.47	4.65	3.62	3.03	4.96	6.68
AUTO DEALERS.....	2477	2600	2357	2540	2647	2782	2596	2759	3008	3150	2889	3054	3138	3318	9836	10565	11806
% Chg Same Qtr Last Yr.....	5.30	7.85	8.32	5.78	6.84	7.01	10.14	8.61	13.65	13.21	11.30	10.71	4.33	5.34	5.99	7.42	11.75
PURCHASES FROM MANUFACTURERS....	1061	1043	1217	888	1099	1134	1364	962	1203	1246	1486	1045	1281	1288	4185	4484	4897
% Chg Same Qtr Last Yr.....	2.91	5.65	1.79	2.83	3.53	8.66	12.07	8.28	9.46	9.96	8.96	8.63	6.53	3.30	3.04	7.15	9.20
MISC DURABLE GOODS.....	4485	4237	4353	3807	4631	4509	4626	3843	4974	4769	5094	4510	5253	5022	16817	17572	18679
% Chg Same Qtr Last Yr.....	3.87	6.62	4.65	1.76	3.25	6.42	6.25	0.93	7.42	5.77	10.12	17.37	5.60	5.30	2.87	4.49	6.30
EATING AND DRINKING PLACES.....	2738	2672	2647	2633	2845	2863	2855	2776	3099	3082	3073	2974	3254	3204	10577	11195	12030
% Chg Same Qtr Last Yr.....	5.11	3.84	3.90	4.46	3.90	7.14	7.86	5.44	8.95	7.65	7.63	7.13	4.98	3.98	3.72	5.84	7.46
FOOD STORES.....	2495	2466	2707	2399	2541	2590	2825	2514	2647	2696	2888	2596	2702	2781	10080	10356	10745
% Chg Same Qtr Last Yr.....	4.60	1.90	3.08	-0.53	1.86	5.04	4.35	4.77	4.17	4.11	2.23	3.25	2.06	3.14	4.01	2.74	3.76
LIQUOR STORES.....	197	202	248	202	211	213	270	217	231	231	295	235	250	221	837	896	974
% Chg Same Qtr Last Yr.....	1.90	8.80	6.22	5.96	7.12	5.67	8.68	7.61	9.49	8.41	9.16	8.31	8.37	-4.07	5.51	6.97	8.71
HOTELS AND MOTELS.....	676	674	649	580	778	799	733	626	876	913	822	724	981	1010	2537	2889	3237
% Chg Same Qtr Last Yr.....	0.02	1.19	4.37	7.63	15.11	18.55	13.00	7.94	12.66	14.28	12.13	15.78	12.01	10.64	2.01	13.90	12.03
OTHER RETAIL AND SERVICE.....	7697	7409	8717	7503	8000	7811	9338	7631	8521	8459	10097	8382	8922	8735	31006	32652	34707
% Chg Same Qtr Last Yr.....	2.80	2.70	3.88	4.46	3.93	5.42	7.12	1.69	6.51	8.30	8.12	9.85	4.70	3.27	2.81	5.31	6.29
MISC NONDURABLE GOODS.....	2139	2058	2469	2050	2231	2171	2601	2084	2334	2302	2763	2273	2457	2375	8695	9053	9484
% Chg Same Qtr Last Yr.....	3.06	3.48	4.12	1.06	4.29	5.49	5.34	1.66	4.63	6.03	6.24	9.05	5.26	3.17	3.24	4.12	4.75
TRANSPORTATION, COMMUNICATION.....	1630	1534	1633	1617	1413	1596	1687	1616	1610	1619	1649	1603	1591	1543	6402	6313	6494
% Chg Same Qtr Last Yr.....	0.17	-4.92	-0.64	0.71	-13.28	3.99	3.35	-0.04	13.94	1.48	-2.30	-0.79	-1.21	-4.71	-2.54	-1.39	2.87
PER CAPITA (\$)......	3927	3809	4120	3686	4007	4007	4363	3769	4282	4265	4641	4084	4435	4374	15468	16063	16957
% Chg Same Qtr Last Yr.....	2.32	2.49	2.87	2.04	2.04	5.20	5.91	2.25	6.87	6.44	6.36	8.34	3.57	2.56	1.93	3.85	5.56

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 2017**

	Historical Data													Annual			
	2013:2	2013:3	2013:4	2014:1	2014:2	2014:3	2014:4	2015:1	2015:2	2015:3	2015:4	2016:1	2016:2	2016:3	2013	2014	2015
TOTAL TAXABLE SALES.....	25206	25183	25480	25858	26024	26743	27222	26770	28124	28722	29236	29380	29429	29723	100922	105848	112852
% Chg Prev Qtr SAAR.....	2.46	-0.37	4.80	6.06	2.60	11.52	7.36	-6.48	21.82	8.78	7.35	1.98	0.67	4.06	2.95	4.88	6.62
% Chg Same Qtr Last Yr.....	3.52	3.63	3.79	3.21	3.25	6.20	6.84	3.53	8.07	7.40	7.40	9.75	4.64	3.49	2.95	4.88	6.62
AUTO DEALERS.....	2418	2496	2520	2539	2596	2666	2767	2762	2956	3013	3075	3064	3084	3172	9832	10567	11806
% Chg Prev Qtr SAAR.....	3.43	13.52	3.80	3.07	9.28	11.25	15.99	-0.61	31.18	7.83	8.56	-1.45	2.63	11.94	5.99	7.47	11.73
% Chg Same Qtr Last Yr.....	5.96	7.89	7.67	5.87	7.33	6.79	9.80	8.81	13.89	13.01	11.15	10.91	4.31	5.29	5.99	7.47	11.73
PURCHASES FROM MANUFACTURERS....	1045	1041	1054	1070	1090	1133	1167	1167	1199	1244	1266	1271	1280	1283	4170	4459	4876
% Chg Prev Qtr SAAR.....	5.88	-1.42	5.22	6.03	7.57	17.12	12.30	0.14	11.44	15.64	7.48	1.67	2.74	0.88	3.17	6.95	9.34
% Chg Same Qtr Last Yr.....	3.69	6.20	-0.07	3.88	4.29	8.88	10.67	9.10	10.07	9.72	8.52	8.93	6.74	3.16	3.17	6.95	9.34
MISC DURABLE GOODS.....	4198	4213	4229	4243	4341	4482	4485	4288	4669	4734	4935	5039	4932	4980	16808	17551	18627
% Chg Prev Qtr SAAR.....	3.01	1.43	1.56	1.34	9.50	13.71	0.21	-16.45	40.63	5.68	18.09	8.71	-8.25	3.94	2.65	4.43	6.13
% Chg Same Qtr Last Yr.....	3.96	6.78	4.36	1.83	3.40	6.39	6.04	1.05	7.57	5.62	10.04	17.53	5.62	5.19	2.65	4.43	6.13
EATING AND DRINKING PLACES.....	2650	2642	2670	2732	2753	2829	2875	2890	2996	3045	3091	3103	3143	3166	10573	11190	12022
% Chg Prev Qtr SAAR.....	6.23	-1.26	4.41	9.57	3.13	11.47	6.64	2.16	15.49	6.69	6.10	1.56	5.38	2.87	3.67	5.83	7.44
% Chg Same Qtr Last Yr.....	4.94	4.01	3.69	4.66	3.89	7.09	7.66	5.79	8.82	7.64	7.50	7.34	4.91	3.96	3.67	5.83	7.44
FOOD STORES.....	2519	2485	2526	2535	2569	2608	2638	2652	2681	2712	2698	2738	2737	2795	10083	10351	10743
% Chg Prev Qtr SAAR.....	-5.16	-5.40	6.78	1.48	5.52	6.13	4.72	2.17	4.30	4.72	-1.98	6.11	-0.21	8.73	4.05	2.65	3.79
% Chg Same Qtr Last Yr.....	4.72	1.91	3.16	-0.70	1.98	4.96	4.45	4.63	4.32	3.98	2.27	3.24	2.11	3.07	4.05	2.65	3.79
LIQUOR STORES.....	204	215	213	217	219	227	231	233	240	246	252	253	260	236	836	894	971
% Chg Prev Qtr SAAR.....	-1.69	22.67	-3.78	8.34	3.67	15.44	7.17	4.46	11.70	10.49	9.77	1.58	12.35	-32.53	5.49	6.86	8.68
% Chg Same Qtr Last Yr.....	2.02	8.85	6.12	5.89	7.30	5.68	8.57	7.59	9.61	8.42	9.07	8.31	8.47	-4.12	5.49	6.86	8.68
HOTELS AND MOTELS.....	622	623	657	689	715	734	745	747	804	835	838	868	899	922	2540	2883	3225
% Chg Prev Qtr SAAR.....	-10.05	0.67	23.89	20.84	16.05	11.34	5.96	1.05	34.30	16.21	1.59	14.83	15.40	10.32	2.05	13.53	11.84
% Chg Same Qtr Last Yr.....	-0.15	1.09	4.64	7.90	15.00	17.93	13.42	8.46	12.49	13.70	12.51	16.16	11.84	10.39	2.05	13.53	11.84
OTHER RETAIL AND SERVICE.....	7752	7746	7831	8002	8065	8163	8373	8156	8595	8835	9037	8975	9005	9115	30992	32603	34623
% Chg Prev Qtr SAAR.....	4.71	-0.28	4.42	9.07	3.14	4.97	10.69	-9.95	23.35	11.62	9.45	-2.69	1.31	4.98	2.69	5.20	6.20
% Chg Same Qtr Last Yr.....	2.73	2.80	3.89	4.43	4.03	5.38	6.92	1.92	6.58	8.23	7.93	10.04	4.76	3.17	2.69	5.20	6.20
MISC NONDURABLE GOODS.....	2161	2167	2186	2205	2253	2282	2303	2246	2357	2417	2445	2453	2480	2492	8692	9042	9465
% Chg Prev Qtr SAAR.....	-2.96	1.18	3.57	3.42	9.05	5.22	3.69	-9.45	21.20	10.53	4.87	1.27	4.44	1.88	3.18	4.03	4.67
% Chg Same Qtr Last Yr.....	2.97	3.29	4.17	1.27	4.27	5.29	5.32	1.88	4.60	5.90	6.20	9.22	5.23	3.10	3.18	4.03	4.67
TRANSPORTATION, COMMUNICATION.....	1636	1555	1594	1625	1424	1618	1640	1627	1626	1642	1599	1615	1608	1564	6396	6307	6493
% Chg Prev Qtr SAAR.....	6.56	-18.51	10.43	8.07	-41.05	66.85	5.32	-3.04	-0.29	4.11	-10.22	4.15	-1.69	-10.59	-2.49	-1.39	2.96
% Chg Same Qtr Last Yr.....	0.86	-4.97	-1.30	0.89	-12.98	4.09	2.86	0.11	14.17	1.47	-2.50	-0.74	-1.09	-4.78	-2.49	-1.39	2.96
PER CAPITA (\$) % Chg Prev Qtr SAAR.....	3867	3853	3888	3936	3951	4049	4111	4032	4225	4303	4369	4379	4375	4408	15462	16046	16929
% Chg Prev Qtr SAAR.....	1.38	-1.41	3.70	4.95	1.53	10.35	6.24	-7.46	20.56	7.66	6.25	0.93	-0.36	3.00	1.86	3.78	5.51
% Chg Same Qtr Last Yr.....	2.43	2.54	2.69	2.13	2.16	5.08	5.72	2.45	6.94	6.28	6.28	8.62	3.56	2.42	1.86	3.78	5.51

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

January 2017

	Historical Data											
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
TN GDP (Mil2009\$) SAAR.....	247,569.0	251,331.0	257,520.0	254,772.0	256,089.0	246,540.0	250,365.0	257,519.0	265,623.0	269,967.0	274,506.0	279,313.5
Percentage change.....	4.23	1.52	2.46	-1.07	0.52	-3.73	1.55	2.86	3.15	1.64	1.68	1.75
US GDP (Bil2009\$) SAAR.....	13773.5	14234.3	14613.8	14873.8	14830.4	14418.8	14783.8	15020.6	15354.6	15612.2	15982.3	16397.2
Percentage change.....	3.79	3.35	2.67	1.78	-0.29	-2.78	2.53	1.60	2.22	1.68	2.37	2.60
TN GDP (Mil\$) SAAR.....	218,156.7	227,503.8	238,990.1	242,964.9	249,011.0	246,540.0	252,494.3	263,199.3	278,304.6	288,152.4	299,205.1	311,620.5
Percentage change.....	6.84	4.28	5.05	1.66	2.49	-0.99	2.42	4.24	5.74	3.54	3.84	4.15
US GDP (Bil\$) SAAR.....	12274.9	13093.7	13855.9	14477.6	14718.6	14418.7	14964.4	15517.9	16155.3	16691.5	17393.1	18036.7
Percentage change.....	6.64	6.67	5.82	4.49	1.66	-2.04	3.78	3.70	4.11	3.32	4.20	3.70
TN PERSONAL INCOME (MIL2009\$) SAAR.....	200663	204145	211779	216974	220530	218414	222942	230081	235839	234431	241346	253644
Percentage change.....	3.48	1.74	3.74	2.45	1.64	-0.96	2.07	3.20	2.50	-0.60	2.95	5.10
US PERSONAL INCOME (BIL2009\$) SAAR.....	11206	11504	12028	12358	12494	12095	12274	12726	13112	13088	13568	14113
Percentage change.....	3.40	2.66	4.56	2.75	1.10	-3.19	1.48	3.69	3.03	-0.18	3.67	4.02
TN PERSONAL INCOME (MIL\$) SAAR.....	180011	188356	200623	210696	220670	218408	226634	239634	250286	252091	263437	277832
Percentage change.....	6.00	4.64	6.51	5.02	4.73	-1.02	3.77	5.74	4.45	0.72	4.50	5.46
US PERSONAL INCOME (BIL\$) SAAR.....	10053	10614	11394	12000	12502	12095	12477	13255	13915	14074	14810	15459
Percentage change.....	5.92	5.58	7.35	5.32	4.18	-3.26	3.16	6.23	4.98	1.14	5.23	4.38
TN NONFARM JOBS (THOUS).....	2705.6	2743.0	2783.0	2797.7	2775.4	2619.2	2615.1	2661.8	2715.3	2760.0	2821.4	2892.3
Percentage change.....	1.62	1.38	1.46	0.53	-0.80	-5.63	-0.16	1.79	2.01	1.65	2.23	2.51
US NONFARM JOBS (MIL).....	131.8	134.0	136.5	138.0	137.2	131.3	130.4	131.9	134.2	136.4	138.9	141.8
Percentage change.....	1.09	1.72	1.80	1.13	-0.55	-4.33	-0.72	1.22	1.69	1.65	1.88	2.08
TN MFG JOBS (THOUS).....	411.8	408.8	399.4	379.9	360.9	309.2	299.0	304.5	313.4	318.5	324.9	332.7
Percentage change.....	-0.35	-0.74	-2.30	-4.87	-4.99	-14.33	-3.32	1.84	2.94	1.62	2.04	2.39
US MFG JOBS (MIL).....	14.3	14.2	14.2	13.9	13.4	11.8	11.5	11.7	11.9	12.0	12.2	12.3
Percentage change.....	-1.34	-0.62	-0.49	-1.97	-3.42	-11.61	-2.69	1.72	1.71	0.77	1.37	1.10
TN UNEMPLOYMENT RATE (%).....	5.4	5.5	5.2	4.7	6.8	10.6	9.6	8.9	7.8	7.7	6.5	5.8
US UNEMPLOYMENT RATE (%).....	5.5	5.1	4.6	4.6	5.8	9.3	9.6	8.9	8.1	7.4	6.2	5.3
CHAINED PRICE INDEX, GDP (2009=100.0).....	89.1	92.0	94.8	97.3	99.2	100.0	101.2	103.3	105.2	106.9	108.8	110.0
Percentage change.....	2.75	3.22	3.07	2.67	1.93	0.79	1.23	2.06	1.84	1.61	1.80	1.07
US PERS CONSUMP DEFL (2009=100.0).....	89.7	92.3	94.7	97.1	100.1	100.0	101.7	104.1	106.1	107.5	109.2	109.5
Percentage change.....	2.43	2.85	2.68	2.50	3.05	-0.06	1.65	2.46	1.89	1.33	1.51	0.35
CONSUMER PRICE INDEX, ALL-URBAN (82-84=1.000)...	1.889	1.953	2.016	2.073	2.153	2.146	2.181	2.249	2.296	2.330	2.367	2.370
Percentage change.....	2.67	3.37	3.22	2.87	3.81	-0.32	1.64	3.14	2.08	1.47	1.61	0.12
BANK PRIME INTEREST RATE (%).....	4.3	6.2	8.0	8.1	5.1	3.3	3.3	3.3	3.3	3.3	3.3	3.3
FEDERAL FUNDS RATE (% per annum).....	1.349	3.213	4.964	5.019	1.928	0.160	0.175	0.102	0.140	0.108	0.089	0.133
30-YEAR FIXED MORTGAGE RATE (%).....	5.8	5.9	6.4	6.3	6.0	5.0	4.7	4.5	3.7	4.0	4.2	3.9
TN TAXABLE SALES (MIL2009\$).....	92220	95679	97859	98868	93181	86225	86957	89900	92377	93853	96970	103022
Percentage change.....	2.56	3.75	2.28	1.03	-5.75	-7.47	0.85	3.38	2.75	1.60	3.32	6.24
TN TAXABLE SALES (MIL\$).....	82727	88283	92704	95995	93235	86221	88396	93638	98028	100922	105848	112852
Percentage change.....	5.05	6.72	5.01	3.55	-2.88	-7.52	2.52	5.93	4.69	2.95	4.88	6.62
TN AVG ANNUAL WAGE, NONFARM (2009\$).....	39485	39441	40242	40848	40545	40823	41449	41312	41968	41505	41880	43096
Percentage change.....	1.73	-0.11	2.03	1.51	-0.74	0.69	1.54	-0.33	1.59	-1.10	0.90	2.90
TN AVG ANNUAL WAGE, NONFARM (\$).....	35421	36388	38122	39664	40569	40824	42135	43025	44537	44630	45712	47205
Percentage change.....	4.20	2.73	4.77	4.05	2.28	0.63	3.21	2.11	3.52	0.21	2.42	3.27

Boyd Center for Business and Economic Research, University of Tennessee

Tennessee Econometric Model

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

**January 2017**

	Historical Data											
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
US GDP (2009\$) SAAR.....	46887	48014	48830	49214	48633	46878	47673	48071	48779	49235	50022	50927
Percentage change.....	2.85	2.40	1.70	0.79	-1.18	-3.61	1.70	0.84	1.47	0.94	1.60	1.81
US GDP (\$) SAAR.....	41786	44167	46297	47903	48266	46878	48255	49663	51322	52639	54438	56018
Percentage change.....	5.68	5.70	4.82	3.47	0.76	-2.88	2.94	2.92	3.34	2.57	3.42	2.90
TN PERSONAL INCOME (2009\$) SAAR.....	34084	34247	34992	35320	35453	34758	35213	36010	36517	35917	36588	38052
Percentage change.....	2.44	0.48	2.18	0.94	0.38	-1.96	1.31	2.26	1.41	-1.64	1.87	4.00
US PERSONAL INCOME (2009\$) SAAR.....	38147	38803	40188	40890	40972	39324	39579	40729	41654	41274	42465	43832
Percentage change.....	2.47	1.72	3.57	1.75	0.20	-4.02	0.65	2.91	2.27	-0.91	2.89	3.22
TN PERSONAL INCOME (\$) SAAR.....	30576	31597	33148	34296	35475	34756	35796	37505	38754	38622	39936	41680
Percentage change.....	4.94	3.34	4.91	3.46	3.44	-2.03	2.99	4.77	3.33	-0.34	3.40	4.37
US PERSONAL INCOME (\$) SAAR.....	34222	35803	38071	39706	40998	39322	40235	42419	44206	44383	46352	48011
Percentage change.....	4.97	4.62	6.34	4.29	3.25	-4.09	2.32	5.43	4.21	0.40	4.44	3.58
TN TAXABLE SALES (2009\$).....	15665	16050	16169	16095	14981	13722	13735	14070	14304	14379	14700	15455
Percentage change.....	1.54	2.46	0.74	-0.46	-6.92	-8.41	0.10	2.44	1.66	0.52	2.23	5.13
TN TAXABLE SALES (\$).....	14052	14809	15317	15627	14990	13721	13962	14655	15179	15462	16046	16929
Percentage change.....	4.01	5.39	3.43	2.02	-4.08	-8.47	1.76	4.96	3.58	1.86	3.78	5.51

Boyd Center for Business and Economic Research, University of Tennessee

Tennessee Econometric Model



**Table 3: Tennessee Personal Income Components (millions of 2009 dollars)** **January 2017**

	Historical Data											
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
TN PERSONAL INCOME.....	200663	204145	211779	216974	220530	218414	222942	230081	235839	234431	241346	253644
Percentage change.....	3.48	1.74	3.74	2.45	1.64	-0.96	2.07	3.20	2.50	-0.60	2.95	5.10
WAGES AND SALARIES.....	107774	109129	112922	115251	113521	107965	109400	110853	114827	115405	118998	125457
Percentage change.....	3.35	1.26	3.48	2.06	-1.50	-4.89	1.33	1.33	3.59	0.50	3.11	5.43
OTHER LABOR INCOME.....	26158	26715	25965	26618	26803	25817	25379	25904	27759	27631	27153	27400
Percentage change.....	4.77	2.13	-2.81	2.51	0.70	-3.68	-1.70	2.07	7.16	-0.46	-1.73	0.91
PROPRIETORS INCOME.....	24849	24607	26396	23493	24096	27133	26428	28648	27511	28541	30932	34182
Percentage change.....	4.19	-0.98	7.27	-11.00	2.57	12.60	-2.60	8.40	-3.97	3.75	8.38	10.51
RENT, INTEREST, DIVIDENDS.....	26732	27252	29482	31803	32608	30040	30591	32093	34105	32903	34628	35649
Percentage change.....	-0.07	1.95	8.18	7.87	2.53	-7.88	1.83	4.91	6.27	-3.52	5.24	2.95
TRANSFER PAYMENTS.....	34138	35531	36559	39183	42789	46062	49595	49388	48980	49733	49851	52181
Percentage change.....	3.84	4.08	2.89	7.18	9.20	7.65	7.67	-0.42	-0.83	1.54	0.24	4.67
LESS: PERS CONT FOR SOC INS....	16998	17219	17684	18051	17978	17644	17697	16033	16218	18471	18917	19838
Percentage change.....	2.98	1.30	2.70	2.07	-0.40	-1.86	0.30	-9.40	1.15	13.90	2.41	4.87
RESIDENCE ADJUSTMENT.....	-1991	-1870	-1861	-1323	-1309	-958	-753	-772	-1125	-1311	-1299	-1387
Percentage change.....	-13.48	-6.09	-0.46	-28.93	-1.03	-26.83	-21.42	2.58	45.78	16.47	-0.90	6.75
PER CAPITA PERSONAL INCOME (\$)...	34084	34247	34992	35320	35453	34758	35213	36010	36517	35917	36588	38052
Percentage change.....	2.44	0.48	2.18	0.94	0.38	-1.96	1.31	2.26	1.41	-1.64	1.87	4.00

Boyd Center for Business and Economic Research, University of Tennessee

Tennessee Econometric Model

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

**January 2017**

	Historical Data											
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
TN PERSONAL INCOME.....	180011	188356	200623	210696	220670	218408	226634	239634	250286	252091	263437	277832
Percentage change.....	6.00	4.64	6.51	5.02	4.73	-1.02	3.77	5.74	4.45	0.72	4.50	5.46
WAGES AND SALARIES.....	96683	100686	106974	111913	113587	107961	111211	115453	121860	124099	129889	137424
Percentage change.....	5.86	4.14	6.24	4.62	1.50	-4.95	3.01	3.81	5.55	1.84	4.67	5.80
OTHER LABOR INCOME.....	23467	24646	24597	25849	26819	25814	25798	26980	29460	29713	29638	30012
Percentage change.....	7.32	5.02	-0.20	5.09	3.75	-3.75	-0.06	4.58	9.19	0.86	-0.25	1.26
PROPRIETORS INCOME.....	22291	22708	25003	22809	24111	27136	26865	29841	29196	30690	33763	37442
Percentage change.....	6.72	1.87	10.11	-8.78	5.71	12.54	-1.00	11.08	-2.16	5.12	10.01	10.90
RENT, INTEREST, DIVIDENDS.....	23981	25147	27931	30886	32629	30035	31098	33428	36197	35382	37798	39047
Percentage change.....	2.37	4.86	11.07	10.58	5.64	-7.95	3.54	7.49	8.28	-2.25	6.83	3.30
TRANSFER PAYMENTS.....	30624	32780	34633	38051	42822	46064	50417	51434	51978	53479	54414	57156
Percentage change.....	6.36	7.04	5.65	9.87	12.54	7.57	9.45	2.02	1.06	2.89	1.75	5.04
LESS: PERS CONT FOR SOC INS...	15248	15886	16752	17528	17989	17644	17989	16698	17210	19863	20648	21730
Percentage change.....	5.48	4.19	5.45	4.63	2.63	-1.92	1.96	-7.18	3.07	15.41	3.96	5.24
RESIDENCE ADJUSTMENT.....	-1786	-1725	-1763	-1285	-1310	-958	-765	-804	-1195	-1410	-1418	-1519
Percentage change.....	-11.38	-3.43	2.22	-27.14	1.96	-26.89	-20.10	5.11	48.53	18.01	0.59	7.14
PER CAPITA PERSONAL INCOME (\$)...	30576	31597	33148	34296	35475	34756	35796	37505	38754	38622	39936	41680
Percentage change.....	4.94	3.34	4.91	3.46	3.44	-2.03	2.99	4.77	3.33	-0.34	3.40	4.37

Boyd Center for Business and Economic Research, University of Tennessee

Tennessee Econometric Model

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

January 2017

	Historical Data											
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
TOTAL NONFARM.....	2705.6	2743.0	2783.0	2797.7	2775.4	2619.2	2615.1	2661.8	2715.3	2760.0	2821.4	2892.3
Percentage change.....	1.62	1.38	1.46	0.53	-0.80	-5.63	-0.16	1.79	2.01	1.65	2.23	2.51
NATURAL RESOURCES, MINING AND CONSTRUCTION.....	121.3	125.3	134.4	137.8	132.5	109.9	105.0	108.5	108.9	107.9	111.0	117.6
Percentage change.....	1.41	3.28	7.30	2.50	-3.81	-17.05	-4.46	3.35	0.32	-0.90	2.88	5.97
MANUFACTURING.....	411.8	408.8	399.4	379.9	360.9	309.2	299.0	304.5	313.4	318.5	324.9	332.7
Percentage change.....	-0.35	-0.74	-2.30	-4.87	-4.99	-14.33	-3.32	1.84	2.94	1.62	2.04	2.39
DURABLE GOODS.....	254.0	254.6	251.8	237.1	220.8	181.8	176.3	183.7	193.9	198.9	205.1	210.7
Percentage change.....	1.25	0.22	-1.11	-5.83	-6.85	-17.66	-3.04	4.21	5.55	2.54	3.15	2.71
NONDURABLE GOODS.....	157.8	154.2	147.6	142.8	140.1	127.4	122.6	120.7	119.5	119.6	119.8	122.0
Percentage change.....	-2.82	-2.28	-4.25	-3.24	-1.92	-9.08	-3.72	-1.57	-1.04	0.11	0.19	1.85
TRADE, TRANSPORTATION, UTILITIES.....	587.8	598.0	607.4	610.7	600.3	559.3	555.0	563.5	575.1	581.2	589.7	603.2
Percentage change.....	1.58	1.73	1.56	0.54	-1.70	-6.82	-0.76	1.53	2.05	1.07	1.47	2.28
WHOLESALE TRADE.....	128.0	130.3	132.1	133.0	131.7	120.7	116.8	117.9	120.4	120.7	120.3	121.6
Percentage change.....	1.14	1.82	1.36	0.70	-1.00	-8.31	-3.26	0.95	2.13	0.24	-0.35	1.09
RETAIL TRADE.....	319.6	324.3	328.3	330.6	325.5	306.9	306.7	309.1	312.8	315.0	320.8	325.6
Percentage change.....	2.05	1.49	1.22	0.70	-1.55	-5.71	-0.06	0.79	1.18	0.69	1.84	1.50
TRANSPORTATION & UTILITIES.....	140.3	143.4	147.0	147.1	143.1	131.7	131.5	136.4	141.8	145.5	148.7	156.0
Percentage change.....	0.91	2.22	2.52	0.04	-2.70	-8.00	-0.12	3.75	3.96	2.61	2.18	4.93
INFORMATION.....	49.5	49.4	49.6	50.3	50.5	46.9	45.0	43.7	43.2	44.1	43.8	43.8
Percentage change.....	-3.31	-0.20	0.37	1.41	0.51	-7.27	-3.98	-2.78	-1.22	2.01	-0.64	0.08
FINANCIAL ACTIVITIES.....	141.9	143.3	143.6	144.8	145.1	140.5	137.1	136.5	137.1	139.0	144.1	148.0
Percentage change.....	1.46	0.99	0.20	0.89	0.18	-3.15	-2.45	-0.43	0.46	1.33	3.74	2.65
PROFESSIONAL & BUSINESS SERVICES..	302.3	312.5	319.2	322.8	321.4	293.6	304.1	323.1	338.7	353.8	375.1	392.7
Percentage change.....	5.21	3.38	2.13	1.14	-0.43	-8.64	3.57	6.25	4.82	4.48	6.00	4.71
EDUCATION & HEALTH SERVICES.....	323.3	332.9	343.5	352.7	361.5	368.3	376.2	386.7	396.2	401.5	406.1	414.8
Percentage change.....	2.57	2.96	3.19	2.68	2.50	1.88	2.15	2.81	2.44	1.35	1.14	2.15
LEISURE & HOSPITALITY.....	253.6	262.1	270.1	276.2	273.7	263.5	262.0	267.7	276.8	285.8	296.3	307.8
Percentage change.....	2.82	3.34	3.07	2.23	-0.88	-3.73	-0.58	2.16	3.40	3.27	3.69	3.86
OTHER SERVICES.....	101.7	100.7	101.7	104.0	104.5	102.0	101.2	102.1	104.3	105.6	106.1	107.3
Percentage change.....	-0.57	-0.99	0.99	2.33	0.42	-2.36	-0.82	0.86	2.17	1.27	0.49	1.10
GOVERNMENT.....	412.5	410.2	414.2	418.6	425.0	426.0	430.6	425.6	421.8	422.6	424.2	424.3
Percentage change.....	0.95	-0.55	0.99	1.06	1.51	0.24	1.08	-1.16	-0.89	0.20	0.37	0.04
FEDERAL, CIVILIAN.....	50.1	49.2	48.8	48.8	49.4	50.1	52.4	50.5	50.1	49.5	48.4	49.0
Percentage change.....	-2.18	-1.80	-0.69	-0.15	1.18	1.49	4.59	-3.58	-0.87	-1.22	-2.07	1.20
STATE & LOCAL.....	362.4	361.0	365.4	369.9	375.6	375.9	378.2	375.1	371.7	373.2	375.8	375.3
Percentage change.....	1.40	-0.38	1.22	1.22	1.55	0.07	0.62	-0.83	-0.90	0.39	0.69	-0.12
STATISTICAL DISCREPANCY (%).....	0.00	0.00	-0.01	0.00	0.00	0.01	0.00	-0.01	0.00	0.00	0.01	0.00

Boyd Center for Business and Economic Research, University of Tennessee

Tennessee Econometric Model

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

**January 2017**

	Historical Data											
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
TOTAL DURABLE GOODS.....	254.0	254.6	251.8	237.1	220.8	181.8	176.3	183.7	193.9	198.9	205.1	210.7
Percentage change.....	1.25	0.22	-1.11	-5.83	-6.85	-17.66	-3.04	4.21	5.55	2.54	3.15	2.71
WOOD PRODUCTS.....	17.4	17.7	17.9	16.1	14.3	11.3	10.9	10.8	11.0	10.9	11.2	11.5
Percentage change.....	4.07	1.91	0.95	-10.14	-11.24	-20.84	-3.55	-1.07	2.25	-1.59	3.36	2.81
NONMETALLIC MINERALS.....	15.7	15.9	16.1	15.5	14.2	11.6	11.3	11.8	12.5	12.1	12.0	12.6
Percentage change.....	0.64	1.73	1.05	-3.52	-8.38	-18.89	-2.05	4.20	5.80	-2.66	-1.12	4.71
PRIMARY METALS.....	12.1	12.0	11.8	11.7	11.1	9.0	8.8	9.2	9.7	10.0	10.1	10.3
Percentage change.....	2.90	-0.98	-1.55	-0.85	-4.97	-18.84	-2.68	4.65	4.89	3.19	1.08	2.48
FABRICATED METALS.....	41.7	42.6	43.4	41.5	39.7	33.6	33.0	33.6	34.5	33.9	34.4	34.9
Percentage change.....	0.68	2.23	1.92	-4.46	-4.30	-15.37	-1.95	1.91	2.66	-1.67	1.55	1.40
MACHINERY.....	34.3	33.9	33.2	32.0	31.2	26.0	24.8	25.1	25.5	25.4	25.4	25.3
Percentage change.....	3.21	-1.16	-1.97	-3.69	-2.50	-16.63	-4.79	1.47	1.66	-0.70	0.31	-0.73
COMPUTERS & ELECTRONICS.....	11.3	10.4	9.3	8.1	7.4	6.2	5.6	5.6	5.6	5.2	5.0	5.0
Percentage change.....	-3.39	-7.48	-11.27	-12.55	-8.27	-16.07	-10.58	0.43	0.58	-7.24	-3.34	-1.48
ELECTRICAL EQUIPMENT, APPLIANCES & COMPONENTS.....	23.1	23.5	23.2	22.1	20.6	17.8	16.9	17.7	17.9	18.6	19.3	19.8
Percentage change.....	-2.22	1.65	-1.36	-4.66	-6.94	-13.51	-4.99	4.52	1.66	3.48	4.04	2.28
TRANSPORTATION EQUIPMENT.....	62.9	63.9	63.7	58.6	52.5	40.5	40.5	45.8	53.6	59.5	63.8	66.9
Percentage change.....	4.53	1.59	-0.27	-7.99	-10.46	-22.96	0.03	13.21	17.04	11.02	7.13	4.89
FURNITURE.....	19.6	19.2	17.7	16.0	14.2	10.8	9.7	8.9	8.7	8.8	9.0	9.0
Percentage change.....	-1.34	-2.04	-7.71	-9.72	-11.08	-24.26	-10.21	-7.73	-2.92	1.07	2.73	-0.08
MISCELLANEOUS DURABLES.....	15.9	15.3	15.3	15.4	15.5	15.0	14.9	15.2	14.9	14.5	14.8	15.4
Percentage change.....	-5.22	-3.83	0.16	0.18	0.98	-2.99	-0.68	1.83	-2.30	-2.25	1.78	4.40

Boyd Center for Business and Economic Research, University of Tennessee

Tennessee Econometric Model

**Table 7: Tennessee Nondurable Goods Manufacturing Employment (thousands of jobs) January 2017**

	Historical Data											
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
TOTAL NONDURABLE GOODS.....	157.8	154.2	147.6	142.8	140.1	127.4	122.6	120.7	119.5	119.6	119.8	122.0
Percentage change.....	-2.82	-2.28	-4.25	-3.24	-1.92	-9.08	-3.72	-1.57	-1.04	0.11	0.19	1.85
FOOD.....	34.8	34.3	34.0	32.7	32.5	32.3	32.6	33.1	33.0	32.4	32.7	33.2
Percentage change.....	-3.04	-1.38	-0.97	-3.84	-0.62	-0.46	0.80	1.62	-0.24	-1.90	1.05	1.55
BEVERAGE & TOBACCO.....	5.8	5.4	5.2	5.1	5.1	5.1	5.0	5.0	5.2	5.3	5.5	5.8
Percentage change.....	-6.12	-5.79	-4.31	-2.56	0.14	0.16	-1.64	0.16	3.50	2.58	3.46	6.37
TEXTILE MILLS, TEXTILE MILL PRODUCTS & APPAREL.....	19.4	18.0	16.1	15.1	14.8	12.6	11.5	10.7	10.7	10.5	10.0	10.0
Percentage change.....	-8.85	-7.37	-10.55	-6.37	-2.09	-14.93	-8.35	-7.20	-0.07	-1.95	-4.37	0.23
PAPER.....	18.8	18.9	18.3	17.4	17.2	16.2	15.7	15.3	14.7	14.7	14.6	14.6
Percentage change.....	-3.92	0.72	-3.23	-5.06	-1.02	-6.13	-2.94	-2.53	-3.76	-0.16	-0.82	-0.13
PRINTING & RELATED SUPPORT.....	19.6	18.8	17.8	17.0	15.7	13.3	11.4	10.0	9.6	9.6	9.5	9.2
Percentage change.....	-1.20	-4.32	-5.39	-4.51	-7.53	-15.27	-13.96	-12.93	-3.45	0.08	-1.21	-2.72
CHEMICALS.....	27.6	27.2	26.3	26.9	27.5	25.8	25.0	24.6	24.4	24.8	25.3	25.5
Percentage change.....	-3.29	-1.76	-3.14	2.34	2.20	-6.17	-3.26	-1.63	-0.68	1.68	1.91	0.72
PLASTICS & RUBBER.....	28.9	29.3	27.6	26.6	25.4	20.4	19.9	20.5	20.0	20.2	20.8	21.7
Percentage change.....	2.59	1.46	-5.76	-3.64	-4.40	-19.81	-2.49	2.89	-2.46	1.03	2.93	4.70
MISCELLANEOUS NONDURABLE GOODS.....	2.8	2.3	2.3	2.1	2.0	1.8	1.6	1.6	1.9	2.1	1.5	1.9
Percentage change.....	0.06	-20.22	3.32	-8.57	-9.00	-9.44	-10.88	4.82	14.69	12.55	-31.45	31.06

Boyd Center for Business and Economic Research, University of Tennessee

Tennessee Econometric Model

**Table 8: Tennessee Average Annual Wage and Salary Rate by Sector (2009 dollars)**

**January 2017**

	Historical Data											
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
TOTAL NONFARM.....	39485	39441	40242	40848	40545	40823	41449	41312	41968	41505	41880	43096
Percentage change.....	1.73	-0.11	2.03	1.51	-0.74	0.69	1.54	-0.33	1.59	-1.10	0.90	2.90
NATURAL RESOURCES, MINING												
AND CONSTRUCTION.....	41541	42264	44044	45328	45092	44529	45469	45500	45924	45656	47012	49225
Percentage change.....	-0.38	1.74	4.21	2.91	-0.52	-1.25	2.11	0.07	0.93	-0.58	2.97	4.71
MANUFACTURING.....	46892	46605	47371	48006	48163	48923	51200	50738	51666	50909	51631	52344
Percentage change.....	2.26	-0.61	1.64	1.34	0.33	1.58	4.65	-0.90	1.83	-1.47	1.42	1.38
DURABLE GOODS.....	46069	45774	46584	47071	47379	48242	50335	49666	51258	49506	50579	51361
Percentage change.....	1.73	-0.64	1.77	1.04	0.66	1.82	4.34	-1.33	3.20	-3.42	2.17	1.55
NONDURABLE GOODS.....	48219	47976	48721	49551	49402	49884	52454	52365	52336	53241	53431	54041
Percentage change.....	3.16	-0.50	1.55	1.70	-0.30	0.97	5.15	-0.17	-0.05	1.73	0.36	1.14
TRADE, TRANSPORTATION, UTILITIES.....	37525	37797	38337	38926	38008	37815	38270	38523	38771	38312	38838	39764
Percentage change.....	1.50	0.72	1.43	1.54	-2.36	-0.51	1.20	0.66	0.64	-1.18	1.37	2.39
WHOLESALE TRADE.....	53743	54161	56196	57141	56361	55941	56904	57359	58839	58285	60575	61434
Percentage change.....	3.93	0.78	3.76	1.68	-1.37	-0.74	1.72	0.80	2.58	-0.94	3.93	1.42
RETAIL TRADE.....	26489	26583	26659	27206	26281	26401	26841	26929	26722	26129	26455	27179
Percentage change.....	-0.63	0.36	0.29	2.05	-3.40	0.46	1.67	0.33	-0.77	-2.22	1.25	2.74
TRANSPORTATION & UTILITIES.....	47872	48297	48367	48796	47789	47801	48376	48524	48309	48114	47974	49141
Percentage change.....	2.32	0.89	0.15	0.89	-2.06	0.02	1.20	0.31	-0.44	-0.40	-0.29	2.43
INFORMATION.....	48212	48521	52767	52342	51111	51533	52405	54183	55103	54085	56068	56912
Percentage change.....	3.44	0.64	8.75	-0.81	-2.35	0.83	1.69	3.39	1.70	-1.85	3.67	1.51
FINANCIAL ACTIVITIES.....	56157	54620	57508	58928	57322	57385	60363	60284	63318	61257	62011	62837
Percentage change.....	2.61	-2.74	5.29	2.47	-2.73	0.11	5.19	-0.13	5.03	-3.25	1.23	1.33
PROFESSIONAL & BUSINESS SERVICES.....	40484	40405	41932	43665	44569	46282	46898	46073	48588	48308	47253	49711
Percentage change.....	1.65	-0.20	3.78	4.13	2.07	3.84	1.33	-1.76	5.46	-0.58	-2.18	5.20
EDUCATION & HEALTH SERVICES.....	41145	41829	41964	42412	42312	43362	43271	42619	42572	42291	42511	44155
Percentage change.....	3.36	1.66	0.32	1.07	-0.23	2.48	-0.21	-1.51	-0.11	-0.66	0.52	3.87
LEISURE & HOSPITALITY.....	19545	19397	19858	20195	19686	19666	20077	19980	20212	19825	20269	21500
Percentage change.....	-0.05	-0.76	2.38	1.69	-2.52	-0.10	2.09	-0.48	1.16	-1.91	2.24	6.07
OTHER SERVICES.....	37014	36314	37234	36543	36437	37018	37008	37193	37491	37180	38552	39652
Percentage change.....	3.08	-1.89	2.53	-1.85	-0.29	1.60	-0.03	0.50	0.80	-0.83	3.69	2.85
GOVERNMENT.....	38337	38341	38749	39248	39166	39366	39255	39396	39309	39242	39560	39945
Percentage change.....	1.12	0.01	1.07	1.29	-0.21	0.51	-0.28	0.36	-0.22	-0.17	0.81	0.97
FEDERAL, CIVILIAN.....	63065	63280	63711	64944	63288	64163	65790	67988	67114	66810	71973	71137
Percentage change.....	3.75	0.34	0.68	1.94	-2.55	1.38	2.54	3.34	-1.29	-0.45	7.73	-1.16
STATE & LOCAL.....	34918	34943	35413	35860	35996	36062	35597	35547	35564	35590	35383	35872
Percentage change.....	0.82	0.07	1.35	1.26	0.38	0.18	-1.29	-0.14	0.05	0.07	-0.58	1.38

**Table 9: Tennessee Average Annual Wage and Salary Rate by Sector (current dollars)****January 2017**

	Historical Data											
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
TOTAL NONFARM.....	35421	36388	38122	39664	40569	40824	42135	43025	44537	44630	45712	47205
Percentage change.....	4.20	2.73	4.77	4.05	2.28	0.63	3.21	2.11	3.52	0.21	2.42	3.27
NATURAL RESOURCES, MINING & CONST	37263	38995	41725	44020	45119	44525	46218	47383	48733	49096	51315	53921
Percentage change.....	2.04	4.65	7.00	5.50	2.50	-1.32	3.80	2.52	2.85	0.74	4.52	5.08
MANUFACTURING.....	42067	42999	44875	46615	48192	48933	52048	52838	54828	54743	56355	57336
Percentage change.....	4.75	2.22	4.36	3.88	3.38	1.54	6.36	1.52	3.77	-0.16	2.95	1.74
DURABLE GOODS.....	41328	42231	44128	45705	47412	48251	51166	51723	54393	53235	55208	56260
Percentage change.....	4.21	2.19	4.49	3.57	3.73	1.77	6.04	1.09	5.16	-2.13	3.71	1.91
NONDURABLE GOODS.....	43259	44266	46156	48119	49427	49896	53325	54532	55542	57250	58318	59194
Percentage change.....	5.68	2.33	4.27	4.25	2.72	0.95	6.87	2.26	1.85	3.08	1.86	1.50
TRADE, TRANSPORTATION, UTILITIES.....	33663	34872	36317	37796	38030	37816	38903	40120	41145	41198	42393	43557
Percentage change.....	3.97	3.59	4.14	4.07	0.62	-0.56	2.87	3.13	2.55	0.13	2.90	2.75
WHOLESALE TRADE.....	48212	49972	53236	55483	56395	55941	57846	59737	62447	62676	66119	67289
Percentage change.....	6.46	3.65	6.53	4.22	1.64	-0.81	3.41	3.27	4.54	0.37	5.49	1.77
RETAIL TRADE.....	23762	24525	25255	26417	26298	26402	27285	28047	28356	28096	28876	29772
Percentage change.....	1.79	3.21	2.98	4.60	-0.45	0.40	3.34	2.79	1.10	-0.92	2.78	3.10
TRANSPORTATION & UTILITIES.....	42943	44556	45819	47379	47815	47802	49176	50533	51266	51737	52363	53827
Percentage change.....	4.81	3.75	2.84	3.40	0.92	-0.03	2.87	2.76	1.45	0.92	1.21	2.80
INFORMATION.....	43247	44752	49988	50817	51141	51535	53268	56430	58479	58159	61198	62338
Percentage change.....	5.96	3.48	11.70	1.66	0.64	0.77	3.36	5.94	3.63	-0.55	5.23	1.86
FINANCIAL ACTIVITIES.....	50379	50399	54482	57219	57358	57388	61370	62784	67199	65871	67684	68829
Percentage change.....	5.11	0.04	8.10	5.02	0.24	0.05	6.94	2.30	7.03	-1.98	2.75	1.69
PROFESSIONAL & BUSINESS SERVICES..	36314	37273	39723	42403	44594	46283	47673	47980	51566	51946	51578	54449
Percentage change.....	4.11	2.64	6.57	6.75	5.17	3.79	3.00	0.64	7.47	0.74	-0.71	5.57
EDUCATION & HEALTH SERVICES.....	36911	38593	39752	41184	42339	43363	43987	44387	45179	45476	46401	48366
Percentage change.....	5.87	4.56	3.00	3.60	2.81	2.42	1.44	0.91	1.78	0.66	2.03	4.24
LEISURE & HOSPITALITY.....	17532	17896	18812	19610	19698	19666	20409	20809	21448	21319	22125	23551
Percentage change.....	2.37	2.07	5.12	4.24	0.45	-0.17	3.78	1.96	3.07	-0.60	3.78	6.45
OTHER SERVICES.....	33199	33504	35272	35482	36458	37021	37619	38733	39786	39981	42080	43434
Percentage change.....	5.57	0.92	5.27	0.60	2.75	1.54	1.61	2.96	2.72	0.49	5.25	3.22
GOVERNMENT.....	34390	35372	36708	38110	39189	39363	39903	41031	41715	42198	43179	43753
Percentage change.....	3.58	2.85	3.78	3.82	2.83	0.44	1.37	2.83	1.67	1.16	2.33	1.33
FEDERAL, CIVILIAN.....	56570	58379	60354	63058	63324	64164	66884	70805	71219	71846	78560	77915
Percentage change.....	6.27	3.20	3.38	4.48	0.42	1.33	4.24	5.86	0.58	0.88	9.35	-0.82
STATE & LOCAL.....	31324	32237	33548	34820	36018	36059	36184	37022	37741	38270	38620	39291
Percentage change.....	3.27	2.91	4.06	3.79	3.44	0.11	0.35	2.32	1.94	1.40	0.91	1.74

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

**January 2017**

	Historical Data											
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
CIVILIAN LABOR FORCE (THOUS).....	2880	2901	3032	3062	3052	3050	3088	3118	3091	3059	3027	3056
Percentage change.....	-1.11	0.73	4.52	0.97	-0.32	-0.05	1.23	0.99	-0.87	-1.04	-1.05	0.95
EMPLOYED PERSONS (THOUS).....	2726	2740	2874	2916	2845	2727	2790	2841	2850	2825	2831	2880
Percentage change.....	-0.81	0.54	4.89	1.46	-2.46	-4.14	2.32	1.82	0.31	-0.87	0.21	1.73
UNEMPLOYED PERSONS (THOUS).....	154	161	158	145	207	323	298	278	242	234	196	176
Percentage change.....	-6.01	4.17	-1.86	-7.93	42.71	56.11	-7.95	-6.77	-12.92	-3.04	-16.22	-10.30
PARTICIPATION RATE (PERCENT).....	63.4	62.9	64.6	64.3	63.3	62.7	62.7	62.7	61.6	60.4	59.2	59.2
Percentage change.....	-2.18	-0.77	2.68	-0.46	-1.59	-1.01	0.05	0.02	-1.83	-1.90	-1.97	-0.06
UNEMPLOYMENT RATE (PERCENT).....	5.4	5.5	5.2	4.7	6.8	10.6	9.6	8.9	7.8	7.7	6.5	5.8

**Boyd Center for Business and Economic Research, University of Tennessee**

**Tennessee Econometric Model**



Table 11: Tennessee Taxable Sales (millions of 2009 dollars)

January 2017

	Historical Data											
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
TOTAL TAXABLE SALES.....	92220	95679	97859	98868	93181	86225	86957	89900	92377	93853	96970	103022
Percentage change.....	2.56	3.75	2.28	1.03	-5.75	-7.47	0.85	3.38	2.75	1.60	3.32	6.24
AUTO DEALERS.....	10529	10224	9911	9788	7935	6724	7546	8094	8741	9143	9680	10778
Percentage change.....	-2.23	-2.90	-3.06	-1.24	-18.93	-15.27	12.22	7.26	8.01	4.60	5.87	11.33
PURCHASES FROM MANUFACTURERS....	4628	5204	4939	4884	4494	3493	3596	3849	3808	3878	4085	4451
Percentage change.....	3.09	12.44	-5.10	-1.11	-7.98	-22.26	2.94	7.04	-1.06	1.82	5.35	8.96
MISC DURABLE GOODS.....	15810	17170	18165	17964	16339	13748	14258	14961	15432	15630	16079	17003
Percentage change.....	7.41	8.60	5.80	-1.11	-9.05	-15.86	3.71	4.93	3.15	1.29	2.87	5.75
EATING AND DRINKING PLACES.....	8309	8627	8935	9144	8968	8841	8909	9128	9610	9832	10251	10975
Percentage change.....	5.24	3.83	3.56	2.35	-1.92	-1.43	0.78	2.45	5.29	2.31	4.26	7.07
FOOD STORES.....	8849	8884	8887	8992	8592	8822	8740	8849	9132	9377	9483	9808
Percentage change.....	-1.31	0.40	0.04	1.17	-4.44	2.68	-0.93	1.24	3.19	2.69	1.13	3.43
LIQUOR STORES.....	510	536	578	612	636	657	673	699	747	778	819	887
Percentage change.....	3.20	5.09	7.76	5.86	3.89	3.37	2.48	3.75	6.93	4.11	5.28	8.30
HOTELS AND MOTELS.....	2096	2215	2342	2425	2312	2038	2033	2239	2345	2362	2641	2944
Percentage change.....	0.81	5.66	5.73	3.56	-4.66	-11.84	-0.25	10.12	4.73	0.71	11.84	11.44
OTHER RETAIL AND SERVICE.....	27074	27970	28642	29151	28220	26806	26871	27610	28441	28821	29869	31607
Percentage change.....	2.15	3.31	2.40	1.78	-3.19	-5.01	0.24	2.75	3.01	1.34	3.64	5.82
MISC NONDURABLE GOODS.....	7269	7613	7698	7990	7780	7364	7521	7669	7938	8083	8284	8641
Percentage change.....	1.98	4.72	1.12	3.79	-2.63	-5.34	2.13	1.97	3.50	1.83	2.49	4.30
TRANSPORTATION, COMMUNICATION.....	7146	7237	7763	7919	7905	7731	6809	6803	6182	5948	5778	5928
Percentage change.....	4.02	1.27	7.27	2.01	-0.17	-2.20	-11.94	-0.08	-9.14	-3.78	-2.86	2.60
PER CAPITA (\$).....	15665	16050	16169	16095	14981	13722	13735	14070	14304	14379	14700	15455
Percentage change.....	1.54	2.46	0.74	-0.46	-6.92	-8.41	0.10	2.44	1.66	0.52	2.23	5.13

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

**January 2017**

	Historical Data											
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
TOTAL TAXABLE SALES.....	82727	88283	92704	95995	93235	86221	88396	93638	98028	100922	105848	112852
Percentage change.....	5.05	6.72	5.01	3.55	-2.88	-7.52	2.52	5.93	4.69	2.95	4.88	6.62
AUTO DEALERS.....	9444	9429	9389	9503	7938	6725	7671	8431	9276	9832	10567	11806
Percentage change.....	0.14	-0.16	-0.43	1.21	-16.47	-15.28	14.07	9.90	10.03	5.99	7.47	11.73
PURCHASES FROM MANUFACTURERS.....	4152	4802	4678	4741	4496	3493	3656	4009	4042	4170	4459	4876
Percentage change.....	5.59	15.64	-2.58	1.35	-5.17	-22.31	4.65	9.66	0.82	3.17	6.95	9.34
MISC DURABLE GOODS.....	14183	15845	17208	17440	16347	13747	14494	15583	16374	16808	17551	18627
Percentage change.....	10.02	11.72	8.60	1.35	-6.27	-15.90	5.43	7.51	5.08	2.65	4.43	6.13
EATING AND DRINKING PLACES.....	7454	7960	8464	8880	8973	8840	9057	9508	10199	10573	11190	12022
Percentage change.....	7.80	6.79	6.34	4.91	1.06	-1.48	2.45	4.98	7.27	3.67	5.83	7.44
FOOD STORES.....	7937	8196	8419	8731	8601	8822	8885	9217	9691	10083	10351	10743
Percentage change.....	1.09	3.26	2.72	3.70	-1.49	2.57	0.72	3.74	5.14	4.05	2.65	3.79
LIQUOR STORES.....	458	495	548	594	636	657	685	728	793	836	894	971
Percentage change.....	5.71	8.10	10.63	8.51	7.05	3.31	4.17	6.31	8.93	5.49	6.86	8.68
HOTELS AND MOTELS.....	1881	2044	2218	2355	2313	2038	2067	2333	2489	2540	2883	3225
Percentage change.....	3.27	8.67	8.55	6.15	-1.78	-11.87	1.40	12.85	6.69	2.05	13.53	11.84
OTHER RETAIL AND SERVICE.....	24286	25806	27134	28304	28237	26805	27316	28757	30181	30992	32603	34623
Percentage change.....	4.62	6.26	5.15	4.31	-0.24	-5.07	1.90	5.28	4.95	2.69	5.20	6.20
MISC NONDURABLE GOODS.....	6521	7024	7293	7758	7784	7364	7645	7988	8424	8692	9042	9465
Percentage change.....	4.45	7.72	3.82	6.38	0.34	-5.39	3.82	4.48	5.45	3.18	4.03	4.67
TRANSPORTATION, COMMUNICATION.....	6410	6682	7353	7689	7910	7729	6921	7085	6559	6396	6307	6493
Percentage change.....	6.55	4.23	10.05	4.57	2.87	-2.29	-10.45	2.37	-7.42	-2.49	-1.39	2.96
PER CAPITA (\$).....	14052	14809	15317	15627	14990	13721	13962	14655	15179	15462	16046	16929
Percentage change.....	4.01	5.39	3.43	2.02	-4.08	-8.47	1.76	4.96	3.58	1.86	3.78	5.51

Boyd Center for Business and Economic Research, University of Tennessee

Tennessee Econometric Model

Table 13: Tennessee Gross Domestic Product by Sector (millions of 2009 dollars)

January 2017

	Historical Data											
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
GROSS DOMESTIC PRODUCT.....	249,478	253,139	259,825	256,408	257,925	248,284	251,607	258,765	266,651	271,435	275,800	280,529
Percentage change.....	4.08	1.47	2.64	-1.32	0.59	-3.74	1.34	2.84	3.05	1.79	1.61	1.71
AGRICULTURE, FORESTRY, FISHING & HUNTING.....	1909.00	1808.00	2305.00	1636.00	1836.00	1744.00	1242.00	1246.00	1028.00	1468.00	1294.00	1215.12
Percentage change.....	-12.11	-5.29	27.49	-29.02	12.22	-5.01	-28.78	0.32	-17.50	42.80	-11.85	-6.10
NATURAL RESOURCES & MINING.....	3,105	3,020	3,617	2,950	2,952	2,717	2,196	2,046	1,779	2,230	2,091	2,155
Percentage change.....	-8.81	-2.74	19.77	-18.44	0.07	-7.96	-19.18	-6.83	-13.05	25.35	-6.23	3.04
CONSTRUCTION.....	12,309	11,930	11,585	11,112	10,494	9,256	8,714	9,072	9,883	9,660	9,683	9,790
Percentage change.....	2.81	-3.08	-2.89	-4.08	-5.56	-11.80	-5.86	4.11	8.94	-2.26	0.24	1.10
MANUFACTURING.....	44,685	43,958	45,680	43,780	42,805	38,637	39,980	41,765	44,085	45,812	46,663	47,718
Percentage change.....	12.70	-1.63	3.92	-4.16	-2.23	-9.74	3.48	4.46	5.55	3.92	1.86	2.26
DURABLE GOODS.....	25,106	26,119	27,096	24,486	24,875	20,624	21,017	23,342	25,015	25,908	27,845	28,668
Percentage change.....	10.57	4.03	3.74	-9.63	1.59	-17.09	1.91	11.06	7.17	3.57	7.48	2.96
WOOD PRODUCTS.....	655	705	730	814	809	602	611	663	659	564	574	586
Percentage change.....	5.31	7.63	3.55	11.51	-0.61	-25.59	1.50	8.51	-0.60	-14.42	1.77	2.14
NONMETALLIC MINERAL PRODUCTS.....	1,675	1,497	1,335	1,332	1,136	889	972	1,074	1,086	1,025	1,050	1,062
Percentage change.....	8.27	-10.63	-10.82	-0.22	-14.71	-21.74	9.34	10.49	1.12	-5.62	2.44	1.16
PRIMARY METALS.....	1,134	1,121	1,075	853	847	766	874	991	1,156	1,229	1,228	1,253
Percentage change.....	14.55	-1.15	-4.10	-20.65	-0.70	-9.56	14.10	13.39	16.65	6.31	-0.08	2.06
FABRICATED METAL PRODUCTS.....	4,477	4,294	4,601	4,483	3,899	3,527	3,751	3,625	3,711	3,435	3,634	3,708
Percentage change.....	12.91	-4.09	7.15	-2.56	-13.03	-9.54	6.35	-3.36	2.37	-7.44	5.79	2.04
MACHINERY.....	3,299	3,797	3,534	3,064	3,614	2,760	2,598	2,802	2,546	3,117	2,746	2,799
Percentage change.....	-4.85	15.10	-6.93	-13.30	17.95	-23.63	-5.87	7.85	-9.14	22.43	-11.90	1.93
COMPUTER & ELECTRONIC PRODUCTS.....	2868	2561	2302	2752	3849	4056	1716	1489	1141	1232	1,269	1,297
Percentage change.....	27.35	-10.70	-10.11	19.55	39.86	5.38	-57.69	-13.23	-23.37	7.98	3.00	2.19
ELECTRICAL EQUIPMENT, APPLIANCES & COMPONENTS....	2,583	2,828	3,090	2,487	3,089	2,909	2,535	2,696	3,495	3,213	3,845	3,929
Percentage change.....	-0.27	9.49	9.26	-19.51	24.21	-5.83	-12.86	6.35	29.64	-8.07	19.67	2.18
MOTOR VEHICLES, BODIES & TRAILERS, & PARTS.....	5,020	5,859	7,082	5,318	4,399	1,972	4,795	6,825	8,138	9,139	10,207	10,645
Percentage change.....	21.55	16.71	20.87	-24.91	-17.28	-55.17	143.15	42.34	19.24	12.30	11.69	4.29
OTHER TRANSPORTATION EQUIPMENT.....	894	946	806	752	631	423	493	538	459	371	462	491
Percentage change.....	33.23	5.82	-14.80	-6.70	-16.09	-32.96	16.55	9.13	-14.68	-19.17	24.53	6.21
FURNITURE.....	990	905	849	826	651	471	424	404	426	473	493	499
Percentage change.....	-3.70	-8.59	-6.19	-2.71	-21.19	-27.65	-9.98	-4.72	5.45	11.03	4.23	1.22
MISCELLANEOUS DURABLE GOODS.....	1,511	1,606	1,692	1,805	1,951	2,249	2,248	2,235	2,198	2,110	2,337	2,399
Percentage change.....	4.71	6.29	5.35	6.68	8.09	15.27	-0.04	-0.58	-1.66	-4.00	10.76	2.66
NONDURABLE GOODS.....	19,579	17,839	18,584	19,294	17,930	18,013	18,963	18,423	19,070	19,904	18,818	19,050
Percentage change.....	15.54	-8.89	4.18	3.82	-7.07	0.46	5.27	-2.85	3.51	4.37	-5.46	1.23
FOOD AND BEVERAGE & TOBACCO.....	6,014	5,938	6,585	7,370	6,780	6,915	7,095	6,763	6,801	6,699	6,281	6,373
Percentage change.....	11.62	-1.26	10.90	11.92	-8.01	1.99	2.60	-4.68	0.56	-1.50	-6.24	1.47
TEXTILE MILLS & TEXTILE PRODUCT MILLS	725	618	668	582	614	421	369	295	332	466	449	447
Percentage change.....	7.41	-14.76	8.09	-12.87	5.50	-31.43	-12.35	-20.05	12.54	40.36	-3.65	-0.45
APPAREL & LEATHER PRODUCTS.....	349	298	240	230	243	213	242	207	208	334	182	178
Percentage change.....	-8.16	-14.61	-19.46	-4.17	5.65	-12.35	13.62	-14.46	0.48	60.58	-45.51	-2.07

(CONTINUED ON NEXT PAGE)

Table 13: Tennessee Gross Domestic Product by Sector (millions of 2009 dollars)

January 2017

	Historical Data											
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
PAPER.....	2,402	2,462	2,746	2,348	2,385	2,590	2,709	2,452	2,615	2,717	2,582	2,609
Percentage change.....	5.12	2.50	11.54	-14.49	1.58	8.60	4.59	-9.49	6.65	3.90	-4.97	1.06
PRINTING & RELATED SUPPORT.....	1,233	1,256	1,304	1,276	1,237	1,092	1,063	1,040	994	1,117	1,088	1,083
Percentage change.....	1.82	1.87	3.82	-2.15	-3.06	-11.72	-2.66	-2.16	-4.42	12.37	-2.60	-0.49
CHEMICALS.....	5,506	4,218	4,604	4,781	4,335	4,554	5,196	5,641	5,936	6,140	5,525	5,659
Percentage change.....	55.76	-23.39	9.15	3.84	-9.33	5.05	14.10	8.56	5.23	3.44	-10.02	2.42
PLASTICS & RUBBER.....	2,509	2,280	1,932	2,121	1,919	1,757	1,894	1,749	1,787	1,991	1,917	1,911
Percentage change.....	2.37	-9.13	-15.26	9.78	-9.52	-8.44	7.80	-7.66	2.17	11.42	-3.72	-0.33
MISCELLANEOUS NONDURABLE GOODS.....	841	769	505	586	417	471	395	276	397	440	794	790
Percentage change.....	-17.55	-8.56	-34.33	16.04	-28.84	12.95	-16.14	-30.13	43.84	10.83	80.45	-0.56
TRADE.....	50,430	52,613	53,975	53,375	52,279	47,339	49,261	50,384	51,780	52,263	52,768	52,511
Percentage change.....	6.06	4.33	2.59	-1.11	-2.05	-9.45	4.06	2.28	2.77	0.93	0.97	3.97
WHOLESALE TRADE.....	17,660	18,344	18,974	19,406	19,436	16,671	17,141	17,444	18,354	18,792	19,432	20,032
Percentage change.....	6.71	3.87	3.43	2.28	0.15	-14.23	2.82	1.77	5.22	2.39	3.41	3.09
RETAIL TRADE.....	19,159	20,070	20,229	19,865	18,830	17,961	18,575	18,905	19,344	19,322	19,581	19,885
Percentage change.....	4.16	4.75	0.79	-1.80	-5.21	-4.61	3.42	1.78	2.32	-0.11	1.34	1.55
TRANSPORTATION & UTILITIES.....	13,611	14,199	14,772	14,104	14,013	12,707	13,545	14,035	14,082	14,149	13,755	13,930
Percentage change.....	7.96	4.32	4.04	-4.52	-0.65	-9.32	6.59	3.62	0.33	0.48	-2.78	1.27
INFORMATION.....	6,248	6,784	7,551	8,597	8,100	8,495	8,415	8,332	7,554	7,846	7,763	7,926
Percentage change.....	4.25	8.58	11.31	13.85	-5.78	4.88	-0.94	-0.99	-9.34	3.87	-1.06	2.10
FINANCIAL ACTIVITIES.....	35,389	34,784	35,332	37,007	37,519	39,030	40,568	41,890	42,181	42,486	43,653	44,771
Percentage change.....	-3.08	-1.71	1.58	4.74	1.38	4.03	3.94	3.26	0.69	0.72	2.75	2.56
PROFESSIONAL & BUSINESS SERVICES.....	24,071	24,128	24,441	24,847	26,488	25,047	26,143	27,036	29,183	30,568	31,284	32,501
Percentage change.....	4.34	0.24	1.30	1.66	6.60	-5.44	4.38	3.42	7.94	4.75	2.34	3.89
EDUCATION & HEALTH SERVICES.....	21,984	22,753	23,299	23,500	25,111	26,416	26,651	27,448	28,104	28,412	28,825	29,500
Percentage change.....	6.65	3.50	2.40	0.86	6.86	5.20	0.89	2.99	2.39	1.10	1.45	2.34
LEISURE & HOSPITALITY.....	11,382	11,753	12,473	12,712	11,562	10,760	11,030	11,396	11,724	11,929	12,740	13,263
Percentage change.....	3.17	3.26	6.13	1.92	-9.05	-6.94	2.51	3.32	2.88	1.75	6.80	4.11
OTHER SERVICES.....	7,464	7,401	7,422	7,097	6,767	6,454	6,435	6,526	6,758	6,612	6,613	6,642
Percentage change.....	2.30	-0.84	0.28	-4.38	-4.65	-4.63	-0.29	1.41	3.56	-2.16	0.02	0.44
GOVERNMENT.....	30,502	32,207	32,145	29,795	32,012	32,389	30,972	31,624	32,592	32,149	32,423	32,537
Percentage change.....	0.22	5.59	-0.19	-7.31	7.44	1.18	-4.37	2.11	3.06	-1.36	0.85	0.35
FEDERAL.....	9,005	8,794	8,778	8,600	8,036	8,115	8,241	8,025	7,871	7,959	8,415	8,522
Percentage change.....	-1.19	-2.34	-0.18	-2.03	-6.56	0.98	1.55	-2.62	-1.92	1.12	5.73	1.28
STATE & LOCAL.....	21,497	23,413	23,367	21,195	23,976	24,274	22,731	23,599	24,721	24,190	24,008	24,015
Percentage change.....	0.82	8.91	-0.20	-9.30	13.12	1.24	-6.36	3.82	4.75	-2.15	-0.75	0.03

Table 14: Tennessee Gross Domestic Product by Sector (millions of current dollars)

January 2017

	Historical Data											
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
GROSS DOMESTIC PRODUCT.....	220,311	229,363	241,319	244,868	251,216	248,284	253,909	265,037	279,861	290,420	301,042	313,136
Percentage change.....	6.72	4.11	5.21	1.47	2.59	-1.17	2.27	4.38	5.59	3.77	3.66	4.02
AGRICULTURE, FORESTRY, FISHING & HUNTING.....	2,154	1,859	2,329	1,903	2,205	1,744	1,415	1,838	1,556	2,268	1,837	1,516
Percentage change.....	-4.65	-13.70	25.28	-18.29	15.87	-20.91	-18.86	29.89	-15.34	45.76	-19.00	-17.49
NATURAL RESOURCES & MINING.....	2,778	2,671	3,320	3,066	3,275	2,717	2,467	2,794	2,460	3,069	2,691	2,689
Percentage change.....	0.65	-3.85	24.30	-7.65	6.82	-17.04	-9.20	13.25	-11.95	24.76	-12.32	-0.08
CONSTRUCTION.....	9,386	10,099	10,736	10,956	10,348	9,256	8,556	9,038	10,134	10,253	10,942	11,573
Percentage change.....	10.72	7.60	6.31	2.05	-5.55	-10.55	-7.56	5.63	12.13	1.17	6.72	5.77
MANUFACTURING.....	41,197	41,093	42,262	40,291	40,045	38,637	39,376	41,126	45,301	47,888	50,174	52,490
Percentage change.....	11.36	-0.25	2.84	-4.66	-0.61	-3.52	1.91	4.44	10.15	5.71	4.77	4.62
DURABLE GOODS.....	25,110	25,804	26,016	23,418	23,510	20,624	20,383	22,165	24,490	25,746	28,418	29,956
Percentage change.....	10.29	2.76	0.82	-9.99	0.39	-12.28	-1.17	8.74	10.49	5.13	10.38	5.41
WOOD PRODUCTS.....	893	942	907	887	834	602	631	627	663	659	762	784
Percentage change.....	21.50	5.49	-3.72	-2.21	-5.98	-27.82	4.82	-0.63	5.74	-0.60	15.63	2.94
NONMETALLIC MINERAL PRODUCTS.....	1,401	1,333	1,316	1,307	1,062	889	941	1,005	1,058	1,049	1,111	1,159
Percentage change.....	9.20	-4.85	-1.28	-0.68	-18.75	-16.29	5.85	6.80	5.27	-0.85	5.91	4.28
PRIMARY METALS.....	1,305	1,433	1,672	1,401	1,408	766	1,104	1,435	1,480	1,395	1,506	1,583
Percentage change.....	46.30	9.81	16.68	-16.21	0.50	-45.60	44.13	29.98	3.14	-5.74	7.96	5.14
FABRICATED METAL PRODUCTS.....	3,462	3,474	3,706	3,696	3,356	3,527	3,491	3,361	3,624	3,454	3,645	3,834
Percentage change.....	14.79	0.35	6.68	-0.27	-9.20	5.10	-1.02	-3.72	7.83	-4.69	5.53	5.18
MACHINERY.....	2,857	3,359	3,116	2,747	3,235	2,760	2,483	2,651	2,523	3,230	2,936	3,053
Percentage change.....	-8.05	17.57	-7.23	-11.84	17.76	-14.68	-10.04	6.77	-4.83	28.02	-9.10	3.99
COMPUTER & ELECTRONIC PRODUCTS.....	4,245	3,515	2,866	3,086	3,960	4,056	1,670	1,399	1,060	1,154	1,189	1,220
Percentage change.....	16.14	-17.20	-18.46	7.68	28.32	2.42	-58.83	-16.23	-24.23	8.87	3.03	2.59
ELECTRICAL EQUIPMENT, APPLIANCES & COMPONENTS.....	2,118	2,358	2,636	2,212	2,829	2,909	2,470	2,593	3,568	3,349	4,046	4,262
Percentage change.....	-2.35	11.33	11.79	-16.08	27.89	2.83	-15.09	4.98	37.60	-6.14	20.81	5.33
MOTOR VEHICLES, BODIES & TRAILERS, & PARTS.....	5,737	6,191	6,678	4,883	3,776	1,972	4,466	5,948	7,397	8,402	9,788	10,412
Percentage change.....	15.06	7.91	7.87	-26.88	-22.67	-47.78	126.47	33.18	24.36	13.59	16.50	6.38
OTHER TRANSPORTATION EQUIPMENT.....	791	863	754	709	597	423	493	543	474	394	506	559
Percentage change.....	35.91	9.10	-12.63	-5.97	-15.80	-29.15	16.55	10.14	-12.71	-16.88	28.43	10.53
FURNITURE.....	818	773	729	734	578	471	405	386	423	470	495	516
Percentage change.....	-8.60	-5.50	-5.69	0.69	-21.25	-18.51	-14.01	-4.69	9.59	11.11	5.32	4.31
MISCELLANEOUS DURABLE GOODS.....	1,483	1,563	1,636	1,756	1,875	2,249	2,229	2,217	2,220	2,190	2,434	2,573
Percentage change.....	2.42	5.39	4.67	7.33	6.78	19.95	-0.89	-0.54	0.14	-1.35	11.14	5.71
NONDURABLE GOODS.....	16,087	15,289	16,246	16,873	16,535	18,013	18,993	18,961	20,811	22,142	21,756	22,534
Percentage change.....	13.09	-4.96	6.26	3.86	-2.00	8.94	5.44	-0.17	9.76	6.40	-1.74	3.58
FOOD AND BEVERAGE & TOBACCO.....	5,010	5,037	5,442	6,061	6,053	6,915	6,986	6,504	7,052	7,128	7,022	7,270
Percentage change.....	7.90	0.54	8.04	11.37	-0.13	14.24	1.03	-6.90	8.43	1.08	-1.49	3.53
TEXTILE MILLS & TEXTILE PRODUCT MILLS.....	645	576	636	553	572	421	369	332	359	497	490	483
Percentage change.....	5.91	-10.70	10.42	-13.05	3.44	-26.40	-12.35	-10.03	8.13	38.44	-1.41	-1.48
APPAREL & LEATHER PRODUCTS.....	372	311	246	231	240	213	235	203	205	330	182	179
Percentage change.....	-10.58	-16.40	-20.90	-6.10	3.90	-11.25	10.33	-13.62	0.99	60.98	-44.85	-1.60

(CONTINUED ON NEXT PAGE)

**Table 14: Tennessee Gross Domestic Product by Sector (millions of current dollars)**

**January 2017**

	Historical Data											2014	2015
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013			
PAPER.....	1,894	1,971	2,334	2,040	2,171	2,590	2,806	2,537	2,698	2,961	2,846	2,934	
Percentage change.....	1.99	4.07	18.42	-12.60	6.42	19.30	8.34	-9.59	6.35	9.75	-3.88	3.09	
PRINTING & RELATED SUPPORT.....	1,203	1,258	1,350	1,307	1,222	1,092	1,039	973	921	1,036	1,025	1,031	
Percentage change.....	0.92	4.57	7.31	-3.19	-6.50	-10.64	-4.85	-6.35	-5.34	12.49	-1.06	0.56	
CHEMICALS.....	4,216	3,367	3,806	3,962	3,981	4,554	5,203	6,109	6,850	7,262	6,784	7,092	
Percentage change.....	56.50	-20.14	13.04	4.10	0.48	14.39	14.25	17.41	12.13	6.01	-6.58	4.54	
PLASTICS & RUBBER.....	2,057	1,909	1,780	1,898	1,745	1,757	1,834	1,752	1,878	2,121	2,007	2,125	
Percentage change.....	-1.44	-7.19	-6.76	6.63	-8.06	0.69	4.38	-4.47	7.19	12.94	-5.37	5.87	
MISCELLANEOUS NONDURABLE GOODS.....	690	860	652	821	551	471	521	551	848	807	1,400	1,421	
Percentage change.....	-5.09	24.64	-24.19	25.92	-32.89	-14.52	10.62	5.76	53.90	-4.83	73.48	1.52	
TRADE.....	43,743	46,801	49,477	50,073	50,279	47,339	49,824	51,980	54,950	56,259	57,755	59,834	
Percentage change.....	8.37	6.99	5.72	1.20	0.41	-5.85	5.25	4.33	5.71	2.38	2.66	3.60	
WHOLESALE TRADE.....	14,689	15,657	16,761	17,502	18,083	16,671	17,548	18,275	19,825	20,470	21,331	22,362	
Percentage change.....	10.00	6.59	7.05	4.42	3.32	-7.81	5.26	4.14	8.48	3.25	4.21	4.83	
RETAIL TRADE.....	17,173	18,415	19,103	19,282	18,606	17,961	18,718	19,432	20,418	20,578	21,020	21,513	
Percentage change.....	6.23	7.23	3.74	0.94	-3.51	-3.47	4.21	3.81	5.07	0.78	2.15	2.34	
TRANSPORTATION & UTILITIES.....	11,881	12,729	13,613	13,289	13,590	12,707	13,558	14,273	14,707	15,211	15,404	15,959	
Percentage change.....	9.56	7.14	6.94	-2.38	2.27	-6.50	6.70	5.27	3.04	3.43	1.27	3.60	
INFORMATION.....	6,721	7,093	7,742	8,692	8,097	8,495	8,364	8,247	7,482	7,829	7,744	7,811	
Percentage change.....	3.58	5.53	9.15	12.27	-6.85	4.92	-1.54	-1.40	-9.28	4.64	-1.09	0.87	
FINANCIAL ACTIVITIES.....	33,332	33,467	34,754	37,061	37,947	39,030	40,855	42,716	44,188	45,568	48,016	50,246	
Percentage change.....	-0.81	0.41	3.85	6.64	2.39	2.85	4.68	4.56	3.45	3.12	5.37	4.64	
PROFESSIONAL & BUSINESS SERVICES.....	21,089	21,731	22,817	24,222	26,130	25,047	26,271	27,396	29,960	31,837	32,937	34,974	
Percentage change.....	8.71	3.04	5.00	6.16	7.88	-4.14	4.89	4.28	9.36	6.27	3.46	6.19	
EDUCATION & HEALTH SERVICES.....	18,875	20,132	21,136	22,198	24,214	26,416	27,255	28,457	29,683	30,375	31,207	32,363	
Percentage change.....	9.97	6.66	4.99	5.02	9.08	9.09	3.18	4.41	4.31	2.33	2.74	3.70	
LEISURE & HOSPITALITY.....	9,394	10,091	11,096	11,787	11,062	10,760	11,034	11,389	12,151	12,672	13,875	15,059	
Percentage change.....	5.60	7.42	9.96	6.23	-6.15	-2.73	2.55	3.22	6.69	4.29	9.49	8.54	
OTHER SERVICES.....	6,065	6,258	6,532	6,500	6,444	6,454	6,604	6,854	7,286	7,349	7,548	7,715	
Percentage change.....	5.53	3.18	4.38	-0.49	-0.86	0.16	2.32	3.79	6.30	0.86	2.71	2.21	
GOVERNMENT.....	25,577	28,068	29,118	28,119	31,170	32,389	31,888	33,202	34,710	35,053	36,316	36,866	
Percentage change.....	5.28	9.74	3.74	-3.43	10.85	3.91	-1.55	4.12	4.54	0.99	3.60	1.51	
FEDERAL.....	7,750	7,896	8,122	8,254	7,887	8,115	8,550	8,526	8,384	8,664	9,381	9,604	
Percentage change.....	3.69	1.89	2.87	1.62	-4.45	2.89	5.36	-0.28	-1.67	3.35	8.27	2.38	
STATE & LOCAL.....	17827	20172	20996	19865	23283	24274	23338	24676	26326	26389	26935	27262	
Percentage change.....	5.9932	13.154	4.0849	-5.3867	17.206	4.2563	-3.856	5.7331	6.6867	0.2393	2.069	1.2134	

