AN ECONOMIC REPORT TO THE GOVERNOR OF THE STATE OF TENNESSEE

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THE STATE’S ECONOMIC OUTLOOK

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PREFACE

This 2011 volume of An Economic Report to the Governor of the State of Tennessee is the thirty-fifth 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 2013 and annual forecast through 2020 represent the collective judgment of the staff of the University of Tennessee’s Center for Business and Economic Research in conjunction with the Quarterly and Annual Tennessee Econometric Models. The national forecasts were prepared by Global Insight, Inc. Tennessee forecasts, current as of January 2011, 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 Agricultural Policy Analysis Center. Chapter Three presents the long-run outlook and forecast for the state. Chapter Four provides a discussion of the importance of transportation infrastructure to the state and its economic development.

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, the Tennessee Department of Labor and Workforce Development, and the Appalachian Regional Commission—is to provide wide public dissemination of the most-current possible economic analysis to planners and decision-makers in the public and private sectors.

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3.1. Introduction

Today, the U.S. and Tennessee are beginning to rebound from the most severe recession in the last half century. While recessions are a natural part of the business cycle, the length and depth of the current cycle has been unprecedented. Economic expansion is now taking hold, though unemployment is high and many sectors of the economy remain fragile. Factors causing persistent effects of the recession that ended in June of 2009 are related to circumstances rendering it vastly different from typical recessions. These same factors will have long-term and lingering effects on the economy.

The economy is nonetheless poised to grow over the next decade. Looking forward, nonfarm jobs within Tennessee are projected to grow at a 1.3 percent compound annual growth rate (CAGR) from 2010 to 2020. The unemployment rate is projected to decline to 5.3 percent in Tennessee and 5.2 percent for the U.S. by 2020. U.S. inflation-adjusted gross domestic product (GDP) is expected to grow 2.9 percent while Tennessee state GDP is expected to grow 2.8 between 2010 and 2020. These growth rates are below historical trend values.

This chapter is organized as follows: the next section places the Great Recession in historical context while the subsequent section draws out in greater detail some of the long-term consequences and uncertainties created by the recession. The last section of the chapter provides a discussion of the long-term outlook for Tennessee framed by the state’s long-term history and growth prospects for the national economy.
3.2. Framing the Recent Recession

Each recession is unique. For example, the back-to-back recessions of the early 1980s began with the decision of monetary policymakers to raise interest rates in order to control inflation. The increase in interest rates stifled investment, curbed construction spending, and reduced durable good purchases. This led to a fall in GDP, lost jobs, and a rise in unemployment. Once inflation was under control, the Federal Reserve (Fed) lowered interest rates, and the economy (as well as employment) ultimately rebounded.

The Great Recession has proven to be dramatically different from the 1980s and other economic downturns. It was born out of regulatory failures and unsound lending practices that led to a housing bubble and a financial market collapse. The events rendered an unprecedented loss of wealth by individuals as housing and stock prices tumbled. Due to the dramatic loss of wealth, the ensuing loss of confidence and massive job setbacks, consumer spending, investment, and residential construction all declined. As demand fell, firms responded by slashing production causing a fall in GDP and rising unemployment.

Since January 2009 the federal government has employed unprecedented monetary and fiscal policies in an attempt to moderate job loss and reignite economic growth. The Fed, which controls monetary policy, has cut interest rates to historical lows and has taken a variety of other steps including support of non-bank financial institutions and other firms. The U.S. Congress, using its fiscal powers, passed a substantial stimulus package known as the American Recovery and Reinvestment Act (ARRA), as well as other initiatives like the Troubled Asset Relief Program (TARP). Despite these efforts which would be effective catalysts to increased demand in a typical recession, consumer spending has not rebounded, and firms are still not producing and hiring at anything close to normal levels.

There are several facets of this recession that have limited the effectiveness and scope of fiscal and monetary policy. These are discussed in detail in the next section. The importance of these factors goes beyond the fledgling expansion currently underway. Long-term forecasts like that presented in this chapter generally focus on the expected trend performance of the economy rather than the outlook for short-term fluctuations of the business cycle. However, in the current context these short-term influences—and their persistence—will have long-term consequences for national and state economic performance. While the outlook to 2020 is positive, the slow recovery means a long period of adjustment and transformation before the economy does in fact return to its trend pattern of growth. Unfortunately, some measures of economic activity like the unemployment rate will take years to recover, while others such as housing starts may not fully rebound even by the end of the decade.

3.3. Persisting and Lingering Effects from the Recession: Uncharted Territory

The current recession is much different than those previously encountered in recent decades. In most cycles, the economy bottoms out and returns to the pre-recessionary trend relatively quickly. This recession, however, is unique in that a variety of factors will contribute to persistent and lingering effects of the cycle well beyond the end-date of the recession itself. While the short-term economic outlook into 2013 is discussed in earlier
3.3. Persisting and Lingering Effects from the Recession: Uncharted Territory, continued

chapters of this report, many of these impacts will ripple well beyond 2013, affecting the state and national economies through much of the decade. It is certainly not a “gloom and doom outlook,” but it is an outlook clouded by more uncertainty than is typically the case.

Two contributors to the slow recovery are the circumstances and consequences surrounding monetary and fiscal policy. Monetary and fiscal policies are the tools that the Fed and the federal government have to stimulate the economy. The Fed traditionally chooses a target Federal Funds Rate and uses policy tools (the purchase or sale of bonds) to manipulate the rate toward the target. Through its impacts on interest rates, the Fed can influence private sector borrowing and spending. By the time the current recession had firmly gripped the economy, interest rates had already been reduced to low levels. The Fed continually cut the target interest rate to record lows to increase bank lending and expand the money supply. But due to more cautionary lending practices, the expanded monetary base has remained in reserve instead of finding its way into the hands of businesses and consumers. With tighter credit restrictions, the Fed has limited additional power to stimulate the economy through the reduction of interest rates. (See Chapter 1 for a discussion of the Fed’s ongoing quantitative easy program that is intended to lower long-term interest rates.)

The Fed has already wound down many of the initiatives that were introduced to forestall steeper and deeper economic decline if not financial market collapse. But as the economy recovers further, the Fed will have to address its huge balance sheet of bank reserves to help keep inflation in check. These are uncharted waters. The Fed may be compelled to act quickly by raising interest rates which will, in turn, slow economic growth. There are many critics of the Fed who fear rapidly rising inflation, and they have long clamored for rate increases. Rates will ultimately rise, but the timing will be critical to balancing a still-fragile recovery against inflationary risks. It will be many years before the Fed winds down all of its recession-related programs.

Fiscal policy over the course of the business cycle has been criticized for aggravating the deficit and the nation’s accumulation of debt. Increased government spending was intended to fill a private sector vacuum by increasing final demand in the economy, which in the short run serves to diminish the fall in GDP, limit employment losses and temper increases in the unemployment rate. Decreasing government spending, on the other hand, equates to fiscal tightening, which in the short run lowers spending and therefore GDP, along with other measures of economic activity. While the deficit is a critical issue facing the economy, fiscal tightening too early in the recovery process could do severe damage to the emerging expansion absent stronger private sector forces. Policymakers face an ugly trade-off between sustaining high spending to stimulate the economy versus fiscal retrenchment to reduce the deficit that would weaken near-term growth.

The nation’s rising debt will continue to play a role in future policy decisions through 2020, thus having long-term consequences for economic performance. After the recovery is well established, the U.S. will have to grapple with what now appears to be near-impossible decisions on how much to cut government spending and how much to raise taxes. Given the magnitude of the gap between revenues and expenditures, it will not prove practical to close the deficit using only tax increases or only spending cuts. Regardless of the path taken, federal government fiscal policy will become a drag on economic growth through the current decade.

A third reason contributing to the persistence of impacts from the recession is the legacy of pre-recession construction. New residential housing construction will remain stifled in many regions due to previous overbuilding. A recovery in the housing sector normally helps lead the economy out of the
3.3. Persisting and Lingering Effects from the Recession: Uncharted Territory, continued

trough of the business cycle in traditional recessions. However, in this recession, housing starts remain suppressed at very low levels. The burst of the housing bubble left an excess supply of housing that still has not been eliminated, including foreclosed property reclaimed by banks.

In addition to the excess housing stock, there is also excess plant capacity and commercial space available for businesses. Business fixed investment in structures continues to fall with spending down 20.4 percent in 2009, 14.5 percent in 2010, and further setbacks expected in 2011. Investment in structures is not expected to even begin to see a meaningful rebound until 2013. This investment pattern will have ongoing effects on construction activity and employment. At the same time, investment in equipment and software was strong in 2010, and the same is expected next year. This equipment investment, given the slack demand for goods and services, is likely replacing the need for many additional workers. This same investment will contribute to the persistence of high unemployment rates for several years to come.

A fourth consideration is the way in which the financial crisis that precipitated the recession has impacted consumer behavior. The crisis has triggered an increase in household saving and less reliance on credit. Similar to attitudes seen following the Great Depression, individuals are choosing to save to replenish savings accounts and retirement funds in addition to paying off debt. Unfortunately, higher saving rates hinder the economy’s recovery in the short run because consumer spending is lower; lower spending reduces demand for goods and services, firm production remains depressed and there is less need to add workers. An important question is whether or not consumer behavior has undergone a fundamental shift toward increased frugality. (In 2005 the personal savings rate was 1.4 percent, but in 2010 it had jumped to 5.8 percent.) In the long run this will be good for household finances, economy-wide savings rates and investment. But an increased savings rate will diminish consumption spending and weaken economic growth in the near-term.

A fifth factor giving rise to the persistence of recession impacts is the crippling effect of the recession on state and local government finances. Property tax revenues decline with falling property values, and sales tax revenues are diminished with weakened consumer and construction spending. While tax revenues decline in a recession, the demand for state and local government services is counter-cyclical. When the economy falters, more people are in need of unemployment benefits, health care subsidies, welfare relief and job training assistance. In order to balance their budgets, state and local governments have reduced employment despite federal stimulus funds that will largely evaporate in fiscal year 2011. Once the recovery fully takes hold, states and localities will face pent-up demand for infrastructure investments and restoration of services that had been cut or eliminated over the course of the Great Recession. It will take many years to restore fiscal health to the budgets of states and localities.

Neither Tennessee nor the nation operates in a vacuum with the fate of the domestic market being hampered by the fragile global marketplace. Vulnerability, as demonstrated by debt crises in Greece and Ireland, and more recent problems in Portugal, certainly has not assisted the U.S. recovery. Exports were growing in the first two quarters of 2010, but they have been severely affected by lackluster growth in Europe. The events in Europe have contributed to the ongoing crisis of confidence with uncertain consequences for the future path of global growth. This uncertainty could create a post-recessionary hangover that lingers for years.

The set of issues presented here are largely unique on their own, but especially unique as a package that could have long-term effects on economic growth in the U.S. and Tennessee. Slow and now steady growth
3.3. Persisting and Lingering Effects from the Recession: Uncharted Territory, continued

is finally emerging. However, the economy will not return to trend as quickly as in past recessions. The state and national economies face unique challenges in the coming decade in the aftermath of the Great Recession.

3.4. Long-Term Retrospective and Prospective Outlook for Tennessee

The outlook for the U.S. and Tennessee moving toward 2020 is generally optimistic although framed by the series of uncertainties and lingering effects of the recession discussed above. While the short-term outlook presented in Chapters 1 and 2 focuses primarily on fluctuations within the business cycle, the long-term outlook presented below concentrates on trend patterns of economic growth. Economic growth will continue to trend upward, but the legacy of the recession and changes in the demographic composition of the population will mean a somewhat slower growth trajectory than the historical record. Some components of the economy, like national housing starts, may not recover to their pre-recessionary levels even by 2020.

Ingredients Supporting Long-Term Growth

A region’s long-term economic growth potential depends on the economy’s ability to produce and sell goods and services. For a state like Tennessee, exports to other states and to countries around the world are most important in supporting in-state job creation. Key inputs to the production process include the size of the labor force, education and skill levels of the workforce, private capital investment in productive capacity, and public infrastructure capital like roads, schools and parks. Technology is also important, especially for businesses, since this can have an influential effect on productivity and global competitiveness. These inputs all determine the amount of goods and services that the state economy can produce. Fostering the growth of these inputs affects the economy’s productive capacity and expansion trajectory. This in turn affects the well-being of Tennesseans and the fiscal health of the public sector. Tennessee’s future growth will be determined by market forces and public policies that affect all of these ingredients of the growth process.

In the past, Tennessee’s growth has often fallen behind the nation suggesting that one or more components of growth in Tennessee trail the nation. Primary explanations include a lower labor force participation rate and lower educational attainment of Tennessee’s adult population and workforce. In the face of the latter challenge, Tennessee has taken significant steps to improve its education pipeline, including passage of the Complete College Tennessee Act. Steps such as this will have to be sustained in order to retain competitive businesses, while at the same time striving to recruit new businesses that can be successful at a global level. While Tennessee’s educational investments have grown and educational outcomes have improved, the U.S. has also made strides forward in these same areas.

Figure 3.1 shows educational attainment gains for the U.S. and Tennessee from 2000 to 2009. The first panel of Figure 3.1 depicts the percentage of the population that holds a high school degree or a more advanced level of educational attainment. Both the state and nation displayed gains from 2000 to 2009, with Tennessee showing some modest improvement relative to nation. The second panel of Figure 3.1 illustrates the percentage of the population with a bachelor’s degree or greater. Again, the U.S. and Tennessee both demonstrated gains
3.3. Long-Term Retrospective and Prospective Outlook for Tennessee, continued

from 2000 to 2009, but Tennessee’s standing relative to the nation is largely unaltered. Together, Tennessee’s standing in comparison to the U.S. remains virtually unaltered meaning the state’s relative attractiveness in terms of workforce quality is largely the same today as a decade ago. This points to the need to continue to push for further advancements in the years ahead.

Formal education is an important component of a quality workforce. A few decades ago, educational attainment was not as much of an issue for the state because competition was largely localized within the southeast region where education levels of workers were largely similar. Today, however, workers in the U.S. and Tennessee not only compete with surrounding regions, but against workers across the world. Promoting stronger growth within Tennessee requires not only further financial investments in education but also ensuring those investments translate into improved educational outcomes and improved success in the labor market.

Jobs and the Unemployment Rate
Ongoing economic restructuring means the emergence of new products and services along with new jobs and occupations. But restructuring also means the demise of some economic activity and the elimination of some jobs. Many of the jobs (and occupations) in greatest demand today simply did not exist 10 years ago both in the U.S. and Tennessee.

Table 3.1 shows the historical and projected compound annual growth rates (CAGRs) for Tennessee’s broad nonfarm employment sectors. Overall growth in nonfarm jobs in

**Figure 3.1. Educational Attainment Rises for Tennessee and U.S.**

<table>
<thead>
<tr>
<th></th>
<th>2000</th>
<th>2009</th>
</tr>
</thead>
<tbody>
<tr>
<td>High school graduate or higher</td>
<td></td>
<td></td>
</tr>
<tr>
<td>TN</td>
<td>75.9</td>
<td>80.4</td>
</tr>
<tr>
<td>U.S.</td>
<td>83.1</td>
<td>85.3</td>
</tr>
<tr>
<td>Bachelor’s degree or higher</td>
<td></td>
<td></td>
</tr>
<tr>
<td>TN</td>
<td>19.6</td>
<td>24.4</td>
</tr>
<tr>
<td>U.S.</td>
<td>23.0</td>
<td>27.9</td>
</tr>
</tbody>
</table>

Source: U.S. Census Bureau.
3.3. Long-Term Retrospective and Prospective Outlook for Tennessee, continued

Tennessee was negative from 2000 to 2010, a rather remarkable phenomenon. But 2000 was a near-peak of the business cycle (with a recession in 2001), while 2010 was just one year past the trough of the Great Recession and a year of continued job setbacks for the state. Manufacturing fared the worst with job losses totaling 5.3 percent (CAGR). Education and health services, which were largely unscathed by the recession, showed growth of 2.9 percent (CAGR).

Overall nonfarm employment in Tennessee is expected to grow at 1.3 percent CAGR between 2010 and 2020. Sectors which are expected to grow the fastest are professional and business services (up 3.3 percent, CAGR), natural resources, mining and construction (1.9 percent, CAGR) and education and health services (up 1.8 percent, CAGR). Despite the strong growth in natural resources, mining and construction, employment levels in 2020 will nonetheless lag levels of employment in 2000. While manufacturing will see some near-term job gains, employment will return to its trend pattern of decline producing net contraction in employment between 2010 and 2020.

The changing industry structure is depicted in Figure 3.2 for 2000, 2010, and 2020. Education and health services will also grow from 14.3 percent of nonfarm jobs in 2010 to 15.1 percent of jobs in 2020, building on dramatic growth in the past decade. Health services will become particularly important with the aging of the population. Finance, information and business services also will experience a significant growing share of the job pie, as will leisure and hospitality services.

### Table 3.1. Tennessee Nonfarm Employment by Sector

<table>
<thead>
<tr>
<th>Sector</th>
<th>Level 2000</th>
<th>Level 2010</th>
<th>Level 2020</th>
<th>2000 to 2010</th>
<th>2010 to 2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Nonfarm</td>
<td>2,727.7</td>
<td>2,606.9</td>
<td>2,967.4</td>
<td>-0.45</td>
<td>1.30</td>
</tr>
<tr>
<td>Natural Resources, Mining &amp; Construction</td>
<td>130.9</td>
<td>102.4</td>
<td>123.5</td>
<td>-2.42</td>
<td>1.89</td>
</tr>
<tr>
<td>Manufacturing</td>
<td>493.0</td>
<td>304.1</td>
<td>294.3</td>
<td>-4.72</td>
<td>-0.33</td>
</tr>
<tr>
<td>Durable Goods</td>
<td>303.8</td>
<td>175.7</td>
<td>180.2</td>
<td>-5.33</td>
<td>0.25</td>
</tr>
<tr>
<td>Nondurable Goods</td>
<td>189.3</td>
<td>128.4</td>
<td>114.1</td>
<td>-3.80</td>
<td>-1.17</td>
</tr>
<tr>
<td>Trade, Transportation, Utilities</td>
<td>592.9</td>
<td>554.9</td>
<td>633.9</td>
<td>-0.66</td>
<td>1.34</td>
</tr>
<tr>
<td>Wholesale Trade</td>
<td>132.9</td>
<td>119.5</td>
<td>139.0</td>
<td>-1.05</td>
<td>1.52</td>
</tr>
<tr>
<td>Retail Trade</td>
<td>320.0</td>
<td>311.5</td>
<td>348.0</td>
<td>-0.27</td>
<td>1.11</td>
</tr>
<tr>
<td>Transportation &amp; Utilities</td>
<td>140.0</td>
<td>123.9</td>
<td>146.9</td>
<td>-1.22</td>
<td>1.72</td>
</tr>
<tr>
<td>Information</td>
<td>55.3</td>
<td>44.7</td>
<td>48.2</td>
<td>-2.10</td>
<td>0.75</td>
</tr>
<tr>
<td>Financial Activities</td>
<td>140.6</td>
<td>137.0</td>
<td>138.4</td>
<td>-0.26</td>
<td>0.10</td>
</tr>
<tr>
<td>Professional &amp; Business Services</td>
<td>304.0</td>
<td>299.6</td>
<td>415.8</td>
<td>-0.15</td>
<td>3.33</td>
</tr>
<tr>
<td>Education &amp; Health Services</td>
<td>281.6</td>
<td>373.8</td>
<td>447.9</td>
<td>2.87</td>
<td>1.83</td>
</tr>
<tr>
<td>Leisure &amp; Hospitality</td>
<td>235.7</td>
<td>259.0</td>
<td>304.5</td>
<td>0.95</td>
<td>1.63</td>
</tr>
<tr>
<td>Other Services</td>
<td>94.6</td>
<td>101.7</td>
<td>114.7</td>
<td>0.73</td>
<td>1.20</td>
</tr>
<tr>
<td>Government</td>
<td>399.0</td>
<td>429.6</td>
<td>446.3</td>
<td>0.74</td>
<td>0.38</td>
</tr>
<tr>
<td>Federal, Civilian</td>
<td>53.6</td>
<td>51.5</td>
<td>45.9</td>
<td>-0.40</td>
<td>-1.15</td>
</tr>
<tr>
<td>State &amp; Local</td>
<td>345.4</td>
<td>378.1</td>
<td>400.4</td>
<td>0.91</td>
<td>0.58</td>
</tr>
</tbody>
</table>

Note: employment level data is seasonally adjusted in thousands
*compound annual growth rate
Source: Bureau of Labor Statistics and CBER-UT.
3.3. Long-Term Retrospective and Prospective Outlook for Tennessee, continued

Manufacturing’s dominant role in supporting jobs in the Tennessee economy has steadily eroded since the 1960s. The Great Recession led to an expedited rate of job loss that will never be fully replaced. There will be some near-term gains as workers who were laid off are re-hired, but then manufacturing employment will start to contract again beginning in 2014. As depicted in Figure 3.2, manufacturing accounted for 18.1 percent of non-farm jobs in 2000. By 2010, the trend decline in employment coupled with recession-induced setbacks pushed manufacturing down to only 11.7 percent of jobs. In 2020, the manufacturing sector will comprise only 9.9 percent of the total distribution of nonfarm jobs.

Unemployment fluctuates counter-cyclically with the business cycle. In good times when GDP is advancing at a healthy pace, unemployment is low. As the business cycle bottoms out, the unemployment rate climbs to high levels. In 2000, just before the onset of the 2001 recession, the state unemployment rate was only 4.0 percent; in 2007, unemployment in the U.S. and Tennessee was under 5 percent. Following the start of the recession in December 2007, unemployment increased to great heights. In 2010, Tennessee’s unemployment rate averaged nearly 10 percent which was higher than the national rate of 9.6 percent. Looking forward, the annual unemployment rate in both the U.S. and Tennessee will continue to slowly decline but remain elevated through the decade (see Figure 3.3.)

There are several reasons why unemployment rates will remain relatively high. First, there are a growing number of displaced workers who have been unemployed for a long period of time. These individuals will find it increasingly difficult to match their eroding skill levels with the skill requirements of businesses. Second, many baby boomers have delayed retirement due to the wealth shocks they incurred because of the recession. By holding on to their jobs, new entrants to the labor market will find it difficult to secure

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Figure 3.2. Distribution of Nonfarm Jobs in Tennessee Continues to Evolve

<table>
<thead>
<tr>
<th>Year</th>
<th>Nat Res, Mining, Const</th>
<th>Govt</th>
<th>Mfg</th>
<th>Trade, Trans, Util</th>
<th>Fin, Info, Bus Srvs</th>
<th>Educ, Health</th>
<th>Leisure, Hosp</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000</td>
<td>4.6%</td>
<td>14.6%</td>
<td>18.1%</td>
<td>21.7%</td>
<td>18.3%</td>
<td>10.3%</td>
<td>8.6%</td>
</tr>
<tr>
<td>2010</td>
<td>3.9%</td>
<td>15.7%</td>
<td>11.7%</td>
<td>21.3%</td>
<td>18.5%</td>
<td>15.1%</td>
<td>10.3%</td>
</tr>
<tr>
<td>2020</td>
<td>4.2%</td>
<td>15.0%</td>
<td>9.9%</td>
<td>21.4%</td>
<td>20.3%</td>
<td>15.1%</td>
<td>10.3%</td>
</tr>
</tbody>
</table>

Source: Bureau of Labor Statistics and CBER-UT.
3.3. Long-Term Retrospective and Prospective Outlook for Tennessee, continued

Output, Personal Income and Prices

Over the next 10 years, inflation-adjusted state GDP is projected to grow at a 2.8 percent compound annual growth rate, slightly below the rate of growth of output for the nation. Tennessee’s projected rate of growth is well above the historical record between 2000 and 2010, a time frame that includes two recessions. Exceptionally strong growth is expected in manufacturing, though this is largely due to durable goods and the computer and electronics sector. This same sector enjoyed unprecedented compound annual output growth of 36.5 percent between 2000 and 2010 while at the same time shedding almost two-thirds of 2000 employment.

Transportation equipment will also see healthy growth reflecting a rebound from the recession and new in-state producers like Volkswagen. Despite employment losses, the state’s manufacturing sector will account for a rising share of state GDP by 2020 reflecting strong gains in productivity.

Nominal personal income will grow at a 4.9 percent compound annual growth rate by 2020, well above the historical record from 2000 to 2010. Part of the explanation is lower rates of inflation in the years ahead relative to the decade of the 2000s. Inflation-adjusted personal income in Tennessee will be up 3.0 percent between 2010 and 2020. Transfer payments will be the most rapidly-growing component of personal income, followed by proprietors’ income (5.3 percent) and other labor income (4.7 percent).

Nominal per capita income in Tennessee stood at $35,541 in 2010 while national per capita income was $40,353. Tennessee
3.3. Long-Term Retrospective and Prospective Outlook for Tennessee, continued

Per capita income fell as a share of the national average between 2003 and 2008 before recovering some over the course of the recession. Further improvement is expected through 2012 when the state’s relative position vis a vis the nation is expected to stabilize. By 2020, per capita income in Tennessee will total $53,217 or 89.5 percent of the national average.

Over the long run, inflation is a largely a monetary policy phenomenon. The baseline forecast presented here assumes that the Fed will be effective in reining in future inflation. The Consumer Price Index, the most-commonly used gauge of inflation, is expected to increase by only 1.7 percent in 2011. Consumer prices are then expected to hover in the 2 percent range for the remainder of the decade.

Some products can have an influential effect on inflation by virtue of their importance to the overall economy. Included are commodity prices in general and energy prices in particular. As shown in Figure 3.4, petroleum prices rose steadily in the first half of the decade of the 2000s before spiking during the onset of the recession; oil prices then tumbled before rebounding in 2009. With worldwide demand steadily increasing, prices will continue to trend upward. Scarcity tends to bid up the price of energy encouraging the pursuit of energy-saving technologies and new energy sources. But these are long-term responses—expect energy prices to climb steadily over the course of the decade.

Tennessee’s Aging Population

The aging baby boom generation is creating dramatic demographic change in the U.S. and Tennessee. In 2000, about one out every eight Tennesseans was 65 years or older.

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Figure 3.4. Average Price of West Texas Intermediate Crude Expected to Climb

Source: IHS Global Insight, Inc.
3.3. Long-Term Retrospective and Prospective Outlook for Tennessee, continued

By 2020, CBER estimates that about one of every six Tennesseans will be 65 years or older (see Figure 3.5). This older age profile will have many economic, social and political consequences for the coming years. Notably it will create increased burdens on the health care delivery system and translate into a smaller labor force. The current recession adds additional uncertainty, however, as it comes at a critical time just before retirement for many baby boomers. Many of these individuals will have delayed their retirement, but ultimately they will retire and withdraw from the workforce. The recent changes in the labor, housing and financial markets will likely have permanent impacts on many baby boomers well into their retirement years.

The increasing life span of Americans will mean more healthy years for most adults rather than unhealthy years, but the aging process will ultimately place pressures on Medicare (health care for the aged) and Medicaid (health care for the poor). The longer life span will also have important implications for Social Security since it means a longer benefit-payout period. It is likely that retirement ages will be increased to diminish the pressures on the Social Security Trust Fund.

Most elderly prefer to live in their own home...
as long as possible. This is called “aging in place.” Compared to the rest of the nation, this will create somewhat unique problems for Tennessee, since many of the elderly here live in rural areas. In fact there are many rural regions across the state that have become highly attractive locations for retirees. Unfortunately, most are not in immediate proximity to large health care service clusters. In addition, many of the homes that the elderly reside in are older and are often energy inefficient, in poor condition and costly to maintain. This will exacerbate the health and economic problems of older persons in Tennessee. It may make sense to actively encourage these persons to take advantage of federally-funded initiatives promoting energy efficiency and home modification.

It is usually assumed in public discourse that persons retire at age 65 or 66, if not sooner. This is no longer true. The fraction of persons aged 65 to 75 who are employed has risen steadily since the 1990s (Figure 3.6), so that now 24 percent of all Americans in this age group are employed. The rising employment of older persons will present both opportunities and challenges for the American labor force in coming decades. First, labor forecasts based on the dependency ratio—the ratio of the number of persons ages 65 and older divided by the number in the 16 to 64 age group—will exaggerate the true number of those who have exited the labor force. The rising number of older workers will partially dampen previously expected labor shortages. This rising number of older workers will

![Figure 3.6. Employment Rate of the Aged Has Steadily Grown](image)

3.3. Long-Term Retrospective and Prospective Outlook for Tennessee, continued

present challenges as well. Labor contracts may need to be readjusted in order to accommodate part-time work for older persons. Also, older workers are often paid more than their younger workers, even if productivity declines. At times, employers may feel the urgency to keep these workers as the general supply of labor declines. During downturns in the business cycle, however, older workers may be among the first to lose their job, and unemployment may affect older workers more severely in the future. Finally, it is unknown why the employment rate of older workers is rising in the first place. One simple explanation is that the relative health status of the aged has improved and longevity has increased giving rise to more healthy years of potential work. Alternatively, if the increase is a response to increasing need, then this suggests that there are yet unidentified social and economic problems for elderly persons.

It is still difficult to assess the impact of the Great Recession on those who will retire in the near future. The recession dealt a blow to wealth through declines in both house prices and financial markets. Better data will be available next year when the triennial Survey of Consumer Finances is released by the Federal Reserve Board, but preliminary estimates of the relationship between the recession and baby boomers have been prepared by the Center for Economic and Policy Research. According to that study, baby boomers have seen their wealth drop by 45 to 50 percent between 2004 and 2009. Much of this is due to the decline in the housing market. The drop in house prices has impacted baby boomers at all income levels. About one in five may have less than 6 percent equity in their homes; i.e., they would need to bring cash to close on a house sale today, compared to one in ten who would have had to do so in 2004. While housing prices are no longer in free fall, they are not yet rising, and will probably not rise to pre-recessionary levels any time soon. Baby boomers may find themselves financially unprepared for retirement. In addition, many baby boomers are approaching retirement with little wealth outside of Social Security. Proposals to scale back Social Security and Medicare are unrealistic, and if successful, will guarantee that many baby boomers experience recession-related hardships into their retirement years, and any general economic recovery will probably skip over many retiring baby boomers.