A Profile of the Automobile Industry in Tennessee

Prepared for

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Department of Economic and Community Development

by

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Introduction

The early history of the automobile industry, as told by Robert Paul Thomas, is divided into four eras, beginning with the pre-1900 era of invention. Innovation was the main focus during this era. Henry Ford, for instance, used a section of pipe to make his first cylinder. By the 1900s, the U.S. had the capability to manufacture parts that would work on an automobile but this was very experimental and expensive. Firms began locating near manufacturers of the parts needed, and the "horseless carriage" was transformed into a car.

During the era of product development (1900-1908) and the era of rapid expansion (1908-1918), Americans began manufacturing cars after the French design – modern features at a low price. Henry Ford produced the Model T with just that combination. As time progressed, the focus shifted from innovation to process development, i.e. the mass production by assembly line that contributed to the Model T's success. Modern tools were developed and productivity was soon on the rise. Technology played a significant role in the era of replacement demand (1918-1929). Employment in plants fell by 43,628 from 1923 to 1925, but employment in manufacturing the parts for automobiles grew by 64,628.[1] Locating near firms equipped with technology made it affordable to manufacture more cars. The novelty of the car wore off by the end of the 1920s and firms began releasing new models with new, more modern features. This created a used car market as the wealthier purchased the newer versions of the automobile and sold the older versions.

The automobile soon became an American icon and automobile manufacturing became an important and lucrative piece of the economy. The industry was initially concentrated in the upper Midwest and eastern regions of the U.S. Transplants from other countries and branch and re-locating plants eventually made their impact in other regions, including the southeast. Tennessee recognized this pattern of development and has recruited three major automobile plants since the 1980s – Nissan, Saturn (GM), and, most recently, Volkswagen. Because the three automakers are housed in Tennessee, firms that produce parts are located all over Tennessee to aid in the production process.[2] Automobile assembly and parts manufacture, as well as overall transportation equipment production, has become a primary industry in Tennessee reshaping the state's economic linkages to other states and the global economy.

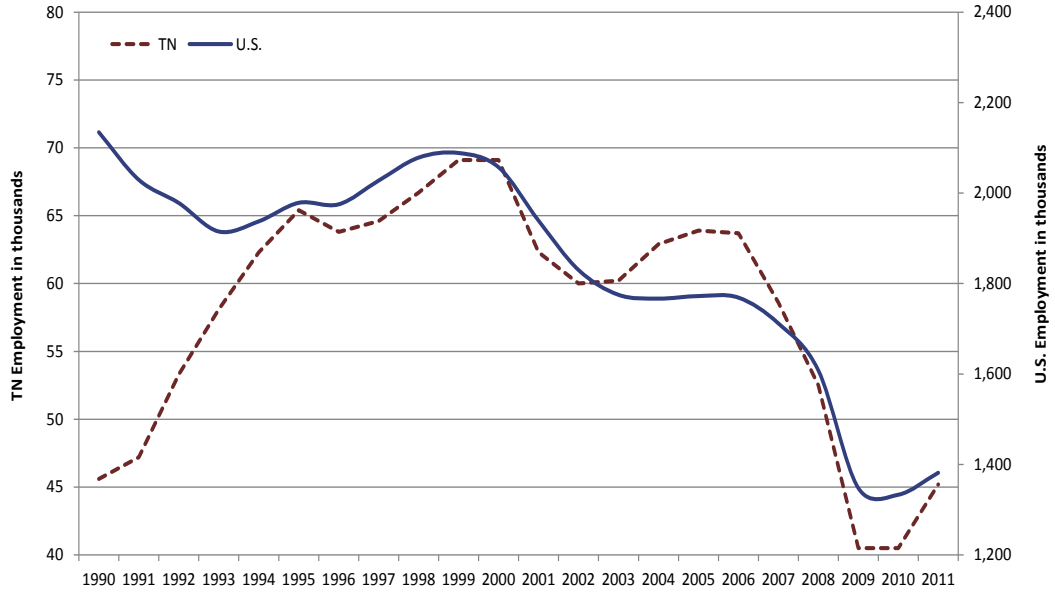
This brief report provides a data-driven analysis of trends in the automobile industry in Tennessee. Historical data are presented along with comparisons to the nation and other states to put the Tennessee situation in context. This report is one of several studies that have been developed by the Center for Business and Economic Research focused on the automobile industry in Tennessee.

1Langlois, Richard N. and Paul L. Robertston. "Explaining Vertical Integration: Lessons from the American Automobile Industry." (June 1989). The Journal of Economic History. Vol 49, no. 2.
2 Murray, Matthew N., and Paula Dowell. "Examining Supply Gaps and Surpluses in the Automototive Cluster in Tennessee." (May 2009). http://cber.bus.utk.edu/pubs/mnm080.pdf.

Employment[3]

Transportation equipment employment history since the 1990s is shown in Figure 1. Employment levels in the U.S. and in Tennessee show similar trends from 1995 forward. The early 1990s reflect Tennessee's surge in employment, due to two Nissan plants (Smyrna production beginning in 1983 and Decherd assembly plant production beginning in 1997) and the Saturn plant (Spring Hill production beginning 1990). The two most recent recessions took a toll on this sector in Tennessee and across the nation. Notable is the fact that national employment has continued to trend down since the late 1990s while Tennessee has enjoyed a bit of resurgence following the 2001 recession. The most current years, 2010 and 2011, show the sector starting to grow again, but levels are far below the 1999 peak. National levels of employment in 2011 were at 66.2 percent of peak and Tennessee at 65.4 percent of peak.

Figure 1. Transportation Equipment Manufacturing Employment Levels Rising but Below Peak

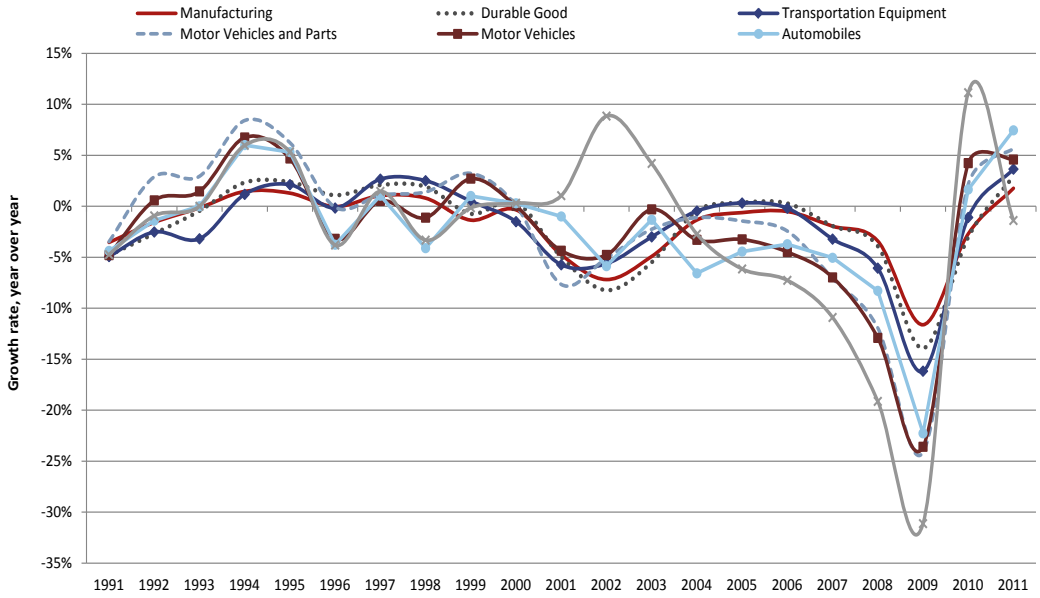


Source: U.S. Bureau of Labor Statistics

Figure 2 shows industry detail for the overall U.S. manufacturing industry along with durable goods and key transportation-related sub-sectors. Automobiles and light trucks and utility vehicles followed trend together until 2001. Growth in light trucks and utility vehicles was not affected by the recession of 2001 like automobiles were. The Great Recession had a considerably bigger impact on light trucks and utility vehicles, a 31.1 percent decline in 2009 alone. The sub-sector grew 11.1 percent during the recovery in 2010, growing more quickly than the other manufacturing sub-sectors, but saw declines again in 2011. Employment in 2011 sat at levels near 46 percent of their peak in 2003. Motor vehicles and parts grew more quickly than the other sub-sectors in the early 1990s but showed more mid-range growth through the 2000s. The 2001 recession had a serious impact on motor vehicle and parts employment, followed by declines every year until 2011.

3 Employment is in privately owned establishments covered by unemployment insurance for all cases with the exception of nonfarm employment.

Figure 2. U.S. Manufacturing Employment Sub-sectors Show High Response to Recessions



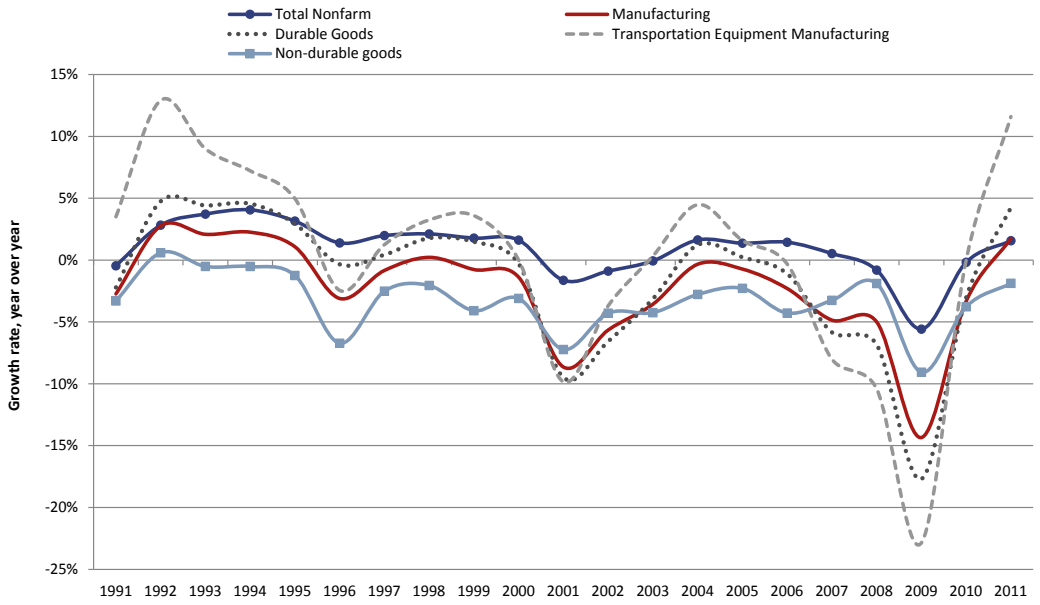
Source: U.S. Bureau of Labor Statistics

Data on Tennessee are not as detailed as the nation, but the available data does show employment following the same trend as the nation. Tennessee's total nonfarm employment grew from 1991 to 2000, as seen in Figure 3. The 2001 recession, however, caused employment to decline for two years before it began growing again. Growth stayed steady and modest through 2007. The Great Recession caused the biggest dip in modern history, a 5.6 percent decline in 2009. While Tennessee saw growth move into the black by 2011, employment levels had not returned to 2007 peak levels.

The overall manufacturing sector has experienced a similar trend but has shown a more elastic response to business cycle conditions. This sector has been falling since its peak in the late 1990s. Employment in 2011 evidenced small growth but was well below the peak employment level. Non-durable goods employment was more elastic than total nonfarm, manufacturing, and durable goods employment during the 1990s and continued to fall from 1992. Non-durable goods employment fell faster than the other sectors shown in Figure 3 during the 1990s but experienced less rapid declines in comparison to the 2000s. Durable goods employment experienced growth through most of the 1990s but fell during the 2001 recession. This sector saw steeper declines than most sectors but a faster recovery than the others. While durable goods experienced a big shift in employment growth, from a steep decline of 17.7 percent to 4.3 percent growth, the levels are roughly 60 percent of peak.

Transportation equipment manufacturing employment is the most cyclically-sensitive of the sectors included evidenced by the sharp growth and declines in response to overall economic trends. The peak years were in 1999 and 2000 and the Great Recession devastated employment levels to pre-1990 levels. Data for 2011 shows improvement with 11.6 percent growth yielding employment levels comparable to 1990.

Figure 3. Tennessee Employment Shows Rebound in 2011 but Levels Remain Depressed



Source: U.S. Bureau of Labor Statistics

Monthly data for employment in Tennessee's transportation equipment sector are shown in Figure 4. Tennessee has seen 30 months of year-over-year growth. After a rapid decline during the Great Recession, October 2012 employment was back to levels experienced in 2008 and is at 82.7 percent of the 2004 peak. (See Appendix Table 1 for data on employment levels.)

Figure 4. Employment in Tennessee's Transportation Equipment Sector has Grown for Over 2 Years

Source: U.S. Bureau of Labor Statistics

Table 1 presents data on employment in Tennessee's transportation equipment sub-sectors as shares of the employment in national sub-sectors. (See Appendix Table 2 for detail on Tennessee employment levels.) Motor vehicle parts manufacturing employment has grown both as a share of total industry employment (Table 2) and as a share of the U.S. over the 10 year time span that is displayed (Table 1). Overall automobile manufacturing shows the largest share of its national counterpart, reflecting the influence of Nissan, Saturn (GM), and Volkswagen (with production beginning in 2011). Motor vehicle body and trailer manufacturing employment showed higher percentages of the nation during 2001-2003 but have declined rapidly since then. However, in 2011, employment jumped back to 2.9 percent of the national level of employment.

Table 1. Tennessee Employment in Transportation Equipment Growing Again as a Share of U.S. Employment

Transportation equipment manufacturing industry	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Motor vehicle manufacturing	5.0%	ND	ND	6.0%	6.0%	6.3%	ND	ND	5.8%	5.0%	5.4%
Automobile and light truck manufacturing	ND	ND	ND	ND	ND	ND	ND	ND	6.9%	ND	6.4%
Automobile manufacturing	ND	ND	ND	9.7%	ND	ND	ND	ND	ND	8.2%	8.6%
Light truck and utility vehicle manufacturing	ND	ND	ND	ND	ND	ND	ND	0.0%	ND	ND	0.0%
Heavy duty truck manufacturing	ND	ND	ND	ND	ND	ND	ND	ND	0.4%	ND	0.1%
Motor vehicle body and trailer manufacturing	3.2%	2.9%	2.7%	1.5%	1.5%	1.4%	1.4%	1.4%	1.4%	0.8%	2.9%
Motor vehicle parts manufacturing	4.5%	4.6%	4.8%	5.3%	5.6%	5.6%	6.1%	6.0%	6.2%	6.5%	6.4%
Aerospace product and parts manufacturing	0.7%	0.7%	0.6%	0.6%	0.6%	0.6%	0.4%	0.4%	0.3%	0.3%	0.3%
Railroad rolling stock manufacturing	0.0%	0.0%	ND	0.1%	0.1%	0.1%	ND	ND	0.1%	ND	ND
Ship and boat building	2.9%	3.0%	3.2%	3.3%	3.5%	3.5%	3.3%	2.8%	2.0%	2.2%	2.3%
Other transportation equipment manufacturing	1.1%	ND	1.3%	1.4%	1.3%	1.2%	0.6%	0.6%	0.5%	ND	ND
Transportation equipment manufacturing	3.2%	3.3%	3.4%	3.5%	3.6%	3.6%	3.5%	3.3%	3.0%	3.0%	3.3%

ND- Not Disclosable
Source: U.S. Bureau of Labor Statistics

Table 2 shows Tennessee employment in transportation equipment sub-sectors as a share of overall transportation equipment employment in the state. Motor vehicle body and trailer manufacturing employment as a share of total transportation equipment employment in 2011 was 7.3 percent – nearly the same percentage as 2002. Motor vehicle parts manufacturing contributes over half of the state's employment in the industry. Companies such as DENSO (an automotive supplier of technology, systems, and components[4] with two locations in east Tennessee) are major contributors to this sub-sector. Motor vehicle manufacturing employment is second as a share of the total transportation equipment manufacturing sector.

Table 2. Employment in Motor Vehicle Parts Manufacturing is over One-Half of Total Tennessee Transportation Equipment Employment

Transportation equipment manufacturing industry	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Motor vehicle manufacturing	22.5%	ND	ND	24.6%	23.5%	24.1%	ND	ND	22.5%	19.3%	19.1%
Automobile and light truck manufacturing	ND	ND	ND	ND	ND	ND	ND	ND	22.3%	ND	19.0%
Automobile manufacturing	ND	ND	ND	22.8%	ND	ND	ND	ND	ND	19.2%	19.0%
Light truck and utility vehicle manufacturing	ND	ND	ND	ND	ND	ND	ND	0.0%	ND	ND	0.0%
Heavy duty truck manufacturing	ND	ND	ND	ND	ND	ND	ND	ND	0.2%	ND	0.1%
Motor vehicle body and trailer manufacturing	8.2%	7.5%	6.9%	3.9%	3.9%	3.9%	3.9%	3.8%	3.5%	2.1%	7.3%
Motor vehicle parts manufacturing	56.0%	55.7%	56.3%	58.6%	59.0%	58.1%	62.1%	62.0%	63.0%	67.4%	63.5%
Aerospace product and parts manufacturing	5.8%	5.0%	4.4%	4.2%	4.4%	4.4%	3.6%	3.5%	4.1%	3.9%	3.5%
Railroad rolling stock manufacturing	0.0%	0.0%	ND	0.0%	0.0%	0.1%	ND	ND	0.0%	ND	ND
Ship and boat building	6.7%	7.1%	7.6%	7.9%	8.3%	8.7%	8.8%	8.2%	6.3%	6.7%	6.1%
Other transportation equipment manufacturing	0.7%	ND	0.8%	0.8%	0.8%	0.7%	0.4%	0.5%	0.5%	ND	ND
Transportation equipment manufacturing	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

ND- Not Disclosable
Source: U.S. Bureau of Labor Statistics

4 http://www.densocorp-na.com/about_us

Employment in transportation equipment manufacturing differs greatly by county in Tennessee, both in levels and as a share of nonfarm employment. Table 3 shows the top 10 Tennessee counties ranked by 2011 transportation equipment employment levels. Employment in 2011 reveals a significant rebound from the devastating Great Recession but most counties are not back to peak levels. Rutherford County, ranking first, employs the most in the transportation equipment industry in the state. This does not come as a surprise as Rutherford County is home to the Nissan production plant in Smyrna, Tennessee. Hamilton County, ranking 3rd, is home to Volkswagen. The 2010 employment nearly tripled from the level of 2009 and 2011 showed an increase of 85 percent over 2010. Three of the five Knoxville metropolitan statistical area (MSA) counties are in the top 10: Blount, Anderson, and Knox. Monroe and McMinn Counties are just south of the Knoxville MSA, establishing east Tennessee as home to over half of the top 10 counties.

Table 3. Transportation Equipment Manufacturing Employment Concentrated in Middle and East Tennessee

County	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2011 Rank in TN	Share of private covered employment
Rutherford	7,832	8,478	9,527	10,226	10,361	11,095	10,692	9,814	8,250	7,569	9,918	1	0.5%
Blount	3,531	3,506	3,618	2,961	3,178	3,323	3,417	3,385	3,054	2,749	2,801	2	8.3%
Hamilton	792	848	725	671	716	737	747	630	523	1,417	2,624	3	1.7%
Monroe	1,962	1,859	2,130	2,269	2,871	2,865	2,938	2,264	1,548	1,757	2,114	4	20.8%
Hamblen	2,596	2,389	2,341	2,553	2,743	2,784	2,732	2,339	1,740	1,853	2,092	5	8.3%
Anderson	1,644	1,477	1,431	1,430	1,516	1,500	1,509	1,355	1,056	1,278	1,609	6	4.7%
Knox	3,264	3,140	3,343	3,489	3,491	3,548	3,206	2,506	1,587	1,656	1,453	7	0.8%
McMinn	ND	ND	ND	ND	ND	1,637	2,129	1,751	1,439	1,434	1,445	8	10.8%
Coffee	1,276	1,124	1,201	1,294	1,468	1,415	1,327	1,278	1,091	1,081	1,171	9	6.1%
Davidson	3,842	2,882	2,236	2,812	3,283	3,256	2,483	1,683	1,255	1,182	1,148	10	0.3%

ND- Not Disclosable
Source: U.S. Bureau of Labor Statistics

Table 4 shows the top 10 Tennessee counties ranked by the 2011 share of total private employment per county. The recession is evident in this table and 2011 shows Tennessee counties in recovery. Monroe County has the largest transportation equipment employment as a share of total private employment (20.8 percent). Rutherford County is second in the ranking with 12.2 percent of its employment in transportation equipment.

Table 4. Monroe County Holds the Top Spot for Transportation Equipment Employment as Share of Total County Employment

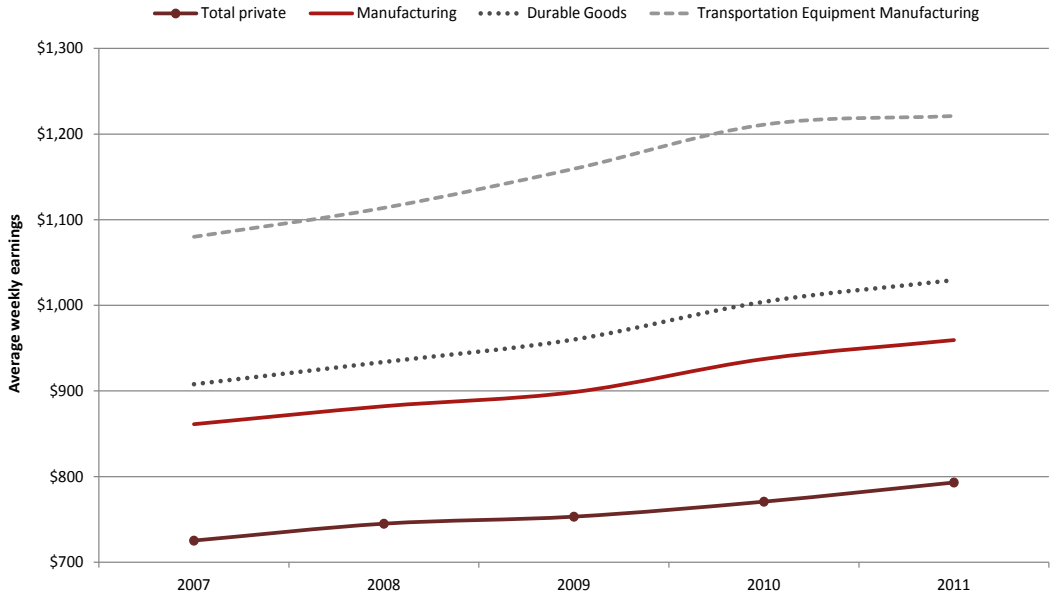
County	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2011 Rank in TN
Monroe	19.0%	19.0%	20.8%	20.4%	23.6%	22.7%	24.3%	20.5%	16.0%	17.7%	20.8%	1
Rutherford	11.7%	12.1%	13.1%	12.9%	12.4%	12.9%	12.4%	11.4%	10.4%	9.6%	12.2%	2
White	11.2%	11.0%	8.3%	7.5%	7.6%	6.7%	6.9%	7.0%	9.6%	11.2%	11.4%	3
McMinn	ND	ND	ND	ND	ND	10.2%	13.6%	11.8%	10.9%	11.0%	10.8%	4
Smith	ND	ND	ND	ND	10.3%	ND	9.4%	9.6%	7.9%	7.6%	8.4%	5
Blount	11.3%	10.9%	10.8%	8.7%	9.2%	9.2%	9.3%	9.3%	9.3%	8.6%	8.3%	6
Hamblen	8.7%	8.1%	7.8%	8.3%	8.8%	9.1%	9.5%	8.4%	6.9%	7.4%	8.3%	7
Dickson	ND	8.7%	8.5%	7.7%	7.1%	7.0%	7.3%	6.0%	3.6%	5.2%	7.1%	8
Coffee	6.4%	5.4%	5.6%	5.9%	6.7%	6.6%	6.3%	6.2%	5.8%	5.7%	6.1%	9
Dyer	ND	ND	ND	ND	ND	3.9%	4.2%	4.1%	3.7%	4.0%	5.4%	10

ND- Not Disclosable
Source: U.S. Bureau of Labor Statistics

Wages

Tennessee's transportation equipment sector generally pays very well compared to other sectors of the state economy. At the national level, total private average weekly earnings continued to grow through the Great Recession, but slowly, as shown in Figure 5. Overall manufacturing tells the same story with average weekly earnings coming in higher than earnings across the private sector. Earnings in durable goods were higher still at $1,029 per week in 2011. Average weekly earnings in transportation equipment manufacturing were the highest of those shown in Figure 5, at $1,211 in 2011.

Figure 5. U.S. Average Weekly Earnings Grew Through Recession but Slowly

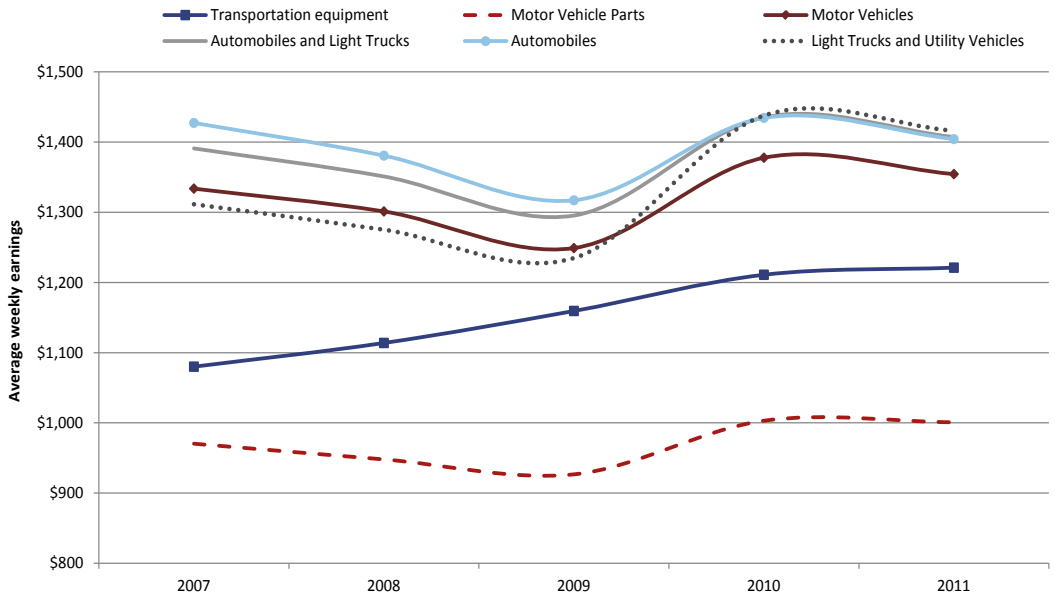


Source: U.S. Bureau of Labor Statistics

The components of the transportation equipment manufacturing sector, however, were more affected by the recession. The pieces show a dip during the recession, as seen in Figure 6. The automobile sub-sector experiences the largest decline during the recession, $110.21 less per week in 2009 than in 2007. The 2010 weekly earnings in all sectors shown were back at their pre-recession peaks. All but the total transportation equipment manufacturing sector showed declines again in 2011.[5]

5 Non-automobile sub-sectors (aerospace products and parts, ship and boat building, and railroad rolling stock and other transportation equipment) did not experience the affects of the Great Recession like the other sub-sectors, explaining why the transportation equipment weekly earnings did not drop during the recession.

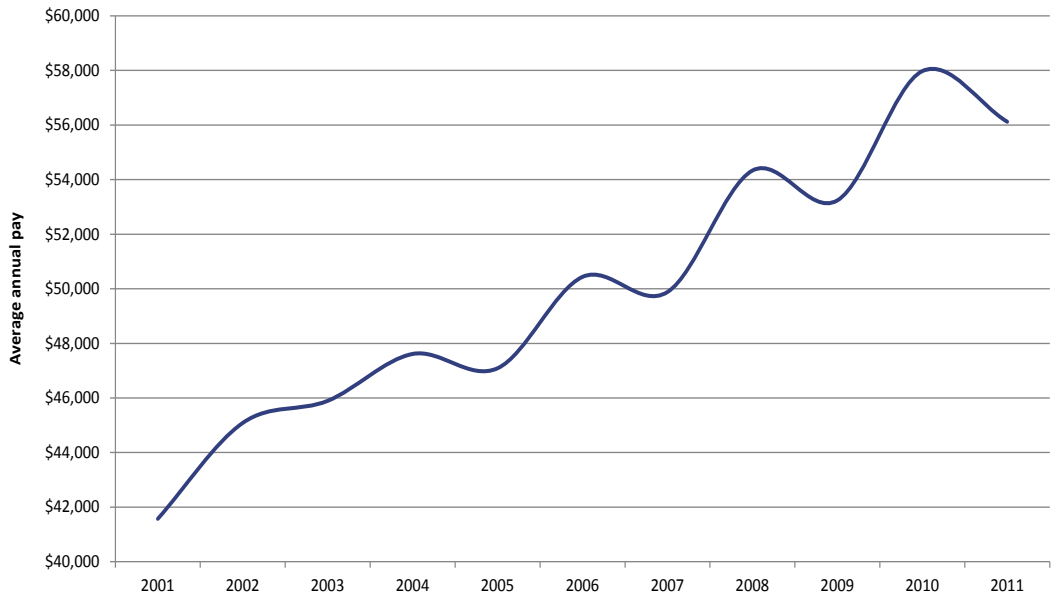
Figure 6. U.S. Transportation Equipment Manufacturing Sub-sectors Show Affects of Recession in Average Weekly Earnings



Source: U.S. Bureau of Labor Statistics

Earnings in Tennessee's transportation equipment industry were significantly affected by the Great Recession as shown in Figure 7. The stair steps of the figure get more pronounced over time and include minor declines instead of plateaus until the impacts of the most recent recession are felt. Pay in 2011 was one step down with annual average wages at $56,118, down from $57,972 in 2010.

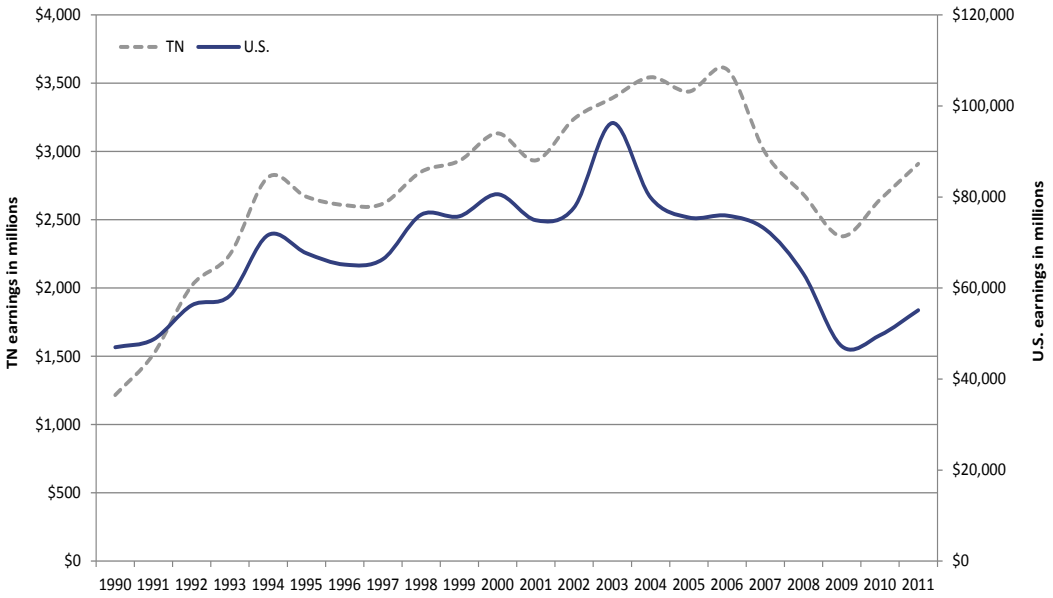
Figure 7: Average Annual Pay in Tennessee's Transportation Equipment Sector Has Risen $14,549 Since 2001



Source: U.S. Bureau of Labor Statistics

Motor vehicles, bodies and trailers, and parts manufacturing, a sub-sector of transportation equipment manufacturing, saw annual earnings display a different pattern over time. The pattern in the U.S. and in Tennessee, as seen in Figure 8, shows a pronounced response to the recession that began in 2007. During the recession, Tennessee experienced aggregate earnings levels similar to 1993 while the U.S. was back to 1990 levels. Data for 2010 and 2011 show both Tennessee and the nation still in recovery - Tennessee back to 2007 levels and the U.S. back to 1992 levels. Of the states that disclosed 2011 earnings (22 states), Tennessee ranked nineteenth in total earnings.

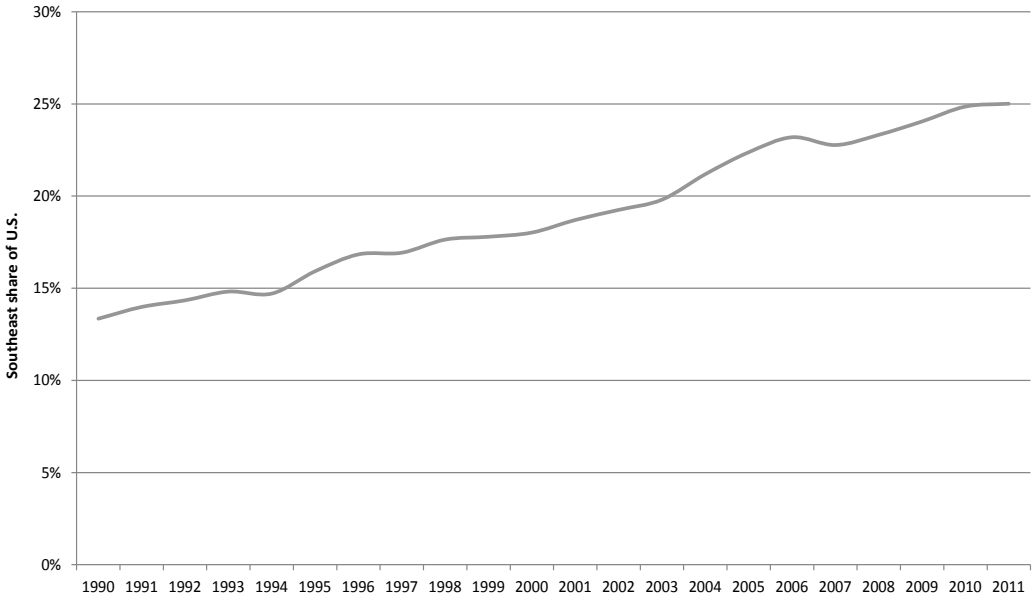
Figure 8. Tennessee and the U.S. Motor Vehicles, Bodies and Trailers, and Parts Aggregate Annual Earnings Hurt by Recession



Source: Bureau of Economic Analysis
Note: Years 2002, 2003, 2007, and 2008 are not disclosed in Tennessee and are averages for pre-and post-years.

Total annual earnings for motor vehicles, bodies and trailers, and parts manufacturing in the southeastern states (Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, South Carolina, Tennessee, Virginia, and West Virginia) as a share of the nation have grown steadily since 1990, as seen in Figure 9. Total annual earnings in the southeast began at 13.3 percent of total industry earnings for the nation in 1990 and rose to 25.0 percent of the nation in 2011. Nineteen of the 21 years showed increases. In 2011, Tennessee had the greatest share of earnings in the southeast at 5.3 percent of the U.S., followed closely by Kentucky at 4.9 percent of the U.S. (For additional detail see Appendix Table 3.)

Figure 9. Total Earnings in Motor Vehicles, Bodies and Trailers, and Parts Manufacturing in the Southeast as Share of U.S. Experienced Growth in 19 of 21 Years

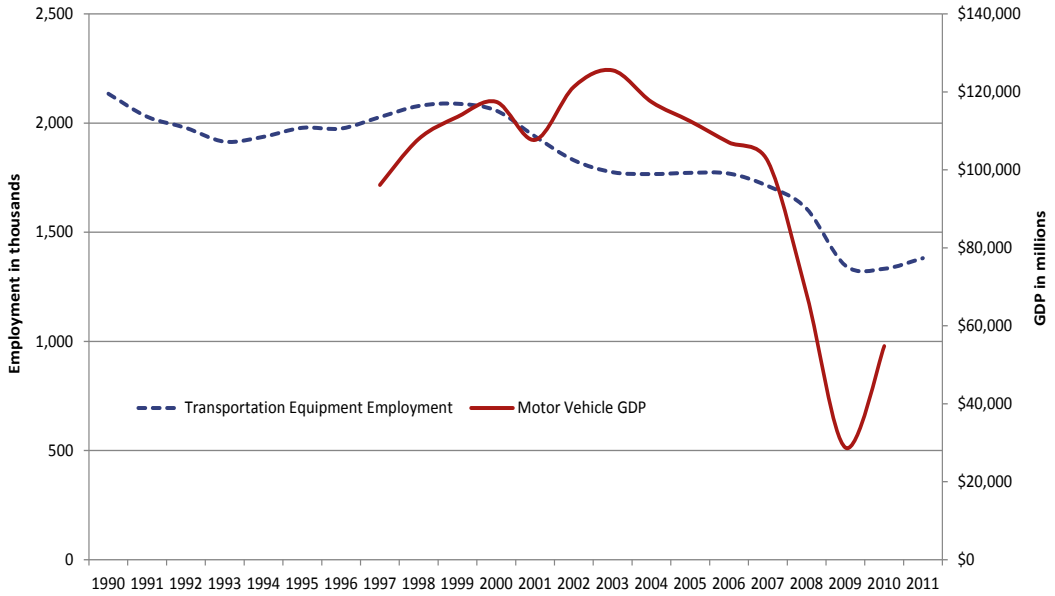


Source: Bureau of Economic Analysis

Production

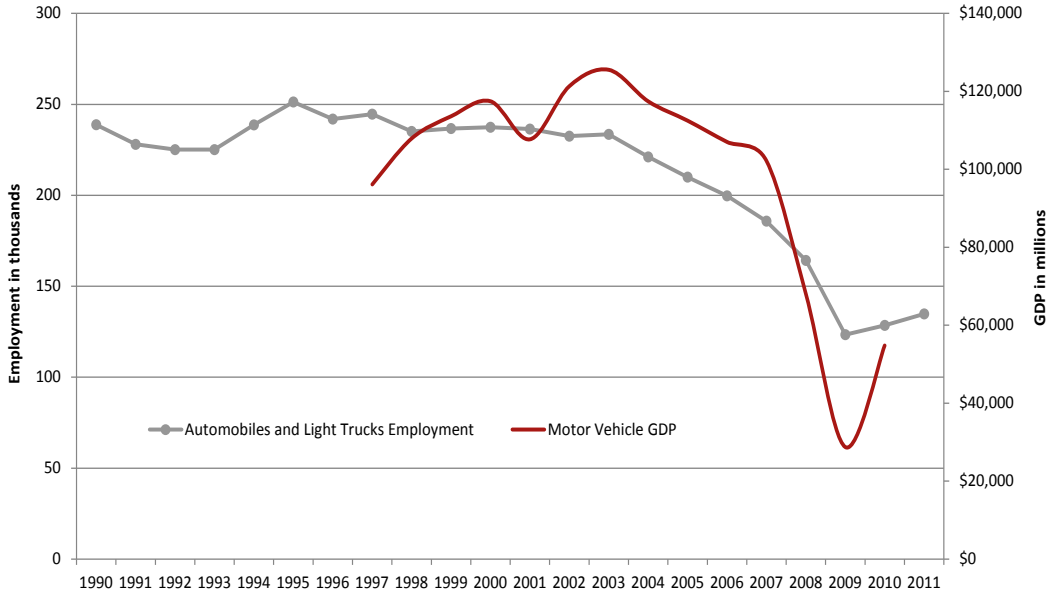
Figure 10 displays the nation's motor vehicle, body, trailer, and parts manufacturing gross domestic product (GDP) along with transportation equipment employment data. National production levels fell $96,753 million from the 2003 peak to the 2009 trough but nearly doubled 2009 levels in 2010. The late 1990s and early 2000s showed growth in GDP while employment was on the decline. Output per worker was growing, due to new technologies and production processes. Automobile and light truck employment show a similar pattern but a smaller time span of output per worker growth (see Figure 11).

Figure 10. U.S. Transportation Equipment Employment and Motor Vehicle, Body, Trailer and Parts Production Have Declined Since 2003



Source: U.S. Bureau of Labor Statistics and Bureau of Economic Analysis

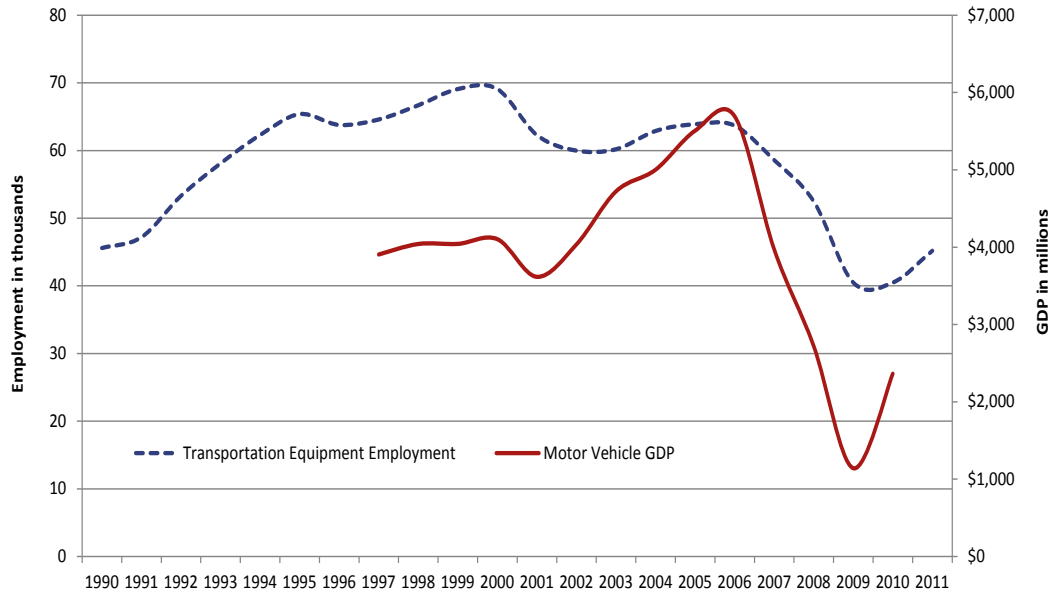
Figure 11. U.S. Automobile and Light Truck Manufacturing Employment and Motor Vehicle, Body, Trailer and Parts Production Close the Last Decade with Sharp Declines



Source: U.S. Bureau of Labor Statistics and Bureau of Economic Analysis

Tennessee transportation equipment employment and motor vehicle, body, trailer, and parts manufacturing GDP exhibit a pattern that is similar to the nation (see Figure 12). The early 2000s show a period when employment was on the decline and GDP was growing, implying that output per worker was increasing. From 2003 to 2011, employment and GDP followed the same downward trend.

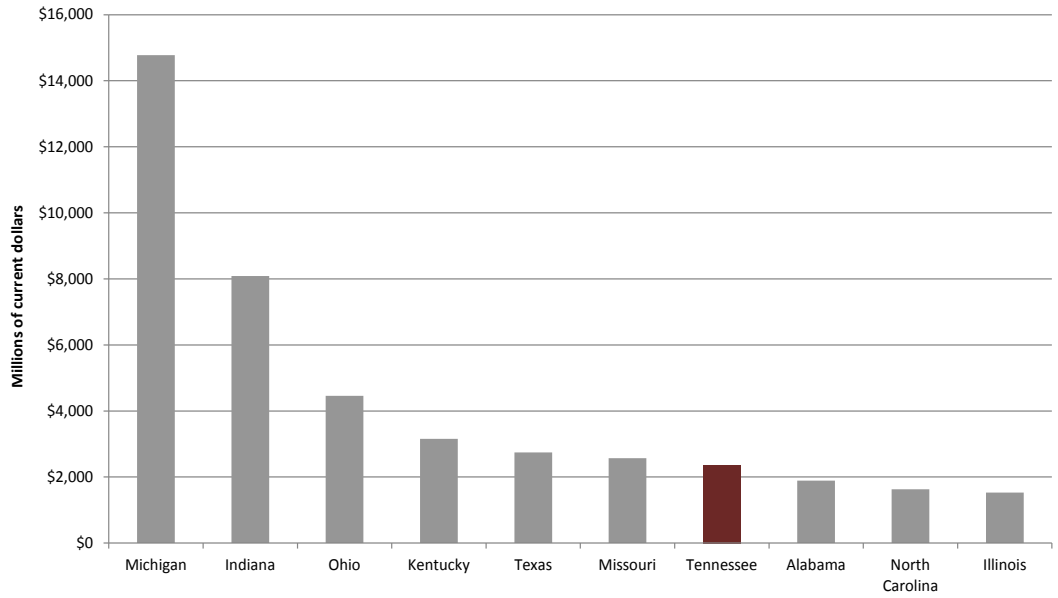
Figure 12. Tennessee Transportation Equipment Employment and Motor Vehicle, Body, Trailer and Parts GDP Show Declines Since 2003



Source: U.S. Bureau of Labor Statistics and Bureau of Economic Analysis

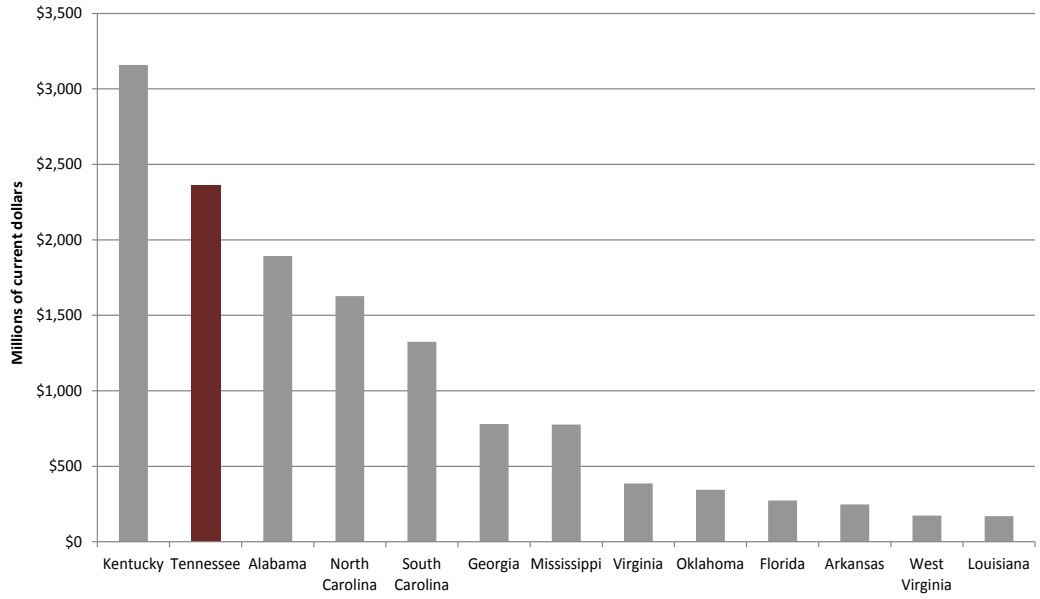
Figure 13 displays motor vehicle, body, trailer, and parts manufacturing GDP for the top 10 states in the nation. In 2010, four southeastern states made it in the top 10 of U.S. producers. Tennessee is number 7 out of the top 10, with GDP of $2,363 million. In the Southeast, as shown in Figure 14, Tennessee ranked second, behind Kentucky. The next highest GDP was Alabama, ranking third and $470 million behind Tennessee.

Figure 13. Tennessee Motor Vehicle, Body, Trailer, and Parts Manufacturing GDP Ranked 7th in Nation in 2010



Source: Bureau of Economic Analysis

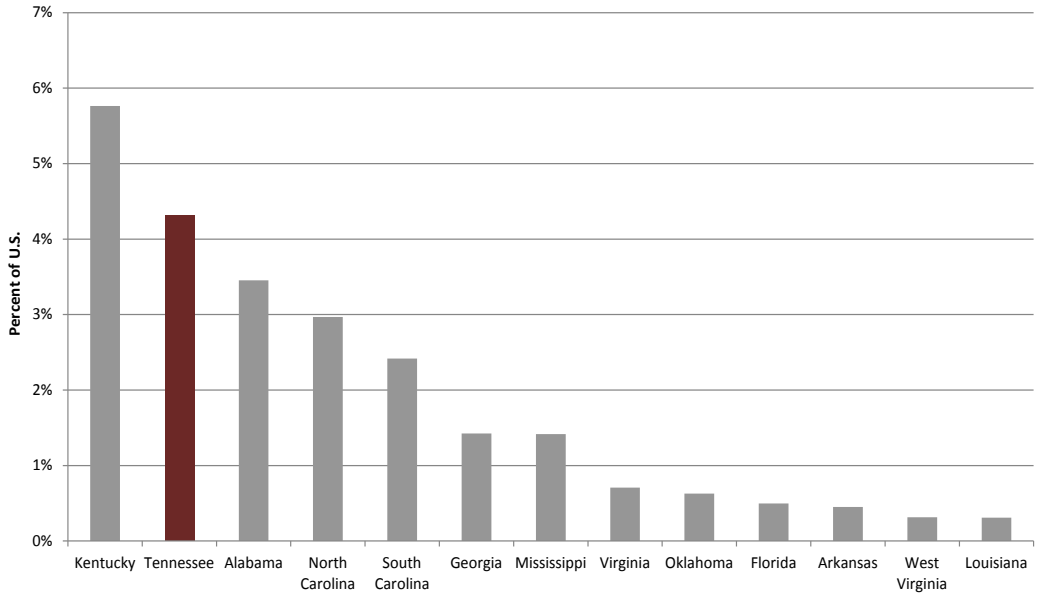
Figure 14. Tennessee Motor Vehicle, Body, Trailer, and Parts Manufacturing GDP Ranked 2nd in Southeast



Source: Bureau of Economic Analysis

Tennessee's motor vehicle, body, trailer, and parts manufacturing GDP was 4.3 percent of the nation's GDP in the same industry in 2010 (see Figure 15). Kentucky surpassed Tennessee with a share of 5.8 percent of the nation while Alabama trailed Tennessee with a 3.5 percent share.

Figure 15. Tennessee was 4.3 Percent of the Nation's Motor Vehicles, Bodies and Trailers, and Parts Manufacturing GDP in 2010

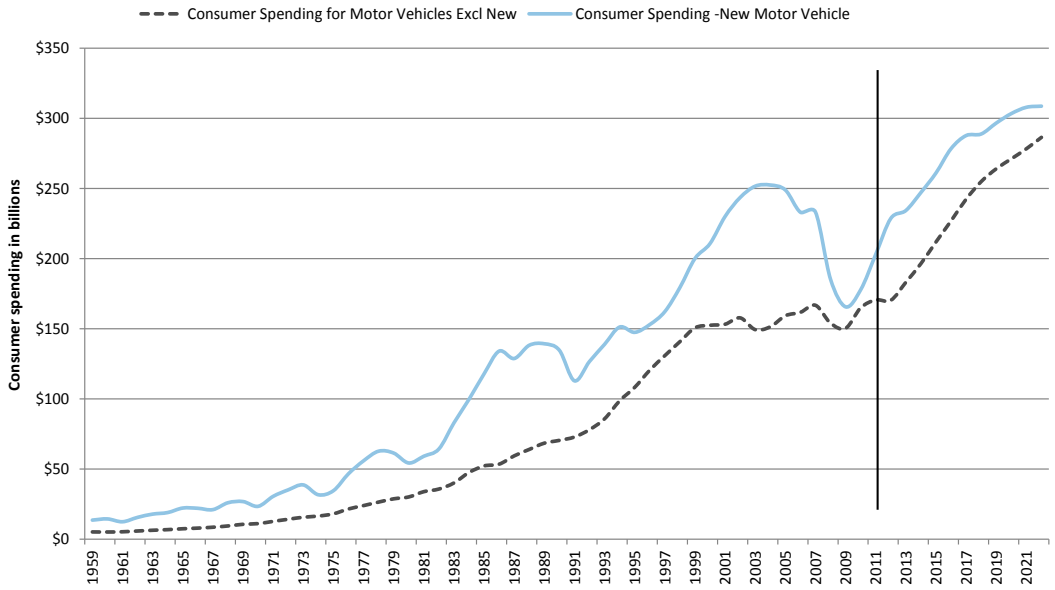


Source: Bureau of Economic Analysis

Consumer Spending

The long-term history of consumer spending in the U.S. on new and used motor vehicles has had an upward trajectory that has only been taken off course by recession (see Figure 16). By 1963, purchases were up $5.5 billion, and by 1968, purchases were up another $11.2 billion. Purchases of new vehicles had doubled by 1969. Used vehicle purchases grew steadily during the early years as well, doubling in the same year as new vehicles, 1969. By 1979, used car purchases had seen a compound annual growth rate of 9.0 percent and new cars a 7.8 percent compound growth rate.

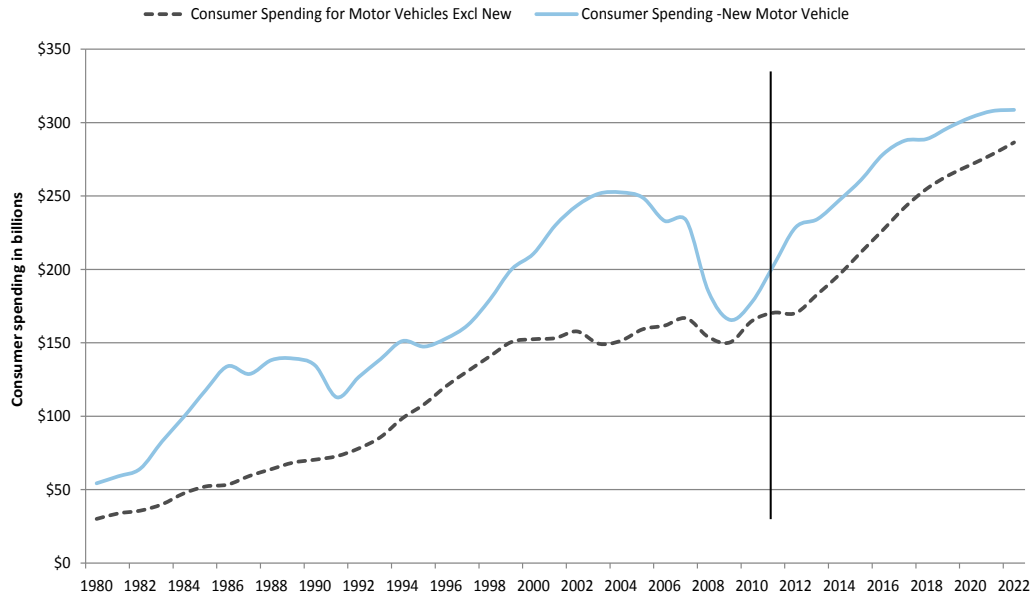
Figure 16. Consumer Spending on New and Used Vehicles Grows Rapidly in Early History



Source: IHS Global Insight

As evidenced by Figure 17, the 1980s were the starting point for accelerated growth. Consumer spending on new vehicles experienced a plateau for a few years in the late 1980s, hit a bump in the early 1990s, and took off again through 2004. The Great Recession cut most non-necessary consumer spending and by 2009, spending levels on new vehicles were down to 1997 levels. Consumer spending in 2010 and 2011 was increasing and the forecast has the nation back to pre-recession peak purchasing levels in 2015. Consumer spending on used vehicles followed the upward movement through the 1980s and 1990s at a steadier pace. The plateau beginning in 1999 lasted through 2009 with minor ups and downs. The recession did not affect used cars as much as new vehicles.

Figure 17. Consumer Spending on New Vehicles Forecasted to be at Pre-recession Peak Levels in 2015



Source: IHS Global Insight

Conclusion

The Tennessee economy has benefited greatly from growth in the transportation equipment sector, especially automobile assembly and parts manufacture. The Great Recession had a devastating effect on the nation's and state's transportation equipment sectors and an earnest recovery is now underway. But we are still two or three years away from a full recovery that would restore activity to pre-recession levels.

The longer-term future of the industry will be characterized by a major transformation of the product itself that will embody new technologies to propel vehicles and new materials like carbon composites to comprise component parts. These transitions will afford Tennessee the opportunity to make further advances in development of the industry to support the wellbeing of workers and the overall state economy.

Appendix

Table 1. Tennessee Monthly Transportation Equipment Manufacturing Employment, in thousands

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
1990	41.9	42.1	42.8	45.7	46.1	46.5	45.9	46.6	47.6	47.1	47.3	47.0	45.6
1991	45.1	45.0	45.0	45.6	46.2	47.2	46.7	47.6	48.4	49.6	50.2	50.3	47.2
1992	50.1	50.9	51.5	52.7	53.0	53.2	54.4	54.0	54.4	54.9	55.1	55.7	53.3
1993	55.2	55.6	56.0	57.0	57.9	58.7	58.2	58.9	59.8	59.6	59.7	60.5	58.1
1994	59.5	60.8	61.1	61.8	62.5	63.0	61.5	63.1	63.4	63.3	63.8	64.1	62.3
1995	65.0	65.9	66.0	66.1	65.9	65.7	63.8	65.5	65.6	65.2	65.3	65.1	65.4
1996	64.3	64.1	64.6	62.8	63.1	63.4	63.1	64.4	64.3	63.2	64.1	64.1	63.8
1997	62.3	62.5	62.9	64.0	64.6	64.6	63.4	64.8	65.1	66.5	67.0	67.4	64.6
1998	67.4	67.4	67.4	67.5	66.4	66.6	64.5	66.1	66.8	66.2	66.5	67.2	66.7
1999	67.8	68.1	68.6	68.7	68.5	68.7	68.8	69.6	69.9	70.1	70.3	70.4	69.1
2000	69.8	69.7	69.9	70.0	69.8	69.9	69.3	69.0	68.2	68.1	67.6	67.9	69.1
2001	65.4	64.4	63.7	63.3	62.8	62.4	60.8	61.7	61.7	61.0	60.2	60.3	62.3
2002	59.6	59.4	59.5	59.8	60.3	60.5	59.6	60.9	60.7	60.1	59.5	60.3	60.0
2003	59.8	60.3	60.2	60.0	60.0	60.2	58.8	60.2	60.2	60.5	60.8	61.1	60.2
2004	61.1	61.1	61.3	62.1	62.4	63.0	62.5	64.1	64.5	64.3	63.9	64.5	62.9
2005	64.1	64.0	64.1	64.3	64.4	64.4	62.8	63.7	63.9	63.6	63.7	63.8	63.9
2006	63.3	63.4	63.0	63.3	63.5	63.5	63.1	64.4	64.3	64.0	64.2	64.8	63.7
2007	63.4	62.9	62.3	61.0	58.4	58.2	56.8	56.9	56.5	56.4	55.6	55.3	58.6
2008	54.8	56.4	56.0	55.0	55.2	55.4	51.7	52.0	51.1	49.1	47.0	46.4	52.5
2009	43.6	43.6	42.4	41.4	39.8	37.3	38.4	39.6	40.2	40.1	40.2	38.9	40.5
2010	38.8	38.9	39.2	39.4	39.8	40.4	40.5	41.0	41.4	41.6	42.2	42.5	40.5
2011	43.2	43.5	43.9	44.2	44.3	44.8	45.3	46.0	46.7	47.2	46.7	47.0	45.2
2012	47.7	48.3	49.3	50.5	51.3	52.7	53.0	52.4	52.4	53.2			

Source: U.S. Bureau of Labor Statistics

Table 2. Tennessee Transportation Equipment Manufacturing Employment, 2001-2011

Transportation equipment manufacturing industry	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Motor vehicle manufacturing	14031	ND	ND	15372	15063	15083	ND	ND	9089	7703	8664
Automobile and light truck manufacturing	ND	ND	ND	ND	ND	ND	ND	ND	9001	ND	8631
Automobile manufacturing	ND	ND	ND	14296	ND	ND	ND	ND	ND	7669	8631
Light truck and utility vehicle manufacturing	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Heavy duty truck manufacturing	ND	ND	ND	ND	ND	ND	ND	ND	88	ND	32
Motor vehicle body and trailer manufacturing	5118	4487	4169	2446	2506	2470	2315	1981	1417	831	3310
Motor vehicle parts manufacturing	34904	33471	33868	36660	37749	36362	37039	32426	25422	26856	28819
Aerospace product and parts manufacturing	3602	3033	2648	2639	2798	2750	2157	1810	1642	1551	1570
Railroad rolling stock manufacturing	ND	ND	ND	13	30	37	ND	ND	17	ND	ND
Ship and boat building	4184	4278	4570	4928	5339	5419	5237	4298	2547	2684	2779
Other transportation equipment manufacturing	435	ND	505	525	518	468	260	248	202	ND	ND
Transportation equipment manufacturing	62273	60097	60185	62582	64003	62589	59613	52293	40335	39851	45386

ND- Not Disclosable
Source: U.S. Bureau of Labor Statistics

Table 3. Southeastern Transportation Equipment Manufacturing Earnings as percent of U.S.

State	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Alabama	1.3%	1.2%	1.2%	1.1%	0.9%	1.0%	1.1%	1.1%	1.3%	1.5%	1.5%	1.5%	1.7%	1.9%	2.1%	2.7%	3.0%	3.1%	3.5%	3.7%	3.9%	3.7%
Arkansas	0.5%	0.5%	0.5%	0.5%	0.5%	0.6%	0.6%	0.6%	0.6%	0.5%	0.6%	0.5%	0.5%	D	D	D	D	0.6%	D	D	D	D
Florida	0.6%	0.6%	0.6%	0.6%	0.5%	0.6%	0.7%	0.7%	0.7%	0.6%	0.7%	0.7%	0.6%	0.7%	0.7%	0.8%	0.9%	0.8%	0.7%	0.7%	0.7%	D
Georgia	1.6%	1.5%	1.6%	1.4%	1.4%	1.7%	1.7%	1.7%	1.6%	1.6%	1.6%	1.7%	1.7%	1.6%	1.7%	1.7%	1.9%	D	1.5%	1.4%	1.7%	1.8%
Kentucky	2.3%	2.4%	2.4%	2.6%	2.7%	3.1%	3.4%	3.6%	3.7%	3.9%	4.1%	4.4%	4.4%	4.5%	4.5%	4.7%	4.7%	4.8%	4.5%	4.7%	5.0%	4.9%
Louisiana	0.4%	0.4%	0.5%	0.5%	0.6%	0.5%	0.4%	0.4%	0.3%	0.3%	0.4%	D	D	D	D	D	D	D	D	D	D	D
Mississippi	0.7%	0.7%	0.6%	0.6%	0.6%	0.6%	0.7%	0.6%	0.7%	0.5%	0.5%	0.5%	D	D	D	D	D	D	D	D	D	D
North Carolina	1.7%	1.6%	1.6%	1.7%	1.6%	1.8%	1.9%	1.8%	2.0%	2.1%	2.1%	2.0%	2.0%	2.0%	2.1%	2.3%	2.3%	2.3%	2.4%	2.6%	2.5%	2.6%
South Carolina	0.8%	0.8%	0.8%	0.8%	0.8%	1.0%	1.2%	1.2%	1.3%	1.4%	1.5%	D	D	D	D	D	D	D	D	D	2.6%	2.7%
Tennessee	2.6%	3.1%	3.6%	3.8%	3.9%	3.9%	4.0%	3.9%	3.7%	3.9%	3.9%	3.9%	D	D	4.4%	4.6%	4.7%	D	D	5.0%	5.3%	5.3%
Virginia	0.8%	1.0%	1.0%	1.1%	1.0%	1.1%	1.2%	1.2%	1.4%	1.2%	1.1%	D	D	D	D	D	D	D	D	D	D	D
West Virginia	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%	D	D	D	D	D
Southeast	13.3%	14.0%	14.3%	14.8%	14.7%	15.9%	16.8%	16.9%	17.6%	17.8%	18.0%	18.7%	19.3%	19.8%	21.2%	22.4%	23.2%	22.8%	23.3%	24.1%	24.9%	25.0%

Source: Bureau Economic Analysis

(D) Not shown to avoid disclosure of confidential information, but the estimates for this item are included in the total.