Contribution of Toyota Motor North America to the Economies of Sixteen States and the United States in 2010

Prepared for

Toyota Motor North America, Inc.

by

March 2011

The statements, findings, and conclusions herein are those of the authors and do not necessarily reflect the views of the project sponsor.

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Acknowledgements

This study is the result of a group effort. The authors would like to thank our colleagues at the Center for Automotive Research, Valerie Sathe Brugeman, Josh Cregger and Adam Cooper for their assistance with content, analysis, and interpretation. Additional assistance was provided by Diana Douglass, who contributed greatly to the coordination of the project and the production of the document.

Also, we would like to thank Toyota Motor North America, Inc. for the opportunity to carry out this study.

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Executive Summary

This study seeks to estimate the economic impact in 2010 of Toyota's U.S. operations on the U.S. economy and 16 individual state economies. It finds that Toyota's employment in the U.S. contributes to the support of more than 365,000 jobs nationally, and compensation of over $20 billion.

Toyota's U.S. operations directly employed over 28,500 people during 2010, with compensation of nearly $2.3 billion. Toyota's U.S. operations are defined in this analysis as manufacturing, marketing, distribution, research, development and design, headquarters, and all other operational activities within the company. From the direct employment at Toyota facilities, it is estimated that, including the direct jobs, Toyota's operations support more than 177,000 jobs in the U.S. economy, with an associated compensation of nearly $11.7 billion.

There are three companies who employ people solely for the production and distribution of Toyota vehicles. These three companies employ a total of 5,700 people and support another 14,000 jobs, for a total of nearly 19,700 additional jobs in the economy.

When factoring in the people selling and servicing new Toyota vehicles, an additional 168,000 jobs and $8.6 billion in annual compensation brings the total jobs supported annually by Toyota in the U.S. to 365,000 and annual compensation to $21.4 billion.

Additionally, Toyota's newest assembly plant in Tupelo, Mississippi (due to come on line in late 201) is expected to employ 2,000 people once it is fully operational. In an analysis of the expected economic impact of the new plant, this study estimates that almost 16,000 jobs will be created nationally by the operations at this facility. This highlights the substantial impact automotive assembly operations have on job creation—one of the highest job multiplier sectors in all of manufacturing.

This study confirms job creation and retention are occurring on a very large scale as a result of Toyota's U.S. operations and are having a large impact on the U.S. economy. For those jobs in the U.S. auto industry related to Toyota and those supported by the industry spending, the average employee tends to be very well-compensated, leading to higher than average household spending and tax payments. An analysis and discussion of individual state employment and economic impacts for 16 states occurs further in this report.

Introduction

The motor vehicle industry is the largest manufacturing industry in the United States. No other single industry is linked so closely to the U.S. manufacturing sector or directly generates so much retail business and employment. This study describes the breadth of Toyota's involvement in the U.S. automotive industry and the economic impact it contributes to the motor vehicle industry and national economy.

The importance of this study is directly related to the importance of foreign direct investment and operations in the sustainability of the overall U.S. automotive industry. While there has been a restructuring of the domestic auto companies, international manufacturers have retained and seem poised to expand U.S. operations. Toyota is an international automotive company that has a long history of investment in the United States. As a result, its impact on the U.S. economy is substantial compared to many other international auto companies with U.S. operations. A better understanding of the role of Toyota in the U.S. economy leads to a more comprehensive view of the industry as a whole and how it may change in the future and further impact the U.S. economy.

The Center for Automotive Research (CAR) conducted an earlier study "Contribution of Toyota Motor North America to the Economies of Sixteen States and the United States in 2006".[1] This current analysis updates that study and describes the economic contribution of Toyota's total manufacturing and non-manufacturing operations in the United States. The first section of this study presents an updated overview of the industry and Toyota's role in it.

The second section of the study estimates the contribution of Toyota's U.S. operations and dealership partners to employment and income in the economies of sixteen states and the United States in 2010. The 16 states analyzed in detail include Alabama, Arkansas, California, Georgia, Illinois, Indiana, Kentucky, Maryland, Michigan, Mississippi, Missouri, North Carolina, Ohio, Tennessee, Texas and West Virginia. Toyota's current economic contribution was analyzed using an economic software model, which was also used to empirically estimate the expected contribution to the economy of Toyota's future assembly facility in Tupelo, Mississippi.

The employment and compensation data for Toyota's U.S. operations used to perform the research was provided by Toyota. The remaining data on the U.S. economy and the automotive industry was collected by CAR from a wide variety of publicly available sources, listed in the Reference section.

[1] Hill, Kim. ""Contribution of Toyota Motor North America to the Economies of Sixteen States and the United States in 2006". Center for Automotive Research, October 2007. Ann Arbor Michigan.

Section I: Overview

Toyota's stated mission is to enrich society through building cars. As Toyota's 2010 annual report states,

> *"Since its foundation, Toyota's unchanging mission has been to contribute to society by making safe and reliable vehicles. This will continue to be our priority... The automobile industry is being driven by advances in environmental technology. Toyota will work to improve its technology, while broadening its strategy of sustainable mobility to include new technologies and products, partnerships, the urban environment and energy. By strengthening the bonds between the customers, dealers and suppliers who represent our driving force, we will redouble our efforts to create a new future for the automobile."*

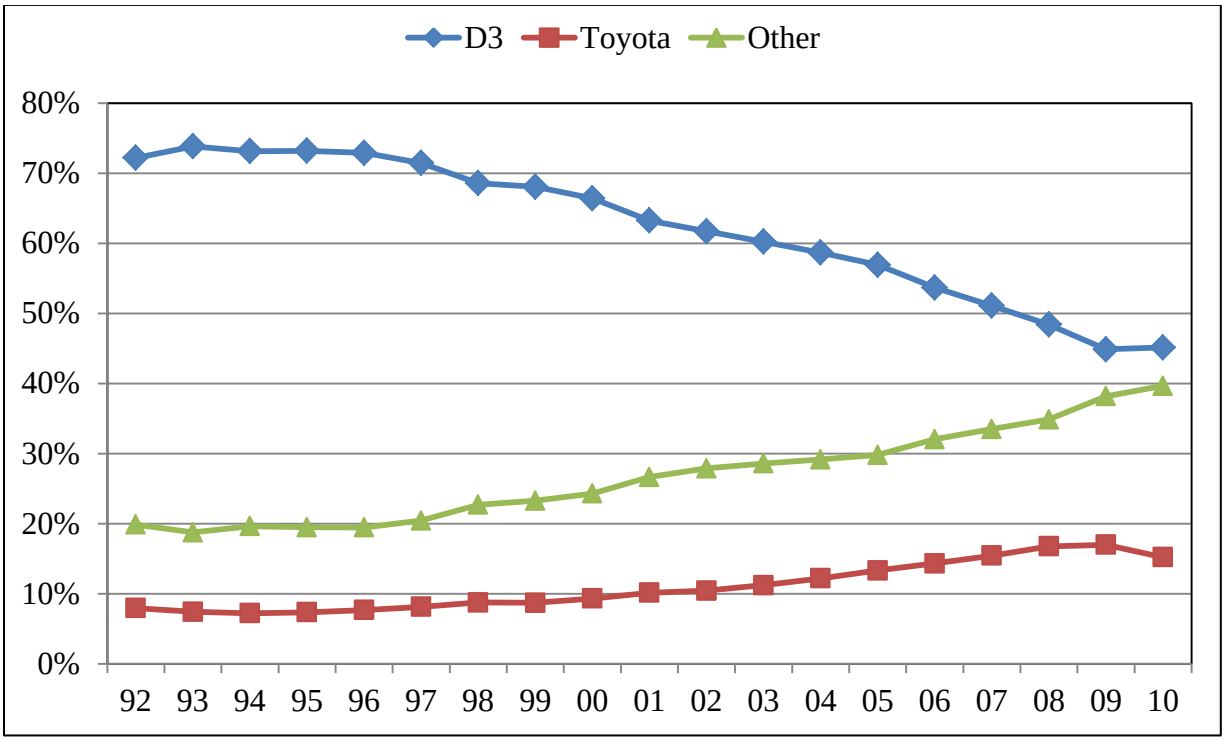
It is fitting to start a report such as this with this statement. An economic impact study, at its heart, is the study of how many additional economic opportunities are created by a given industry. Contributing well-paying jobs to society–and thus improving its overall quality of life–is part of the social contract. More importantly, motor vehicle manufacturers require an extensive network of parts suppliers, service companies and dealerships. This network extends the reach of the automotive industry into nearly every community of the nation. In this first section, the study tracks Toyota's growth as a company in the United States; the second section details what Toyota contributes back to the U.S. society through job creation.

The Automobile in North America

For more than a century, the automotive industry has been a major contributor in shaping the identity of the U.S. economy and has generated millions of jobs. The industry is not static and continues to undergo dramatic changes. Over the past two decades, the U.S. industry has been transformed by more than $25 billion in new direct investments from Asia and Europe[2]. Much of the foreign direct investment has gone to areas in the country that were not traditional locations for automotive employment–in effect, stretching the footprint of the U.S. auto industry.

Along with these new investments, the composition of the auto industry has been transformed as domestic automotive assembly firms (Chrysler, Ford, and General Motors) have slowly lost market share to international firms operating in the U.S. In 2007, for the first time in history, there was market share parity between the Detroit 3 and international firms. The collective market shares of international automakers are forecasted to be at nearly 60% for 2010 and beyond. The erosion of domestic automaker market share over twenty years, as shown in Figure 1, reveals how competitive the U.S. automotive landscape has become for all auto manufacturers.

Figure 1: U.S. Motor Vehicle Market Share, 1986-2011



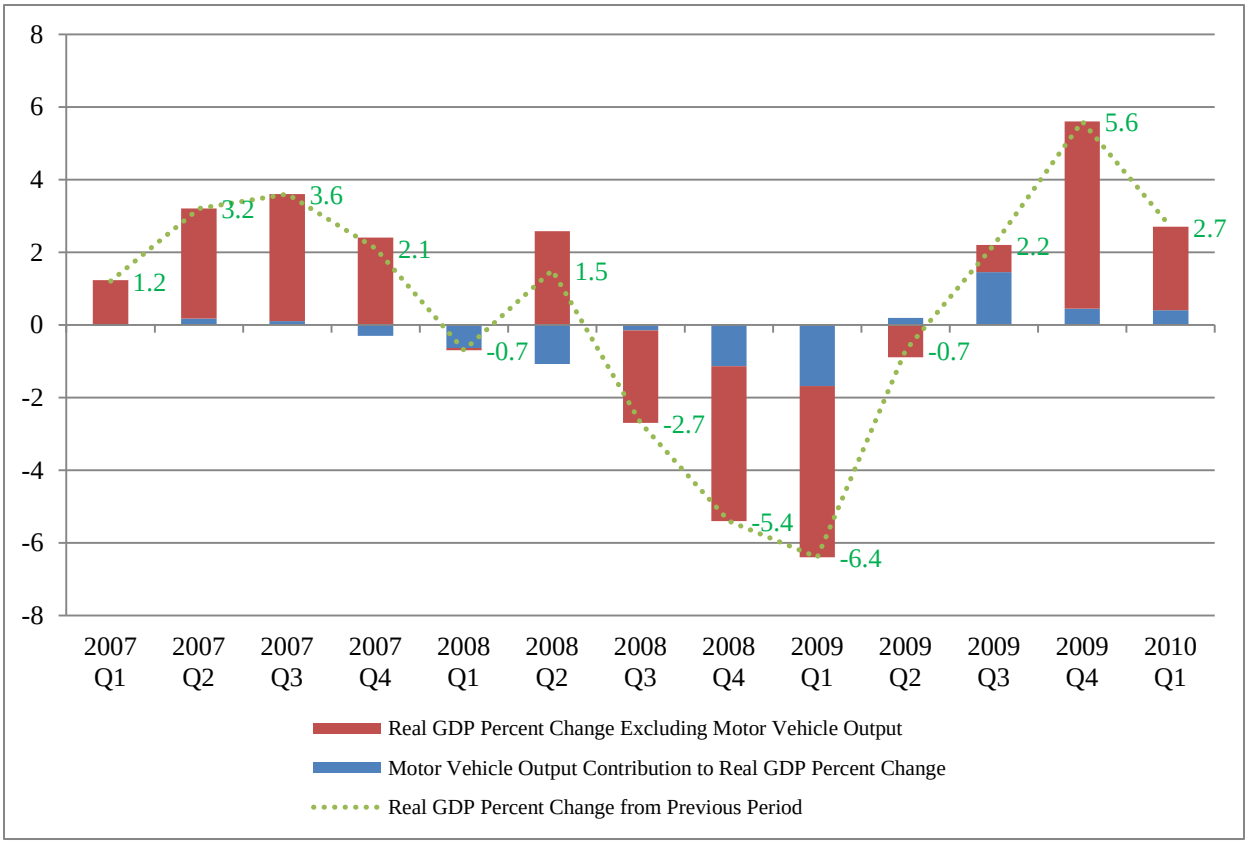
Source: Automotive News Market Data Book

[2] Center for Automotive Research, Book of Deals

The economic performance of the automotive sector, as well as the broader manufacturing sector, is extremely important for the continued development and growth of the national and regional economies, as it comprises a large share of total U.S. output. At the end of 2008, U.S. automotive output was 2.2% of GDP; overall manufacturing contributed 11.5%.[3] While the automotive industry adds only a few percentage points to the total GDP, the effects of the industry extend significantly beyond that due to the complex manufacturing process chain supporting many tiers of suppliers and jobs across a wide array of industries.

As can be seen in Figure 2, growth or decline in automotive output often constitutes a significant portion of total change in GDP. In addition, due to the industry's high multiplier, changes in motor vehicle output have cascading effects into other industries, resulting in surprising significant changes in the overall GDP. This effect can also be seen in Figure 2 where periods of large growth and decline in GDP follow and coincide with changes in motor vehicle output.

Figure 2: Change in U.S. GDP and Automotive Output, 2007-2010



Source: Bureau of Economic Analysis

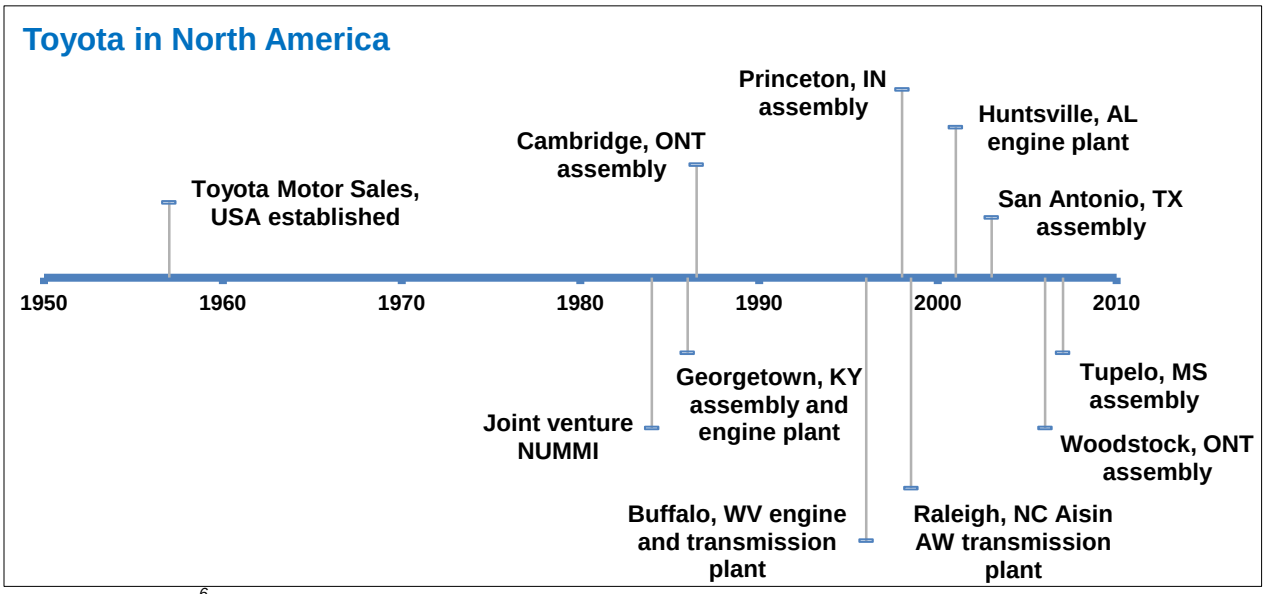
[3] BEA. (2010). "Gross-Domestic-Product-(GDP)-by-Industry Data." Bureau of Economic Analysis Industry Economic Accounts. May 25, 2010 <http://www.bea.gov/industry/gdpbyind_data.htm>.

Toyota's Presence in the Region

Toyota Motor Sales, U.S.A., Inc., was established in 1957, with its headquarters based in California.[4] Sales, beginning in 1958, were modest with just a few hundred vehicles sold that year. However, within one decade, Toyota was selling over 20,000 vehicles a year and was the third best-selling import brand in the United States. By 1975, Toyota became the top selling import brand in the nation. With the 1986 opening of its New United Motor Manufacturing, Inc. (NUMMI) plant, a joint venture with General Motors, Toyota began production in North America.[5]

Over the following two decades, Toyota continued to expand its product offerings with the additions of Lexus and Scion brands. Simultaneously, Toyota added to its production capacity with new engine and assembly plants across the nation. Toyota assembles cars and trucks in nine plants across North America, builds engines in four plants, and builds transmissions in two plants. Figure 3 depicts a timeline outlining milestones in Toyota's North American growth throughout the years.

Figure 3: Toyota North American Milestones



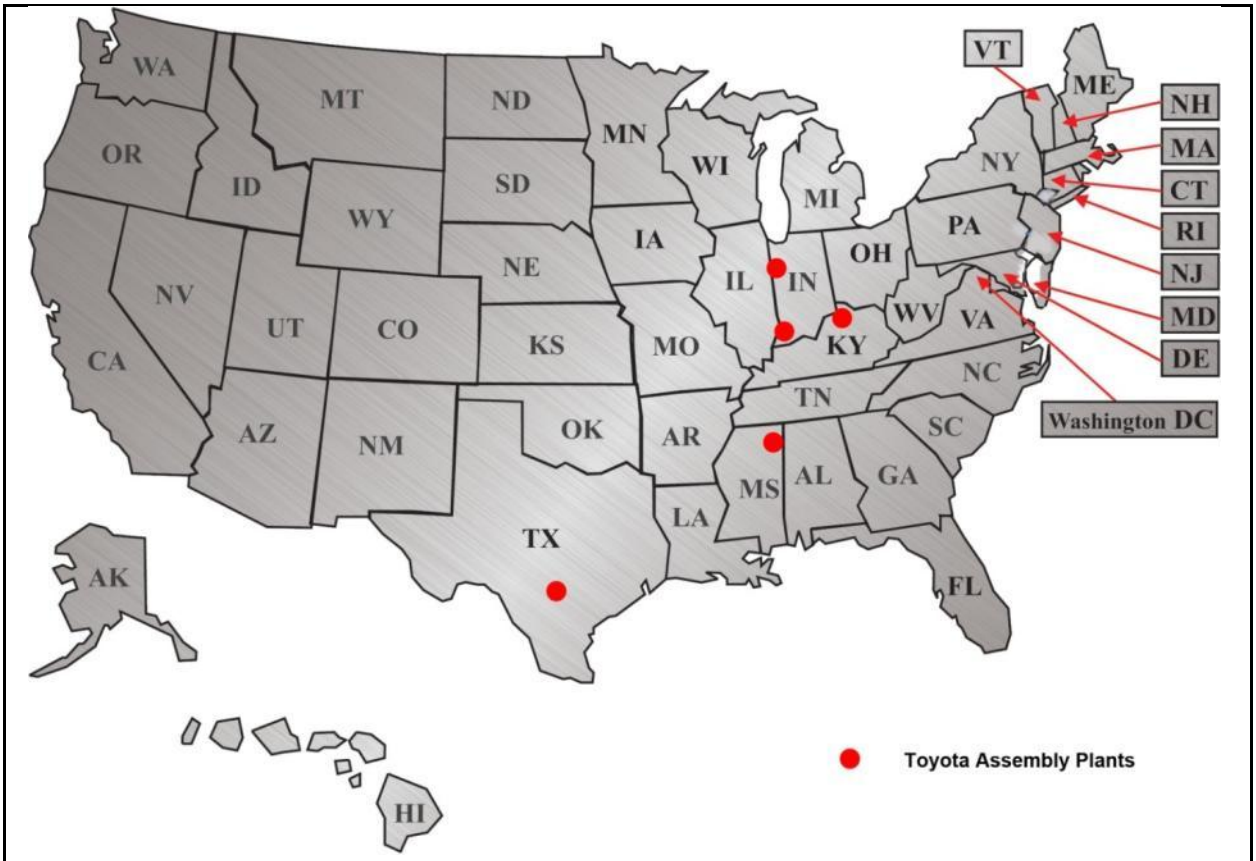
Source: Toyota[6]

Figures 4 to 6 detail Toyota's assembly plants, engine plants, and transmission plants in the United States. Assembly plants are located in Kentucky, Indiana, Texas, and Mississippi and provide Toyota with a total annual capacity to produce 1.8 million motor vehicles annually. At its

[4] Toyota. "Toyota: 50 Years in America and Counting." Accessed August 3, 2010. <http://www.toyota.com/about/our_business/our_history/u.s._history/>.
[5] Ibid.
[6] Toyota. (2008). "Toyota Motor Engineering & Manufacturing North America, Inc., North American Manufacturing Milestones." Toyota Motors Sales, U.S.A., Inc. January 17, 2008. <http://pressroom.toyota.com/pr/tms/manufacturing/TYT2002010227094.aspx>.

seven assembly plants, Toyota produces a variety of products including the Avalon, Highlander, Venza, Camry, Corolla, Sequoia, Sienna, Tacoma, and Tundra. Engine Plants in Alabama, Kentucky, and West Virginia provide Toyota with the capacity to produce 1.5 million engines annually. Transmission plants in North Carolina and West Virginia provide Toyota with the capacity to produce 1,030 transmissions annually.

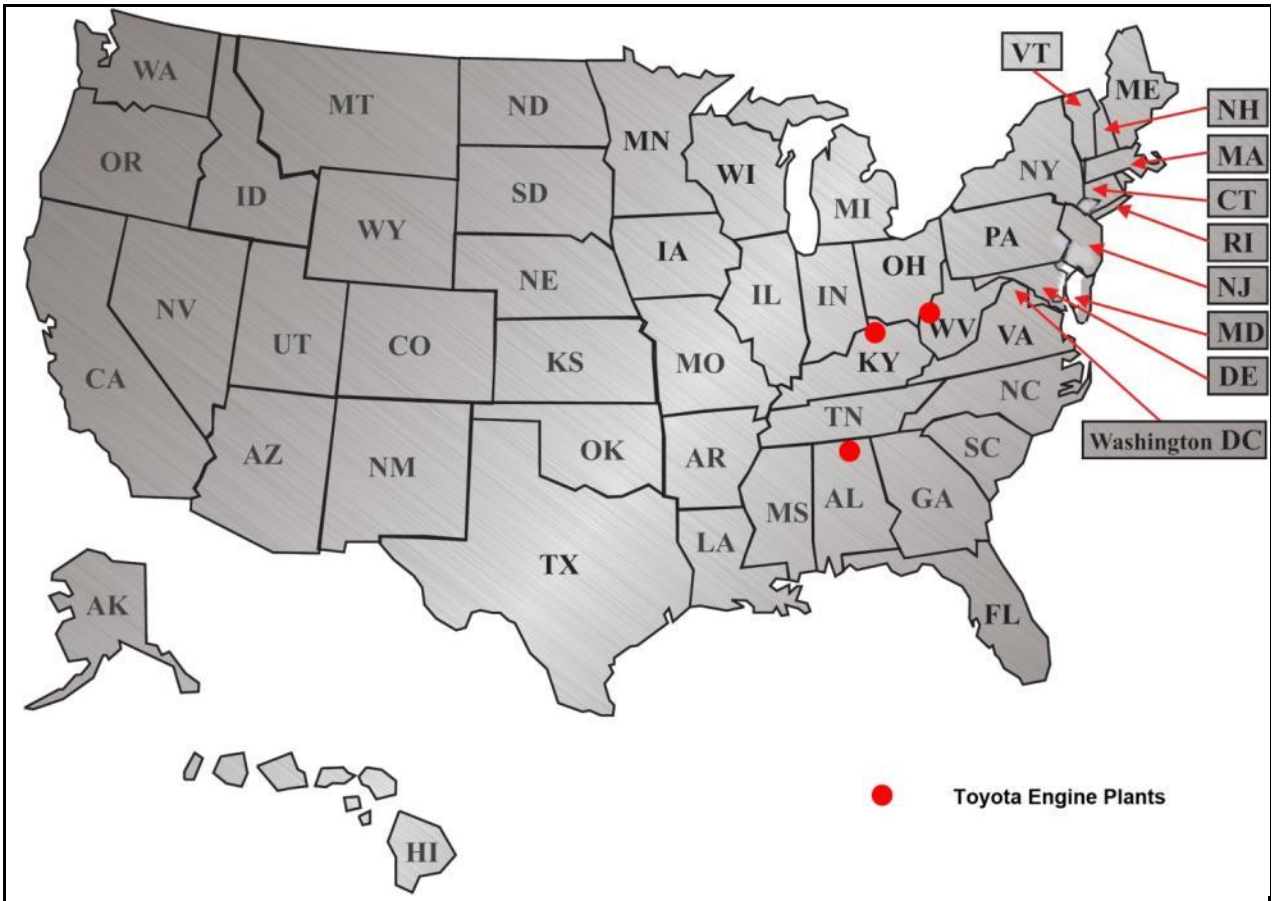
Figure 4: Toyota Assembly Plants in the United States, 2010



Plant	Type	Facility Location	Product	2010 Production Estimate
Georgetown #1	Assembly	Georgetown, KY	Camry, Avalon	172,350
Georgetown #2	Assembly	Georgetown, KY	Camry, Venza	213,025
Lafayette #2	Assembly	Lafayette, IN	Camry	83,496
Princeton East	Assembly	Princeton, IN	Sienna	128,194
Princeton West	Assembly	Princeton, IN	Sequoia, Highlander	105,831
San Antonio	Assembly	San Antonio, TX	Tundra, Tacoma	145,897
Tupelo	Assembly	Tupelo, MS	Corolla	26,578 (2011)

Source: CAR Research, Toyota, IHS Global Insight

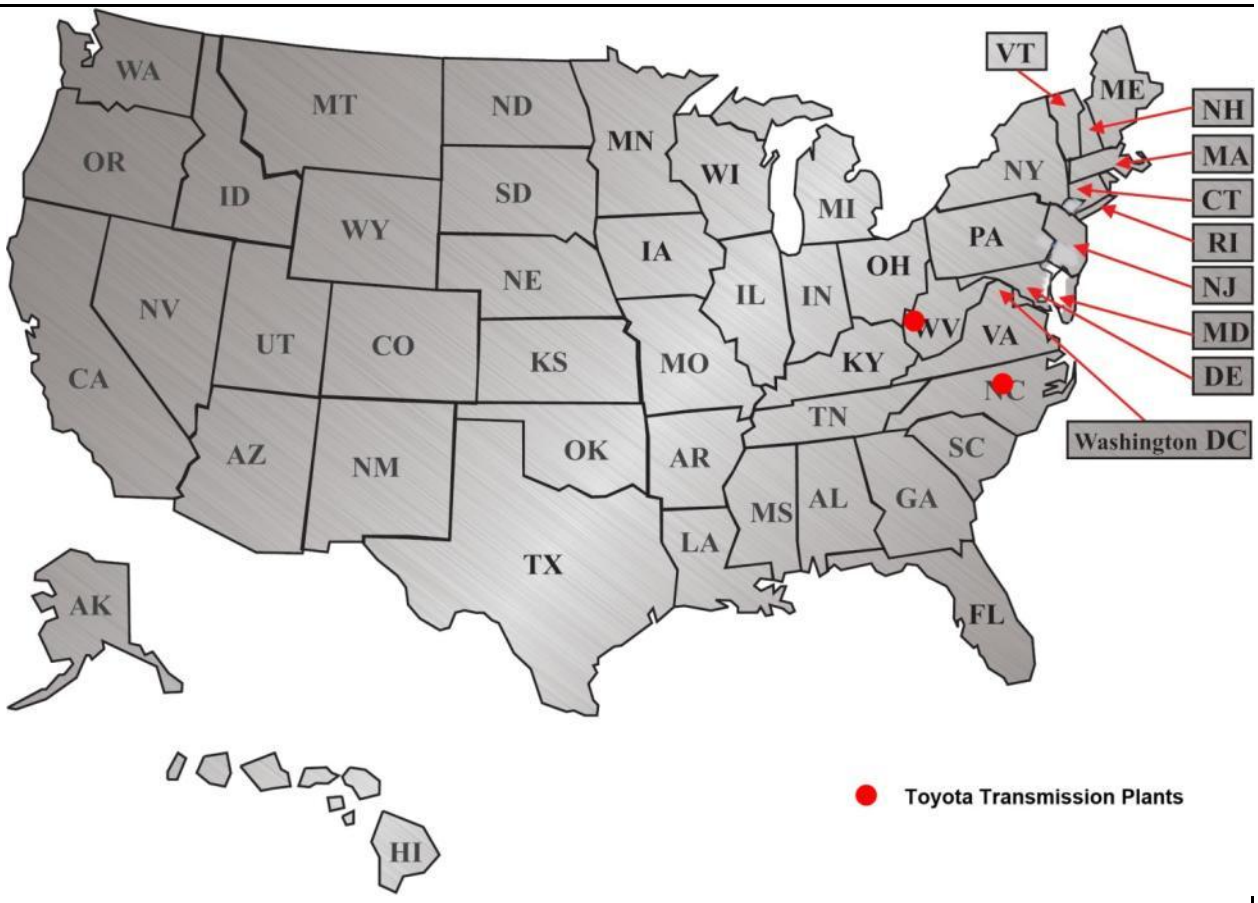
Figure 5: Toyota Engine Plants in the United States, 2010



Facility	Estimated 2010 Production	Platform	Model	Application
Buffalo, WV	473,103	GR	V6	Lexus RX, Sienna
		AZ/ZR	L4	Corolla, Matrix
Georgetown, KY	278,199	AR	L4	Camry, Highlander, Venza, Sienna
		AZ	L4	Corolla
		GR	V6	Camry, Venza, Avalon
Hunstville, AL	203,525	GR	V6	Tacoma, Tundra
		UR	V8	Sequoia, Tundra

Source: CAR Research, Toyota, IHS Global Insight

Figure 6: Toyota Transmission Plants in the United States, 2010



Facility	Estimated 2010 Production	Platform	Model	Application
Buffalo, WV	386,421	U151	Automatic 5	Highlander
		U250	Automatic 5	Matrix
		U660	Automatic 6	Lexus RX, Camry, Sienna
		U760	Automatic 6	Venza
Raleigh, NC (Aisin AW)	123,091	A750	Automatic 5	Tundra
		A760	Automatic 6	Sequoia, Tundra
		TB-61SN	Automatic 6	Sequoia, Tundra

Source: CAR Research, Toyota, IHS Global Insight

Recent North American Market Developments

At the beginning of this past decade, annual motor vehicle sales peaked at 17.4 million and remained at over 16 million units through 2007. This unprecedented sales activity was largely supported by a plethora of factors including access to low interest credit, housing development

patterns necessitating increased vehicle ownership, a booming stock market, post–9/11 manufacturer incentives, and an enhanced sense of personal wealth.

The surplus of vehicles purchased in the early part of the decade, the ensuing credit crunch, and the recession are the central factors driving the recent issues in the automotive industry. In 2008, along with other bubbles associated with debt financing, the motor vehicle bubble burst. Because suppliers, dealers, and assemblers expanded capacity during the early part of the decade, many were vulnerable when sales suddenly began to drop off.

As major consumer lending arms of large banks increased credit requirements and reduced lines of credit to all but the most qualified applicants, many consumers could no longer finance motor vehicle purchases. High unemployment rates made the problem worse. With the current unemployment rate still hovering at 9.5 percent (July 2010), economic recovery and the rebound of the auto industry have been affected. Employment, income stability and consumer confidence are major determining factors in the purchase of durable goods like automobiles. Despite these conditions, the industry is beginning to recover. The Commerce Department reported that automobile sales improved in July even though July retail sales in general were disappointing.[7] Many of the leading economic indicators are trending in the right direction–with consumer confidence, the Dow Jones Index, full time employment, and the CPIs for both new and used vehicles all increasing in the first half of 2010. Sales as a whole have improved, with a 14.8 percent increase over last July's figures.[8]

During the months of July and August in 2009, the U.S. Federal government intervened in the U.S. auto sales market by introducing the Car Allowance Rebate System, commonly referred to as the "Cash for Clunkers" program. Congress originally appropriated $1 billion for the program, but due to how quickly that amount was depleted, increased the amount to $3 billion. The impact on new vehicle sales was immediate and significant with roughly 690,000 eligible vehicles turned in by consumers who then received a $3,500 or a $4,500 voucher for purchasing or leasing a new, fuel- efficient vehicle.

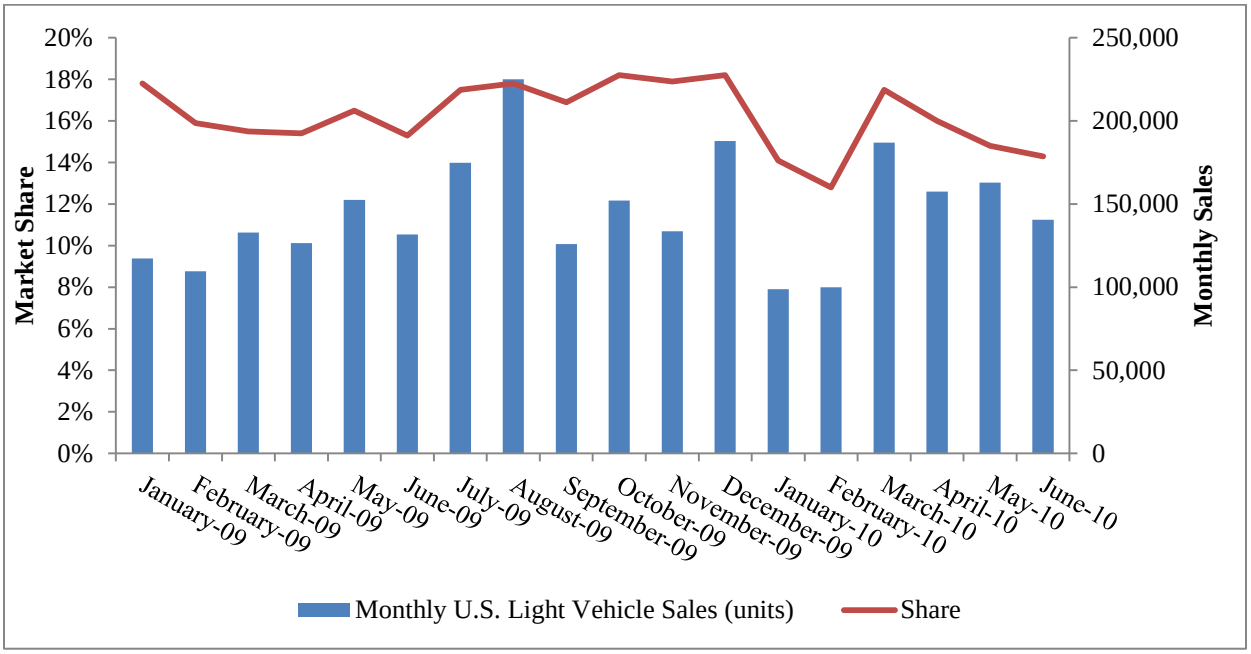
The program generated new vehicle sales of 998,000 units in July and 1,262,000 units in August of 2009. Cash for Clunkers had a significant stimulating effect on the industry, as dealers sold hundreds of thousands of additional vehicles beyond the norm for that time of year. The higher-than-anticipated volume of new vehicle sales created a tax revenue boost that

[7] Vlasic, Bill. (2010). "Detroit Goes From Gloom to Economic Bright Spot." New York Times. August 13, 2010. <http://www.nytimes.com/2010/08/14/business/14auto.html?src=busln>.

[8] Automotive News. (2010). "U.S. Total Vehicles Sales by Make, July & YTD."Automotive News Data Center. August 3, 2010. <http://www.autonews.com/section/datacenter>.

helped states' finances. The effect of the program is noticeable in the graph of Toyota's North American sales in Figure 7; the months of July and August show dramatic increases in sales. Those months also show gains in market share for Toyota as the program stimulated sales of high fuel economy vehicles such as the Corolla, Prius, and Camry–among the most purchased vehicles under Cash for Clunkers.

Figure 7: Toyota Monthly North American Sales and Market Share, 2009-2010

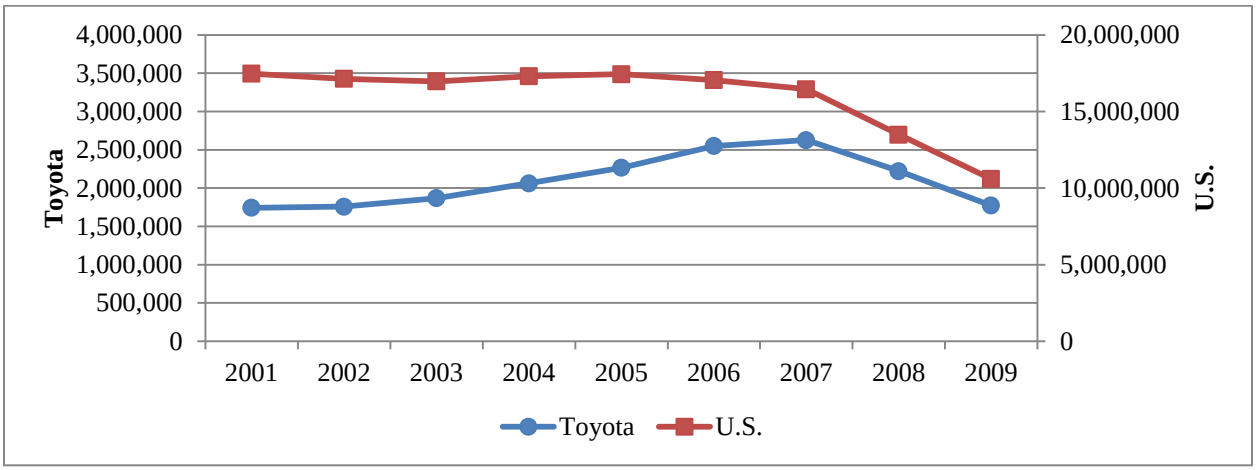


Source: Automotive News

Also notable in Figure 7 is the dip in market share during the first quarter of 2009 when media coverage of issues with "unintended acceleration" among Toyota's vehicles peaked. Much of the loss in market share during January and February was regained as Toyota engaged in an aggressive incentive program.

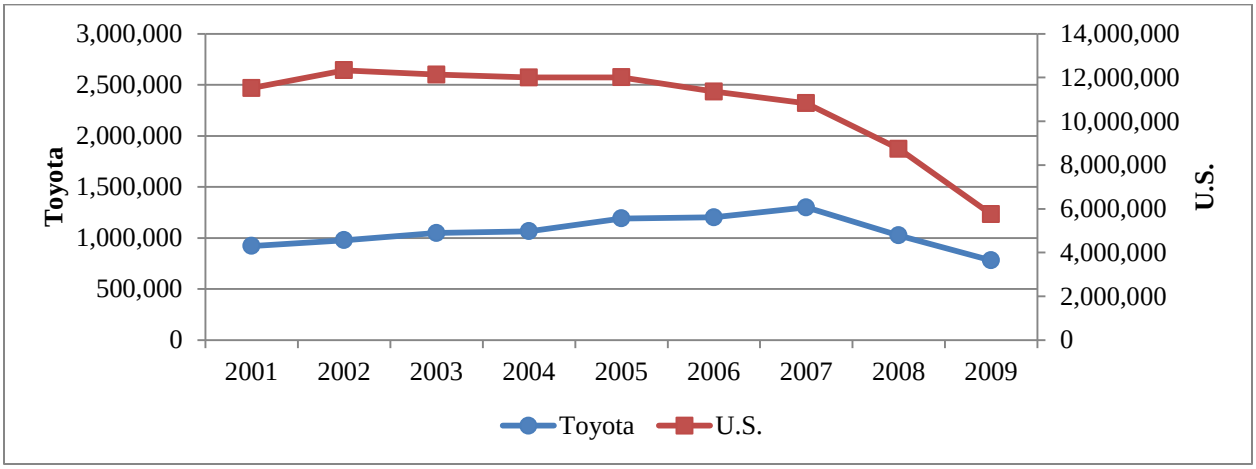
As depicted in Figure 8, from 2001 to 2007, auto sales were mostly flat; however, during this time period, Toyota was regularly able to increase sales. While both U.S. and Toyota sales fell from 2007 to 2009, Toyota's decrease in sales was slightly less dramatic (32.5% as compared to 35.6%). Figure 9 displays a similar story for production, with overall U.S. production flat or slightly declining for the period from 2001 to 2007, while Toyota increased its production by over 40%. Both Toyota and U.S. production fell from 2007 to 2009, but as with sales, Toyota's production cutbacks were less drastic than those seen in the U.S. as a whole (40% reduction as compared to 47%).

Figure 8: Toyota U.S. Sales, 2001-2010



Source: Automotive News

Figure 9: Toyota U.S. Production, 2001-2010

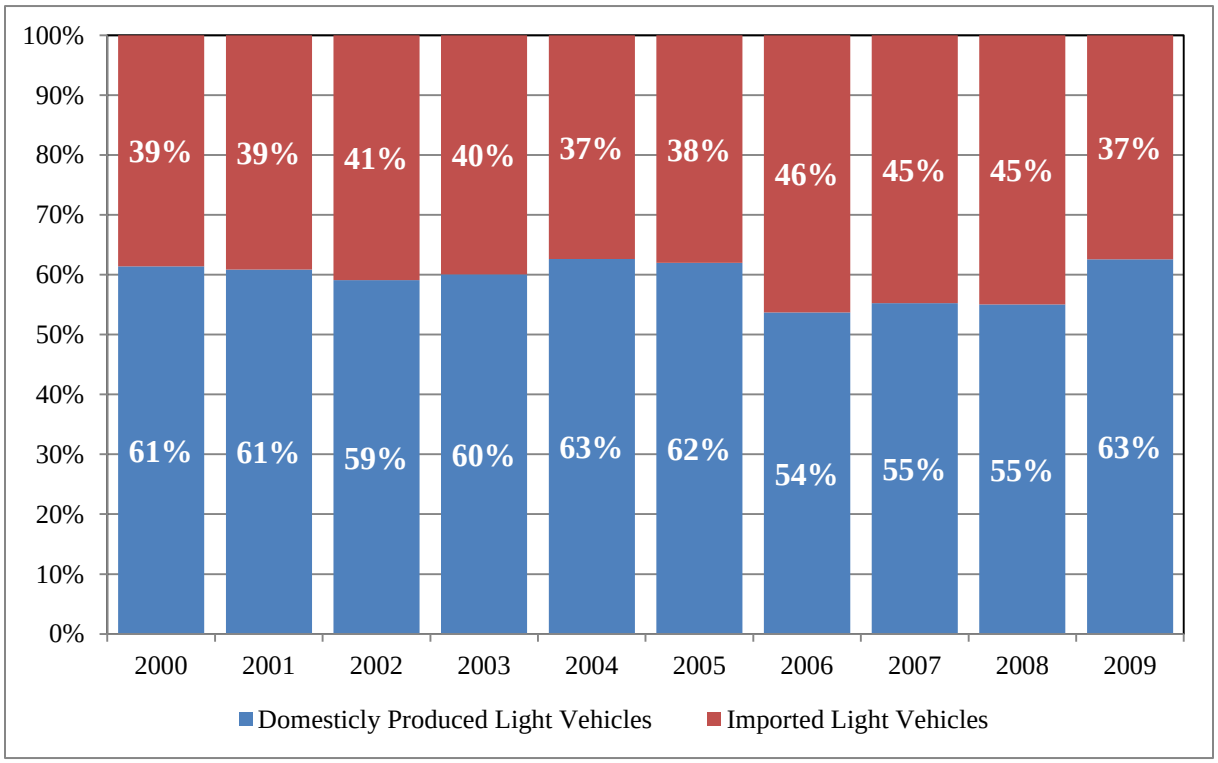


Source: Automotive News

While Toyota's sales numbers have begun to improve over last year's, different segments are improving at different rates. While Toyota has seen remarkable growth in SUV sales in July 2010 as compared to July 2009 (48 percent sales growth), the base numbers of July 2009 were abnormally low; SUV sales had fallen by nearly 58 percent from the previous year. CUVs, however, had relatively low losses in July 2009 compared year over year to July 2008 (less than two percent decline), and have shown reasonably strong growth in the past year (14 percent sales growth). Toyota continues to primarily sell passenger cars, with that segment making up 58 percent of total sales.

Despite the recession, Toyota has maintained steady vehicle production in the U.S. This year, the portion of domestically produced Toyota vehicles sold in the U.S. was the highest it has been in a decade, with 63 percent of all vehicles sold produced domestically. Figure 10 graphically displays the share of Toyota's vehicle sales domestically produced. When the new plant in Tupelo Mississippi (see page 32) enters production in 2011, it is estimated that the percent of Toyota vehicles (sold in the U.S.) produced domestically will rise to 70 percent.

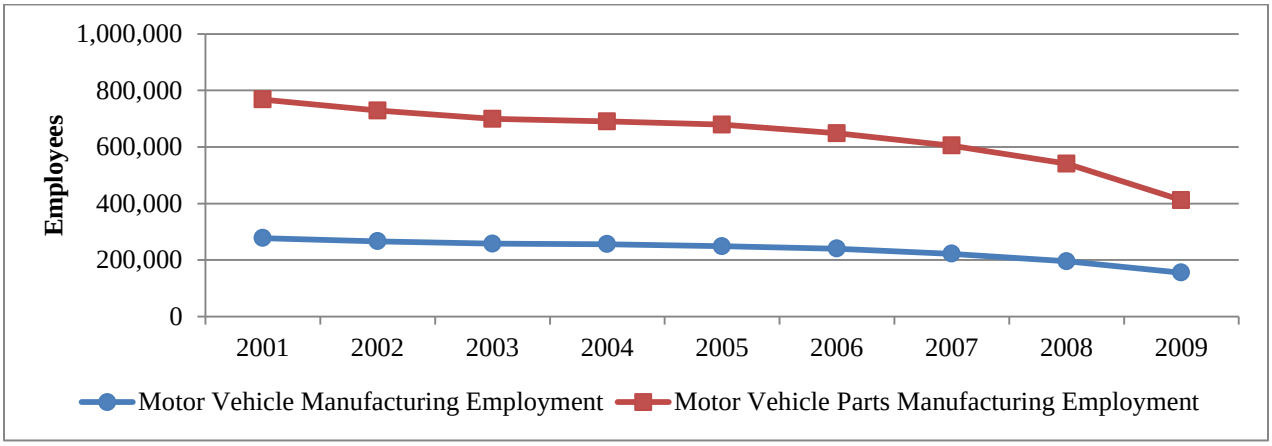
Figure 10: Breakdown of Toyota's US Light Vehicle Sales by Domestic/Imported, 2000-2009



Source: Automotive News

Motor vehicle manufacturing employment and vehicle parts manufacturing employment trends in the United States have been in decline since 2001. Motor vehicle manufacturing employment has dropped by more than 120,000 (44.0 percent) between 2001 and 2009, as seen in Figure 11. Similarly, over the same period, motor vehicle parts manufacturing employment has declined by more than 350,000 (46.3 percent). The industry decline accelerated in the recession of 2008/2009, with a considerable loss of jobs among automakers–particularly among parts suppliers. Currently, however, automakers and suppliers have rationalized capacity; the industry is well positioned (at all levels) to be profitable at much lower levels of production. Industry employment should be stable or even grow in coming years.

Figure 11: Motor Vehicle and Parts Employment: 2001-2009



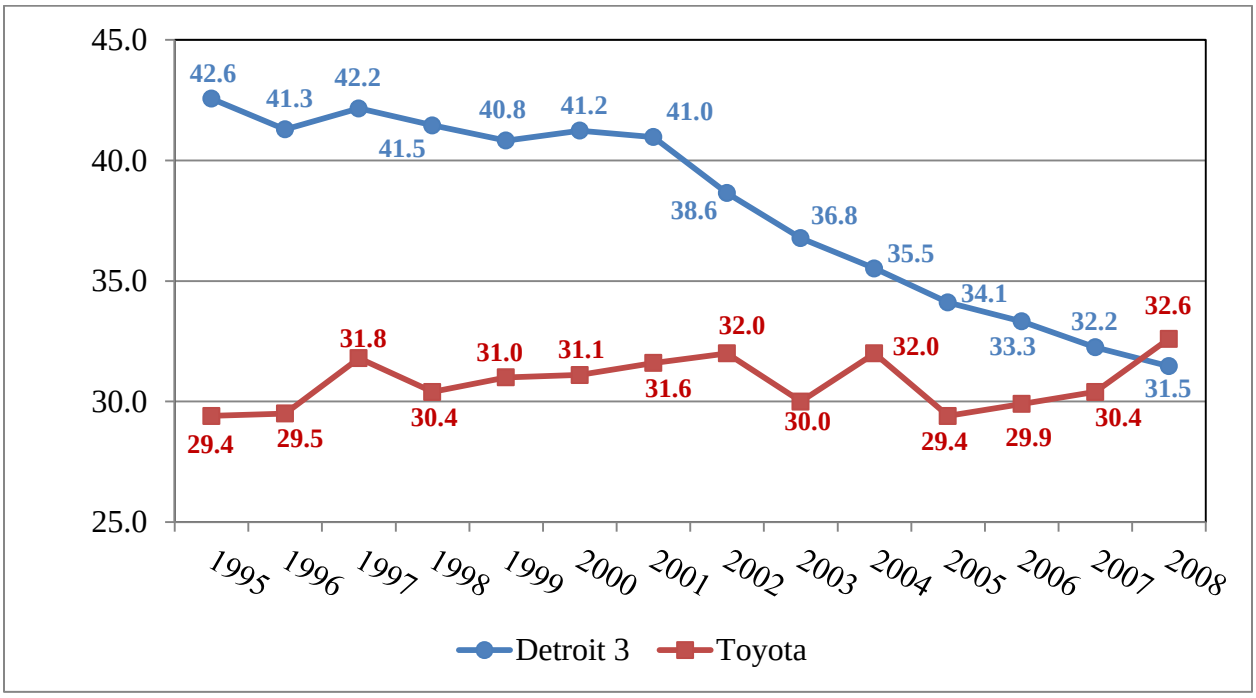
Sources: Bureau of Labor Statistics

The Leaders of Lean Manufacturing

Toyota is well known for its lean manufacturing practices, which have now diffused throughout the industry. The effects of a corporate philosophy that stresses the elimination of waste and constant improvement are apparent throughout Toyota operations, including manufacturing as well as non-manufacturing facilities. Toyota also believes that eliminating waste is only a part of implementing successful lean practices. Other important factors include eliminating the overburden to people and equipment as well as eliminating unevenness in production schedules.[9] Figure 12 depicts the evolution of the total hours of manufacturing labor input (a total of hours used in vehicle assembly, engine and transmission assembly, and stamping of major vehicle body panels) per vehicle produced (HPV). The figure utilizes data from Harbour's HPV analysis, which is considered the most reliable manufacturing productivity comparison available for the North American auto industry. The HPV for Toyota, as well as figures for the major domestic automakers producing vehicles in the United States, is shown from 1995 to 2008.

[9] Liker, Jeffery "The Toyota Way: 14 Management Principles From The World's Greatest Manufacturer" New York: McGraw-Hill, 2004. p.38

Figure 12: Productivity Estimates (Hours per Vehicle), 1999-2008



Source: The Harbour Report 1996 – 2010, Harbour Consulting. Research by the Center for Automotive Research.

The complexity of the content of vehicles has increased significantly in recent years, particularly with the growth in electronic components integrated into vehicles. Electronics are now estimated to constitute 40-50 percent of a vehicle's cost, up from 20 percent ten years ago.[10] In addition, the variety of vehicles introduced into the market has greatly increased. These factors have created both productivity and quality control challenges for all automakers. Regardless, Toyota has historically maintained productivity levels higher than the industry average. Clearly, Toyota has been the benchmark since before 1995. Only recently have the other automakers managed to pull even, with the Detroit 3 average hours per vehicle reaching near parity with Toyota in production year 2008.

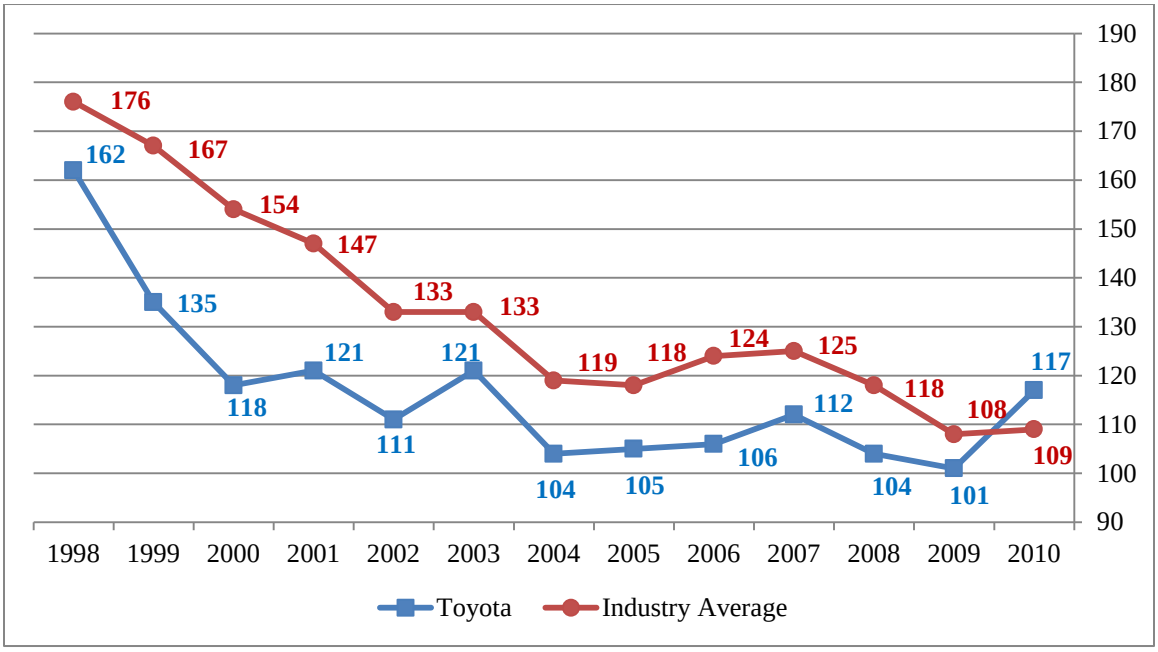
Toyota's impact in changing industry practices is not limited to the automotive industry, however. Many companies, throughout not just the manufacturing sector but also the service and retail sectors, benchmark Toyota and lean manufacturing practices for productivity improvement. The U.S. economy has experienced strong, almost historic, productivity growth in recent years. Although the source of this growth can be partially attributed to the greater use of

[10] Murray, Charles J. (2009). "Automakers Aim to Simplify Electrical Architectures." Design News. July 29, 2009. <http://www.designnews.com/article/316784-Automakers_Aim_to_Simplify_Electrical_Architectures.php>.

information technology, some observers also point out the competitive effect of international companies on the entire U.S. economy.[11]

The high levels of productivity achieved by Toyota's U.S. manufacturing operations are not at the expense of quality in its products. Figure 13 depicts the history of J.D. Power and Associates' Initial Quality Study (IQS) results. The number of problems reported per 100 vehicles in the first 90 days (PP100) is shown for vehicles sold in the United States, as well as Toyota Division vehicles (not including Lexus), during 1998-2010.

Figure 13: J.D. Power and Associates Initial Quality Study Ratings: 1998-2010



Sources: J.D. Power and Associates Initial Quality Study (IQS) 2005-2010, Center for Automotive Research.

Although the overall industry has posted impressive improvements in quality during this time period, Toyota has maintained its lead in quality. From 1998 to 2009, Toyota's PP100 score

[11] For instance, see: Spear, Steven, and Brown, H. Kent "Decoding the DNA of the Toyota Production System". Boston: Harvard Business Review. Sept/Oct 1999 Vol. 77, Issue. 5.; Spear, Steven "Learning to Lead at Toyota." Harvard Business Review. Boston: May 2004 Vol. 82, Issue. 5.; Furman, Cathie "Implementing a Patient Safety Alert System". Nursing Economics. Pitman: Jan/Feb 2005 Vol. 23, Issue 1.; Elsey, Barry "The Training and Development of Kaizen and Technology Transfer Instructors in the Toyota Corporation: A Practical and Conceptual Perspective in Human Resource Development". Training & Management Development Methods. Bradford: 2001 Vol. 15, Issue 4.; Kasul, Ruth A., Motwani, Jaideep G. "Successful Implementation of TPS in a Manufacturing Setting: A Case Study". Industrial Management + Data Systems. Wembley: 1997 Vol. 97, Issue 7.; Gross, John M., McInnis, Kenneth R. "Kandan Made Simple Simple: Demystifying and Applying Toyota's Legendary Manufacturing Process." New York: ANACOM, 2003.; Besser, Terry L. "Team Toyota: Transplanting the Toyota Culture to the Camry Plant in Kentucky". New York: State University of New York Press, 1996.; Womack, James P., Jones, Daniel T., Roos, Daniel "The Machine That Changed the World: The Story of Lean Production". New York: Harper Collins, 1990.; Liker, Jeffery "The Toyota Way: 14 Management Principles From The World's Greatest Manufacturer" New York: McGraw-Hill, 2004.; Taiichi, Ohno "Toyota Production System: Beyond Large-Scale Production" New York: Productivity Press, 1988.

decreased from 162 to 101, an improvement of around 38 percent. For that same period, the industry as a whole improved its quality performance, as well.

For the 2010 IQS, however, Toyota fell from 6th best brand to 21st with 121 problems per 100 cars. Among the most frequent of complaints for the brand were problems with floor mats and brakes, the same issues that garnered massive media coverage and resulted in the company recalling over eight million vehicles.[12] With so much negative publicity centered on the brand, it is possible that owners filling out questionnaires for the IQS graded the company more critically than in previous years, an effect that would not materialize in scores of other brands.

Environmental Sustainability

While Toyota has set a moving standard in world class manufacturing productivity and quality, it has also made a corporate commitment to setting another standard in developing environmental technology for its products and processes. Toyota aims "for growth that is in harmony with the environment" and strives "to develop, establish and promote technologies enabling the environment and economy to coexist harmoniously."[13] The "Greenest Vehicles" list from the American Council for an Energy Efficient Economy (ACEEE) is reproduced in Figure 14. The list takes fuel economy and engine emissions into consideration when ranking vehicles, using a "Green Score." In the 2010 rankings, Toyota placed two vehicles in the top 10 and has other fuel efficient products, as well, with the Toyota Camry Hybrid and the Lexus HS 250H nearly making the top 10 list.[14]

The Toyota Prius, which places second, is the most efficient gasoline vehicle in the 2010 lineup. The Prius has a 3-mile-per gallon increase in fuel economy over the previous model year, with 51 mpg in the city and 48 mpg on the highway. The improvements include increased engine size (allowing the engine to operate at lower rpm on the highway), a new exhaust gas recirculation system, an electric water pump, a lower coefficient of drag, light-weighting of several parts, LED low-beams and taillights, a more efficient A/C system, and solar panels on the moon roof.[15] Toyota will release a plug-in version of the Prius in 2011, featuring the manufacturer's first lithium-ion battery.

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[12] Kiley, David. (2010). "Making Sense of the J.D. Power Rankings: Toyota's Down and Ford Is Up – Or Are They?" Aol Autos. June 18, 2010. <http://autos.aol.com/article/2010-jd-power-quality-study/>.

[13] Toyota. (2009). "Toyota Motor Corporation Annual Report 2009." Toyota Motor Corporation. Pg 29. March 31, 2009. <http://www.toyota.co.jp/en/ir/library/annual/pdf/2009/index.html>.

[14] ACEEE. (2010). "ACEEE's Green Book." American Council for an Energy-Efficient Economy. <http://www.greenercars.org/>.

[15] Ibid.

Figure 14: American Council for an Energy Efficient Economy
Greenest Vehicles for 2010 List

Make and Model	Specifications [a]	Emission Standard[b]	MPG: City	MPG: Hwy	Green Score
HONDA CIVIC GX [c]	1.8L 4, auto [CNG]	Tier 2 bin 2 / PZEV	24	36	57
TOYOTA PRIUS	1.8L 4, auto CVT	Tier 2 bin 3 / PZEV	51	48	52
HONDA CIVIC HYBRID	1.3L 4, auto CVT	Tier 2 bin 2 / PZEV	40	45	51
SMART FORTWO CONVERTIBLE/COUPE	1.0L 3, manual	Tier 2 bin 5 / ULEV II	33	41	50
HONDA INSIGHT	1.3L 4, auto CVT	Tier 2 bin 3	40	43	50
FORD FUSION HYBRID/ MERCURY MILAN HYBRID	2.4L 4, auto CVT	Tier 2 bin 3 / PZEV	41	36	47
TOYOTA YARIS	1.5L 4, manual	Tier 2 bin 5 / ULEV II	29	36	46
NISSAN ALTIMA HYBRID	2.5L 4, auto CVT	PZEV	35	33	46
MINI COOPER	1.6L 4, manual [P]	Tier 2 bin 5 / ULEV II	28	37	45
CHEVROLET COBALT XFE/ PONTIAC G5 XFE	2.2L 4, manual	Tier 2 bin 5 / PZEV	25	37	45
HYUNDAI ACCENT BLUE	1.6L 4, manual	Tier 2 bin 5 / ULEV II	27	36	45
HONDA FIT	1.5L 4, auto	Tier 2 bin 5 / ULEV II	28	35	45

[CNG] denotes compressed natural gas fuel.
[P] denotes premium gasoline
"**auto CVT**" denotes continuously variable automatic transmission.
a Certain other configurations of these models (with different transmissions or meeting different emission standards) score nearly as well.
b A listing with two emission standards (e.g., Tier 2 bin 2/ PZEV) denotes a single vehicle carrying both a Federal and a California emission certification. Green Scores for such listings reflect the cleaner of the two certifications.
c Compressed natural gas (CNG) vehicle fuel economy given in gasoline-equivalent miles per gallon.

Source: ACEEE

In addition to reducing fuel consumption and engine emissions, Toyota has invested in reducing the environmental impact of its facilities. They recently completed a North America-wide greenhouse gas inventory. Over the past decade, Toyota has made progress in reducing energy consumption and greenhouse gas emissions per vehicle produced.[16] In addition, Toyota plants in North America have achieved and maintained near-zero waste-to-landfill status with all plants collectively having a greater than 95% reduction in the amount of waste sent to landfills compared to 1999 levels.

Toyota's manufacturing processes focus on reducing energy use and greenhouse gas emissions, reducing waste and improving recycling, decreasing water consumption, reducing

[16] Toyota. (2009). "2009 North America Environmental Report: Challenge, Commitment, Progress." Toyota Motor Corporation. December 2009. < http://www.toyota.com/about/environmentreport2009/pdfs/2009report.pdf >.

the use of substances of concern, and improving air quality. Regarding end-of-life vehicles, Toyota has worked to support automobile recycling. Toyota has developed methods to reduce the amount of waste stemming from dismantling vehicles, thus improving the amount of content that can be reclaimed.

Section II: The Economic Impact Analysis

Vehicle Manufacturing-related Activities, 2010

Table 1 in this section details the estimated employment and income contributions by Toyota's U.S. manufacturing operations to the private sector economies of sixteen states and the U.S. for 2010. The estimates of employment are broken out by direct employment (people employed directly by Toyota); intermediate employment (people employed by suppliers who supply Toyota, and the suppliers who supply them); and spin-off employment (expenditure-induced employment resulting from spending by direct and intermediate employees who earn an income as a result of Toyota-related activities).

The process of building motor vehicles necessitates a great many workers assembling those vehicles. In addition to the workers directly employed in Toyota's U.S. assembly operations, many more people are needed to supply the goods and services that are directly or indirectly related to the operations of a motor vehicle company. Beyond the employees at the manufacturing plants, Toyota Motor North America is comprised of individuals that routinely engage in research and design activities that improve vehicle safety and performance; transport and store parts and finished vehicles; manage the complexities of a multi-billion dollar enterprise; and transact with customers to finalize new vehicle sales. Each of these activities requires a unique mix of labor talent and input from other sectors of the economy; the summation of inter-industry transactions and associated labor income expenditures provides a snap shot of Toyota's contribution to the regional and the national economy. This study estimates the total number of workers related to Toyota's U.S. motor vehicle assembly operations, as well as employees in dealership operations and workers employed by the suppliers of goods and services to dealerships.

Complete U.S. operations employment and payroll data supplied by Toyota totaled 28,742 employees who were compensated at $2.3 billion as of June 30, 2010. The employment and payroll data was coded according to the North America Industry Classification System (NAICS) into seven categories for input into the model—motor vehicle manufacturing (NAICS 3361); motor vehicle parts manufacturing (NAICS 3363); management of companies (NAICS 551); professional, scientific and technical services (NAICS 541); securities, commodity contracts and investments (NAICS 523); warehousing and storage (NAICS 493); and administrative and support services (NAICS 561). The motor vehicle assembly data does not include employment at the New United Motor Manufacturing, Inc. (NUMMI) plant in California.

As can be seen in the table below, there are 55,410 intermediate—or supplier—jobs resulting from Toyota's direct employment. The sum of employment in the direct and intermediate categories totals 84,152 total jobs. The spin-off jobs associated with spending by the people who work in the direct and intermediate jobs add another 93,645 jobs, bringing the total jobs associated with Toyota's automotive activities in the United States (direct plus intermediate plus spin-off) to 177,797 jobs. The ratio of total jobs created to direct employment equals the employment multiplier of 6.2 (177,797 ÷ 28,742). This means there are 5 additional jobs in the U.S. economy for every 1 job in Toyota manufacturing-related operations.

Table 1 also includes employees located at Subaru of Indiana Automotive (SIA) in Lafayette, Indiana and employees of two distribution companies. A discussion of SIA and the distribution companies begins on page 34.

Table 1: Contribution of Toyota's Operations to the Economy in the United States, 2010

Economic Impact	Manufacturing-Related	Toyota-dedicated Employees at SIA	Toyota-dedicated Employees at Distributors
Employment			
Direct	28,742	1,278	4,400
Intermediate	55,410	3,023	1,598
Total (Direct + Intermediate)	84,152	4,301	5,998
Spin-Off	93,645	5,715	3,643
Total (Direct + Intermediate + Spin-off)	177,797	10,016	9,641
Multiplier: (Direct + Intermediate + Spin-off)/Direct	6.2	7.8	2.2
Compensation ($ Billions Nominal)	11.646	.665	.522
Less: Transfer Payments & Social Insurance Contributions	-2.168	-.130	-.146
Less: Personal Income Taxes	-1.280	-.072	-.065
Equals Private Disposable Personal Income ($ Billions Nominal)	8.198	.463	.311
Contribution as % of Total Private Economy			
Employment	0.10		
Compensation	0.08		

Compensation in the private sector associated with total jobs (direct plus intermediate plus spin-off) amounts to $11.6 billion. After accounting for transfer payments, social insurance contributions, and personal income taxes, the private disposable personal income (or personal income after taxes, including transfers) is $8.2 billion.

A key change since the 2006 study is that the multiplier effect of direct jobs at Toyota has increased slightly. Primarily, intermediate employment (the suppliers of goods and services to Toyota's manufacturing operations) per direct employee increased. In part, the recession of 2008-2009 brought a contraction in global trade that effectively reduced the long standing pattern of overseas outsourcing. Both auto assembly and auto parts supplier companies purchased increasing amounts of intermediate inputs from domestic sources. There could be a number of explanations for this reversal of outsourcing including unfavorable exchange rates, lower domestic wages, and an effort by more companies to build and source where they sell.

Table 2 provides a breakout of the nearly 150,000 intermediate and spin-off jobs supported by Toyota's manufacturer-related operations. Table 4 on page 28 shows even greater detail of sub-categories these intermediate and spin-off jobs; table 4 also includes an examination of the downstream jobs created by dealership employment. These jobs are spread across numerous manufacturing and non-manufacturing industries. As discussed earlier, the intermediate category captures the employment necessary to satisfy Toyota's demand for the materials and services it needs to design, produce and sell motor vehicles. This can be broadly considered Toyota's U.S. supplier network. This supply network consists of the suppliers who supply parts and services directly to Toyota along with the suppliers who supply the basic materials and services to Toyota's suppliers. Some of these companies supply basic commodities and can be several steps removed from the vehicle design and manufacturing process.

Spin-off jobs are expenditure-induced jobs, created as a result of spending by the people employed in the direct and intermediate categories. As could be expected, a large portion of the spin-off jobs are in the non-manufacturing sectors of retail trade and health services. When employees use their paychecks to purchase a wide range of goods and services including electronics equipment, clothing, food, and health care, employment is created to supply their demands.

Table 2: Intermediate and Spin-off Employment Contribution of Toyota's Manufacturer-related Operations in the U.S., 2010

Types of Jobs	# of Jobs supported by Toyota manufacturing operations	
Forestry, Fishing, Related Activities, and Other	306	
Mining	626	
Utilities	377	
Construction	5,766	
Manufacturing	30,174	
Nonmetallic mineral product manufacturing		1,150
Fabricated metal product manufacturing		2,973
Machinery manufacturing		1,220
Computer and electronic product manufacturing		589
Electrical equipment and appliance manufacturing		468
Motor vehicles parts manufacturing		18,501
Furniture and related product manufacturing		428
Miscellaneous manufacturing		236
Food & Beverage manufacturing		521
Textile mills, textile products, apparel		926
Paper mfg., Printing and related support activities		846
Chemical, petroleum product manufacturing		1,089
Plastics and rubber product manufacturing		1,915
Wholesale Trade	8,115	
Retail Trade	10,852	
Transportation and Warehousing	7,026	
Information	2,585	
Finance and Insurance	9,702	
Real Estate and Rental and Leasing	5,264	
Professional and Technical Services	13,126	
Management of Companies and Enterprises	2,212	
Administrative and Waste Services	10,926	
Educational Services	2,688	
Health Care and Social Assistance	11,762	
Arts, Entertainment, and Recreation	2,674	
Accommodation and Food Services	6,694	
Other Services, including Public Administration	17,492	
TOTAL	149,055	

Automobile Dealerships

Auto assembly operations and motor vehicle parts manufacturing operations are business operations often clustered together within certain areas in manufacturing-oriented regions of the country. Auto dealerships, on the other hand, are found in nearly every community across the country–in rural and urban areas alike. Just as the manufacturing segment of the motor vehicle industry has suffered in the recent economic downturn, the retail and service segment of the industry has also incurred heavy losses. If the amount of column space in news media is considered a measure of issues of importance, the economic and cultural impact of the downturn on auto dealerships was substantial. The omnipresence of auto dealerships in communities across the U.S. allows for a deep connection between their business operations and civic events. Automotive News observes, "If there were a competitive event to measure the philanthropy of businesses in America, the local car dealer would always take the top prize. If you go to a Little League or youth hockey game or any other locally organized sporting event, the sponsors always seem to be local auto dealers."[17]

Tables 3 and 6 detail the estimated employment contributions by new vehicle dealer operations to: the economies of each of the 16 states of this study, the rest of the nation, and the nation as a whole. Employment estimates are broken out by direct employment (people directly employed at dealerships); intermediate employment (people employed by those who provide goods and services, excepting inventory, to dealerships); and spin-off employment (expenditure-induced employment resulting from spending by direct and intermediate employees).

Automotive dealership employment for new vehicle sales totaled nearly 80,000 employees. As can be seen in the table below, there are 33,383 intermediate jobs that support direct employment in the industry (suppliers of goods and services, not including motor vehicle inventory). The spin-off jobs associated with spending (from the people who work in the direct and intermediate jobs) add nearly 55,000 more jobs, bringing the total jobs associated with new motor vehicle Toyota retail operations to nearly 170,000 jobs. The ratio of total jobs created to direct employment produces an employment multiplier for motor vehicle retail operations of 2.1. This multiplier of 2.1 means there is slightly more than 1 additional job in the U.S. economy for every 1 job in Toyota new vehicle dealership operations.

[17] Automotive News. Keith Crain, "Closing Dealerships? Be Careful". September 7, 2009. P. 12.

Compensation in the private sector associated with total jobs (direct plus intermediate plus spin-off) amounts to $8.5 billion. Estimated personal taxes to be paid resulting from employment in automotive manufacturing operations are $1 billion.

Table 3: Total Contribution of Toyota's New Vehicle Dealership Operations to the Private Sector Economy in the United States, 2010

Economic Impact	New Vehicle Dealer Related
Employment	
Direct	79,658
Intermediate	33,383
Total (Direct + Intermediate)	113,041
Spin-Off	54,678
Total (Direct + Intermediate + Spin-off)	167,719
Multiplier: (Direct + Intermediate + Spin-off)/Direct	2.1
Compensation ($ Billions Nominal)	8.558
Less: Transfer Payments & Social Insurance Contributions	-1.701
Less: Personal Income Taxes	-1.000
Equals Private Disposable Personal Income ($ Billions Nominal)	5.857
Contribution as % of Total Private Economy	
Employment	0.10
Compensation	0.09

Intermediate and Spin-off Employment Contribution of Toyota's Manufacturer-related Operations in the U.S., 2010

Table 4 provides a detailed look at the nearly 150,000 intermediate and spin-off jobs supported by Toyota's manufacturer-related operations and nearly 90,000 intermediate and spin-off jobs supported by dealership operations. These jobs, totaling nearly 240,000 jobs do not include direct employment at Toyota or the dealerships. These jobs are spread across numerous manufacturing and non-manufacturing industries. The intermediate categories of jobs are the suppliers of goods and services to Toyota's production operations and to Toyota dealers. As stated earlier in this report, spin-off jobs are expenditure-induced jobs, created as a result of spending by the people employed in the direct and intermediate categories. These jobs are created or supported when employees use their paychecks to purchase a wide range of goods and services, including electronics equipment, clothing, food, and health care.

Table 4: Intermediate and Spin-off Employment Contribution of Toyota's Operations and Dealerships in the U.S., 2010

Types of Jobs (Sub-category job titles are indented and listed below the main job category)	Operations	Dealerships
	Sub-category	Sub-category
Forestry, Fishing, Related Activities, and Other	306	268
Mining	626	382
Utilities	377	314
Construction	5,766	6,198
Manufacturing	30,862	5,592
Nonmetallic mineral product manufacturing	1,150	332
Fabricated metal product manufacturing	2,973	909
Machinery manufacturing	1,220	211
Computer and electronic product manufacturing	589	150
Electrical equipment and appliance manufacturing	468	139
Motor vehicles parts manufacturing	18,501	439
Furniture and related product manufacturing	428	350
Miscellaneous manufacturing	236	204
Food & Beverage manufacturing	521	485
Textile mills, textile products, apparel	926	132
Paper mfg., Printing and related support activities	846	821
Chemical, petroleum product manufacturing	1,089	503
Plastics and rubber product manufacturing	1,915	917

Continued from previous page

Types of Jobs (Sub-category job titles are indented and listed below the main job category)	Operations		Dealerships	
		Sub-category		Sub-category
Wholesale Trade	8,115		2,833	
Retail Trade	10,852		8,733	
Transportation and Warehousing	7,026		3,766	
Truck transportation		3,177		1,887
Warehousing and storage		2,465		892
All other modes of transportation		1,384		987
Information	2,585		2,200	
Finance and Insurance	9,702		6,271	
Business operations		4,406		2,986
Insurance and all other financial services		5,296		3,285
Real Estate and Rental and Leasing	5,264		4,292	
Professional and Technical Services	13,126		8,811	
Advertising, marketing, promotions, media, communications		2,632		2,909
Engineering and engineering technician services		4,512		944
Scientists, except medical fields		1,274		352
Legal services		1,653		806
Computer and IT services		2,938		3,498
All other professional and technical services		117		302
Management of Companies and Enterprises	2,212		1,225	
Administrative and Waste Services	10,926		8,944	
Educational Services	2,688		1,180	
Health Care and Social Assistance	11,762		8,367	
Arts, Entertainment, and Recreation	2,674		1,884	
Accommodation and Food Services	6,694		4,153	
Other Services, including Public Administration	17,492		12,648	
Protection services (police, fire, etc.)		1,905		1,623
Repair and maintenance services - building and vehicle		12,990		8,563
Government services (except protection services)		1,748		1,975
All other services		849		487
TOTAL	149,055		88,061	

Summary

The table below sums the combined effects from all motor vehicle manufacturing and retail operations. Summing the direct employment from all operations (108,400), intermediate employment (88,793) and spin-off employment (148,323) Toyota operations directly provide or support 345,516 jobs in the U.S. economy. There are employees at SIA who produce the Toyota Camry. There are two distribution companies who handle the distribution for about one-thrid of all Toyota vehicles sold in the U.S. A discussion of the SIA employment contribution and distribution employment contribution begins on page 34. Including these employees and their economic impacts, Toyota operations support 365,173 jobs in the U.S. economy. Comparing total employment to direct employment produces an overall employment multiplier of 3.2. This means that there are 2.2 additional jobs in the U.S. economy for every one job related to Toyota.

Table 5: Total Contribution of Toyota's Manufacturing-related and New Vehicle Dealership Operations to the Private Sector Economy in the United States, 2010

Economic Impact	Manufacturing-Related	New Vehicle	Sub-Total	Toyota-dedicated	Total
Employment					
Direct	28,742	79,658	108,400	5,678	114,078
Intermediate	55,410	33,383	88,793	4,621	93,414
Total (Direct + Intermediate)	84,152	113,041	197,193	10,299	207,492
Spin-Off	93,645	54,678	148,323	9,358	157,681
Total (Direct + Intermediate + Spin-off)	177,797	167,719	345,516	19,657	365,173
Multiplier: (Direct+Intermediate+Spin-off)/Direct	6.2	2.1	3.2	3.5	3.2
Compensation ($ Billions Nominal)	11.646	8.558	20.204	1.187	21.391
Less: Trnsfr Pymts & Social Insur. Contributions	-2.168	-1.701	-3.869	-0.276	-4.145
Less: Personal Income Taxes	-1.28	-1	-2.28	-0.137	-2.417
Equals Private Disposable Personal Income ($ Billions Nominal)	8.198	5.857	14.055	0.774	14.829
Contribution as % of Total Private Economy					
Employment	0.1	0.1	0.2		0.2
Compensation	0.08	0.09	0.17		0.2

Table 6: Total Toyota Manufacturer- and Dealer-related Employment in the U.S. by State and Nationally, 2010

Economic Impact	U.S.	MI	TN	OH	CA	MO	NC	GA	TX	AL	AR	MD	WV	IN	KY	IL	MS	Rest of U.S.
Manufacturer-related																		
Direct Employment	28,742	900	229	170	5,800	698	48	70	2,071	771	277	657	1,090	4,153	8,263	257	65	3,223
Intermediate	55,410	3,646	1,326	3,112	2,107	1,464	772	1,100	4,602	1,381	354	469	807	8,867	10,696	2,256	232	12,219
Spin-off	93,645	5,308	3,843	6,414	6,716	2,344	2,055	2,727	5,937	2,442	807	1,341	1,487	10,722	12,001	5,037	1,012	23,452
Subtotal	177,797	9,854	5,398	9,696	14,623	4,506	2,875	3,897	12,610	4,594	1,438	2,467	3,384	23,742	30,960	7,550	1,309	38,894
SIA and Distributors	19,641	591	291	697	201	176	212	2,757	3,571	636	70	108	55	4,610	886	934	72	3,801
Subtotal	197,438	10,445	5,689	10,393	14,824	4,682	3,087	6,654	16,181	5,230	1,508	2,575	3,439	28,352	31,846	8,484	1,381	42,695
New Vehicle Dealers																		
Direct Employment	79,658	1,077	1,693	2,257	12,258	1,228	2,199	2,505	6,629	1,179	603	2,364	679	2,916	895	2,873	708	37,595
Intermediate	33,384	600	561	947	5,825	483	790	1,005	3,001	361	184	623	106	697	265	1,323	160	16,453
Spin-off	54,679	1,232	1,269	1,905	8,480	1,106	1,722	1,887	5,315	861	500	1,369	354	1,362	716	2,359	455	23,788
Total Employment	365,159	13,354	9,212	15,502	41,387	7,499	7798	12,051	31,126	7,631	2,795	6,931	4,578	33,327	33,722	15,039	2,704	120,531

NOTE: Numbers may not add up due to rounding.

Mississippi Economic Forecast for 2012

Toyota's newest assembly plant, near Tupelo, Mississippi, is in the start-up phase of operations. It is expected to come online and begin full production within the next twelve months. The plant will manufacture Toyota Corollas, allowing Toyota to produce nearly all Corollas for this market in North America. This analysis will estimate the potential economic impact of the Toyota assembly facility on the Mississippi state economy as well as the regional and national economies. This forecasted employment is in addition to the existing Toyota-related employment as of June, 2010, estimated in the previous section of this report. Table 7 shows the employment forecast for the first full year of operations in 2012.

Table 7: Total Estimated Contribution of Toyota's Tupelo, Mississippi Plant by 2012

Economic Impact	U.S.	Mississippi	Region
Employment			
Direct	2,000	2,000	2,000
Intermediate	5,133	1,857	2,603
Total (Direct + Intermediate)	7,133	3,857	4,603
Spin-Off	8,680	1,713	3,871
Total (Direct + Intermediate + Spin-off)	15,813	5,570	8,474
Multiplier: (Direct + Intermediate + Spin-off)/Direct	7.9	2.8	4.2
Compensation ($ Millions Nominal)	1,268	403	610
Less: Transfer Payments & Social Insurance Contributions	-242	-63	-102
Less: Personal Income Taxes	-135	-35	-56
Equals Private Disposable Personal Income ($ Millions Nominal)	891	305	452

There is another automotive assembly plant located in Mississippi. However, it is unlikely that the automotive sector of the Mississippi economy is large enough to provide all of the parts and supplies required by the Tupelo assembly plant. Tupelo is located near borders with Arkansas and Tennessee, and as such, these states are likely to see significant employment in intermediate (supplier) and spin-off jobs resulting from the direct employment that the plant provides. It is estimated the plant will add 5,570 employees to the state of Mississippi, while it will add approximately 8,500 jobs to the region.

Expected private sector compensation within Mississippi resulting from Toyota's Tupelo plant is forecast to be over $400 million, and over $600 million for the southeastern part of the country. When netting for transfer payments, social insurance contributions, and personal income taxes, the private disposable personal income generated in Mississippi from the activities related to the Toyota Tupelo facility is expected to be over $300 million in 2012, $450 million for the southeastern region, and nearly $900 million for the entire country (including Mississippi).

Additional Employment Supported by Toyota Motor North America

To make maximum use of available motor vehicle production and distribution capacity at other, non-Toyota facilities, Toyota contracts for the production of motor vehicles at the Subaru of Indiana Automotive, Inc. (SIA) facility in Lafayette, Indiana. The plant employs 2,770 associates, nearly 500 of which are administrative, with the remaining working on automotive production. Of these employees, 1,278 are dedicated to production of Toyota vehicles. Toyota announced that it would produce the Camry in the SIA plant in March of 2007 and actual production began in February 2007. The impact of Toyota production at the SIA plant was not counted in the operations portion of the study. This section estimates the employment contribution of production of Toyota vehicles at the SIA plant[18] to be slightly more than 10,000 jobs nationwide.

Table 8: Total Estimated Contribution of Employment Dedicated to Toyota Vehicle Production and Distribution, 2010

Economic Impact	Toyota-dedicated Production Employment, SIA	Toyota-dedicated Employees at Distributors
Employment		
Direct	1,278	4,400
Intermediate	3,023	1,598
Total (Direct + Intermediate)	4,301	5,998
Spin-Off	5,715	3,643
Total (Direct + Intermediate + Spin-off)	10,016	9,641
Multiplier: (Direct + Intermediate + Spin-off)/Direct	7.8	2.2
Compensation ($ Millions Nominal)	665	522
Less: Transfer Payments & Social Insurance Contributions	-130	-146
Less: Personal Income Taxes	-72	-65
Equals Private Disposable Personal Income ($ Millions Nominal)	463	311

Expected total private sector compensation resulting from Toyota's contract with the SIA plant is estimated at $665 million. When netting for transfer payments, social insurance contributions,

[18] SIA. (2009). "Outline of Production Facility." Subaru of Indiana Automotive, Inc. July 22, 2009. <http://www.subaru-sia.com/Company/sia_outline_english_2007.pdf>.

and personal income taxes, the private disposable personal income generated from the activities related to production for Toyota at this facility is estimated to be $463 million.

In addition, Toyota contracts with large distribution companies such as Southeast Toyota Distributors, LLC (SET) located in Florida and Gulf States Toyota Distributers (GST) located in Texas. SET distributes vehicles and parts to more than 173 dealers in the five states of Florida, Georgia, Alabama, North Carolina, and South Carolina. The vehicles distributed by SET account for 20% of Toyota sales in the United States. SET is a wholly owned subsidiary of JM Family Enterprises.[19,20] GST distributes vehicles and parts to 150 dealers in the five states of Arkansas, Louisiana, Mississippi, Oklahoma and Texas. The vehicles distributed by GST account for 13% of Toyota sales in the United States. GST is a wholly owned subsidiary of the Friedkin Companies.[21] The employees of these distribution companies are not direct employees of Toyota operations, however, they are largely accounted for in the indirect employment numbers. Together, these two distributors employ about 4,400 people exclusively for the distribution of Toyota vehicles. In turn, these 4,400 jobs support another 5,241 jobs in the economy, for a total contribution of more than 9,600 jobs. The private disposable personal income generated from the activities related to distribution for Toyota at these companies is estimated to be $311 million.

Conclusion

This study highlights the substantial impact automobile companies have on national employment. Nationwide, Toyota operations support many indirect and spin-off jobs. As shown in the analyses of Toyota vehicle manufacturing operations in Tupelo, Mississippi and West Lafayette, assembly plants make the largest contribution to employment

Toyota's U.S. operations have a large impact on the U.S. economy, and job creation and retention are occurring on a very large scale as a result of Toyota's investment in this country. This further confirms the importance of foreign direct investment to the sustainability of the overall U.S. automotive industry.

[19] JM Family. (2010). "Southeast Toyota Distributors, LLC." JM Family Enterprises, Inc. <http://www.jmfamily.com/Business/SoutheastToyota.aspx>.
[20] Forbes. (2008). "America's Largest Private Companies: #23 JM Family Enterprises" Forbes.com. November 11, 2008. <http://www.forbes.com/business/lists/2008/21/privates08_JM-Family-Enterprises_PTGE.html>.
[21] Forbes. (2008). "America's Largest Private Companies: #53 Gulf States Toyota" Forbes.com. November 11, 2008. <http://www.forbes.com/lists/2008/21/privates08_Gulf-States-Toyota_5FC5.html>.

Section III: State Level Analysis

Alabama

Toyota's first major investment in Alabama was in 2001, developing an 800,000 square foot engine plant on a 3,000 acre site in the city of Huntsville, AL. Since 2001, Toyota Motor Manufacturing, Alabama, Inc. (TMMAL) has invested $552 million to develop V8 and V6 engines for the Tacoma and Tundra pickup trucks and the Sequoia sport utility vehicle. Toyota's investments in the state and commitment to developing U.S.-manufactured engines for its North American assembly facilities provide 771 direct jobs to Alabama residents. In addition to the direct manufacturing jobs, Toyota also employs 1,179 new vehicle dealers at its Toyota, Lexus, and Scion dealerships within the state. The combined effect of engine manufacturing and new vehicle dealership employment in Alabama, along with the activities of other Toyota employees throughout the U.S., provides employment opportunities for 6,995 workers in Alabama.

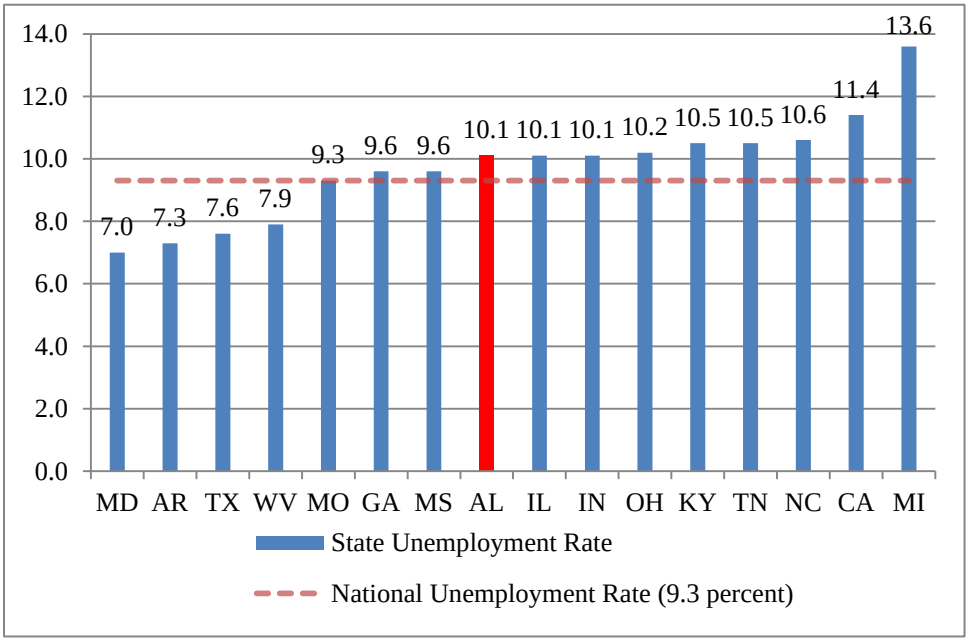
Total Statewide Employment Contribution: 6,995

Direct Employment (Manufacturer-related): 771	Direct Employment (New Vehicle Dealers): 1,179
Intermediate: 1,381	Intermediate: 361
Spin-off: 2,442	Spin-off: 861

Alabama and TMMAL (2009)

- State Unemployment Rate (2009): 10.1%
- State Employment (2009): 1,829,960
- Toyota Contribution to Total State Employment: 0.38%
- TMMAL Produced 65,400 4.0L V6 and 93,900 4.6L-5.7L V8 engines
- Engines used in Tacoma, Tundra, Sequoia

Alabama's Unemployment Rate, Relative to Other States, 2009



Arkansas

Toyota's operations in Arkansas involve mainly its component supplier, Hino Motors Manufacturing U.S.A. Inc. (HMMUSA) and their 400,000 square-foot plant in the city of Marion, AR. Hino Motors provides axles and other suspension parts to Toyota. Toyota has invested $241 million in the plant and owns a controlling interest in Hino Motors Ltd. Toyota's investments in the state and commitment to developing U.S.-manufactured components for its North American assembly facilities provide 277 direct jobs to Arkansas residents. In addition to the direct manufacturing jobs, Toyota also employs 603 new vehicle dealers at its Toyota, Lexus, and Scion dealerships within the state. The combined effect of component manufacturing and new vehicle dealership employment in Arkansas, along with the activities of other Toyota employees throughout the U.S., provides employment opportunities for 2,725 workers in Arkansas.

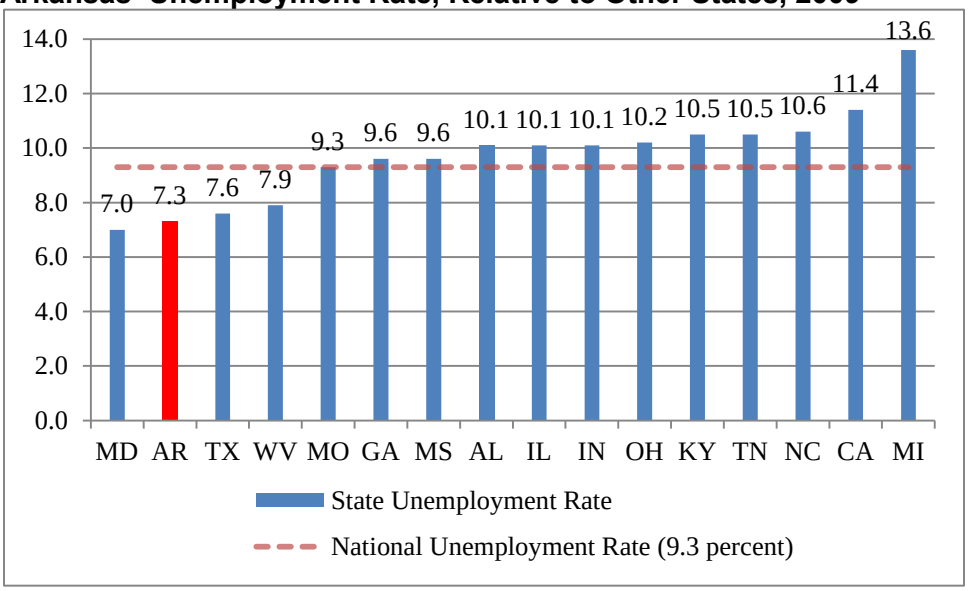
Total Statewide Employment Contribution: 2,725

Direct Employment (Manufacturer-related): 277	Direct Employment (New Vehicle Dealers): 603
Intermediate: 354	Intermediate: 184
Spin-off: 807	Spin-off: 500

Facts for Arkansas (2009)

- State Unemployment Rate (2009): 7.3%
- State Employment (2009): 1,134,258
- Toyota Contribution to Total State Employment: 0.24%
- Hino Motors Ltd. Produces axles and suspension parts for Toyota

Arkansas' Unemployment Rate, Relative to Other States, 2009



California

Toyota's first foray into the North America vehicle market was in 1957 when Toyota Motor Sales, U.S.A., and Inc. (TMS) was formed in Hollywood, CA. In 1972, Toyota built TABC in Long Beach, CA making it Toyota's first North American manufacturing plant. Still in operation, TABC produces steering columns, catalytic converters and sheet metal components used in Toyota Tacoma assembly. In 1973, Calty Design Research, Inc. was formed to develop design solutions for Toyota vehicles, including color and trim. By 1982, a national sales headquarters was opened in Torrance, CA; in 1986, Toyota manufactured its first vehicle in the U.S. at the New United Motor Manufacturing, Inc. plant in Fremont, CA in partnership with General Motors. Toyota's U.S. roots lie in California and the state has greatly benefited from the company's presence. Since 1957, Toyota has invested $2.286 billion to design and manufacture vehicles, provide finance and insurance products for buyers, and assist dealerships across 49 states in their vehicle sales, parts and services and marketing activities.

Toyota's manufacturer-related activities in California provide 5,800 direct jobs to California residents. In addition to the direct manufacturing, finance, sales, and design jobs, Toyota also employs 12,258 new vehicle dealers at its Toyota, Lexus, and Scion dealerships within the state. The combined effect of vehicle manufacturing, research and design activities, finance and insurance handling and new vehicle dealership employment in California along with the spinoff activities of Toyota employees throughout California provides employment opportunities for 41,186 workers in California.

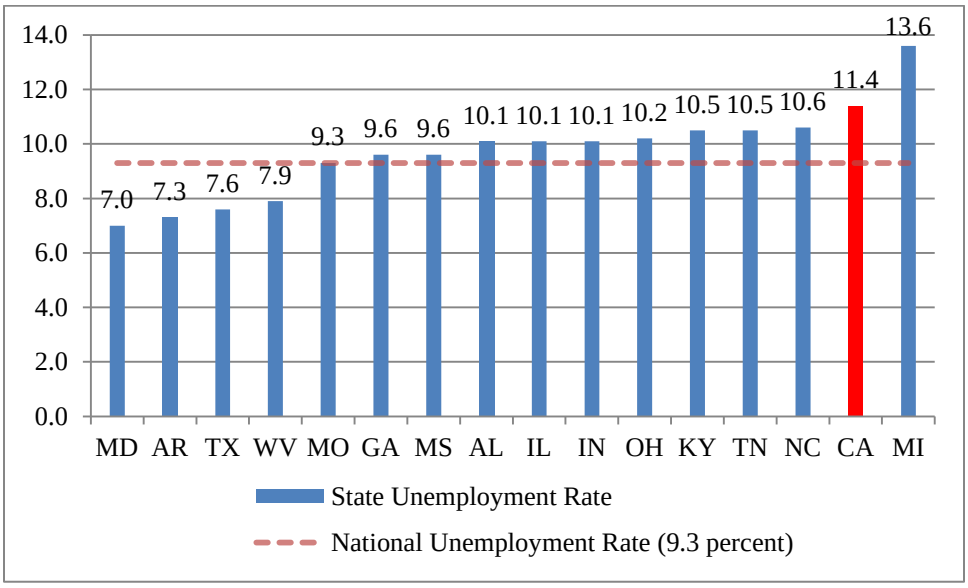
Total Statewide Employment Contribution: 41,186

Direct Employment (Manufacturer-related): 5,800	Direct Employment (New Vehicle Dealers): 12,258
Intermediate: 2,107	Intermediate: 5,825
Spin-off: 6,716	Spin-off: 8,480

Facts for California (2009)

- State Unemployment Rate (2009): 11.4%
- State Employment (2009): 14,621,432
- Toyota Contribution to Total State Employment: 0.28%
- First North American plant formed in Long Beach, CA (1972)
- First North American vehicle assembled in Fremont, CA (1986)
- Toyota's financial services and sales operations headquartered in Torrance, CA

California's Unemployment Rate, Relative to Other States, 2009



Georgia

Toyota obtains door frames, locks, hinges and gaskets from automotive suppliers within Georgia. In addition to independent automotive parts manufacturers acting as suppliers to Toyota's North American assembly facilities, Toyota has invested $79 million in the state and operates 1 of its 30 financial services offices in Atlanta, GA. The finance and insurance products and services offered by 70 professionals in Atlanta provide an array of customer-focused finance and insurance options for Toyota customers within and outside of the state.

Toyota's financial service office in Georgia provides 70 direct jobs to Georgia residents. In addition to the finance- and insurance-related jobs, Toyota also employs 2,505 new vehicle dealers at its Toyota, Lexus, and Scion dealerships within the state. The combined effect of finance and insurance handling and new vehicle dealership employment in Georgia, along with the activities of other Toyota employees throughout the U.S., provides employment opportunities for 9,294 workers in Georgia.

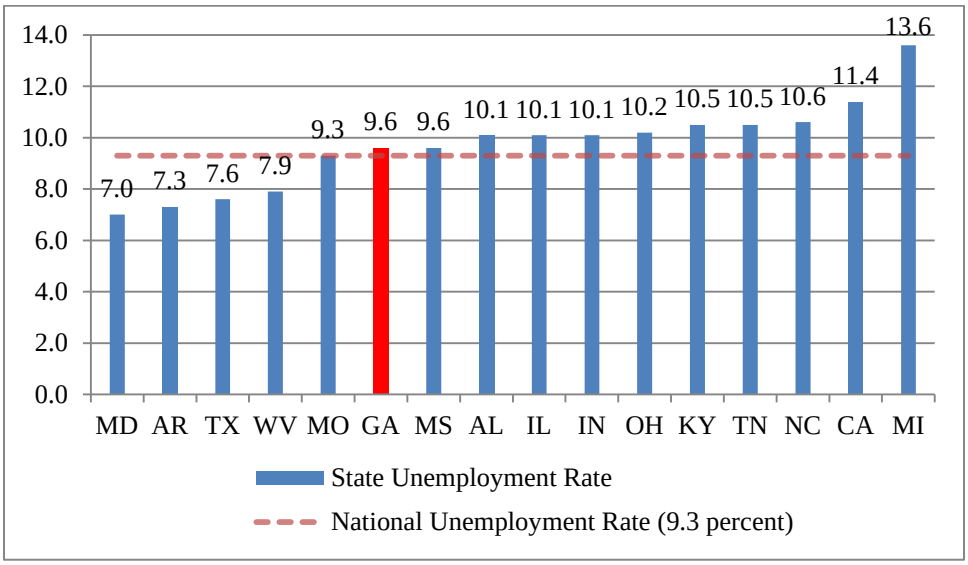
Total Statewide Employment Contribution: 9,294

Direct Employment (Manufacturer-related): 70	Direct Employment (New Vehicle Dealers): 2,505
Intermediate: 1,100	Intermediate: 1,005
Spin-off: 2,727	Spin-off: 1,887

Facts for Georgia (2009)

- State Unemployment Rate (2009): 9.6%
- State Employment (2009): 3,799,790
- Toyota Contribution to Total State Employment: 0.24%
- Supplier state to Toyota North American manufacturing
- Toyota Financial Services Office located in Atlanta, GA

Georgia's Unemployment Rate, Relative to Other States, 2009



Indiana

Toyota's first major investment in Indiana was in 1996, developing a 4,000,000 square foot assembly plant in the city of Princeton, IN. Since 1996 Toyota has invested $2.9 (or $3.6—see source) billion in Princeton to build and modify the Toyota Motor Manufacturing Indiana (TMMI) plant that produces the Sienna, Highlander and Sequoia. In 2007, Toyota entered into an agreement with Fuji Heavy Industries Ltd. to build the Camry at the Subaru of Indiana Automotive, Inc. plant in Lafayette, IN. To date Toyota has invested $207 million at the facility. Toyota's investments in the state and commitment to developing U.S.-manufactured vehicles for its customers provide 4,153 direct jobs to Indiana residents. In state purchasing of brake components, bumpers, fuel tanks, exterior moldings and steering columns, along with numerous other vehicle components, create additional employment opportunities throughout the diversified automotive parts supplier base. In addition to the direct manufacturing jobs, Toyota also employs 2,916 new vehicle dealers at its Toyota, Lexus, and Scion dealerships within the state. The combined effect of engine manufacturing and new vehicle dealership employment in Indiana, along with the activities of other Toyota employees throughout the U.S., provides employment opportunities for 28,717 workers in Indiana.

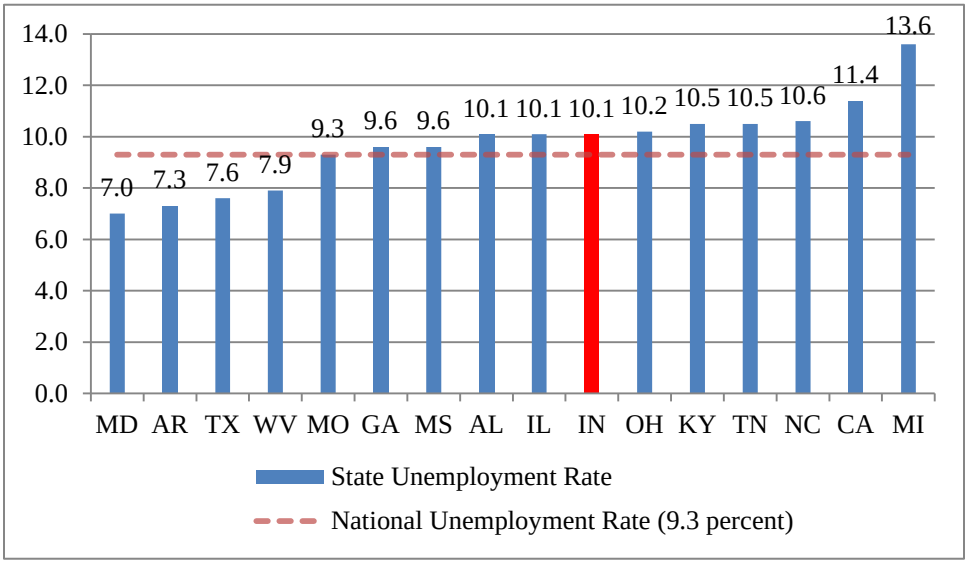
Total Statewide Employment Contribution: 28,717

Direct Employment (Manufacturer-related): 4,153	Direct Employment (New Vehicle Dealers): 2,916
Intermediate: 8,867	Intermediate: 697
Spin-off: 10,722	Spin-off: 1,362

Facts for Indiana (2009)

- State Unemployment Rate (2009): 10.1%
- State Employment (2009): 2,704,688
- Toyota Contribution to Total State Employment: 1.06%
- TMMI and SIA Produced Sienna, Highlander, Sequoia, and Camry

Indiana's Unemployment Rate, Relative to Other States, 2009



Illinois

Toyota operates sales and financial service offices in the state of Illinois that assist with the processing of auto lease and finance payments. Toyota's financial service and sales offices in Illinois provide 257 direct jobs to Illinois residents. In addition to the financial services related jobs, Toyota also employs 2,873 new vehicle dealers at its Toyota, Lexus, and Scion dealerships within the state. The combined effect of finance and insurance handling and new vehicle dealership employment in Illinois, along with the activities of other Toyota employees throughout the U.S., provides employment opportunities for 14,105 workers in Illinois.

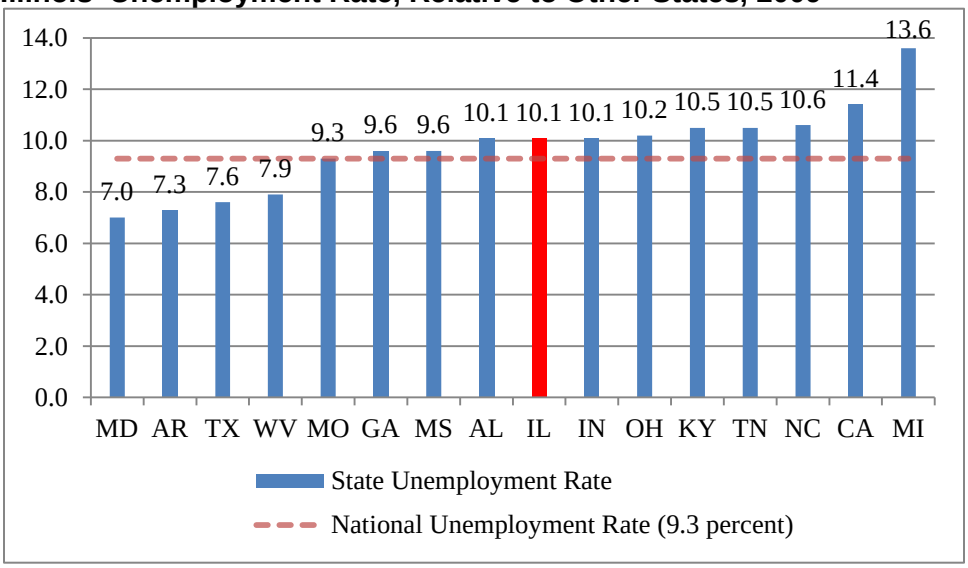
Total Statewide Employment Contribution: 14,105

Direct Employment (Manufacturer-related): 257	Direct Employment (New Vehicle Dealers): 2,873
Intermediate: 2,256	Intermediate: 1,323
Spin-off: 5,037	Spin-off: 2,359

Facts for Illinois (2009)

- State Unemployment Rate (2009): 10.1%
- State Employment (2009): 5,552,936
- Toyota Contribution to Total State Employment: 0.25%

Illinois' Unemployment Rate, Relative to Other States, 2009



Kentucky

Toyota's largest manufacturing facility outside of Japan is located in Georgetown, KY. The Georgetown facility was established in 1986; over the years, Toyota has invested $5.6 billion in the plant, developing the capacity to build 4- and 6-cylinder engines, powertrain parts and Avalon, Camry/Camry Hybrid and Venza vehicles. In addition to the automotive production, Toyota has invested $670 million to headquarter their senior management of engineering, design, development, R&D, and North American manufacturing operations in Erlanger, KY. This headquarters manages 13 parts and vehicles facilities across the country, and employs 2,748 people. In total, Toyota employs 32,836 people in the state of Kentucky.

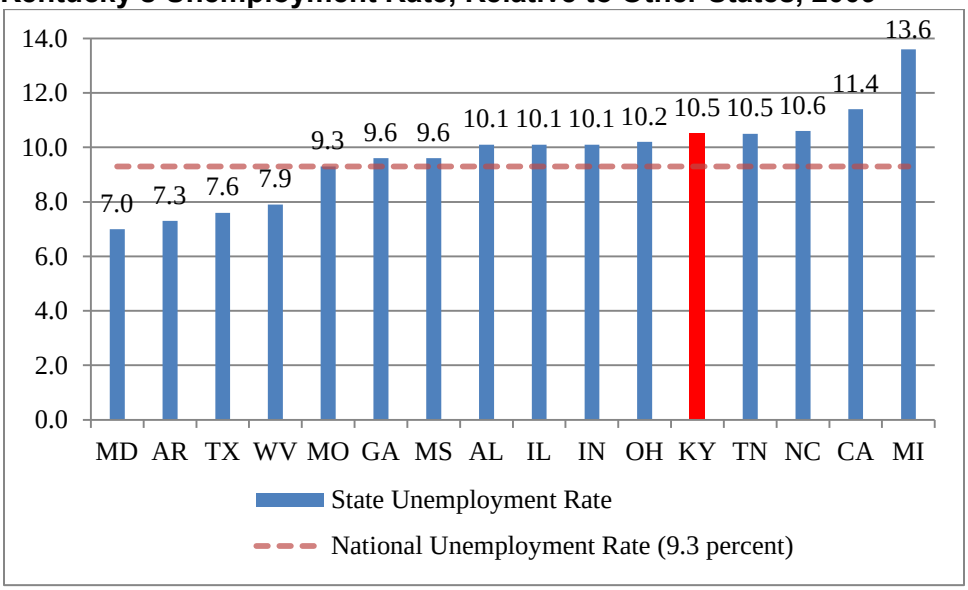
Total Statewide Employment Contribution: 32,836

Direct Employment (Manufacturer-related): 8,263	Direct Employment (New Vehicle Dealers): 895
Intermediate: 10,696	Intermediate: 265
Spin-off: 12,001	Spin-off: 716

Facts for Kentucky (2009)

- State Unemployment Rate (2009): 10.5%
- State Employment (2009): 2,704,688
- Toyota Contribution to Total State Employment: 1.21%

Kentucky's Unemployment Rate, Relative to Other States, 2009



Maryland

Maryland is home to a Toyota Motor Sales, U.S.A regional sales office, which helps coordinate Toyota and Scion vehicle sales, parts, and service for dealers in Maryland and surrounding states. Toyota Financial Services operates a customer service center in Maryland that provides finance and insurance products and services to the Toyota family of brands. These two offices directly employ 657 Maryland residents, and new vehicle dealers directly employ 2,364 residents at Toyota, Lexus, and Scion dealerships within the state.

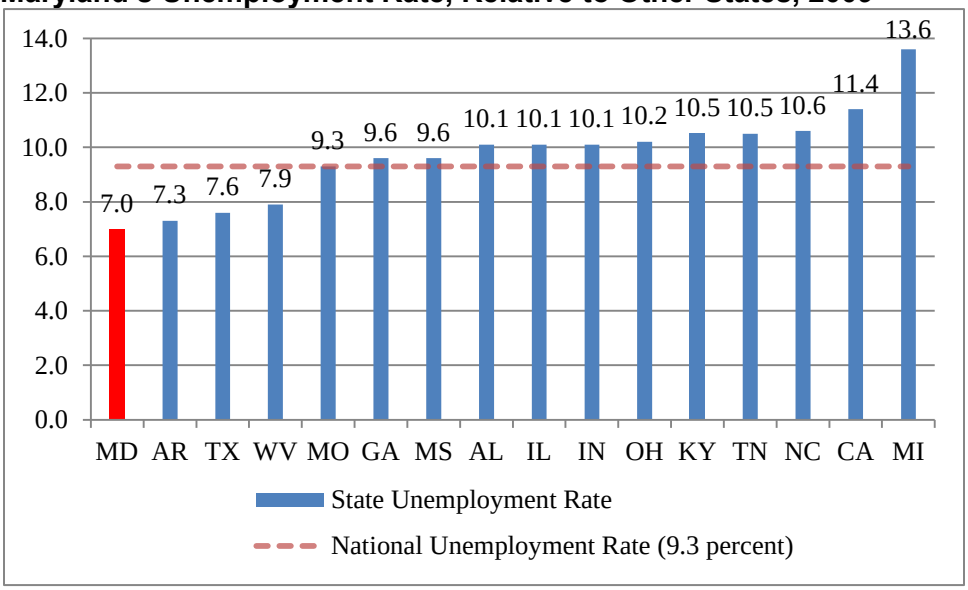
Total Statewide Employment Contribution: 6,823

Direct Employment (Manufacturer-related): 657	Direct Employment (New Vehicle Dealers): 2,364
Intermediate: 469	Intermediate: 623
Spin-off: 1,341	Spin-off: 1,369

Facts for Maryland (2009)

- State Unemployment Rate (2009): 7.0%
- State Employment (2009): 2,460,529
- Toyota Contribution to Total State Employment: 0.28%

Maryland's Unemployment Rate, Relative to Other States, 2009



Michigan

Toyota's statewide employment supports 12,700 jobs due to the direct employment at Toyota Technical Center (TTC), Calty Design Research Facility, and the Hino Motors Manufacturing, U.S.A. headquarters, part of the Toyota Group. The TTC has been in Michigan for over 25 years, and oversees the design and development of vehicles. In 2006, it expanded creating around 400 new jobs and invested $150 million in the state. Calty Design Research Facility in Ann Arbor, Michigan focuses on production development, and the Hino Motors Manufacturing headquarters performs administrative, product planning, quality assurance and purchasing activities for the company.

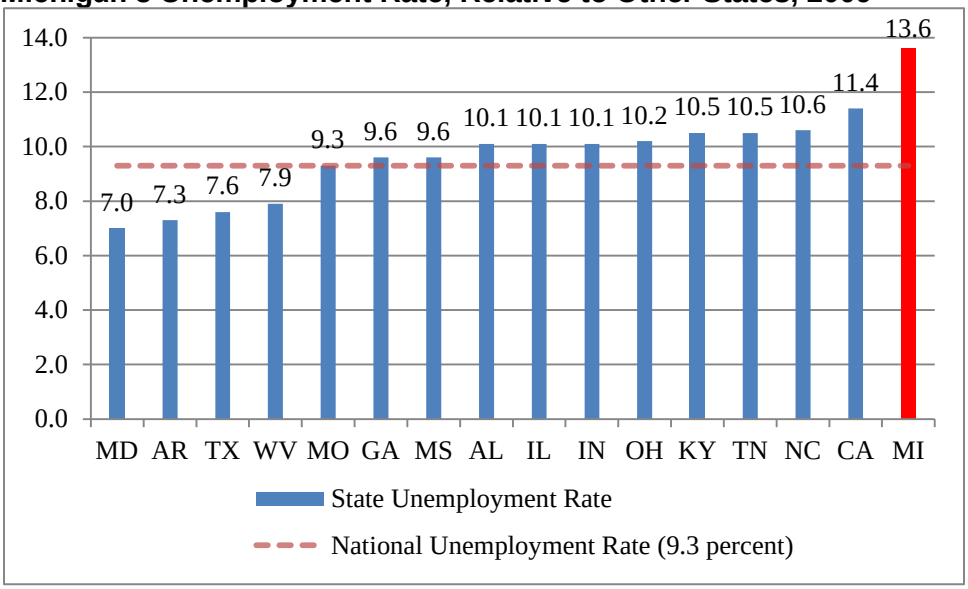
Total Statewide Employment Contribution: 12,763

Direct Employment (Manufacturer-related): 900	Direct Employment (New Vehicle Dealers): 1,077
Intermediate: 3,646	Intermediate: 600
Spin-off: 5,308	Spin-off: 1,232

Facts for Michigan (2009)

- State Unemployment Rate (2009): 13.6%
- State Employment (2009): 3,775,058
- Toyota Contribution to Total State Employment: 0.34%

Michigan's Unemployment Rate, Relative to Other States, 2009



Missouri

Bodine Aluminum was acquired by Toyota in 1990, and has expanded from the original facility in St. Louis to Troy as well. The St. Louis plant manufactures engine brackets and carrier covers, while the Troy plant manufactures cylinder heads and cylinder blocks. Missouri is home to a Toyota Motor Sales, U.S.A regional sales office, which helps coordinate Toyota and Scion vehicle sales, parts, and service for dealers in Missouri and surrounding states in its region. Toyota Financial Services operates an office in Missouri that provides finance and insurance products and services to the Toyota family of brands. These facilities combined directly employ 698 people and contribute to almost 4,000 intermediate and spin-off jobs.

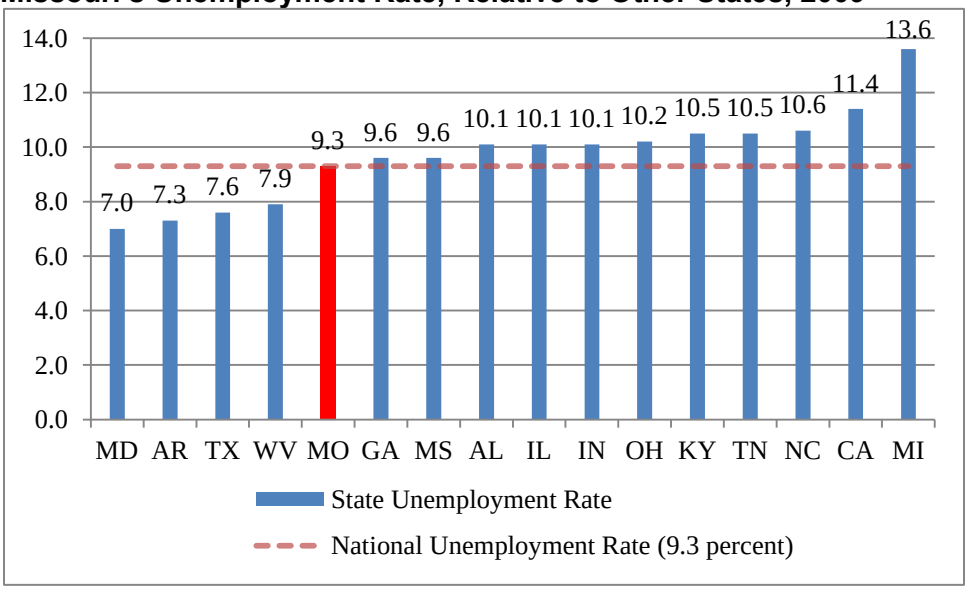
Total Statewide Employment Contribution: 7,323

Direct Employment (Manufacturer-related): 698	Direct Employment (New Vehicle Dealers): 1,228
Intermediate: 1,464	Intermediate: 483
Spin-off: 2,344	Spin-off: 1,106

Facts for Missouri (2009)

- State Unemployment Rate (2009): 9.3%
- State Employment (2009): 2,608,105
- Toyota Contribution to Total State Employment: 0.28%

Missouri's Unemployment Rate, Relative to Other States, 2009



Mississippi

Toyota's 10th plant in the United States is located in Blue Springs, Mississippi. It is slated to begin operation in fall of 2011, and is projected to employ approximately 2,000 people–this is not reflected in the information below. The plant is Toyota's first facility in Mississippi, and will build the Toyota Corolla. Currently, direct employment in Mississippi (as shown in the tables below) is low but is expected to soon increase significantly.

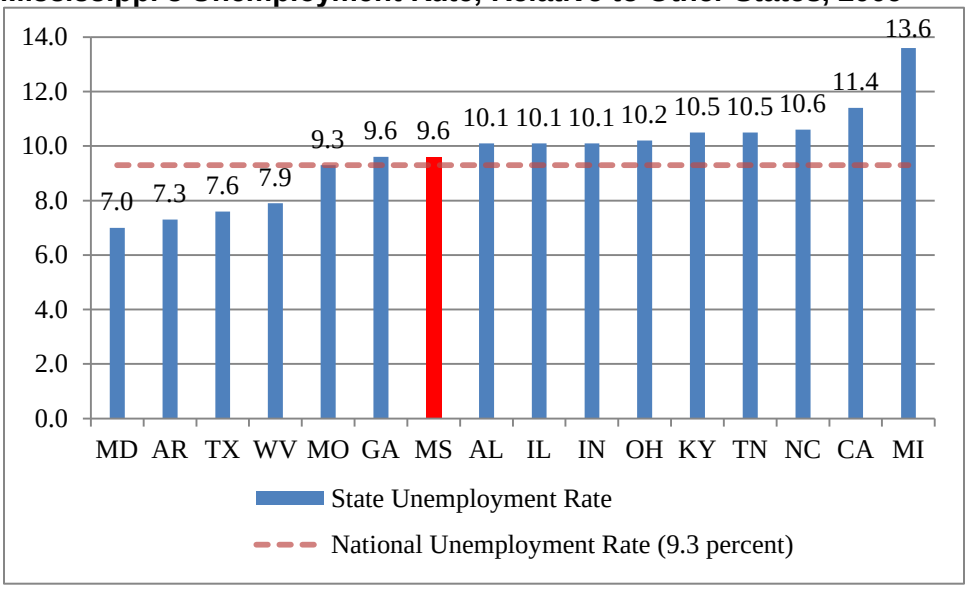
Total Statewide Employment Contribution: 2,632

Direct Employment (Manufacturer-related): 65	Direct Employment (New Vehicle Dealers): 708
Intermediate: 232	Intermediate: 160
Spin-off: 1,012	Spin-off: 455

Facts for Mississippi (2009)

- State Unemployment Rate (2009): 9.6%
- State Employment (2009): 1,080,914
- Toyota Contribution to Total State Employment: 0.24%

Mississippi's Unemployment Rate, Relative to Other States, 2009



North Carolina

Toyota's TMS Motorsports Marketing promotes its brand in NASCAR and other U.S. racing series. TRD, U.S.A., a division of TMS, develops and assembles engines in North Carolina to drive Toyota's racing programs. Toyota also purchases automatic transmissions, driveshaft, gaskets, window motors, and tires from within the state. Toyota directly employs 2,247 persons in North Carolina (48 in manufacturing, 2,199 in new vehicle dealerships); the total statewide employment contribution of Toyota, considering intermediate and spin-off employment is 7,586.

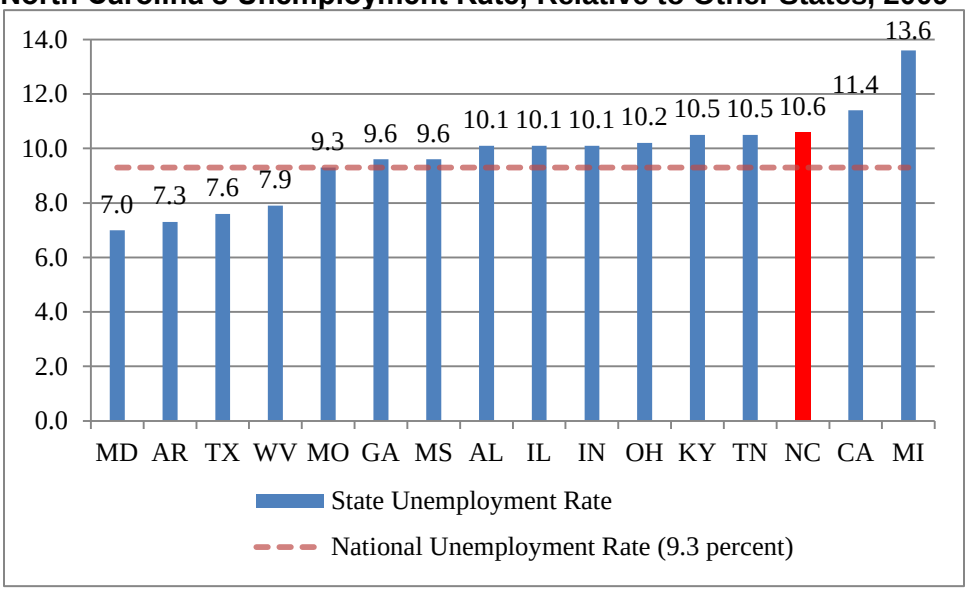
Total Statewide Employment Contribution: 7,586

Direct Employment (Manufacturer-related): 48	Direct Employment (New Vehicle Dealers): 2,199
Intermediate: 772	Intermediate: 790
Spin-off: 2,055	Spin-off: 1,722

Facts for North Carolina (2009)

- State Unemployment Rate (2009): 10.6%
- State Employment (2009): 3,915,700
- Toyota Contribution to Total State Employment: 0.19%

North Carolina's Unemployment Rate, Relative to Other States, 2009



Ohio

Ohio is home to one of Toyota's nine U.S. regional sales offices. Ohio is also home to one of Toyota's eight Parts Distributions Centers. The new vehicle sales arm of Toyota directly employs 2,257 persons in Ohio. Toyota also purchases batteries, brake components, display products, and other vehicle components that are made in Ohio. The total statewide employment contribution of Toyota to Ohio is 14,805 employees.

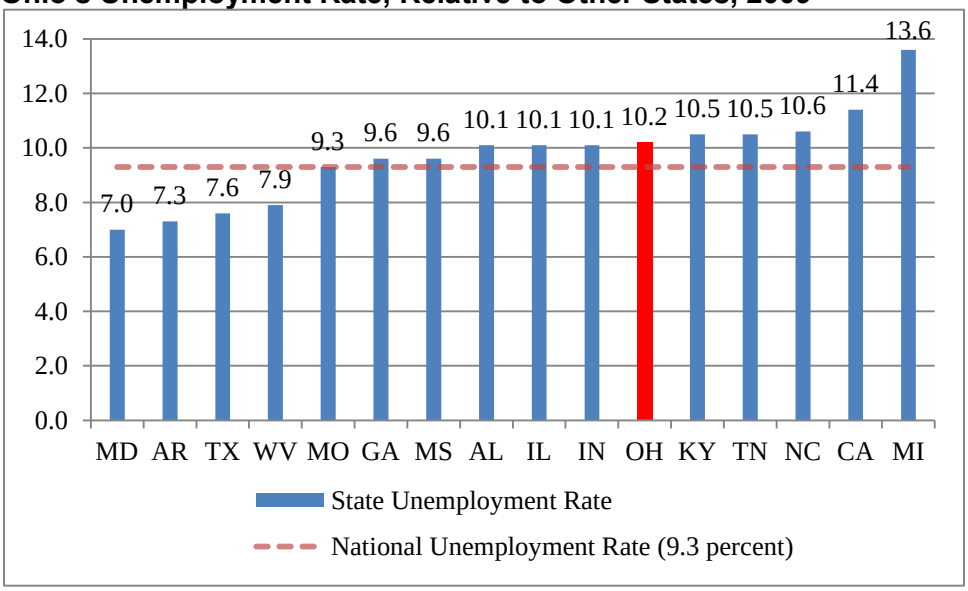
Total Statewide Employment Contribution: 14,805

Direct Employment (Manufacturer-related): 170	Direct Employment (New Vehicle Dealers): 2,257
Intermediate: 3,112	Intermediate: 947
Spin-off: 6,414	Spin-off: 1,905

Facts for Ohio (2009)

- State Unemployment Rate (2009): 10.2%
- State Employment (2009): 5,073,600
- Toyota Contribution to Total State Employment: 0.29%

Ohio's Unemployment Rate, Relative to Other States, 2009



Tennessee

Toyota manufactures engine parts and components in Tennessee. Toyota's Bodine Aluminum, Inc. produces aluminum cylinder blocks and automatic transmission parts. Products and parts made in Tennessee that Toyota purchases include display products, engine sensors, exhaust systems, alternators, and more. The total statewide employment contribution of Toyota to Tennessee is 8,921 jobs.

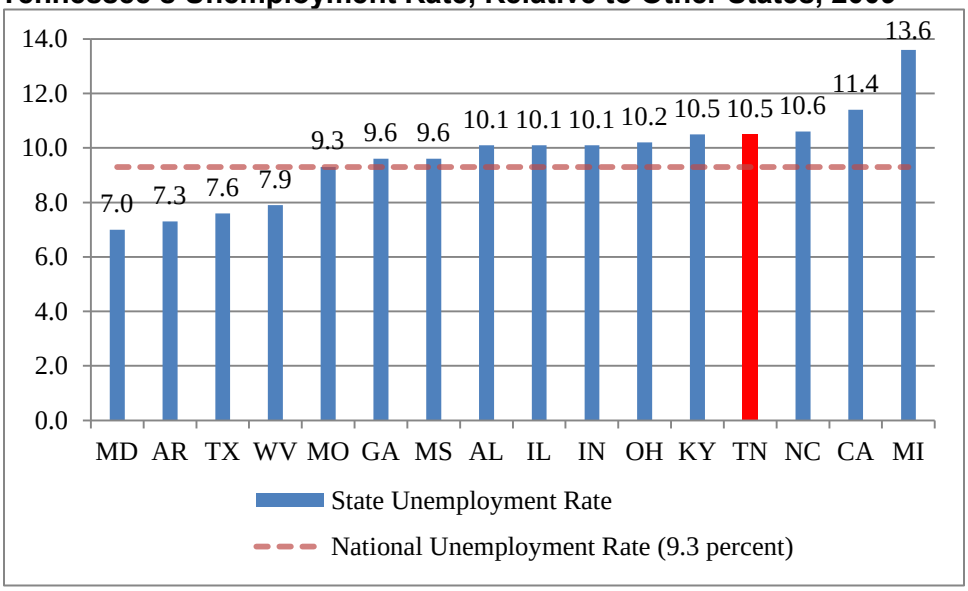
Total Statewide Employment Contribution: 8,921

Direct Employment (Manufacturer-related): 229	Direct Employment (New Vehicle Dealers): 1,693
Intermediate: 1,326	Intermediate: 561
Spin-off: 3,843	Spin-off: 1,269

Facts for Tennessee (2009)

- State Unemployment Rate (2009): 10.5%
- State Employment (2009): 2,618,900
- Toyota Contribution to Total State Employment: 0.34%

Tennessee's Unemployment Rate, Relative to Other States, 2009



Texas

Texas is home to one of the two Toyota Motor Sales, U.S.A., Inc. private distributor offices. Toyota Logistics Services, Inc. also has an operation in Texas. Tundra and Tacoma pickup trucks are both built in the San Antonio, Texas Toyota Motor Manufacturing plant. Toyota directly employs 2,071 people in manufacturing and 6,629 people in new vehicle dealerships. Considering indirect and spin-off employment, Toyota's statewide employment impact is 27,555 jobs.

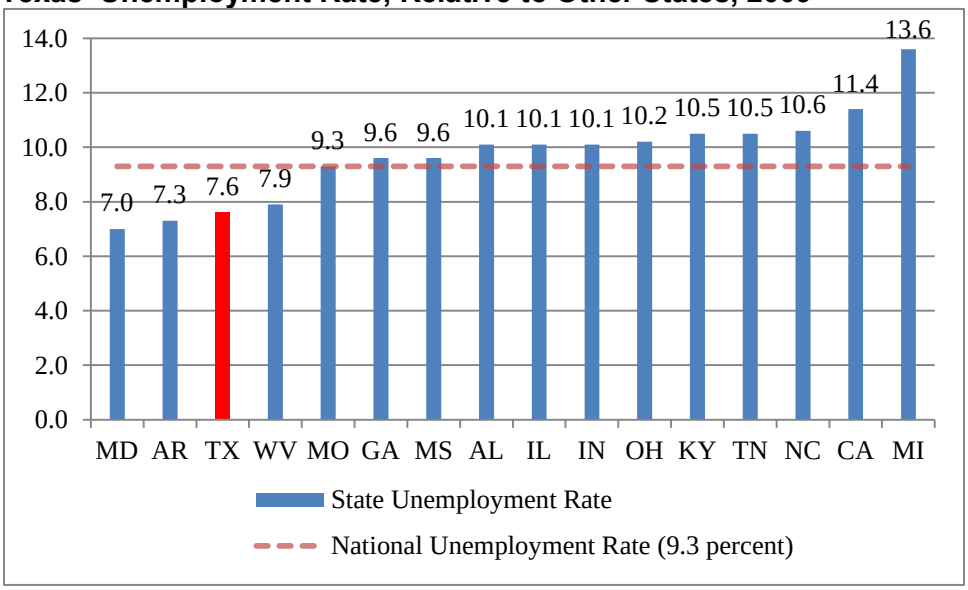
Total Statewide Employment Contribution: 27,555

Direct Employment (Manufacturer-related): 2,071	Direct Employment (New Vehicle Dealers): 6,629
Intermediate: 4,602	Intermediate: 3,001
Spin-off: 5,937	Spin-off: 5,315

Facts for Texas (2009)

- State Unemployment Rate (2009): 7.6%
- State Employment (2009): 10,311,100
- Toyota Contribution to Total State Employment: 0.27%

Texas' Unemployment Rate, Relative to Other States, 2009



West Virginia

The Toyota Motor Manufacturing plant in Buffalo, West Virginia builds V6 and V8 engines as well as automotive transmissions. Toyota's Hino Motors Manufacturing, U.S.A., Inc. assembles trucks in the state. Toyota manufacturing directly employs 1,090 people, while new vehicle dealerships directly employ 678. Products and parts made in West Virginia that Toyota purchases include 02 sensors and spark plugs. The total statewide employment contribution of Toyota to North Carolina is 4,523 persons.

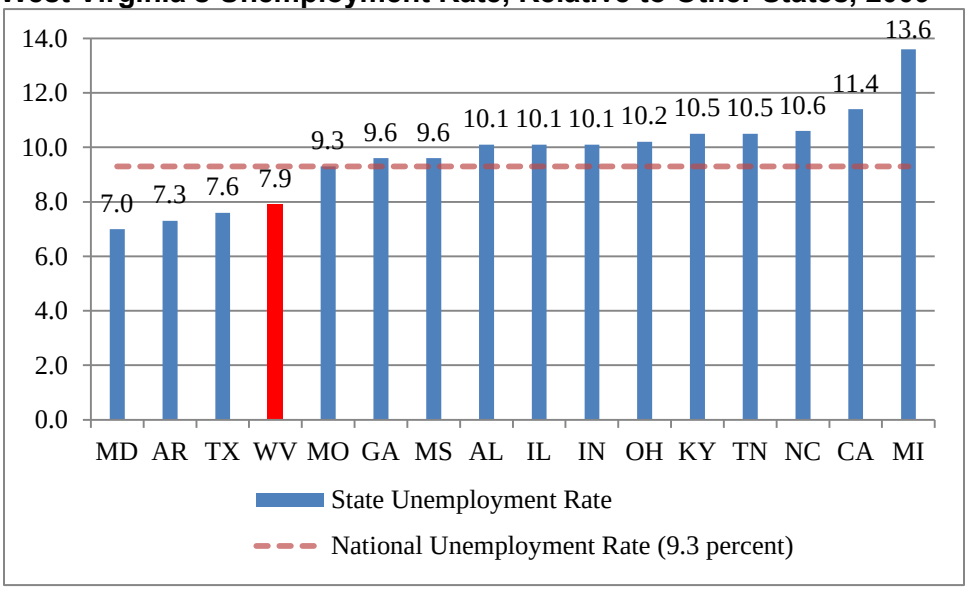
Total Statewide Employment Contribution: 4,523

Direct Employment (Manufacturer-related): 1,090	Direct Employment (New Vehicle Dealers): 679
Intermediate: 807	Intermediate: 106
Spin-off: 1,487	Spin-off: 354

Facts for West Virginia (2009)

- State Unemployment Rate (2009): 7.9%
- State Employment (2009): 744,100
- Toyota Contribution to Total State Employment: 0.6%

West Virginia's Unemployment Rate, Relative to Other States, 2009



Appendix: Methodology

The basic approach in these analyses has been to use a specially constructed regional economic impact model, input Toyota-specific data, and generate estimates of the economic contribution associated with Toyota's U.S. operations.

The Macroeconomic Model

For the estimation of employment and compensation associated with Toyota's U.S. operations, and to forecast the expected contribution of a new assembly plant to the Mississippi economy, an economic model supplied and constructed specifically for this study by Regional Economic Models, Inc. (REMI) of Amherst, Massachusetts was used. Adjustments are made to the model to reflect the general characteristics of the automobile industry and Toyota's specific employment and compensation data. The REMI model, which has been fully documented and peer-reviewed, was designed for the type of analyses employed in this current study and has been used by CAR and other organizations for over two decades for these types of analyses.

The version of the model used in this study represents the economies of 16 states— Michigan, Texas, Ohio, California, Missouri, Tennessee, North Carolina, Georgia, Alabama, Arkansas, Maryland, West Virginia, Indiana, Kentucky, Illinois, and Mississippi —and the rest of the United States. This model allows for simulating the interaction among all the regional economies and the rest of the nation, providing for an accounting of interregional trade and migration. Therefore, the model can simulate economic impacts that may occur in any one region, resulting from changing Toyota's level of activities in any or all of the regions.

The data provided by Toyota for input into the model included employment and compensation for each state as of June, 2010. For the Mississippi forecast, expected construction and equipment purchase expenses were also provided. Adjustments were made to estimate the used vehicle dealer employees and subtract them from the total to derive new vehicle dealer employment.

The general methodology in the analyses is to run baseline simulations for each region's economy, then subtract Toyota's activities in each of the regions and run another set of simulations. The difference between the simulations represents the impact Toyota has on each region.

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