Economic Contribution of General Motors' Orion Assembly, Pontiac Metal Stamping, and Spring Hill Assembly Manufacturing Plants

For UAW-General Motors Center for Human Resources

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February 2014

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Executive Summary

This research memorandum examines the economic contribution to the U.S. economy and the Michigan and Tennessee state economies of General Motors' decision to reopen three manufacturing facilities—Orion Assembly (Michigan), Pontiac Metal Center (Michigan), and Spring Hill Assembly (Tennessee) that had been designated as "stand-by" capacity in the 2009 UAW-GM Agreement. This memorandum is part one of a two-part analysis of the economic contribution of GM's facilities in the United States; the results are preliminary. The second part will look at the broader economic contribution of GM in the United States and ten U.S. states in which the company manufactures vehicles, parts, and components.

CAR researchers customized a specially constructed regional economic contribution model using employment and compensation data provided by the company to generate estimates of the economic contribution of these three plants to the U.S. economy, as well as to the individual states in which the plants are located. GM restarted three plants—Orion Assembly, Pontiac Metal Center, and Spring Hill Assembly. The production at Orion Assembly largely replaced GM's captive imports that were previously sourced from Korea (small cars), and the production at Spring Hill is replacing imports from Canada (cross-utility vehicles).

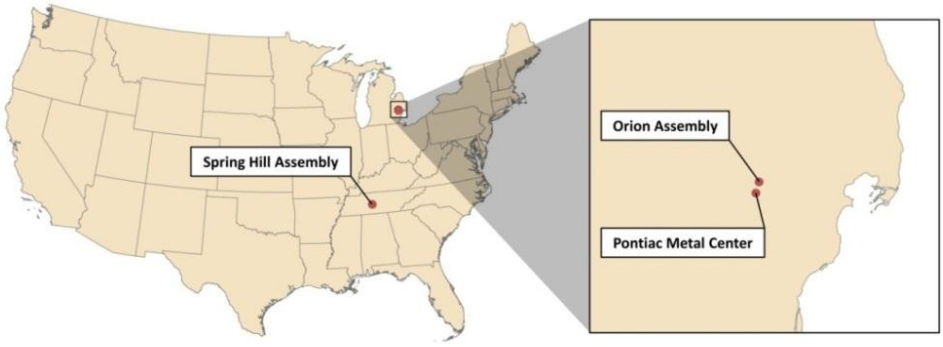
GM reported direct employment at Orion Assembly, Pontiac Metal Center, and Spring Hill Assembly totaled just over 3,000 in 2013, which CAR estimates supports a total of nearly 38,600 jobs in the U.S. economy (which includes direct jobs at GM, intermediate jobs at all suppliers to GM, and expenditure-induced spin-off jobs). For 2013, the analysis yields an employment multiplier of 12.6—meaning that every GM job supports another 11.6 jobs in the U.S. economy. The forecast for 2014 is an estimated increase to 3,400 direct jobs at GM, which support a total of almost 39,700 jobs in the U.S. economy and yields a 2014 employment multiplier of 11.7. GM's employment at these three manufacturing plants produced an estimated $3 billion in employee compensation in the U.S. economy in 2013 and 2014. CAR researchers estimate that GM's activities at Orion Assembly, Pontiac Metal Center, and Spring Hill Assembly supported $530 million in transfer payments and social insurance contributions, and $330 million in federal personal income taxes in 2013, and are forecast to support $572 million in transfer payments and social insurance contributions, and $377 million in federal personal income taxes in 2014.

In Michigan, GM's 2,561 direct employees at Orion Assembly and Pontiac Metal Center supported a total of just over 14,000 total jobs in the state in 2013, which yields a state employment multiplier of 5.5. For 2014, the model forecasts GM's employment at these two manufacturing plants will grow to 2,800, and support just over 14,700 total jobs in the state with a state employment multiplier of 5.3. The economic contribution of GM's nearly 500 employees at Spring Hill Assembly to the Tennessee economy was nearly 2,200 jobs in the state economy, and an employment multiplier of 4.4 for 2013. In 2014, the model forecasts GM's Spring Hill Assembly employment will grow to 600, which is estimated to support just over 2,400 jobs in Tennessee with a 2014 employment multiplier of 4.0. The employment multipliers are lower in Tennessee because the state has a smaller share of the U.S. automotive supplier base than does Michigan.

Background

In the months leading up to GM'S Chapter 11 filing on June 8, 2009, the International Union, UAW (UAW) and GM reopened their 2007 agreement to revise terms of the agreement and to provide financial concessions to demonstrate shared sacrifice of all the parties to the bankruptcy case. During the course of the 2009 "bankruptcy" negotiations, one of the UAW's concerns was that GM "may have exited too much capacity in certain segments"[1] in their April 2009 Viability Plan that was submitted to the U.S. Treasury. In an effort to enable GM to respond quickly to an upturn in U.S. demand—and to avoid increases in GM captive imports to the U.S. market to satisfy that demand—the union and the company agreed to designate three assembly plants and one stamping plant as "stand-by locations." These four "stand-by" plants were to be brought back on-line if U.S. market conditions improved, creating the need for additional GM productive capacity in the United States. The plants designated as "stand-by" capacity included Janesville Assembly (Wisconsin), Orion Assembly (Michigan), Spring Hill Assembly (Tennessee), and Pontiac Metal Center (Michigan).

Figure 1: Location of General Motors' Orion Assembly, Pontiac Metal Stamping, and Spring Hill Assembly



Source: Center for Automotive Research

Orion Assembly and Pontiac Metal Center—Back On-Line in 2011

The 2009 UAW-GM contract also included a "Memorandum of Understanding" regarding a future compact/small car investment in the United States[2] that would utilize an idled GM-UAW assembly plant and stamping facility. On June 26, 2009, GM announced that Orion Assembly and Pontiac Metal Center would be the site for this $575 million small car investment. In addition, there were a number of specific agreements between the UAW and GM regarding conditions necessary for this investment; most notably, the union and the company agreed that due to the competitiveness of the small car segment in the United States, "innovative labor agreement provisions"[3] would be required to produce these small vehicles profitably. The key "innovative" labor provision was the composition of the workforce—with an eventual goal that the Orion Assembly workforce would be entirely entry level workers, who earn a

[1] 2009 UAW-GM Modification Agreement, Memorandum of Understanding RE: Imports to the U.S. Market—Stand-By U.S. Capacity, May 16, 2009.
[2] 2009 UAW-GM Modification Agreement, Memorandum of Understanding RE: Compact/Small Car Investment in the U.S., May 16, 2009.
[3] *Ibid.*

starting wage and benefit package that costs roughly half that of the more senior union workers in the plant. Production at Orion Assembly restarted in the third quarter of 2011, with the Chevrolet Sonic; production of the Buick Verano began in the fourth quarter of 2011. GM's small cars had previously been supplied to the U.S. market as Chevrolet-badged captive imports from Korea.

Spring Hill Assembly—Back On-Line in 2012

On November 21, 2011, GM announced a $61 million investment to restart Spring Hill Assembly as an ultra-flexible automotive assembly plant capable of building any GM car or cross-utility vehicle (CUV) that the market demands. An additional $183 million investment was committed to Spring Hill Assembly for production of a future midsize vehicle. Production at Spring Hill Assembly restarted in third quarter of 2012 with the Chevrolet Equinox; GM has committed to produce two additional (and as yet, unnamed) models at the plant. The Equinox had previously been produced only in Canada at GM's CAMI Assembly in Ingersoll, Ontario and Oshawa Assembly in Oshawa, Ontario.

Janesville Assembly Remains on Stand-By

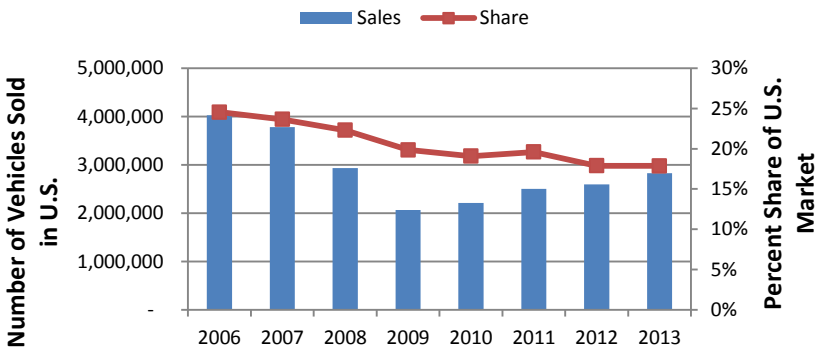
Production at Janesville Assembly ended in December 2008. Market demand has not recovered to a point where GM needs more U.S. manufacturing capacity, and this plant remains on stand-by status.

GM's U.S. Sales and Market Share

GM's market share has fallen steadily for decades. The Chapter 11 bankruptcy provided an opportunity for the company to better align its productive capacity with current and future market demands for GM cars and trucks. GM shuttered eight vehicle assembly plants between 2006 and 2013[4], and a number of these were placed in the assets of Motors Liquidation Company (the former General Motors Corporation). The Revitalizing Auto Communities Environmental Response (RACER) Trust was created by the U.S. Bankruptcy Court to remediate, market, and sell these and other former GM properties. Had it not been for the 2009 agreement between the UAW and GM to place four plants on "stand-by" status, these facilities could have been closed or relegated to the RACER Trust. The UAW-GM Memorandum of Understanding to idle these three assembly plants and one stamping facility (but retain ownership) allowed GM to respond quickly to increased market demand for GM's small cars and CUVs.

[4] The eight plants include Doraville, GA (2008); Lansing Craft Center (2006); Moraine, OH (2008); Oklahoma City, OK (2006); Oshawa Truck, Oshawa, Ontario, Canada (2009); Pontiac Truck (2009); Shreveport, LA (2012); and Wilmington, DE (2009).

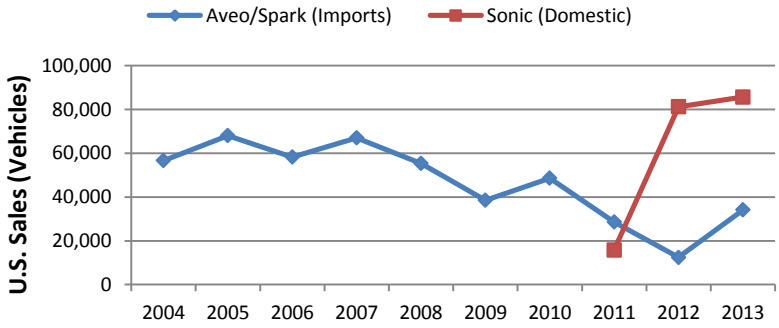
Figure 2: General Motors' U.S. Sales and Market Share 2006-2013



Source: LMC Automotive

The vehicles produced at Orion Assembly (and supported by stampings produced at Pontiac Metal Center) are the Chevrolet Sonic and Buick Verano. The Sonic is the smallest car GM has assembled in the United States since the Chevrolet Chevette was produced in the years 1975-1987. Between 1987 and 2011 (when Sonic production began), GM rebadged and imported small cars from other manufacturers (Isuzu, Suzuki, and Toyota), as well as producing small Chevrolets in GM's Korea (formerly Daewoo) plants for import to the United States. The chart below shows how U.S. sales of the Chevrolet Aveo and Spark have fallen, while sales of the U.S.-produced Chevrolet Sonic have increased dramatically since the car's introduction in the 2012 model year.

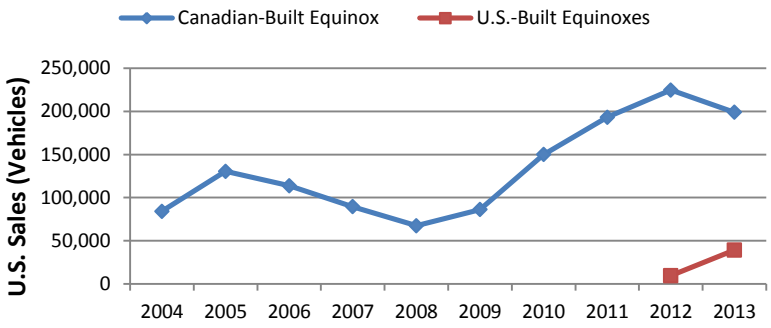
Figure 3: General Motors' U.S. Small Car Sales: Korean-produced Chevrolet Aveo and Chevrolet Spark and U.S.-produced Chevrolet Sonic, 2004-2013



Source: Automotive News Data Center

The vehicle currently produced at Spring Hill Assembly is the Chevrolet Equinox. This vehicle has been produced for the U.S. market by GM in Canada since 2004. The latest version of the Equinox proved so popular that in addition to production at GM's CAMI Assembly in Ingersoll Ontario, GM added co-production of the models at the underutilized Oshawa Assembly in nearby Oshawa, Ontario in August 2010. Equinox bodies are produced at CAMI, and then transported via truck to Oshawa for paint and final assembly. In 2012, GM began producing the Equinox at Spring Hill Assembly. The chart below shows how U.S. sales of the Canadian-built Equinoxes have fallen, while sales of U.S.-produced Equinoxes have increased.

Figure 4: General Motors' U.S. Chevrolet Equinox Sales: Canadian vs. U.S.-produced Vehicles, 2004-2013

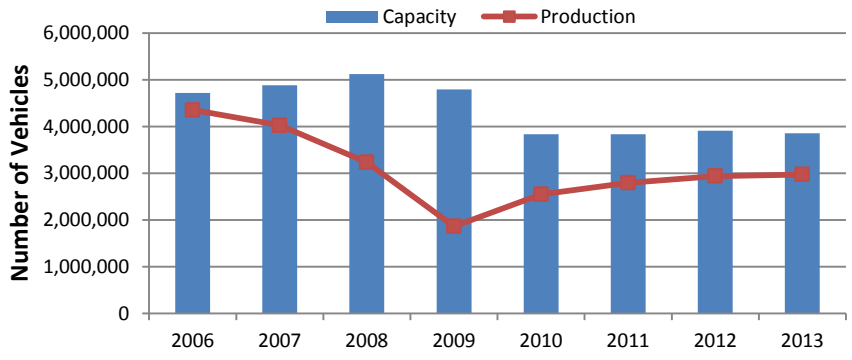


Source: Automotive News Data Center (2004-2011) and General Motors (2012-2013)

GM's North American Capacity and Production

As a result of actions taken during GM's 2009 Chapter 11 bankruptcy, the company's productive capacity[5] in North America fell from 5.1 million vehicles in 2008 to 3.8 to 3.9 vehicles between 2010 and 2013. Lower capacity coupled with production gains improved GM's capacity utilization from 63 percent in 2008 to 77 percent in 2013. A majority of GM's assembly plants in North America are currently running two or more shifts to meet production demand. The chart below shows GM's capacity and production between 2006 and 2013. While one might expect to see a jump in production capacity in 2011 (when Orion Assembly restarted production) and in 2012 (when Spring Hill Assembly restarted production), these additions to capacity were offset by other plants that were off-line to retool for new models during those years.

Figure 5: General Motors' North American Capacity and Production, 2006-2013



Source: LMC Automotive

[5] Two-shift, straight-time capacity.

Methodology

CAR's utilizes a specially constructed regional economic impact model (REMI[6]), and customizes the analysis using proprietary company data on employment and compensation for each region, as well as publicly available data on investments. The model is used to generate estimates of the economic contribution associated with GM's manufacturing operations that were brought back into production after having been put on stand-by status. The model assumes that production at Orion Assembly, Pontiac Metal Center, and Spring Hill Assembly primarily replaced GM's captive imports from Canada and Korea, as the vehicles put into production in these three plants had previously been produced outside the United States. The data was coded according to the North American Industry Classification System.

The REMI model has been fully documented and peer-reviewed, and was designed for the type of analyses required for this memo. The model has been used by CAR and other organizations for over two decades. The version of the model used in this analysis represents the economy of the United States, as well as the states of Michigan and Tennessee. CAR's approach permitted simulation of the interaction among the regional economies, as well as with the rest of the nation, providing for an accounting of interregional trade and migration. The model can simulate economic impacts that occur in any one region resulting from changing GM's level of activities in any or all of the regions.

Consideration was paid to the potential of double-counting activities between suppliers and the various GM assembly plants. Within the framework of the REMI model, there is an inter-industry input-output table that calculates demand for intermediate inputs used in the production of finished goods. By first running the simulation for GM's direct manufacturing operations included in this memo, and then discounting the calculated demand for parts supplied by GM manufacturing operations, the CAR research team was able to adjust for systemic double counting, and calculate only the net employment effects for the three GM manufacturing plants that are the subject of this memo. Since initial efforts were made to avoid double counting between segments of the industry (automaker and parts supply), the results for each of these segments can be added together to arrive at the total economic contribution of GM's manufacturing operations at Orion Assembly, Pontiac Metal Center, and Spring Hill Assembly. Employment at Pontiac Metal Center is counted as direct GM employment, but the indirect employment is adjusted to account for the fact that these jobs are not in vehicle final assembly.

The general analytical methodology is to run baseline simulations for each region's economy, then subtract GM activities in each of the regions and run another set of simulations. The difference between the simulations represents GM's impact on each region. The results represent the current size of GM's three operations—Orion Assembly, Pontiac Metal Center, and Spring Hill Assembly—and the impact of restarting these plants on the U.S. economy and the economies of Michigan and Tennessee. Impacts are estimated for calendar 2013, and forecast for calendar 2014.

[6] Supplied and constructed specifically for this analysis by Regional Economics Models, Inc. (REMI) of Amherst, Massachusetts.

Results

The analysis shows that GM's direct employment at Orion Assembly, Pontiac Metal Stamping, and Spring Hill Assembly of just over 3,000 employees in 2013 supported an estimated 14,000 intermediate jobs (at facilities that directly supply or service these three GM manufacturing plants), and roughly 21,000 spin-off jobs (jobs that were created by the result of expenditures of GM employees in the selected plants). The result is a U.S. employment multiplier of 12.6—in other words, every direct GM job in these three plants supported 11.6 jobs in the rest of the U.S. economy in 2013. GM's employment at the three selected plants produced an estimated $3 billion in total compensation in the U.S. economy, $530 million in government transfer payments and social insurance contributions, and $330 million in federal personal income taxes paid. The table below details the results for Michigan, Tennessee, and the balance of the U.S. states. The estimated employment multiplier within Michigan was 5.5—meaning that every direct GM job in these three plants supported 4.5 jobs in the rest of the Michigan economy in 2013; the employment multiplier for Tennessee is estimated at 4.4—meaning that every direct GM job in the three selected plants supports 3.4 other jobs in the state of Tennessee. Because there are suppliers to Orion Assembly and Pontiac Metal Center in Tennessee and suppliers to Spring Hill Assembly in Michigan, the state economic contributions are derived from production activity in all three plants. The Tennessee employment multiplier is lower than Michigan's primarily because a smaller proportion of Spring Hill's supply chain is co-located within the state of Tennessee; the automotive supply base is much more concentrated in Michigan.

Table 1: Total Contribution of General Motors' Orion Assembly, Pontiac Metal Stamping, and Spring Hill Assembly Manufacturing Operations to the Private Sector Economy in the United States, Including Detail for Michigan and Tennessee—2013 Estimates

Economic Impact—2013 Estimates	Michigan	Tennessee	Rest of U.S.	All U.S.*
Employment				
Direct	2,561	498	0	3,059
Intermediate	6,467	730	6,842	14,039
Subtotal (Direct + Intermediate)	9,028	1,228	6,842	17,098
Spin-Off	4,992	939	15,559	21,490
TOTAL (Direct + Intermediate + Spin-Off)	14,020	2,167	22,401	38,588
Multiplier (TOTAL Employment)/Direct Employment	5.5	4.4	N/A	12.6
Compensation ($ Millions, Nominal)	1,022	141	1,552	2,716
Less: Transfer Payments & Social Insurance Contributions	-169	-27	-336	-530
Less: Personal Income Taxes	-127	-12	-191	-330
Equals: Private Disposable Personal Income	726	102	1,025	1,856

**Totals may not sum exactly due to rounding errors.*

Looking forward to 2014, CAR estimates that GM will employ 3,400 in the three selected manufacturing plants—an employment gain of roughly 350[7]. This level of employment is expected to support nearly 14,500 intermediate (supplier) jobs, and close to 22,000 spin-off (expenditure-induced) jobs—leading to

[7] The employment forecast is a model output, and was not provided by General Motors.

a total employment impact of almost 40,000 jobs, and an employment multiplier of 11.7. The estimated multiplier for 2014 is lower than the 2013 estimate of 12.6 largely due to the fact that the REMI model assumes both a growing economy for all sectors (which means the auto sector shares the burden of supporting spin-off jobs with other sectors) and productivity improvements (which means the same number of workers can produce more in terms of both quantity and value; quantity gains will increase indirect employment as more inputs are required, but not spin-off employment since wages do not increase at the same rate as do production quantity and value). GM's employment at the three selected plants produced an estimated $3 billion in total compensation in the U.S. economy in 2014, and supports $572 million in government transfer payments and social insurance contributions, and $377 million in federal personal income taxes. The table below includes the detailed forecast for Michigan, Tennessee, and the rest of the United States. As was the case for the U.S. employment multiplier, the individual state multipliers are also forecast to be slightly lower in 2014; the forecast for the Michigan employment multiplier is 5.3, and the forecast for the Tennessee multiplier is estimated at 4.0.

Table 2: Total Contribution of General Motors' Orion Assembly, Pontiac Metal Stamping, and Spring Hill Assembly Manufacturing Operations to the Private Sector Economy in the United States, Including Detail for Michigan and Tennessee—2014 Forecast

Economic Impact—2014 Forecast	Michigan	Tennessee	Rest of U.S.	All U.S.*
Employment				
Direct	2,800	600	0	3,400
Intermediate	6,652	789	7,000	14,441
Subtotal (Direct + Intermediate)	9,452	1,389	7,000	17,841
Spin-Off	5,256	1,036	15,547	21,839
TOTAL (Direct + Intermediate + Spin-Off)	14,708	2,425	22,547	39,680
Multiplier (TOTAL Employment)/Direct Employment	5.3	4.0	N/A	11.7
Compensation ($ Millions, Nominal)	1,108	166	1,695	2,969
Less: Transfer Payments & Social Insurance Contributions	-167	-30	-375	-572
Less: Personal Income Taxes	-147	-15	-215	-377
Equals: Private Disposable Personal Income	794	121	1,105	2,020

**Totals may not sum exactly due to rounding errors.*

Conclusion

The UAW and GM's agreement to retain three assembly plants and one metal stamping facility on "stand-by" status to respond quickly to the need for additional capacity or to displace sales of GM's captive imports has added roughly 40,000 jobs to the U.S. economy in 2013 and 2014. Restarting production at GM's Orion Assembly and Pontiac Metal Center added 14,000-15,000 jobs to the Michigan economy in 2013 and 2014, and restarting production at GM's Spring Hill Assembly added 2,200-2,400 jobs to the Tennessee economy in 2013 and 2014.

Appendix

The following two tables detail the industry sectors that contribute to the 2013 and 2014 induced (indirect and spin-off) employment estimates supported by GM's direct employment at its Orion Assembly, Pontiac Metal Center, and Spring Hill Assembly plants. The largest contributing sectors to the U.S., Michigan, and Tennessee induced employment estimates are manufacturing, construction, retail trade, and wholesale trade; in the rest of the United States, the largest contributing sectors are manufacturing, professional and technical services, administrative and waste services, and construction.

*Table 3: Types of Indirect and Spin-Off Jobs Supported by GM's Orion Assembly, Pontiac Metal Center, and Spring Hill Assembly Manufacturing Operations, 2013**

Industry Sector	Michigan	Tennessee	Rest of U.S.	All U.S.
Forestry, Fishing, Related Activities, and Other	4	2	71	77
Mining	10	3	415	428
Utilities	36	2	86	124
Construction	1,105	174	1,710	2,989
Manufacturing	2,559	330	4,486	7,375
Wholesale Trade	1,457	224	1,194	2,875
Retail Trade	1,297	169	1,485	2,951
Transportation and Warehousing	168	69	1,375	1,612
Information	84	17	486	587
Finance and Insurance	208	46	1,664	1,918
Real Estate and Rental and Leasing	435	48	626	1,109
Professional and Technical Services	572	132	1,874	2,578
Management of Companies and Enterprises	286	10	830	1,125
Administrative and Waste Services	665	99	1,828	2,592
Educational Services	109	12	264	385
Health Care and Social Assistance	1,022	127	1,441	2,590
Arts, Entertainment, and Recreation	175	23	529	727
Accommodation and Food Services	625	75	726	1,426
Other Services, including Public Administration	642	107	1,312	2,061
TOTAL	11,459	1,669	22,401	35,529

*Non GM jobs; totals may not sum exactly due to rounding errors.

*Table 4: Types of Indirect and Spin-Off Jobs Supported by GM's Orion Assembly, Pontiac Metal Center, and Spring Hill Assembly Manufacturing Operations, 2014 Forecast**

	Michigan	Tennessee	Rest of U.S.	All U.S.
Forestry, Fishing, Related Activities, and Other	3	1	69	73
Mining	10	3	445	458
Utilities	37	2	87	126
Construction	1,276	242	1,878	3,396
Manufacturing	2,568	338	4,595	7,501
Wholesale Trade	1,502	238	1,203	2,943
Retail Trade	1,359	187	1,358	2,904
Transportation and Warehousing	168	72	1,422	1,662
Information	84	17	486	587
Finance and Insurance	198	46	1,638	1,882
Real Estate and Rental and Leasing	460	53	613	1,126
Professional and Technical Services	584	138	1,979	2,701
Management of Companies and Enterprises	285	10	846	1,140
Administrative and Waste Services	679	108	1,899	2,686
Educational Services	124	14	250	388
Health Care and Social Assistance	1,048	134	1,341	2,523
Arts, Entertainment, and Recreation	182	24	520	726
Accommodation and Food Services	698	85	647	1,430
Other Services, including Public Administration	645	112	1,271	2,028
TOTAL	11,910	1,824	22,547	36,280

*Non GM jobs; totals may not sum exactly due to rounding errors.

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Note: The research staff of the Center for Automotive Research performed a few of these studies while employed by the University of Michigan’s Office for the Study of Automotive Transportation.