



**Department of  
Development**

**Policy Research and Strategic Planning Office**  
A State Affiliate of the U.S. Census Bureau

# **THE OHIO MOTOR VEHICLE INDUSTRY**

**February 2009**



**Ted Strickland**, Governor of Ohio  
**Lee Fisher**, Lt. Governor of Ohio  
Director, Ohio Department of Development



## Department of Development

Ted Strickland, Governor  
Lee Fisher, Lt. Governor

Mark Barbash, Interim Director

Dear Fellow Ohioan:

The Motor Vehicle Industry is facing an unprecedented global transition -- and Ohio, second in the nation for vehicle production, is directly impacted by these changes. From assembly plants to plastic fasteners, Ohio's manufacturers serve the motor vehicle industry, and a wide variety of business sectors depend upon the industry for their revenues.

This report outlines the size, location, and trends of the motor vehicle facilities located in our state. Three-year trends are provided whenever possible. There are detailed profiles on Honda, General Motors, Ford, and Chrysler, as well as an analysis of national trends that will be impacting the big assemblers and the hundreds of Ohio-based suppliers. An Input-Output model of Ohio's economy suggests that more than 370,000 people depend upon the motor vehicle cluster for their jobs and income.

Ohio's diverse industry base makes our state a global market leader. This diversity is complemented by a business environment that facilitates professional success and a high quality of life that allows for personal fulfillment. Ohio's unique combination of life and work amenities makes our state a place where you can achieve true professional and personal balance.

I invite you to review the attached report to further your understanding of Ohio's large and diverse economy. We welcome your input. If you have any questions or comments, please contact John Magill, our Department's Chief Strategic Officer at (614) 466-2116.

Sincerely,

Mark Barbash  
Interim Director  
Ohio Department of Development



Department of  
Development

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**FEBRUARY 2009**

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## DESCRIPTION OF OHIO'S MOTOR VEHICLE INDUSTRY

## THE MOTOR VEHICLE INDUSTRY'S IMPACT ON OHIO'S ECONOMY

## OHIO'S MOTOR VEHICLE CLUSTER

Industry (NAICS Code)	Output <sup>1</sup> (Billions)	Value Added <sup>1</sup> (Billions)	Employment (Thousands)	Compensation <sup>2</sup> (Billions)
Motor vehicles (3361)	\$38.4	\$4.7	27.7	\$3.2
Motor vehicle Bodies & Trailers (3362)	\$5.5	\$0.7	9.6	\$0.7
Motor vehicle Parts (3363)	\$33.2	\$8.5	89.1	\$7.2
Other related industries (32621 & 335911)	\$1.2	\$0.4	4.4	\$0.3
<b>Motor vehicle industry subtotal</b>	<b>\$78.3</b>	<b>\$14.3</b>	<b>130.8</b>	<b>\$11.4</b>
Other manufacturing industries	\$6.6	\$2.3	26.7	\$1.5
Non-manufacturing goods (including utilities)	\$1.1	\$0.6	4.8	\$0.2
<b>Supporting goods subtotal</b>	<b>\$7.7</b>	<b>\$2.9</b>	<b>31.5</b>	<b>\$1.7</b>
<b>Goods-production subtotal</b>	<b>\$86.0</b>	<b>\$17.2</b>	<b>162.3</b>	<b>\$13.1</b>
Transportation and wholesale	\$2.8	\$1.6	26.3	\$1.0
Retail	\$1.9	\$1.2	29.9	\$0.6
Business services	\$9.9	\$5.4	70.1	\$2.9
Personal and social services	\$7.3	\$4.5	85.1	\$3.4
<b>Service-providing subtotal</b>	<b>\$21.9</b>	<b>\$12.7</b>	<b>211.4</b>	<b>\$7.9</b>
<b>Total motor vehicle cluster<sup>3</sup></b>	<b>\$108.0</b>	<b>\$30.1</b>	<b>371.1</b>	<b>\$20.0</b>
<b>Totals</b>	<b>\$902.4</b>	<b>\$447.4</b>	<b>6,677.8</b>	<b>\$263.9</b>
<b>Percent of state total<sup>3</sup></b>	<b>11.9</b>	<b>6.7</b>	<b>5.5</b>	<b>7.5</b>

Notes: 1 – Output values indicate of the volume of industry transactions. However, these numbers contain large amounts of duplication since products of some industries are used as materials by others. Value-added estimates avoid some of the duplication inherent in sales data. 2 – Includes the value of benefits as well as wages and salaries. 3 – Subtotals do not sum to totals due to rounding error. Percentages also may reflect rounding error.

Source: Minnesota IMPLAN Group (2008).

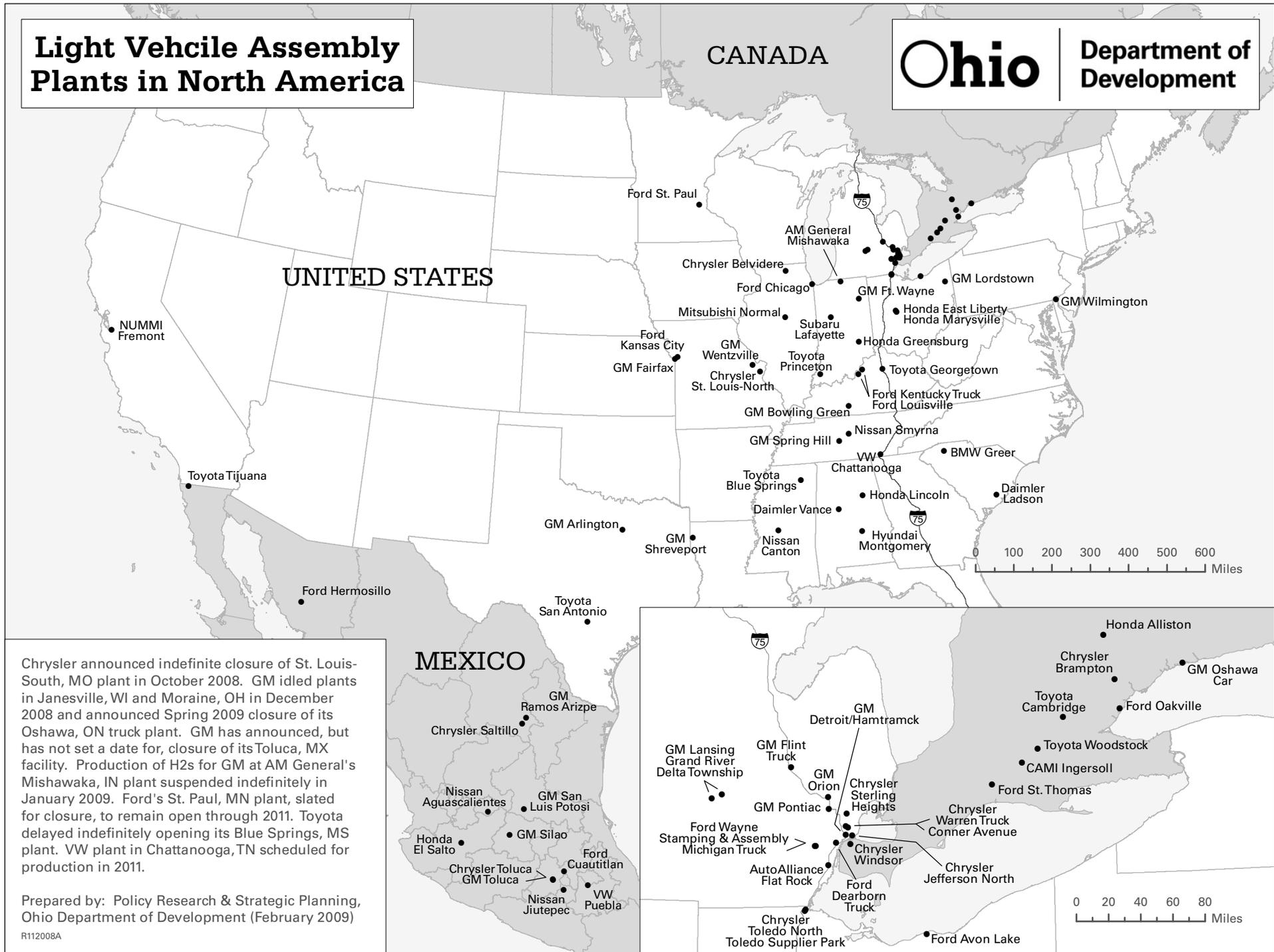
- The Ohio motor vehicle industry directly employed 130,800 workers – 16.3 percent of all manufacturing employees in the state.
- A broader view of the industry’s role in the economy takes into account a cluster of industries supplying capital equipment, parts, and materials, as well as providing services.
  - An estimated 26,700 Ohio workers made various goods that were incorporated into motor vehicles, bodies, trailers and parts, or were used in the process. Examples of the former include windshields and windows, springs, nuts, bolts, bearings, valves, electronic parts, paints and metal coatings, adhesives, and sealing devices. These were often made of steel, aluminum, glass, rubber, plastics or other chemical products. Examples of the latter include capital equipment and paperboard products.
  - 4,800 more jobs in construction and utility industries depended on presence of the motor vehicle industry here. Altogether, 162,300 jobs in Ohio were directly related to motor vehicle production.
- Additional industries outside of goods production are part of the motor vehicle cluster.
  - Industries within the transportation, wholesale and retail sectors employed 56,200 people in the sale and use of motor vehicles, bodies, trailers and parts, including tires and fuel.
  - Industries providing business, personal and social services associated with motor vehicles employed an additional 155,200. Altogether, 211,400 jobs in services sectors – more than the manufacturing subtotal – were concerned with motor vehicles, bodies, trailers and parts and their use.

Combining the impact of the manufacturing and service clusters means that a total of 5.5 percent of all Ohio workers – 371,100 of 6,677,800 – depended on the motor vehicle industry cluster for their livelihood. The value of the goods and services provided amounted to 6.7 percent of the economy. Yet these figures may under estimate the ultimate importance of motor vehicles because they exclude the ripple effect created by the purchases these workers make.

# Light Vehicle Assembly Plants in North America



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Chrysler announced indefinite closure of St. Louis-South, MO plant in October 2008. GM idled plants in Janesville, WI and Moraine, OH in December 2008 and announced Spring 2009 closure of its Oshawa, ON truck plant. GM has announced, but has not set a date for, closure of its Toluca, MX facility. Production of H2s for GM at AM General's Mishawaka, IN plant suspended indefinitely in January 2009. Ford's St. Paul, MN plant, slated for closure, to remain open through 2011. Toyota delayed indefinitely opening its Blue Springs, MS plant. VW plant in Chattanooga, TN scheduled for production in 2011.

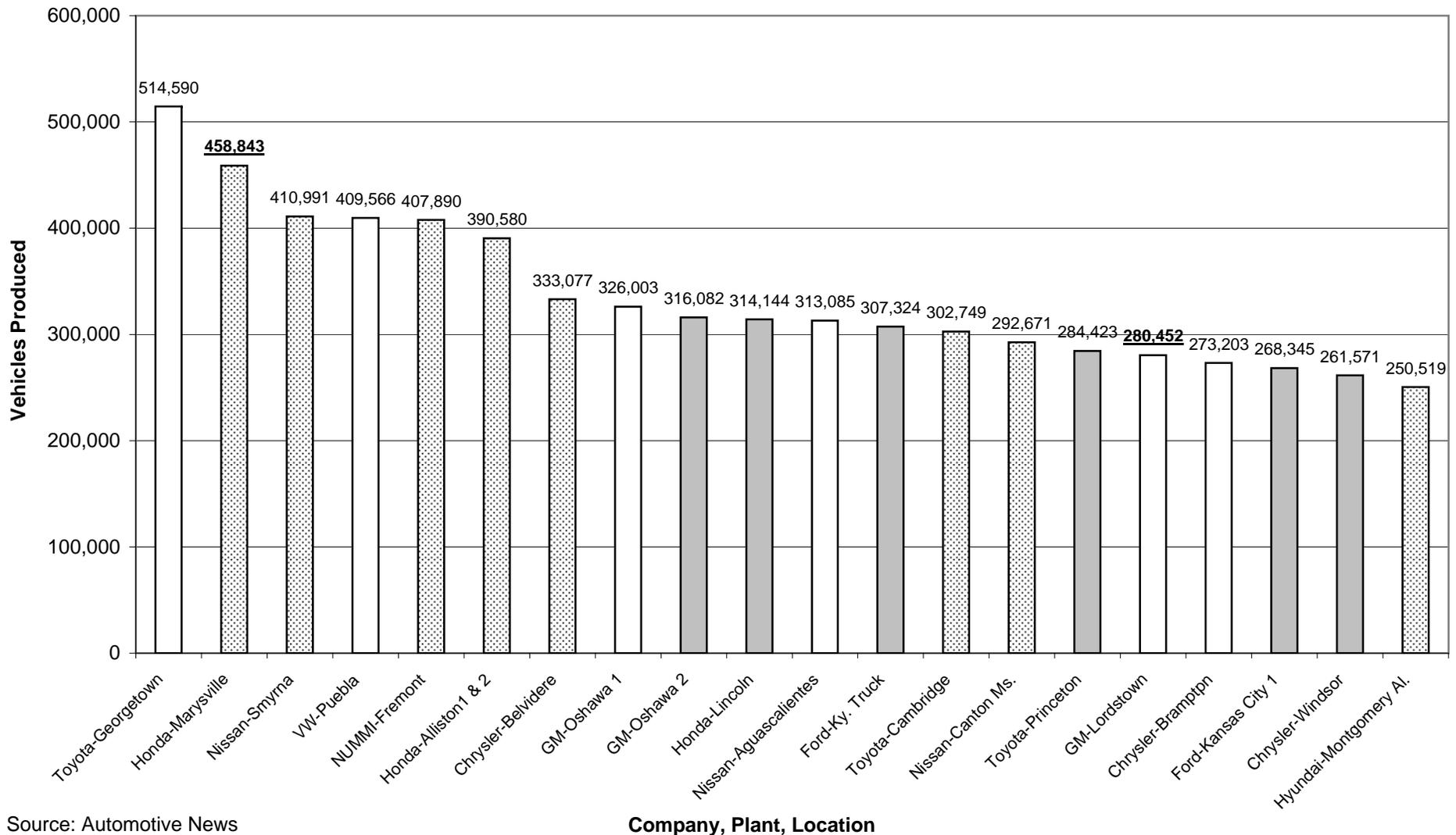
Prepared by: Policy Research & Strategic Planning, Ohio Department of Development (February 2009)

## N. American Light Vehicle Production in 2007:

82-Plant Total - 15,138,011

The 20 Highest-Volume Plants Are Listed Below

White: Cars      Gray: Light Trucks      Dots: Both



Source: Automotive News

# Leading Establishments\* in Ohio's Motor Vehicle Industry



## Establishment Location

- Chrysler
- ▲ Ford
- ✕ General Motors
- Honda
- Other

\*Establishments employing 500 or more

\*\*Replaced Toledo South and Stickney

Prepared by:  
Ohio Department of Development  
Policy Research and Strategic Planning  
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## NOTABLE MOTOR VEHICLE INDUSTRY MANUFACTURERS IN OHIO

Forty-seven companies on Fortune magazine’s U.S.-1,000 or Global-500 lists have motor vehicle industry establishments in Ohio. Six of them maintain their world headquarters here: Cooper Tire & Rubber, Dana, Eaton, Goodyear Tire & Rubber, Thor Industries, and Worthington Industries. Honda is the largest industry employer with just under 12,000 people in manufacturing operations. (Honda’s total employment in Ohio is about 15,000 when research and development and other activities are included. An additional 6,000-plus are employed at companies Honda describes as affiliates.) General Motors (GM) follows with over 9,100 (12,600 when non-manufacturing activities are included), and Delphi, its former parts division, is believed to have around 3,000. Ford employs almost 8,000, and 3,375 work for Chrysler.<sup>2</sup> Other companies employing at least 1,000 in Ohio include ArvinMeritor, Behr & Co., the Commercial Vehicle Group, Cooper Tire & Rubber, the Cypress Group’s Cooper-Standard Automotive, Dana, Eaton and Goodyear Tire & Rubber (both include corporate headquarters), Honeywell International, International Automotive Components, Johnson Controls, Navistar International, PACCAR’s Kenworth division, PPG Industries, PSA Peugeot-Citreon’s Faurecia Exhaust Systems, Qualitor, Showa, Shiloh Industries, Tenneco, Tokai Kogyo, and YUSA.

Establishments with non-motor vehicle industry NAICS codes have been included when their specific products are used by the industry. Examples include Daimler AG’s diesel engine rebuilding plant, GM-Isuzu’s DMAX facility, Ford’s and GM’s foundries, and the glass and automotive finishes from PPG.

The map above shows the locations of the 71 manufacturing establishments with 500 or more employees. The list below includes the Fortune companies with at least 50 people at a site as well as other companies employing 500 or more in Ohio and having at least 50 people at a site.<sup>3</sup> It is organized by NAICS code and includes the city where the site is located. Assembly or parts operations may not be the primary businesses of some of the companies on the list, but their sites are included because their primary NAICS codes or products their clients buy make them as part of the industry.

Parent/Company/Division	Primary NAICS	City	Jobs at Site <sup>^</sup>
Transportation equipment industry codes:			
33611: Automobiles and Light-Duty Motor Vehicles			
BAE Systems*/BAE Systems Survivability Systems	336111	Fairfield	250
BAE Systems*/BAE Systems Survivability Systems/Centigon USA	336111	Fairfield	90
GM* <sup>6</sup> /Lordstown Complex: Assembly and Metal Center <sup>11</sup>	336111/33637	Lordstown	2,756
Honda*/E. Liberty Assembly Plant <sup>6</sup>	336111	E. Liberty	2,500



Parent/Company/Division	Primary NAICS	City	Jobs at Site^
33611: Automobiles and Light-Duty Motor Vehicles (continued)			
Honda*/Marysville Assembly Plant <sup>6</sup>	336111	Marysville	5,300
Honda affiliate: <sup>13</sup> Jefferson Industries	336111	W. Jefferson	370
Honda affiliate: <sup>13</sup> Toyo Denso/Weastec	336111	Seaman	59
Visteon*	336111	Springfield	61
Chrysler* <sup>3, 6</sup> /Toledo North Assembly Plant	336112	Toledo	1,275
Chrysler* <sup>3, 6</sup> /Toledo Supplier Park <sup>4</sup>	336112	Toledo	500
Ford* <sup>6</sup> /Ohio Assembly Plant	336112	Avon Lake	2,300
33612: Heavy Duty-Trucks <sup>14</sup>			
Navistar International*/International Truck & Engine (Lagonda)	33612	Springfield	
Navistar International*/International Truck & Engine (Urbana Rd.)	33612	Springfield →	1,000-1,400
Navistar International*/International Truck & Engine (W. County Line)	33612	Springfield	
PACCAR*/Kenworth <sup>14</sup>	33612	Chillicothe	1,000-1,500
3362: Motor Vehicle Bodies and Trailers			
Commercial Vehicle Group <sup>5</sup>	336211	Norwalk	n.a.
Commercial Vehicle Group/Trim Systems Operating	336211	Chillicothe	178
Johnson Controls*	336211	Dayton	500
Qualitor/International Brake Industries	336211	Lima	153
Temasek Holding/Kidron	336211	Kidron	500
AB Volvo*-Hitachi*/Euclid-Hitachi Heavy Equipment	336212	Cleveland	457
Berkshire-Hathaway*/Scott Fetzer/Stahl	336212	Cardington	107
Berkshire-Hathaway*/Scott Fetzer/Stahl	336212	Wooster	150
Thor Industries*/Airstream	336213	Jackson Center	350
33631: Motor Vehicle Gasoline Engines and Engine Parts			
Dover*/Dover Diversified/Wiseco Piston	336311	Mentor	265
Honda*/Honda Foundry/Celina Aluminum Precision Technology	336311	Celina	480

Parent/Company/Division	Primary NAICS	City	Jobs at Site <sup>^</sup>
33631: Motor Vehicle Gasoline Engines and Engine Parts			
Atlas Industries	336312	Fremont	134
Atlas Industries	336312	Gibsonburg	302
33631: Motor Vehicle Gasoline Engines and Engine Parts (continued)			
Atlas Industries	336312	Tiffin	96
Ford <sup>*6</sup> /Cleveland Engine Plant 1 <sup>8</sup>	336312	Brook Park	0
Ford <sup>*6</sup> /Cleveland Engine Plant 2	336312	Brook Park	813
Ford <sup>*6</sup> /Lima Engine Plant	336312	Lima	730
Honda*/Anna Engine Plant <sup>6</sup>	336312	Anna	2,800
ThyssenKrupp*/ThyssenKrupp Atlas <sup>1</sup>	336312	Fostoria	80
33632: Motor Vehicle Electrical and Electronic Equipment			
ATC Group	336321	Geneva	100
ATC Group/ATC Lighting & Plastics	336321	Geneva	60
ATC Group/ATC Lighting & Plastics/Advanced Technology	336321	Geneva	250
ATC Group/ATC Lighting & Plastics/Lighting Products	336321	Andover	155
ATC Group/ATC Lighting & Plastics/Lighting Products	336321	Andover	84
Stanley Electric/Stanley Electric US	336321	London	780
Delphi*	336322	Warren	120
Honda affiliate: <sup>13</sup> Toyo Denso/Weastec	336322	Greenfield	158
Honda affiliate: <sup>13</sup> Toyo Denso/Weastec	336322	Hillsboro	222
Magna International*/Decoma International	336322	Toledo	100
Mitsubishi Electric*/Mitsubishi Electric Automotive America	336322	Mason	422
Stoneridge	336322	Mansfield	500
33633: Motor Vehicle Steering and Suspension Components			
Honda affiliate: <sup>13</sup> Yamada Mfg./Yamada N. America	33633	S. Charleston	350
Showa/American Showa	33633	Blanchester	530

Parent/Company/Division	Primary NAICS	City	Jobs at Site^
33633: Motor Vehicle Steering and Suspension Components			
Showa/American Showa	33633	Sunbury	600
ThyssenKrupp*/ThyssenKrupp Bilstein of America <sup>1</sup>	33633	Hamilton	200
33634: Motor Vehicle Brake Systems			
Aisin Seiki*, <u>et.al.</u> /ADVICS N. America/ADVICS Mfg. Ohio	33634	Lebanon	625
Cooper-Standard Automotive*	33634	New Lexington	352
33634: Motor Vehicle Brake Systems (continued)			
Dana*/Coupled Products	33634	Upper Sandusky	355
Eaton*	33634	Cleveland	200
Honda affiliate: <sup>13</sup> Nissin Kogyo/Nissin Brake Ohio (f.k.a. Findlex)	33634	Findlay	670
Qualitor/Hebco Products	33634	Bucyrus	862
33635: Motor Vehicle Transmissions and Parts			
ArvinMeritor	33635	Newark	600
Ford* <sup>6</sup> /Sharonville Transmission Plant	33635	Cincinnati	1,478
GM* <sup>6</sup> /GMPT Toledo Transmission	33635	Toledo	1,663
Honda affiliate: <sup>13</sup> Atsumitec/Ada Technologies	33635	Ada	60
Honda*/Russell's Point Transmission Plant <sup>6</sup>	33635	Russell's Point	900
Honda affiliate: <sup>13</sup> Kaneta Kogyo/Bucyrus Precision Tech	33635	Bucyrus	189
33636: Motor Vehicle Seating and Interior Trim			
Honda affiliate: <sup>13</sup> TS Trim Industries, Inc.	33636	Athens	360
International Automotive Components	33636	Sidney	350
Johnson Controls*/Johnson Controls Interiors	33636	Oberlin	250
Magna International*/Intier Automotive Seating	33636	Strongsville	60
Taichi-S <sup>15</sup> /Tachi-S Engineering USA/Setex	33636	St. Marys	600

Parent/Company/Division	Primary NAICS	City	Jobs at Site <sup>^</sup>
33637: Motor Vehicle Metal Stampings			
American Trim	33637	Sidney	600
ArcelorMittal*/Dofasco/Powerlasers	33637	Pioneer	115
Chrysler* <sup>3, 6</sup> /Twinsburg Stamping Plant	33637	Twinsburg	900
Commercial Vehicle Group <sup>5</sup>	33637	Shadyside	n.a.
Ernie Green Industries/Florida Production Engineering	33637	New Madison	230
Ford* <sup>6</sup> /Walton Hills Stamping Plant	33637	Walton Hills	607
GM* <sup>6</sup> /GMPT Parma	33637	Parma	1,040
GM* <sup>6</sup> /Mansfield Metal Center	33637	Mansfield	1,593
Honda affiliate: <sup>13</sup> TS Tech/TS Tech N. America	33637	Reynoldsburg	88
33637: Motor Vehicle Metal Stampings (continued)			
Honda affiliate: <sup>13</sup> Yanagawa Seiki/YSK	33637	Chillicothe	250
Magna International*/Decoma International/Decoma Systems Integration	33637	Toledo	100
Magna International*/Decoma International/Norplas Industries	33637	Northwood	100
Midway Products Group/Findlay Products	33637	Findlay	200
Midway Products Group/P & A Industries	33637	Findlay	200
Midway Products Group/Progressive Stamping	33637	Ottoville	250
M-Tek	33637	Upper Sandusky	600
Shiloh Industries	33637	Valley City	1,200
Tower Automotive <sup>6</sup> /Tower Automotive Operations USA I	33637	Bluffton	217
Worthington Industries*/Gerstenslager	33637	Wooster	537
33639: Other Motor Vehicle Parts			
Behr/Behr Dayton Thermal Products <sup>2</sup>	336391	Dayton	1,400
Cooper-Standard Automotive*	336391	Archbold	240
ArvinMeritor	336399	Cleveland	81
ArvinMeritor	336399	Kenton	800
Blackhawk Automotive Plastics	336399	Salem	680



Parent/Company/Division	Primary NAICS	City	Jobs at Site^
33639: Other Motor Vehicle Parts			
Blackstone Group LP/ TRW Automotive Holdings*	336399	Cleveland	50
Blackstone Group LP/ TRW Automotive Holdings* <sup>6</sup>	336399	Fayette	210
Blackstone Group LP/ TRW Automotive Holdings*	336399	Toledo	55
Chrysler* <sup>3, 6</sup> /Toledo Machining Plant	336399	Perrysburg	700
Commercial Vehicle Group <sup>5</sup>	336399	New Albany	125
Commercial Vehicle Group/Trim Systems Operating	336399	New Albany	80
Dana*	336399	Maumee	100
Dana*	336399	Toledo	300
Dana*/Coupled Products	336399	Wharton	200
Delphi*	336399	Dayton	1,200
Delphi*	336399	Dayton	700
Delphi*	336399	Kettering	n.a.
Delphi*	336399	Vienna	120
Delphi*	336399	Warren	99
Delphi*	336399	Warren	500
Delphi*	336399	Warren	200
Delphi*	336399	Youngstown	100
Eaton*-Inoac	336399	Fremont	400
Ernie Green Industries/Marion Industries	336399	Marion	753
F-Tech/F&P America Mfg.	336399	Troy	650
Ford* <sup>6</sup> /Automotive Components Holding (f.k.a. a Visteon* plant) <sup>9</sup>	336399	Sandusky	1,000
Hayes Lemmerz International*	336399	Akron	230
Hitachi*/Hitachi Metals America/AAP St. Marys	336399	St. Marys	470
Honda affiliate: <sup>13</sup> KTH Parts Industries	336399	Saint Paris	770
Honda affiliate: <sup>13</sup> KTH Parts Industries/Kalida Mfg.	336399	Kalida	250
Honda affiliate: <sup>13</sup> Nihon Plast/Neaton Auto Products	336399	Eaton	705
Honda affiliate: <sup>13</sup> Tanaka Seimitsu Kogyo/FT Precision	336399	Fredericktown	200
Honda affiliate: <sup>13</sup> TS Tech/TS Tech N. America/TS Tech USA	336399	Reynoldsburg	400

Parent/Company/Division	Primary NAICS	City	Jobs at Site^
33639: Other Motor Vehicle Parts (continued)			
Honda affiliate: <sup>13</sup> Yachiyo Industry/AY Mfg.	336399	Columbus	200
Honda affiliate: <sup>13</sup> Yutaka Giken/Cardington Yutaka Technologies	336399	Cardington	750
Honeywell International, Inc.*	336399	Fostoria	900
Honeywell International, Inc.*	336399	Greenville	325
INA Holding Schaffler/LuK/LuK Clutch Systems	336399	Wooster	980
International Automotive Components	336399	Wauseon	600
Johnson Controls*/Johnson Controls Interiors	336399	Northwood	170
Kongsberg Automotive Holdings/Kongsberg Driveline Systems II	336399	Van Wert	750
Lear <sup>7</sup>	336399	Zanesville	300
Magna International*/Decoma International/Decoma Modular Systems	336399	Toledo	100
Magna International*/Intier Automotive Seating	336399	Warren	250
Modine Mfg.*	336399	Pemberville	250
Morioku/Greenville Technology	336399	Greenville	672
Pacific Industrial/Pacific Industries USA/Pacific Mfg. Ohio	336399	Fairfield	500
Pacific Industrial/Pacific Industries USA/Takumi Stamping	336399	Fairfield	150
Parker Hannifin Corp.*	336399	Wickliffe	271
PSA Peugeot-Citreon*/Faurecia Exhaust Systems	336399	Franklin	400
PSA Peugeot-Citreon*/Faurecia Exhaust Systems	336399	Toledo	1,200
PSA Peugeot-Citreon*/Faurecia Exhaust Systems	336399	Troy	300
Sankei Giken/Newman Technology	336399	Mansfield	850
Sanoh Industrial/Sanoh America (f.k.a. Hisan)	336399	Findlay	733
Sanoh Industrial/Sanoh America (f.k.a. Hisan)	336399	Mt. Vernon	224
Tenneco*	336399	Kettering	400
Tenneco*	336399	Milan	450
Tenneco*	336399	Napoleon	404
Tokai Kogyo/Green Tokai	336399	Brookville	600
Tower Automotive <sup>6</sup> /Tower Automotive Operations USA I	336399	Bellevue	163
Toyota*/Taiho Kogyo/Taiho of America	336399	Tiffin	100

Parent/Company/Division	Primary NAICS	City	Jobs at Site <sup>^</sup>
The Related Industries:			
32621: Tires			
Cooper Tire & Rubber* <sup>6</sup>	326211	Findlay	1,192
Goodyear Tire & Rubber* <sup>12</sup>	326211	Akron	3,000
335911: Storage Batteries			
Johnson Controls*/Battery Group	335911	Holland	456
Miscellaneous establishments whose products become parts of motor vehicles:			
Commercial Vehicle Group/Trim Systems Operating	31332	Dublin	240
PPG Industries*	32551	Cleveland	602
PPG Industries*	32551	Crestline	700
PPG Industries*	32551	Delaware	465
Illinois Tool Works*/Tomco	326199	Bryan	270
International Automotive Components	326199	Fremont	304
International Automotive Components	326199	Huron	700
Textron*/Kautex <sup>7</sup>	326199	Wilmington	160
Toledo Molding & Die	326199	Delphos (Allen)	130
Toledo Molding & Die	326199	Delphos (Van Wert)	85
Toledo Molding & Die	326199	Tiffin	310
Cooper-Standard Automotive*	32622	Bowling Green	500
Cooper-Standard Automotive*	32622	Bowling Green	350
Teleflex*	32622	Grand River	56
Tokai Kogyo/DTR Industries	32622	Bluffton	750
Bridgestone*/Bridgestone AMP	326291	Upper Sandusky	100
YUSA	326291	Washington C.H.	1,046
Asahi Glass/AGC Automotive <sup>1</sup>	327215	Bellefontaine	500
Asahi Glass-PPG Industries*/Belletech (a joint venture with PPG*) <sup>1</sup>	327215	Bellefontaine	150
Guardian Industries	327215	Millbury	225

Parent/Company/Division	Primary NAICS	City	Jobs at Site <sup>^</sup>
Guardian Industries	327215	Upper Sandusky	500
Ford <sup>*6</sup> /Cleveland Casting Plant <sup>7</sup>	331511	Brook Park	1,067
GM <sup>*6</sup> /GMPT Defiance Foundry	331511	Defiance	1,493
Dana*/Daido Metal	331525	Bellefontaine	372
Daimler*/Detroit Diesel Remanufacturing	333618	Byesville	500
GM <sup>*6</sup> /DMAX <sup>10</sup> (a joint venture with Isuzu Motors*)	333618	Moraine	600
Cummins*/Cummins Filtration/Kuss	333999	Findlay	280

Notes: ^ – figures from Harris (2008) unless otherwise noted, sites with less than 50 jobs excluded; \* – a Fortune U.S. 1,000 or Global 500 company; 1) jobs figure from LexisNexis (2008); 2) jobs figure is not current, but is latest available; 3) Daimler AG retains 19.9 percent of Chrysler, and Fiat recently acquired a 35 percent stake from Cerberus Capital; 4) perhaps 1,700 more work at the site, but only 500 work for Chrysler; 5) jobs figure from Burns (2009); 6) jobs figures from company website or ODOD (2008) sources; 7) scheduled to close in 2009; 8) may reopen in 2009; 9) jobs figure from Zelm (2008); 10) Dirr (2008a) reported 876; 11) jobs figures combined for Lordstown assembly and metal fabrication plants; second shift will be cut in 2009, leaving only 1,400 in assembly (Gearino, 2009); (12) jobs figure from Crain's Cleveland Business (2008) includes headquarters; 13) list compiled from Honda's and others' websites; 14) no one credible figure available; 15) Nissan\* own 12 percent; n.a. – not available.

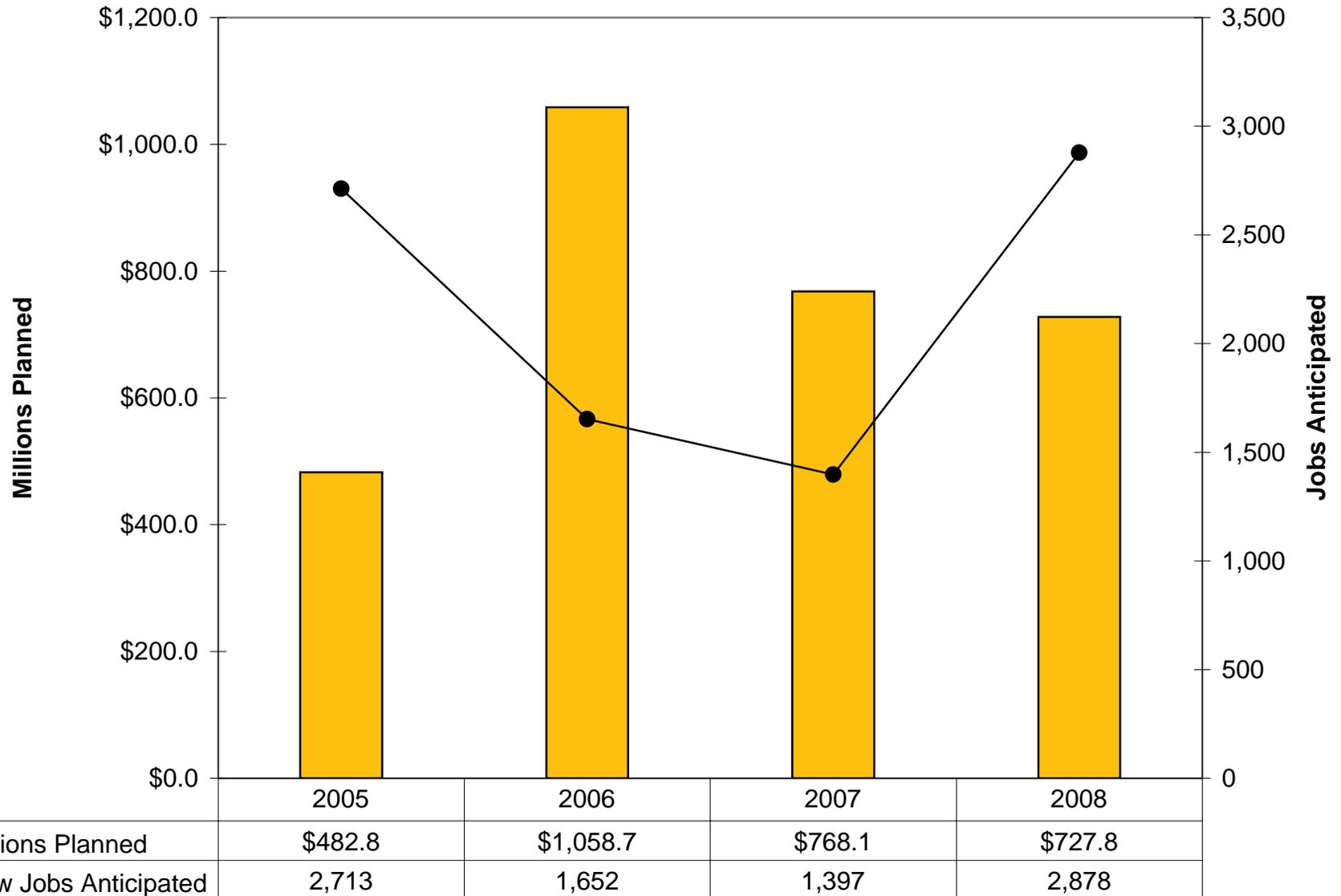
See Table A1

Sources: Blade Staff (2008), Burns (2009), Crain's Cleveland Business (2008), Dirr (2008a), Gearino (2009), Harris (2008), Jarman (2008), Lexis-Nexis (2008), ODOD (2008), Schoenberger (2008d), Zelm (2008), and various company websites.

Prepared by: Policy Research & Strategic Planning, Ohio Dept. of Development. Telephone 1-800-848-1300, or 614-466-2116 (DL, 1/09).

## Investment Announcements in Ohio's Motor Vehicle Industry, 2005-2008

Four-Year Totals: \$3,037.4 Million; 8,640 Jobs



Source: Policy Research & Strategic Planning

## RECENT EXPANSION AND ATTRACTION ANNOUNCEMENTS

From 2005 through 2008 the Ohio Dept. of Development recorded 152 investment announcements by 114 companies in the state's motor vehicle industry totaling \$3 billion (B). Over 8,600 new jobs and 6.36 million (M) square feet of space are anticipated when the projects are completed. The vast majority of these – \$2.6B, almost 6,700 jobs, and 5.1M square feet – are in the parts group (NAICS 3363 and products specifically for motor vehicles from non-transportation equipment industries). Over \$397M is being invested in assembly and chassis plants (NAICS 3361), with the remaining \$36.2M for establishments making bodies and trailers (NAICS 3362). Almost 35 percent of the investment – \$1.06B – occurred in 2006. One-third of the anticipated new jobs were announced in 2008.

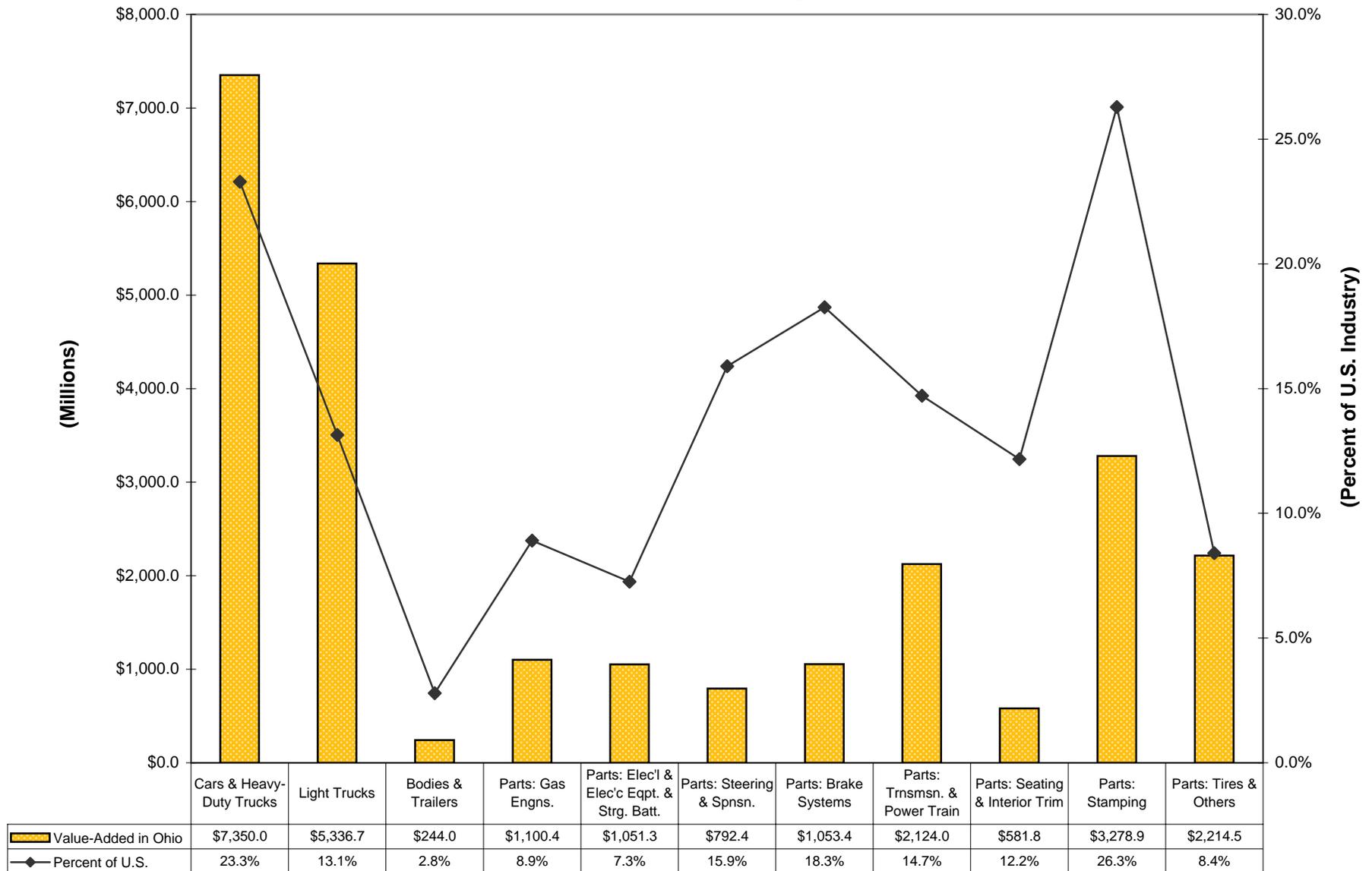
General Motors Corp. (GM) led all assemblers in Ohio by investing almost \$1.5B during the four-year period.<sup>4</sup> Ford followed with \$277M. Honda invested \$116.9M, with its affiliates collectively adding another \$98.9M. PACCAR's Kenworth division planned investments totaled \$68M, and Cerberus, which owns Chrysler and Tower Automotive, planned to invest \$32.6M. Thirty parts companies announced investments of at least \$10M during the last four years, but only Bridgestone planned over \$100M.

Assemblers also made nine of the 10 largest individual investments during 2005-2008. The largest was \$462.8M for GM's transmission plant in Toledo in 2006. The company followed that with another \$332M for the same plant in 2007, and \$317M for its Lordstown assembly plant in 2008. All of the remaining top 10 investments were for parts operations. Kenworth and Honda announced smaller investments in their assembly plants.

These counts are part of the Ohio Private Investment Survey annually compiled by Policy Research & Strategic Planning (2008, 2009). A major investment must meet at least one of the following criteria: 20,000 square feet of new space; \$1M to be spent for land, building(s), or equipment; or 50 new jobs. Many of the major investments are phased in over a two-to-three year cycle, with production and employee counts phased in after project completion.

See Table A2

## Value-Added by Subgroup in Ohio's Motor Vehicle Industry, 2002



Source: U.S. Census Bureau

## THE CONCENTRATION OF THE INDUSTRY IN OHIO: GROSS DOMESTIC PRODUCT AND VALUE-ADDED

While gross domestic product data from the U.S. Bureau of Economic Analysis (2008a) show that the motor vehicle industry overall (NAICS 3361-3) is concentrated in Ohio, value-added data provide additional specific information about which segments of the industry are more or less concentrated here. The chart above shows that some industries are exceptionally concentrated in Ohio. These include stamping operations – 26.3 percent of the national total, the combination of cars and heavy-duty trucks – 23.3 percent, brake systems – 18.4 percent, and steering and suspension – 15.9 percent. Other segments are less concentrated here: light trucks – 13.1 percent, seats and interior trim – 12.2 percent, engines and engine parts – 8.9 percent, tires and other parts – 8.4 percent, and electrical and electronic equipment and storage batteries – 7.3 percent.

Data shown separately in table A3 add further detail to the portrait above. It shows that the production of gasoline engines and engine parts (336312) is concentrated in Ohio,<sup>5</sup> but not the production of carburetor, pistons, rings, and valves (336311). The production of other motor vehicle parts (33639) in Ohio is about twice the concentration of tire (32621) production. Finally, the production of motor vehicle bodies (336211) is slightly concentrated in Ohio, but not the production of truck and travel trailers, motor homes, or campers.

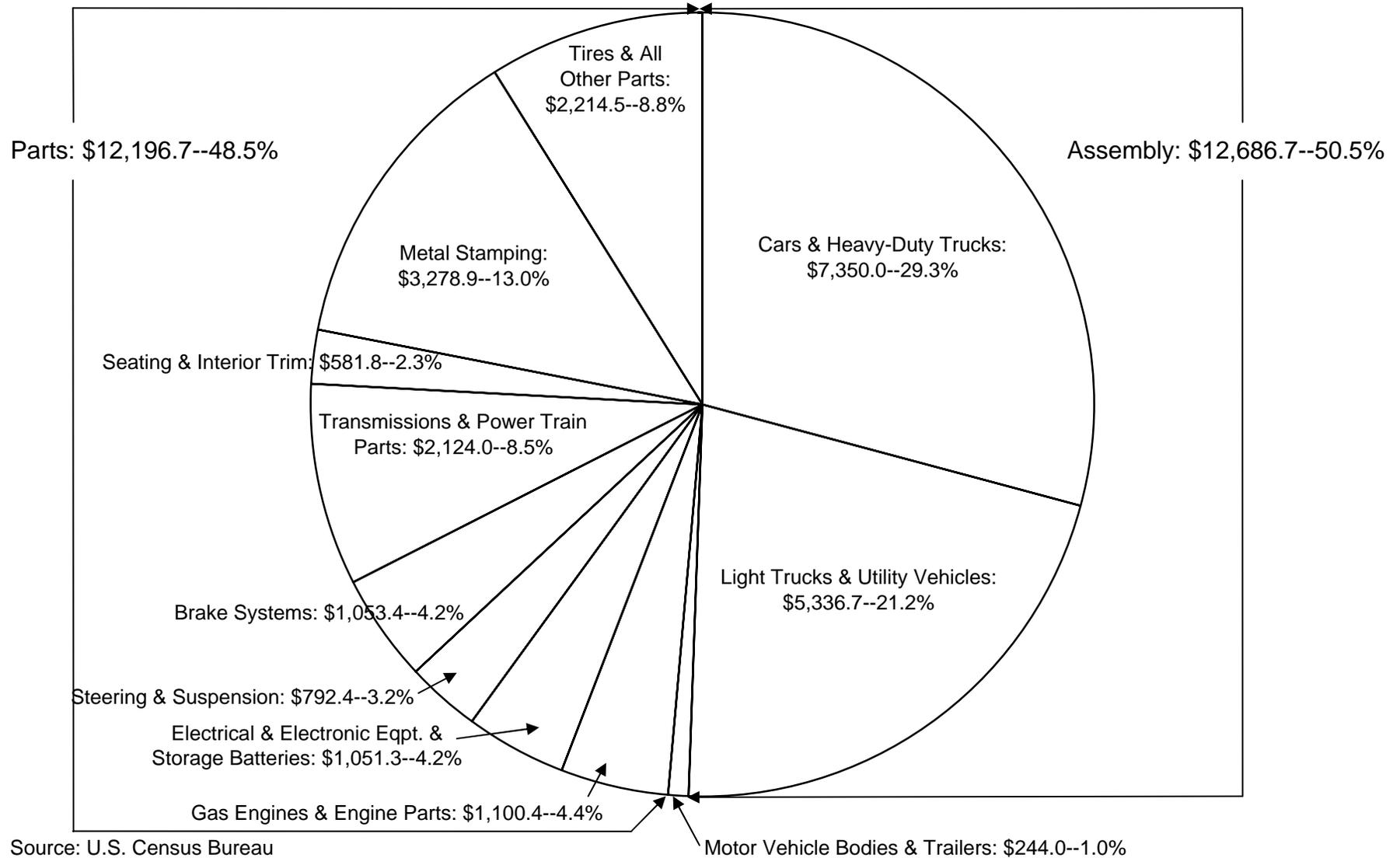
The latest available data (2006) from the Annual Survey of Manufactures (ASM) shows that Ohio ranked second only to Michigan in assembly operations and parts production. The state ranked eighth in body and trailer production. Overall, Ohio ranked second in industry production (U.S. Bureau of the Census, 2008a).

See Table A3

### Value-Added by Subgroup in Ohio's Motor Vehicle Industry: 2002

Total: \$25,127.4--100.0%

(in millions, except percentages)



Source: U.S. Census Bureau

## THE COMPOSITION OF OHIO'S MOTOR VEHICLE INDUSTRY: VALUE-ADDED

Value-added data from the most recent Census of Manufactures provide insight into the composition of the motor vehicle industry in Ohio and a basis for comparisons with other states and the country as a whole.

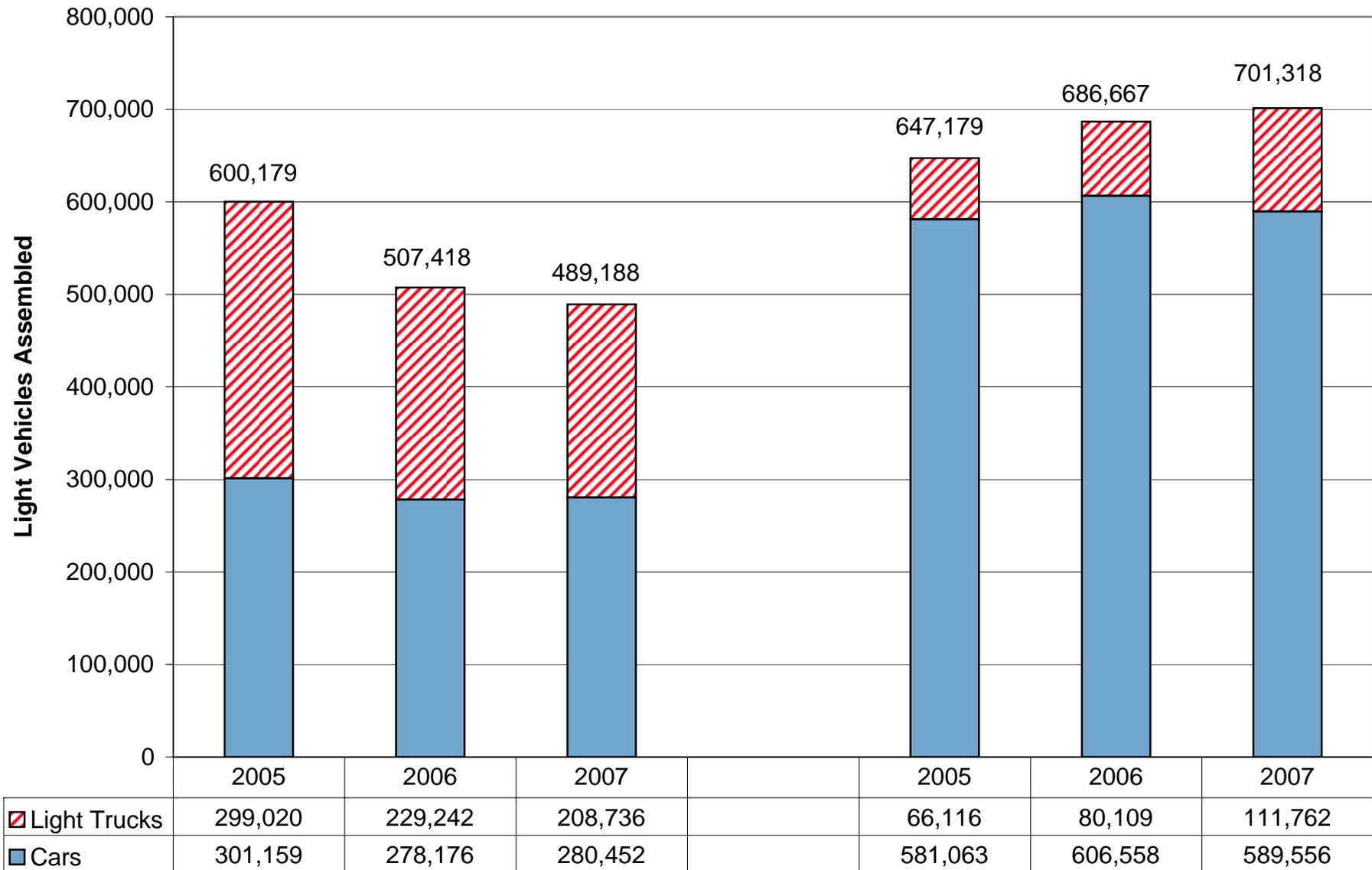
The chart above illustrates the relative distribution of motor vehicle industry output, usually by industry subgroups. Assembly operations (NAICS 3361) were 50.5 percent of industry production in the state. In turn, assembling light trucks contributed 21.2 percent of industry output, while assembly of cars and heavy-duty trucks combined to add 29.3 percent.<sup>6</sup>

Parts production – including tires and storage batteries – was 48.5 percent of motor vehicle industry output in Ohio. Metal stamping (33637) is the largest industry in the parts group with 13.0 percent of industry output, followed by transmissions and power trains (33635) with 8.2 percent. The remaining industries and sub-groups each comprise less than 5.0 percent of industry value-added in the state, although tires (32621) and other parts (33639) combined are 8.8 percent of the total. Manufacturing bodies and trailers (3362) constitutes just one percent of industry output in Ohio.

The chart above also illustrates how much of the motor vehicle industry in Ohio is attributable to just six companies. Chrysler, Ford, General Motors, Honda, Navistar International, and PACCAR are high-volume assemblers, producing nearly all of the value-added in assembly operations. They also dominate some of the parts industries. For example, assemblers have long made almost all of their own engines (4.4 percent of value-added), transmissions (8.5 percent of value-added), and do much of their own metal stamping (13 percent of value-added). Therefore, it appears that those six companies were directly responsible for over 60 percent of motor vehicle industry output in Ohio.

See Table A3

### A Three Year Summary of Light Vehicle Production in Ohio: General Motors and Honda



Source: Ward's

## THREE-YEAR SUMMARIES OF LIGHT VEHICLE PRODUCTION IN OHIO

The charts on the preceding and following pages summarize light vehicle production in Ohio during the last three years by each of the four high-volume assemblers in N. America. Each had one or two assembly plants in Ohio in this time period.

The charts show that Honda is the highest-volume assembler in Ohio, surpassing 701,000 in 2007, and producing more vehicles in all three years than any other assembler. The chart above also shows that the vast majority of vehicles it makes here are cars – at least 581,000 a year. More detailed data in table A4 show that the Accord is the mainstay of Honda's Ohio production with over 350,000 assembled at the company's Marysville plant each year. At least 66,000 Acuras, Honda's near-luxury brand, also were made at Marysville each year. The addition of the RDX crossover vehicle (another type of light truck) in 2006 helped make Marysville the highest-volume assembly plant in the state during this three-year period.

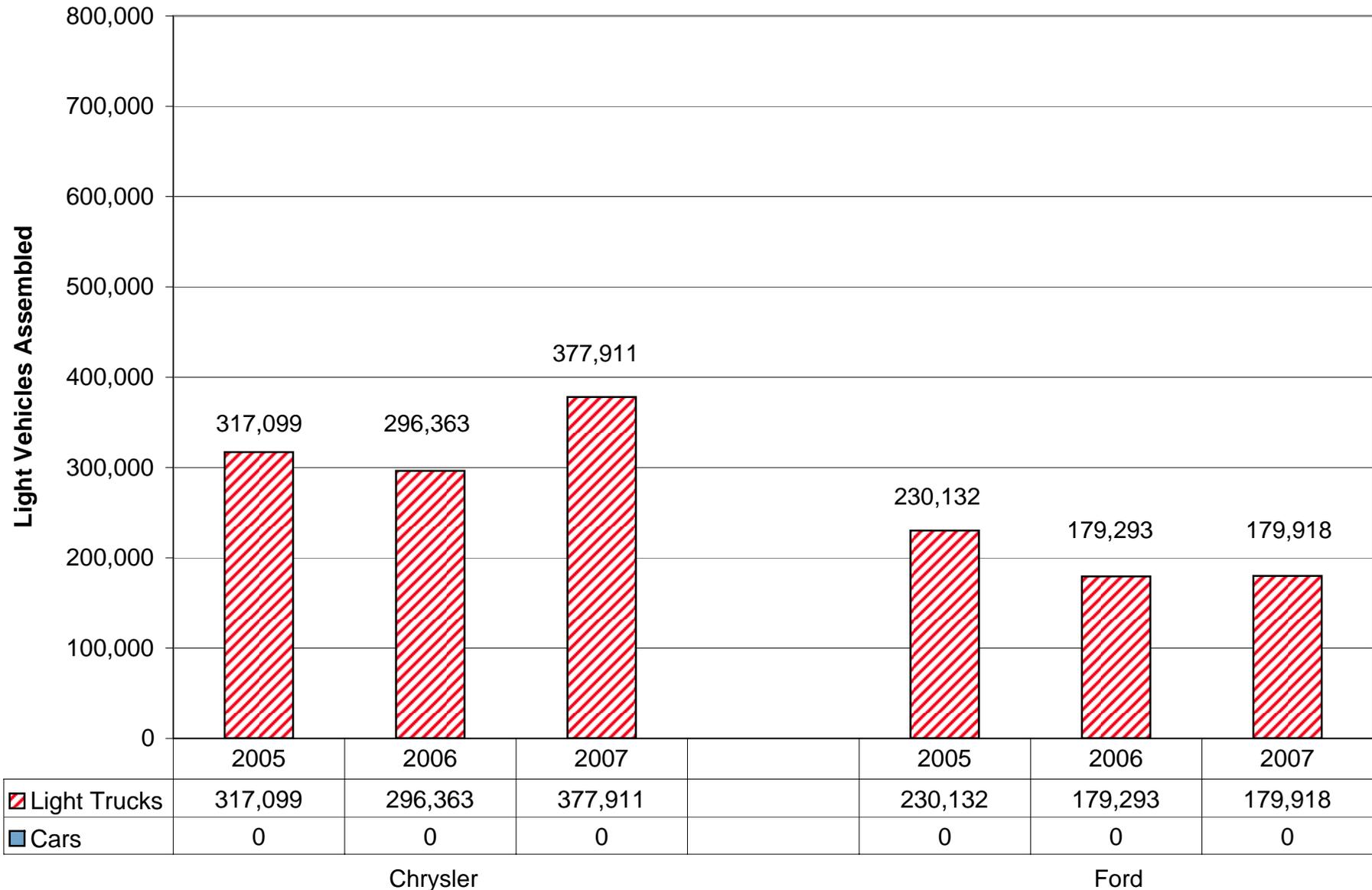
Honda makes more trucks, though, at its E. Liberty plant; combined output of the CR-Vs and Elements ranged from about 61,300 to 86,400. (The chart above shows Honda's total light truck production in Ohio nearly doubling, and playing a key role in the company's growing light vehicle output.) Still, most of the vehicles from E. Liberty are Civics (cars) – at least 133,000 per year. The detailed data in table A4 provide further evidence of E. Liberty's flexibility: 5,460 Accords were assembled there in 2005.

2005 was the first year in recent memory that GM produced more cars than light trucks in Ohio, and the shift continued in 2006 and 2007, with light truck production continuing to fall – about 90,000 vehicles – while car production dropped less – about 21,000. Detailed data in table A4 show that production of Trailblazers and Envoys – the mid-size SUV mainstays at Moraine – dropped by 53,000 and 25,000, respectively. The declining assemblies of other models there, including the termination of the Buick Rainier, were comparatively minor. Production in Moraine terminated in December, 2008, due in part to the recession, higher fuel prices, and the associated drop in demand for SUVs.

The smaller decline in car production at GM's Lordstown plant is the sum of two different trends. The increase in Pursuit/G5/G4 production of almost 33,000 was more than offset by the drop of 53,000-plus in Cobalt assemblies. (Only the Cobalt is for sale in the U.S.)

See Tables A4 & A11

## A Three-Year Summary of Light Vehicle Production in Ohio: Chrysler and Ford



Source: Ward's

The chart above shows that Chrysler and Ford make only light trucks in Ohio. Detailed data in table A4 show that Chrysler's net increase of nearly 60,000 SUVs is the aggregation of different production trends at its two plants in Toledo. The introduction of the Dodge Nitro at its Toledo North plant essentially offset the drop in Jeep Liberties, while the expansion of the Jeep Wrangler Unlimited – well over 72,000 – far out-stripped the net decline of 12,000-plus in Jeep Wrangler production at the Toledo South plant. Toledo's most popular models in 2007 rank as follows: the Nitro, the Liberty, the Wrangler Unlimited, and the Wrangler.

The numbers alone do not convey the substantial changes Ford made in Ohio. Just over 27,000 Mariners (SUVs) were assembled at Avon Lake in 2005 before production was consolidated in Kansas City. The Avon Lake plant was retooled beginning in August that year, and Econoline production shifted from Lorain with the permanent closure of the latter in December (Harbour Consulting, 2006: 44-45; Parker, 2006).

The changes outlined above help explain the changes in summary figures for light vehicle production in Ohio. Total production in Ohio for the three years ranged between 1,669,741 (2006, and the lowest since 1991) and 1,794,589 (2005, and fairly typical of recent years). Production was close to evenly split between cars and light trucks. Car production varied little, with 884,734 assembled in 2006, and 870,008 assembled in 2007. Light truck production ranged from 785,007 in 2006 to 912,367 in 2005.

See Table A4 & A11

## MOTOR VEHICLE PARTS: POWERTRAIN AND STAMPING OPERATIONS IN OHIO

### POWERTRAIN AND STAMPING OPERATIONS BY ASSEMBLERS IN OHIO DURING 2007, FROM AVAILABLE DATA<sup>#</sup>

Subject	Chrysler	Ford	GM	Honda	Total*
Powertrain:					
Engine Plants (in Ohio/in N. America):	0/6	3/7+	1/10+	1/2	5/33+
Engine Models <sup>@</sup> in Ohio:	0	7+	2	11	20+
Engines Produced:					
In Ohio:	0	532,819 <sup>e</sup>	200,000 <sup>e</sup>	1,090,175	1,822,994 <sup>e</sup>
In N. America	2,297,150	2,387,812 <sup>e</sup>	4,340,959 <sup>e</sup>	1,428,226	13,486,585 <sup>e</sup>
Transmission Plants (in Ohio/in N. America):	0/3	1+/3+	1/6	1/2	3+/15+
Transmission Models <sup>@</sup> in Ohio:	0	1+	3	1	5+
Transmissions Produced:					
In Ohio:	0	363,328+	1,061,386	869,404	2,294,118+
In N. America	2,075,797	1,966,030+	3,786,310	996,134	9,179,985+
Major Stamping Locales (in Ohio/in N. America):	1/7	2/9	3/17	2/4	8/44

Notes: # – Data are incomplete and usually refer only to plants participating in Harbour’s study: manufacturers of light vehicles with assembly plants in N. America. Medium- or heavy-duty truck parts produced at the same plants may be included in these statistics, but it excludes Daimler’s diesel engine remanufacturing plant in Byesville. Also missing are data for Ford’s Engine Plant No. 1 in Brook Park, its stamping plant in Maumee (idled in October 2007), and transmission plant in Batavia (closed June 2008). Honda does stamping at its assembly plants. Limited data for GM-Isuzu’s DMAX plant in Moraine are available from Wikipedia (2008). Consequently, percentages are not computed because they would be misleading. \* – Totals for N. America also include various combinations of other companies: Auto Alliance, CAMI, Hyundai, Nissan, NUMMI, Toyota and Volkswagen. + – plus more not included in Harbour Consulting (2008). @ – Variations on models are not included. e – The number appears to be, or incorporates, an estimate.

Sources: Ford (2008), Harbour Consulting (2008), Harris (2008), Wikipedia (2008).

While many motor vehicle assemblers have divested parts manufacturing operations, they have retained three types: engines, transmissions, and stampings. Most assemblers have long made their own engines and transmissions (collectively referred to as powertrains), and use this fact to distinguish their vehicles from competitors’ vehicles.<sup>7</sup>

Unfortunately, the data are incomplete. Consequently, the exact role played by powertrain and stamping operations in Ohio is not

known, but it seems to be significant. Honda and Ford appear to be the high-volume engine producers in the state. In 2007, the three lines at Honda's engine plant turned-out about 1,090,000 engines, while Ford's Lima and Cleveland Plant #2 combined to make almost 533,000. (Ford's Engine Plant #1 was idle for most of 2007, and was not included in Harbour's survey.) Ford made at least seven engine models in Ohio, and Honda made 11. One of Honda's models uses compressed natural gas. The production in Ohio for both companies seems to be a substantial part of their total N. American output (Harbour Consulting, 2008). GM-Isuzu's DMAX made two types of diesel engines in 2007 for light- and medium-duty trucks. The estimate of 200,000 is the latest available (Wikipedia, 2008).

Ironically, engines made in Ohio by Ford and GM are used in vehicles assembled elsewhere, while vehicles assembled in Ohio by Chrysler, Ford and GM have engines made elsewhere (Harbour Consulting, 2008). On the other hand, Honda's plant in Anna supplied the engines used in its Accords, Acuras, Civics, and Elements – all made here. The Anna plant also supplied engines for Honda's Pilot and the Saturn VUE, which are assembled elsewhere (Harbour Consulting, 2006).

GM's Toledo plant made three models of rear wheel drive (RWD) transmissions totaling over 1,061,000 in 2007 – more than any other plant in N. America except Chrysler's in Kokomo. Ford's plant in Sharonville made over 363,000 of one RWD model. Production at its Batavia plant ended. The two lines in Honda's Russells Point plant made over 869,000 front wheel drive transmissions in 2007 (Harbour Consulting, 2008).

Transmissions produced in Ohio are used in some of the vehicles assembled in Ohio, and some assembled elsewhere. Examples of the former include Ford's Econoline van, GM's Moraine-made light trucks, and Honda's light vehicles. Conversely, vehicles assembled in Ohio may have transmissions produced out of state. Examples of the latter include Jeeps and GM's Cobalt and Pontiac G-series cars (Harbour Consulting, 2008).

All four assemblers had stamping operations in 2007: Chrysler's was in Twinsburg; Ford's were in Maumee (now closed) and Walton Hills; GM's were in Lordstown, Mansfield, and Parma; and Honda's were in E. Liberty and Marysville. As with its engine and transmission plants, Honda follows the newer practice of having stamping plants close to assembly plants to reduce transportation costs and match production to just-in-time requirements. However, as more models are built on one assembly line, stamping plants must make more parts and be able to switch between parts with a minimum of down-time. In effect, such plants edge toward the model characteristic of Chrysler, Ford and GM, who still operate large regional plants with lots of press lines making parts for multiple assembly plants.<sup>8</sup> Suffice it to note that all want to make better quality parts in higher volume with fewer press lines and less labor. Multiple part stampings, reduction of scrap, higher speeds, and quicker die changes are part of the process. (Chrysler, Ford and GM in particular are upgrading their plants by replacing older tandem and smaller transfer presses with larger transfer and newer progressive presses.) However, stamping operations are complex, and the number of models offered by assemblers varies, so Harbour Consulting (2008) does not offer one over-all measure by which all assemblers may be compared; it merely points to evidence that all four assemblers have improved, but more can be done.

**Other Tier-1 Suppliers\* of Motor Vehicle Parts in North America**

Area		Chrysler	Ford	GM	Honda	Kenworth	Navistar	Total^
Ohio:	Number	200	221	239	115	1	15	370
	Percent	8.1%	7.3%	8.1%	8.5%	4.8%	11.5%	3.1%
Indiana:	Number	125	152	158	48	0	9	228
	Percent	5.1%	5.0%	5.4%	3.5%	0.0%	6.9%	1.9%
Kentucky:	Number	62	85	82	53	0	2	150
	Percent	2.5%	2.8%	2.8%	3.9%	0.0%	1.5%	1.3%
Michigan:	Number	498	509	548	101	1	22	689
	Percent	20.2%	16.9%	18.6%	7.5%	4.8%	16.8%	5.9%
Ontario:	Number	244	251	300	73	0	10	372
	Percent	9.9%	8.3%	10.2%	5.4%	0.0%	7.6%	3.2%
Pennsylvania:	Number	47	46	54	10	0	5	63
	Percent	1.9%	1.5%	1.8%	0.7%	0.0%	3.8%	0.5%
West Virginia:	Number	4	2	3	3	0	0	6
	Percent	0.2%	0.1%	0.1%	0.2%	0.0%	0.0%	0.1%
North America:	Number	2,252	2,466	2,604	722	21	130	3,781
	Percent	91.2%	81.8%	88.3%	53.4%	100.0%	99.2%	32.1%
the ELM World:	Number	2,470	3,014	2,948	1,353	21	131	11,769
	Percent	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Notes: \* - These are establishments.

^ - Includes any motor vehicle assembler any where.

Source: ELM International (2008).

Prepared by: Policy Research & Strategic Planning, Ohio Dept. of Development. Phone 614/466-2116 (DL, 7/08).

## MOTOR VEHICLE PARTS: OTHER SUPPLIERS

All assemblers deal with independent parts suppliers – also referred to as tier-1 companies – regardless of how many of their own parts they make. ELM International records information on over 11,700 such independent establishments in the world. However, the table above focuses on those supplying parts, modules, and systems to the high-volume assemblers with plants in Ohio: Chrysler, Ford, General Motors (GM), Honda, the Kenworth division of PACCAR, and Navistar. (As in the preceding section, the suppliers located in Ohio are not restricted to shipping to assembly plants in Ohio.) The figures in the table above indicate that there are 370 establishments operating in Ohio. Of those 370, 239 ship to GM, 221 to Ford, 200 to Chrysler, 115 to Honda, 15 to Navistar and one to Kenworth. Summing the counts for these six customers produces a number greater than 370. Therefore, some of the establishments make parts for more than one assembler.

Between seven and nine percent of all tier-1 supply establishments for Chrysler, Ford, GM and Honda are located in Ohio.<sup>9</sup> 11.5 percent of Navistar's suppliers are in Ohio.

The table above also shows counts of suppliers by assembler for the areas surrounding Ohio. Of the six areas, only Michigan has substantially more tier-1 suppliers than Ohio. Ontario has a total of just two more than Ohio.

Some companies concentrate on supplying original equipment to assemblers. These include Dana, Delphi, Goodyear Tire & Rubber, Johnson Controls, Magna International, Superior Industries, Tenneco Automotive, TRW (some of whose establishments were sold to form the Blackstone Group), and Visteon. Other original equipment companies, such as Allied Signal, Eaton, General Electric, 3M, PPG Industries, Textron, and United Technologies, have significant operations, but receive most of their revenue from outside of the motor vehicle industry. This also is true of smaller tier-1 companies listed in ELM's data base. Still other companies make parts that are more likely to be sold in the aftermarket as replacements; the largest include ArvinMeritor, Cooper Tire & Rubber, Dana's Echlin division, and Federal-Mogul (Levy, 2008: 6). As previously noted, many of these companies have establishments in Ohio.

Parts companies survive by making a few specialized items requiring a high degree of skill, and doing so more efficiently than assemblers. Their ability to spread research, development, and equipment expenditures over several contracts – as well as selling their expertise to a number of assemblers – gives them a cost advantage over assemblers. They also are less likely to have a unionized labor force. Tier-1 companies try to maintain a diversified supply base – the tier-2 and tier-3 companies – to ensure a steady flow of parts at competitive prices. However, assemblers and tier-1 companies have been occasionally willing to provide financial and managerial assistance to the latter to maintain timely parts production.

Original equipment sales tend to be cyclical because they follow the sales of new vehicles. Aftermarket sales are more

stable than original equipment sales due to the tendency to keep vehicles longer. However, aftermarket sales have been lower than they otherwise would be due to the improved durability of newer original equipment (Levy, 2008: 15-16).

The role of tire makers in the industry is often discussed separately from other parts makers. In 2007, 53 million tires were delivered to assemblers for new light vehicles, with another 241 million shipped as replacements according *Modern Tire Dealer*, an industry publication cited by Levy (2008: 18). The sum of the two figures is a 1.8 percent increase over the 2006 total, with replacement sales more than offsetting the decrease for new vehicles. Despite their low profit margins (when compared with per unit aftermarket sales) and smaller percentage of total sales, original equipment sales are important for several reasons. Original equipment sales help aftermarket sales because owners tend to replace tires with the same brand. In turn, this means a larger market share than could be attained in the aftermarket alone, and greater economies of scale reduce per-unit operating costs. Original equipment sales also reduce distribution and advertising expenses (Levy, 2008: 18).

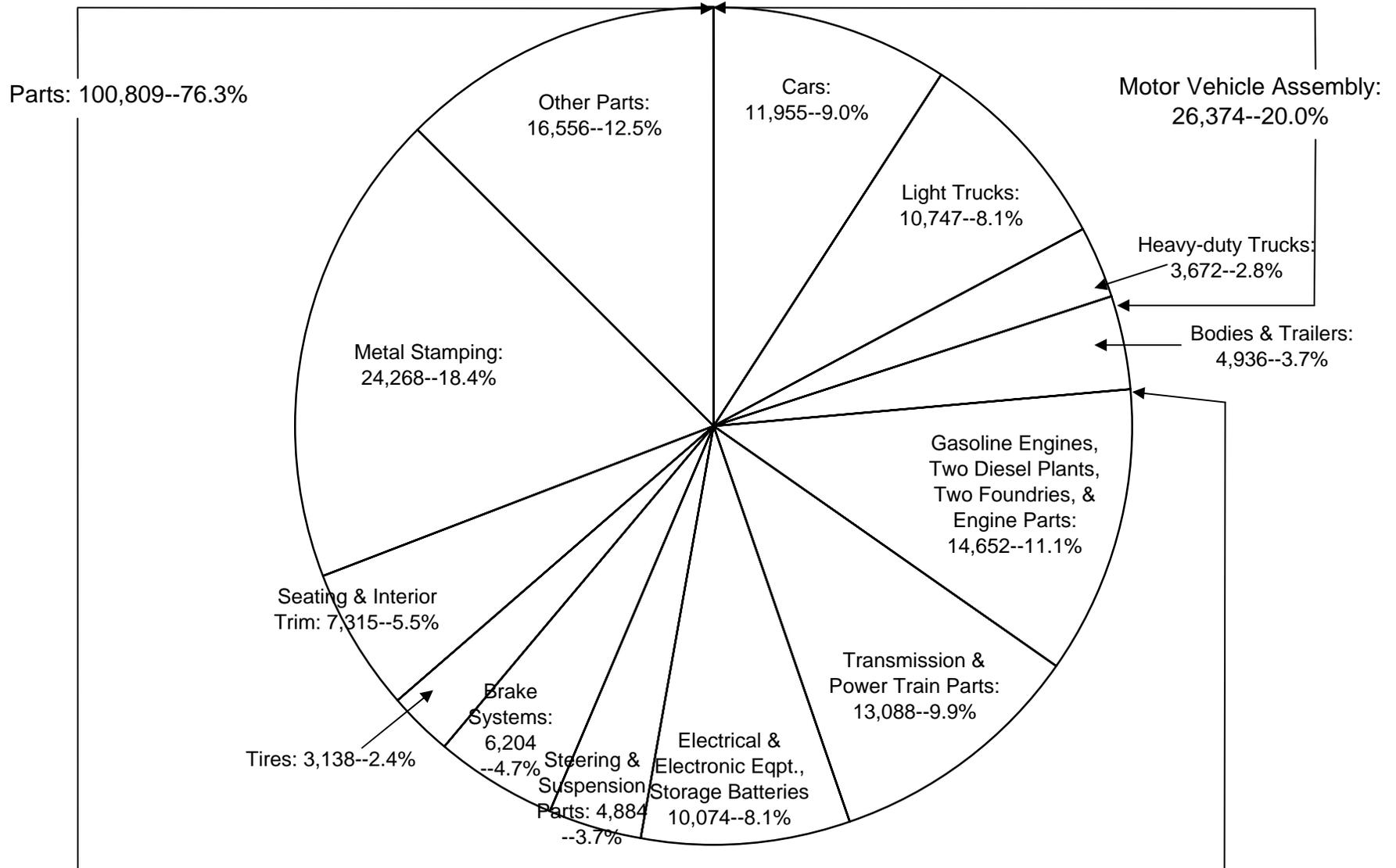
The tire industry is highly capital intensive. Research and development efforts, production technology, and operations are very expensive. Consequently, the industry is dominated by a small number of vertically integrated giants; Bridgestone, Goodyear, and Michelin together account for about one-half of worldwide tire production (Levy, 2008: 6). (The vertical integration does not extend into distribution and retail sales. Other large companies dominate this part of the business.) Cost pressures and the increased number of niche markets compelled the giants to adopt flexible manufacturing techniques. These more sophisticated processes allow producers to economically meet customers' specifications. Global tire makers also pursue technical improvements in their products as a means of drawing attention in a competitive market (Prat, 1998). According to the National Highway Traffic Safety Administration, tires have indeed become better at resisting wear. Consumers can search the Administration's website; start with <http://www.safercar.gov/>.



Department of  
Development

## Employment in Ohio's Motor Vehicle Industry, 2006

Estimated Total: 132,119--100%



Sources: Harris, PR&SP, & U.S. Census Bureau

## THE COMPOSITION OF OHIO'S MOTOR VEHICLE INDUSTRY – EMPLOYMENT AT THE PLANTS

The latest detailed data show that about 132,100 people worked in Ohio's motor vehicle industry. The chart above illustrates the distribution of employment within the industry. Over 26,300 – or 20.0 percent – worked at assembly plants (NAICS 3361), and 4,900-plus – 3.7 percent – worked in bodies and trailers (3362). About 100,800 – 76.3 percent – worked in parts industries including tires, storage batteries, and those employed at two foundries and two diesel engine plants (3363, 32621, 335911, 3315 and 333618, respectively). (The detailed data come primarily from the Census Bureau's County Business Patterns series. December 2008 data from the state's Labor Market Information division show 20,300 employed at assembly plants – group 3361 – and 71,600 employed in parts – group 3363 only. No further detail is available.)

The largest industry within the parts group was metal stamping (33637) – 24,200-plus jobs, followed by other motor vehicle parts (33639) – 16,500-plus; engines and engine parts – 14,600-plus; transmissions and powertrain parts (33635) – close to 13,100; and electrical and electronic equipment and storage batteries (33632 and 335911) – about 10,100. The remaining parts industries each employed less than 10,000, ranging from 2.4 percent to 5.5 percent of the industry total.

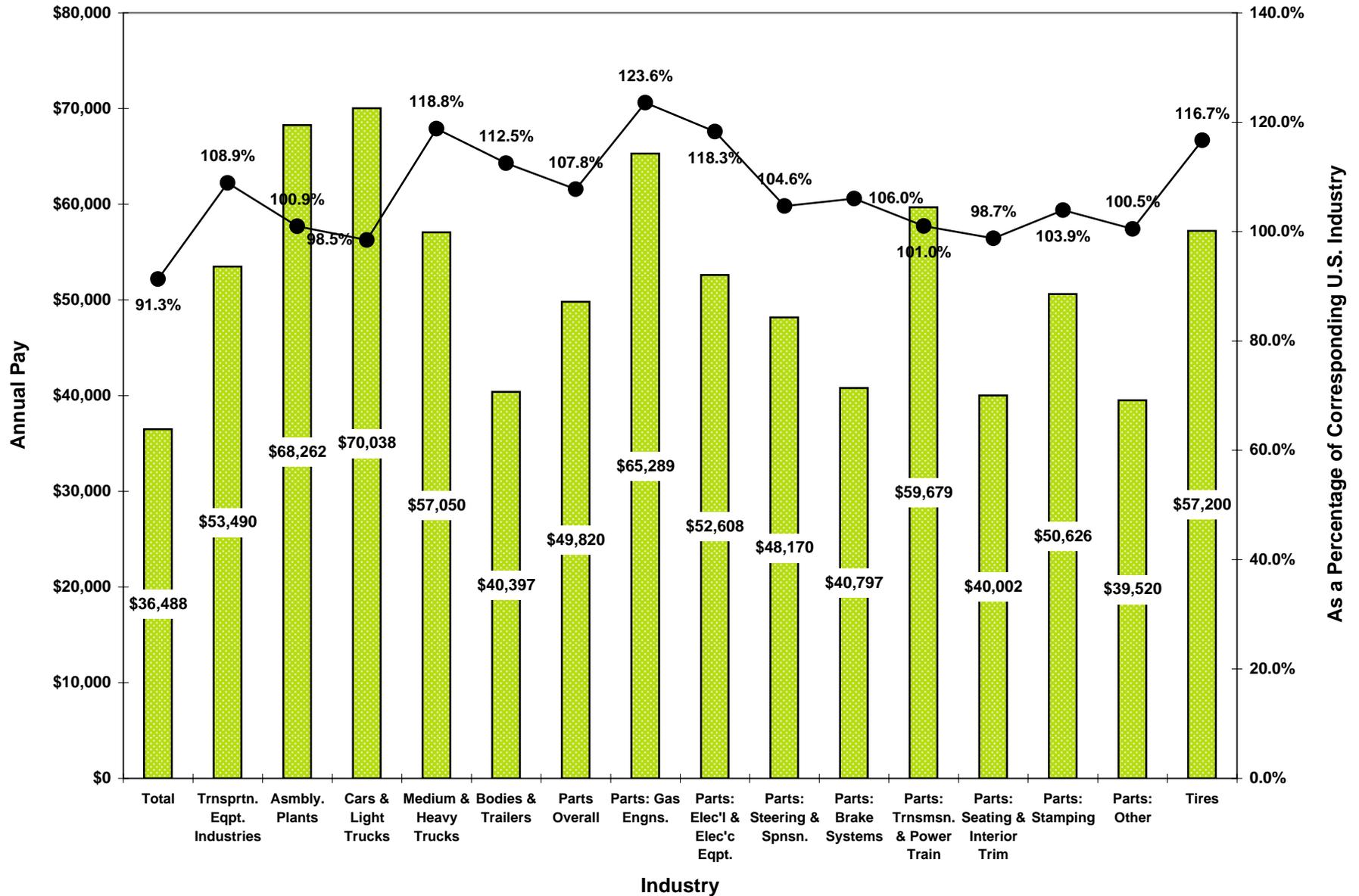
The plurality of jobs in the assembly group – 11,900-plus – were found in car plants (336111), followed by 10,700-plus in light trucks (336112). (Job figures and percentages for the car and light-truck industries are estimates not based on Census Bureau data.) Well over 3,600 people worked at establishments assembling buses and medium-to-heavy-duty trucks (33612).

Light vehicle assembly plants (33611) are the largest in the industry, averaging over 1,200 employees each. The smallest plants in the industry are those making bodies and trailers, carburetors-pistons-rings-valves (336311), and retreading tires (326212); they typically employ less than 100 people. Heavy-duty truck (33612) and all other parts plants typically employ a few hundred.

Comparisons with national figures are also instructive (and based solely on the five NAICS codes defining the industry). Overall motor vehicle industry employment is concentrated in Ohio, with 11.6 percent of the national industry's workers here. By comparison, 4.0 percent of all employees in the nation (excluding those on farms, at railroads, and in government) worked in Ohio. Specific industries especially concentrated in Ohio include metal stamping – 21.9 percent of the national industry total, air-conditioning (336391) and brake systems (33634) – 18.4 percent each, car assembly – 15.9 percent, and transmissions – 15.6 percent. On the other hand, employment in motor homes (336213) and travel trailers and campers (336214) is not concentrated here.

See Table A5

### Pay in Ohio's Motor Vehicle Industries: 2006



Source: U.S. Census Bureau

## INDUSTRY WAGES

Census Bureau data charted above show that employees in Ohio's transportation equipment industries (NAICS 3361-3) averaged almost \$53,500 in wages and salaries for the latest year available. This figure is 108.9 percent of the corresponding national average, and \$17,000 above the average for all non-agricultural, non-rail private sector employees in Ohio. There is considerable variation between the three groups: the work at assembly plants (3361) paid over \$68,200 per year, while bodies and trailers (3362) paid almost \$40,400, and parts (3363) averaged \$49,800-plus. These group averages were either very close to or surpassed the corresponding national averages. (The overall average including related industries is not available because the datum for storage batteries has not been released.)

There is substantial variation between the individual industries within the groups. People working at plants assembling cars or light-trucks averaged about \$70,000, while those assembling medium- and heavy-duty trucks averaged \$57,000-plus. Variation in the parts group was even greater. At one end, gasoline engines (33631) paid the highest – almost \$65,300, closely followed by transmissions and power trains (33635) with \$59,600-plus. Two other industries averaged between \$50,000 and \$59,999: stamping (33637) and electrical and electronic equipment (33632). Three more were between \$40,000 and \$49,999 – steering and suspension (33633), brake systems (33634), and seating and interior trim (33636). Workers in other parts (33639) averaged \$39,500-plus. One possible explanation for the higher wages in engines, transmissions, and stamping is that many such plants are subdivisions of assemblers, while those in other groups are not.

Employees in the tire industry (32621) average \$57,200, which was above the national average. In fact, pay in Ohio in every industry was either very close to the corresponding national average or exceeded it. See the appendix table for further details.

See Table A6



## THE DISTRIBUTION OF INDUSTRY ESTABLISHMENTS IN OHIO

The motor vehicle industry is widely distributed across Ohio. The latest available data, mapped above, shows that 661 establishments<sup>10</sup> were found in 76 counties. However, the majority of establishments could be found in 13 counties: Cuyahoga – 77, Franklin – 36, Lucas – 34, Montgomery – 31, Summit – 30, Stark – 22, Hancock – 19, Lorain and Trumbull – 18 each, Clark – 17, Hamilton – 16, and Richland and Wood – 15 each. Six more counties had 10 to 14 plants each: Allen, Lake, Mahoning, Sandusky, Wayne, and Williams. Twenty-four counties had from five to nine establishments, and 33 had from one to four.

It is interesting to note that the eight counties with the 10 high-volume assembly plants – Clark, Logan, Lorain, Lucas, Montgomery, Ross, Trumbull, and Union – had a total of 127 industry establishments. This is a significant portion of the industry – 19.2 percent, but far from the majority. This represents a limit to the concentration of the industry in local areas.

See Table A7



## THE DISTRIBUTION OF INDUSTRY EMPLOYMENT IN OHIO

The map above shows the distribution of motor vehicle industry employment by county. The eight counties with high-volume assembly plants – Clark, Logan, Lorain, Lucas, Montgomery, Ross, Trumbull, and Union – had 127 industry establishments (19.2 percent of the total), but about 51,100 industry jobs (37.6 percent of the total). High-volume assembly plants are large employers and may support a number of parts jobs close by. Counties that formed this pattern included Lucas (an estimated 11,800-plus jobs, 4,000 of which were at the assembly plants), Montgomery (also 11,800-plus jobs estimated, with 3,000 at the assembly plant), and Trumbull (10,400-plus jobs estimated, with over 3,800 at the assembly plant).

The other assembly-plant counties have fewer industry jobs, but border counties that have large numbers of parts employees. All of the 5,600 jobs in Union were at the plant, and 3,600-plus parts jobs were in Franklin. Over 1,900 of the nearly 3,300 jobs in Lorain were at the assembly plants, with about 11,000 parts jobs in Cuyahoga. In Logan, over 2,600 of the approximately 4,000 jobs were at the assembly plant, and almost 4,600 parts jobs were in Shelby. 1,500 of 2,100-plus jobs in Clark were at the assembly plant, and Clark borders Montgomery. Ross County, with 1,500 of the 1,800 jobs at the plant, is the exception to this pattern.

Other counties with large numbers of parts jobs included Summit – well over 6,500 (including tires), Richland – 4,300-plus, Hancock – 4,200-plus (including tires), Defiance – 3,100-plus, Erie – 3,000, Wood – 2,700, Allen and Wayne – each over 2,600, Hamilton – 2,400, and Clermont – 2,000-plus. Large stamping and powertrain-related operations frequently were located in these counties. Other counties at least with 1,000 industry jobs include Butler, Champaign, Clinton, Fulton, Licking, Madison, Miami, Sandusky, Stark, Warren, Williams, and Wyandot.

Altogether, four counties – Cuyahoga, Lucas, Montgomery and Trumbull – each had over 10,000 jobs, two counties – Summit and Union – had from 5,000 to 9,999 jobs, 27 counties had 1,000 to 4,999 jobs, and 43 counties had from 1 to 999.

See Table A7

## FOREIGN INVESTMENT IN OHIO

Dozens of foreign-based companies have subsidiaries and/or joint ventures in Ohio's motor vehicle industry; 13 of them are on Fortune's Global 500 list. The following list identifies them, the countries where the home office is located, their subsidiaries in Ohio, and the total number of employees in the state. Sometimes the arrangements are complex, as evidenced by Honda's subsidiaries and affiliates in Ohio. The affiliates may be partially owned by Honda, a joint venture between Honda and other companies, or they may be independent but have Honda as their principal customer.

Foreign Parents	Country	Ohio Subsidiaries	Total Jobs
Ahresty	Japan	Ahresty Wilmington Corp.	420
Aisin Seiki Co., Ltd.* <u>et.al.</u>	Japan	ADVICS Mfg. Ohio, Inc.	625
ArcelorMittal*/Dofasco, Inc.	Luxembourg	Powerlasers Corp.	115
Asahi Glass Co., Ltd.*	Japan	(total)	650
		AGC Automotive <sup>1</sup>	500
		Belletech Corp. (a joint venture with PPG*)	150
Automodular Corp.	Canada	Automodular Corp.	35
Behr GmbH & Co.	Germany	Behr Dayton Thermal Products, Inc. <sup>2</sup>	1,400
Bridgestone Corp.*	Japan	Bridgestone APM Co.	100
Canadian General-Tower Ltd.	Canada	Textileather Corp.	385
Daimler AG <sup>3</sup>	Germany	Detroit Diesel	500
Freudenberg & Co.-NOK Corp. (a joint venture)	Germany-Japan	Freudenberg-NOK	65
F-Tech, Inc.	Japan	F & P America Mfg., Inc.	650
GS Electech Co.	Japan	GSW Mfg., Inc.	412
Hayashi Telemu Co., Ltd.	Japan	Amtex, Inc.	322
Hitachi Ltd.*	Japan	Hitachi Metals America/AAP St. Mary's Corp.	470
Hitachi Ltd.*-Volvo AB* (a joint venture)	Japan-Sweden	Euclid-Hitachi Heavy Equipment, Inc.	457
Honda Motor Co.*	Japan	Honda of America Mfg. Co. <sup>4</sup>	11,980
Honda Motor Co. affiliates	Japan	(total)	6,051
Atsumitech Co., Ltd.		Ada Technologies, Inc.	60
Hongo Press & Hirata Press		KTH Parts Industries, Inc.	770
Kaneta Kogyo Co., Ltd.		Bucyrus Precision Tech, Inc.	189
Kikuchi Metal Stamping, <u>et.al.</u>		Jefferson Industries Corp.	370
KTH Parts Industries, Inc., <u>et.al.</u>		Kalida Mfg. Inc.	250
Nihon Plast Co., Ltd.		Neaton Auto Products Mfg., Inc.	705
Nissin Kogyo Co., Ltd.		Nissin Brake Ohio, Inc. (f.k.a. Findlex Corp.)	670
Tanaka Seimitsu Kogyo Co., Ltd.		FT Precision, Inc.	200
Toyo Denso Co., Ltd.		Weastec, Inc.	439
Tokyo Seat Ltd.		(subtotal)	848
		TS Tech Co., Ltd.	488
		TS Trim Industries, Inc.	360
Yachiyo Industry Co., Ltd.		AY Mfg. Ltd.	200

Foreign Parents	Country	Ohio Subsidiaries	Total Jobs
Honda Motor Co. affiliates (continued)			
Yamada Mfg. Co., Ltd.		Yamada N. America, Inc.	350
Yanagawa Seiko Co., Ltd.		YSK Corp.	250
Yutaka Giken Co, Ltd.		Cardington Yutaka Technologies	750
Imasen Electric Industrial Co.	Japan	Imasen Bucyrus Technology, Inc.	220
INA Holding Schaffler KG/LuK GmbH & Co.	Germany	LuK, Inc.	980
Ishikawa Gasket Ltd.	Japan	Ishikawa Gasket of America, Inc.	190
Isuzu Motors Ltd.*-General Motors Corp.* <sup>5</sup>	Japan-U.S.	DMAX	876
Kasai Kogyo Co., Ltd.	Japan	M-Tek, Inc.	600
Kongsberg Automotive Holdings ASA	Norway	Kongsberg Driveline Systems II Corp.	750
Kumi Kasei Co., Ltd.	Japan	Kamco Industries, Inc.	370
Magna International, Inc.*	Canada	(total)	750
		Decoma International (including Norplas)	400
		Intier Automotive Seating <sup>6</sup>	350
Masuda Mfg. Co., Ltd.	Japan	Tomasco Mulciber, Inc.	460
Meteor Gummiwerke KH Badje GmbH & Co.	Germany	Meteor Sealing Systems LLC	155
Miba AG	Austria	Miba Bearings US and Miba Sinter USA	275
Mitsubishi Electric Industrial Corp.*	Japan	Mitsubishi Electric Automotive	422
Molten Co.	Japan	Molten Corp.	250
Morioku Co. Ltd.	Japan	Greenville Technology, Inc.	672
Muro Corp.	Japan	Murotech Ohio Corp.	60
NHK Spring Co., Ltd.	Japan	New Mather Metals, Inc.	194
Nippon Seiki Co., Ltd.	Japan	New Sabina Industries, Inc.	488
Nissen Chemitec, Inc.	Japan	London Industries, Inc.	250
Pacific Industrial Co., Ltd.	Japan	(total)	650
		Pacific Industries U.S.A., Inc./Pacific Mfg. Ohio	500
		Pacific Industries U.S.A., Inc./Takumi Stamping	150
Pioneer Corp.	Japan	Pioneer Automotive Techs	310
PSA Peugeot Citroen SA*	France	Faurecia Exhaust Systems, Inc.	1,900
Saia-Burgess Electronics	Switzerland	Saia-Burgess, Inc.	330
Sankei Giken Kogyo Co., Ltd.	Japan	Newman Technology, Inc.	850
Sankyo Kogyo Co., Ltd.	Japan	SK Tech, Inc.	70
Sanoh Industrial Co., Ltd.	Japan	Sanoh America, Inc. (f.k.a. HiSAN, Inc.)	957
Sekisui Chemical Co., Ltd.	Japan	Sekisui America Corp.	10
Showa Corp.	Japan	American Showa, Inc.	1,130
Showa Denko K.K.	Japan	Showa Aluminum Corp. of America	476
Stanley Electric Co., Ltd.	Japan	Stanley Electric U.S. Co., Inc.	780
Sumitomo Electric Industries Ltd.*	Japan	Sumitomo Electric Wiring Systems, Inc.	13
Taichi-S Co., Ltd. <sup>7</sup>	Japan	Taichi-S Engineering USA, Inc./Setex, Inc.	600
Temasek Holding Pte. Ltd.	Singapore	Kidron, Inc.	500
TFO Corp.	Japan	TFO Tech Co., Ltd.	140

Foreign Parents	Country	Ohio Subsidiaries	Total Jobs
ThyssenKrupp AG* <sup>1</sup>	Germany	(total)	280
		ThyssenKrupp Atlas, Inc.	80
ThyssenKrupp AG* (continued)		ThyssenKrupp Bilstein of America, Inc.	200
TI Automotive Ltd.	United Kingdom	TI Automotive Group/Fluid Carrying Systems	318
Tokai Kogyo Co., Ltd.	Japan	(total)	1,350
		DTR Industries, Inc.	750
		Green Tokai Co., Ltd.	600
Toyo Roki Mfg. Co., Ltd.	Japan	Filtech, Inc.	n.a.
Toyobo Co., Ltd.	Japan	Toyobo Kureha America Co., Ltd.	29
Toyota Motor Corp.*/Taiho Kogyo Co., Ltd.	Japan	Taiho Corp. of America	100
Toyota affiliate: Fine Sinter Co.	Japan	American Fine Sinter Co., Ltd.	125
Trelleborg AB	Sweden	Trelleborg Wheel Systems Americas, Inc.	163
Valeo SA	France	Valeo Climate Control Corp.	250-499
Wangxiang Holdings Corp.	China	Powers & Sons LLC	220
Windsor Mold, Inc.	Canada	(total)	n.a.
		Autoplas	50
		Precision Automotive Plastics	100-249
Woodbridge Group	Canada	Woodbridge Group	150
Yamashita Rubber	Japan	YUSA Corp.	1,046

Notes: \* – a Fortune U.S. 1,000 or Global 500 company; f.k.a. – formerly known as; n.a. – not available; 1 – Jobs figures from LexisNexis (2008); 2 – Jobs figure from 2007, the latest available; 3 – Daimler still owns 19.9 percent of Chrysler; 4 – Jobs figure from ODOD (2008) – additional people are employed at non-manufacturing establishments; 5 – GM owns 60 percent; 6 – Includes jobs at Gra-Mag, a joint venture with Germany's Grammer AG; 7 – Nissan Motor Co. owns 12 percent.

Sources: Fortune (2008), Harris (2008), LexisNexis (2008), ODOD (2008), Office of Strategic Research (2006), Policy Research & Strategic Planning (2008, 2009) and various company websites.

Honda of America Manufacturing is the largest foreign-based company in Ohio's motor vehicle industry, directly employ-ing almost 12,000 at its manufacturing facilities. Over 6,000 more are employed by Honda's affiliates. PSA Peugeot Citroen is the second largest foreign-based employer with 1,900 at its Faurecia subsidiary. Other foreign-based com-panies with at least 1,000 workers in Ohio include Behr (air-conditioning), Showa (steering and suspension components), and Tokai Kogyo (rubber and glass). Except for Honda, the companies listed above are exclusively parts manufacturers. None manufactures trailers or batteries, but one, a Pacific Industrial subsidiary, makes tire values.

The foreign parent companies or joint venture partners have headquarters in 12 nations. Six are located in Germany, five in Canada, two each in France and Sweden, and one each in Austria, China, Luxembourg, Norway, Singa-pore, Switzer-land, and the United Kingdom. The remaining ones – close to 60, if all the joint venture partners are included – are Ja-panese. Although exact numbers are not available, Japanese-based companies easily account for the majority of all foreign-based company employment in Ohio's motor vehicle industry.



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