



State OF THE Region 2015

Underwritten by:





Detroit is the most exciting city in the nation, an underdog upstart attracting increased interest, investment and talent. Michigan is the Comeback State, reclaiming its spot as a national leader and economic powerhouse. The constant in those two narratives? The Detroit region.

As more time passes since the Great Recession and Detroit bankruptcy, achieving a bright future for our city, region and state depends on working together to showcase the unique opportunities and assets throughout Southeast Michigan.

The region is home to more than 300,000 businesses, and 5.4 million residents and growing – that's a lot of innovation, capital and know-how. Supported by top-notch universities, engineering and talent, manufacturing expertise and infrastructure – the Detroit region can support businesses of any size or industry as they compete in today's global marketplace.

The Detroit Regional Chamber is proud to present this State of the Region to provide an overview of the key indicators to drive the regional dialogue and better inform the efforts of economic development champions of Southeast Michigan. As the data in this report suggests, the Detroit economic story is that much stronger when delivered as a region. Let's go tell it.

Sandy K. Baruah
President & Chief Executive Officer
Detroit Regional Chamber



Michigan has been an important market for Kroger since we opened our first store here in 1909. Today, we proudly operate 127 stores, 103 pharmacies, 67 fuel centers and the Michigan Dairy with 19,000 amazing team members. At the conclusion of 2015, we will have made capital investments in our Michigan stores exceeding \$500 million during the past five years, in addition to more than \$500 million in support of Michigan agriculture and produce. We are growing, and helping to grow Michigan's economy at the same time.

The Kroger Co. of Michigan not only invests in our facilities, but in our associates, and the communities in which we live and serve through the core areas that mean the most to our customers: hunger relief, better health, sustainability, education, military family support through the USO, and diversity. Recently named Outstanding Corporation by the Association of Fundraising Professionals Greater Detroit Chapter, we approach philanthropy with the same passion and pride with which we open our stores daily.

Thank you for your continued support, and for the successes and contributions each of you and your organizations make daily in writing Michigan's comeback story. Let our commitment to local, and to this great state set an example for the nation.

Jayne Homco
President
The Kroger Co. of Michigan

Table of Contents

Detroit.....	4
Economic Indicators.....	5
Business.....	9
Education.....	12
Talent.....	14
Innovation.....	16
International Gateway.....	18
Regional Spotlight.....	20

Industry Spotlights

Mobility.....	21
Health Care.....	24
Aerospace and Defense.....	26
Metalworking.....	28
Transportation, Distribution and Logistics.....	30

Defining the Detroit Region



The Detroit region is a united 11-county area that encompasses more than 300 municipalities with rich geographic, human and business assets. Home to more than 300,000 businesses, including 13 Fortune 500 companies, 5.4 million people and numerous educational institutions, the Detroit region has the talent, resources and cutting-edge facilities to drive innovation. Anchored by Detroit, and located on an international border supported by a robust international logistics infrastructure, the region offers unrivaled opportunities to compete in the global economy.

Area	Population 2010	Population 2014	2010-2014 % Change	Number of Households	Per Capita Income	Median House- hold Income	Land Area Square Miles
Detroit Region	5,389,730	5,384,184	(0.1)	2,080,301	\$26,597	\$52,972	7,061.0
Genesee	425,790	412,895	(3.0)	165,669	\$22,380	\$42,089	637.0
Lapeer	88,316	88,153	(0.2)	32,684	\$23,907	\$52,939	643.0
Lenawee	99,892	99,047	(0.8)	37,754	\$22,395	\$47,766	749.6
Livingston	180,967	185,596	2.6	67,691	\$32,129	\$72,359	565.3
Macomb	840,987	860,112	2.3	332,818	\$26,748	\$53,451	479.2
Monroe	152,021	149,824	(1.4)	58,702	\$25,939	\$53,972	549.4
Oakland	1,202,362	1,237,868	3.0	486,332	\$36,458	\$65,594	867.7
St. Clair	163,040	160,078	(1.8)	64,379	\$24,357	\$48,066	721.2
Shiawassee	70,648	68,933	(2.4)	27,485	\$22,713	\$46,217	530.7
Washtenaw	345,066	356,874	3.4	135,800	\$33,231	\$59,055	706.0
Wayne	1,820,641	1,764,804	(3.1)	670,987	\$22,308	\$41,184	612.1
Detroit	713,777	680,250	(4.7)	256,599	\$14,870	\$26,325	138.8
Michigan	9,884,133	9,909,877	0.3	3,823,280	\$25,681	\$48,411	56,538.9

Source: U.S. Bureau of the Census

Detroit: A Smart Investment City

When Detroit filed bankruptcy, the business community told people around the world that putting the city's fiscal house in order stood as the last major hurdle to exponential economic growth. This past year, the city continued to emerge as a smart investment amid its historic revitalization.

Like the automotive companies exiting financial restructuring before it – Detroit has recommitted itself to its product. The city, the 18th largest in the nation, continues to provide improved services that serve as the backbone of any growing city. Over the past year, more than 22,000 LED streetlights have been installed and more than 3,600 blighted structures removed, while city leadership has significantly reduced EMS and police response times.

Since January 2013, at least \$3.4 billion in investment and development has been announced in the city. In the past year, that momentum continued. Moody's changed its outlook on Detroit from stable to positive raising the city's bond rating, another sign of the city's improving investment potential. Construction of economic game changers such as the M-1 Rail and Red Wings arena progressed while companies like Sakthi announced it is investing \$31 million to renovate a Detroit high school into a manufacturing facility that will employ 650.

Clearly the city's reputation as a must-locate-to continues to grow. Recently, Amazon announced that it would open a technology hub and corporate office in the Motor City. Nike also plans to open a location, joining more than 125 new restaurants and real estate establishments that have opened recently.

This is just the beginning for Detroit, a city rapidly becoming a smart investment city.

The Detroit News

APRIL 2015

India auto parts supplier to invest \$31.9M in Detroit

CNN Money

SEPTEMBER 2015

Amazon to open major Detroit office in 2016

Detroit Free Press

NOVEMBER 2015

Nike store to inject new energy into downtown Detroit



Economic Indicators

The Detroit region remains one of the fastest growing in the nation as the state continues to reinvent itself in the global economy. In many key economic categories, including gross domestic product (GDP), private sector job growth and per capita income, the region is outperforming the national average while unemployment rates have decreased below pre-recession levels.

Detroit remains **2nd** only to Dallas for GDP growth against peer metropolitan areas.

Real Gross Domestic Product

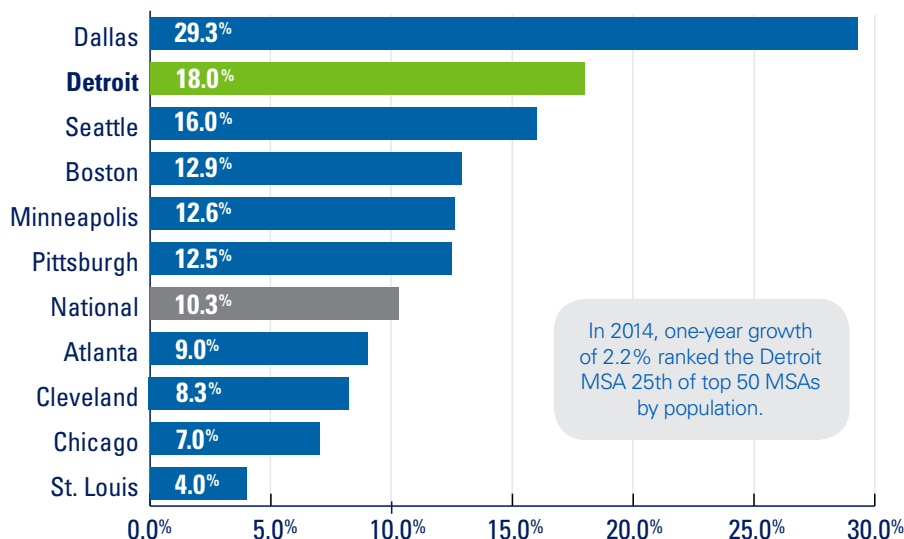
The Detroit region's GDP growth **outpaced the national average by 7.7 percentage points.**

Among the top 50 MSAs by population, the Detroit MSA has the **seventh highest growth rate in real GDP** from 2009-2014, at 18%.

Detroit ranked second only to Dallas for GDP growth against peer metropolitan areas.

The Detroit MSA has experienced GDP growth greater than 2.2% each of the past five years.

2009-2014 Real Gross Domestic Product (GDP) Growth



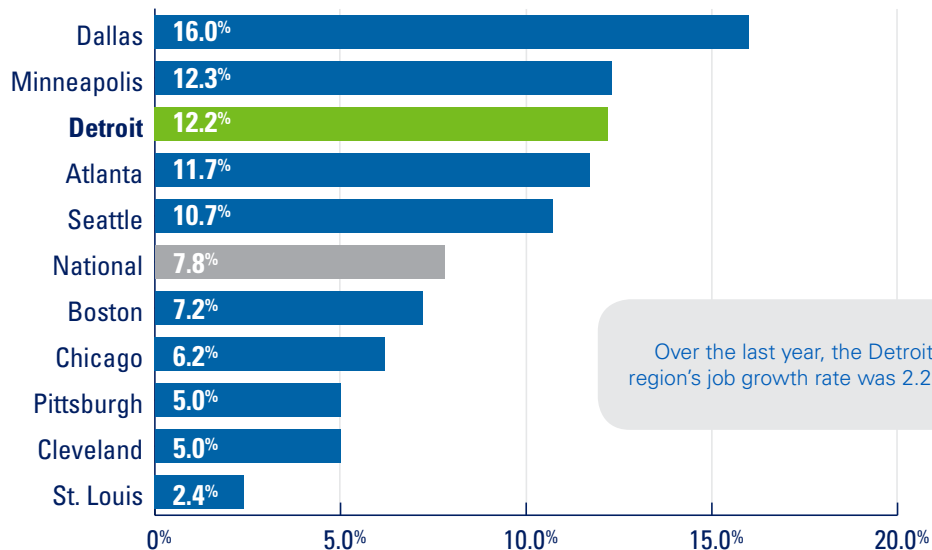
Source: U.S. Bureau of Economic Analysis

Job Growth

The Detroit MSA gained nearly 186,000 private sector jobs since 2009, surpassing Boston, Minneapolis, and Seattle in number of jobs gained.

The region has **outpaced the national growth rate by 4.4 percentage points**.

Private Sector Job Growth, 2009-2014



Source: U.S. Bureau of Labor Statistics

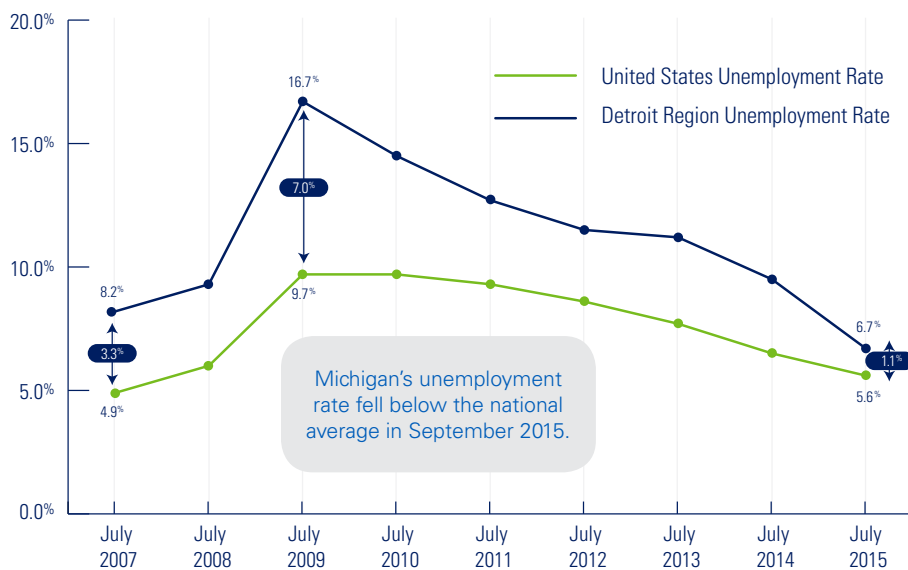
Unemployment

The regional Detroit unemployment rate, which includes Ann Arbor, Detroit, Flint and Monroe, peaked in July 2009 and has continued to decline, moving closer to the national rate.

After peaking in 2009 at 7%, the spread between the national and the regional rate has dropped to 1.1%, dipping below the pre-recession level of 3.3% in July 2007.

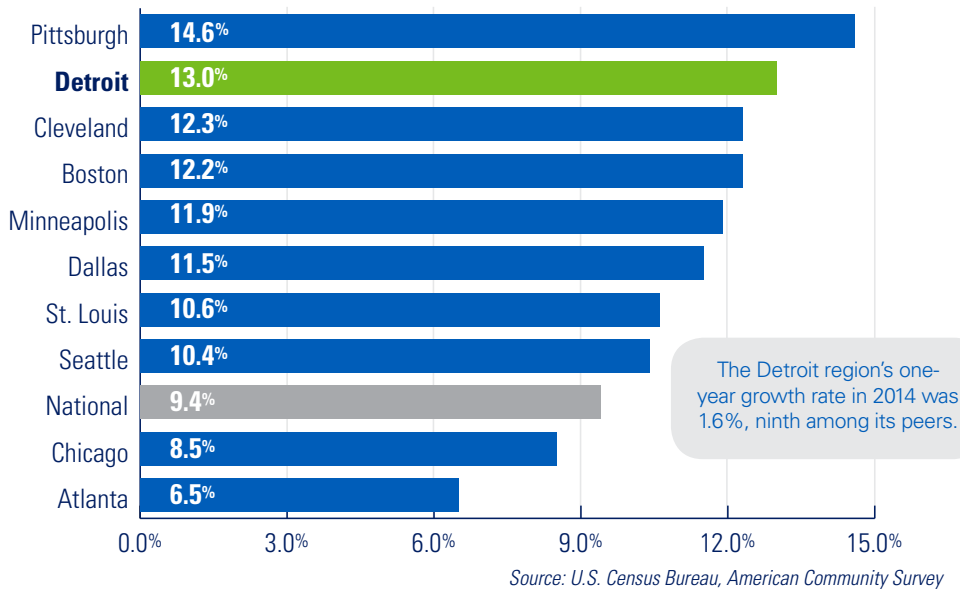
Of the four MSAs in the Detroit region, **Ann Arbor continues to record the lowest unemployment rate of 4.5%** while Detroit and Flint have unemployment rates at 7%.

Unemployment Rate, 2007-2015



Source: U.S. Bureau of Labor Statistics

Per Capita Income Growth, 2009-2014

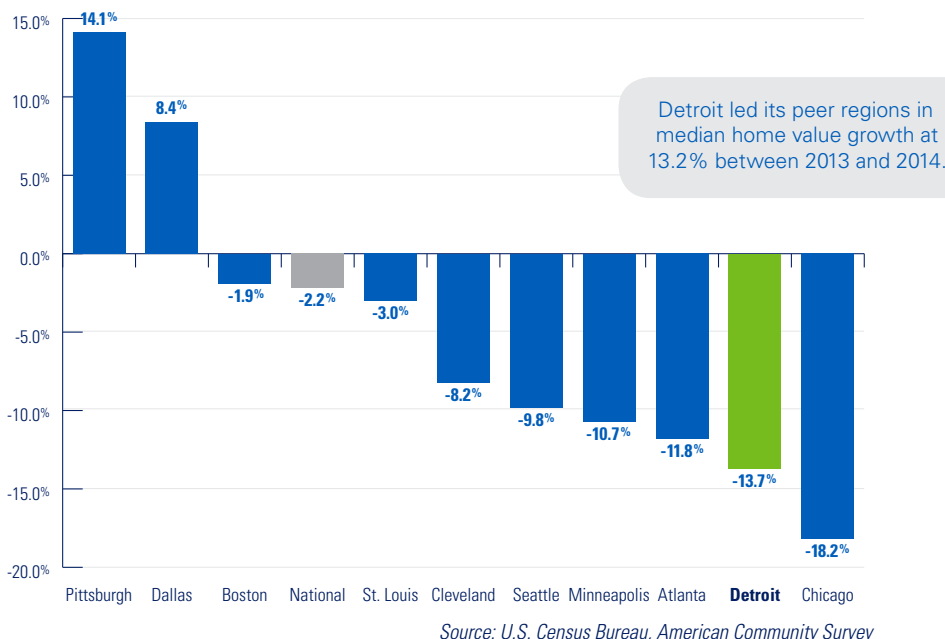


Income Growth

The Detroit region has recorded per capita income growth of 13% since 2009, **outpacing the national growth rate by 3.6 percentage points**.

The region experienced an 8.1% increase in median household income, rising from \$48,535 in 2009 to \$52,462 in 2014, ranking the region seventh against peer regions. The region also outpaced the nation by 1.2 percentage points during the same period.

Median Home Value Growth, 2009-2014



Median Home Values

Home values are beginning to return to near 2009 levels. During 2013-2014, the Detroit area **median home values increased by 13.2%**, leading peer regions in growth and outpacing the national average by 9 percentage points. Seattle was the next closest peer region with 8.7% median home value growth.

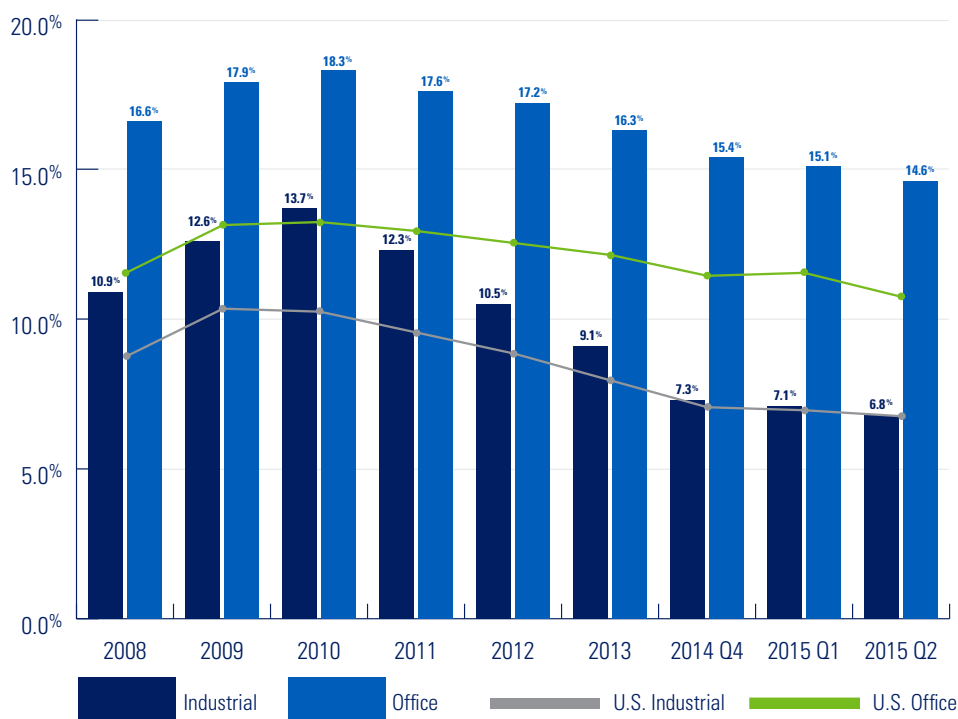
The 2014 average median home value in the Detroit MSA was \$136,400 compared to \$158,000 in 2009.

The Detroit News

JULY 2015

Detroit area housing market among nation's hottest

Office and Industrial Vacancy Rates, Detroit Region vs. National



Source: Costar

Since 2010, the region's industrial vacancy rate has declined **6.9 percentage points** compared to the national rate of 4 percentage points.

Office and Industrial Real Estate

While vacancy rates are **declining at a faster rate than the national average** when compared to peer regions, Detroit continued to report the highest office vacancy rate among peer regions, but the fourth lowest industrial vacancy rate.

For the second quarter of 2014, the Detroit office market posted a vacancy rate of 14.6%, down by 1.9 percentage points from last year and down from a high of 19.1% in 2010.

For the second quarter of 2015, **Detroit's industrial vacancy rate matched the national vacancy rate.** The industrial market has continued to improve immensely with vacancy rates declining from 8.3% in 2014 to 6.8% through the second quarter of 2015. That is down from a high of 13.6% in 2010.

In the first two quarters of 2015, more than 47,000 square feet of office space and 11 buildings totaling more than 1.1 million square feet of industrial space have been constructed.

An additional 752,000 square feet of office and 605,500 square feet of industrial space were under construction at the end of the second quarter of 2015.



Photo: DTE Energy

Business

Home to 13 Fortune 500 companies, the Detroit region's dynamic business base is anchored by the health care, government and manufacturing sectors. While serving as the epicenter of the global automotive industry, the region continues to welcome international businesses while attracting increased foreign direct investment.

Health care and social assistance is the largest industry, accounting for 14% of the region's employment.

The top three industries, excluding the government sector – health care and social assistance, manufacturing, and retail trade – employ more than 860,000 people.

Thirteen of the 20 Fortune 500 companies with headquarters in Michigan are located within the Detroit region. General Motors Co. and Ford Motor Co. rank in the top 10 Fortune 500 companies.

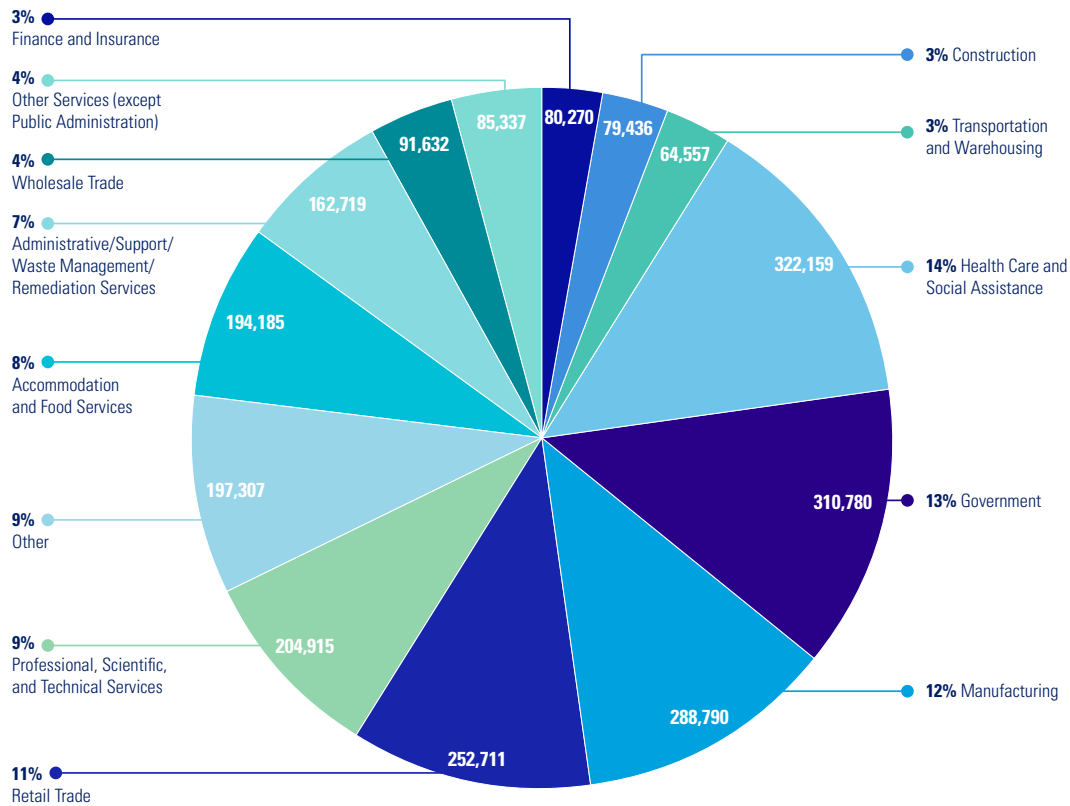
The region's largest private sector employers include FCA US LLC, Guardian Industries and Penske Corp., which have a collective revenue of more than \$100 billion.

CRAIN'S DETROIT BUSINESS

SEPTEMBER 2015

**Windsor-based Valiant International to expand
in Auburn Hills, create 223 jobs**

Employment by Industry



Source: EMSI

2015 Fortune 500

Rank	Company	Revenue in billions
6	General Motors Co.	\$155.9
8	Ford Motor Co.	\$144.1
174	Lear Corporation	\$17.7
175	TRW Automotive Holdings	\$17.5
177	Penske Automotive Group	\$17.4
246	DTE Energy	\$12.3
295	Ally Financial	\$9.8
312	Autoliv	\$9.2
334	Masco	\$8.5
344	Visteon	\$8.3
347	BorgWarner	\$8.3
456	Con-way	\$5.8
471	Kelly Services	\$5.6

Source: Fortune magazine

Note: Con-way was purchased by XPO Logistics in September 2015.

Largest Private Companies

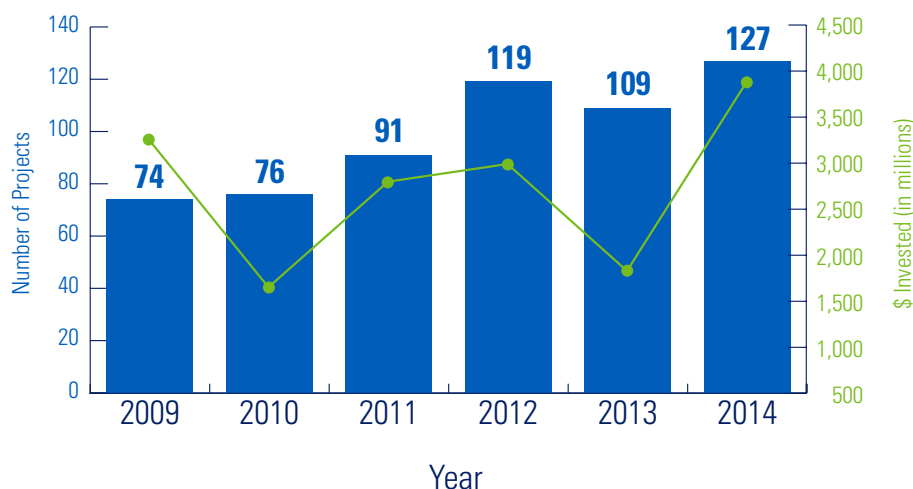
Company	2013 Revenue (in billions)	Full-Time Employees in Detroit Area Jan. 2014
Chrysler Group LLC (now FCA US LLC)	\$72.1	30,579
Penske Corp.	\$21.3	N/A
Guardian Industries Corp.	\$5.6	N/A
International Automotive Components (IAC)	\$5.2	846
Rock Ventures	\$3.6	9,122
TI Automotive Ltd.	\$3.2	400
Ilitch Companies	\$3.1	6,100
Inteva Products LLC	\$2.5	350
Plastipak Holdings Inc.	\$2.3	600
Bridgewater Interiors LLC	\$2.2	1,104

Source: Crain's Detroit Business

Note: FCA US LLC went public on Oct. 13, 2014.

In 2014, **109** foreign-held companies invested **\$3.88 billion** in Michigan facilities, creating more than **15,000** jobs.

Foreign Direct Investment Projects, Michigan



Source: Financial Times FDI Markets.com

Foreign-held companies continue to invest in a big way in Michigan facilities. Foreign firms made investments totaling \$2.2 billion more in 2014 over 2013, while the **number of projects grew by 17%**.

Since 2009, 522 foreign-held companies have invested in Michigan operations.

The automotive components sector led foreign-held company investment for 2014, accounting for nearly 25% of all projects tracked.

Between 2010 and June 2015, automakers and suppliers announced investments of \$20 billion in Michigan, over \$5.7 billion of which came from 93 foreign automotive firms from 18 countries.

In 2014, 22 Michigan counties announced automotive investments of more than \$3 billion, creating more than 11,000 jobs, 54% attributed to foreign firms.

There are nearly **1,300** international business locations from **38** countries in the Detroit region, led by Japan and Germany which together account for more than **600** locations.





Photo: Lawrence Technological University

The Detroit region's universities and colleges feature nationally ranked undergraduate and graduate programs while powering Michigan's status as a top 10 state for degrees conferred. However, the region falls below the national average for population with a bachelor's degree or higher.

Ranked Institutions

School	Ranking
National Universities	
University of Michigan - Ann Arbor	29
Michigan State University	75
Midwest Regional Universities	
Kettering University	23
University of Detroit Mercy	23
University of Michigan - Dearborn	36
Lawrence Technological University	54
Eastern Michigan University	85
Siena Heights University	92
Madonna University	98
University of Michigan - Flint	99
Midwest Regional Colleges	
Adrian College	19
Rochester College	69

Source: U.S. News and World Report

The state of Michigan is ranked ninth for the total number of degrees conferred, in addition, Michigan continuously ranks in the top 10 for each type of degree conferred. In 2013, Michigan's education institutions awarded more than 119,000 degrees.

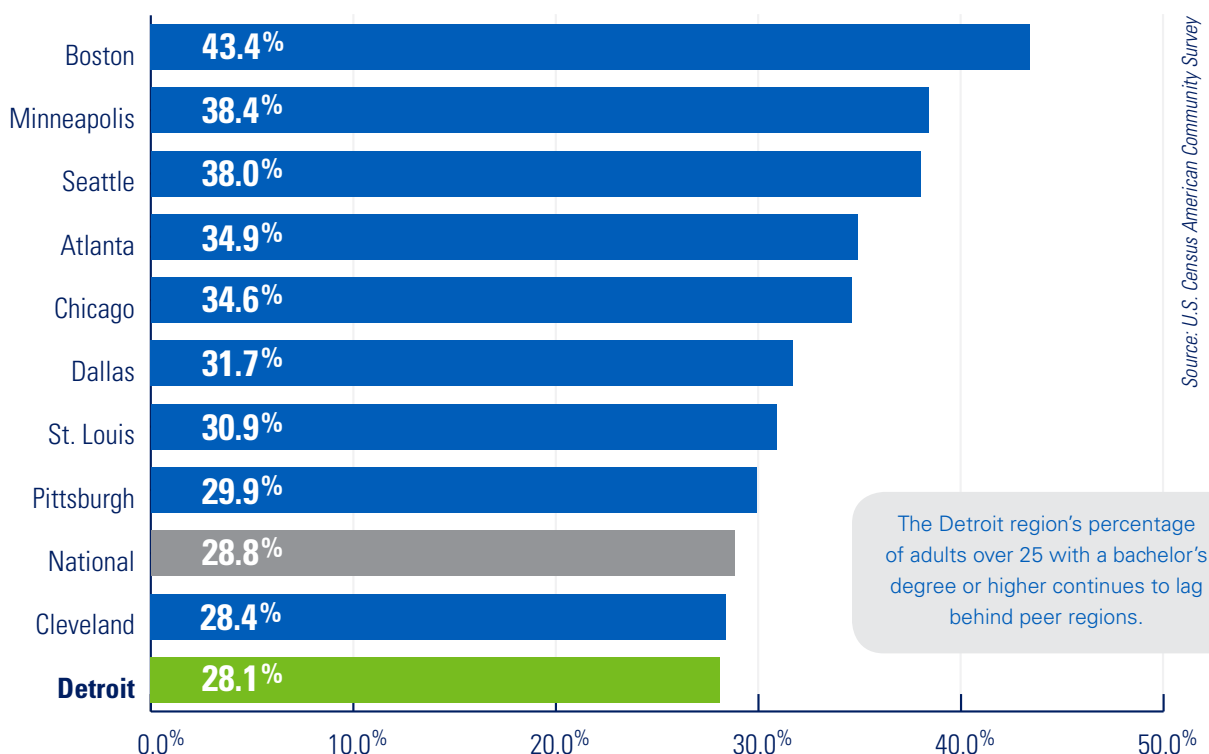
Nearly 30% of the Detroit region's population has earned a bachelor's degree or higher, however the region lags behind all peer regions and sits just below the national average.

As of 2015, Michigan has 22 high schools ranked in the top 500, up from 10 in 2014, with the International Academy in Bloomfield Hills ranking as the eighth best high school in the nation.

The Detroit region is home to **six** universities and colleges with nationally ranked undergraduate engineering programs, two of which have nationally ranked graduate programs.

Educational Attainment, 2013

Percentage of Population, 25 Years and Older, With Bachelor's Degree or Higher



The University of Michigan ranks as the 29th best university and **4th** best public university in the nation. The Ross Business School was ranked the **7th** best graduate school for entrepreneurship.



Photo: University of Michigan

Talent

In 2014, the Detroit region's labor force exceeded 2.5 million, including the highly skilled workers that serve as one of the area's primary assets. The region has experienced job growth in the skilled trades while leading its peers in STEM job growth.

Top 10 Fastest Growing Occupations, Detroit Region

DESCRIPTION	2009 JOBS	2014 JOBS	2009-2014 CHANGE	2009-2014 % CHANGE	2014 LOCATION QUOTIENT
Architecture & Engineering	63,305	84,187	20,882	33%	2.15
Production	173,195	216,659	43,464	25%	1.51
Computer & Mathematical	59,992	69,622	9,630	16%	1.10
Transportation & Material Moving	117,046	132,662	15,616	13%	0.89
Life, Physical & Social Science	15,484	17,380	1,896	12%	0.92
Installation, Maintenance & Repair	74,061	82,910	8,849	12%	0.96
Construction & Extraction	54,402	60,156	5,754	11%	0.69
Building & Grounds Cleaning/Maintenance	60,463	66,705	6,242	10%	0.87
Management	104,346	115,081	10,735	10%	1.03
Business and Financial Operations	101,948	112,348	10,400	10%	1.00
Total	824,242	957,710	133,468		

Source: EMSI

Nearly 74,000 jobs in skilled trades have been created in the region since 2009, with assemblers, machinists and truck drivers leading that growth.

The fastest growing occupations over the past five years in the Detroit region were architecture and engineering occupations with 33% growth, up 5 percentage points from 2013. Production occupations showed the largest net gain in jobs with an increase of more than 43,000. Construction occupations have entered the top 10 fastest growing occupations.

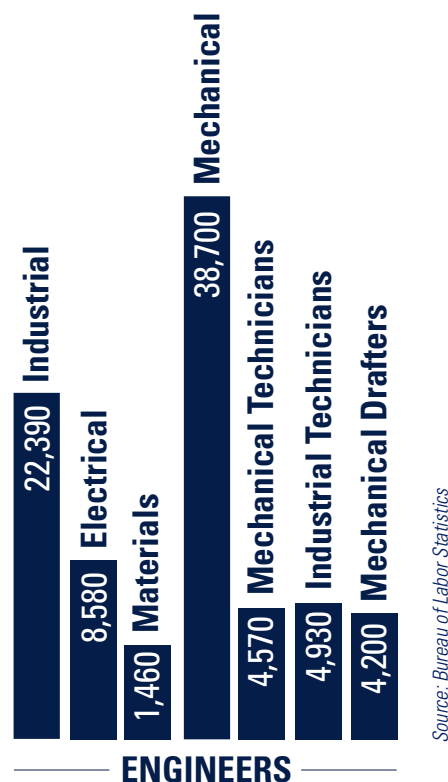
Projecting to 2019, the top three occupations for job growth within the Detroit region include health care support, personal care and services, and life, physical and social service occupations, with health care support jobs expected to grow by more than 7,000 jobs.

Engineering Talent

Home to nearly 90,000 engineers, **Michigan ranks No. 1 for mechanical, industrial engineers and mechanical engineering technicians**, by concentration.

Since 2009, over 20,000 engineering jobs have been added to Michigan's economy.

Over 6,300 engineers graduated from Michigan universities and colleges in 2014.



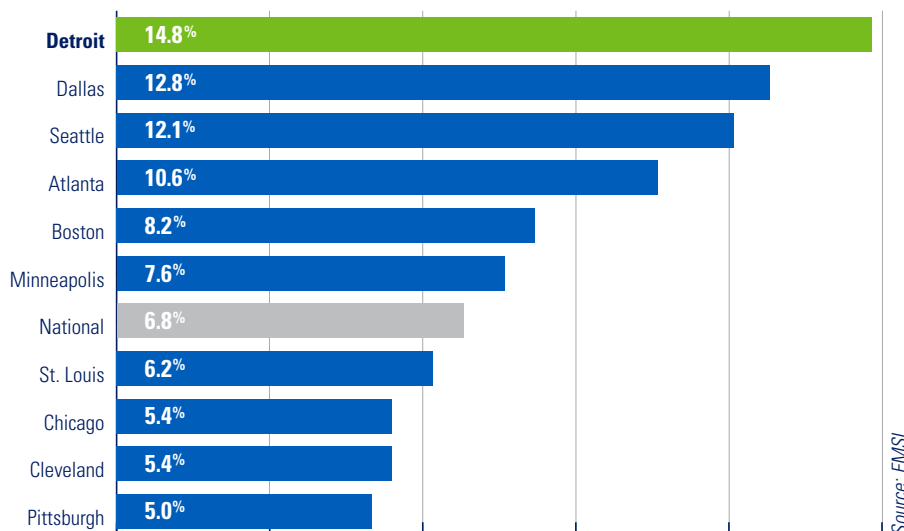
STEM Growth

Detroit leads its peers in **STEM occupation job growth at nearly 15%** since 2009. Occupations that have experienced the largest growth are engineers, drafters and engineering technicians and computer occupations.

Nearly 36,000 jobs were added to the Detroit economy in STEM occupations from 2009-2014.

As of 2014, nearly 300,000 workers in the Detroit region are employed in STEM occupations.

STEM Occupation Job Growth, 2009-2014



BloombergBusiness

APRIL 2015

**Michigan's Snyder Vows to Lead U.S.
in Skilled-Job Training**

A photograph showing three people in a workshop or laboratory setting. Two men and one woman are working on a large, flat, rectangular object that appears to be a model or a prototype. The object is yellow and blue. One man is standing on the left, another man is standing in the center holding a yellow and blue helmet, and a woman is sitting on the floor on the right, working on the object. The background shows industrial equipment and a large open space.

Innovation

Photo: University of Michigan

The Detroit region is known around the world for its innovation. With leading research universities and a workforce comprised of a high percentage of scientists and engineers, the region continues to produce patents and cutting-edge technology that are redefining the world. That innovation, coupled with a rapidly improving business climate, continues to attract venture capital while creating a fertile environment for entrepreneurs and small businesses to thrive in nearly any industry.

There are 129 venture-backed companies in Michigan,
a **70% increase** in the last five years.

According to Michigan Venture Capital Association, total venture capital available for new investments of firms headquartered in Michigan or national firms with an office in Michigan in 2014 was \$876 million, an increase of 158% in the last five years.

Fifty-one companies in Michigan received more than \$204 million from Michigan venture capital firms in 2014. This is an 89% increase in the past five years (and a 247% increase in the past 10 years).

The life science and information technology sectors continued to draw the most capital deployment in Michigan in 2014. Forty-four percent of the companies that received venture capital funding in Michigan in 2014 were information technology companies while 36% were life science companies.

Michigan ranks first in research spending-to-venture capital investment ratio in the nation and 21st in venture capital invested.

2015 Rank for the Kauffman Index:

Startup Activity by Metropolitan Area

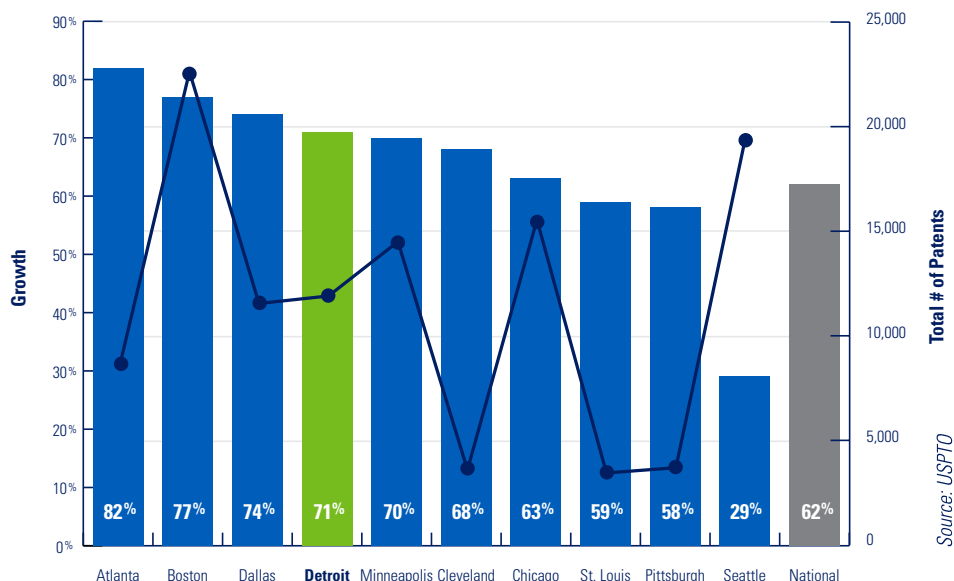
Rank 2015	Region	Rank 2014	Startup Density
13	Atlanta	18	154.49
15	Dallas	13	142.46
16	Seattle	17	167.91
21	Chicago	29	140.76
22	Boston	31	136.12
35	Cleveland	36	105.87
36	Detroit	37	123.39
37	Minneapolis	33	132.12
38	St. Louis	35	126.58
40	Pittsburgh	40	98.26

Source: Ewing Marion Kauffman Foundation

Detroit ranked 36th in the new Kauffman Index, which includes measures of the rate of new entrepreneurs, opportunity share of new entrepreneurs and startup density. The region ranked seventh among its peers in the category of startup density.

The University of Michigan ranked as the fifth most innovative university in Reuters Top 100 Innovative Universities.

Utility Patents Originated, 2000–2013



The Detroit MSA accounted for 3,000 utility patents in 2013, the latest data available. This is the most ever recorded for the region in a single year.

Detroit had 12% patent growth over the year, while the nation had 10% growth.

CRAIN'S DETROIT BUSINESS

JANUARY 2015

**Michigan venture capital investment value
up nearly 100% from 2013**



Photo: Wayne County Airport Authority

International Gateway

2014 Airport Rankings, Total Movements

Sitting along the second busiest border crossing in North America, Detroit is an international gateway to business around the world. With world-class infrastructure, the region is one of the strongest export markets in the nation with millions of dollars of commerce flowing through it daily.

Detroit Metropolitan Airport serves as Delta's second largest hub, with 443 peak-day departures, 125 destinations served, which includes 19 international destinations.

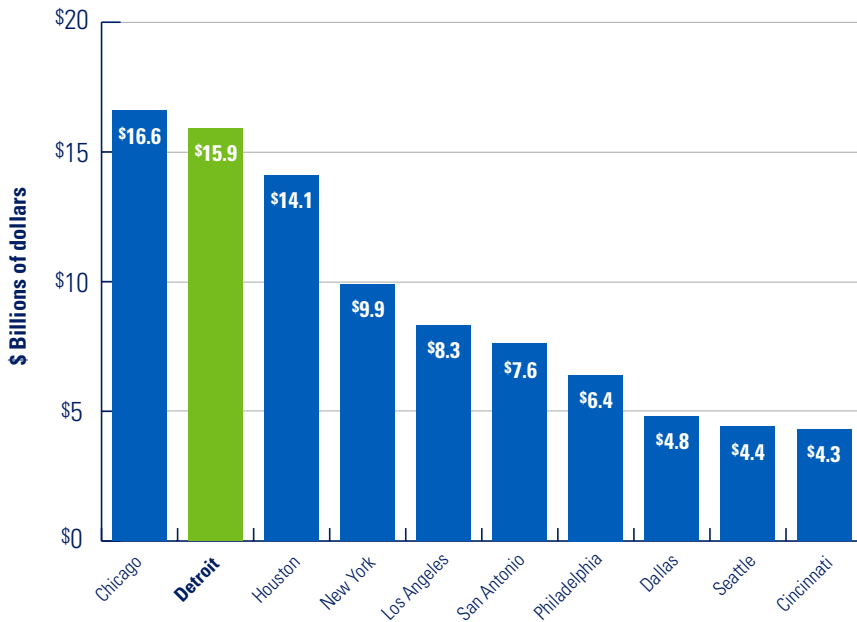
Over 32.5 million passengers utilized Detroit Metropolitan Airport in 2014, up 0.4% from 2013.

Cargo handled by Detroit Metropolitan Airport in 2014 totaled **over 200,000 metric tons**.

World Ranking	NAM Ranking	Airport	2013	2014	% Change
1	1	Chicago (ORD)	883,287	881,933	-0.15
2	2	Atlanta (ATL)	911,074	868,359	-4.69
3	3	Los Angeles (LAX)	696,443	708,647	1.72
4	4	Dallas/Ft. Worth (DFW)	678,059	679,820	0.26
6	5	Denver (DEN)	582,653	565,525	-2.94
7	6	Charlotte (CLT)	557,948	545,178	-2.29
8	7	Las Vegas (LAS)	520,992	522,399	0.27
9	8	Houston (IAH)	496,908	499,802	0.58
15	9	Toronto (YYZ)	431,323	432,825	0.15
16	10	San Francisco (SFO)	421,400	431,633	2.43
17	11	Phoenix (PHX)	459,434	430,461	-1.31
19	12	New York (JFK)	406,143	422,415	4.01
20	13	Philadelphia (PHL)	432,884	419,253	-3.15
21	14	Minneapolis/St. Paul (MSP)	431,328	412,586	-4.35
24	15	Miami (MIA)	399,140	402,663	0.88
27	16	Newark (EWR)	413,744	395,524	-4.40
28	17	Detroit (DTW)	425,732	392,635	-7.77
31	18	Boston (BOS)	361,339	363,797	0.68
32	19	New York (LGA)	371,565	360,834	-2.70
37	20	Phoenix (PVT)	354,995	339,493	-4.37

Source: Airport Council International

Top MSA Exporters to Canada, 2014



Source: International Trade Administration

In 2014, the **Detroit region exported over \$50 billion in goods** representing 70% of Michigan's total merchandise exports. The Detroit region was surpassed by Chicago as the No. 1 exporter to Canada in 2014 as the region experienced decreases of \$3.6 billion primarily due to reduced transportation equipment exports. Gains, however, occurred in fabricated metal product manufacturing and electrical equipment, appliance and component manufacturing.

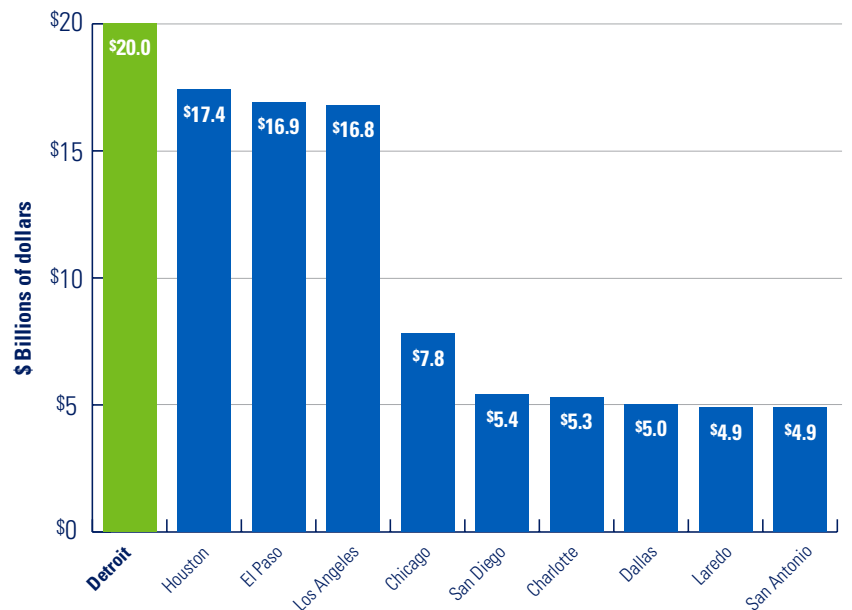
Detroit's top export markets are Mexico and Canada, with \$35.9 billion in exports to those markets originating in the Detroit region.

Top 10 Metropolitan Area Exporters, by 2014 Value

1. Houston-The Woodlands-Sugar Land, TX
2. New York-Newark-Jersey City, NY-NJ-PA
3. Los Angeles-Long Beach-Anaheim, CA
4. Seattle-Tacoma-Bellevue, WA
- 5. Detroit-Warren-Dearborn, MI**
6. Chicago-Naperville-Joliet, IL-IN-WI
7. Miami-Fort Lauderdale-West Palm Beach, FL
8. New Orleans-Metairie, LA
9. Dallas-Fort Worth-Arlington, TX
10. San Francisco-Oakland-Hayward CA

Source: International Trade Administration

Top MSA Exporters to Mexico, 2014



Source: International Trade Administration

In 2014, the Detroit MSA remained the **5th largest export market** in the United States.

REGIONAL SPOTLIGHT:

The Detroit region is home to many regional partners and assets dedicated to growing the economy.



Defense: Michigan Defense Corridor

Michigan is home to a robust national defense cluster. Macomb County is home to the Michigan Defense Corridor and is considered the defense capital of the Midwest. This six-mile stretch contains two-thirds of all defense contractors in the state and resources such as the U.S. Army TACOM Life Cycle Management Command, Tank Automotive Research Development and Engineering (TARDEC) and Selfridge Air National Guard Base.

Life Sciences: Medical Main Street



As part of its Emerging Sectors initiative, Oakland County's Medical Main Street is dedicated to maximizing the growth potential of the health care and life science sectors in Southeast Michigan. It serves as a conduit for businesses looking to connect with the region's many health care systems, universities and government, as well as a resource to facilitate relocation or expansion.



Tech Industry: Ann Arbor SPARK

Ann Arbor SPARK is one of the nation's leading business incubators and economic development organizations supporting business acceleration, attraction and retention in the Ann Arbor region. It features innovative initiatives such as the inaugural Ann Arbor Tech Trek this past year, which drew 800 attendees as local tech companies and incubators showcased their latest innovations.

Ag and Food Processing: The I-69 International Trade Corridor



Comprised of four county partners and 31 municipalities, the I-69 International Trade Corridor Next Michigan Development Corporation is the largest organization of its kind in Michigan. Highlighting the proximity of Interstates 75 and 94 as well as US-23, it offers incentives to businesses that utilize two or more forms of transportation to move their products, with an emphasis on the agriculture and food processing industries.





INDUSTRY SPOTLIGHT: Mobility

Photo: FCA US LLC

Michigan is leading the world in connected vehicle technology. In 2014, Michigan led the nation with 45 connected vehicle projects, a growth of 50% over the previous year, which is **46% more than California, the next closest state.**

The Detroit region is a leader in **connected vehicle programs with locations in eight cities in Southeast Michigan.**

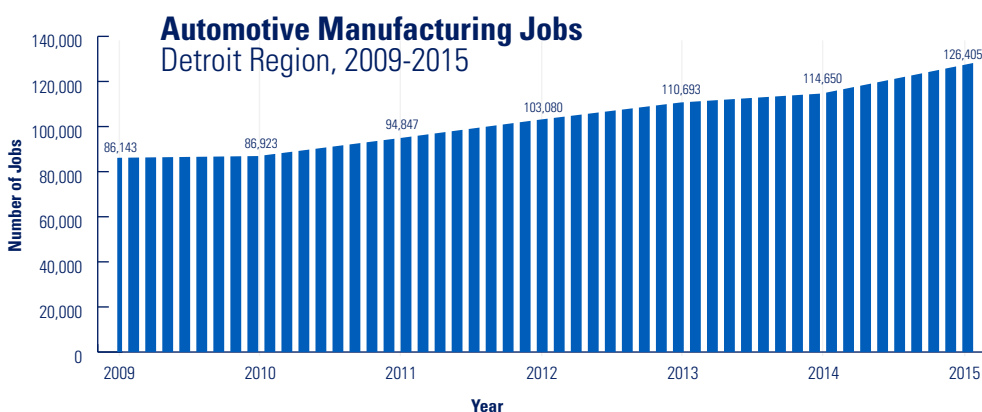
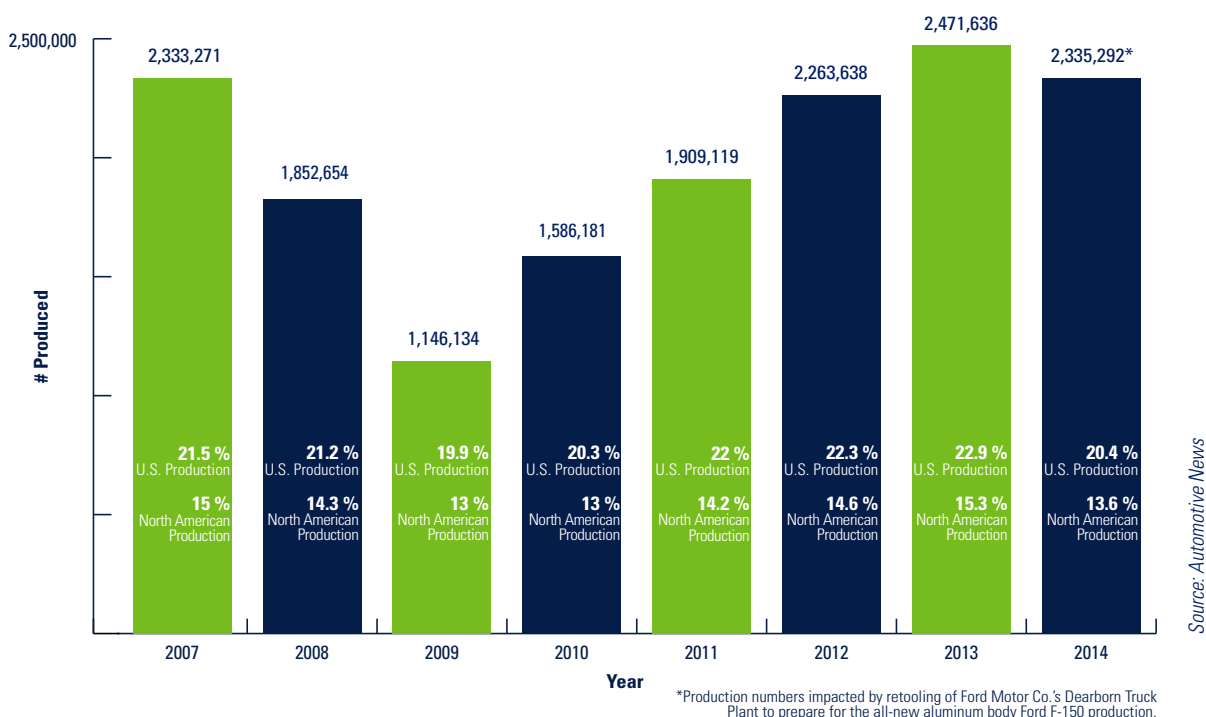
Occupying 32 acres at the University of Michigan's North Campus Research Complex, Mcity is the world's first controlled environment specifically designed to test the potential of connected and automated vehicle technologies. The facility simulates the broad range of complexities vehicles encounter in urban and suburban environments, including intersections, buildings, street lights and obstacles such as construction barriers. Mcity celebrated its grand opening on July 20, 2015 with representatives from state government, the automotive industry and the university.

Testing and Development	
The University of Michigan's Mobility Transformation Center	Provides a 32-acre testing facility for connected technology. Initial partners include: Bosch, Econolite, Ford, GM, Toyota and Xerox.
The Southeast Michigan Test Bed	Provides real-world, operational conditions that offer participants the supporting vehicles, infrastructure and equipment to serve the needs of public and private sector testing and certification activities.
The Smart Corridor	Expected to be in place by 2017, General Motors Co. is joining forces with the Michigan Department of Transportation, the University of Michigan's Mobility Transformation Center and other automakers to create V2I-enabled corridors on 120 miles of metro Detroit roadways, the largest deployment of V2I technology in the United States.
City of Detroit Test Bed	The only urban test bed environment in the United States with urban canyon effect and tunnels.
Willow Run Proposed Testing and Research Center	This is the proposed home for a technologically advanced connected vehicle research center, a project that could become a hub of research and development and a catalyst for jobs in innovative automotive research.

The Detroit region is the epicenter of the global automotive industry with unrivaled assets and expertise in manufacturing, design, engineering and research and development. The region serves as the global headquarters of FCA US LLC, Ford Motor Co. and General Motors Co. while Michigan is home to 61 of the top 100 global automotive suppliers to North America, with 56 of those calling the Detroit region home.

Michigan is ranked No. 1 for North American car and truck production, accounting for one in six vehicles made in 2014. The Detroit region accounted for 78% of Michigan's vehicle production in 2014. Michigan vehicle production dropped slightly from 2.47 million vehicles in 2013 to 2.33 million in 2014.

Car and Truck Production, Michigan 2007-2014



Since the end of the Great Recession, **the region has added 40,000 automotive manufacturing jobs.** In 2014, automotive manufacturing jobs grew by 3.6% or nearly 4,000 jobs. However, the 126,400 people employed in automotive manufacturing today still lags behind the more than 220,000 employed in 2001.

Source: EMSI

CASE STUDY:

General Motors' Warren Tech Center Investing in the Future

In May, General Motors Co. announced that it would invest \$1 billion in its Warren Technical Center, creating approximately 2,600 new jobs and providing significant renovations to the iconic campus. The extensive project will add new design studios, upgrade existing research and development facilities and allow for the construction of a multi-story information technology building.

The investment positions the company for continued success and innovation in an automotive industry on the precipice of immense change, as connected and autonomous vehicle technology continues to evolve. It reflects the automaker's strong commitment to building quality vehicles for customers across the globe, and furthermore, that the Detroit region's talent and infrastructure make it the best place on the planet to do so.



Photo: General Motors

Automotive Footprint and Impact

- » Michigan leads the nation in motor vehicle and motor vehicle parts manufacturer establishments with 1,733.
- » There are more than 1,400 tool and die establishments in Michigan, more than any other state.
- » Michigan leads the nation in original equipment manufacturer (OEM) assembly plants with 13.
- » There are 35 OEM components/material plants in Michigan, more than any other state.
- » Michigan accounted for \$8.9 billion, or 76%, of business-funded automotive R&D - leading the nation in automotive-related R&D.
- » Over the past 50 years, Michigan has accounted for over 20,000 automotive patents, three times more than the next ranked state and it leads the country in navigation and smart mobility patents.
- » Automakers and their suppliers have announced more than \$20 billion in investment in Michigan facilities since 2010, according to the Center for Automotive Research. More than \$3 billion was announced in 2014 with 54% attributed to foreign firms.

Detroit Free Press

APRIL 2015

GM to add 2,500 jobs, invest \$1B at Warren Tech Center

INDUSTRY SPOTLIGHT: Health Care

Photo: Henry Ford Health System

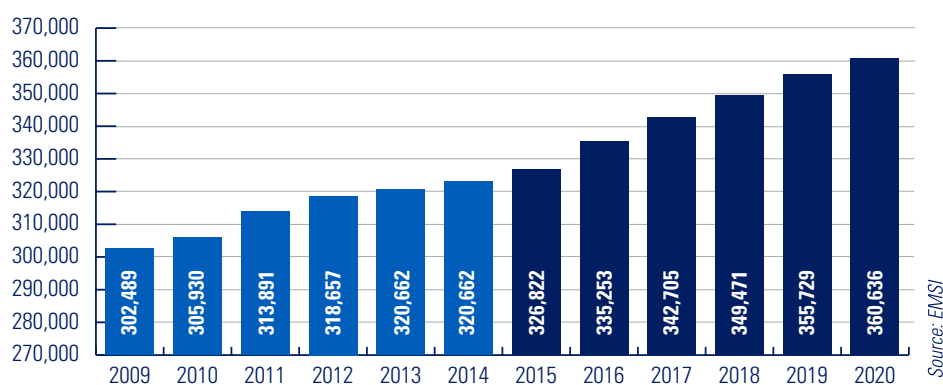
Health care is the Detroit region's largest industry employing more than 320,000 people including nearly 20,000 physicians and specialists. The industry continues to expand in the region with growth forecasted at 11.6% between 2014 and 2020.

Employing 326,000 health care workers today, the health care industry has grown by nearly 7% since 2009, and nearly 1% in 2014. That growth trajectory is expected to continue with nearly 26% growth anticipated between 2009 and 2024.

The largest occupations are registered nurses, home health aides, nursing assistants, medical assistants and physicians and surgeons. Together, these occupations account for nearly 52% of all health care occupations. The average hourly wage for health care occupations in the Detroit region is \$28.28, or \$58,800 a year.

With four hospitals in the region earning U.S. News and World Report's Best Hospitals National Ranking and an additional nine hospitals earning regionally ranked hospital designations, the region attracts patients from around the world for cutting-edge treatment.

Regional Detroit Health Care Job Growth, 2009–2020



CRAIN'S DETROIT BUSINESS

FEBRUARY 2015

Health care occupations dominate top middle-skill jobs in SE Michigan

CASE STUDY:

University of Michigan Mini-Lungs

The Anatomy of Innovation

In a groundbreaking project, researchers at the University of Michigan Health System's (UMHS) Spence Lab succeeded this spring in using stem cells to grow the very first three-dimensional "mini-lungs." Referred to as organoids, these structures are effectively able to mimic real human lungs in shape, response and complexity, giving scientists a first-of-its-kind tool to study how the organ changes with disease and reacts to new drugs.

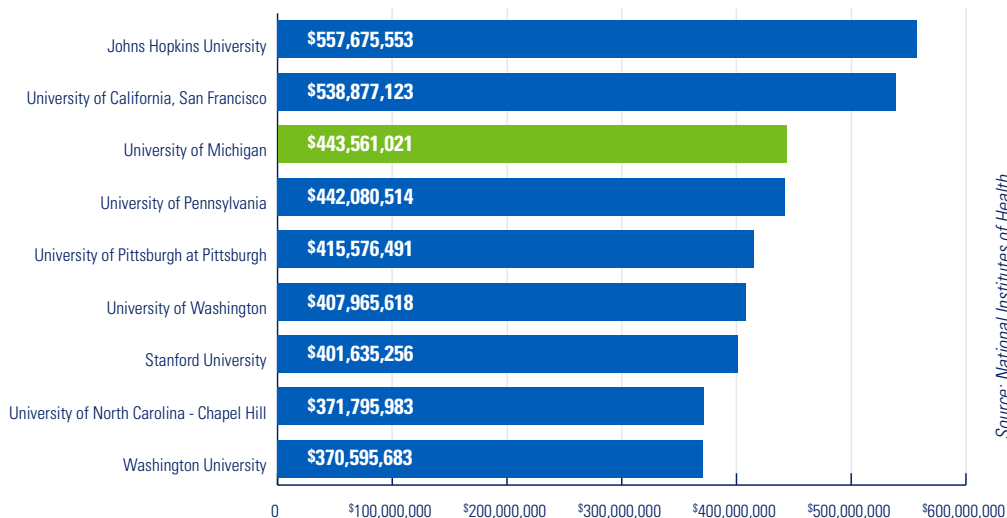
Developed collaboratively with researchers from multiple institutions, the breakthrough is set to increase the pace of clinical discovery, possibly paving the way for a future where stem cells can replace damaged lung tissue or generate completely new lungs.

Employing over 26,000 people in the region, UMHS consistently ranks among the top hospitals in the nation for both patient care and research. The health system was responsible for 133 invention reports and 61 license agreements with private businesses in 2014 alone.



Photo: University of Michigan

National Institutes of Health Funding – YTD, Sept. 28, 2015



Looking forward, the region's leadership in health care innovation is expected to continue due in large part to its world-class research institutions. So far this year, five of the region's education institutions have been awarded more than \$500 million in health care research funding from the National Institutes of Health. The big three awardees – the University of Michigan, Michigan State University and Wayne State University – have been awarded a combined \$543 million for the advancement of health care. In addition, the University of Michigan ranks third in the nation for funding (up from six in 2014) and fourth for number of awards (as of September 2015).



INDUSTRY SPOTLIGHT:

Aerospace and Defense

Defense and aerospace companies continue to look to the Detroit region for innovation. With the presence of military facilities such as U.S. Army TACOM Life Cycle Management Command, Tank Automotive Research Development and Engineering (TARDEC) and Selfridge Air National Guard Base, the region serves as a strategic research and development hub for the nation's military. **In the 2015 fiscal year, more than \$2 billion in defense and homeland security contracts were awarded to defense-related businesses in the Detroit region**, according to the Federal Procurement Data System.

In 2014, aerospace and defense industry jobs grew by 2.3% or 2,045 jobs. Since 2009, the region has experienced 16% growth in employment, and today, the cluster employs 93,000 workers. Industry sectors reporting the highest growth between 2009 and 2014 are aircraft manufacturing (142%), tire and tube merchant wholesalers (94%) and other communication equipment manufacturing (93%). **Mechanical, electrical and electronics engineers are the top three occupations in the industry cluster.**

With the region's top-notch research universities, including the No. 1 nationally ranked public school aerospace engineering graduate program and No. 3 ranked undergraduate program at the University of Michigan, the region offers the talent required by such a high-tech industry. Additional assets such as Michigan's 24,000 tool, die and molds workers, the largest talent pool in the nation, make the region and state a vital supplier to the aerospace and defense industry. In 2015, PwC recognized these assets and ranked Michigan as the second most attractive state for aerospace and defense manufacturing.

CASE STUDY:

Futuramic and NASA Mission to Mars Starts Here

When building a rocket that will travel to Mars, the average toolbox won't do. That's where Warren-based Futuramic Tool & Engineering Co. comes in. Since moving into the aerospace industry in 2000, the company has played an instrumental role in the country's spaceflight program by supplying massive tools specifically designed to construct a spacecraft. Currently, Futuramic provides three crucial welding tools for Boeing's Orion Space Launch System and large tooling for Lockheed Martin's Orion crew cabin.

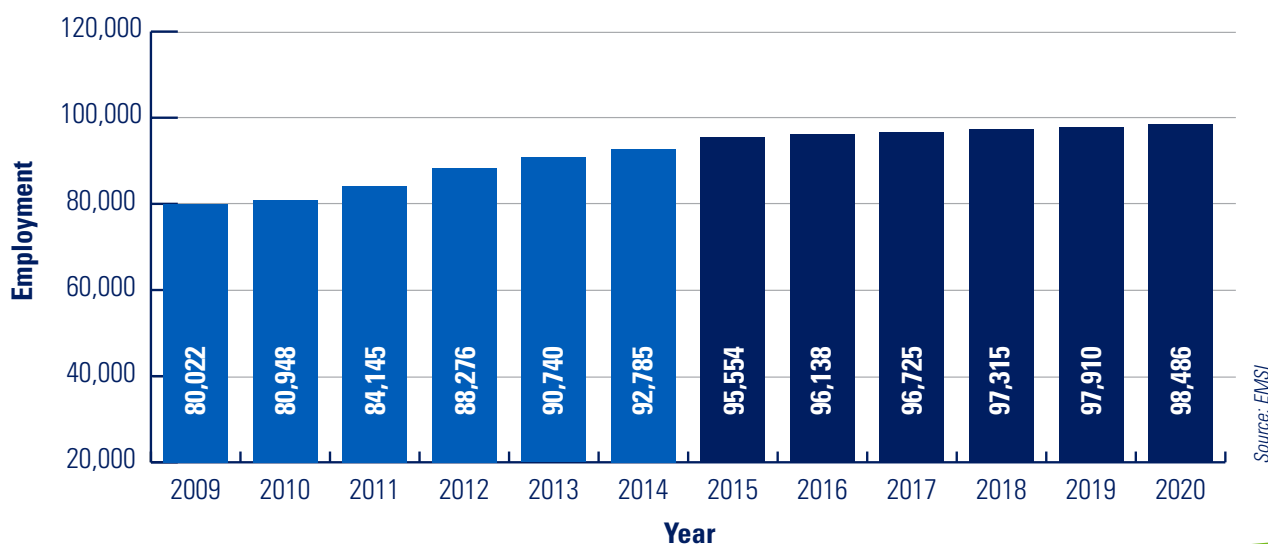
Once completed, Orion will be the safest, most advanced spacecraft ever built, giving astronauts the ability to travel even further into the solar system. NASA hopes to use this technology to explore an asteroid by 2025 and Mars by the 2030s.

Originally founded as an automotive company in 1956, Futuramic reimagined and repurposed its core manufacturing skill set to emerge as one of the region's most prominent aerospace companies. Due to its continued growth, Futuramic expanded in Detroit in 2014, investing \$20 million in a new facility that is expected to create over 100 jobs.



Photo: Futuramic

Aerospace and Defense Job Growth, Detroit Region 2009–2020





INDUSTRY SPOTLIGHT: Metalworking

Considering its expertise in automobile manufacturing, it is no surprise the **Detroit region ranks No. 1 for metalworking employment**. From building engines to large infrastructure components and metalworking machinery, the region employs more metalworkers than anywhere else in the United States.

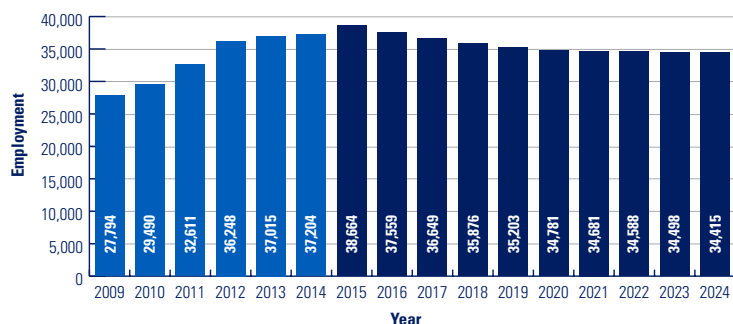
In 2014, nearly 33,000 people worked in the metalworking industry cluster. Employment growth in metalworking since 2009 stands at 31.6%, although this explosive growth is expected to contract slightly and level off over the next five years.

Between 2009 and 2012, the region experienced a **50% growth for the primary metals manufacturing, fabricated metal products and machinery manufacturing**. In addition, this accounts for 46% of the state's GDP for the same industries.

Of the top 25 metalworking occupations (based on percent of the total workers within the cluster), the average hourly wage ranges from \$11.90 for helpers-production workers to a high of \$52.06 for industrial production managers. The average annual wage for the cluster in the region is just over \$62,000.

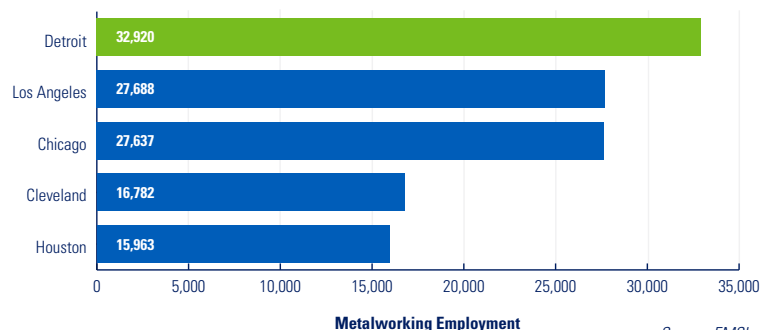
Demonstrating the need for highly skilled workers, nearly 85% of the occupations in this industry cluster require some type of post-secondary, on-the-job training.

Metalworking Technology Employment, 2009-2014



Source: EMSI

Top Five MSAs for Metalworkers, 2014



Source: EMSI

CASE STUDY:

With LIFT, Less is More Leading Advanced Manufacturing

In manufacturing, sometimes less is more. In a 100,000 square-foot facility located in Detroit's Corktown neighborhood, Lightweight Innovations for Tomorrow (LIFT) is pioneering the research and implementation of new lightweight metals in vehicles and components. Despite their reduced weight, these materials have a big impact, making products stronger, cheaper and more energy efficient.

LIFT works with public and private stakeholders in a range of industries, from automotive to aerospace and defense, recently partnering with Boeing and Ohio State University to develop new technologies that can remove air from aluminum parts and make them lighter, lowering manufacturing costs and increasing fuel savings.

Part of a larger network of five federal manufacturing institutes, LIFT will soon be joined by the Institute for Advanced Composites Manufacturing Innovation (IACMI), placing two of these facilities in Detroit and further cementing the region's leadership in advanced manufacturing.



Top 10 Metalworking Occupations, Detroit Region

Description	Employed in Industry Group (2015)	Median Hourly Earnings
Machinists	4,096	\$19.92
Tool and Die Makers	2,740	\$27.18
Mechanical Engineers	2,429	\$44.63
First-Line Supervisors of Production and Operating Workers	1,512	\$29.76
Team Assemblers	1,318	\$17.85
Computer-Controlled Machine Tool Operators, Metal and Plastic	1,227	\$18.71
Coating, Painting and Spraying Machine Setters, Operators and Tenders	1,205	\$12.63
Inspectors, Testers, Sorters, Samplers and Weighers	1,190	\$15.88
Plating and Coating Machine Setters, Operators and Tenders, Metal and Plastic	1,159	\$12.39
Helpers - Production Workers	1,085	\$11.90

Source: EMSI

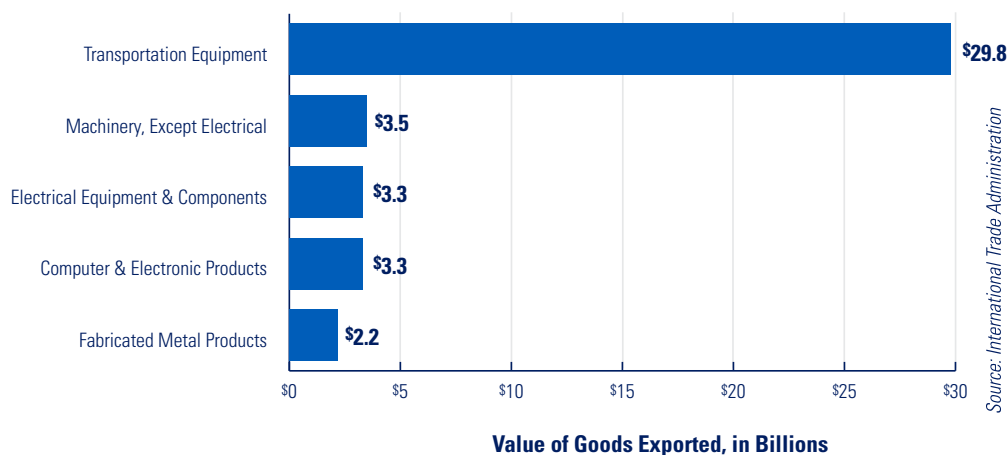
INDUSTRY SPOTLIGHT:

Transportation, Distribution and Logistics

An international gateway to the global marketplace, the Detroit region provides first-rate transportation, distribution and logistics (TDL) infrastructure **along the busiest northern border crossing on the continent**. Sharing a border with Canada, the United States' largest trade partner, the region is a hub for international trade as more than 11,100 trucks cross through Detroit and Port Huron daily. In 2014, **truck traffic increased by 4.3%** as nearly 4.1 million trucks crossed through the Port Huron and Detroit borders. The region also ranks as the fifth largest export market in the United States as companies exported more than \$50 billion in goods during 2014.

TDL jobs grew at nearly twice the national rate, adding more than 13,000 jobs between 2009 and 2014. TDL job growth is expected to continue, but at a slightly slower rate with anticipated additions of slightly over 6,000 jobs over the next decade.

Exports by Industry Sector, 2014



Currently, the top five occupations are heavy and tractor-trailer truck drivers, laborers and freight, stock and material movers, light truck or delivery services drivers, couriers and messengers and flight attendants. Combined, they account for nearly half of the cluster's workforce.

The Detroit area has a total of 550.8 million square feet of warehouse space with lease rates at \$4.97 per square foot in June 2015, up from \$4.72 in June 2014. Warehouse space vacancy rates in June 2015 stood at 6.8%, down from 8.6% in June 2014.

The state is also home to the nation's top supply chain schools according to U.S. News and World Report. Michigan State University is home to the No. 1 undergraduate program and No. 2 graduate supply chain management/logistics schools in the nation.

CASE STUDY:

DENSO's Trucking Efficiencies Improving Safety and Performance

This summer, DENSO International America Inc. announced an investment agreement with Peloton Technology to speed the development of the company's platooning system for large commercial transportation fleets. This innovative new technology gives pairs of heavy trucks the ability to wirelessly "link" together and safely travel at close distances.

Similar to racecars, the compact platoon formation allows trucks to draft each other, dramatically decreasing aerodynamic drag and increasing fuel savings for both the trailing and leading vehicle. The company estimates that fuel consumption could potentially be reduced by 10% for the rear truck and 4.5% for the front truck.

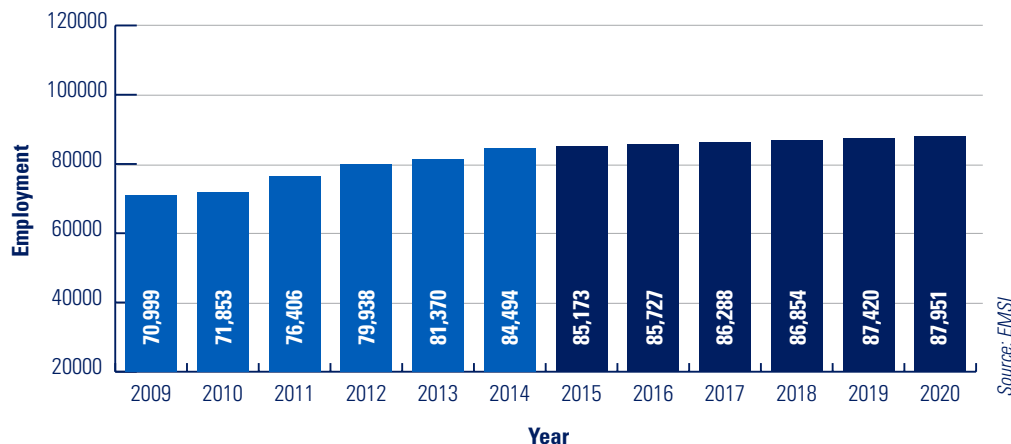
But Peloton's technology does more than just improve efficiency, it also keeps drivers and cargo safe. Using vehicle-to-vehicle communication and radar-based braking systems, the trucks can effectively avoid collision with other vehicles on the road and each other. In addition, a live video link also allows the rear truck to see what is ahead of the platoon.

Once fully implemented, the agreement with Peloton will put in place the very first large-scale deployment of a vehicle-to-vehicle communication system.



Photo: DENSO

Regional Detroit TDL Jobs Growth, 2009–2020





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