



State  
OF THE  
Region  
2017

Regional Champion:





Over the past year, the region has made tremendous strides in its economic growth. With the Detroit bankruptcy now in the rearview mirror, the multitude of opportunities are now clearer than ever. The region has achieved great accomplishments, but the momentum needs to continue. Michigan's and Detroit's comeback story is far from over.

With more than 300,000 businesses and 5 million residents, the region is attracting businesses and talent from every corner of the world. From Fortune 500 companies to startups and everything in between, companies are choosing to make Southeast Michigan their home. From life sciences to energy to next-generation mobility, the talent is here, creating a culture of innovation that is busting at the seams. In 2015, Detroit moved up five spots in the Kauffman Innovation Index and was ranked No. 1 for patent growth among its peers. However, the region is still behind its peers in education attainment. While programs are in place to raise the region's numbers, this initiative must continue to be a priority focus.

For the third year, the Detroit Regional Chamber is proud to release its annual State of the Region to provide an economic overview of our 11-county region.

As the data in this report suggest, the needle is indeed moving in the right direction. It also shows the areas in which improvement is needed. With the continued support and unity of our civic, business and public leadership, our city, region and state will stay positive and our comeback story will be a playbook for other regions to replicate. Let's stay the course – full speed ahead.

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



Detroit has come a long way over the past few years. Today, this burgeoning city is experiencing a true renaissance buoyed by private sector job growth, strong employment and continued investment in innovation.

At Citizens, our bankers are excited to witness and play a role in the economic growth of this region. Whether it be providing funding for business creation or expansion, or bringing forth good ideas and the right solutions to fuel corporate growth, reduce expenses and mitigate risks, our goal remains the same - to create long-term growth and success for our clients and the region.

But long-term success requires strong communities, which is why we are actively involved in fighting hunger, teaching money management and volunteering with organizations like the Gleaners Community Food Bank, Eastern Market Corporation, The Greening of Detroit and Southwest Solutions.

We understand that continued investment in this region and its people is essential to driving transformative change in Detroit, and look forward to working with each of you to collectively revitalize and rebuild this great city.

Richard C. Hampson  
State President, Michigan  
Citizens Bank

# Forward DETROIT



Forward Detroit is the Detroit Regional Chamber’s economic development strategy to sustain Southeast Michigan as one of the fastest growing regions in the United States. The data in this report now aligns with the Forward Detroit pillars and serves as a regional roadmap for economic growth. Our focus with each pillar is to make the state of our region stronger, in order for Detroit to remain competitive in a 21st century economy.

It is important to note that the Forward Detroit metrics are measured by the Chamber’s 11-county Detroit region, while the benchmarked graphs in this report compare the Detroit MSA only for appropriate analysis purposes.



## 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 11 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.

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Photo: Campbell Ewald / Justin Maconochie

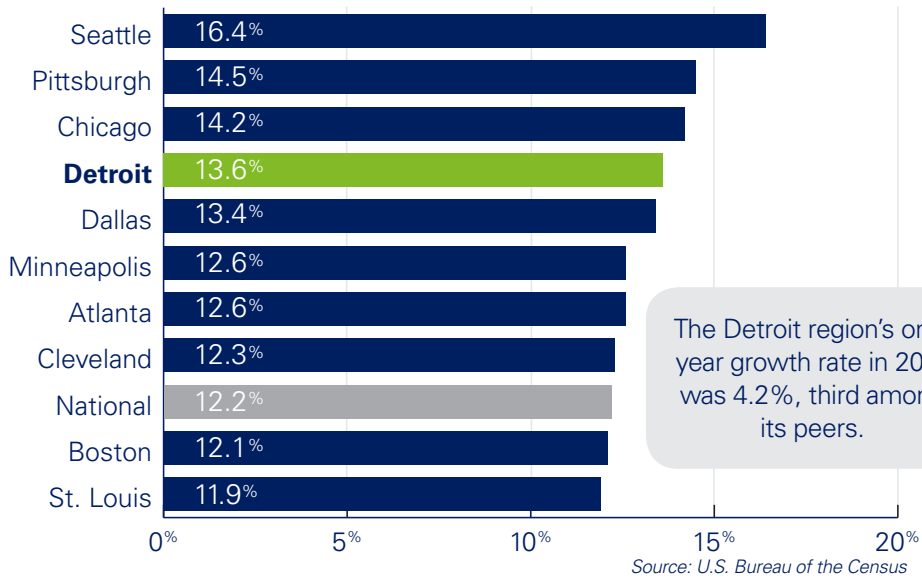
## Population Overview, 2015

Area	Population 2010	Population 2015	2010-2015 % Change	Number of Households	Per Capita Income	Median Household Income	Land Area Square Miles
<b>Detroit Region</b>	5,389,730	5,388,532	(0.0)	2,090,222	\$27,562	\$54,222	7,061.0
Genesee	425,790	410,849	(3.5)	165,268	\$22,957	\$42,327	637.0
Lapeer	88,316	88,373	0.1	32,682	\$24,478	\$52,996	643.0
Lenawee	99,892	98,573	(1.3)	37,964	\$23,252	\$48,043	749.6
Livingston	180,967	187,316	3.5	68,980	\$33,619	\$75,204	565.3
Macomb	840,987	864,840	2.8	336,379	\$27,525	\$54,582	479.2
Monroe	152,021	149,568	(1.6)	58,566	\$26,982	\$55,653	549.4
Oakland	1,202,362	1,242,304	3.3	493,489	\$37,728	\$67,465	867.7
St. Clair	163,040	159,875	(1.9)	64,143	\$25,429	\$49,730	721.2
Shiawassee	70,648	68,619	(2.9)	27,409	\$27,582	\$48,233	530.7
Washtenaw	345,066	358,880	4.0	138,067	\$34,738	\$61,003	706.0
Wayne	1,820,641	1,759,335	(3.4)	667,275	\$22,897	\$41,210	612.1
Detroit	713,777	677,116	(5.1)	255,740	\$15,038	\$25,764	138.8
<b>Michigan</b>	9,884,133	9,922,576	0.4	3,841,148	\$26,607	\$49,576	56,538.9

Source: U.S. Bureau of the Census



### Per Capita Income Growth, 2010-2015

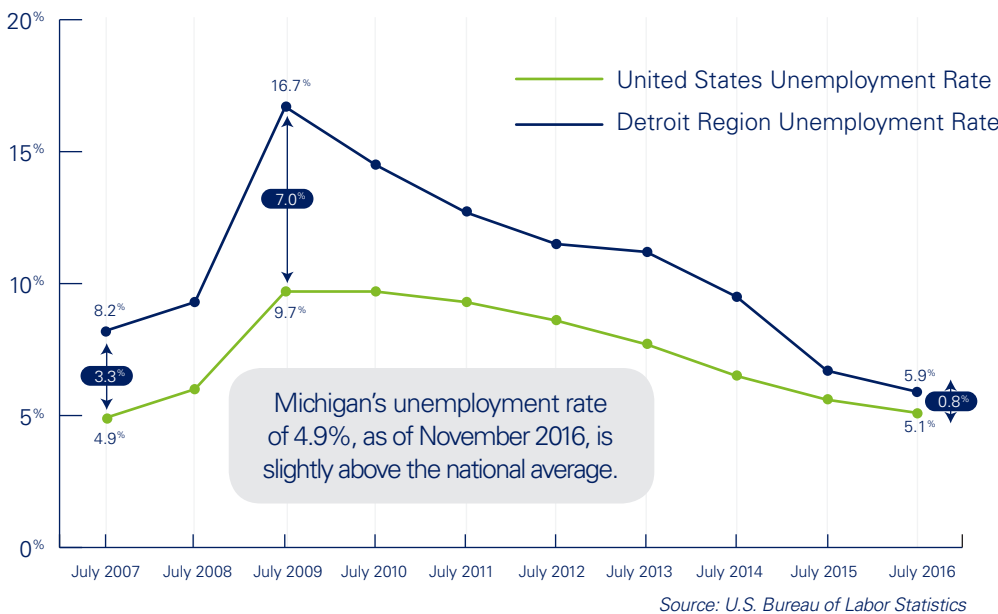


### Income Growth

The Detroit region has recorded per capita income growth of 13.6% since 2010, outpacing the national growth rate by 1.4 percentage points.

The region experienced an 11.3% increase in median household income, rising from \$48,198 in 2010 to \$53,628 in 2015, ranking the region seventh against peer regions. The region matched the national growth rate during the same period.

### Detroit Region vs. National Unemployment Rate, 2007-2016



### 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 0.8%, 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 4.1% while Detroit and Flint reported unemployment rates at 6%.



To sustain Southeast Michigan as one of the fastest growing regions in the United States our People Forward goal is to decrease unemployment and increase per capita income.

#### Unemployment

Goal: 4.5%  
Current: 5.1%

#### Per Capita Income

Goal: \$37,577  
Current: \$28,966 - Detroit Region  
\$29,979 - United States



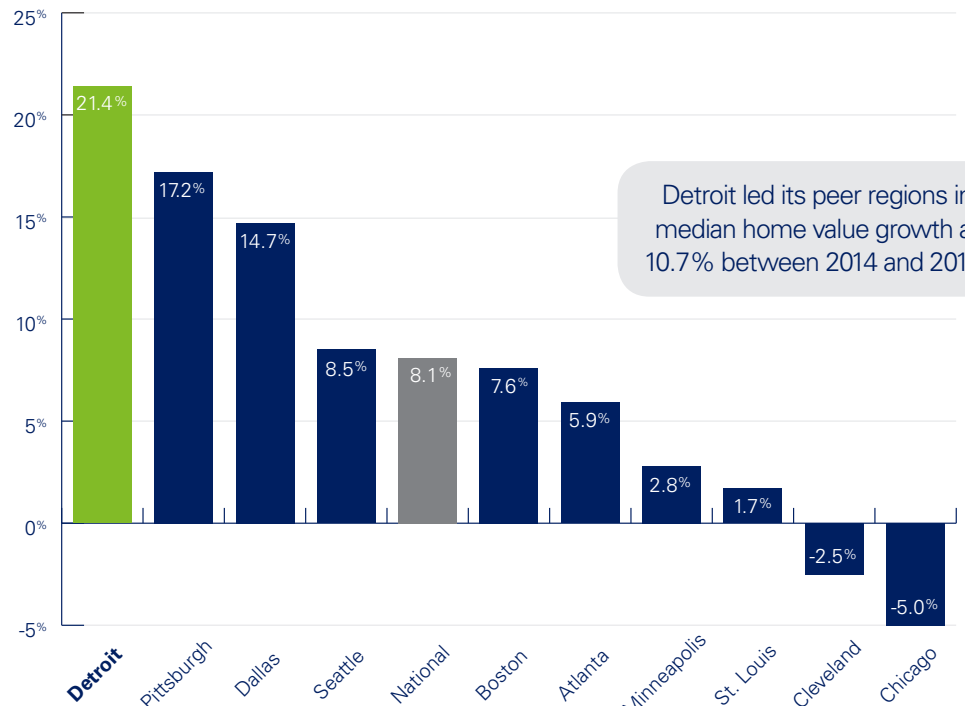
Photo: M-1 Rail

## Median Home Values

Home values are beginning to return to 2009 levels. During 2010-2015, the Detroit area median home values increased by 21.4%, leading peer regions in growth and outpacing the national average by 13.3 percentage points. Pittsburgh was the next closest peer region with 17.2% median home value growth.

The 2015 average median home value in the Detroit MSA was \$151,000 compared to \$158,000 in 2009.

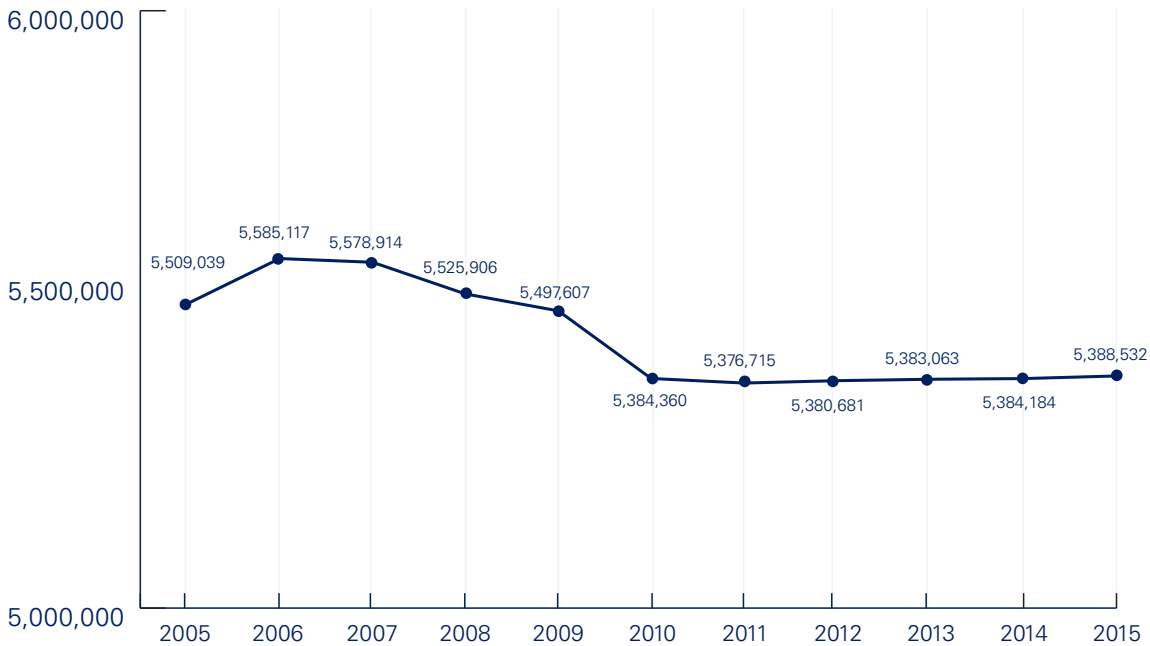
### Median Home Value Growth, 2010-2015



Detroit led its peer regions in median home value growth at 10.7% between 2014 and 2015.

Source: U.S. Bureau of the Census

Total Population 11-County Detroit Region, 2005-2015



Source: U.S. Bureau of the Census

## Connecting Our Communities

Annually, more than 42.5 million trips occur on the four public transit systems across the region. While the proposed millage for regional transit was narrowly defeated in the November 2016 election, the need for coordinated regional transit remains. The Detroit Regional Chamber will continue to support and advocate for coordinated regional transit, including plans for rapid transit.

The QLine, owned and operated by M-1 Rail, will open in the spring of 2017 as a 3.3-mile street car line, linking downtown Detroit to New Center. The \$140-million street car system is led and funded by private business and philanthropic organizations, in partnership with local, state and the federal government. The QLine is projected to generate \$3 billion in development, including 10,000 new housing units and \$5 million square feet of new commercial space within 10 years.

Forward  
DETROIT

Community

To sustain Southeast Michigan as one of the fastest growing regions in the United States our Community Forward goal is to increase both public transit ridership and population growth.

### Public Transit

Goal: 55,000,000 Ridership

Current: 42,622,774 Ridership (FY 2015)

### Population Growth

Goal: 1% Annual Growth

Current: 0% Annual Growth





Photo: Lear Corporation

## 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 patent growth, the region is outperforming the national average while unemployment rates have decreased below pre-recession levels.

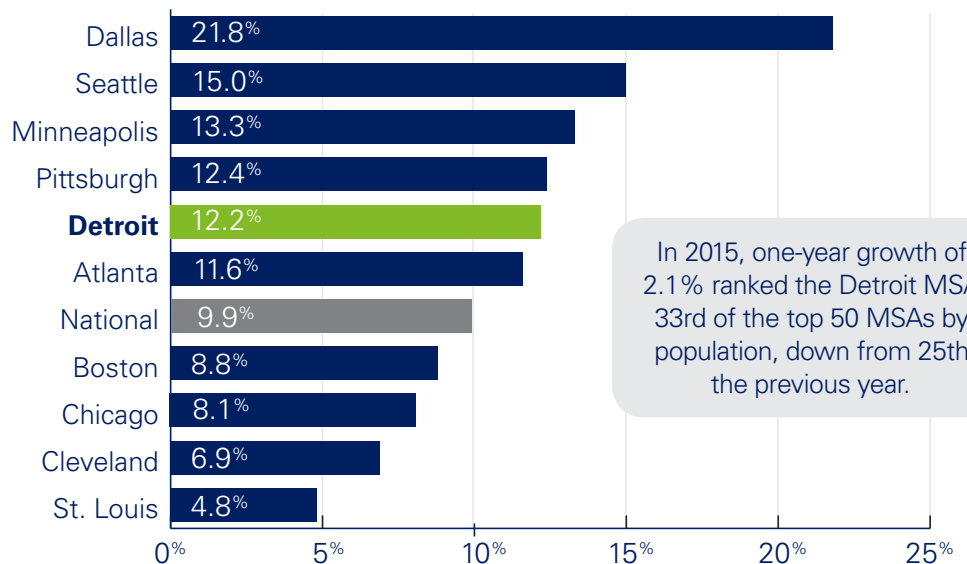
### Real Gross Domestic Product

The Detroit region's GDP growth outpaced the national average by 2.3 percentage points.

Among the top 50 MSAs by population, the Detroit MSA has the 19th highest growth rate in real GDP from 2010 to 2015, at 12.2%.

Detroit now ranks fifth among peer regions in GDP growth since 2010.

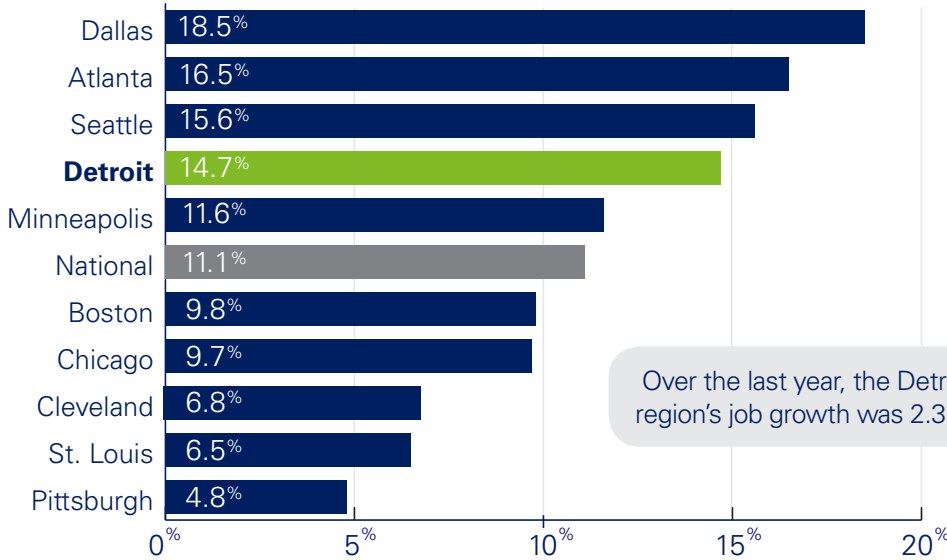
Real Gross Domestic Product (GDP) Growth, 2010-2015



In 2015, one-year growth of 2.1% ranked the Detroit MSA 33rd of the top 50 MSAs by population, down from 25th the previous year.

Source: U.S. Bureau of Economic Analysis

Private Sector Job Growth, 2010-2015



Over the last year, the Detroit region's job growth was 2.3%.

Source: U.S. Bureau of Labor Statistics

Job Growth

The Detroit MSA gained more than 225,000 private sector jobs since 2010, surpassing Boston, Minneapolis and Seattle in the number of jobs gained.

The region has outpaced the national growth rate by 3.6 percentage points.

Venture Capital and Innovation

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.

According to the Michigan Venture Capital Association, there are 36 venture capital firms in Michigan, with \$2.2 billion in capital under management, an increase of 47% in the last five years. Of the 141 venture-backed companies in Michigan, 74 companies received more than \$282 million from Michigan venture capital firms in 2015 alone. This is a 48% increase in the past five years (and a 174% increase in the past 10 years).

The life science/health care and information technology sectors continued to draw the most capital deployment in Michigan in 2015. Fifty-three percent of the companies that received venture capital funding in Michigan in 2015 were life science/health care companies, while 21% were in information technology.

Michigan ranks first in research spending-to-venture capital investment ratio in the nation.



To sustain Southeast Michigan as one of the fastest growing regions in the United States our Business Forward goal is to increase both regional jobs and commercial rental rates.

Regional Jobs

Goal: 1.5% above the national average  
Current: Detroit, 2.4%; National, 1.7%

Commercial Rental Rates

Goal: Industrial, \$5.50/square foot;  
Office, \$24/square foot  
Current: Industrial, \$5.25/square foot;  
Office, \$21.27/square foot





## 2016 Kauffman Index

Detroit ranked 30th 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 sixth among its peers in the category of startup density.

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

## Startup Activity by Metropolitan Area

2016 Rank	Region	2015 Rank	2016 Startup Density
12	Dallas	15	93.7
15	Atlanta	14	92.3
22	Boston	23	68.5
26	Seattle	19	86.1
29	Chicago	22	78.0
30	Detroit	35	74.8
36	St. Louis	38	86.1
37	Cleveland	36	55.1
38	Minneapolis	37	70.2
40	Pittsburgh	40	52.7

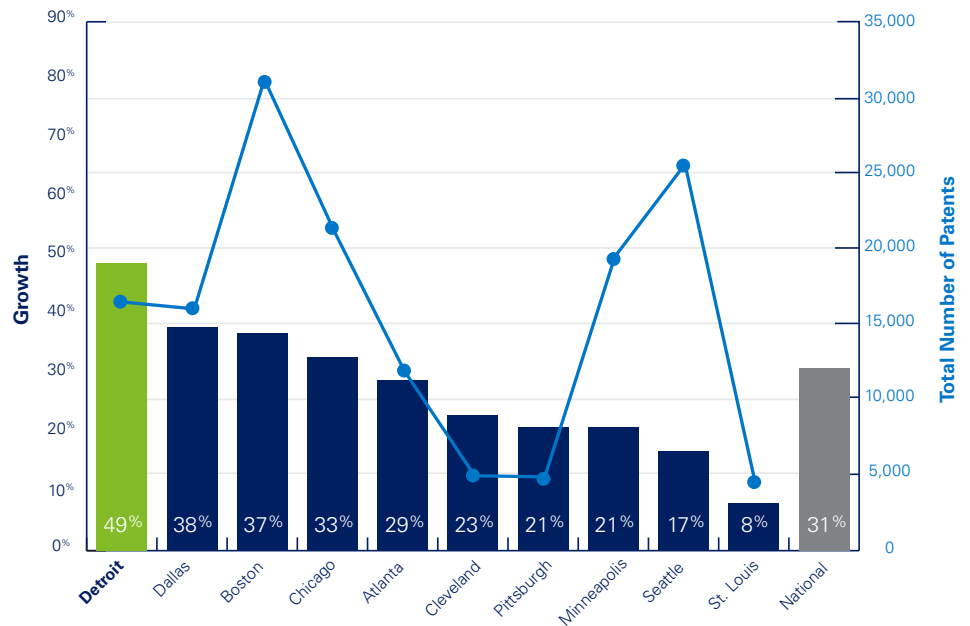
Source: Ewing Marion Kauffman Foundation

## Utility Patents

The Detroit MSA accounted for more than 3,300 utility patents in 2015, the latest data available. This is the most ever recorded for the region in a single year.

Detroit experienced an 8% growth in patents granted from 2014 to 2015, while all peer regions remained at the same level or decreased. In addition, the national rate decreased year over year.

## Utility Patents Originated, 2010-2015



Source: USPTO

The Detroit region ranks in the top 10 of total number of patents granted over the last 15 years.

## Business

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.

The region's largest private sector employers include Penske Corp. and Rock Ventures, which together have more than \$35 billion in revenue.

Eleven of the 18 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.

### Largest Private Companies

Company	2015 Revenue (billions)	Full-Time Employees in Detroit Area (January 2016)
Penske Corp.	\$29.2	N/A
Rock Ventures	\$6.1	14,237
International Automotive Components (IAC)	\$5.9	909
Guardian Industries Corp.	\$5.6	N/A
TI Automotive Ltd.	\$3.4	430
Meridian Health Plan	\$3.4	1,305
Ilitch Companies	\$3.3	7,437
Plastipak Holdings Inc.	\$2.9	610
Inteva Products LLC	\$2.6	330
Moroun Family Holdings	\$2.3	N/A

Source: Crain's Detroit Business

### 2016 Fortune 500 Companies

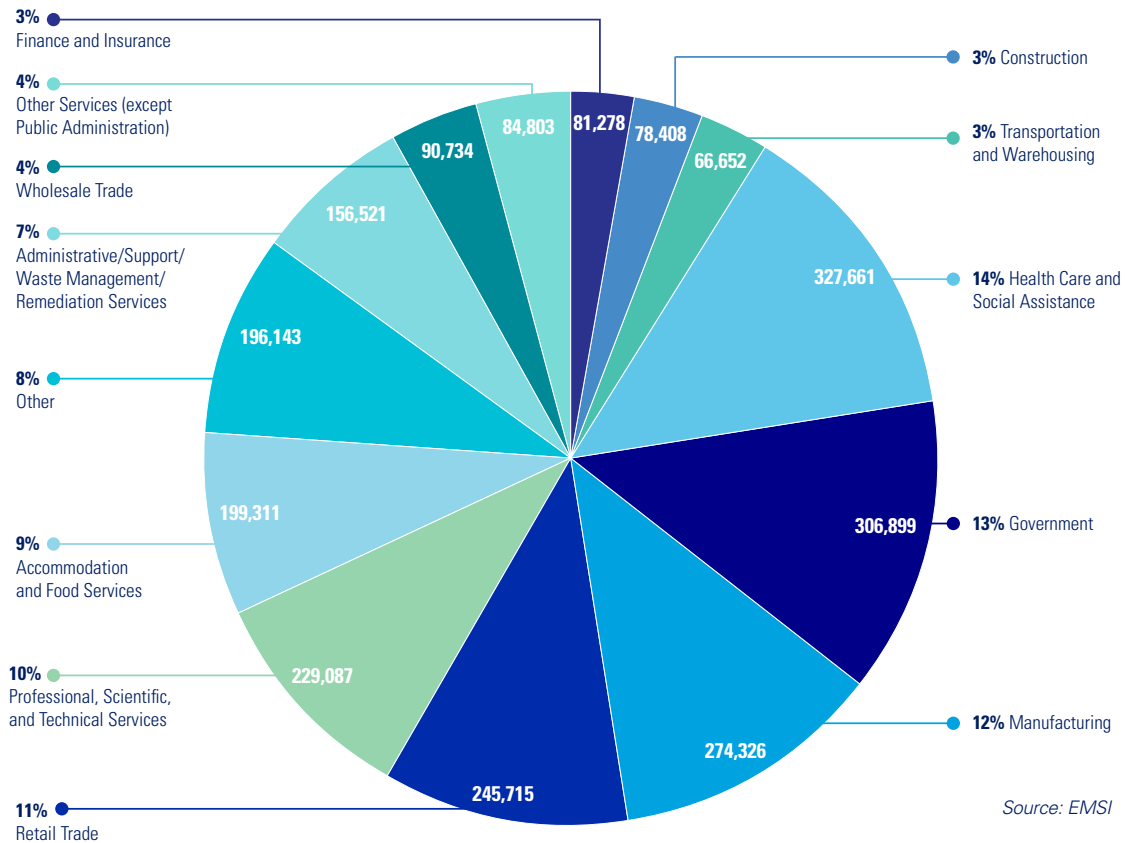
Rank	Title	2015 Revenue (millions)
8	General Motors Co.	\$152,356
9	Ford Motor Co.	\$149,558
143	Penske Automotive Group	\$19,361
154	Lear	\$18,211
274	DTE Energy	\$10,337
298	Ally Financial	\$9,539
310	Autoliv	\$9,170
339	BorgWarner	\$8,023
345	Masco	\$7,904
467	Kelly Services	\$5,518
470	Visteon	\$5,444

Source: Fortune magazine



## Employment by Industry

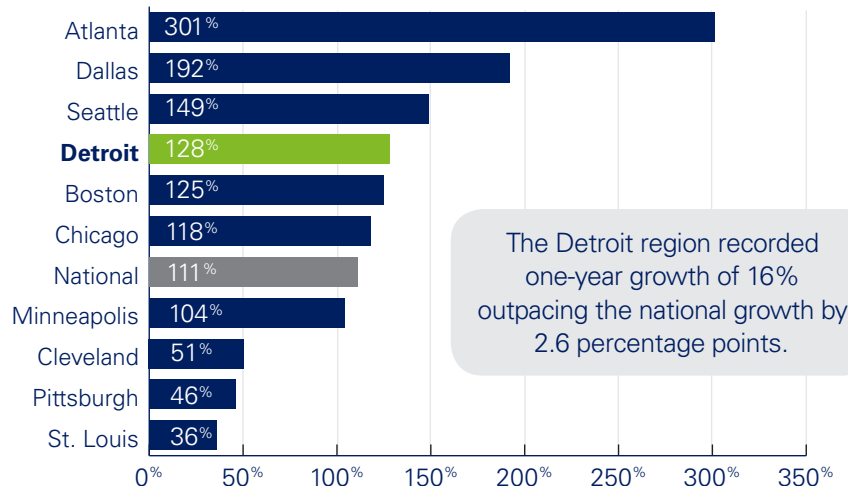
Health care and social assistance is the largest industry, accounting for 14% of the region's employment. The top three industries, excluding the government sector – health care and social assistance, manufacturing and retail trade – employ nearly 850,000 people.



## Residential Construction Permits

The Detroit region's residential construction permits growth has outpaced the national growth rate by 17 percentage points since 2010, ranking the region fourth among its peers. From 2010 to 2015 the region recorded just over 31,000 residential construction permits. More than 7,300 permits were granted in 2015 alone.

### Residential Construction Permits Growth, 2010-2015



## Office and Industrial Real Estate

Office vacancy rates in the Detroit region continue to decline at a faster rate than the national average for a third straight year, but remain 1.9 percentage points above the national average. When compared to peer regions, Detroit has the third highest office vacancy rates, trailing only Chicago (13.3%) and Dallas (14.3%).

For the third quarter of 2016, the Detroit office market posted a vacancy rate of 12.5%, down by 1.8 percentage points from the third quarter of 2015 and down from a high of 18% in 2010.

In the same timeframe, Detroit's industrial vacancy rate continued to decline and is well below the national vacancy rate. Compared to peer regions, Detroit has the second lowest industrial vacancy rate behind only Seattle (3.5%). The industrial market has continued to improve with vacancy rates declining from 4.7% in 2015 to 4% through the third quarter of 2016. That is down from a high of 13.1% in 2010.

More than 613,000 square feet of office space, along with 16 buildings totaling more than 1 million square feet of industrial space have been delivered to the market, as reported in the first three quarters of 2016. An additional 1 million square feet of office and 2.5 million square feet of industrial space were under construction at the end of the third quarter of 2016.

Office and Industrial Vacancy Rates, Detroit Region vs. National, 2008-2016

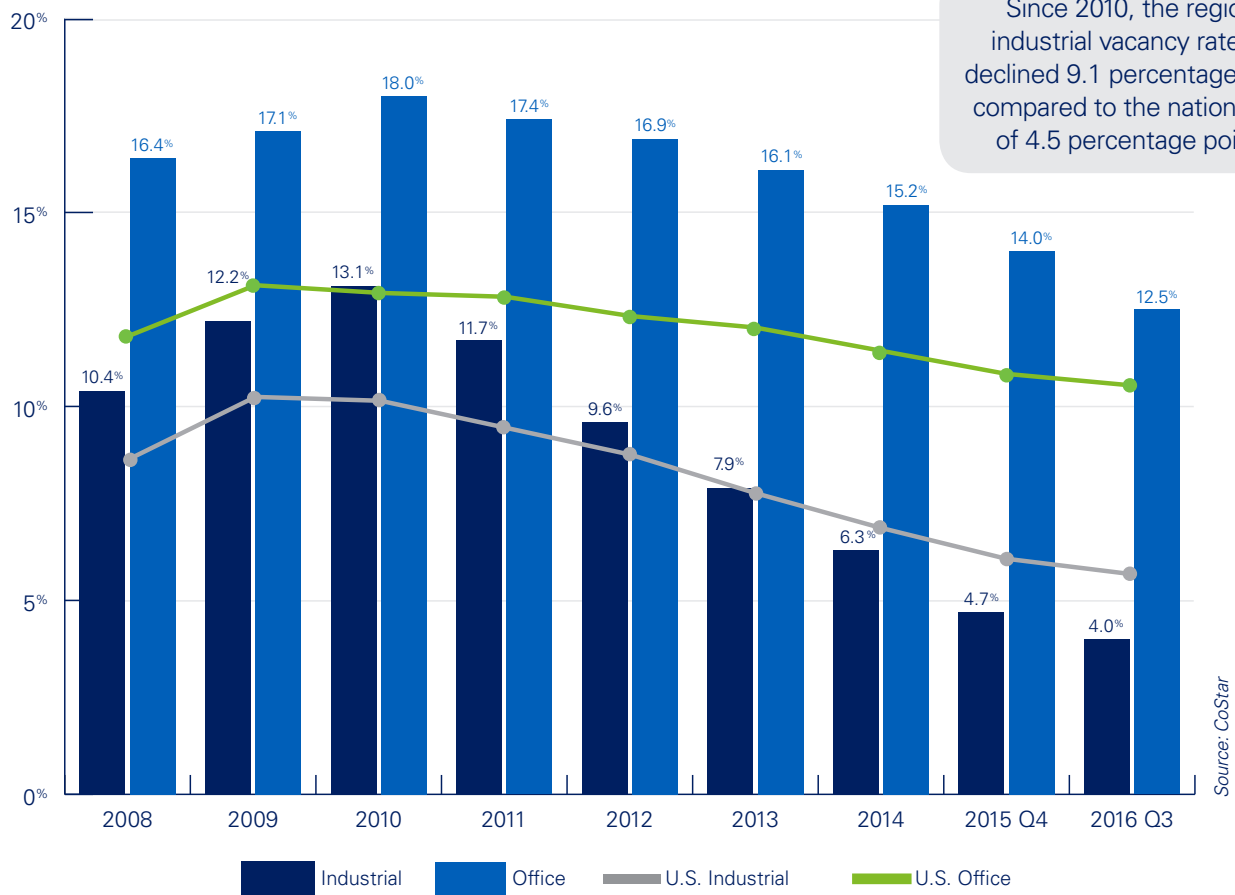




Photo: Oakland University

## Education

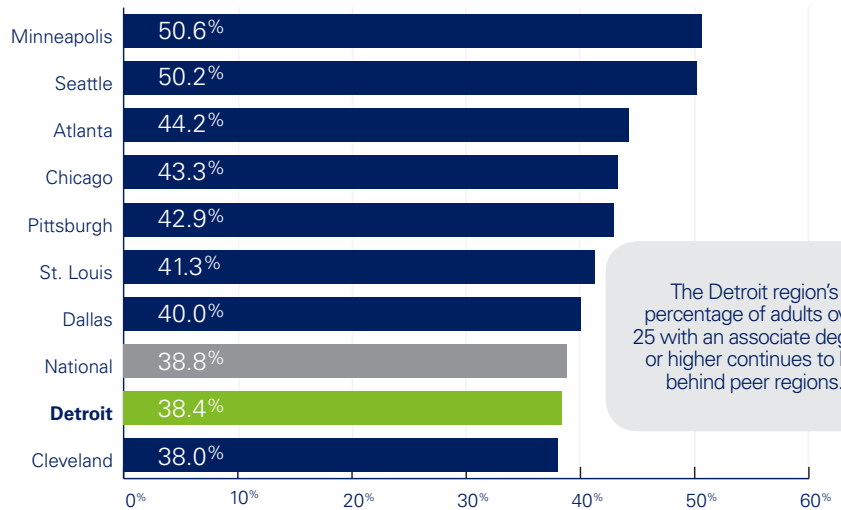
### Educational Attainment, 2015

Percentage of Population (25 Years and Over) with Associate Degree or Higher

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. The region is on par with the national average for population with an associate degree or higher.

The state of Michigan is ranked ninth for the total number of degrees conferred. In 2014, Michigan's education institutions awarded nearly 119,000 degrees.

More than 38% of the Detroit region's population has earned an associate degree or higher, however the region ranks ninth among peer regions and sits just below the national average.



The Detroit region's percentage of adults over 25 with an associate degree or higher continues to lag behind peer regions.

Source: U.S. Bureau of the Census

**Wayne State University ranked 69th among the top 100 medical schools** for research in U.S. News and World Report's Best Medical Schools.

**Michigan State University ranked No. 1 in undergraduate supply chain management/logistics** in U.S. News and World Report's Best Colleges Rankings.

**The University of Michigan ranks as the 27th best university nationally** and fourth best public university in the nation. The Ross Business School was ranked the 12th best business school in the nation.



## Talent

In 2015 the Detroit region's labor force exceeded 2.4 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.

More than 88,000 jobs in skilled trades have been created in the region since 2010, with machine operators and computer control programmers and operators among the occupations leading that growth.

### Top 10 Fastest Growing Occupations, Detroit Region

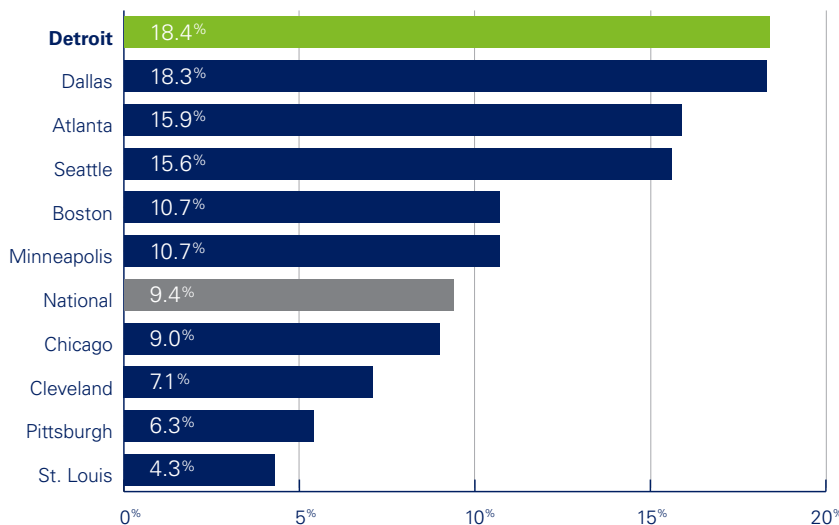
Occupations	2010 Jobs	2015 Jobs	2010-2015 Change	2010-2015 % Change	2015 Location Quotient
Architecture and Engineering	61,346	86,636	25,290	41%	2.21
Production	167,728	205,241	37,513	22%	1.44
Construction and Extraction	50,385	61,000	10,615	21%	0.69
Computer and Mathematical	58,499	70,287	11,788	20%	1.08
Transportation and Material Moving	114,957	133,834	18,877	16%	0.88
Installation, Maintenance and Repair	73,745	84,814	11,070	15%	0.97
Management	101,236	115,467	14,232	14%	1.02
Building and Grounds Cleaning and Maintenance	59,217	67,004	7,788	13%	0.89
Business and Financial Operations	99,441	111,231	11,790	12%	0.98
Life, Physical and Social Science	16,564	18,493	1,929	12%	1.01

Source: EMSI

The fastest growing occupations over the past five years in the Detroit region were architecture and engineering occupations with 41% growth. Production occupations showed the largest net gain in jobs with an increase of more than 37,000 since 2010.

Construction occupations have continued to move up in ranking for the region's growth. Projecting to 2020, the top occupations for job growth within the Detroit region include life, physical and social science occupations and health care support occupations, with health care support jobs expected to grow by more than 8,000 jobs.

### STEM Occupations Job Growth, 2010-2015



Source: EMSI

## STEM Growth

Detroit continues to lead its peers in STEM occupations job growth at more than 18% since 2010. Occupations that have experienced the largest growth include engineers, drafters and engineering technicians.

Nearly 44,000 jobs in STEM occupations were added to the Detroit economy between 2010 and 2015.

As of 2015, nearly 300,000 workers in the Detroit region are employed in STEM occupations.

Forward  
DETROIT

Talent

To sustain Southeast Michigan as one of the fastest growing regions in the United States our Talent Forward goal is to increase both third-grade reading scores and adults with post-secondary degrees.

**Third-Grade Reading Scores**

**Goal: 58%**

Current: 44% (2015-2016)

**Adults with Post-Secondary Degrees**

**Goal: 41%**

Current: 38.4%



Photo: Delta Air Lines

## Recent announcements for the region...

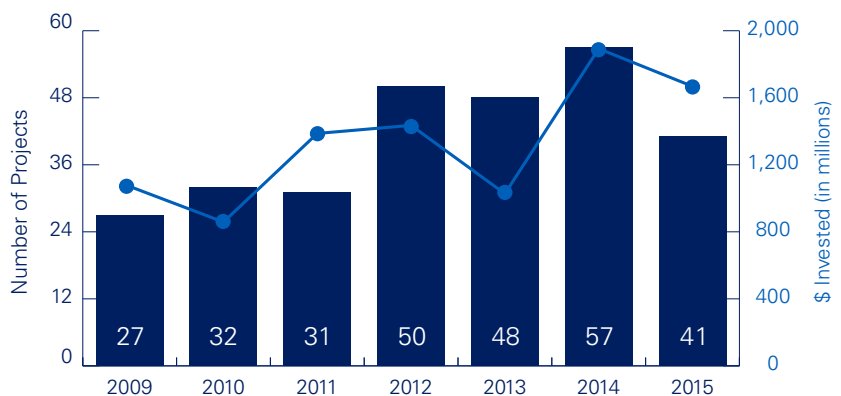
- China-based **Fuyao Glass** announced that it will invest **\$66 million** in a 500,000 square foot building, creating 533 new jobs and retaining 400.
- Luxembourg-based **ArcelorMittal** announced that it will invest **\$83 million** in a new manufacturing facility that will employ 120 people.
- Canada-based **Mitchell Plastics** announced it will invest **\$20.5 million** to build a new manufacturing facility, creating 122 new jobs.
- Japan-based **Daifuku North American Holding Co.** announced it will invest **\$15 million** in a new headquarters location.

## Foreign Direct Investment, Michigan

Foreign-held companies continue to invest in a big way in Michigan facilities. The region is home to nearly 1,300 foreign firms from 38 countries. Foreign firms made investments totaling \$1.7 billion in 2015, down slightly from 2014's investment of \$1.9 billion. The number of projects was also down over the past year. In 2015, 41 projects created more than 6,100 jobs in the state.

Since 2009, 268 foreign-held companies have invested more than \$9.3 billion in Michigan operations and created more than 38,700 jobs. The top sector for 2015 was automotive components, which accounted for 12 of the 41 projects.

### FDI Trends, Michigan



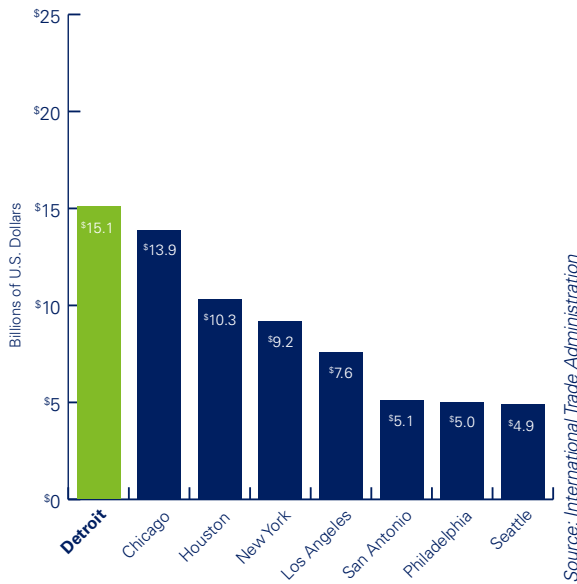
Source: Financial Times FDI Markets.com

## Export Data

In 2015, the Detroit region exported more than \$44 billion in goods, down 11.8% from 2014. Motor vehicle manufacturing exports decreased 22% from 2014 to 2015. The Detroit region represents 68% of Michigan's total merchandise exports.

Detroit's top export markets are Canada and Mexico, with \$32.3 billion in exports to those markets originating in the Detroit region. Despite overall decreases in exports, the Detroit region regained its position as the No. 1 exporter to Canada in 2015.

Top MSA Exporters to Canada, 2015



Top MSA Exporters to Mexico, 2015



In 2015, the Detroit MSA became the sixth largest export market in the United States, surpassed by Chicago.

## Airport Rankings

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 Air Lines' second largest hub, with 455 peak-day departures, and 127 destinations served, which includes 21 international destinations.

Nearly 33.5 million passengers utilized Detroit Metropolitan Airport in 2015, up 2.8% from 2014.

Cargo handled by Detroit Metropolitan Airport in 2015 totaled nearly 200,000 metric tons, down 4.2% from the previous year.

The 2015 North America Airport Satisfaction Study, released by J.D. Power, ranked Detroit Metropolitan Airport ninth best in the nation in terms of overall traveler satisfaction and No. 1 in 2010.

Forward  
DETROIT

Global  
Connectivity

To sustain Southeast Michigan as one of the fastest growing regions in the United States our Global Connectivity Forward goal is to increase both foreign direct investment and the number of international firms.

### Foreign Direct Investment

Goal: \$12 billion  
Current: \$5.6 billion

### International Firms

Goal: 125 new foreign facilities  
Current: 98 foreign facilities



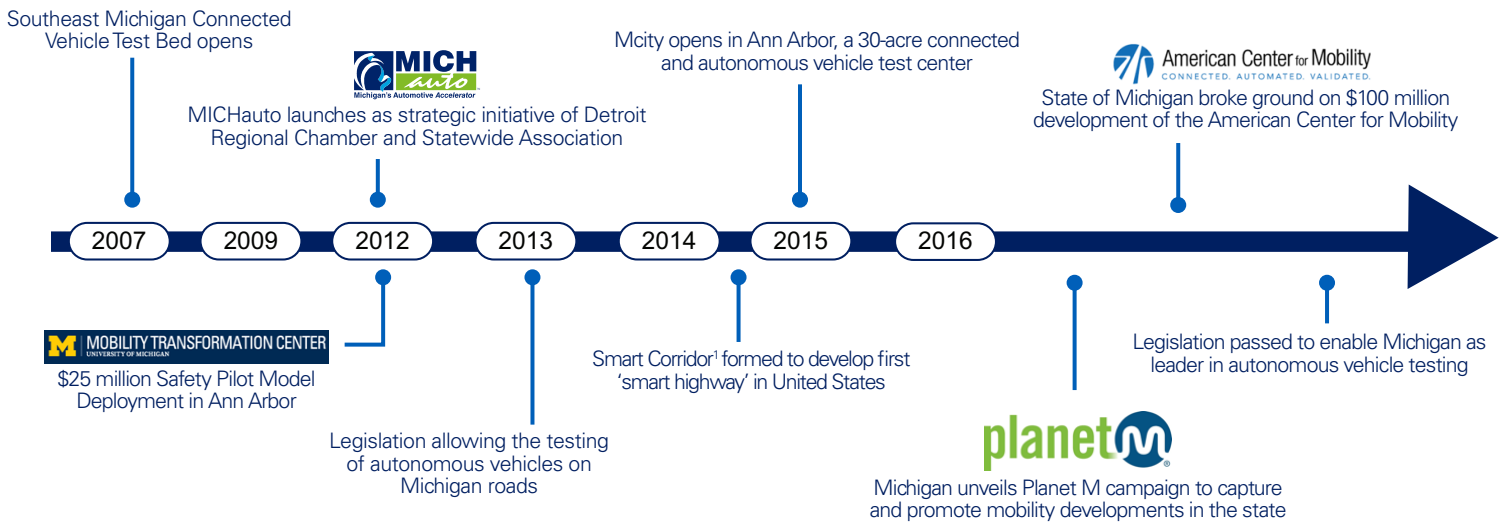


# Next-Generation Mobility Forward



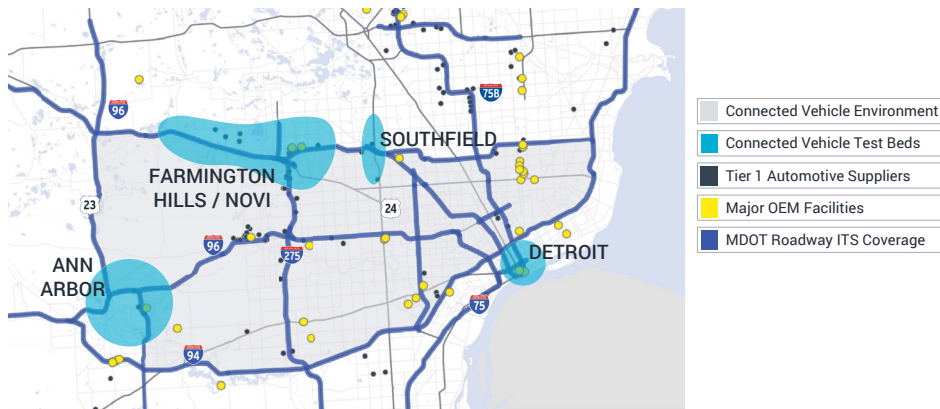
## Michigan's Mobility Assets

The state of Michigan, Michigan Department of Transportation and our public institutions and universities have a longstanding record of supporting mobility and are making investments to ensure we have the right infrastructure, assets and legislation to remain a leader in connected and automated vehicle research and development.



1. Consortium of General Motors Co., Ford Motor Co., University of Michigan, Michigan Department of Transportation.

Source: Analysis by Detroit Regional Chamber

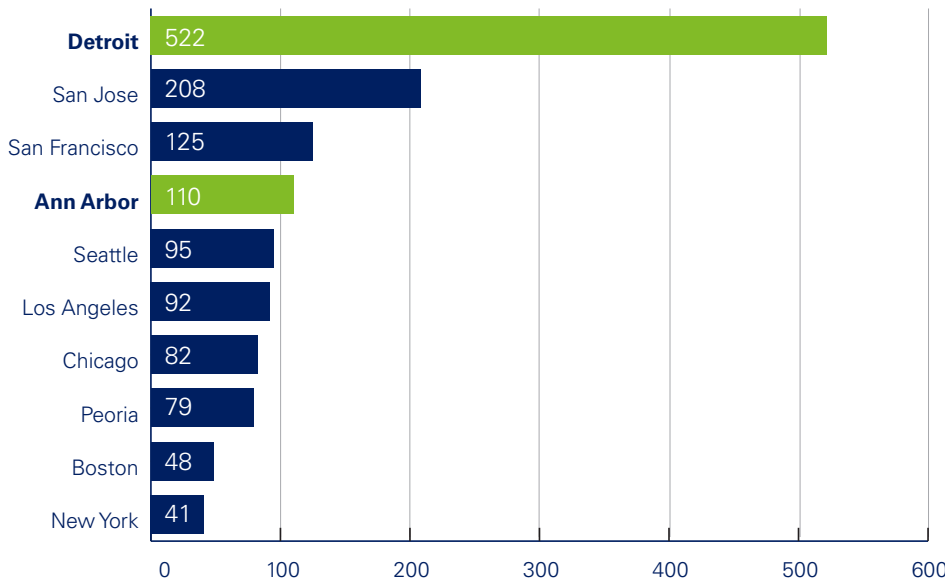


Source: Michigan Department of Transportation

## Connected Vehicle Assets

The race to develop the first fully automated and connected vehicle technology is driving the automotive industry to being one of the fastest evolving industries on the globe. The Detroit region is at the heart of this fast-changing evolution. In 2015, Michigan led the United States in connected vehicle projects (49) followed by California (35). In addition, Michigan is tied with Japan and Germany for number of projects underway for connected and automated vehicle research and testing.

## Vehicle Location, Navigation and Relative Location (Data Processing) Patents Granted, 2015



Source: U.S. Patent and Trademark Office

## Innovation

The Detroit region leads Silicon Valley in the number of patents granted for vehicle location, navigation and relative location data processing by more than three to one.

## Michigan's Commitment to Mobility

In 2016, Michigan introduced some of the most aggressive legislation to ensure the state remains the leader in connected and automated vehicle testing. Senate Bill 995 was signed by Gov. Rick Snyder in December 2016, making Michigan the first state in the nation to establish comprehensive regulations for the testing, use and eventual sale of automated vehicle technology.

Forward  
DETROIT

Next-Generation  
Mobility

To sustain Southeast Michigan as one of the fastest growing regions in the United States our Next-Generation Mobility Forward goal is to increase both mobility testing facilities and projects and mobility investments.

### Mobility Testing Facilities/Projects

Goal: **No. 1 in the world**

Current: Tied for No. 1 in the world with Japan and Germany

### Mobility Investment

Goal: **No. 1 in the nation**

Current: N/A



# Industry Spotlight: Automotive



Photo: Ford Motor Co. Media Center

## Automotive Footprint and Impact

Michigan remains the epicenter of the North American automotive industry and is well-positioned to drive the future.



## Vehicle Production and Sales

In 2015, Michigan workers manufactured nearly 2.4 million cars and trucks. This accounts for 50,000 more units than 2014. However, this remains slightly below 2013 when nearly 2.5 million cars and trucks rolled off Michigan assembly lines. The outlook for the next 12 to 18 months remains positive with vehicle production equaling 2015 or just slightly higher.

Motor Vehicle Production, Michigan 2007-2016



## CASE STUDY:

### American Center for Mobility The Future of Mobility

In November 2016, a special ceremony was held to break ground on the new American Center for Mobility (ACM). The Center, located on 335 acres at the existing Willow Run site in Ypsilanti Township, will be designed to test new and emerging technologies.

Once completed, the ACM will be a national-scale advanced automotive testing and product development center that can accommodate the broad needs of industry and government, test various weather conditions and provide room to grow and adapt as technology evolves. The Center will focus on testing, verification and certification of connected and automated vehicles.

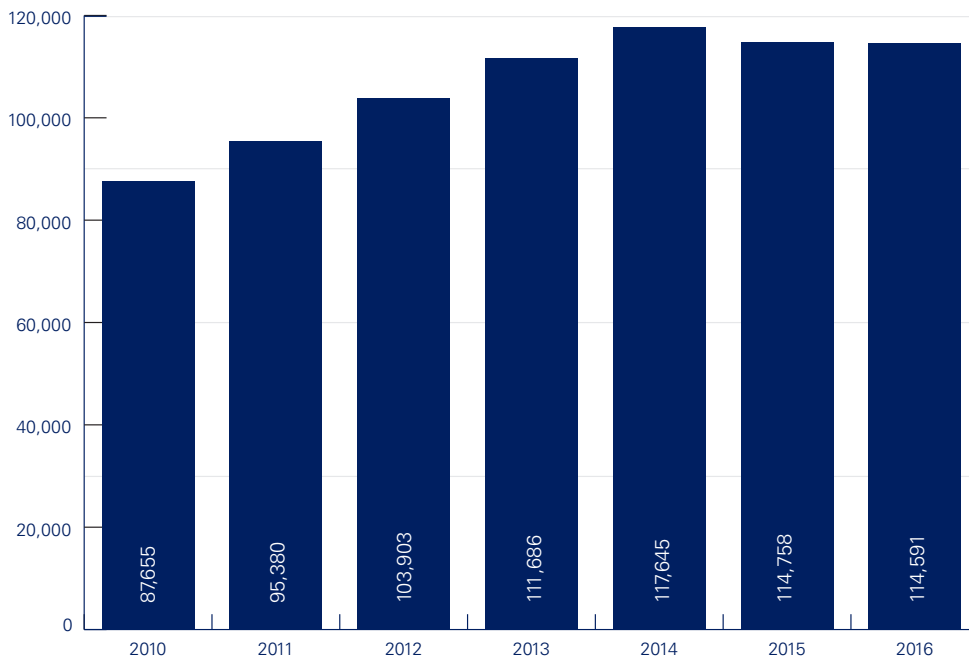
The ACM is a joint initiative among the state of Michigan founded in partnership with the Michigan Department of Transportation, the Michigan Economic Development Corporation, the University of Michigan, Business Leaders for Michigan and Ann Arbor SPARK.

Construction is scheduled to begin this spring with the Center being open for use by December 2017.



Photo: American Center for Mobility

### Motor Vehicle Manufacturing Employment, 2010-2016



Source: EMSI

### Talent

Nearly 115,000 people work in motor vehicle manufacturing. Employment in this sector peaked in 2014 and is beginning to level off. Since 2010, the region's employment has grown by 31% or 27,000 jobs.

The average wage for the automotive industry across the Detroit region is \$81,000 annually. Since 2010, mechanical and industrial engineers have experienced the largest growth within the region, growing by nearly 18,000 jobs. Michigan employs more mechanical and industrial engineers and industrial engineering technicians than any other state.



# Industry Spotlight: Health Care



Photo: St. John Macomb-Oakland Hospital

## Employment in Health Care

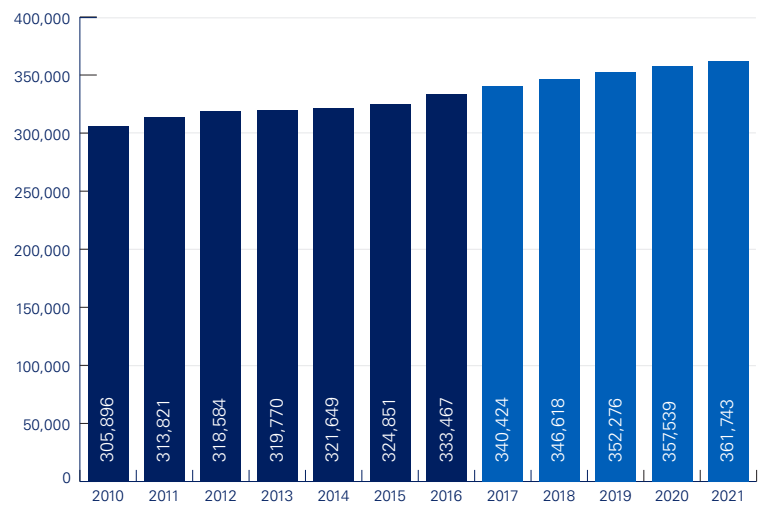
Health care is the Detroit region's largest industry employing more than 333,000 workers, up from 302,000 workers in 2009. In 2016, U.S. News and World report recognized 15 regional Detroit hospitals in their annual "Best Hospitals" report.

Over the past year, employment in the health care industry has grown by nearly 2.7% and more than 6.3% in the past five years. In addition, the health care services industry is forecasted to grow by more than 51,000 jobs, representing a 15.4% growth rate.

Registered nurses, nursing assistants and home health aides were the top three occupations in 2016 and the average wage for this industry was \$29.43 hourly or \$62,214 annually. These three occupations are expected to add 17,700 workers over the next five years.

To support the health care industry needs, the region boasts a vibrant talent pipeline, graduating nearly 27,000 students with some type of health care-related certificate or degree.

### Health Care Job Growth, 2010-2021



Source: EMSI

## CASE STUDY:

### Wayne State University's Integrative Biosciences Center (IBio)

## Urban Research. Global Impact.

The opening of Wayne State's \$90 million Integrative Biosciences Center (IBio) reflects Wayne State's efforts to tackle the complexities of health inequality through multidisciplinary research teams. IBio will be home to faculty with expertise in environmental sciences, bio and systems engineering, heart disease, diabetes, obesity, asthma and biobehavioral health.

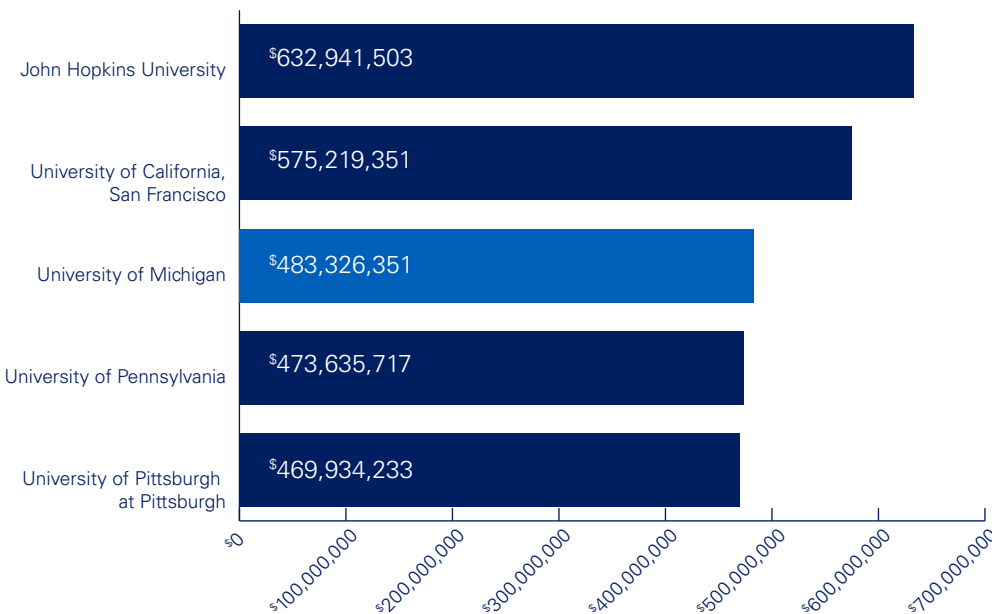
The building, strategically positioned near TechTown, Wayne State's business incubator, will move discoveries and technologies from the laboratory to the community, and will eventually house more than 400 individuals within 200,000 square feet of lab and clinical space designed to foster a collaborative and flexible team science approach to research.

From prenatal to end-of-life care, Wayne State is a national leader in health disparities research and advocacy, with a mission to achieve health equity across diverse populations. Through interdisciplinary research, programmatic pathways and collaborative partnerships, Wayne State faculty and students are making a measurable impact in communities at home and around the world.



Photo: Wayne State University

### National Institutes of Health Funding, YTD Oct. 15, 2016



Source: National Institutes of Health

## Health Funding

As of late 2016, four of the Detroit region's education institutions have been awarded more than \$546 million in health care research funding from the National Institutes of Health.

The University Research Corridor (URC) institutions – the University of Michigan, Michigan State University and Wayne State University – were awarded a combined \$593 million in funding for the advancement of health care.

The University of Michigan ranked third in the nation for funding awards, up from sixth in 2014, as of October 2016.

Michigan is a leader in health care innovation. With nearly 2,000 open/active clinical trials, Michigan ranks No. 1, leading California, Texas and New York.



# Industry Spotlight: Aerospace and Defense



Photo: General Dynamics Land Systems

Since 2010, nearly \$29 billion in defense and homeland security contract funding has been awarded to Michigan-based companies, with \$2.7 billion in funding occurring in fiscal year 2016, according to the Federal Procurement Data System. This funding comes to our region, not only because of our automotive technical expertise that naturally fits with the U.S. military demands with respect to its ground vehicles, but the region also is home to the Michigan Defense Corridor.

Anchoring the Michigan Defense Corridor is the headquarters for the U.S. Army's TACOM Life Cycle Management Command (LCMC), which manages every aspect of developing and maintaining innovative equipment for the nation's troops, both home and abroad. It is one of the U.S. Army's largest weapon systems research, development and sustainment organizations, providing cutting-edge ground combat, automotive, marine and armaments technologies. Additional assets located within the region include military facilities such as the Tank Automotive Research, Development and Engineering Center (TARDEC) and Selfridge Air National Guard Base.

Aerospace and defense industry companies also look to the Detroit region for innovation. In October 2016, General Dynamics Land Systems unveiled a new light-weight tank required by the U.S. Army. In 2016, PwC recognized these assets and ranked Michigan as a top 10 most attractive state for aerospace and defense manufacturing.

## Select Major Defense Companies with Facilities in Michigan

Five of the top 10 defense companies in the world have facilities located in Michigan. Four of them are located within Southeast Michigan.

Company	Location
BAE Systems	Sterling Heights
Raytheon	Troy
General Dynamics Land Systems	Sterling Heights
Northrop Grumman Space	Troy
L3 Communications	Muskegon

Source: Defense News



## CASE STUDY:

### General Dynamics Land Systems' Maneuver Collaboration Center Harnessing Innovation to Support Those Who Protect Our Freedom

General Dynamics Land Systems leverages its expertise in innovation to produce the tracked and wheeled combat vehicles used by the United States and its allies around the world.

Headquartered in Sterling Heights, Land Systems employs a unique tool to enhance collaboration and innovation with current and potential industry partners, whether across the globe or here in Michigan.

The Maneuver Collaboration Center (mc2) leverages the company's strong heritage in system engineering and integration, leading to new and advanced solutions for military customers.

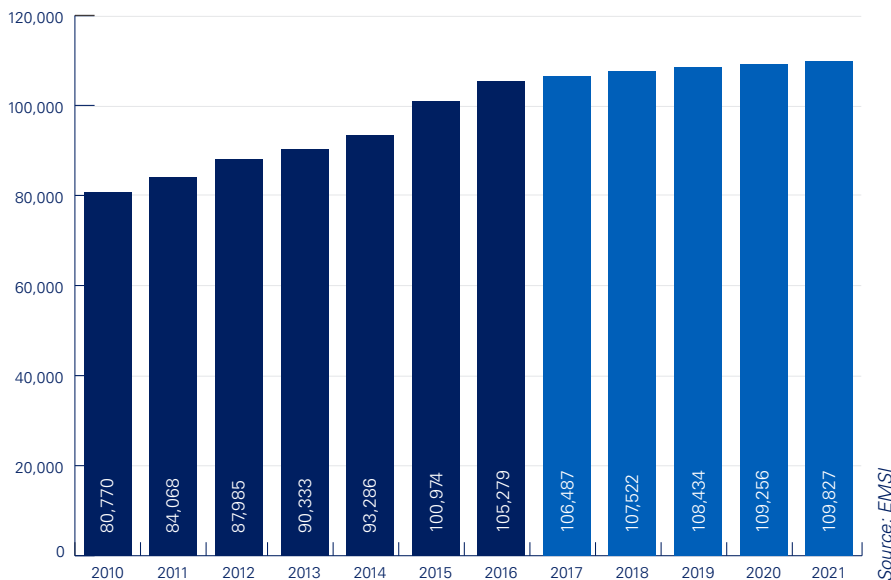
The state-of-the-art mc2 facility offers a complete life cycle laboratory where promising ideas can be conceived, examined and implemented.

Visitors to the mc2 website can review current opportunities and needs, categorized by Technology Thrust Areas. The system is designed so members can submit an innovative solution. Every idea is evaluated and a collaboration process is launched to further explore the promising new ideas that are submitted. High-potential solutions are further investigated, prototyped and inserted into new and existing military vehicle platforms.



Photo: General Dynamics Land Systems

Aerospace and Defense Job Growth, 2010-2021



## Employment

Since 2010, the Detroit region has added more than 24,500 aerospace and defense industry jobs. More than 7,600 of those jobs were added in 2016. This represents a 30% job growth within the industry and is forecasted to grow another 5,000 jobs over the next five years.

The University of Michigan has two nationally ranked aerospace and engineering programs, ranked first in its public-school aerospace and engineering graduate program and third in its undergraduate program.

# Industry Spotlight: Engineering and Design

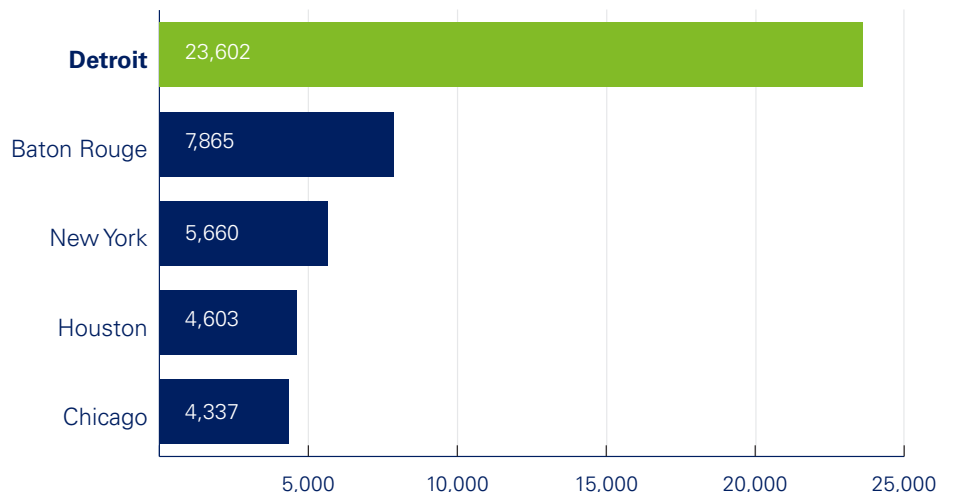


Engineering and design cross many industries, from automotive and mobility, to construction and medical device manufacturing. Michigan, in particular the Detroit region, is an engineering services and industrial design powerhouse. In the region, more than 70,000 people work in engineering and industrial design services firms, accounting for nearly 76% of the workforce in Michigan. Jobs have grown by 46.2% between 2010 and late 2016 and are on pace to experience another 23.3% growth over the next decade.

## Engineering and Design Industries

Since 2010, the Detroit region added more than 23,600 jobs, more than three times the number of jobs created by any other metropolitan area. Furthermore, this accounts for nearly a quarter of the total number of engineering and design jobs created nationwide.

Top Five Metros for Engineering Services and Industrial Design Job Growth by Industry, 2010-2015



Source: EMSI



## CASE STUDY:

Center for Innovative Materials Research (CIMR) at Lawrence Technological University

### Finding New Applications for Advanced Materials

Completed in 2008, the Center for Innovative Materials Research (CIMR) at Lawrence Technological University was initially funded by a five-year, \$11 million agreement with the U.S. Army. The 7,200 square-foot research facility, with a 30-foot clearance height, has a 25,000-pound crane to accommodate testing of structural components up to 100 feet long under various types of loads up to 1 million pounds.

A large fire chamber with dynamic and static loading capabilities can test structural components at high temperatures. Nearby an environmental chamber can simulate harsh weather such as high winds, freezing rain, salt spray, sandstorms and extreme temperatures. CIMR also has an ElectroPuls 10,000 linear test instrument and a MTS Model 311 Four-Post Load Frame.

CIMR is best known for developing new applications for carbon fiber in bridge construction. Many other advanced materials have also been developed and tested for applications in the military as well as in business and industry.

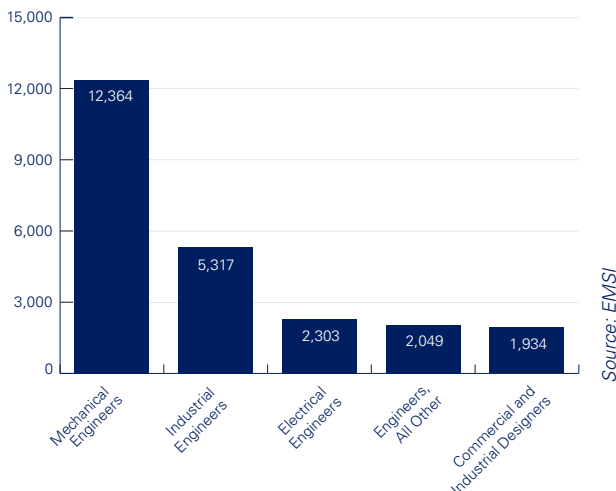


Photo: Lawrence Technological University

## Engineering and Design Occupations

The Detroit region employs more mechanical and industrial engineers than any other state. These engineers work in a variety of industries. Since 2010, the region has added more than 30,600 engineering and design occupations with 57% of those occupations added occurring in the mechanical and industrial engineering occupations.

### Fastest-Growing Engineering and Design Occupations, 2010-2016



## Talent Pipeline

To keep up with the demand for engineering talent, the Detroit region's higher education institutions graduate approximately 5,000 engineers each year.

In addition, Michigan ranks seventh among all states for engineering and engineering-related technology degrees, graduating more than 8,500 students in 2015.

Michigan has 15 universities and colleges with nationally ranked undergraduate engineering programs, four of which also have nationally ranked graduate programs. In 2015, the region's universities conferred more than 2,100 mechanical, electrical and industrial engineering degrees.

# Industry Spotlight: Food and Agriculture



Photo: Michigan Municipal League Flickr

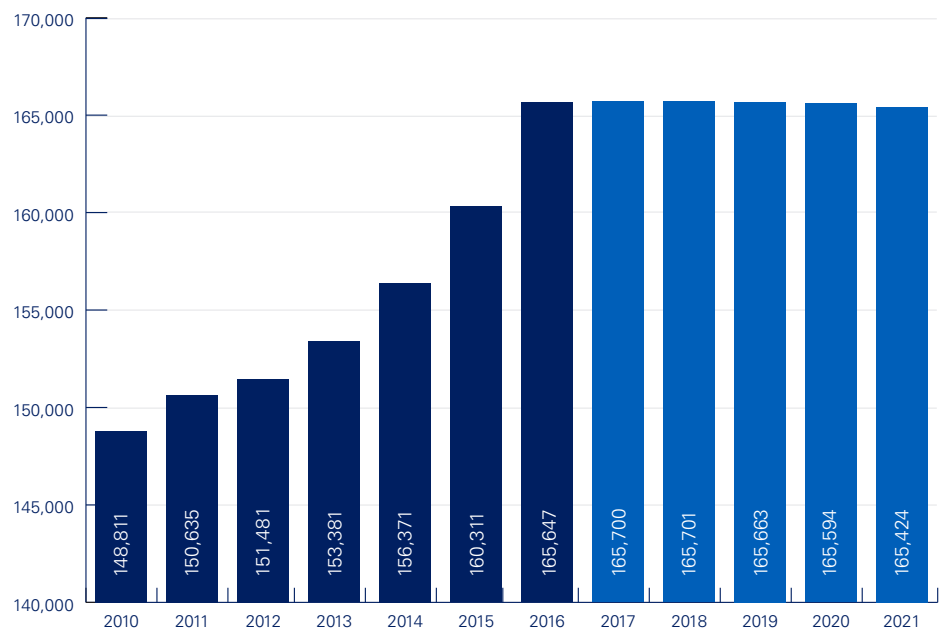
The popularity of the farm-to-table concept and the craft beverage industry have been drivers of enormous growth for the Detroit region. To this point, breweries and distilleries saw employment growth of 888% and 426% respectively, between 2010 and 2016 and are forecasted to continue to grow by 21% or better over the next five years. The Michigan Brewers' Guild reports there are now 72 breweries located within the Detroit region.

## By Industry

### Food and Agriculture Job Growth, 2010-2021

The Detroit region has seen explosive growth in the food and agriculture industry since the end of the recession in 2009. In 2016, nearly 165,000 people work within the food industry in the region. This represents a growth of nearly 17,000 jobs since 2010, or 11.6%. The region added more than 5,000 jobs in 2016 alone.

After such explosive growth, it appears that employment in the food industry is expected to level off over the next five years. Wages in the food industry range from \$12,400 annually in the tortilla manufacturing sector to \$130,600 annually in the plastic bottle manufacturing sector.





## CASE STUDY:

### Expanding Eastern Market Food Innovation Zone

Eastern Market is home to more than 125 companies that manufacture, process, or distribute food products.

In early 2016, Eastern Market Corp., the nonprofit that shepherds the Eastern Market District, unveiled a 10-year development strategy. Expanding Eastern Market and providing sites for growing food businesses in proximity to the existing market district is key to preserving and enhancing Eastern Market's authenticity as a working food district.

The Detroit Food Innovation Zone (FIZ) is planned for the areas east and north of the current market district that have high percentages of vacant land. The FIZ will provide space for expanding food businesses, encourage innovative food-making and distribution technologies, and incorporate storm water management best practices to buffer food businesses from other uses.

In 2017, the city of Detroit will be leading the development of a strategic framework-plan to help implement the FIZ which should lead to specific business expansion projects breaking ground later in the year. Keeping the 1,500 food jobs already in the Eastern Market District and doubling that number by adding new food jobs is the goal.



Photo: Eastern Market

## By Occupation

Looking at the region's workforce by occupation, more than 222,000 people work in food-related occupations. By occupation, the region experienced 13.3% growth by adding 26,575 jobs since 2010. The top five fastest-growing occupations accounted for 70% of that job growth.

Occupation	2010-2016 % Change	Occupation	2010-2016 Change
Slaughters and Meat Packers	23.3%	Combined Food Prep and Serving Workers, including Fast Food	9,825
Meat, Poultry and Fish Cutters and Trimmers	22.2%	Waiters and Waitresses	5,407
Cooks, Restaurants	19.9%	Cooks, Restaurants	3,251
Combined Food Prep and Serving Workers, including Fast Food	18.5%	First-Line Supervisors of Food Prep and Serving Workers	2,011
Agriculture Equipment Operators	16.1%	Food Preparation Workers	1,266

Pickles are a big deal in Michigan. The state is the No. 1 producer of cucumber pickles in the nation. Michigan provides pickles for every fast-food chain sandwich east of the Mississippi.

## Brands

The Detroit region is home to some of the nation's largest food manufacturers such as Better Made Snack Food, Country Fresh, Garden Fresh Gourmet and Aunt Millie's, as well as soft drink bottlers, Pepsi Bottling Group, Dr. Pepper/Seven-Up Bottling and Faygo. In addition to these national brands, major food manufacturers such as Sysco Detroit, Jiffy Mixes, Wolverine Packaging Co., McClure's and Awrey's Bakeries all operate within the Detroit region.



# Regional Spotlights:



We're all business.



## City of Detroit - DEGC

The Mt. Elliott Employment District, roughly 3,200 acres, is the city of Detroit's largest hub of industrial activity, supporting more than 20,000 jobs associated with more than 140 companies. Businesses operating in the District today range from small service companies and logistics firms to large-scale manufacturers and distributors supporting major auto assembly plants. Within the District, the city of Detroit has assembled and begun to develop a roughly 200-acre area of land known as the I-94 Industrial Park, which is the current and future home to Tier I auto suppliers, logistics firms and other industrial end-users.



Photo: Macomb County

## Macomb County

Situated in the heart of Michigan's Defense Corridor, the Velocity Collaboration Center serves as a hub for business incubation and economic development. A designated Pure Michigan SmartZone, the Center is home to the Macomb-Oakland University INCubator, Michigan Defense Center and the Velocity Hub of the Michigan Cyber Range. The Center also includes the International Landing Zone to assist companies headquartered outside of the United States. Also in residence is the Michigan Automotive and Defense Cyber Assurance Team (MADCAT), formed by leaders in industry, economic development and academia. This grassroots organization is working to grow and support a cyber ecosystem where technology innovation and a talented workforce is supported and nurtured.



# tech248



Photo: PIXO Group

## Oakland County

Oakland County's Tech248 is a cluster of more than 2,000 IT/technology companies in Oakland County. Cisco Systems, Google, Intel, HP and Microsoft are just a few of the companies that make up Tech248. Three areas of concentration for this sector include: talent development, connectivity among the 2,000 IT firms, and branding the region as an innovative tech spot nationally. Companies in the IT/technology industry have easy access into the cluster by contacting the county directly or by attending one of its monthly Tech248 meetups.





I-69 INTERNATIONAL  
TRADE CORRIDOR

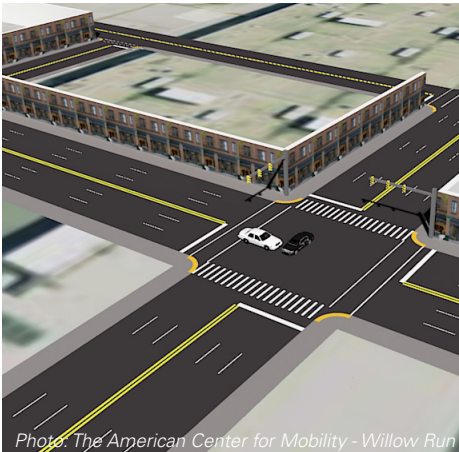


Photo: The American Center for Mobility - Willow Run



Photo: Michigan Municipal League Flickr



Photo: Monroe County Business Development Corp.

## Ann Arbor SPARK

A central focus of Ann Arbor SPARK's work has been the transformation of the former Willow Run site to the new American Center for Mobility (ACM). The Center offers the talent, technology and infrastructure required to attract and support transportation, mobility and innovation-based businesses from all over the world. The Ann Arbor region is home to some of the largest automotive companies in the world, including: Faurecia Interior Systems, Ford Motor Co., Hyundai, Mercedes-Benz, Subaru and the Toyota Technical Center. Recent projects include Link Logistics, Flex-N-Gate and ArcelorMittal.

## I-69 Thumb Region

The I-69 Thumb region is rich in assets and opportunities with a wide range of agricultural richness, manufacturing know-how and transportation resources. Agriculture is big business as the Thumb region leads the state in several major agriculture commodities. Based on its agriculture production, infrastructure, workforce and other strengths, this region has been identified as an ideal location for grain milling, commercial bakery, dairy processing, animal feed production, and other agriculture processing.

## Monroe County

The Port of Monroe, situated along the I-75 corridor and geographically positioned on Lake Erie, is close to all forms of intermodal transportation which include interstates, rails and airports. In 2016, the Port and its stakeholders handled coal, limestone, synthetic gypsum, liquid asphalt, wind tower section, crushed brick, as well as shipping containers destined for Europe. The Port is using a \$3.7 million grant from the state of Michigan to upgrade the riverfront and dock facility that will allow for the simultaneous loading and unloading of multiple vessels and allow for more cargo diversification.





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