

StateRegion

OF THE

2018-2019



Regional Champion:





The Detroit Regional Chamber is proud to bring the business community the fifth annual State of the Region, which benchmarks Southeast Michigan's economic health against our national peers.

The region's progress over the past year is prevalent throughout the report, having outpaced the national average in many key areas including real gross domestic product (GDP) and per capita income. And last year alone, per capita income rose by 4.3% in the region.

For the second year in a row, foreign direct investment (FDI) in the region was more than \$2 billion. With a robust and innovative automotive and technology ecosystem, Southeast Michigan continues to prove that its leading industries can evolve and thrive.

This report not only highlights where the region is performing well, it also showcases areas for continued improvement. Detroit's poverty rate, while declining over the past five years to 34%, still remains the highest among peer regions. Educational attainment is also an area the region continues to lag behind. Last year, however, the region saw the largest year-over-year gain for educational attainment since the recession, with an increase of 1.2 percentage points. This shows that progress is being made, but we cannot take our eye off the prize.

We need to ensure the region's citizens have access to education and jobs, and are healthy to compete in a 21st century economy. This is a top priority of the Chamber Foundation's economic development strategy, which is committed to making meaningful progress to address the region's challenges.

Detroit has recovered, and the region's future looks bright. Through regional collaboration and continued support from civic, business and government leadership, the city, region and state will continue to thrive.

Sandy K. Baruah
President and CEO
Detroit Regional Chamber



Detroit is rewriting its economic narrative. Nearly a decade after the Great Recession, our unemployment rate now trends closer to the national average, office vacancy rates are lower than the national average and median home values are up for a fifth straight year and have grown by 42 percent.

What makes us most excited, though, is the ingenuity and entrepreneurial nature of this great region. Michigan continues to lead our peer regions in five year patent growth at 28.7%, which is 12 percentage points higher than the national average. With over 5.4 million people, 10 Fortune 500 companies and best-in-class educational institutions, the region has the talent, resources and cutting-edge facilities to produce innovative products, services and systems.

Citizens Bank remains committed to Michigan's businesses and people. Our primary objective is to help clients grow revenues, better manage costs and mitigate risks, thereby creating shareholder value. We also want to ensure our communities are healthy, educated and employed. For these reasons, we partner with organizations like Gleaners Community Food Bank for a hunger-free summer, Great Lakes Women's Business Council for financial literacy programs and The Greening of Detroit for workforce development programs.

Our future has never looked brighter. Together, we will help our region continue its growth so that all of us will benefit from its long-term prosperity.

Rick Hampson
President, Michigan
Citizens Bank



TABLE OF CONTENTS

4 ECONOMIC DEVELOPMENT STRATEGY

14 EDUCATION AND TALENT

22 AUTOMOTIVE SPOTLIGHT

5 ECONOMIC INDICATORS

18 GLOBAL CONNECTIVITY

26 AEROSPACE AND DEFENSE SPOTLIGHT

10 COMMUNITY

20 NEXT-GENERATION MOBILITY

30 HEALTH CARE SPOTLIGHT

POPULATION OVERVIEW 2017

DEFINING THE REGION

The Detroit region is a united 11-county area that encompasses more than 300 municipalities and 7,062 square miles with rich geographic, human and business assets. Home to more than 300,000 businesses and numerous educational institutions, a workforce of 2.5 million, and 1,300 foreign firms from 38 countries, the region has talent, resources and cutting-edge facilities to drive innovation. Anchored by the city of Detroit and located on an international border supported by robust international logistics infrastructure, the region offers unrivaled opportunities to compete in the global economy.

The region has seen tremendous growth over the past five years, the counties that have experienced the largest growth are Washtenaw, Livingston, Oakland and Macomb.

	Population 2010	Population 2017	2010-2017 % Change	Number of Households (2017)
Detroit Region	5,389,730	5,404,732	0.3	2,100,849
Genesee	425,790	407,385	(4.0)	166,244
Lapeer	88,316	88,174	0.0	32,757
Lenawee	99,892	98,623	(1.4)	37,856
Livingston	180,967	189,651	4.2	69,763
Macomb	840,987	871,375	3.2	338,893
Monroe	152,021	149,649	(1.9)	58,516
Oakland	1,202,362	1,250,836	3.5	496,727
St. Clair	163,040	159,350	(2.1)	64,529
Shiawassee	70,648	68,446	(3.0)	27,480
Washtenaw	345,066	367,627	5.7	138,672
Wayne	1,820,641	1,753,616	(3.9)	669,412
Detroit	713,862	673,104	(5.8)	256,985
Michigan	9,884,129	9,962,311	0.4	3,860,394

Source: U.S. Census Bureau, 2017 QuickFacts





Positioning the Region for Global Competitiveness

The Detroit Regional Chamber has an economic development strategy to ensure the 11-county Detroit region is educated, employed and healthy to compete in the 21st century global economy. The strategy is centered around strategic metrics used to measure our region against successful peer regions.

PEOPLE



REGIONAL JOBS

Goal: 1.5% above the national average
Current: 2.1% (Detroit)
 1.5% (National)

UNEMPLOYMENT

Goal: 4.5%
Current: 5.0% (Detroit)
 4.1% (National)

PER CAPITA INCOME

Goal: \$37,577
Current: \$32,924

COMMUNITY



PUBLIC TRANSIT

Goal: 55 million ridership
Current: 41.3 million ridership

POPULATION GROWTH

Goal: 1.0% annual growth
Current: 0.2% annual growth

DETROIT'S COMMUNITY WELL-BEING INDEX

Goal: Above 50th percentile
Current: 145 out of 189

TALENT



THIRD-GRADE READING SCORES

Goal: 58%
Current: 42.7% (2017-2018)

ADULTS WITH POSTSECONDARY DEGREES

Goal: 60% *
Current: 40.3% **
 *Professional certificates and above by 2030
 **Associate degree and above

PATENT GROWTH

Goal: Grow faster than national average
Current: 8.8% (Michigan)
 6.2% (National) (2016-2017)

GLOBAL CONNECTIVITY



FOREIGN DIRECT INVESTMENT

Goal: \$12.1 billion
Current: \$10 billion (2017)

INTERNATIONAL FIRMS

Goal: 125 new foreign facilities
Current: 132 new foreign facilities

FOREIGN-BORN POPULATION WITH A DEGREE

Goal: Top five ranking among peer regions
Current: Ranked fourth

NEXT-GENERATION MOBILITY



MOBILITY TESTING FACILITIES/ PROJECTS

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

INCREASE CAV POLICIES

Goal: No. 1 in CAV policies implemented
Current: Tied for No. 1 in CAV policies implemented with Nevada

Our Programs



One Region. Endless Opportunity.





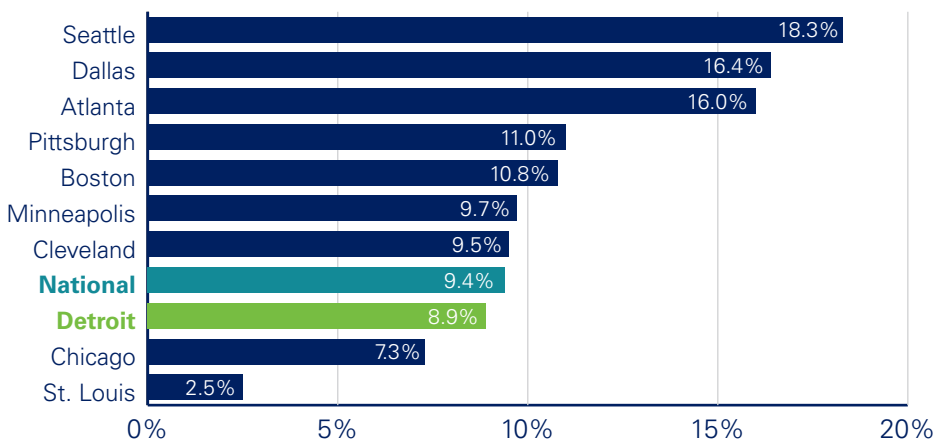
ECONOMIC INDICATORS

PHOTO: Barton Marlow
Barton Marlow led the construction of the iconic Little Caesars Arena.

OVERVIEW

Sustaining its upward trajectory, the Detroit region's economy continued to improve over the past year. Year-over-year growth in real gross domestic product (GDP), per capita income, educational attainment, exports, patents, median home values and residential construction permits all outpaced national averages. For the first time since the recession, office vacancy rates fell below national vacancy rates. However, there is still progress to be made. The region is showing signs of underperformance in labor force participation and employment growth, and the Detroit MSA's unemployment rate trended slightly upward.

REAL GDP GROWTH 2013-2017



Source: U.S. Bureau of Economic Analysis

Detroit's real GDP five-year growth lagged slightly behind the national average for a second year in a row, while one-year growth outperformed the national growth rate. In 2017, the Detroit MSA reported real GDP of \$228.1 billion, ranking 14th among the top 50 metros.

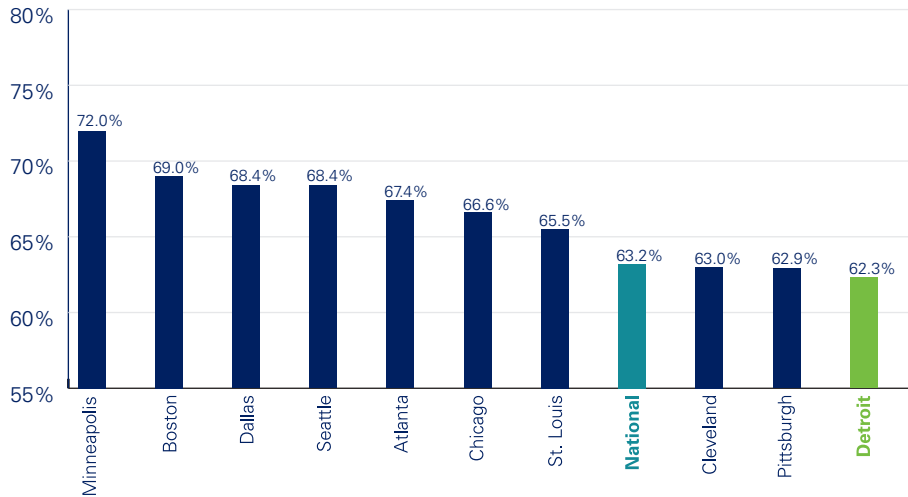
YEAR OVER YEAR

↑ Detroit: 2.7%
National: 2.2%

#7 Among Peers



LABOR FORCE PARTICIPATION RATE 2017



Source: U.S. Census Bureau, 2017 American Community Survey One-Year Estimates

In 2017, the Detroit region's civilian labor force reached 2.65 million workers. The region's highly skilled and educated workforce is larger than the workforces of 28 states, growing by nearly 34,000 last year, and by more than 87,000 the past five years.

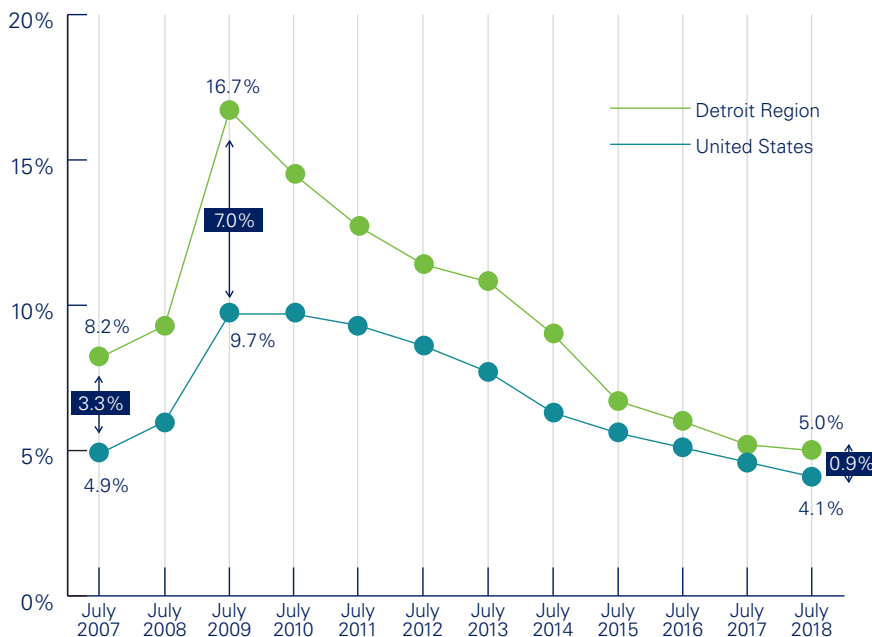
Following a similar trend as its national peers, the Detroit metro's labor force participation rate dipped slightly by 0.1% to 62.3% from the previous year and is nearly a full percentage point behind the national average. Over the past year, Chicago, Cleveland and Dallas also showed declines in labor force participation rates.

YEAR OVER YEAR

↓ **Detroit: Down 0.1%**
 National: Up 0.1%

#10 Among Peers

DETROIT REGION VS. NATIONAL UNEMPLOYMENT RATE 2007-2018

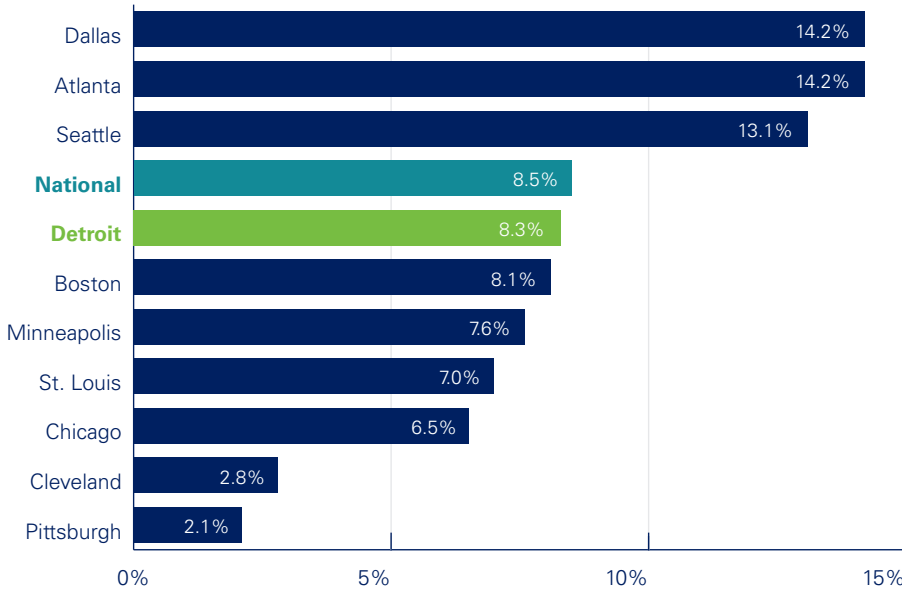


Source: U.S. Bureau of Labor Statistics
 Note: Regional unemployment rates have been adjusted by BLS for previous years.

In the Detroit region, which includes Ann Arbor, Detroit, Flint and Monroe, the unemployment rate decreased to 5.0% as of July 2018. The region falls within one percentage point of the national rate.



PRIVATE SECTOR JOB GROWTH 2013-2017



Source: U.S. Bureau of Labor Statistics

The Detroit region continues to rank fourth among peers in private sector job growth, nearly matching the national growth rate. Since the recession, the region has gained nearly 300,000 private sector jobs, similar to Boston and Seattle.

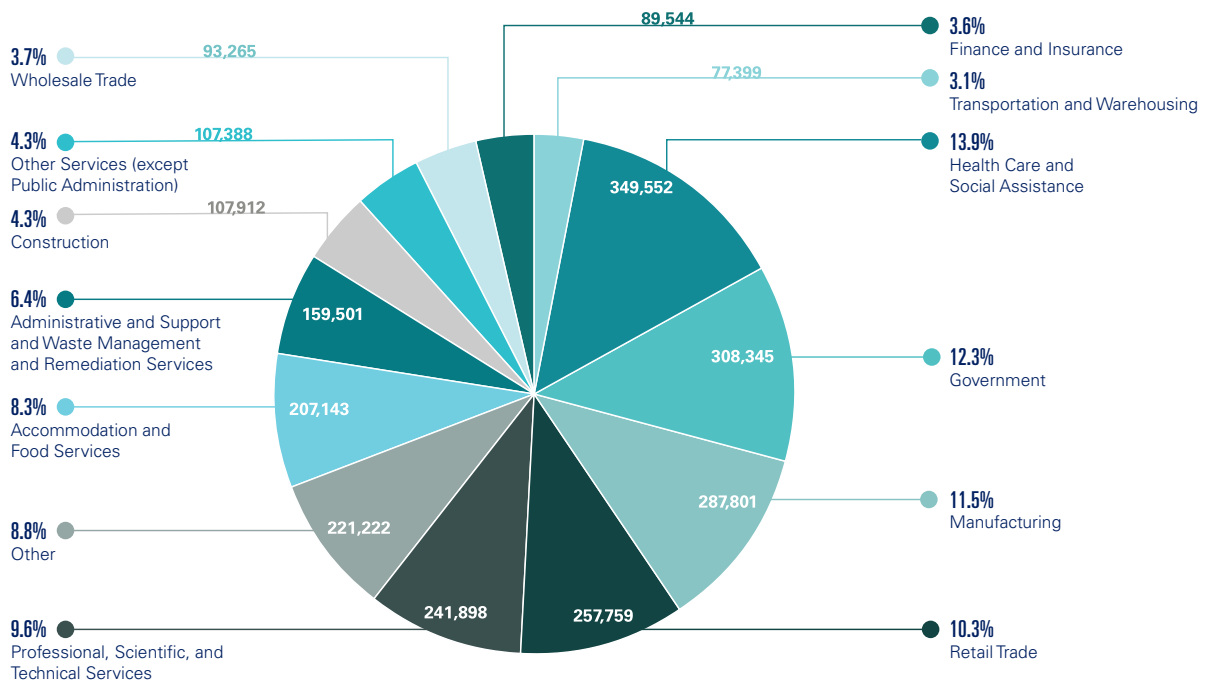
YEAR OVER YEAR

↑ Detroit: 1.6%
National: 1.8%

#4 Among Peers

JOBS BY INDUSTRY 2018

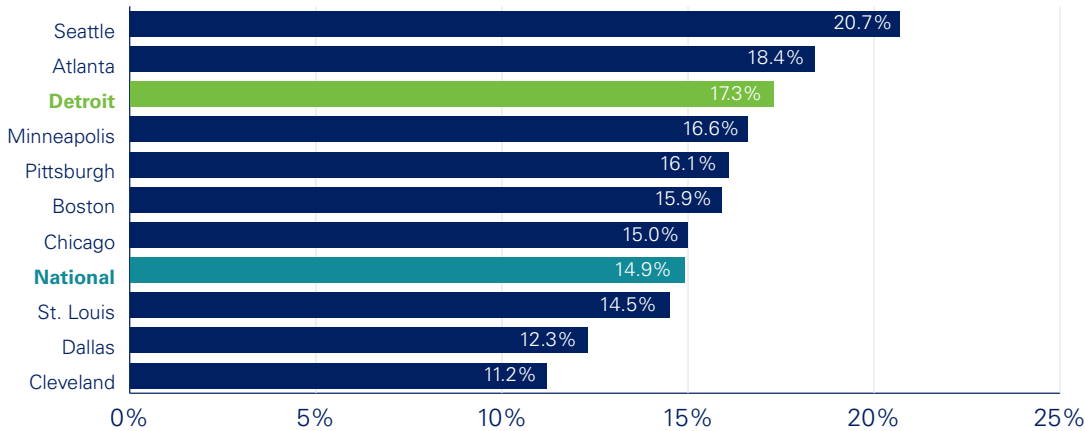
Health care and social assistance continues to be the largest industry, accounting for 13.9% of the region's employment. Industries with the largest five-year job growth include manufacturing and professional, scientific and technical services – combined adding nearly 53,000 jobs.



Source: EMSI



PER CAPITA INCOME GROWTH 2013-2017



Source: U.S. Census Bureau, 2017 American Community Survey One-Year Estimate

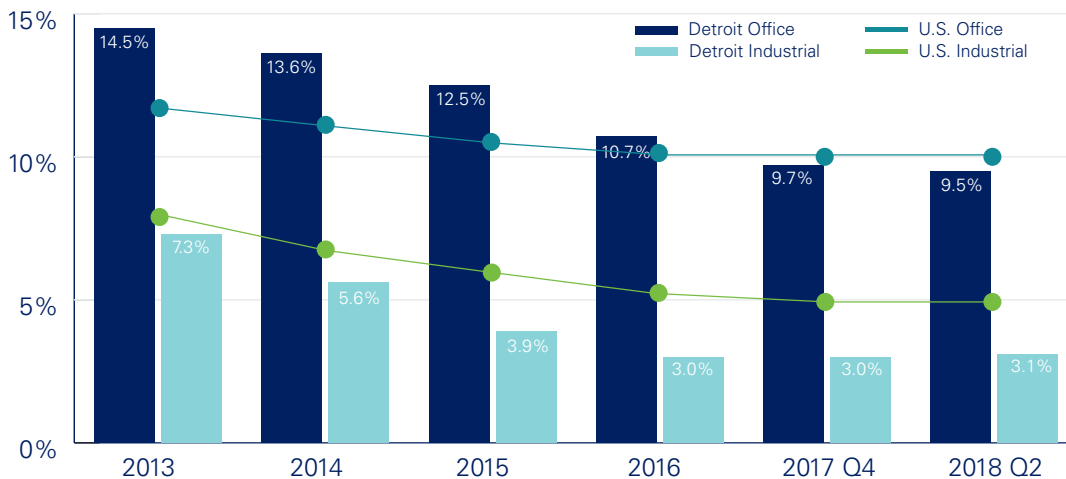
The Detroit region has experienced per capita income growth greater than 4.2% in three of the past five years. In 2017, Detroit's per capita income narrowly outpaced the national growth rate. This followed a record growth rate of 6.2% for the region in 2016.

YEAR OVER YEAR

↑ **Detroit: 4.3%**
 National: 4.1%

#5 Among Peers

OFFICE AND INDUSTRIAL VACANCY RATES, DETROIT REGION VS. NATIONAL 2013-2018



Source: CoStar

Office and industrial vacancy rates have declined every year since 2010, when they peaked at 17.1% for office and 13.4% for industrial. Today, the industrial vacancy rate remains below the national rate for the fifth straight year at 3.1%. The region's office vacancy rates are now below the national rate by 0.5%.

Office

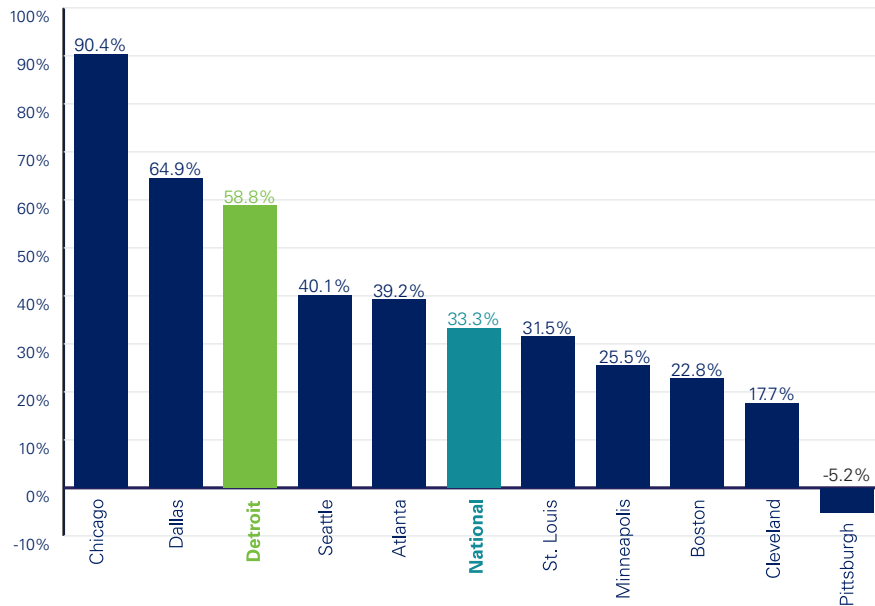
Following the second quarter of 2018, the region's office vacancy rate dropped to 9.5%. Quoted rental rates were \$19.32 per square foot, up from \$18.92 the previous year.

Industrial

Compared to peer regions, Detroit's industrial vacancy rate was the lowest, at 3.1%, along with Seattle. From 2017 to 2018, quoted rates increased to \$5.94 from \$5.46 per square foot.



RESIDENTIAL CONSTRUCTION PERMITS GROWTH 2013-2017



Between 2013 and 2017, the region's residential construction permits totaled 37,700 with 10,000 residential construction permits in 2017 alone. During that time, Detroit ranked third for permit growth among peer regions, with a residential construction growth rate of 58.8%

YEAR OVER YEAR

↑ **Detroit: 31.7%**
 National: 6.0%

#1 Among Peers

Source: U.S. Census Bureau, 2017 American Community Survey One-Year Estimates

BUSINESS

The Detroit region is home to 10 of Michigan's 17 Fortune 500 companies with headquarters located in the state. The region's dynamic business bases are anchored by the automotive, health care, government and manufacturing sectors. As the epicenter of the global automotive industry, General Motors Co. and Ford Motor Company are among the top 15. The region continues to welcome international businesses while attracting increased foreign direct investment. Kelly Services based in Troy ranks 503.

Penske Corp. and Rocket Ventures lead as the Detroit region's largest private companies with a combined more than \$36 billion in revenue. Additionally, FCA US LLC, located in Auburn Hills, employs more than 32,500 people in Southeast Michigan, with \$72.9 billion in revenue in 2017.

2018 FORTUNE 500 COMPANIES

RANK	COMPANY
10.....	GENERAL MOTORS CO.
11.....	FORD MOTOR COMPANY
139.....	PENSKE AUTOMOTIVE GROUP
148.....	LEAR CORP.
232.....	DTE ENERGY
289.....	AUTOLIV
299.....	ALLY FINANCIAL
301.....	BORGWARNER
373.....	MASCO
449.....	AMERICAN AXLE & MANUFACTURING (AAM)

Source: Fortune magazine

2018 LARGEST PRIVATE COMPANIES

1. PENSKE CORP.
2. ROCK VENTURES
3. INTERNATIONAL AUTOMOTIVE COMPONENTS
4. MERIDIAN HEALTH PLAN
5. ILITCH COMPANIES
6. PLASTIPAK HOLDINGS INC.
7. BARTON MALOW CO.
8. INTEVA PRODUCTS LLC
9. MOROUN FAMILY HOLDINGS
10. THE SUBURBAN COLLECTION

Source: Crain's Detroit Business

Note: Meridian Health Plan was acquired by WellCare in 2018.





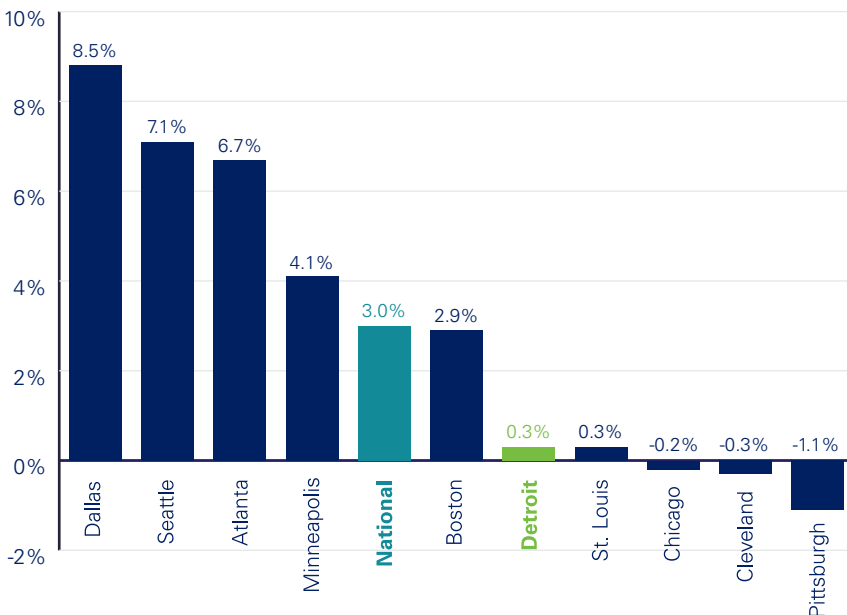
PHOTO: George Thomas
Historic automobiles are featured in the annual "Back to the Bricks" car cruise in Flint.

COMMUNITY

OVERVIEW

Positive gains have been made over the past year in population, household income, median home values and perceptions of the city of Detroit. Although gains were made in the Community Well-Being Index and poverty rates, the region still lags peer metros. Both remain critical focus areas.

POPULATION GROWTH BY METRO 2013-2017



After several years of declining population, the Detroit region is experiencing growth. The five-year reported growth rate was 0.3%, ranking the region sixth among peers. In 2017, the Detroit MSA's population grew by more than 7,000 residents, ranking as the 14th largest metro area in the nation.

YEAR OVER YEAR

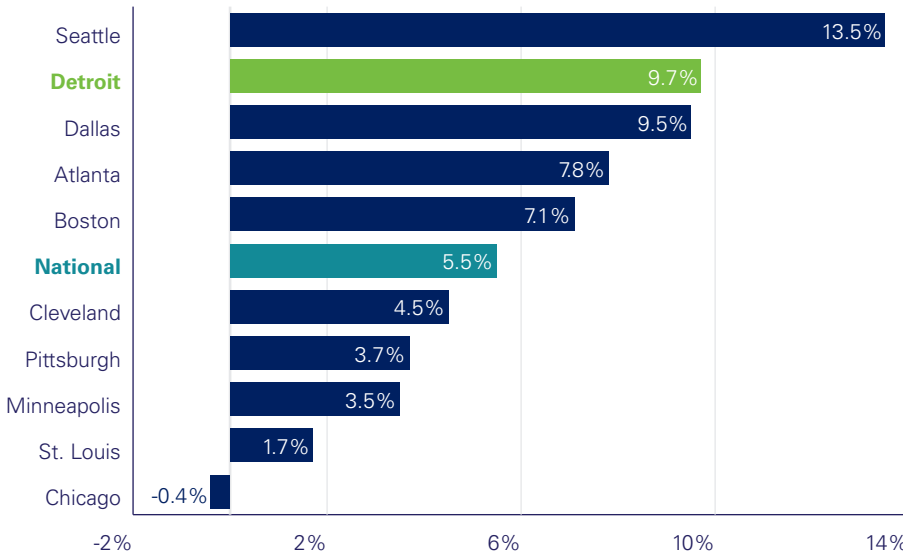
↑ **Detroit: 0.2%**
National: 0.7%

#6 Among Peers

Source: U.S. Census Bureau, 2017 American Community Survey One-Year Estimates



MILLENNIAL POPULATION GROWTH 2013-2017



The Detroit region's 25- to 34-year-old population rose over the past five years by 9.7% to 567,489 people. This is the second highest growth among peers and outpaced the national average by 4.2 percentage points.

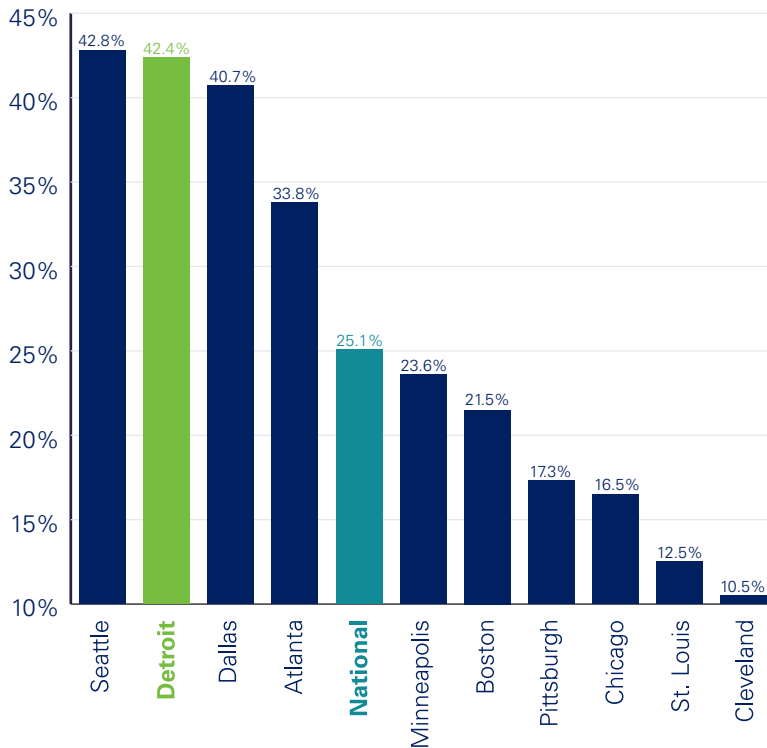
YEAR OVER YEAR

↑ **Detroit: 2.1%**
National: 1.3%

#6 Among Peers

Source: U.S. Census Bureau, 2017 American Community Survey One-Year Estimates
Note: Includes ages 25 to 34.

MEDIAN HOME VALUE GROWTH 2013-2017



Median home values for the Detroit MSA continue to rise. Since 2013, the region's median home values have grown by 42.4%, ranking second only to Seattle.

In 2017, the median home value in the Detroit MSA was \$171,600, ranking the region as third for most affordable housing among peer regions.

YEAR OVER YEAR

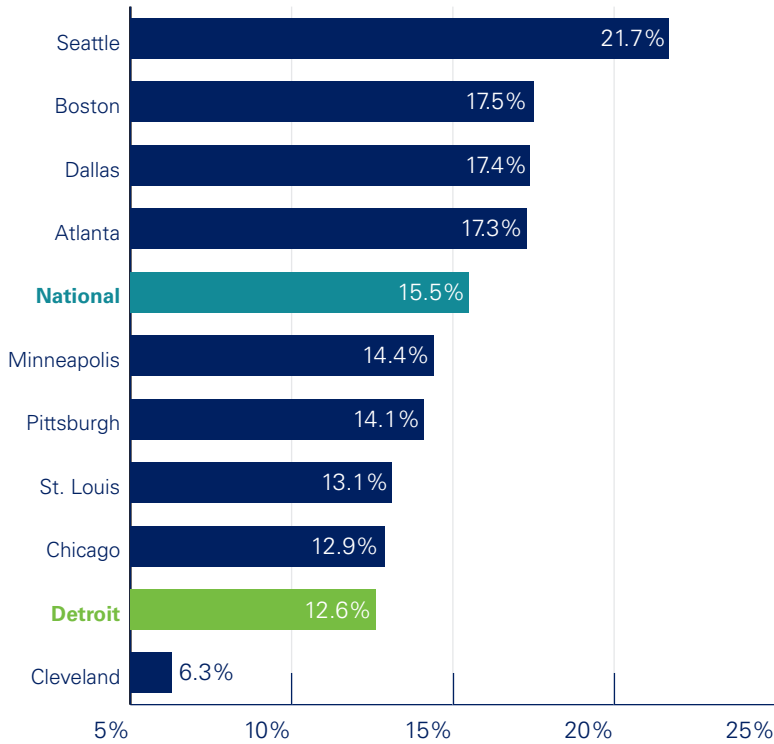
↑ **Detroit: 6.8%**
National: 6.1%

#5 Among Peers

Source: U.S. Census Bureau, 2017 American Community Survey One-Year Estimates



MEDIAN HOUSEHOLD INCOME GROWTH 2013-2017



Source: U.S. Census Bureau, 2017 American Community Survey One-Year Estimates

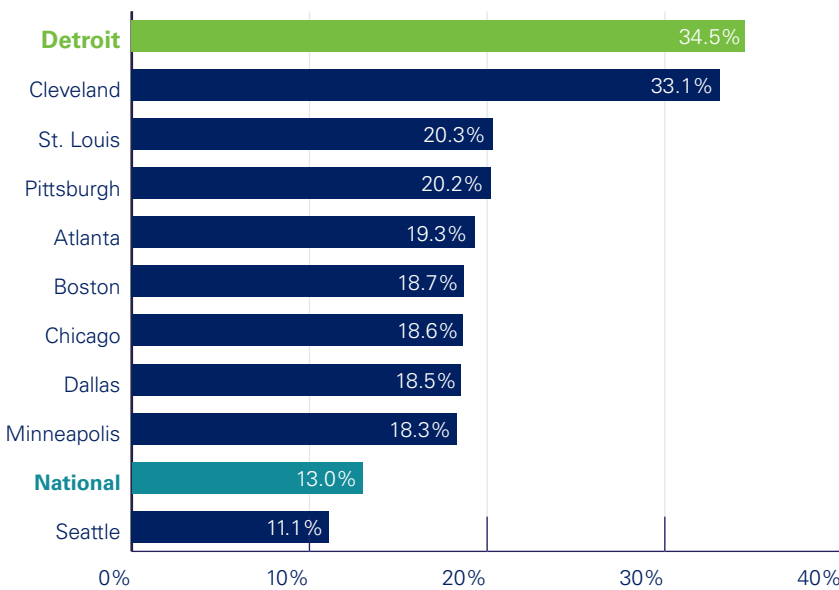
Median household income in the Detroit region rose to \$58,411, lagging growth of peer regions, including Minneapolis at \$76,856 and Chicago at \$68,403. Between 2013 and 2017, the Detroit region experienced rising household incomes but despite the growth it ranks ninth among peers at 12.6%.

YEAR OVER YEAR

↑ **Detroit: 4.0%**
National: 4.7%

#6 Among Peers

POVERTY RATE BY CITY 2017



Source: U.S. Census Bureau, 2017 American Community Survey One-Year Estimates

Despite declining over the past five years from 41% to 34%, the city of Detroit had the highest poverty rate among peer regions in 2017. At the regional level, Detroit, along with Cleveland, has the largest share of its population living below the poverty level.

YEAR OVER YEAR

↓ **Detroit: 1.2 percentage points**
National: 1.0 percentage points

#6 Among Peers

REGIONAL TRANSPORTATION

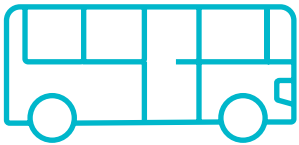


Nearly 41.4 million trips occurred across the region's four public transit systems in 2017, representing an 8.0% decline from the previous year. The Detroit region's investment in regional transit, at \$67 per person, lags peer regions—such as Cleveland at \$158, Chicago at \$293, and Seattle at \$409.

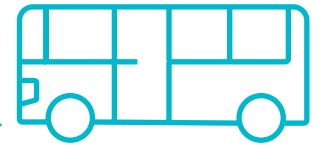
Providing more transportation options to residents remains a priority for the Detroit region, which recently made two large-scale investments to expand transit systems.



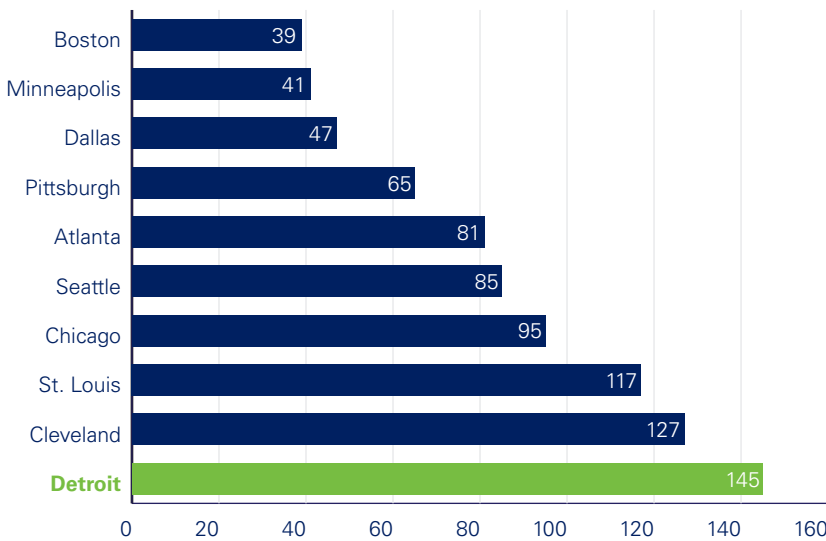
SMART launched a new bus rapid transit line called FAST (Frequent, Affordable, Safe, Transit) in 2018. It quickly takes riders along Gratiot, Woodward and Michigan Avenues, as well as to Detroit Metropolitan Airport from downtown.



The city of Detroit launched ConnecTen, a 24-hour service, with 15-minute service during peak hours along its most popular routes.



COMMUNITY WELL-BEING INDEX 2017



Source: Gallup-Healthways Well-Being Index

In 2017, the Detroit MSA moved up in the Community Well-Being Index from the bottom quintile to the fourth quintile with a rank of 145 out of 189 communities. Despite improvements, the Detroit MSA remains last among peer regions. Ann Arbor continues to rank highest at 12, up from 27 the previous year, and Flint ranked 177.

PERCEPTIONS ABOUT DETROIT

Downtown Detroit Perception Survey 2018 – **Downtown Detroit Partnership**



95%

Would bring an out-of-town guest to downtown Detroit

89%

Say Detroit contributes positively to the overall well-being of Southeast Michigan

83%

Agree Detroit is a safe place to visit

79%

Agree that Detroit is welcoming to all racial and ethnic groups

Detroit Reinvestment Index – **The Kresge Foundation**



84%

National Business Leaders

92%

Detroit Entrepreneurs

94%

Detroit Residents

... have confidence in Detroit's economic recovery and ability to become a great American city again.





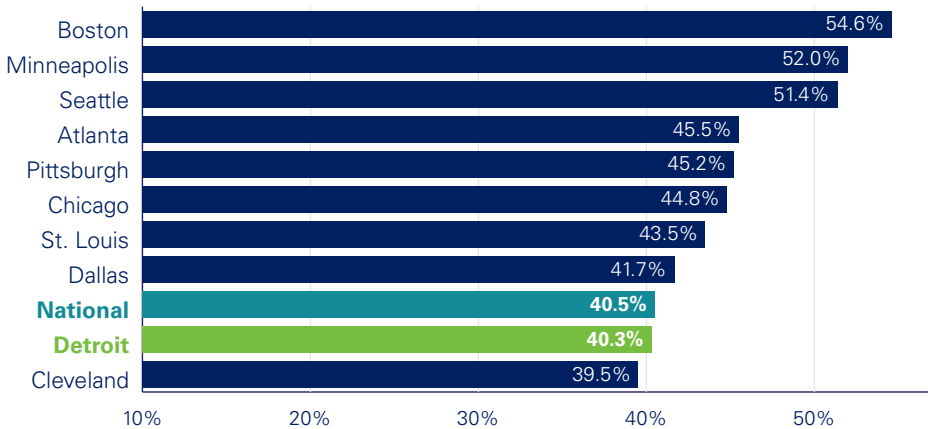
PHOTO: Detroit Regional Chamber
Regional high schoolers compete in the FIRST Robotics championships.

EDUCATION AND TALENT

OVERVIEW

Retaining and attracting high-performing talent is critical to business innovation and growth. Understanding the importance of this, Michigan's higher education institutions and businesses are creating innovative ways to help better prepare future talent. In 2017, Michigan colleges and universities conferred more than 121,000 degrees, providing the state's businesses with a highly trained and skilled pipeline of talent with diverse skill sets.

EDUCATIONAL ATTAINMENT 2017



Source: U.S. Census Bureau, 2017 American Community Survey One-Year Estimates
Note: Includes percentage of population 25 years and over with an associate degree or higher.

Between 2013 and 2017, the region's population with an associate degree or higher grew by 2.9 percentage points to 40.3%, and remains on par with the national average but continues to lag peer regions. Last year, the region's population with an associate degree or higher grew by 44,000 more people. Individuals with an associate degree reported the highest growth with an increase of 5.7%, followed closely by doctorate holders with an increase of 5.6%.

YEAR OVER YEAR

↑ Detroit: 3.8%
National: 3.4%

#2 Among Peers



RANKED INSTITUTIONS 2017

Institution	Location	Enrollment	Rank
National Universities			
University of Michigan	Ann Arbor	46,002	27
Michigan State University	Lansing	50,019	85
Wayne State University	Detroit	27,089	205
Western Michigan University	Kalamazoo	17,936	205
Regional Universities Midwest			
Kettering University	Flint	1,889	25
University of Detroit Mercy	Detroit	2,843	25
University of Michigan-Dearborn	Dearborn	7,141	38
Lawrence Technological University	Southfield	2,191	62
Madonna University	Livonia	2,456	65
Siena Heights University	Adrian	N/A	115
University of Michigan-Flint	Flint	6,434	115
Regional Colleges Midwest			
Adrian College	Adrian	1,671	19
Rochester College	Rochester Hills	1,153	59

Source: U.S. News and World Report

The Detroit region is home to several ranked public and private universities and colleges, featuring a diverse range of undergraduate and graduate programs. In 2017, Michigan's education institutions awarded more than 121,000 degrees, ranking ninth among all states for degrees conferred.

TOP 10 FASTEST-GROWING OCCUPATIONS, DETROIT REGION 2013-2017

Occupation	2013 Jobs	2017 Jobs	2013-2017 Change	2013-2017 % Change
Architecture and Engineering	86,753	103,512	16,759	19%
Farming, Fishing and Forestry	5,072	6,014	942	19%
Computer and Mathematical	73,248	85,262	12,014	16%
Transportation and Material Moving	154,875	176,167	21,292	14%
Arts, Design, Entertainment, Sports and Media	82,910	93,856	10,946	13%
Management	175,351	192,834	17,483	10%
Construction and Extraction	101,346	111,376	10,030	10%
Health Care Practitioners and Technical	164,855	178,077	13,222	8%
Business and Financial Operations	164,815	177,888	13,073	8%

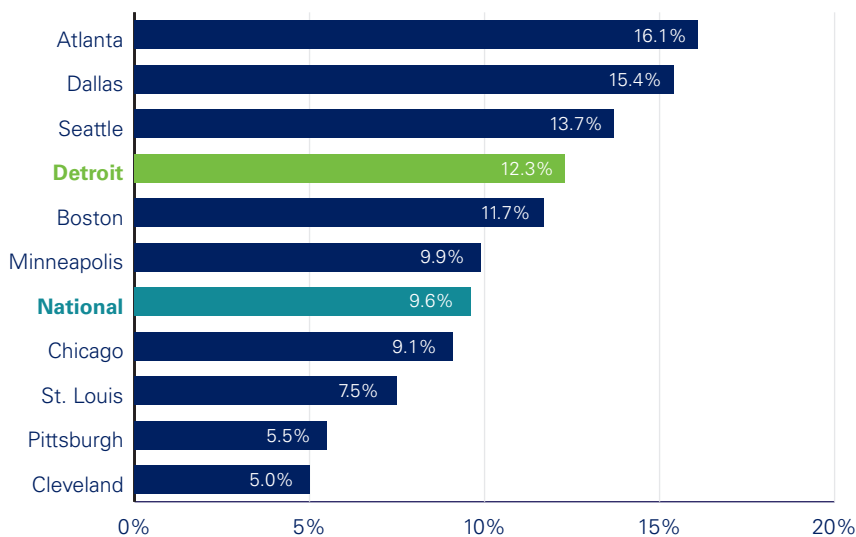
Source: EMSI

Between 2013 and 2017, the 11-county region gained 180,000 jobs, which was dominated by architecture and engineering occupations growth for the fifth straight year at 19%. The largest net gain in jobs was led by transportation and materials moving occupations, with an increase just over 21,000 since 2013.

Employment in the Detroit region exceeded 2.52 million in 2017, for the first time since 2006. Occupations projected to have the highest job growth by 2020 include sales and related occupations, and management. Together they are projected to add more than 26,000 jobs. Architecture and engineering occupations are also projected to continue to experience strong growth, adding more than 8,000 jobs.



STEM OCCUPATIONS JOB GROWTH 2013-2017



Source: EMSI

Detroit's STEM occupations job growth has slowed during the past five years, yet it still ranks fourth among peers. Employing more than 316,000 workers in STEM-related occupations, the region has gained more than 34,500 workers since 2013. Among STEM occupations that have experienced the most growth are computer occupations, hearing aid specialists, and geological and petroleum technicians. Occupations that show strong growth include mechanical engineering, software developers, and applications and industrial engineers.

YEAR OVER YEAR

↑ **Detroit: 0.9%**
National: 1.9%

#9 Among Peers

LARGEST SKILLED TRADES OCCUPATIONS 2017

Occupations	2017 Jobs
Miscellaneous Assemblers and Fabricators	56,321
Laborers and Material Movers, Hand	51,434
Driver/Sales Workers and Truck Drivers	51,409
Maintenance and Repair Workers, General	22,476
Construction Laborers	16,821
Automotive Technicians and Repairers	16,106
Machine Tool Cutting Setters, Operators, and Tenders, Metal/Plastic	15,663
Inspectors, Testers, Sorters, Samplers and Weighers	15,446
Electricians	14,516
Carpenters	14,439

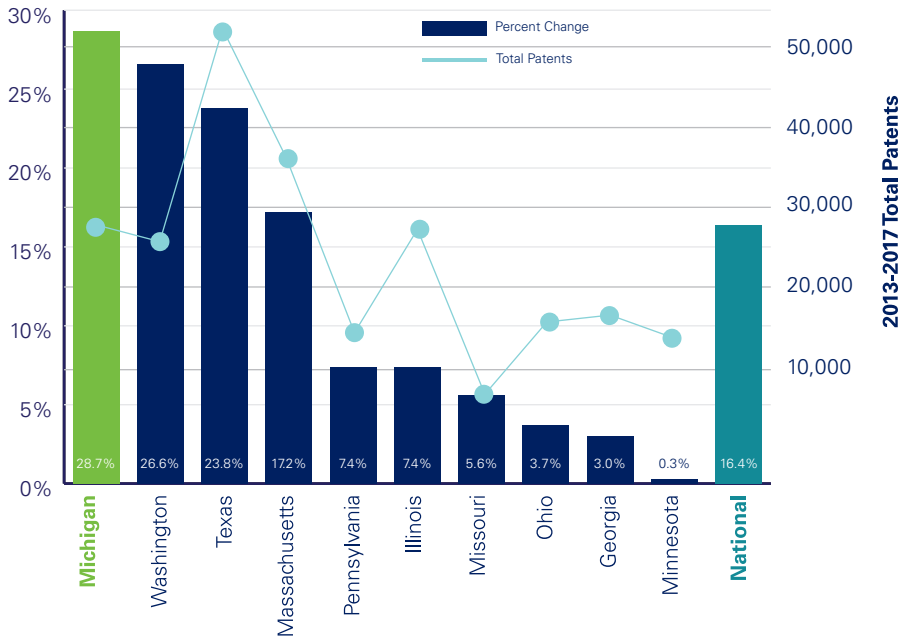
Source: EMSI

Nearly 560,000 people worked in skilled trades-related occupations throughout the Detroit region in 2017. That is a 7.5% increase, adding more than 39,000 workers since 2013.

For 2018, there were an average 36,261 monthly job postings for skilled trades-related occupations. Heavy and tractor-trailer truck drivers remain one of the highest in-demand skilled trades occupations with an average of nearly 16,000 active job postings each month. Light truck or delivery drivers, and maintenance and repair workers follow with more than 2,000 monthly job postings.



UTILITY PATENTS GRANTED 2013-2017



Michigan is known for being a top state for utility patents, and 2017 was no exception. Five-year growth for patents granted was 28.7%, ranking Michigan first among peer states. Michigan inventors were awarded a record number of patents with 6,568 granted, ranking Michigan third among peers and showing growth of 8.8% from the previous year.

YEAR OVER YEAR

↑ Michigan: 8.8%
National: 6.2%

#4 Among Peers

Source: United States Patent and Trademark Office

VENTURE CAPITAL

According to the Michigan Venture Capital Association, there are currently 29 venture capital firms in the state managing \$3.88 billion in funds. Over the past five years, venture-backed companies operating in Michigan have increased by 26%.

2017



70 startups, 30 in information technology alone, raised more than \$41 million from angel investors



\$179 million in venture capital was invested in 68 Michigan startups



Information technology (47%) and life sciences (34%) sectors lead in venture funds invested





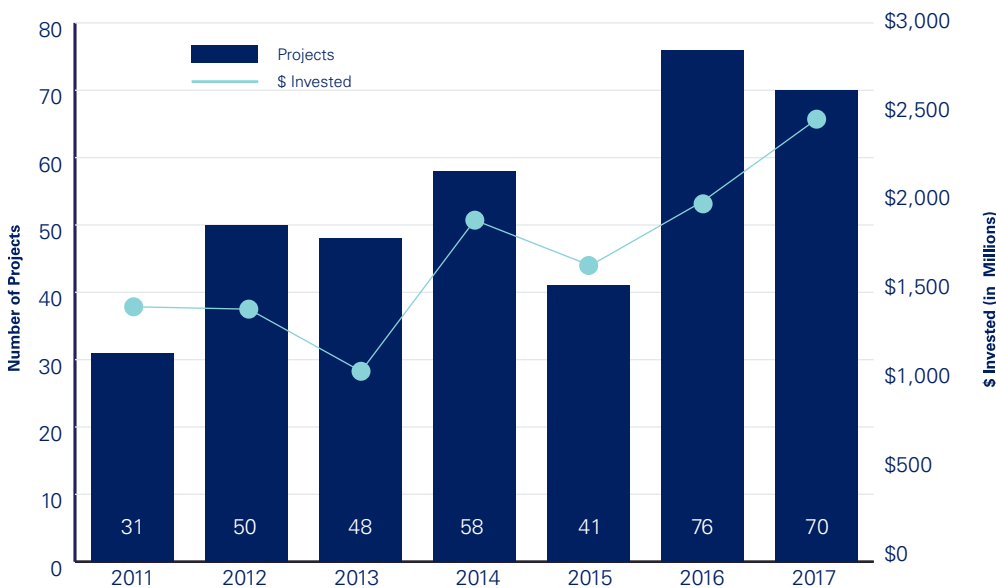
PHOTO: Windsor-Detroit Bridge Authority (WDBA) Canadian Prime Minister Justin Trudeau and Gov. Rick Snyder stand together at the site for the new Gordie Howe International Bridge.

GLOBAL CONNECTIVITY

OVERVIEW

Sharing an international border with Canada, the Detroit region is one of the most globally connected regions in the nation. The region is home to more than 1,300 foreign firms, the sixth largest export market, and the third best airport for customer satisfaction. The Detroit Metropolitan Wayne County Airport, a Delta Air Lines hub, has more than 131 gates, 1,100 daily flights on four continents, and served 34.7 million passengers last year.

FOREIGN DIRECT INVESTMENT, MICHIGAN 2011-2017



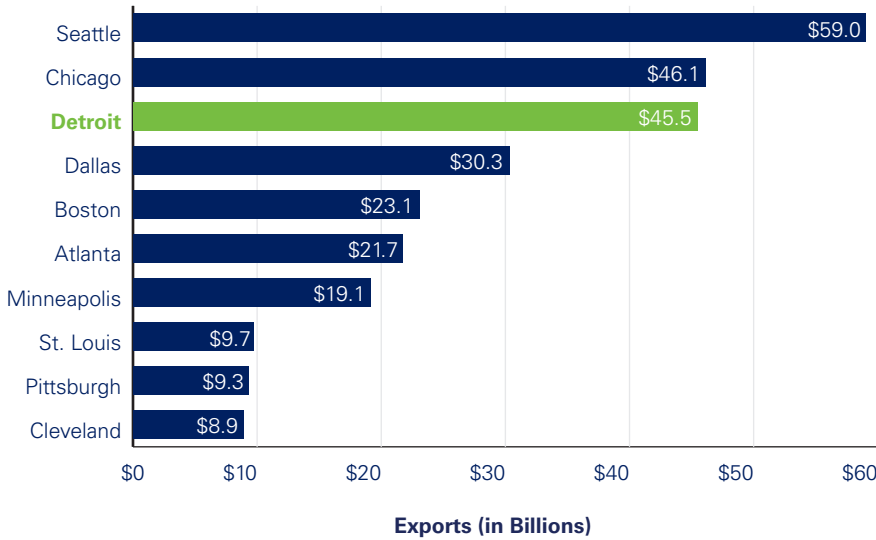
Source: Financial Times FDI Market.com

Investment from foreign-held companies continues to be important to Michigan's economy. Since 2011, foreign-held companies have committed to 374 projects, investing nearly \$12 billion and creating more than 59,500 jobs in Michigan.

In 2017, for the second straight year, Michigan received significant investment with 70 projects announced totaling more than \$2 billion. These projects are expected to add 9,527 jobs to the state's economy.



EXPORTS BY METRO 2017



Source: International Trade Administration

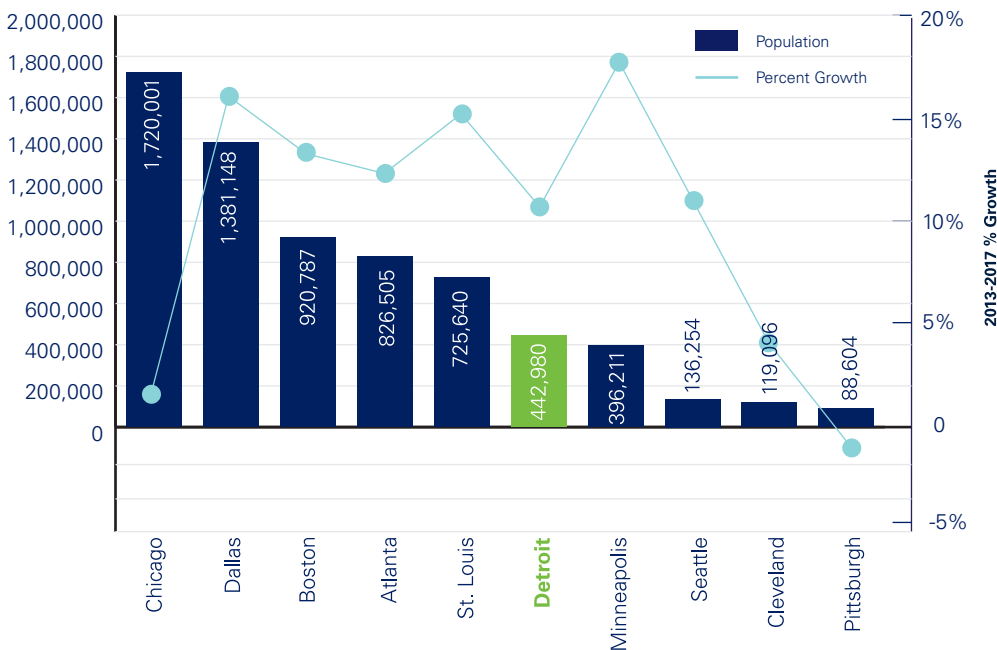
Ranking third among peer regions, Detroit area companies exported more than \$45 billion in goods across the globe. While one-year growth was up 8.1%, the five-year trend shows a 15.5% decline in exports due to a 22% decline in transportation equipment manufacturing. The Detroit region ranks as the largest exporter of goods to Canada and the third largest to Mexico. In 2017, Michigan companies exported more than \$32 billion in goods to Canada and Mexico.

YEAR OVER YEAR

↑ **Detroit: 8.1%**
National: 6.6%

#5 Among Peers

FOREIGN-BORN POPULATION 2017



Source: U.S. Bureau of the Census

In 2017, the Detroit MSA was home to nearly 443,000 foreign-born residents. Up 10.7% over the past five years, the Detroit MSA outpaced the national growth rate of 7.7%. The region's one-year growth rate of 6.1% ranked it first in foreign-born population growth among peer regions, well outperforming the national growth rate of 1.8%.

Foreign-born talent continues to be increasingly important to Michigan, having more welcoming cities and counties for immigrants than any other state in the nation, as recognized by Welcoming America. Educational attainment of Michigan's foreign-born population with graduate or professional degrees was 20.3% in 2017.





NEXT-GENERATION MOBILITY

OVERVIEW

For Michigan to continue to be the global leader in next-generation connected and automated vehicle (CAV) technology, it will require innovative solutions that are structured to fit society's needs. To continue the unprecedented growth, Detroit and Michigan are embracing ideas and initiatives that make those solutions viable.

*PHOTO: American Center for Mobility
An autonomous Visteon vehicle conducts testing in the snow at the American Center for Mobility.*

MOBILITY SOLUTION PARTNERSHIPS

DETROIT MOBILITY INNOVATION INITIATIVE

The city of Detroit, state of Michigan, and business and nonprofit sectors developed an initiative to create mobility-focused solutions for neighborhood mobility, downtown accessibility, traffic safety, and electric vehicle utilization and education.

MICHAUTO

Serving as Michigan's only automotive cluster association, MICHauto is an economic development initiative led by the Detroit Regional Chamber. MICHauto is focused on securing Michigan's position as the most attractive state for next-generation mobility by bringing together industry stakeholders to collaborate on advocacy, awareness, business attraction, and talent attraction and retention.

MICHIGAN MOBILITY CHALLENGE

Various departments from the state of Michigan collaborated to launch an \$8 million innovative pilot dedicated to funding transportation projects that will solve mobility gaps for seniors, persons with disabilities and veterans.

WORLD ECONOMIC FORUM'S SIMSYSTEM

The cities of Ann Arbor, Detroit and Windsor, Canada were selected to pilot a seamless integrated mobility system. The partnership formed between Deloitte and the World Economic Forum seeks to improve the lives of the region's citizens.



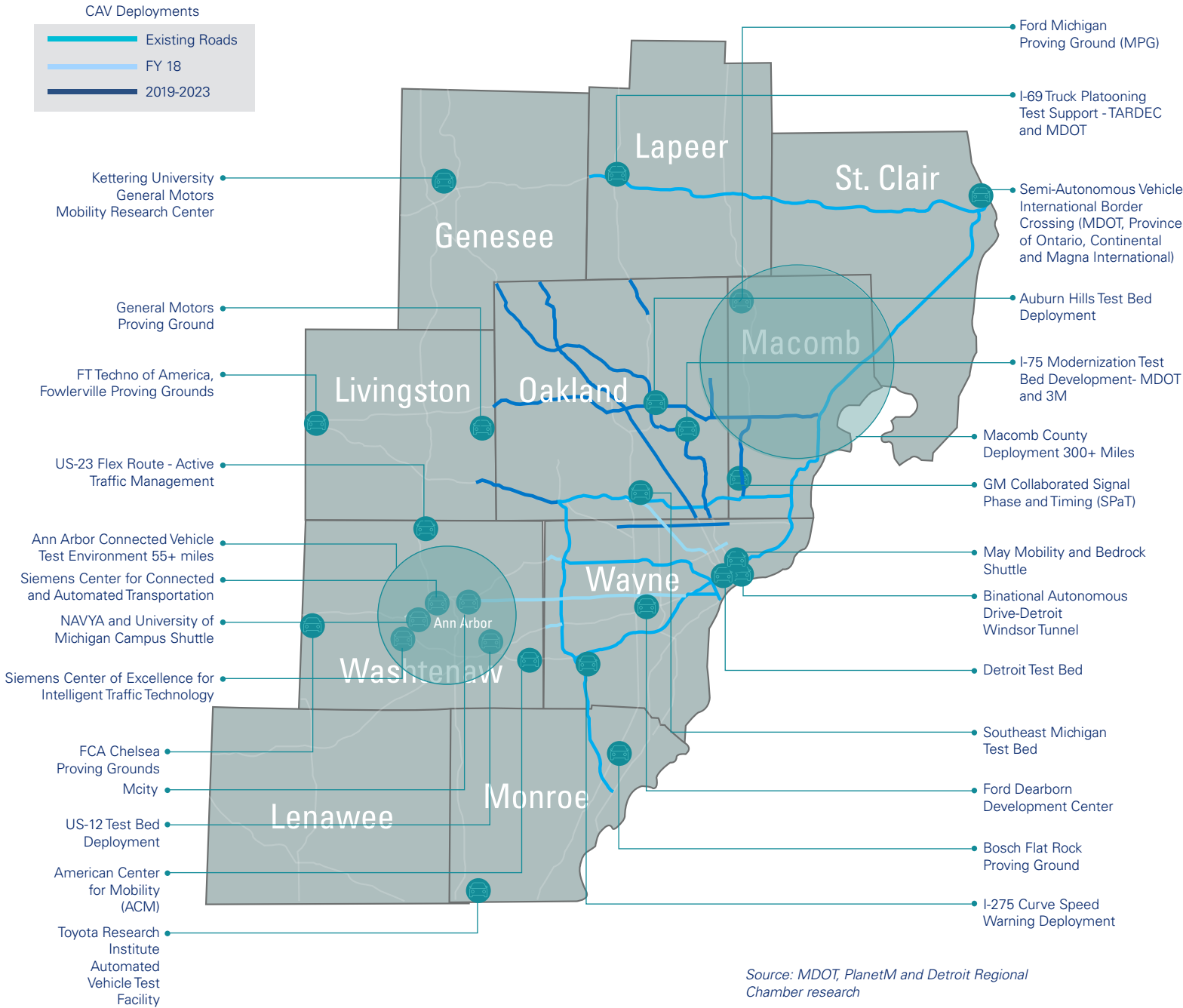
EDUCATING FUTURE TALENT

<p>Institutions in the Detroit region actively adapted to the needs of the automotive and mobility industry, while committing to provide opportunities for talent to thrive in mobility careers.</p>	<p>Detroit Mobility Lab's "Michigan Mobility Institute"</p> <p>Focused on creating a new mobility talent infrastructure education program for professionals with strategic advisory from The Boston Consulting Group.</p>	<p>Macomb Community College Center for Advanced Automotive Technology (CAAT)</p> <p>Industry, education and government partnership to create curriculum in advanced automotive technology programs and certificates.</p>	<p>Washtenaw Community College Advanced Transportation Center (WCCATC)</p> <p>Established to prepare the future and existing workforce for the emerging needs of the advanced transportation industry.</p>
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Connected and Automated Vehicles, Today and Into the Future

A mix of private and public proving grounds, road initiatives and investments are bringing next-generation mobility and connected and automated vehicles (CAV) to communities and consumers across the Detroit region and around the world.



American Center for Mobility (ACM)

Opened in 2017, ACM is a national center for CAV research, testing, product development, validation and certification.

- 500 acres with 12 configurable test environments utilized by government, industry and academia
- 23-member academic consortium enabling Michigan colleges and universities to collaborate on workforce transformation
- Awarded \$2.4 million for research involving fuel-efficient platooning on highways by the U.S. Department of Energy

Mcity

Opened in 2015, Mcity is a facility and test environment created by the University of Michigan to cultivate the diverse expertise and resources required for emerging technologies, culminating in the implementation of a working system of CAV in Ann Arbor by 2021.

- 60 industry partners
- \$20 million invested in 40 research and development projects
- 100+ students and 50 University of Michigan faculty involved in Mcity funded research and activities
- 1,500 vehicles in Ann Arbor Connected Vehicle Test Environment, the world's largest deployment





PHOTO: BorgWarner
BorgWarner conducts testing on solenoid technologies for hybrid vehicles.

INDUSTRY SPOTLIGHT: AUTOMOTIVE



FOOTPRINT

96

of the Top 100 suppliers to North America have a presence or headquarters in Michigan

17

Original Equipment Manufacturers (OEM)

25

OEM components/materials plants

19

universities and colleges with nationally ranked undergraduate engineering programs, four of which also have nationally ranked graduate programs

549

automotive OEMs or components manufacturers employ more than 120,000 workers within Southeast Michigan

2.1

million vehicles assembled

11

Assembly plants

2,200

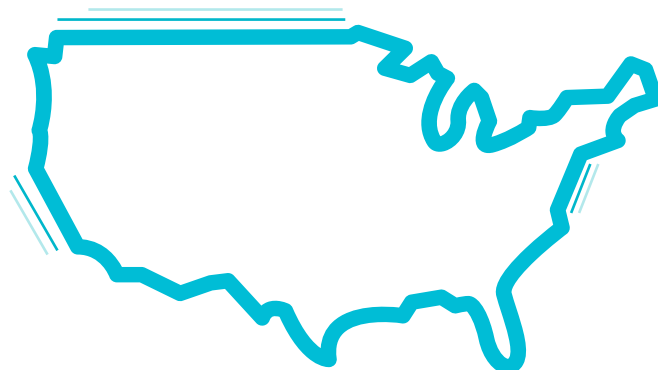
engineering, R&D, testing and validation facilities

22

models built

AUTOMOTIVE GROSS DOMESTIC PRODUCT, 2016

Michigan accounts for 23.5% of the nation's automotive real GDP. In 2016, Michigan reported an automotive real GDP of \$36.7 billion, ranking first among peers and larger than the next two states – Indiana and Texas – combined.



CASE STUDY



PHOTO: Bedrock
May Mobility autonomous shuttle in downtown Detroit



Bedrock and May Mobility

Investing in the Future of Autonomous Mobility

In 2018, Bedrock Detroit partnered with May Mobility, an Ann Arbor self-driving vehicle startup that seeks to make transportation safer and more personal, to deploy a fleet of autonomous vehicle shuttles in Detroit. This was the first commercial deployment of autonomous vehicles on public streets, providing critical operations experience and authentic passenger data for continued expansion across the nation.

The fully-electric autonomous vehicles transport Bedrock staff to their parking garage on weekdays along a one-mile route. The shuttles have provided more than 19,200 rides and reduced wait times by an average of four minutes. This is one of several Bedrock programs designed to enhance commute dynamics, all with the goal of delivering a more accessible urban environment. Bedrock helps keep Detroit at the leading edge of Smart City initiatives.

Through its deployments, May Mobility aims to make the future of transportation more accessible and convenient. By providing cost-effective, safe and reliable transportation, May Mobility and its partners are able to improve traffic congestion and convert cities into more livable and green spaces. The vehicles are designed by May Mobility engineers and then assembled by Magna International. They feature a suite of sensors, panoramic glass roof, 49-inch digital display, and seating for up to six passengers. May Mobility has raised more than \$11.5 million from notable investors.

GREATEST CONCENTRATION OF GLOBAL OEMs

HEADQUARTERS IN MICHIGAN



U.S. MARKET SHARE SALES 2017

25.5%
U.S. Cars

53.4%
Light Truck

44.7%
Total Vehicle

AMERICAN HEADQUARTERS OR R&D FACILITY IN MICHIGAN



DAIMLER



HONDA



HYUNDAI

ISUZU

Mahindra
MAHINDRA AUTOMOTIVE
NORTH AMERICA



mazda



mitsubishi
MOTORS

NISSAN



SUBARU



SUZUKI



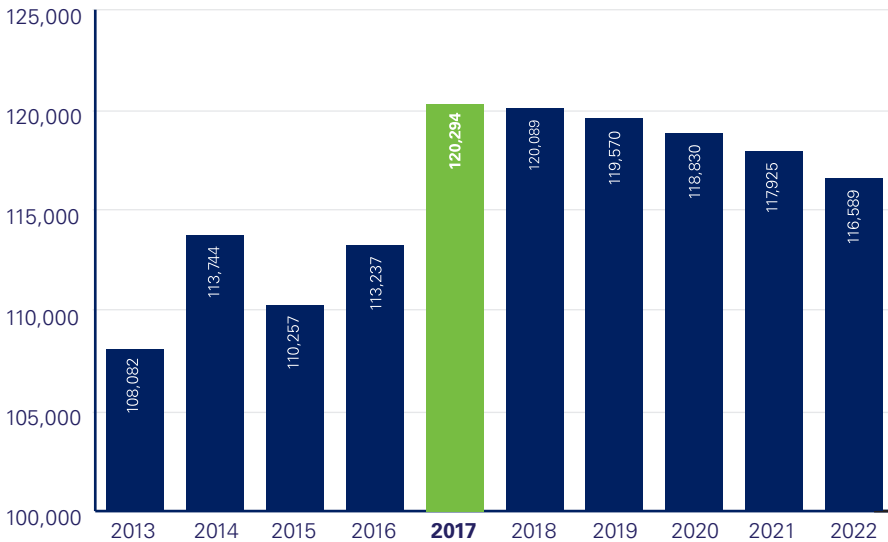
TOYOTA



Volkswagen



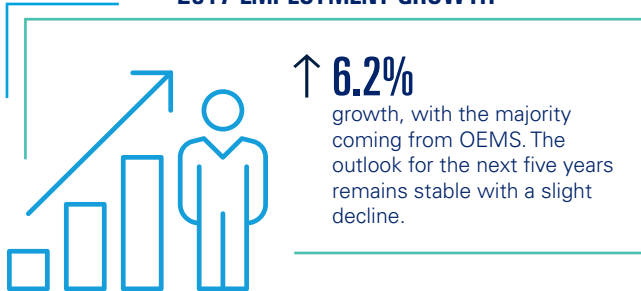
AUTOMOTIVE MANUFACTURING JOB GROWTH AND FORECAST 2013-2022



The Detroit region accounts for 10.7% of the nation's automotive manufacturing workforce. In 2017, more than 120,000 workers assembled more than 2 million passenger cars and light trucks. The top three occupations are assemblers and fabricators, industrial engineers and mechanical engineers, which together make up 41% of the automotive manufacturing workforce.

Source: EMSI

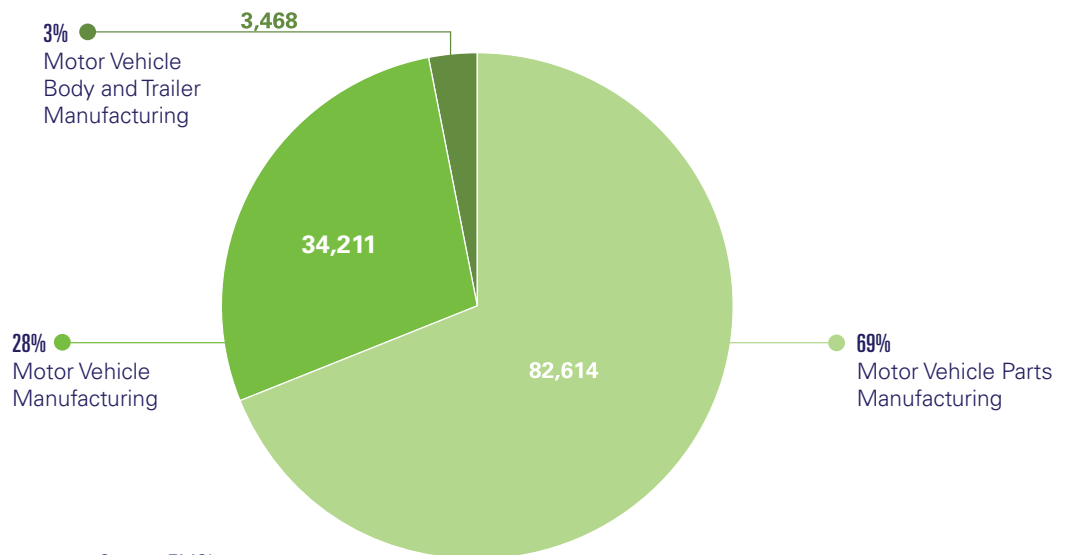
2017 EMPLOYMENT GROWTH



2017 AVERAGE WAGE FOR AUTOMOTIVE MANUFACTURING

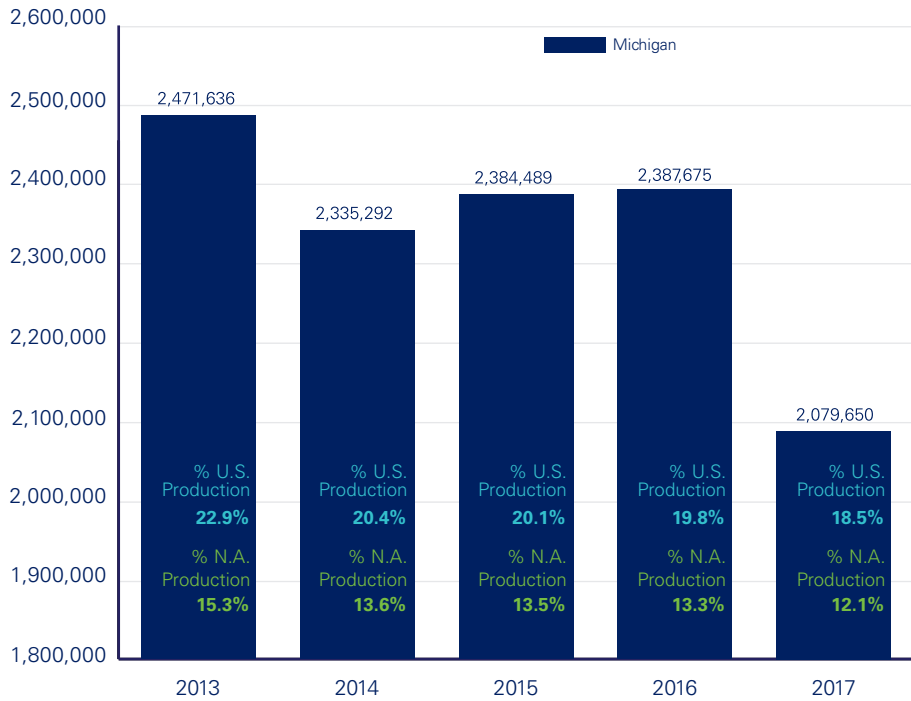


AUTOMOTIVE MANUFACTURING EMPLOYMENT BY INDUSTRY SEGMENT 2017



Source: EMSI

PASSENGER CAR AND LIGHT TRUCK PRODUCTION 2013-2017



Michigan remains the nation's largest producer of passenger cars and light trucks and accounts for 18.5% of all U.S.-based production.

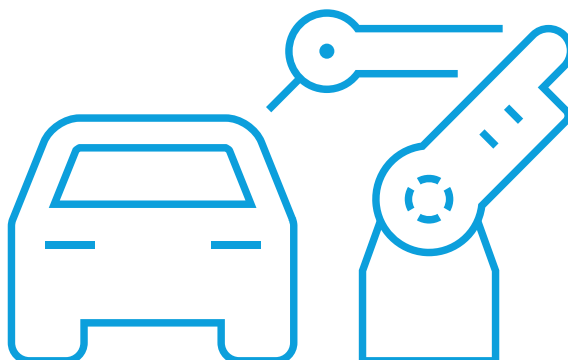
Source: Automotive News

MICHIGAN MANUFACTURING 2018

FCA US LLC	
Jefferson North	
Dodge Durango	63,121
Jeep Grand Cherokee	216,877
Sterling Heights	
Ram Pickup	196,614
Warren	
Ram Pickup	17,989
Total: 494,601	

Ford Motor Company	
Michigan Truck Assembly	
Ford F Series	281,253
Ford C-Max	3,685
Ford Focus	86,862
Ford Ranger	198
Flat Rock	
Ford Mustang	88,275
Lincoln Continental	14,333
Total: 474,606	

General Motors Co.	
Flint	
Chevrolet Silverado	80,899
GMC Sierra	50,953
Hamtramck	
Buick Lacrosse	11,508
Cadillac CT6	9,864
Chevrolet Impala	7,551
Chevrolet Volt	18,350
Lansing	
Buick Enclave	48,853
Chevrolet Traverse	127,242
Lansing Grand River	
Cadillac ATS	10,070
Cadillac CTS	8,248
Chevrolet Camaro	42,222
Orion Township	
Chevrolet Bolt	22,033
Chevrolet Sonic	21,515
Total: 459,308	



Source: Automotive News
Note: YTD September 2018



PHOTO: Michigan Defense Center
The Michigan Defense Center is a key hub for the aerospace and defense industries in Michigan.



INDUSTRY SPOTLIGHT: AEROSPACE AND DEFENSE

FOOTPRINT

The Detroit region's commitment and expertise in providing vehicles, equipment and services to the nation's armed forces is led by Selfridge Air National Guard Base, the U.S. Army's Tank Automotive Operations Command (TACOM) and the Tank-Automotive Research, Development and Engineering Center (TARDEC). Along with the region's long-term investments in these institutions, the Detroit Arsenal was selected as one of the sites of the Next Generation Combat Vehicle Cross Functional Team (NGCVCT) in 2018 to pursue the service's modernization priorities for the future. These military installations collaborate with a strong private sector presence in the region that includes BAE Systems, General Dynamics, Northrup Grumman Space, Raytheon and Williams International Co.

102,619
employees



\$83,846
average annual wage



3,100
establishments



\$3.35
billion in defense contracts



8th



Ranked eighth for aerospace attractiveness driven by strong areas of gross domestic product, foreign direct investment, and market size by PwC.





PHOTO: TARDEC
Ribbon cutting ceremony for the opening of the TARDEC Cyber Hub.

CASE STUDY



TARDEC Cyber Hub Training for the Future of Security

In 2018, the U.S. Army's Tank Automotive Research Development and Engineering Center (TARDEC) launched a Cyber Hub at the Detroit Arsenal in Warren. The hub provides cybersecurity professionals the most effective security methods to create an ironclad defense against attacks.

Unveiled in September, the Cyber Hub is the newest of 11 existing hubs on the Michigan Cyber Range, a key initiative of Gov. Rick Snyder's 2011 cyber initiative. Hubs exist on-site at academic institutions and military and government entities, said Jeff Jaczkowski, associate director of ground systems cyber engineering at TARDEC.

"The Cyber Range itself is a virtual connected network that links these hubs together to enable a variety of functions having to do with cybersecurity training, testing, and workforce development today," Jaczkowski said. TARDEC's mission is to ensure existing tanks, trucks, and ground systems are secure against cyber attack, and to design and develop new systems using resilient engineering architecture from the ground up.

TARDEC's Cyber Hub can be configured as a virtual sandbox with Alphaville, a computerized 3D representation of a city, complete with power grid and underlying infrastructure. In the future, vehicles will be added to develop tactics for vehicular hacking incidents.

AEROSPACE, AERONAUTICAL AND ASTRONAUTICAL ENGINEERING PROGRAM

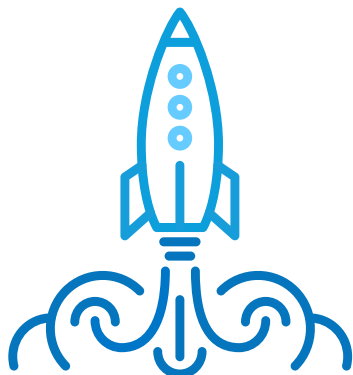
UNIVERSITY OF MICHIGAN

4th

in the nation for undergraduate program

5th

in the nation for graduate program



BEST COLLEGES FOR VETERANS

9th

University of Michigan - Ann Arbor

49th

Michigan State University

92nd

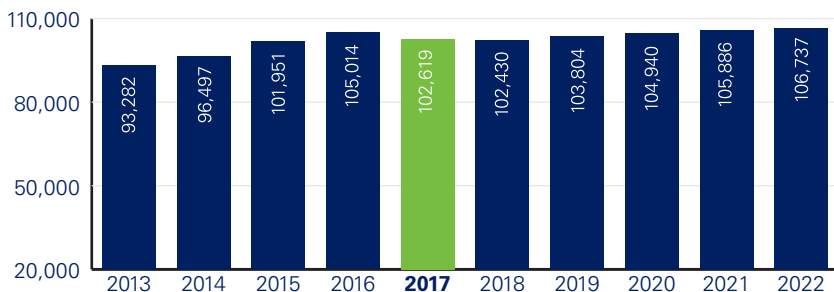
Michigan Technological University



Source: U.S. News and World Report



AEROSPACE AND DEFENSE JOB GROWTH AND FORECAST 2013-2022

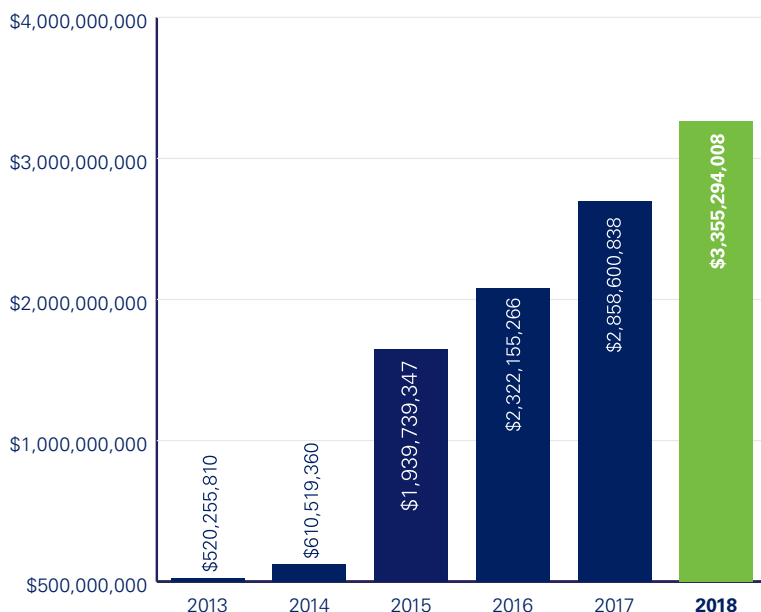


Source: EMSI

The Detroit region is home to more than 3,100 companies working in aerospace and defense-related industry sectors. Employing more than 102,000 people combined, these companies are driving a strong technical and research-driven industry with close ties to the automotive industry's vehicle development infrastructure.

Over the past five years, the region's aerospace and defense industry has grown by more than 9,000 jobs, and another 4.0% growth is projected through 2022. The region's average industry wages for aerospace and defense jobs is \$97,670, slightly higher than the national average of \$95,909.

DEPARTMENT OF DEFENSE CONTRACTS- AMOUNT OBLIGATED FY 2013-2018



Source: USAspending.gov

The Detroit region's defense footprint has significantly increased over the past five fiscal years, with 450% growth in defense contracts. The amount of awarded contracts has increased from \$520 million in 2013 to more than \$3.3 billion in 2018.

ECONOMIC IMPACT 2017

Spending Type	Economic Impact (GDP) in Billions
Personnel	\$3.4
Procurement	\$4.4
Transfers	\$4.0
Total	\$11.7

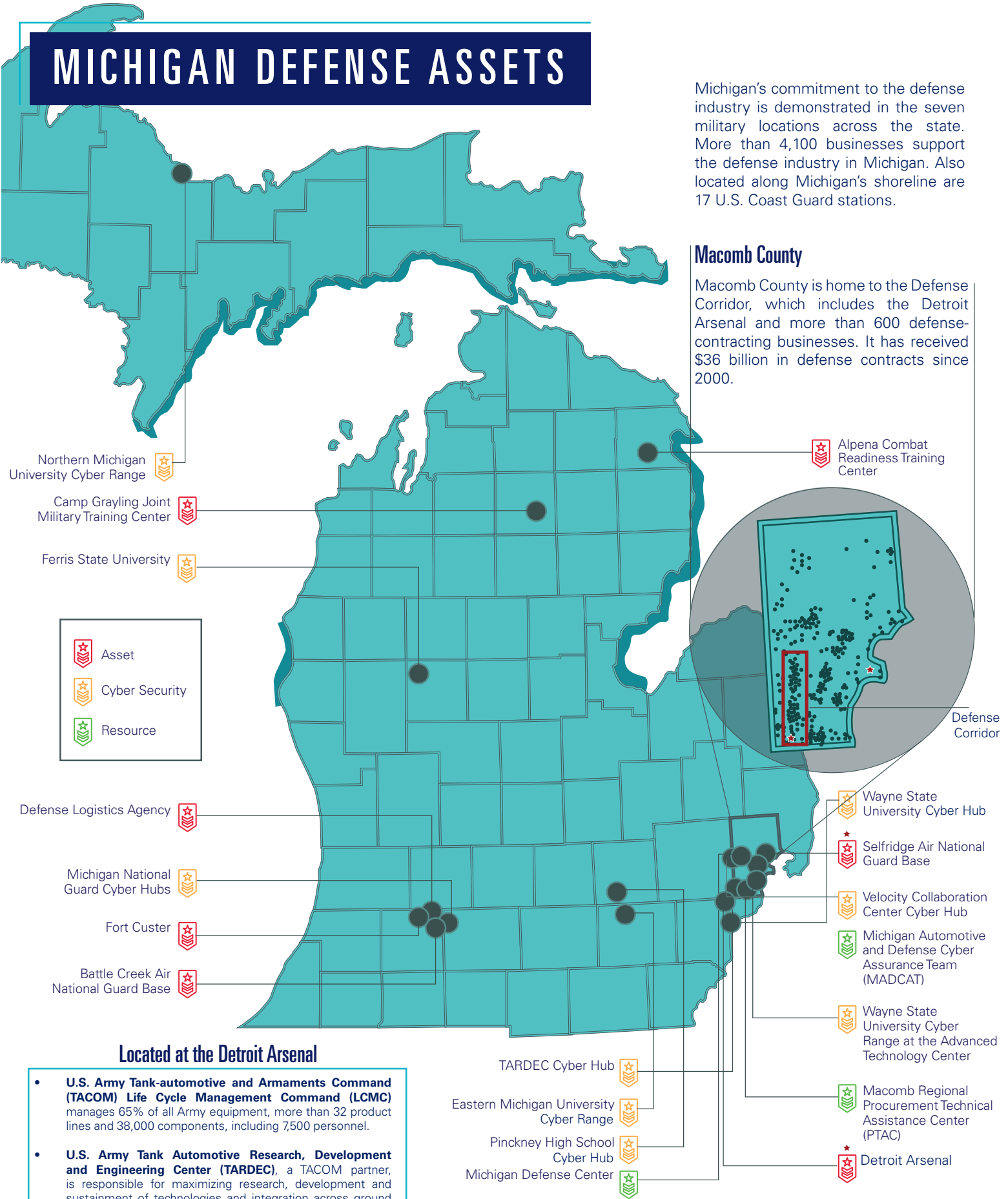
Source: Michigan Defense Center

In 2017, Michigan's defense industry had an economic impact of more than \$11.7 billion, which includes workforce and procurement. This is a consistent impact with a 21% increase year over year.



MICHIGAN DEFENSE ASSETS

Michigan's commitment to the defense industry is demonstrated in the seven military locations across the state. More than 4,100 businesses support the defense industry in Michigan. Also located along Michigan's shoreline are 17 U.S. Coast Guard stations.



Macomb County

Macomb County is home to the Defense Corridor, which includes the Detroit Arsenal and more than 600 defense-contracting businesses. It has received \$36 billion in defense contracts since 2000.

Alpena Combat Readiness Training Center

Located at the Detroit Arsenal

- **U.S. Army Tank-automotive and Armaments Command (TACOM) Life Cycle Management Command (LCMC)** manages 65% of all Army equipment, more than 32 product lines and 38,000 components, including 7,500 personnel.
- **U.S. Army Tank Automotive Research, Development and Engineering Center (TARDEC)**, a TACOM partner, is responsible for maximizing research, development and sustainment of technologies and integration across ground systems.



INDUSTRY SPOTLIGHT: HEALTH CARE



PHOTO: Oakland University
Oakland University medical students prepare to graduate after completing their residencies at Beaumont Hospital.

Health care is the Detroit region's largest industry, employing nearly 340,000 people including nearly 18,000 physicians and specialists. In 2018, University of Michigan Hospitals were ranked as the fifth best in the nation by U.S. News & World Report, and an additional 24 hospitals were recognized as "nationally ranked" or "high performing" in myriad specialties.

FOOTPRINT

10th

largest metro for health care professionals

10,651

health care-related establishments

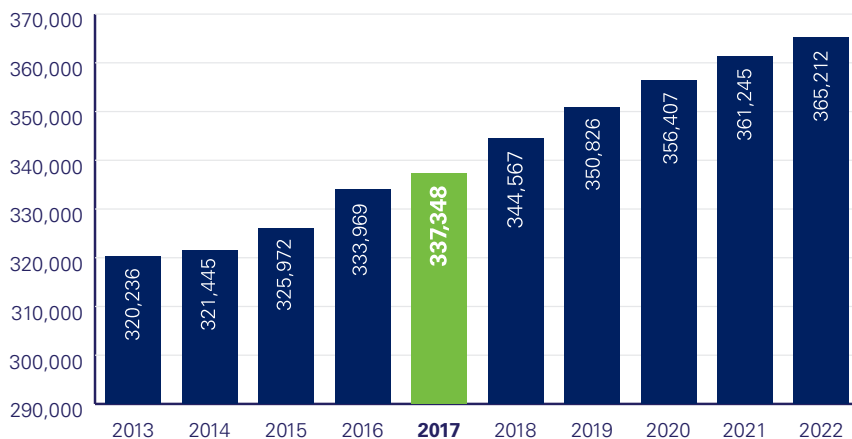
\$54,034

average annual wage

13,415

certificate and degree completions

HEALTH CARE JOB GROWTH AND FORECAST 2013-2022



Source: EMSI

The region's health care industry has consistently shown year-over-year job growth for 16 consecutive years. In 2017, more than 4,000 health care-related jobs were added to the Detroit region, bringing the total to 344,000 professionals.

Between 2013 and 2017, the region added more than 17,000 positions and is expected to add another nearly 30,000 jobs through 2022.

In 2017, more than 25,000 students graduated with health care-related degrees in Michigan, and more than 13,000 of those graduates were from higher education institutions in the Detroit region.



CASE STUDY



PHOTO: Materialise North America
Dr. Dee Dee Wang, director of Structural Heart Imaging for Henry Ford Health System, works with 3D-printed anatomical heart models.

Materialise Medical 3D Printing 3D Printing: Personalized Solutions Are Revolutionizing Health Care

Sixteen of the top 20 hospitals as ranked by U.S. News and World Report have a 3D printing strategy using technology from Materialise, a Belgian company with North American headquarters in Plymouth, Mich. The company produces tens of thousands of 3D printed medical parts per year for cardiovascular, craniomaxillofacial and orthopedic applications. These parts range from anatomical models to help surgeons plan and practice for complex operations to surgical guides used in bone corrections.

“With FDA-cleared software like our Mimics InPrint, 3D printing can produce medical devices, surgical guides, implants and anatomical models that are specifically tailored to a patient’s anatomy for improved planning and more personalized care,” said Bryan Crutchfield, vice president and general manager of Materialise North America. “This technology is helping hospitals curb health care costs, doctors communicate more effectively with each other and their patients and improve patient outcomes to create a better, healthier world.”

Among Southeast Michigan hospitals that have contracts with Materialise to develop 3D solutions to help plan procedures with doctors are Beaumont Hospital, Detroit Medical Center, and the University of Michigan Hospital. In addition to its medical solutions, the company also supports the expansion of 3D printing in manufacturing by working with corporate entities including General Motors Co., Ford Motor Company and Microsoft on projects.

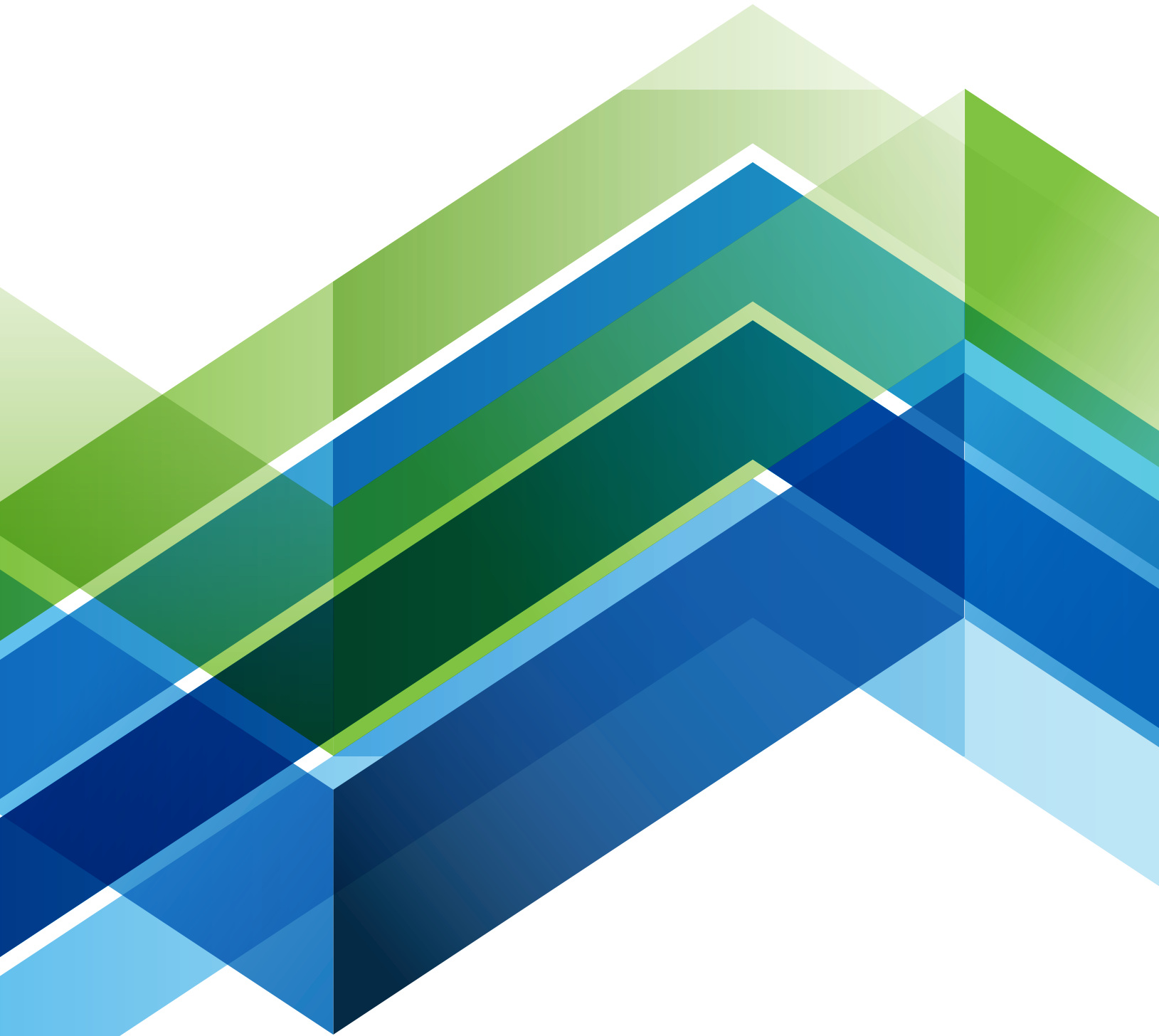
FASTEST-GROWING OCCUPATIONS BY PERCENT 2013-2021

2013-2017		2017-2021	
Genetic Counselors	55.4%	Occupational Therapy Assistants	15.7%
Hearing Aid Specialists	47.0%	Occupational Therapy Aides	15.6%
Occupational Health and Safety Specialties	45.8%	Nurse Practitioners	15.5%
Occupational Therapy Assistants	43.8%	Physical Therapist Aides	13.8%
Nurse Practitioners	42.7%	Physical Therapist Assistants	13.8%

Between 2013 and 2017, the Detroit region’s fastest-growing occupation at 55.4% was genetic counselors. In the next five years, it is expected that occupational therapy assistants will take the lead for the fastest growth with 15.7%. In line with national wages, the median hourly wages for health care practitioners and technicians is at \$32.45 versus \$31.86, and health care support occupations are at \$13.62 versus \$13.76 respectively.

Source: EMSI





detroitchamber.com