MICHIGAN'S LABOR MARKET NEWS

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Michigan nonfarm jobs advanced by 5,400 in June 2019.

JUNE 2019 JOBLESS RATE

MICHIGAN

4.2%

NATIONAL

3.7%

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IT'S BIGGER THAN DATA.

The Bureau of Labor Market Information and Strategic Initiatives is your one-stop shop for information and analysis on Michigan's population, labor market, and more.

- Our Federal-State Programs division runs the state's cooperative agreements with the U.S. Bureau of Labor Statistics and the U.S. Census Bureau, making us the official source for this information.
- Our Research and Evaluation division conducts workforce research and program evaluation, giving you the insight you need to make smarter decisions.

Michigan's unemployment rate remained unchanged at 4.2 percent in June, as a small gain in total employment was canceled by an uptick in the number of unemployed. The state jobless rate was two-tenths of a percent higher over the year, while the national rate edged three-tenths of a percent lower.

Payroll jobs rose by one-tenth of a percent in June. Modest job gains in *Manufacturing* and several *Service-providing* industry sectors were somewhat offset by declines in *Trade, transportation, and utilities* and *State government*. Over the year, total nonfarm job levels were up by 0.4 percent in June.

This month's feature looks at the potential impact of autonomous vehicles on the state's labor market. Building off two national studies, we discuss which occupations are likely to be affected by autonomous vehicles and estimate the number of Michigan jobs that may be displaced as a result of this technology. We also highlight some job titles that are expected to benefit from autonomous vehicles.

In keeping with this broader theme, our *Infographic of the Month* provides information on modes of transportation used in commuting in Michigan and our *Data Spotlight* highlights new experimental state-level productivity measures from our partners at the Bureau of Labor Statistics.

We hope you enjoy this edition of Michigan's Labor Market News. Please let us know if there is something you would like to know more about.

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MICHIGAN'S JOBLESS RATE REMAINS UNCHANGED IN JUNE 2019

Michigan's seasonally adjusted unemployment rate remained unchanged at 4.2 percent in June. Total employment rose by 2,000 and the number of unemployment moved up by 3,000 over the month. Michigan's total workforce went up slightly in June, resulting in a civilian labor force level of 4,957,000.

Over the past year, Michigan's jobless rate advanced by two-tenths of a percentage point. Since June 2018, the national unemployment rate declined by three-tenths of a percentage point. The state's unemployment rate in June was five-tenths of a percentage point above the U.S rate of 3.7 percent.

Over the year, total employment in the state expanded by 46,000, or 1.0 percent. Michigan's June employment level of 4,748,000 was the highest recorded level in the state since October of 2005. Total unemployment in the state rose by 12,000 since June of 2018, an increase of 6.1 percent. June marked the fourth consecutive month of total statewide unemployment level increases.

Since June 2018, Michigan's workforce advanced by 57,000, or 1.2 percent, an increase nearly double that of the pace of the nation (+0.5 percent).

Michigan Job Leavers Move Opposite the Statewide Jobless Rate

The Current Population Survey (CPS) is a survey of households conducted every month by the Census Bureau for the Bureau of Labor Statistics and provides comprehensive data on labor force characteristics across the nation. Michigan's CPS provides detailed information about characteristics of the employed and unemployed across the state. One such statistic is for job leavers. The CPS defines job leavers as "unemployed people who quit or otherwise voluntarily left their previous job and immediately began looking for new employment."[1]

An examination of annual average Michigan CPS data for the ten-year period between 2008 to 2018 reveals an overall inverse relationship between the statewide unemployment rate and the percentage share of the unemployed who are job leavers. In other words, these measures tend to move opposite one another. During the height of the recession in 2009, Michigan had its highest jobless rate over the ten-year period (13.3%). In contrast, the percentage of unemployed characterized as job leavers exhibited its lowest rate over the period of 3.1 percent.

In a similar fashion, Michigan's lowest annual average jobless rate between 2008 and 2018 occurred in 2018 at a rate of 4.1 percent. During 2018, the share of unemployed defined as job leavers recorded its highest rate over the past ten years at 15.8 percent. A possible explanation for this is that as the unemployment rate shrinks, people become more confident about future job prospects and are thus more likely to voluntarily leave their current employer for new employment.

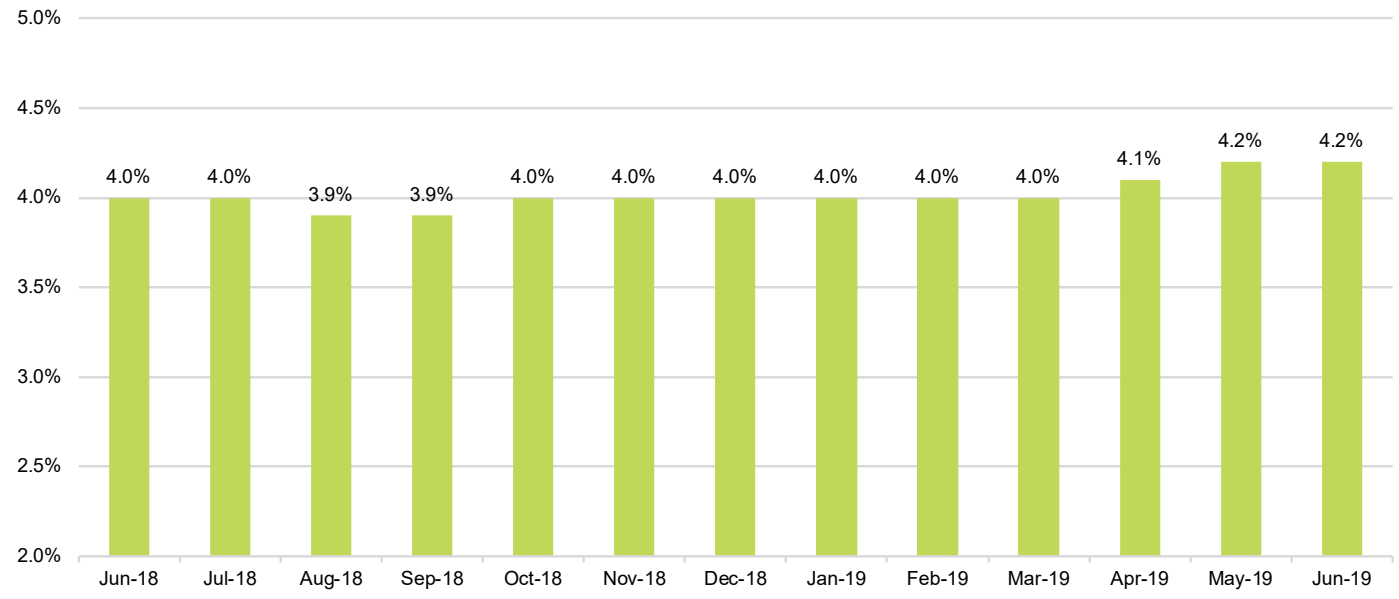
SHIBANI PUTATUNDA
Economic Analyst

[1]https://www.bls.gov/cps/definitions.htm#jobleavers

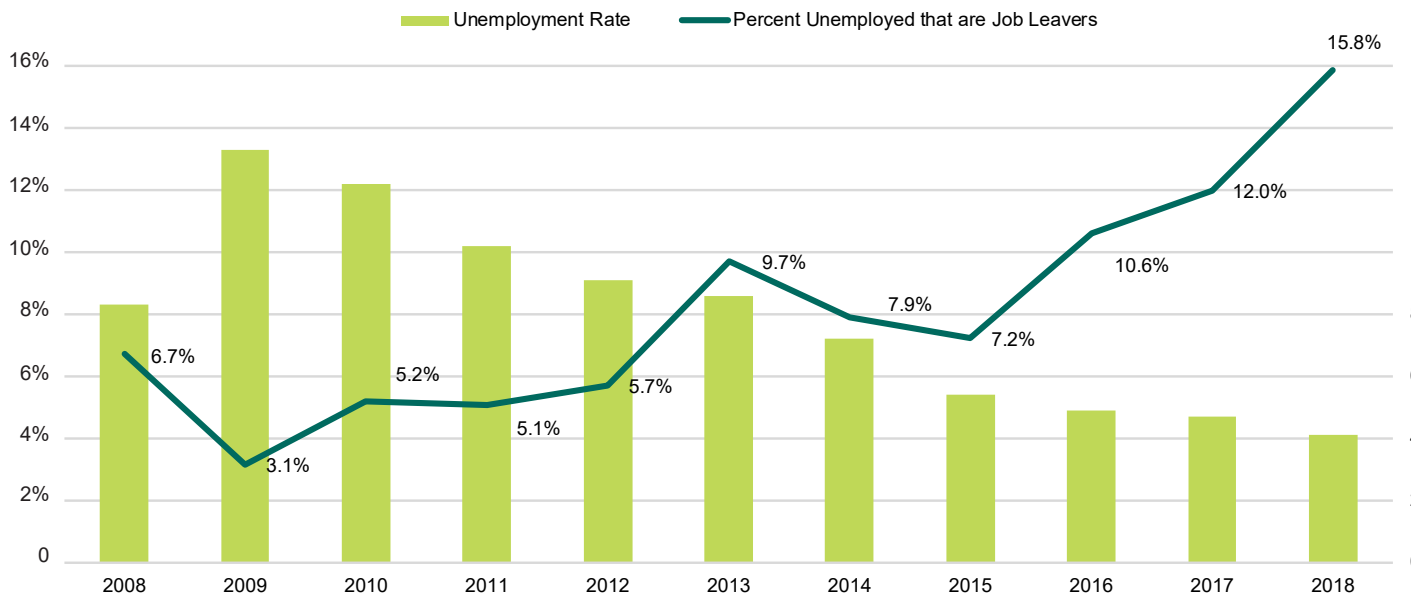
MICHIGAN LABOR FORCE ESTIMATES (SEASONALLY ADJUSTED)

	JUNE 2019	MAY 2019	JUNE 2018	CHANGE OVER THE MONTH	CHANGE OVER THE YEAR
Labor Force	4,957,000	4,953,000	4,900,000	+4,000	+57,000
Employed	4,748,000	4,746,000	4,702,000	+2,000	+46,000
Unemployed	210,000	207,000	198,000	+3,000	+12,000
Jobless Rate	4.2	4.2	4.0	0.0	+0.2

MICHIGAN JOBLESS RATES, JUNE 2018–JUNE 2019



MICHIGAN UNEMPLOYMENT RATE AND JOB LEAVERS AS SHARE OF UNEMPLOYED, 2008–2018



MICHIGAN JOB TRENDS BY INDUSTRY SECTOR

Monthly Overview

Michigan nonfarm payroll jobs increased by 5,400 in June to 4,446,700. The largest-over the-month job gains occurred in *Professional and business services* (+2,400), *Manufacturing* (+2,000), and *Education and health services* (+1,100). The advance in *Manufacturing* jobs was primarily the result of a recall in *Transportation equipment manufacturing* (+2,600). Employers also added to their payrolls in *Leisure and hospitality* (+900), *Construction* (+700), *Other services* (+500), and *Government* (+200). June additions were somewhat offset by a job decline in *Trade, transportation and utilities* (-2,000).

Over-the-Year Analysis

Over the past year, total nonfarm job levels in Michigan have grown by 18,700 or 0.4 percent. This was significantly below the 1.5 percent expansion nationally during this period. The major sectors of *Leisure and hospitality* (+8,900) and *Manufacturing* (+7,200) reported the largest job increases. Sizable job gains were also recorded in *Financial activities* and *Other services* (+2,900 each), and *Construction* (+2,000). The sectors of *Education and health services* (-5,600) and *Trade, transportation and utilities* (-2,300) posted modest over-the-year job reductions.

Michigan Second Quarter 2019 Performance

Total nonfarm payroll employment was essentially unchanged during the second quarter, notching lower by just 800 jobs. Nationally, payrolls moved higher by 0.3 percent during the quarter.

In Michigan, this second quarter performance ended a 36-quarter period of continuous job gains going back to the second quarter of 2010. The broad industry sectors to report payroll declines during the second quarter of 2019 included *Construction* (-1.0 percent), *Trade, transportation, and utilities* (-0.6 percent), *Manufacturing* (-0.3 percent), and *Education and health services* (-0.2 percent).

The major sectors with job additions during this period included *Information* (+1.9 percent), *Mining and logging* (+1.4 percent), *Other services* (+1.0 percent), *Leisure and hospitality* (+0.7 percent), *Professional and business services* and *Government* (+0.2 percent each), and *Financial activities* (+0.1 percent).

Payrolls in the state's key *Transportation equipment manufacturing* sector rose by 1.1 percent during the quarter.

Significant Industry Employment Developments

PROFESSIONAL AND BUSINESS SERVICES

Job levels in this broad sector increased by 2,400 in June. This gain was concentrated in the *Administrative, support, and waste management services* sector (+2,800). Detailed industries with job advances included *Computer systems design and related services* and *Temporary help services*. Automotive industry restructuring was mostly responsible for the payroll decline in *Management of companies and enterprises* (-700).

Since June 2018, payrolls in the broad sector have remained essentially unchanged, notching higher by just 300 jobs. There was job growth over the year in *Professional, scientific, and technical services* (+4,400). Nationally, employment increased by 51,000 over the month and by 2.3 percent over the year.

EDUCATION AND HEALTH SERVICES

Payrolls rose by 1,100 in this major industry sector over the month. All this increase was recorded in the *Health care and social assistance* (+1,300) subsector, as job levels in *Education services* edged lower by 200. Most of this June gain was due to stronger than typical hiring in *Home health care services* and *Nursing and residential care facilities*. The broad sector has seen significant, yet declining, employment growth over the past few years, adding 13,400 jobs in 2016, 9,000 jobs in 2017, and 7,200 jobs in 2018.

This downward trend has continued in 2019 with essentially no job growth in the first quarter and a loss of jobs during the second quarter. Between June 2018 and June 2019, employment in the broad sector was down by 5,600 or by 0.8 percent. This loss occurred in both the *Education services* (-2,300) and *Health care and social assistance* (-3,300) subsectors. Nationally, employment rose by 61,000 in June and by 2.5 percent over the year.

TRADE, TRANSPORTATION, AND UTILITIES

The number of jobs in this sector declined by 2,000 during June with payroll cutbacks in *Transportation, warehousing, and utilities* (-1,000), *Retail trade* (-900), and *Wholesale trade* (-100). A portion of this broad sector job cut on a seasonally adjusted basis reflected smaller than typical monthly job advances in *Truck transportation* and *Food and beverage stores*.

During the second quarter of this year, job levels fell by 4,600, which ended six consecutive quarters of employment growth. Since June 2018, jobs in the sector contracted by 2,300 or 0.3 percent. This reduction was entirely located in *Retail trade* (-8,100). Nationally, job levels declined by 20,000 over the month and by 0.8 percent over the year.

Metropolitan Statistical Areas (MSAs)

In June, on a *not-seasonally adjusted basis*, 12 Michigan regions reported increases in total nonfarm jobs. These gains ranged from 0.1 percent in the Kalamazoo metro area to 3.2 percent in the Flint MSA. The exceptions were Ann Arbor with no monthly job change, and Lansing which recorded a seasonal 2.3 percent decline.

Six metropolitan areas recorded job growth above the statewide average of 0.8 percent. Common to these areas was seasonal hiring in *Leisure and hospitality*. The MSAs of Benton Harbor, Saginaw, and Flint also reported job advances in *Manufacturing*. The Detroit MSA saw notable job additions in the *Professional and business services* sector.

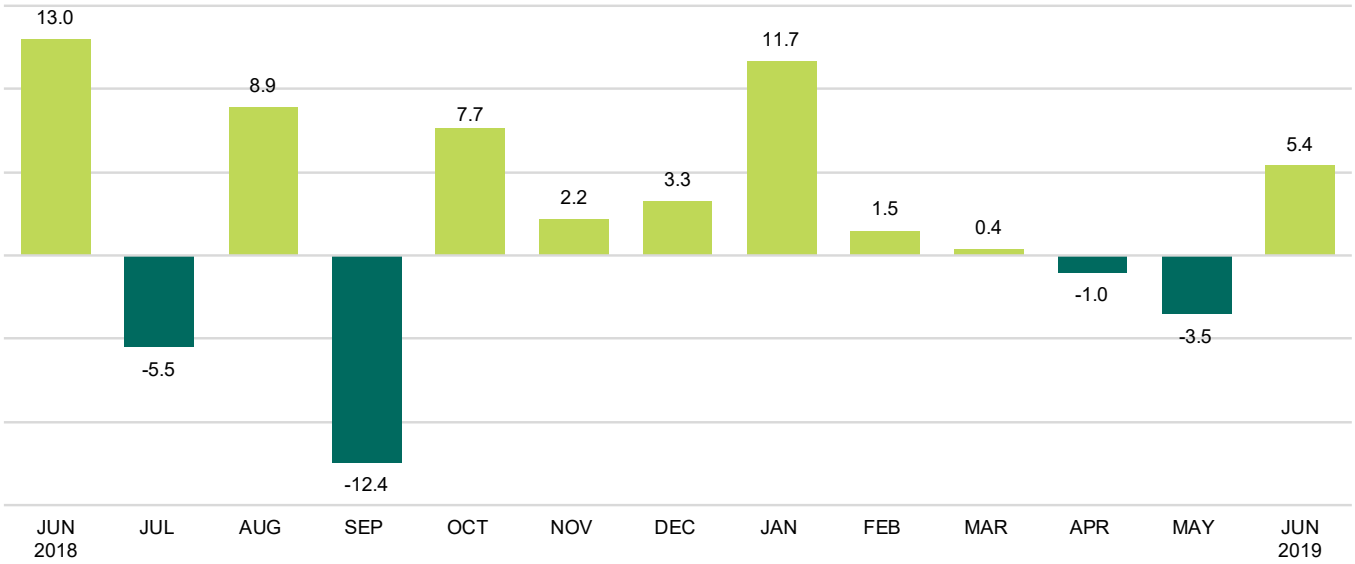
In the Ann Arbor metro area seasonal education-related job declines in the public sector were offset by a similar increase in *Total private* sector jobs. The Lansing job decrease was centered in *State government* and was partially the result of continued seasonal employment reductions in the area's post-secondary education sector.

JEFFREY AULA
Economic Analyst

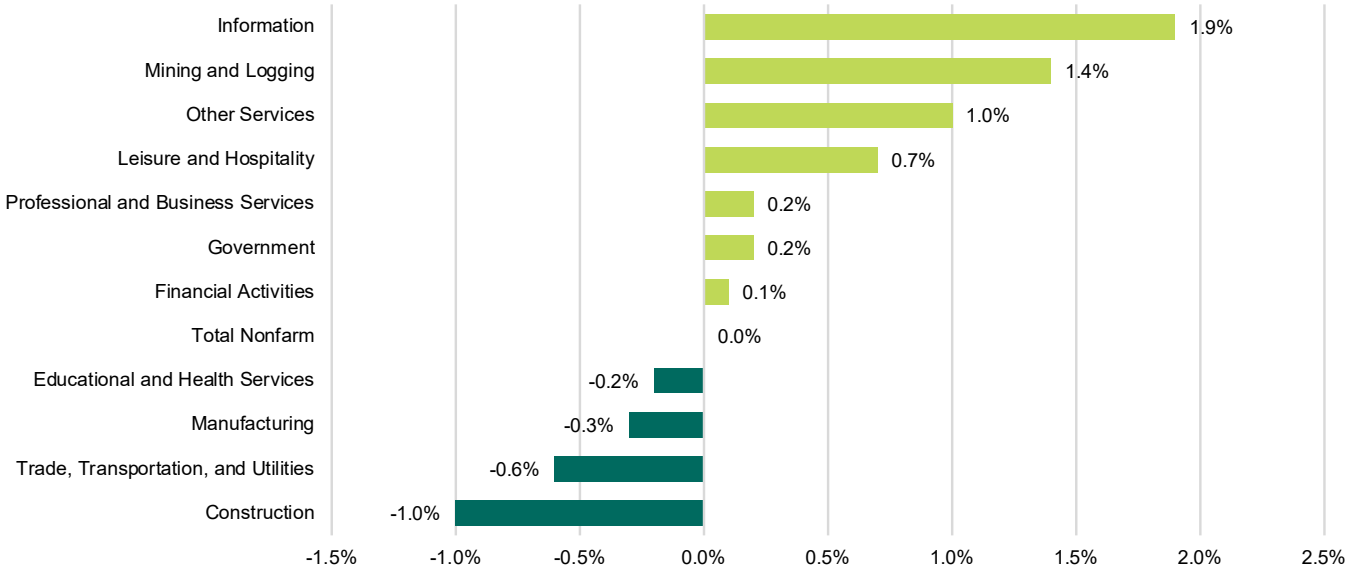
MICHIGAN PAYROLL JOBS (SEASONALLY ADJUSTED)

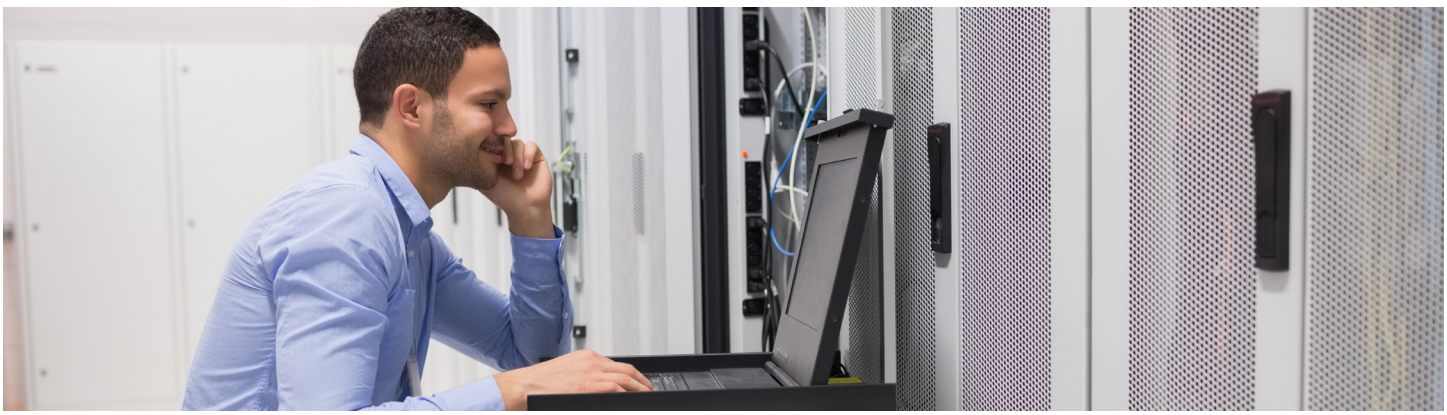
INDUSTRY	JUNE 2019	MAY 2019	JUNE 2018	OVER THE MONTH		OVER THE YEAR	
				LEVEL	PERCENT	LEVEL	PERCENT
TOTAL NONFARM	**4,446,700**	**4,441,300**	**4,428,000**	**5,400**	**0.1%**	**18,700**	**0.4%**
Total Private	3,839,500	3,834,300	3,821,400	5,200	0.1%	18,100	0.5%
Private Service-Providing	3,024,200	3,021,700	3,015,200	2,500	0.1%	9,000	0.3%
GOODS-PRODUCING	**815,300**	**812,600**	**806,200**	**2,700**	**0.3%**	**9,100**	**1.1%**
Mining, Logging, and Construction	179,800	179,100	177,900	700	0.4%	1,900	1.1%
Mining and Logging	7,200	7,200	7,300	0	0.0%	-100	-1.4%
Construction	172,600	171,900	170,600	700	0.4%	2,000	1.2%
Manufacturing	635,500	633,500	628,300	2,000	0.3%	7,200	1.1%
Durable Goods	483,200	482,000	475,200	1,200	0.2%	8,000	1.7%
Transportation Equipment Manufacturing	196,700	194,100	190,500	2,600	1.3%	6,200	3.3%
Non-Durable Goods	152,300	151,500	153,100	800	0.5%	-800	-0.5%
SERVICE-PROVIDING	**3,631,400**	**3,628,700**	**3,621,800**	**2,700**	**0.1%**	**9,600**	**0.3%**
Trade, Transportation, and Utilities	789,600	791,600	791,900	-2,000	-0.3%	-2,300	-0.3%
Wholesale Trade	173,000	173,100	172,200	-100	-0.1%	800	0.5%
Retail Trade	463,600	464,500	471,700	-900	-0.2%	-8,100	-1.7%
Transportation, Warehousing, and Utilities	153,000	154,000	148,000	-1,000	-0.6%	5,000	3.4%
Information	57,700	57,900	55,800	-200	-0.3%	1,900	3.4%
Financial Activities	222,000	222,200	219,100	-200	-0.1%	2,900	1.3%
Finance and Insurance	165,600	166,200	164,100	-600	-0.4%	1,500	0.9%
Real Estate and Rental and Leasing	56,400	56,000	55,000	400	0.7%	1,400	2.5%
Professional and Business Services	665,000	662,600	664,700	2,400	0.4%	300	0.0%
Professional, Scientific, and Technical Services	303,300	303,000	298,900	300	0.1%	4,400	1.5%
Management of Companies and Enterprises	67,600	68,300	68,900	-700	-1.0%	-1,300	-1.9%
Administrative and Support and Waste Management and Remediation Services	294,100	291,300	296,900	2,800	1.0%	-2,800	-0.9%
Education and Health Services	675,300	674,200	680,900	1,100	0.2%	-5,600	-0.8%
Educational Services	71,600	71,800	73,900	-200	-0.3%	-2,300	-3.1%
Health Care and Social Assistance	603,700	602,400	607,000	1,300	0.2%	-3,300	-0.5%
Leisure and Hospitality	444,100	443,200	435,200	900	0.2%	8,900	2.0%
Arts, Entertainment, and Recreation	53,800	53,900	53,900	-100	-0.2%	-100	-0.2%
Accommodation and Food Services	390,300	389,300	381,300	1,000	0.3%	9,000	2.4%
Other Services	170,500	170,000	167,600	500	0.3%	2,900	1.7%
Government	607,200	607,000	606,600	200	0.0%	600	0.1%
Federal Government	52,600	52,500	52,400	100	0.2%	200	0.4%
State Government	190,800	191,400	191,700	-600	-0.3%	-900	-0.5%
Local Government	363,800	363,100	362,500	700	0.2%	1,300	0.4%

MICHIGAN OVER THE MONTH PAYROLL JOB CHANGE (IN THOUSANDS)

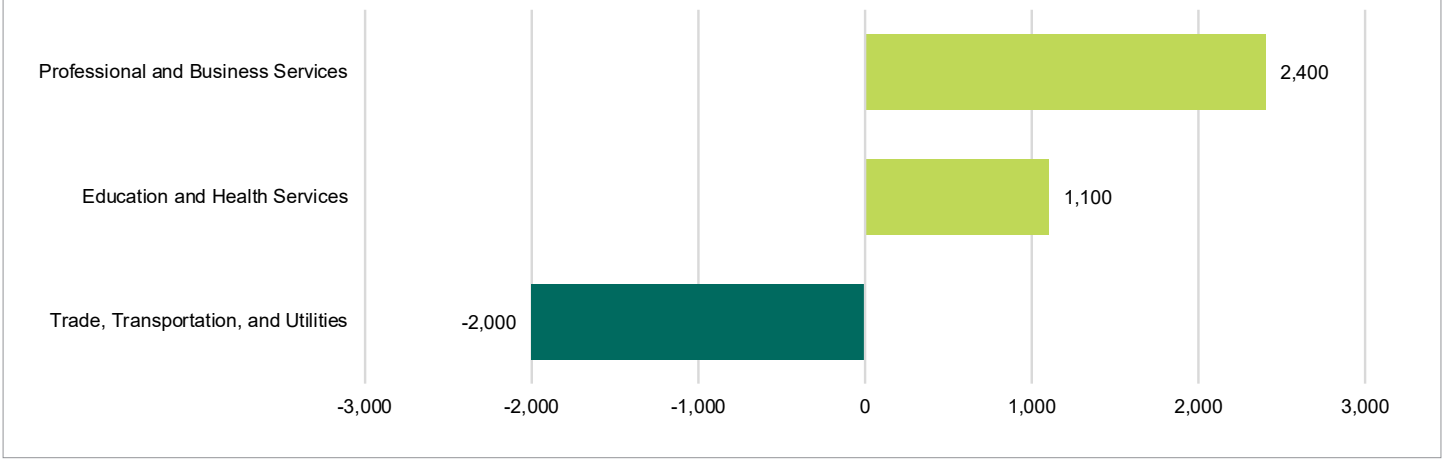


PERCENTAGE JOB CHANGE, FIRST QUARTER 2019–SECOND QUARTER 2019

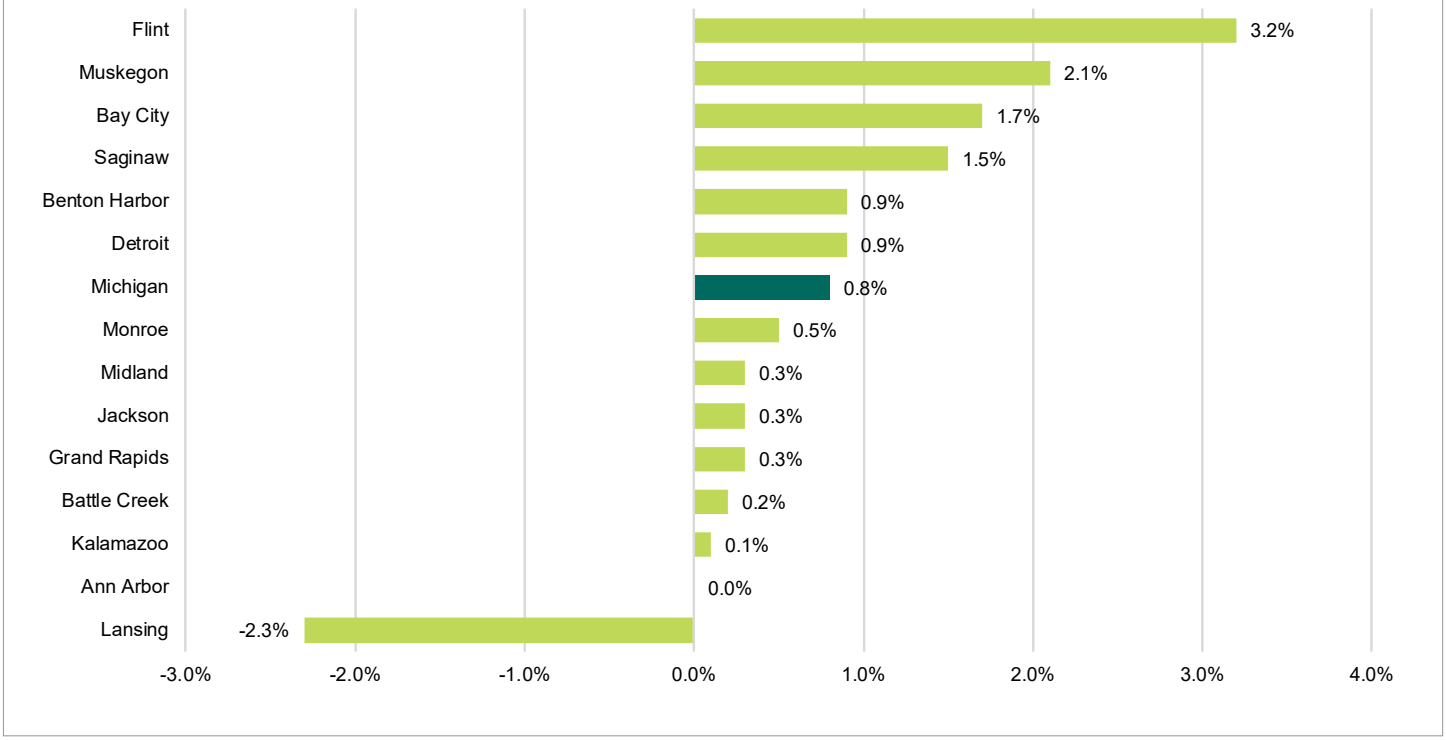




MICHIGAN OVER THE MONTH JOB CHANGE BY SELECT INDUSTRY, MAY 2019–JUNE 2019



METROPOLITAN AREA JOB CHANGE, MAY 2019–JUNE 2019 (NOT SEASONALLY ADJUSTED)



REGIONAL LABOR MARKET ANALYSIS

ANN ARBOR METROPOLITAN AREA

- The unemployment rate in Ann Arbor advanced by six-tenths of a percentage point in June to 3.5 percent.
- Ann Arbor's employment level was unchanged over the month, but rose by 1.3 percent over the year.

MONTHLY INDUSTRY DEVELOPMENTS

- The Ann Arbor total nonfarm job count inched down by 100 over the month.
- Increases in *Professional and business services and Leisure and hospitality* were offset by a large seasonal job decline in *Government*.

INDUSTRY TRENDS

- *Manufacturing* in the Ann Arbor region reached a ten-year high level of 15,700 jobs in June.

BAY CITY METROPOLITAN AREA

- The Bay City metro area jobless rate rose by 0.7 percentage points over the month to 5.0 percent in June.
- Both the civilian labor force and total employment edged up by 0.2 percent over the year.

MONTHLY INDUSTRY DEVELOPMENTS

- Payroll employment in the Bay City region advanced by 600 between May and June, or 1.7 percent, with small job gains seen in multiple regional industries.

INDUSTRY TRENDS

- Bay City was the only Michigan metro area to exhibit no change in nonfarm employment over the year.

FLINT METROPOLITAN AREA

- Joblessness in the Flint metro area fell by two-tenths of a percentage point over the month to 5.4 percent.
- Flint was the only Michigan metro area to exhibit a jobless rate decline in June.

MONTHLY INDUSTRY DEVELOPMENTS

- Payroll jobs in the Flint region advanced by 4,500, or 3.2 percent, between May and June.
- This monthly job gain was concentrated in the *Manufacturing* sector (+3,900), as auto workers returned from a temporary layoff.

INDUSTRY TRENDS

- On a percentage basis, the Flint region exhibited the largest total nonfarm job addition out of all Michigan metro areas both over the month (+3.2 percent) and over the year (+1.4 percent).

BATTLE CREEK METROPOLITAN AREA

- June labor force in the Battle Creek MSA rose by 500, exclusively from an increase in the number of unemployed. Employment inched down 100. The jobless rate was up seven tenths of a percentage point.
- Since June 2018, unemployment was unchanged, while employment rose by 300; the jobless rate was flat.

MONTHLY INDUSTRY DEVELOPMENTS

- June job levels in the Battle Creek MSA were essentially unchanged. *Manufacturing* jobs moved up by 200. A seasonal addition of 100 was seen in *Construction and mining* and in *Leisure and hospitality*.
- Since June 2018, jobs in the Battle Creek MSA were flat. An employment gain of 300 in *Manufacturing* was offset by a job cut in *Professional and business services*.

INDUSTRY TRENDS

- Since 2010, jobs in *Manufacturing* rose by 19.4 percent in the area, about half the rate of 36.6 percent statewide.

DETROIT-WARREN-DEARBORN METRO AREA

- The Detroit MSA unemployment rate inched up by two-tenths of a percentage point in June to 4.5 percent.
- The number of area unemployed rose by 2.1 percent since June 2018.

MONTHLY INDUSTRY DEVELOPMENTS

- Nonfarm jobs in the Detroit MSA rose by 19,200 in June, or 0.9 percent.
- Leading the way in the number of June job additions were industries such as *Leisure and hospitality* (+5,600), and *Professional and business services* (+4,500).

INDUSTRY TRENDS

- *Education and health services* in the Detroit metro area reached an all-time high level of 320,900 jobs in June.

GRAND RAPIDS-WYOMING METRO AREA

- The Grand Rapids unemployment rate increased by 0.6 percentage points in June to 3.3 percent.
- The region's total workforce rose by 0.9 percent since June 2018, matching that of the state.

MONTHLY INDUSTRY DEVELOPMENTS

- Nonfarm jobs in Grand Rapids moved up by 2,000 over the month, or 0.3 percent, mainly due to a 1,600-employment advance in *Manufacturing*.

INDUSTRY TRENDS

- The *Information* sector in Grand Rapids reached a ten-year high level of 6,600 jobs in June.

CIVILIAN LABOR FORCE AND NONFARM PAYROLL JOBS

	ANN ARBOR			BATTLE CREEK			BAY CITY		
	JUNE 2019	MAY 2019	JUNE 2018	JUNE 2019	MAY 2019	JUNE 2018	JUNE 2019	MAY 2019	JUNE 2018
PLACE OF RESIDENCE									
Labor Force	196,700	195,400	194,300	64,400	63,900	64,000	51,300	50,400	51,200
Employment	189,800	189,800	187,400	61,400	61,500	61,100	48,700	48,200	48,600
Unemployment	6,900	5,600	6,900	2,900	2,400	2,900	2,600	2,200	2,600
Rate (percent)	3.5%	2.9%	3.6%	4.5%	3.8%	4.5%	5.0%	4.3%	5.0%
PLACE OF WORK									
Total Nonfarm Jobs	222,200	222,300	220,600	59,100	59,000	59,000	35,800	35,200	35,800
Mining, Logging, and Construction	4,800	4,700	4,700	1,800	1,700	1,800	1,400	1,300	1,400
Manufacturing	15,700	15,500	15,300	12,300	12,100	12,000	4,600	4,500	4,400
Trade, Transportation, and Utilities	25,900	25,800	26,000	9,100	9,200	9,100	7,300	7,300	7,700
Wholesale Trade	6,300	6,300	6,200	*	*	*	*	*	*
Retail Trade	15,700	15,600	16,100	5,700	5,800	5,700	4,900	4,800	5,100
Information	5,500	5,400	5,400	*	*	*	400	400	400
Financial Activities	7,000	7,000	7,300	1,200	1,200	1,200	1,400	1,300	1,400
Professional and Business Services	31,400	30,600	30,600	6,000	6,000	6,300	2,800	2,700	2,700
Educational and Health Services	27,900	28,100	28,400	10,900	11,000	11,000	6,500	6,400	6,600
Leisure and Hospitality	19,500	18,900	19,000	4,700	4,600	4,700	4,700	4,500	4,500
Other Services	6,600	6,500	6,600	1,900	1,800	1,900	1,200	1,300	1,300
Government	77,900	79,800	77,300	10,900	11,000	10,700	5,500	5,500	5,400

	DETROIT-WARREN-DEARBORN			FLINT			GRAND RAPIDS-WYOMING		
	JUNE 2019	MAY 2019	JUNE 2018	JUNE 2019	MAY 2019	JUNE 2018	JUNE 2019	MAY 2019	JUNE 2018
PLACE OF RESIDENCE									
Labor Force	2,157,000	2,140,000	2,141,000	188,700	184,300	184,900	595,400	590,500	590,200
Employment	2,060,000	2,048,000	2,045,000	178,500	174,000	175,500	575,600	574,300	570,900
Unemployment	98,000	92,000	96,000	10,300	10,300	9,400	19,800	16,200	19,300
Rate (percent)	4.5%	4.3%	4.5%	5.4%	5.6%	5.1%	3.3%	2.7%	3.3%
PLACE OF WORK									
Total Nonfarm Jobs	2,072,200	2,053,000	2,061,200	145,000	140,500	143,000	574,900	572,900	573,600
Mining, Logging, and Construction	81,400	78,900	79,300	6,200	6,000	6,100	26,700	25,800	26,300
Manufacturing	260,500	261,000	262,100	13,400	9,500	12,600	121,100	119,500	119,300
Trade, Transportation, and Utilities	380,000	376,700	375,800	29,800	29,800	29,900	99,300	98,400	98,800
Wholesale Trade	88,700	87,700	87,600	5,500	5,400	5,300	32,300	32,100	32,500
Retail Trade	211,000	209,300	212,500	19,700	19,800	20,500	50,900	50,200	50,500
Information	27,300	27,200	27,000	3,800	3,800	3,900	6,600	6,500	6,500
Financial Activities	117,000	116,600	117,700	6,000	6,000	6,200	27,100	27,000	27,100
Professional and Business Services	402,000	397,500	405,900	17,800	17,700	17,200	77,000	77,300	81,300
Educational and Health Services	320,900	319,600	317,900	26,700	26,700	26,800	92,600	93,500	93,900
Leisure and Hospitality	215,500	209,900	209,400	16,500	16,000	15,900	54,300	54,200	52,100
Other Services	76,300	75,500	76,800	5,600	5,600	5,600	22,800	22,500	22,600
Government	191,300	190,100	189,300	19,200	19,400	18,800	47,400	48,200	45,700

* Data Not Available

JACKSON METROPOLITAN AREA

- In June, labor force in the Jackson MSA was up 700, mainly from an increase in the number of unemployed, while employment edged up 100. The jobless rate rose by seven tenths of a percentage point.
- Since June 2018, employment advanced by 1,300, while unemployment inched down 100. The jobless rate was relatively flat.

MONTHLY INDUSTRY DEVELOPMENTS

- Most of the June employment gains in the Jackson MSA were in *Trade, transportation, warehousing, and utilities* (+300) and in *Construction and mining* (+200). Jackson metro area jobs rose slightly by 200 to a total of 60,500 in June.
- Since June 2018, Jackson payroll jobs rose by 800 or 1.3 percent. *Manufacturing* and *Trade, transportation, warehousing, and utilities* moved up by 300 jobs each.

INDUSTRY TRENDS

- Since 2010, jobs in *Manufacturing* in Jackson grew by 39.2 percent (+2,900); similar to the statewide rate of expansion.

LANSING-EAST LANSING METRO AREA

- The Lansing metro area unemployment rate rose by eight-tenths of a percentage point over the month to 3.9 percent.
- The Lansing MSA exhibited the most pronounced employment decline out of all Michigan regions over the month, decreasing seasonally by 2.2 percent in June.

MONTHLY INDUSTRY DEVELOPMENTS

- The Lansing payroll job count fell by 5,600 in June (-2.3%), mainly due to a seasonal job cut of 6,900 in *Government*.

INDUSTRY TRENDS

- Lansing's *Mining, logging and construction* industry reached an eleven-year high level of 8,900 jobs in June.

MONROE METROPOLITAN AREA

- The Monroe metro area jobless rate inched up by a tenth of a percentage point in June to 4.1 percent.
- The number of area unemployed was unchanged over the month.

MONTHLY INDUSTRY DEVELOPMENTS

- Monroe job levels inched up by 200 over the month, or 0.5 percent, largely due to a 200-job seasonal advance in the region's *Leisure and hospitality* industry.

INDUSTRY TRENDS

- The Monroe metro area's *Leisure and hospitality* sector reached a ten-year high level of 5,100 jobs in June, a level last seen in August 2014.

KALAMAZOO-PORTAGE METRO AREA

- June labor force in the Kalamazoo-Portage MSA rose by 1,300, mostly from an increase in the number of unemployed (+1,100). Employment inched up 200. The jobless rate was up six tenths of a percentage point.
- Since June 2018, employment advanced by 1,300, while unemployment and the jobless rate were stable.

MONTHLY INDUSTRY DEVELOPMENTS

- June payroll job levels in the Kalamazoo-Portage MSA were steady. Jobs advanced seasonally in *Leisure and hospitality* (+600). *Manufacturing* employment also moved up in June.
- Since June 2018, jobs in the area inched up. *Leisure and hospitality* and *Manufacturing* added jobs, but employment in *Professional and business services* fell.

INDUSTRY TRENDS

- Since 2010, jobs in *Manufacturing* grew by 27.2 percent (compared to 36.6 percent statewide).

MIDLAND METROPOLITAN AREA

- Midland's jobless rate rose by 0.6 percentage points between May and June to 4.0 percent.
- Midland was the only Michigan region to record a decline in total employment over the year, edging down slightly by 0.3 percent since June 2018.

MONTHLY INDUSTRY DEVELOPMENTS

- Nonfarm employment in Midland edged up by 100 in June 2019, an increase of 0.3 percent.

INDUSTRY TRENDS

- Midland's *Goods producing* sector reached a ten-year record level of 9,400 jobs in June.

MUSKEGON METROPOLITAN AREA

- Joblessness in the Muskegon metro area rose by seven-tenths of a percentage point to 4.6 percent in June.
- The Muskegon region exhibited the largest unemployment rate decline over the year out of all Michigan regions, edging down by 0.4 percentage points since June 2018.

MONTHLY INDUSTRY DEVELOPMENTS

- Nonfarm jobs in Muskegon advanced by 1,400 over the month, or 2.1 percent, largely due to an 800-job increase in *Leisure and hospitality*.

INDUSTRY TRENDS

- *Accommodation and food services* in Muskegon registered a new high level of 7,200 jobs in June.

CIVILIAN LABOR FORCE AND NONFARM PAYROLL JOBS

	JACKSON			KALAMAZOO-PORTAGE			LANSING-EAST LANSING		
	JUNE 2019	MAY 2019	JUNE 2018	JUNE 2019	MAY 2019	JUNE 2018	JUNE 2019	MAY 2019	JUNE 2018
PLACE OF RESIDENCE									
Labor Force	76,600	75,900	75,500	171,800	170,500	170,500	248,900	252,600	246,300
Employment	73,500	73,400	72,200	165,000	164,800	163,700	239,300	244,800	236,700
Unemployment	3,200	2,600	3,300	6,800	5,700	6,900	9,600	7,800	9,600
Rate (percent)	4.1%	3.4%	4.3%	3.9%	3.3%	4.0%	3.9%	3.1%	3.9%
PLACE OF WORK									
Total Nonfarm Jobs	60,500	60,300	59,700	151,000	150,800	150,600	234,300	239,900	233,300
Mining, Logging, and Construction	2,100	1,900	2,100	6,600	6,500	6,500	8,900	8,700	8,700
Manufacturing	10,300	10,200	10,000	23,400	23,200	23,100	20,100	19,900	20,200
Trade, Transportation, and Utilities	12,800	12,500	12,500	27,000	27,100	27,100	36,800	36,500	36,800
Wholesale Trade	*	*	*	6,800	6,800	6,800	6,700	6,700	6,700
Retail Trade	6,600	6,500	6,600	16,200	16,300	16,500	21,200	21,100	21,900
Information	300	300	300	800	800	800	2,700	2,800	3,000
Financial Activities	2,200	2,200	2,200	8,500	8,500	8,400	17,000	17,000	16,200
Professional and Business Services	6,100	6,300	6,300	17,600	17,700	18,000	23,900	23,400	24,500
Educational and Health Services	10,400	10,400	10,500	24,400	24,400	24,600	32,200	32,500	32,400
Leisure and Hospitality	5,700	5,600	5,600	17,600	17,000	17,100	20,200	19,800	19,700
Other Services	2,500	2,600	2,500	5,300	5,300	5,300	10,700	10,600	10,900
Government	8,100	8,300	7,700	19,800	20,300	19,700	61,800	68,700	60,900

	MIDLAND			MONROE			MUSKEGON		
	JUNE 2019	MAY 2019	JUNE 2018	JUNE 2019	MAY 2019	JUNE 2018	JUNE 2019	MAY 2019	JUNE 2018
PLACE OF RESIDENCE									
Labor Force	41,400	41,000	41,500	77,300	77,200	76,600	81,100	79,400	80,900
Employment	39,700	39,600	39,800	74,200	74,100	73,300	77,400	76,300	76,900
Unemployment	1,700	1,400	1,700	3,100	3,100	3,400	3,700	3,100	4,000
Rate (percent)	4.00%	3.40%	4.20%	4.1%	4.0%	4.4%	4.6%	3.9%	5.0%
PLACE OF WORK									
Total Nonfarm Jobs	38,500	38,400	38,900	42,700	42,500	42,500	67,700	66,300	67,800
Mining, Logging, and Construction	*	*	*	2,400	2,500	2,100	2,700	2,600	2,500
Manufacturing	*	*	*	5,900	5,800	5,700	14,000	13,900	14,000
Trade, Transportation, and Utilities	*	*	*	10,500	10,500	10,900	14,400	14,300	14,200
Wholesale Trade	*	*	*	1,800	1,800	1,900	*	*	*
Retail Trade	*	*	*	4,700	4,700	4,900	11,400	11,300	11,400
Information	*	*	*	*	*	*	300	300	300
Financial Activities	*	*	*	900	900	900	1,800	1,800	1,900
Professional and Business Services	*	*	*	5,700	5,700	5,600	3,700	3,700	3,900
Educational and Health Services	*	*	*	5,000	5,000	5,200	12,200	12,100	12,300
Leisure and Hospitality	*	*	*	5,100	4,900	5,000	9,000	8,200	8,900
Other Services	*	*	*	1,400	1,400	1,400	2,300	2,200	2,400
Government	3,100	3,100	3,100	5,400	5,400	5,400	7,300	7,200	7,400

* Data Not Available

NILES-BENTON HARBOR METRO AREA

- June labor force in the Niles-Benton Harbor MSA was up 1,200. Both employment and unemployment increased (+500 and +700, respectively). The jobless rate was up eight tenths of a percentage point.
- Since June 2018, employment rose by 600, while unemployment and the jobless rate were unchanged.

MONTHLY INDUSTRY DEVELOPMENTS

- *Leisure and hospitality* continued to add jobs seasonally in June (+700). *Manufacturing* jobs also moved up by 300. Area job levels rose in June by 600 (+0.9 percent).
- Since June 2018, jobs in the Niles-Benton Harbor metro were stable, inching down by 200. Employment moved up in *Manufacturing* but down in *Trade, transportation, warehousing, and utilities.*

INDUSTRY TRENDS

- Since 2010, jobs in *Manufacturing* expanded by 19.1 percent regionally (+2,200), versus 36.6 percent statewide.

SAGINAW METROPOLITAN AREA

- The June Saginaw area unemployment rate moved up by half a percentage point to 5.1 percent.
- Total unemployment in the region advanced by 2.3 percent over the year.

MONTHLY INDUSTRY DEVELOPMENTS

- Payroll jobs in Saginaw rose by 1,300, or 1.5 percent, between May and June, with increases seen across multiple industries.

INDUSTRY TRENDS

- Saginaw's total private job count has been edging up slightly since the start of 2019. Private sector positions (77,900) in June were nearly three percent higher than the January 2019 employment level.

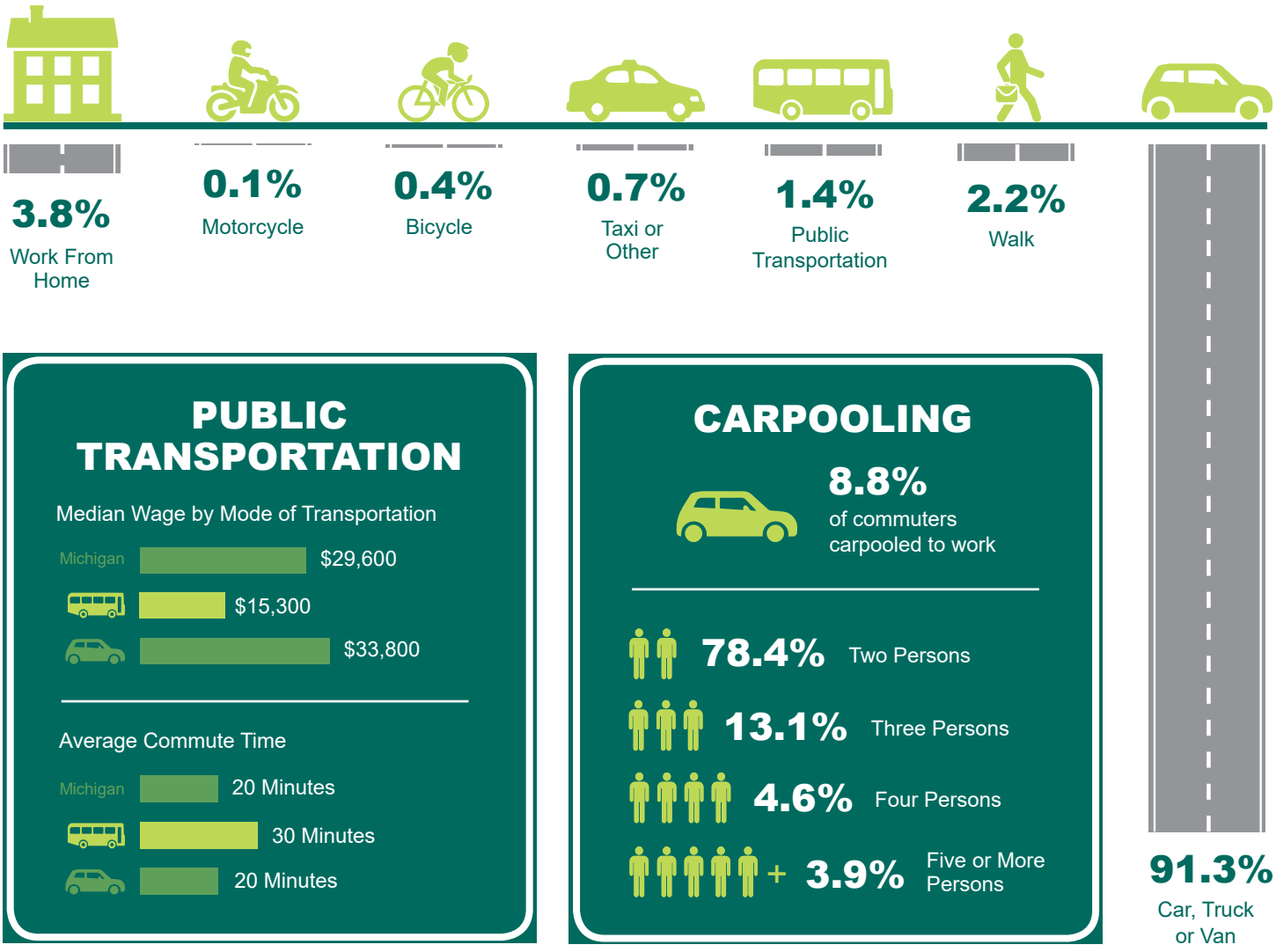
CIVILIAN LABOR FORCE AND NONFARM PAYROLL JOBS

	NILES-BENTON HARBOR			SAGINAW		
	JUNE 2019	MAY 2019	JUNE 2018	JUNE 2019	MAY 2019	JUNE 2018
PLACE OF RESIDENCE						
Labor Force	76,100	74,900	75,500	88,600	87,200	87,900
Employment	72,600	72,100	72,000	84,100	83,200	83,500
Unemployment	3,500	2,800	3,500	4,500	4,000	4,400
Rate (percent)	4.6%	3.8%	4.6%	5.1%	4.6%	5.0%
PLACE OF WORK						
Total Nonfarm Jobs	64,200	63,600	64,400	88,700	87,400	88,500
Mining, Logging, and Construction	2,300	2,300	2,300	3,300	3,200	3,300
Manufacturing	13,700	13,400	13,400	12,500	12,200	12,500
Trade, Transportation, and Utilities	10,700	10,700	11,000	16,800	16,700	16,800
Wholesale Trade	*	*	*	2,100	2,100	2,200
Retail Trade	7,000	6,900	6,900	11,900	11,900	11,900
Information	500	500	500	1,300	1,300	1,300
Financial Activities	2,500	2,500	2,500	3,700	3,600	3,800
Professional and Business Services	5,700	5,900	5,900	11,400	11,300	11,300
Educational and Health Services	9,100	9,400	9,200	15,900	15,800	15,900
Leisure and Hospitality	8,600	7,900	8,500	9,800	9,500	9,400
Other Services	2,400	2,300	2,400	3,200	3,200	3,400
Government	8,700	8,700	8,700	10,800	10,600	10,800

	UPPER PENINSULA			NORTHEAST MICHIGAN			NORTHWEST MICHIGAN		
	JUNE 2019	MAY 2019	JUNE 2018	JUNE 2019	MAY 2019	JUNE 2018	JUNE 2019	MAY 2019	JUNE 2018
PLACE OF RESIDENCE									
Labor Force	140,700	137,000	139,800	86,300	83,900	85,200	160,500	152,600	157,400
Employment	133,000	130,300	132,200	81,400	79,700	80,200	153,600	146,800	150,500
Unemployment	7,700	6,700	7,600	4,900	4,200	5,000	6,900	5,800	6,900
Rate (percent)	5.5%	4.9%	5.4%	5.7%	5.0%	5.9%	4.3%	3.8%	4.4%

INFOGRAPHIC OF THE MONTH:

COMMUTING IN MICHIGAN



Sources: 2013-2017 5-year Census ACS Summary
2012-2016 5-year Census ACS Public Use Microdata Sample

According to estimates from the 2017 5-Year American Community Survey, there were almost 4,431,000 workers aged 16 years and over in Michigan. Of those workers, 91.3 percent or 4,045,000 individuals commuted to work by either car, truck, or van. While a large majority of Michigan's workers travelled to work by car, only 8.8 percent of all workers carpool to work with at least one other person. Over three-quarters of carpools in 2017 consisted of just 2 persons, equivalent to 304,000 individuals.

Workers in Michigan spent a combined 100 million minutes each day commuting to work. On average, it took 24.3 minutes to commute to work in Michigan in 2017. The average commute time has remained virtually unchanged over the last five years. While the majority of all commutes to work took less than 30 minutes (67.2 percent), a notable 6.2 percent took an hour or more.

In total, workers in Michigan that travelled by car, truck, or van spent around 98 million minutes each day commuting to work in 2017. Assuming a constant speed of 45 mph, this would equate to traveling over 73 million miles each day.

DYLAN SCHAFER
Economic Analyst

THE POTENTIAL IMPACT OF AUTONOMOUS VEHICLES ON THE MICHIGAN LABOR MARKET

The wide-spread adoption of autonomous vehicles has been a topic of interest to those studying the future of work. Consider two recent national publications:

- In "The Employment Impact of Autonomous Vehicles," Beede et al. (2017) estimated that one in nine U.S. workers were employed in 108 occupations that could be affected by the introduction of automated vehicles.
- In "Preparing U.S. Workers and Employers for an Autonomous Vehicle Future," Groshen et al. (2018) modeled the long-term impact of autonomous vehicles on the labor market and estimated that between 1.4 and 2.6 million jobs may be lost by 2051 due to the adoption of autonomous vehicles. On the flip side, they estimated 700,000 to 1.7 million new jobs will be created in varying industries because of the technology.

What do these national estimates mean for Michigan? This article attempts to answer this question by extending the analysis in these publications to the state's labor market while noting some unique characteristics of the state's auto-related workforce.

Timelines

Most research on the adoption of autonomous vehicles relies on the six levels of adoption defined by SAE International (2018). These levels range from "no automation" to "full automation."

According to Heineke et al. (2017), while most cars on the road today have no automation, some vehicles have driver assistance (level one) and partial automation (level two). More specifically, in today's new cars, driver assistance is present while partial automation is found in today's luxury vehicles. Some of these features include "lane centering" and "adaptive cruise control." It is expected that conditional automation (level three) and high automation (level four) will be available in five years, with full automation taking more than ten years to appear on the road. These advanced levels of automation include the ability for the vehicle to be a "traffic jam chauffeur" or "local driverless taxi."

When is the driver out of the seat? It depends on the automation level and the application. For example, passenger vehicles may require level 4 or level 5 automation while trucking may require level 3 with vehicle-to-vehicle connectivity.

Looking ahead, Groshen, et al. (2018) analyze four combinations of autonomous vehicle adoption scenarios. The most aggressive involves quick deployment of automation in trucking and a heavier focus on fleets of autonomous vehicles. More conservative estimates include a slower deployment of automation in trucking and a

greater concentration of personally owned autonomous vehicles. On average, they estimate that most impacts are expected in the late 2030's and into the 2040's, with the most severe impact expected in the mid-2040's.

Potential Impact on the Michigan Labor Market

While the consensus is that "widespread adoption of automated vehicles is likely to take several years" (Beede et al., 2017), it is important to understand the potential impact on the Michigan labor market sooner than later.

- Groshen et al. (2018) projected that between 0.9 and 1.6 percent of the U.S. labor force could be affected by autonomous vehicle adoption, translating to 1.4 to 2.6 million people nationally. Applying this projection to the Michigan labor force results in between 43,600 and 77,600 residents affected by the technology.

- Beede et al. (2017) estimate that one in nine U.S. workers are employed in 108 occupations that could be affected by the introduction of autonomous vehicles. Applying this estimate to Michigan, about 1 in 10 Michigan workers are currently employed in these occupations.

It is important to note that the displacement caused by autonomous vehicles will not be felt equally between jobs, people, or places. Indeed, certain occupations are more likely than others to be affected by the widespread adoption of autonomous vehicles, resulting in a disproportionate impact on the people who work in those jobs and the places where those jobs are concentrated. Likewise, autonomous vehicles will result in job creation in yet another set of occupations, having its own implications.

AFFECTED OCCUPATIONS AND PROJECTED DISPLACEMENT

As noted above, Beede et al. (2017) identified 108 occupations affected by autonomous vehicle adoption. They divide the job titles into two major groups: (1) motor vehicle operators; and (2) other on-the-job drivers.

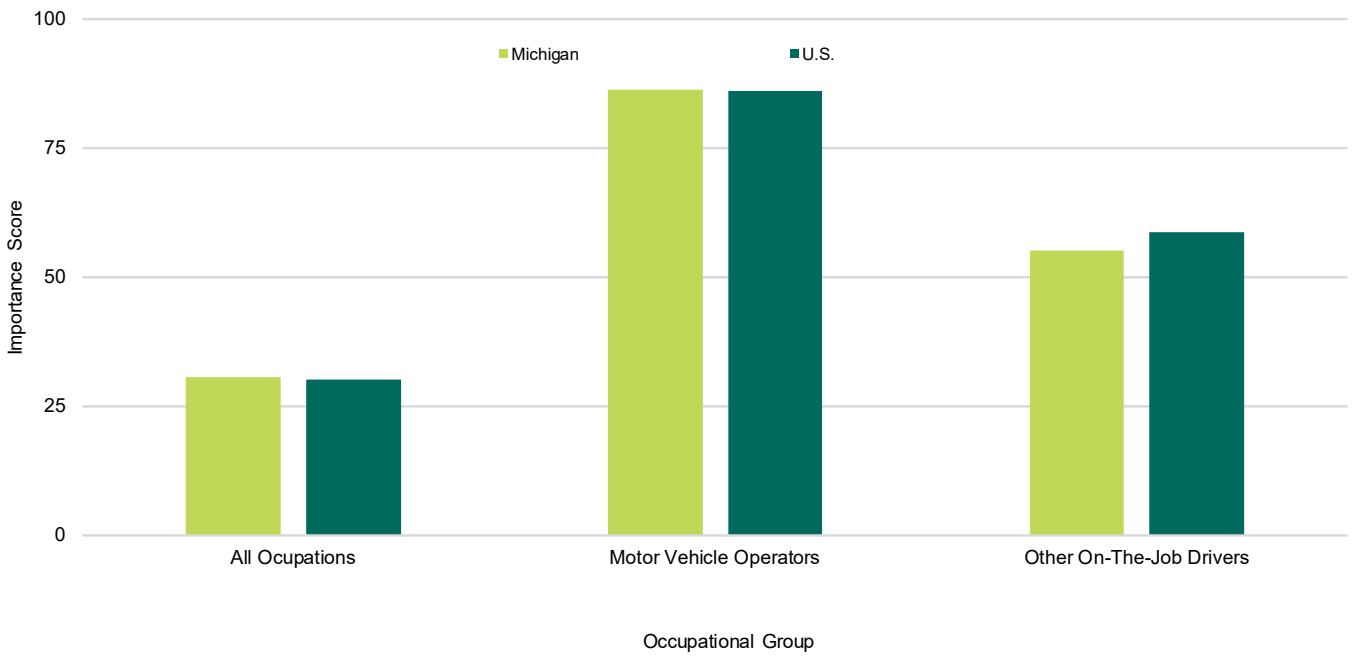
1. Motor vehicle operators: Motor vehicle operators were defined as occupations where driving is the main responsibility. These jobs can demand long hours on the road. Because of the many hours spent driving, these jobs are at higher risk of displacement from autonomous vehicle implementation. Example occupations included: *Heavy and tractor-trailer truck drivers*, *Bus drivers*, and *Taxi drivers and chauffeurs*.

2. Other on-the-job drivers: Other on-the-job drivers were defined as positions that require some driving among several job responsibilities. The necessity for mobility in these jobs means that there is still the potential for displacement. Example occupations included: *Security guards*, *Postal service mail carriers*, and *Police and sheriff's patrol officers*.

According to O*NET (2019), both groups had a very high importance score for the "operating vehicles, mechanized devices, or equipment" work activity, which is one of nine work activities tracked by the U.S. Department of Labor. (Importance scores range from 1 to 100, with a higher score meaning the work activity is frequently used and a lower score meaning the work activity is used less often.)

In Michigan, motor vehicle operators had a high importance score of 86.3 while other on-the-job drivers was at 55.1. As expected, both scores outpaced the score for the total of all occupations (30.6). The importance scores for both groups were basically the same in Michigan and in the U.S.

FIGURE 1: IMPORTANCE OF OPERATING VEHICLES BY OCCUPATIONAL GROUP



Source: O*NET 2019

Nationally, between 47 and 57 percent of positions in the motor vehicles operators group and between 27 to 28 percent of positions in the other on-the-job drivers group are at risk of being eliminated due to autonomous vehicle implementation (Groshen et al. 2018). What does this mean for Michigan? Applying these projections to the state's occupation mix results in somewhere between 123,500 and 176,500 potential job cuts among the two groups.

The largest impact is expected in truck driving job titles with between 60 and 65 percent of *Heavy and tractor-trailer truck drivers* and 45 to 55 percent of *Light truck or delivery services drivers* at risk of displacement (Groshen et al. 2018). In Michigan, this translates to 33,600 to 36,400 *Heavy and tractor-trailer truck drivers* and 13,000 to 15,900 *Light truck or delivery services drivers* that could be displaced because of autonomous vehicle adoption.

As noted above, trucking may require a lower level of automation to take the driver out of the seat. With vehicle-to-vehicle connectivity, trucks can travel in convoys, with one human conductor and autonomous followers. As a result, potential displacement in these occupations could come sooner.

AFFECTED PLACES

In Michigan, the distribution of employment among motor vehicle operators and other on-the-job drivers closely followed the state's overall population and workforce. As expected, most employment in these occupations was heavily concentrated in more populated regions and less concentrated in less populated areas (Occupational Employment Statistics, 2018).

- Metro Detroit and West Michigan together employed 72,900 motor vehicle operators and 185,500 other on-the-job drivers.
- Northwest Lower Michigan and Northeast Lower Michigan together employed 5,100 motor vehicle operators and 16,300 other on-the-job drivers.

However, comparing the number of jobs in the two groups to the total employment in each region paints a different picture:

- The Upper Peninsula and Northeast Lower Michigan have the largest share of these occupations, with 13.9 percent and 13.3 percent of total employment in the two groups, respectively.
- West Michigan and Southeast Michigan were the only regions with the share of these occupations coming in lower than 10.0 percent of all employment, checking in at 9.8 percent and 9.0 percent, respectively.

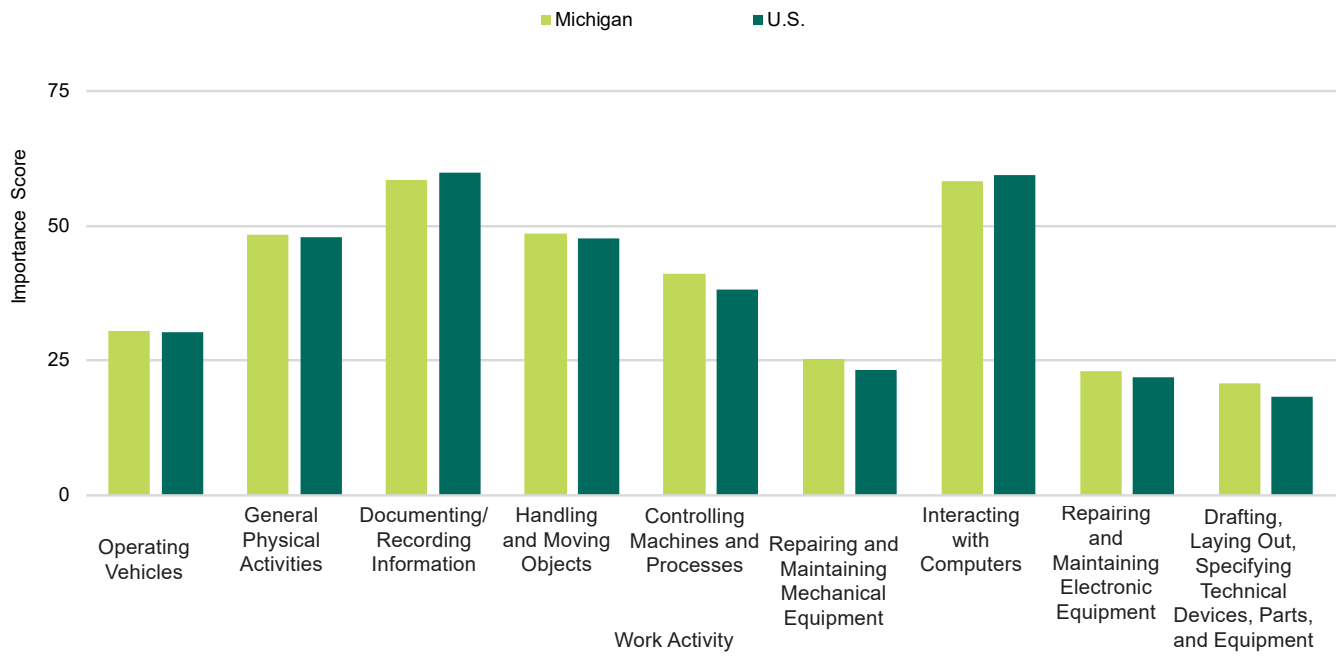
While many more residents were employed in these occupations in more populated regions, these regions have a lower share of affected positions. As such, less populated areas may be more reliant on some of the affected occupations.

AFFECTED PEOPLE

As a group, motor vehicle operators were predominately male, more diverse, and older than overall employment. According to the Bureau of Labor Statistics (2018), 87.1 percent of these jobs were held by men, 19.7 percent were held by Black or African American workers, and 19.7 percent were held by Hispanic or Latino workers. Overall, 12.3 percent of workers are Black or African American and 17.3 percent are Hispanic or Latino, meaning these groups will be disproportionally affected by displacement in the motor vehicle operators category. The estimated age for workers in the motor vehicle operators group was 47.2, five years older than the published median age for all workers.

Other on-the-job drivers were more in line with the overall workforce in terms of race and Hispanic origin, but the group was still disproportionally male (71.6 percent) and slightly older with an estimated age of 43.3.

FIGURE 2: IMPORTANCE SCORES BY WORK ACTIVITY FOR ALL OCCUPATIONS



Source: O*NET 2019

Potential Growth Occupations

Groshen et al. (2018) estimate that autonomous vehicle adoption may create between 700,000 and 1.7 million new jobs nationally by 2051 in varying industries. The authors identify some categories for job creation, including: (1) new transportation jobs; (2) new autonomous vehicle-related jobs; and (3) new jobs producing other goods and services.

- New transportation jobs: Jobs in this category depend on the technology but are not involved with the production of autonomous vehicles. Examples include both existing occupations and some that will see a change in their job duties. To illustrate, *Personal care aides* will likely have a heavier focus on transportation, such as helping people with their groceries or their luggage; *Automotive service technicians and mechanics* will be in demand to service autonomous vehicles on the road; and *Light truck or delivery services drivers* will be needed to make deliveries "for the last mile" (Groshen et al., 2018).
- New autonomous vehicle-related jobs: The production and operation of autonomous vehicles is expected to expand existing and create new positions. This can be broken down into two groups: (1) autonomous vehicle-related manufacturing; and (2) autonomous vehicle-related services. Included in the autonomous vehicle-related manufacturing group are *Computer programmers*, *Network and computer system administrators*, *Traffic technicians*, and *Civil engineers* (which includes traffic engineers). These are all positions that will be important in the development of autonomous vehicles. Autonomous vehicle-related services are not as well defined but may include autonomous vehicles fleet operators and traffic operators (to aid with the flow of traffic during the transition to full automation).
- Other goods and services: Finally, the wide-spread adoption of autonomous vehicles is expected to provide benefits to consumers such as reduced travel times and costs. This may result in more spending on non-transportation consumption and could lead to increased demand for a wide range of service occupations.

These potential growth occupations, particularly in the new autonomous vehicle-related jobs group, are more male, less diverse, and younger than overall employment. For example, *Computer and mathematical occupations* and *Architecture and engineering occupations* both have a larger share of men (at least 20 percentage points greater than total employment) and the share of Black or African American and Hispanic or Latino is much lower in these occupations compared to total employment. Workers in *Computer and mathematical occupations* are also nearly two years younger than the overall median age for all workers.

Michigan's Auto Industry and Autonomous Vehicles

Michigan is widely considered the home of the auto industry. In the October 2018 issue of Michigan's Labor Market News, we published an article titled, "Job Trends in the Michigan Manufacturing and Auto-related Sectors." In that article, it was noted that the state's automotive-related employment (which captures industries beyond the more narrowly defined *Transportation equipment manufacturing industry*) accounted for almost half a million jobs in 2017. This represented over 13 percent of Michigan's total private employment, meaning over one in ten Michigan jobs is strongly linked to the auto sector. And this does not include the many jobs in other industries that are indirectly fueled by the high concentration of above-average wage jobs in auto-related industries.

Indeed, auto and auto-related companies tend to fuel the state's economic growth during expansions (for instance, automotive-related jobs

FIGURE 3: MICHIGAN PROJECTED JOB LOSS BY OCCUPATIONAL GROUP DUE TO IMPLEMENTATION OF AUTONOMOUS VEHICLES

OCCUPATION	2018 EMPLOYMENT	2018 MEDIAN WAGE	2018 LOCATION QUOTIENT	POTENTIAL DISPLACEMENT (2051)*	
				LEVEL	PERCENT
TOTAL MOTOR VEHICLE OPERATORS	**120,800**	**$17.17**	**1.00**	**60,200–68,400**	N/A
Heavy and Tractor-Trailer Truck Drivers	55,900	$19.88	1.04	33,600–36,400	60–65
Light Truck or Delivery Services Drivers	28,900	$15.25	1.06	13,000–15,900	45–55
Bus Drivers, School or Special Client	12,900	$16.56	0.86	6,500	50
Driver/Sales Workers	12,900	$10.47	1.04	2,600	20
Taxi Drivers and Chauffeurs	4,800	$11.16	0.77	1,000–3,300	20–70
Bus Drivers, Transit and Intercity	5,000	$16.16	0.95	3,500–3,700	70–75
Ambulance Drivers and Attendants, Except Emergency Medical Technicians	400	$12.32	0.94	40	10
TOTAL OTHER ON-THE-JOB DRIVERS*	**320,400**	**$19.95**	**0.83**	**25,800–26,600**	N/A
Security Guards	26,100	$11.74	0.79	1,300	4
Police and Sheriff's Patrol Officers	16,300	$27.74	0.82	1,500–1,600	9–10
Automotive Service Technicians and Mechanics	19,400	$18.57	1.00	11,600	60
Postal Service Mail Carriers	12,600	$25.09	1.24	2,500	20
Parking Lot Attendants	4,400	$10.14	1.01	2,200	50
Automotive Body and Related Repairers	4,700	$20.65	1.10	2,600	55
Refuse and Recyclable Material Collectors	4,500	$20.33	1.26	2,200	50
Automotive and Watercraft Service Attendants	3,500	$10.67	1.03	1,400–2,100	40–60
First-Line Supervisors of Police and Detectives	2,400	$37.58	0.68	200	10
Couriers and Messengers	2,200	$13.09	0.99	40	2
Insurance Appraisers, Auto Damage	200	$28.98	0.49	100	45–55
Electronic Equipment Installers and Repairers, Motor Vehicles	400	$16.30	1.08	200	50

*Potential displacement data is only available for twelve out of a total of 101 other on-the-job drivers.

Sources: Michigan Department of Technology, Management and Budget, Bureau of Labor Market Information and Strategic Initatives, 2018 Michigan Occupational Employment Statistics; *Groshen, Erica L., Susan Helper, John Paul MacDuffie, and Charles Carson. (2018). "Preparing U.S. Workers and Employers for an Autonomous Vehicle Future." Washington, DC: Securing America's Future Energy.

FIGURE 4: MICHIGAN EMPLOYMENT, WAGES, AND OUTLOOK FOR POTENTIAL GROWTH OCCUPATIONS

OCCUPATION	2018 EMPLOYMENT	2018 MEDIAN WAGE	2018 LOCATION QUOTIENT	GROWTH % 2016–2026	ANNUAL OPENINGS
NEW TRANSPORTATION JOBS (EXAMPLES)*					
Personal Care Aides	39,700	$11.06	0.60	36.6%	8,600
Automotive Service Technicians and Mechanics	19,400	$18.57	1.00	5.7%	2,400
Light Truck or Delivery Services Drivers	28,900	$15.25	1.06	5.7%	3,400
NEW AUTONOMOUS VEHICLE-RELATED JOBS (EXAMPLES)*					
Civil Engineers	7,300	$37.10	0.80	16.8%	900
Traffic Technicians	100	$19.98	0.55	N/A	N/A
Computer Programmers	4,000	$36.10	0.58	-7.4%	300
Network and Computer Systems Administrators	7,200	$36.00	0.66	6.0%	700
ALL SECTORS JOB CREATION (EXAMPLES)*					
Personal Care Aides	39,700	$11.06	0.60	36.6%	8,600
Combined Food Preparation and Serving Workers, Including Fast Food	123,900	$9.82	1.13	16.0%	23,800
Registered Nurses	96,700	$33.94	1.10	13.5%	6,700

Sources: Michigan Department of Technology, Management and Budget, Bureau of Labor Market Information and Strategic Initatives, 2018 Michigan Occupational Employment Statistics; *Groshen, Erica L., Susan Helper, John Paul MacDuffie, and Charles Carson. (2018). "Preparing U.S. Workers and Employers for an Autonomous Vehicle Future." Washington, DC: Securing America's Future Energy.; Michigan Department of Technology, Management and Budget, Bureau of Labor Market Information and Strategic Initatives, 2016–2026 Occupational Projections

grew three times as fast as total private jobs in the years following the Great Recession). They also are behind Michigan's high concentration of *Architecture and engineering* jobs, with the state's share of these occupations nearly two-times larger than the U.S. average, ranking Michigan first across all other states. Specifically, Michigan ranks first in the U.S. in its shares of *Mechanical engineers* and *Industrial engineers*, and third in its share of *Electrical engineers*.

So, it is no surprise that Michigan is a leader in the development of autonomous vehicles. For example:

- Michigan became the first state to pass comprehensive legislation for autonomous vehicles in 2016 (Achtenberg, 2016).
- Michigan is home to several testing grounds including Mcity and the American Center for Mobility, which opened the first highway test facility in the world in Ypsilanti, Michigan in 2018 (Chin, 2018).
- PlanetM was launched in 2018 as a business development program designed to bring global mobility companies to Michigan to deploy new technologies and connect with Michigan's automotive ecosystem.
- Organizations such as the Michigan Mobility Institute have emerged to ensure industry hiring needs are effectively understood by those delivering training and education.
- Programs such as the recently announced Center for Advanced Mobility at Wayne State University and Washtenaw Community College's Advanced Transportation Center will play a key role in creating the necessary talent pipeline.

While Michigan is poised to lead in autonomous vehicle development, there is another side to this story. Just as the state's auto industry fuels economic growth during expansions, when it struggles, the rest of the economy tends to follow suit. While auto production is likely to suffer setbacks during recessions, this effect could be compounded if Michigan jobs are lost (or not gained) due to an inability to adapt to the structural changes in the industry that autonomous vehicles will create.

Additional challenges for the industry may result from the widespread adoption of autonomous vehicles, such as increased demand for *Electrical engineers* and a decrease in demand for passenger vehicles (over the long-run) that may result in less demand for production-related job titles. However, if we can be leaders in the development and implementation of autonomous vehicle technology, the opportunity for economic gains are significant for Michigan.

References

Achtenberg, Kathleen. 2016. "Driving Innovation: Michigan First in Nation to Develop Comprehensive Regulations for Autonomous Vehicles." Lansing, MI: Michigan Economic Development Corporation.

Beede, David, Regina Powers, and Cassandra Ingram. 2017. "The Employment Impact of Autonomous Vehicles." Washington, DC: Office of the Chief Economist, Economics and Statistics Administration, U.S. Department of Commerce.

Bureau of Labor Statistics. 2018. Current Population Survey

Chin, Chris. 2018. "World's First Highway Test Facility for Autonomous Vehicles Opens in Michigan." Portland, OR: Digital Trends.

Groshen, Erica L., Susan Helper, John Paul MacDuffie, and Charles Carson. 2018. "Preparing U.S. Workers and Employers for an Autonomous Vehicle Future." Washington, DC: Securing America's Future Energy.

SAE International. 2018. "SAE International Releases Updated Visual Chart for Its 'Levels of Driving Automation' Standard for Self-Driving Vehicles." [Press Release].

NICK GANDHI
Economic Analyst

MICHIGAN JOB ADVERTISEMENTS DOWN IN JUNE

Seasonally-adjusted Michigan job advertisements contracted in June by 3.3 percent or 5,117 ads; total job postings fell to 147,986. Four of Michigan's five regional states also experienced a reduction in job ads. Michigan had the largest percentage drop in job postings followed by Illinois at 2.3 percent. Wisconsin was the only state to see additional postings (+1.4 percent). Nationally, job ads were down 1.5 percent.

Rates and Position Types

The ad rate, or the number of job ads per 100 labor force participants, contracted to 2.99 over the month. The lower ad rate was the result of job ads declining while more people entered the labor force.

The number of unemployed individuals per job advertisement, also referred to as the supply/demand rate, went up to 1.42 over the month. The rate increase was caused by a monthly gain in the number of unemployed and job ads falling.

Regarding the duration of time that job ads were online, 28.3 percent were posted less than 30 days, 21.2 percent were posted from 30 to 59 days, and the remaining percentage of job ads were online longer than 60 days. 72.0 percent of ads were for full-time work, 22.0 percent for part-time and 5.0 percent for contract work.

Non-seasonally Adjusted Job Postings

Information is available on advertised jobs by broad occupational group from the Help Wanted Online Data Series, but the data is *not seasonally adjusted*.

Total unadjusted job postings fell 6,656 (-4.2 percent) over the month, led by *Transportation, Professional* and *Service* occupations (-10.4, -9.1, and -6.3 percent respectively). *Sales and Farming, fishing, and forestry* jobs recorded the only positive trends for the month (+3.1 and +3.9 percent respectively).

Non-seasonally adjusted job advertisements were down in all but three Michigan metropolitan areas. The three metro areas of Battle Creek, Midland, and Saginaw had ad gains of less than 1.0 percent each. The largest percentage reductions in ads were in Lansing-East Lansing (-13.2 percent), Monroe (-9.6 percent), and Kalamazoo-Portage (-8.5 percent).

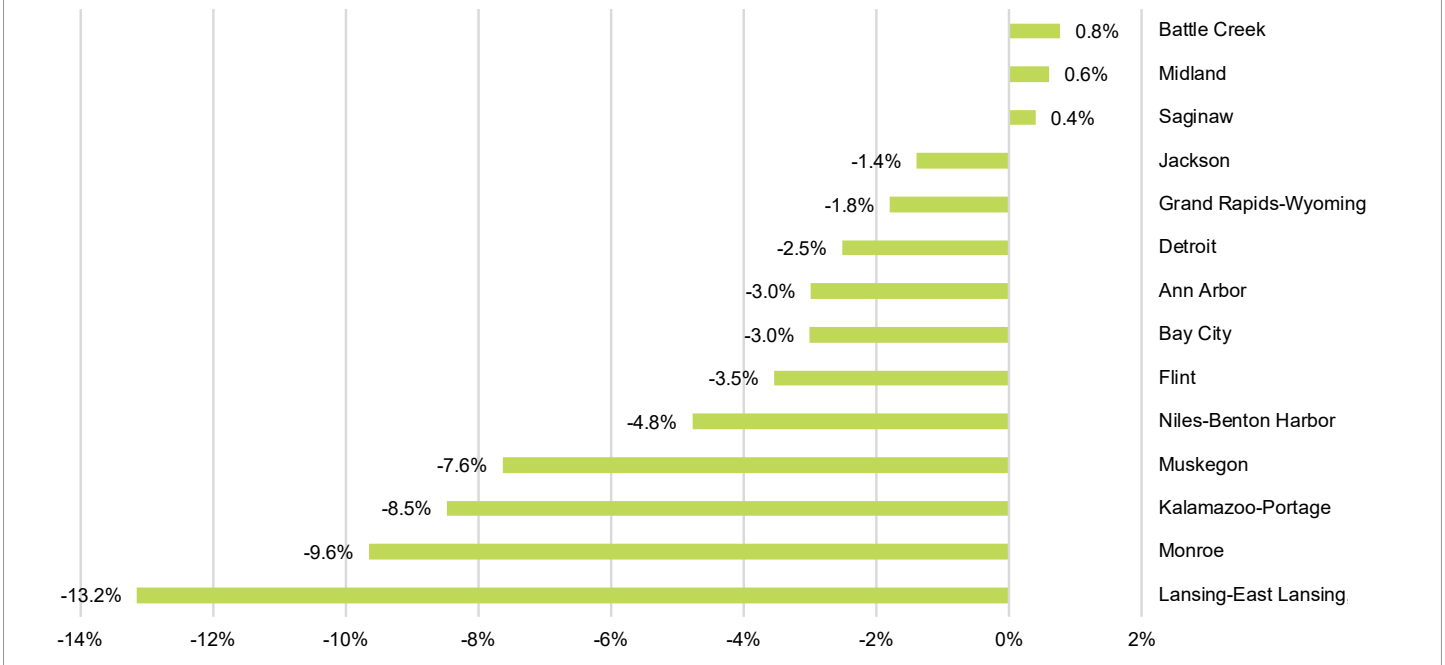
The typical level of education required among the top 50 occupations with the most number of job ads were as follows: bachelor's degree (15), high school diploma or equivalent (21), no formal educational credential (8), postsecondary nondegree award (5), some college/no degree (1). Twenty-four of the top 50 occupations required no on-the-job training, 7 required moderate training and 19 required short-term training.

DATA REVISIONS

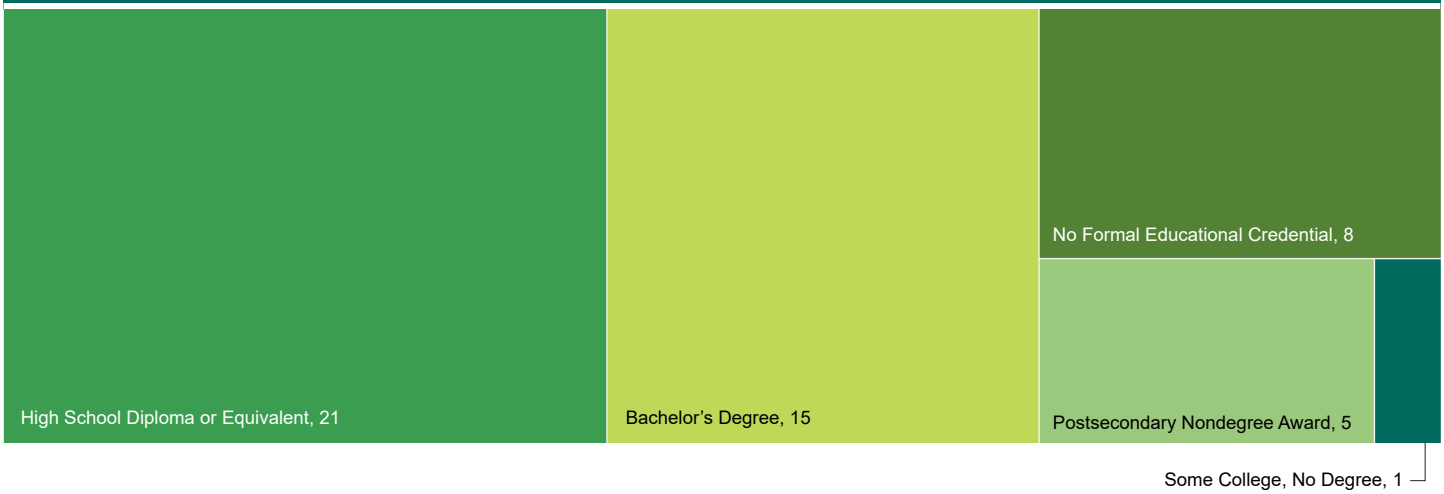
The Conference Board Help Wanted Online recently acquired a new job board that is finding additional online job postings in the state. Due to these new findings, historical analysis of job posting data will not be available for dates prior to May 2019.

MARCUS REASON
Economic Analyst

MONTHLY CHANGE IN JOB ADS BY METRO AREA



EDUCATION REQUIREMENTS OF TOP 50 ADS



LABOR DEMAND BY OCCUPATION (NOT SEASONALLY ADJUSTED)

OCCUPATION CATEGORIES	JUNE 2019	MAY 2019	OVER THE MONTH	
			LEVEL	PERCENT
TOTAL	**153,361**	**160,017**	**-6,656**	**-4.2%**
Administrative Support	15,768	16,204	-436	-2.7%
Office and Administrative Support	15,768	16,204	-436	-2.7%
Construction and Repair	8,975	9,289	-314	-3.4%
Construction and Extraction	2,634	2,816	-182	-6.5%
Installation, Maintenance, and Repair	6,341	6,473	-132	-2.0%
Farming, Fishing, and Forestry	671	646	25	3.9%
Farming, Fishing, and Forestry	671	646	25	3.9%
Healthcare	25,072	25,147	-75	-0.3%
Healthcare Practitioners and Technical	18,945	18,923	22	0.1%
Healthcare Support	6,127	6,224	-97	-1.6%
Management	10,723	10,770	-47	-0.4%
Management	10,723	10,770	-47	-0.4%
Production	4,580	4,730	-150	-3.2%
Production	4,580	4,730	-150	-3.2%
Professional	40,006	44,015	-4,009	-9.1%
Architecture and Engineering	6,806	6,992	-186	-2.7%
Arts, Design, Entertainment, Sports, and Media	2,897	3,443	-546	-15.9%
Business and Financial Operations	6,921	7,241	-320	-4.4%
Community and Social Services	3,344	3,621	-277	-7.6%
Computer and Mathematical	11,593	11,609	-16	-0.1%
Education, Training, and Library	6,396	8,918	-2,522	-28.3%
Legal	406	467	-61	-13.1%
Life, Physical, and Social Science	1,643	1,724	-81	-4.7%
Sales	20,044	19,437	607	3.1%
Sales and Related	20,044	19,437	607	3.1%
Service	19,390	20,702	-1,312	-6.3%
Building and Grounds Cleaning and Maintenance	3,871	4,149	-278	-6.7%
Food Preparation and Serving Related	10,442	11,164	-722	-6.5%
Personal Care and Service	2,618	2,837	-219	-7.7%
Protective Service	2,459	2,552	-93	-3.6%
Transportation	8,132	9,077	-945	-10.4%
Transportation and Material Moving	8,132	9,077	-945	-10.4%

OCCUPATIONAL FOCUS

LIGHT TRUCK OR DELIVERY SERVICES DRIVERS

As discussed in this month's feature article, advancements in automotive technology are changing the way we live and work. This section highlights *Light truck or delivery services drivers*, which is one of the many occupations that will be directly affected while still having a positive outlook based on projected openings and job expansion. A person employed as a *Light truck or delivery service driver* drives and operates a light vehicle, such as a truck or van, with a capacity of less than 26,000 pounds Gross Vehicle Weight (GVW), primarily to deliver or pick up merchandise or to deliver packages. They may also be responsible for loading and unloading the vehicle.

Occupational Highlights:

- The typical education required for a *Light truck or delivery services driver* is a high school diploma or equivalent with additional short-term on-the-job training.
- In 2018, there were 28,860 *Light truck or delivery services drivers* in Michigan, 9th highest of all states.
- The median wage in 2018 was $15.25 per hour ($31,720 per year), putting it in the bottom 20 percent of occupations in Michigan. It ranked 29th among all states.
- Short-term statewide occupational projections (2018 Q2-2020 Q2) show that the average number of annual job openings for this occupation will be about 3,960, which is the 29th most among 800 occupations in Michigan.
- Short-term projections also show that this occupation will have 610 openings due to job expansion, which is the 10th most in the state.
- Long-term statewide occupational projections (2016-2026) show that there will be 3,410 annual openings, ranking 35th in the state. Nearly 90 percent of those job openings will be due to the need to replace workers, while the remaining 10 percent will result from job expansion.
- Between 2016 and 2026, total annual job openings for this occupation range from a low of 55 in the Northeast Lower Prosperity Region to a high of 1,410 in the Detroit Metro Prosperity Region. West Michigan also has a high level of annual openings of 695. The two top regions (West Michigan and Detroit Metro) account for about 60 percent of all openings in the state.
- Regionally, wages range from a low of $11.68 in the East Central Michigan Prosperity Region to a high of $17.40 in the Northwest Lower Prosperity Region. The Metro Detroit Prosperity Region ($16.26) and the Southwest Michigan Prosperity Region ($15.74) are the only two other regions to have median wages above the statewide average.

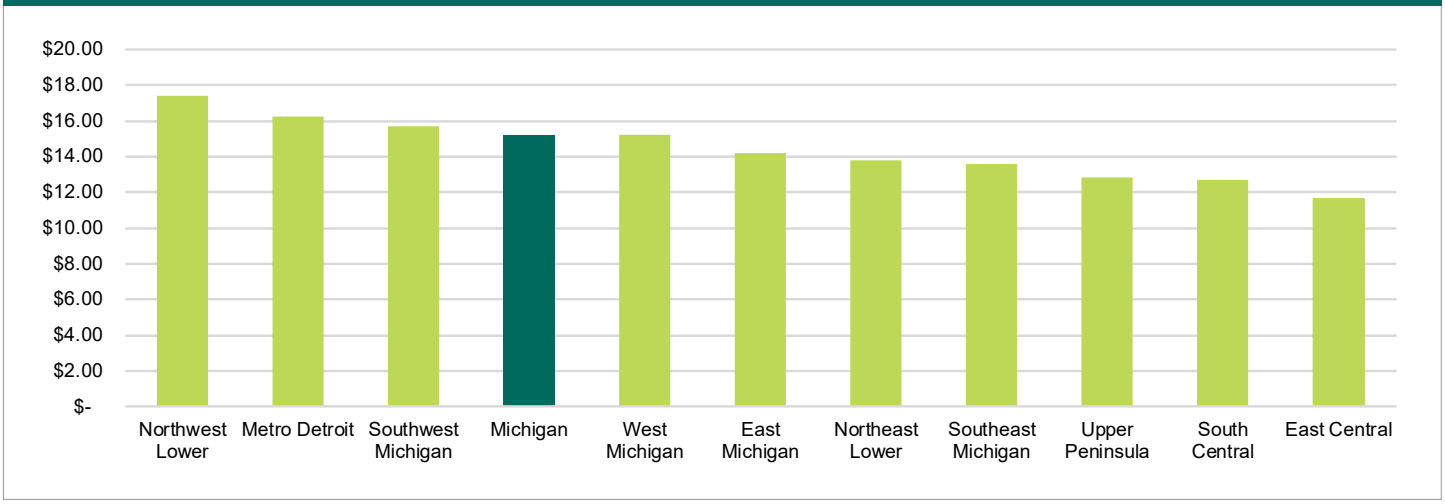
DALIA SALLOUM
Economic Analyst

LIGHT TRUCK OR DELIVERY SERVICES DRIVERS - JOB OPENINGS AND PERCENT JOB GROWTH BY MICHIGAN REGION, 2016–2026

REGION	TOTAL EMPLOYED	ANNUAL OPENINGS	JOB GROWTH %
Metro Detroit	11,990	1,410	8.1
West Michigan	5,850	695	9.1
Southwest	2,390	270	5.9
East Michigan	1,800	185	-1.4
Southeast Michigan	1,755	210	9.1
East Central	1,605	175	3.1
South Central	1,400	160	4.6
Upper Peninsula	995	105	-0.5
Northwest Lower	740	85	8.1
Northeast Lower	495	55	5.1

Source: 2016–2026 Regional Occupational Projections

LIGHT TRUCK OR DELIVERY DRIVER WAGES BY METRO AREA



Source: DTMB-LMISI, Occupational Employment Statistics (OES)

LIGHT TRUCK OR DELIVERY SERVICES DRIVERS - TOTAL EMPLOYMENT SELECTED RANKINGS BY STATE, 2018

RANK	STATE	TOTAL EMPLOYMENT
1	California	111,100
2	Texas	65,960
3	Florida	55,230
4	Illinois	49,140
5	New York	46,030
9	Michigan	28,860
46	Delaware	2,620
47	Vermont	2,190
48	North Dakota	2,060
49	Alaska	1,840
50	Wyoming	1,480

Sources: DTMB-LMISI, Occupational Employment Statistics (OES)
Bureau of Labor Statistics, Occupational Employment Statistics (OES)

DATA SPOTLIGHT

EXPERIMENTAL STATE-LEVEL PRODUCTIVITY MEASURES

The Bureau of Labor Statistics (BLS) recently published experimental state-level labor productivity measures. These annual data series covering 2007–2017 allow comparisons across states and to the U.S. on key measures such as productivity growth, output per hour, and unit labor costs. Review of long-term data trends can help shed light on regional business cycles, income inequality, drivers of national productivity growth, and the role of regulations and taxes on growth. This analysis looks at labor productivity as well as the gap between productivity growth and real hourly compensation.

From 2007 to 2017, Michigan saw modest productivity gains, although annual rates of growth have been small since 2010. Michigan's heavy reliance on manufacturing can be seen in these productivity measures pre- and post-Great Recession.

LABOR PRODUCTIVITY

Labor Productivity is measured as the difference between the percentage growth in output and the percentage growth in hours worked. The output component is taken from the Bureau of Economic Analysis's (BEA) Gross Domestic Product (GDP) by state and the hours worked component is calculated from other BLS surveys and programs, specifically the Current Employment Statistics program and the Current Population Survey.

Figure 1 shows that in 2017 Michigan (and the Midwest) had less labor productivity growth compared to other regions. Michigan ranked fifth out of 12 states in the Midwest for productivity growth. States with the highest productivity gains such as Montana (+2.0 percent) and West Virginia (+1.9 percent) had relatively large shares of GDP coming from energy-producing industries.

From 2007 to 2017, Michigan's labor productivity registered an annual average of 0.4 percent growth. This long-term rate of gain was the lowest of any state in the Midwest. However, in recent years Michigan has shown modest productivity advances while some states registered declines.

The BLS constructs the national labor productivity measures and the state-level productivity measures differently. This is mainly due to data availability for the average weekly hours at the state and national levels and how nonprofits are figured into the calculations. Acknowledging these limitations, general labor productivity trends in Michigan and the U.S. can still be compared over time. Figure 2 highlights that annual U.S. labor productivity was stable or positive over this period, with an average annual growth rate of 1.3 percent. Michigan's labor productivity has remained relatively flat over this same time frame (+0.4 percent), with minimal annual rates of change since 2012.

COMPENSATION-PRODUCTIVITY GAP

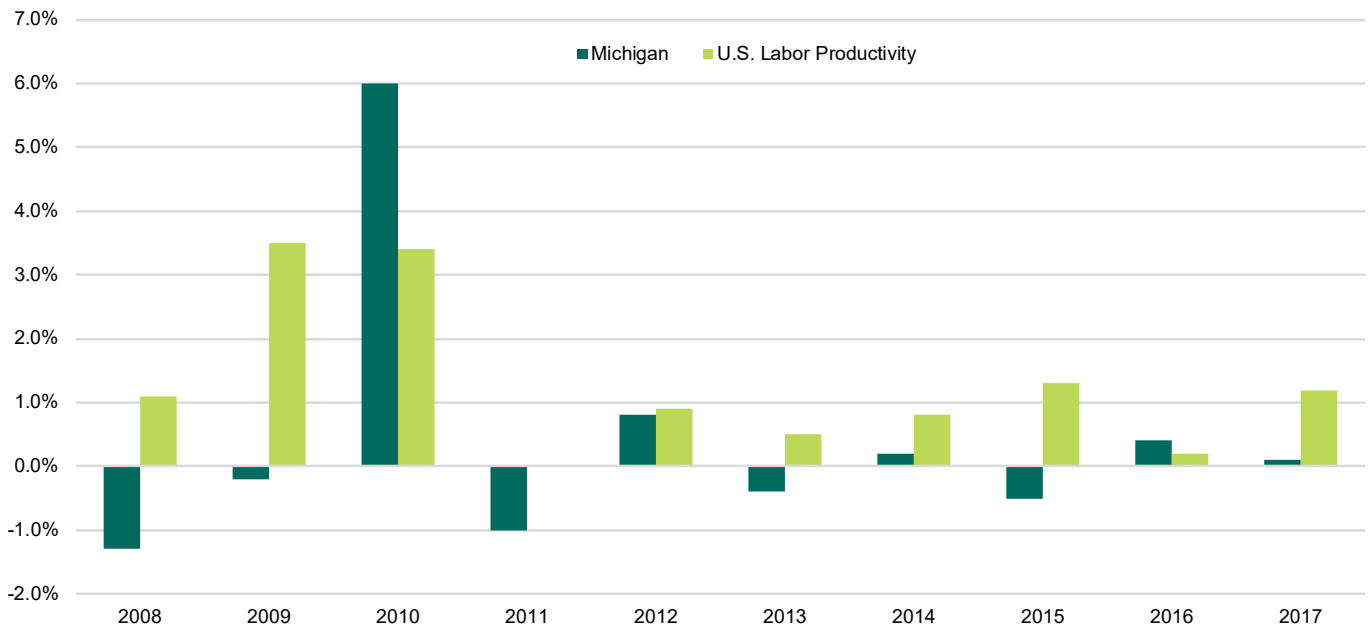
In recent years, economists have been researching the growing gap between productivity growth and real hourly compensation. From 2007 to 2017, national labor productivity rose at an annual rate of 1.3 percent while real hourly compensation grew at an average rate of only 0.5 percent per year. Figure 3 shows this difference between productivity growth and compensation for all states. During this time, 32 states saw labor productivity increase faster than compensation. Michigan was one of six states where the growth rates in productivity and compensation were essentially equal.

FIGURE 1: PERCENT CHANGE IN LABOR PRODUCTIVITY IN MICHIGAN AND U.S. REGIONS, 2016–2017

PRODUCTIVITY MEASURES	MICHIGAN	MIDWEST	NORTHEAST	SOUTH	WEST
Labor Productivity: Measures the rate at which labor is used to produce output of goods and services, typically expressed as output per hour of labor.	0.1%	0.0%	0.9%	0.2%	1.1%
Output Per Worker: A measure that represents the amount of goods or services a person in an occupation can produce over an interval of time, such as a year, regardless of the actual number of hours worked.	1.2%	0.6%	0.7%	0.5%	1.5%
Output: A measure that represents the amount of goods and services produced.	1.8%	1.4%	1.5%	2.2%	3.9%
Hours: A hybrid combination of both hours worked and hours paid. Hours is a measure that represents the amount of time individuals contribute to produce output of domestic goods and services.	1.8%	1.4%	0.7%	2.0%	2.7%
Employment: A measure that represents the total number of wage and salary workers, self-employed workers, and unpaid family workers working at various occupations within business establishments.	0.6%	0.8%	0.9%	1.7%	2.3%
Real Hourly Compensation: A measure that represents the compensation for labor services received for each hour worked.	0.0%	0.6%	1.6%	0.4%	1.1%
Unit Labor Costs: A measure that represents the compensation for labor services used to produce each unit of goods and services produced.	2.0%	2.6%	2.6%	2.4%	2.4%

Source: Bureau of Labor Statistics, Labor Productivity and Costs

FIGURE 2: LABOR PRODUCTIVITY OVER THE YEAR GROWTH RATE IN MICHIGAN AND U.S., 2007–2017



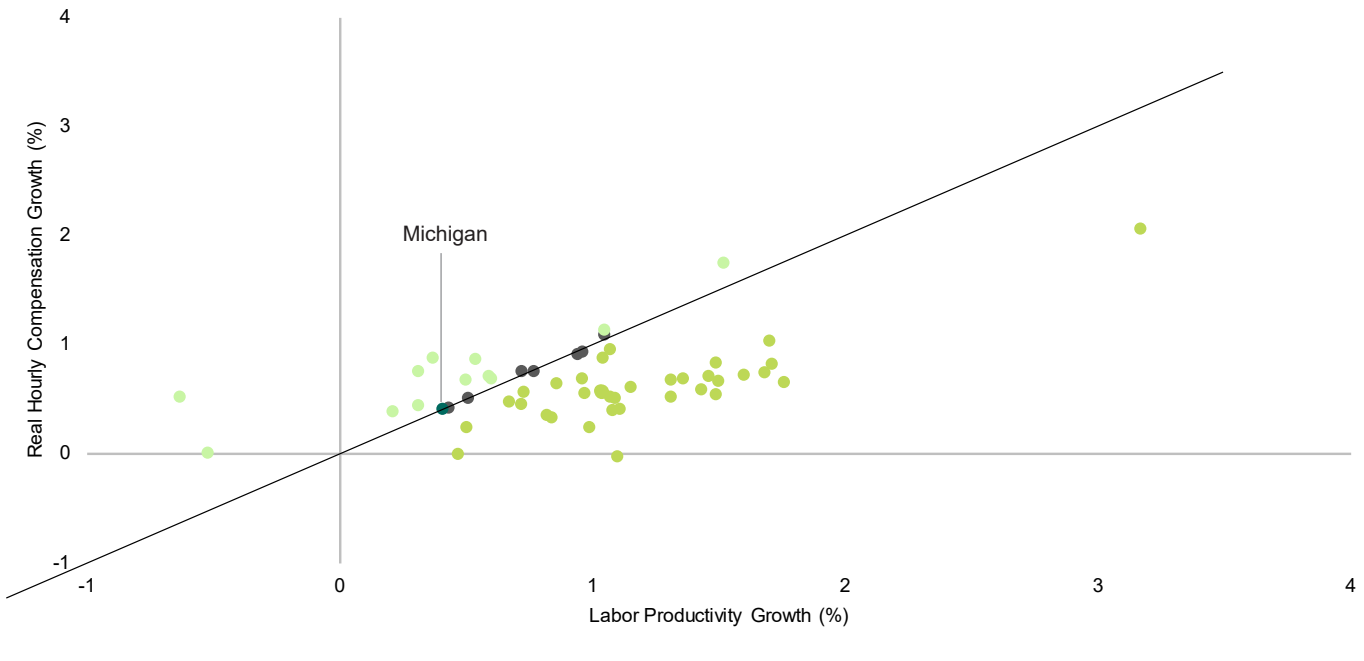
Source: Bureau of Labor Statistics, Labor Productivity and Costs

For More Information

These new state-level data improve on previous efforts to understand statewide and regional variation in productivity. While the BLS acknowledges limitations to these data, it invites feedback on ways to improve these products, and it continues to expand coverage to major industries and regions. For a complete list of all the data measures and more information about these state-level productivity series, please visit: https://www.bls.gov/lpc/state-productivity.htm.

WAYNE ROURKE
Associate Director

FIGURE 3: AVERAGE ANNUAL CHANGE OF PRODUCTIVITY AND COMPENSATION BY STATE, 2007–2017



Source: Bureau of Labor Statistics, Labor Productivity and Costs

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