

MICHIGAN'S LABOR MARKET NEWS

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Computer- and IT-Related Occupations That Can Require an Associate Degree or Less Education

Feature Article pg. 16

Occupational Focus: Telecommunications Equipment Installers and Repairers

pg. 15

Data Spotlight: 2019 Annual Averages From the Quarterly Census of Employment and Wages

pg. 26

Michigan jobs rose in July by 103,000, below the pace of job gains in June (+266,000).

JULY 2020 JOBLESS RATE

MICHIGAN

8.7%

NATIONAL

10.2%

TABLE OF CONTENTS

4	Michigan Employment and Unemployment Trends
6	Michigan Job Trends by Industry Sector
10	Regional Labor Market Analysis
15	Map of the Month: Employment in Select Computer- and IT-Related Occupations
16	Feature Article: Computer- and IT-Related Occupations That Can Require an Associate Degree or Less Education
20	Occupational Focus: Telecommunications Equipment Installers and Repairers
22	Online Job Advertisements
24	Relevant Rankings
26	Data Spotlight: 2019 Annual Averages From the Quarterly Census of Employment and Wages



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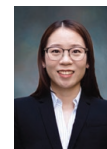
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IT'S BIGGER THAN DATA.

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.

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- Our Research and Evaluation division conducts workforce research and program evaluation, giving you the insight you need to make smarter decisions.

The Michigan labor market showed another incremental improvement in July, but continues to show signs of stress because of the coronavirus pandemic. Michigan's seasonally adjusted jobless rate decreased in July to 8.7 percent. However, the average jobless rate for the period April through July 2020 was 17.1 percent, substantially above the pre-pandemic February rate of 3.6 percent. Nonfarm payroll jobs moved up by 103,200 or 2.7 percent in July. However, Michigan July payroll jobs remained 520,000 below the pre-pandemic February level.

This month's feature looks at computer- and IT-related occupations that can require an associate degree or less. The *Map of the Month* complements this feature by showing by state the share of total employment that is in select computer- and IT-related occupations and our *Relevant Rankings* displays the education requirements for these and similar occupations in the states.

Sadly, this month we lost Jeff Aula, our colleague and friend. Jeff was a long-time contributor to Michigan's Labor Market News, authoring our industry analysis section each month. Jeff had been in our bureau for 32 years, most recently in our Current Employment Statistics (CES) program. We are going to miss Jeff very much. His contributions to our bureau and to our workplace culture will be long-lasting. We dedicate this month's issue of Michigan's Labor Market News to Jeff Aula.



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MICHIGAN'S JOBLESS RATE FALLS IN JULY

Michigan's seasonally adjusted jobless rate decreased in July to 8.7 percent. Employment advanced over the month, and the state's total labor force moved down by 127,000.

The national unemployment rate fell by nine-tenths of a percentage point over the month to 10.2 percent. Michigan's rate was 1.5 percentage points below the national rate in July.

The Michigan average jobless rate for the period April through July 2020 was 17.1 percent, which was substantially above the pre-pandemic February rate of 3.6 percent.

Michigan's total employment level dropped by 7.1 percent since July 2019. In comparison, the national employment level receded by 8.8 percent. The number of unemployed in Michigan from April to July 2020 averaged an extremely high 818,000.

Michigan Current Population Survey Data Reveals Impact of Pandemic on Labor Market

An analysis of Michigan's average Current Population Survey (CPS) data from April 2020 to July 2020 revealed that the Michigan

number of unemployed since the COVID-19 pandemic averaged over 800,000, soaring by about 400 percent since the pre-pandemic February 2020 level. Average total employment fell by 860,000, or approximately 18 percent. The CPS state workforce estimate receded by 235,000, or 4.7 percent.

The CPS data revealed a difference in the average jobless rate between men and women aged 20 years of age and above with the impact of the pandemic. The average Michigan unemployment rate for males was 15.7 percent; an increase of 12.2 percentage points since February. The mean jobless rate for women was 17.0 percent; 14.2 percentage points higher than the female February rate.

The Current Population Survey also revealed how the pandemic impacted the number of Michigan persons on temporary layoff. To be classified as unemployed on temporary layoff in the CPS, a person must either have been given a date to return to work by his or her employer or expects to be recalled to their job within six months. In addition, since the onset of the pandemic, most workers who indicate on

the household survey that they were off work because of the coronavirus should also be classified as unemployed on temporary layoff. As a result, the average number of Michigan persons on temporary layoff jumped from 35,000 in February to an average 653,000 from April through July.

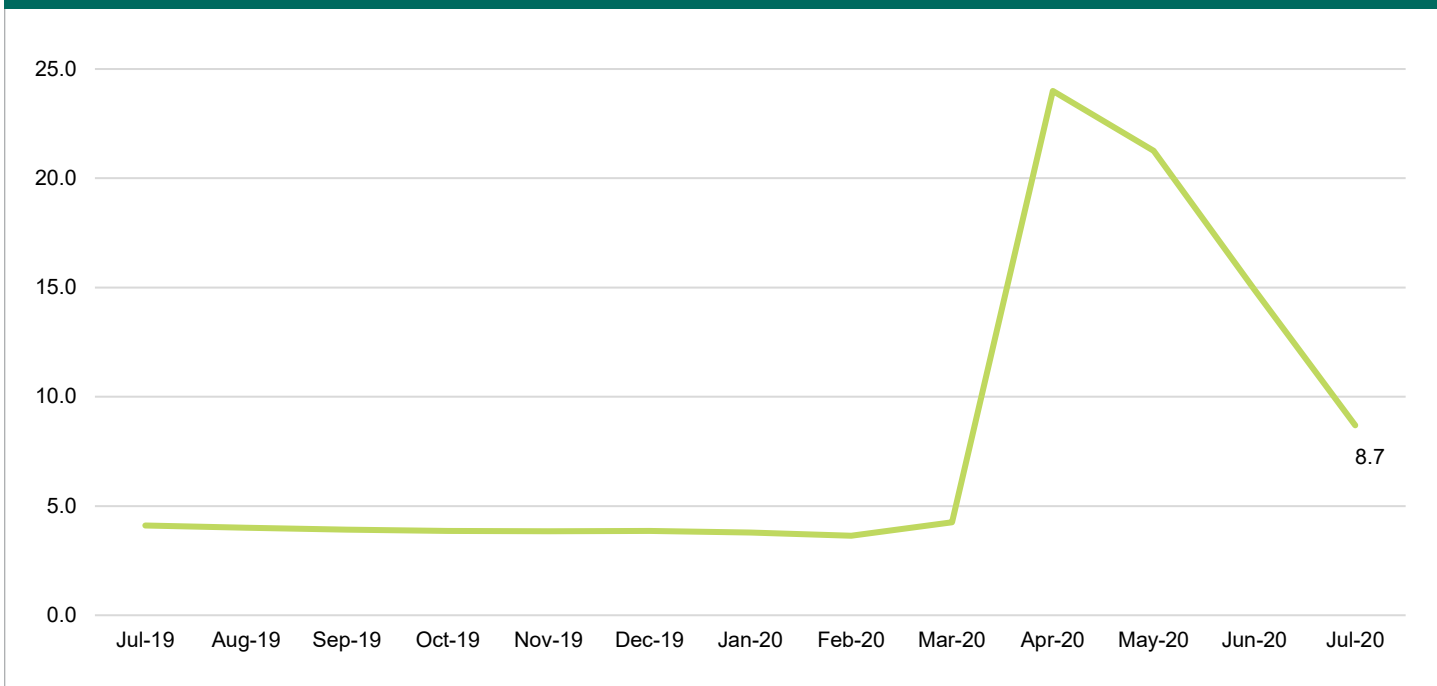
The CPS survey also sheds light on the impact of the pandemic on hours worked by persons who usually work full-time. Employed people who usually work full time (35 hours or more per week) but indicate that they had worked fewer than 35 hours in the reference week because of slack work or business conditions, including those due to pandemic-related closures, are classified as employed part time for economic reasons. The CPS data indicates the number of such workers in Michigan increased substantially to 222,000 on average from April to July, up significantly from the 2019 average of 44,000.

SHIBANI PUTATUNDA
Economic Specialist

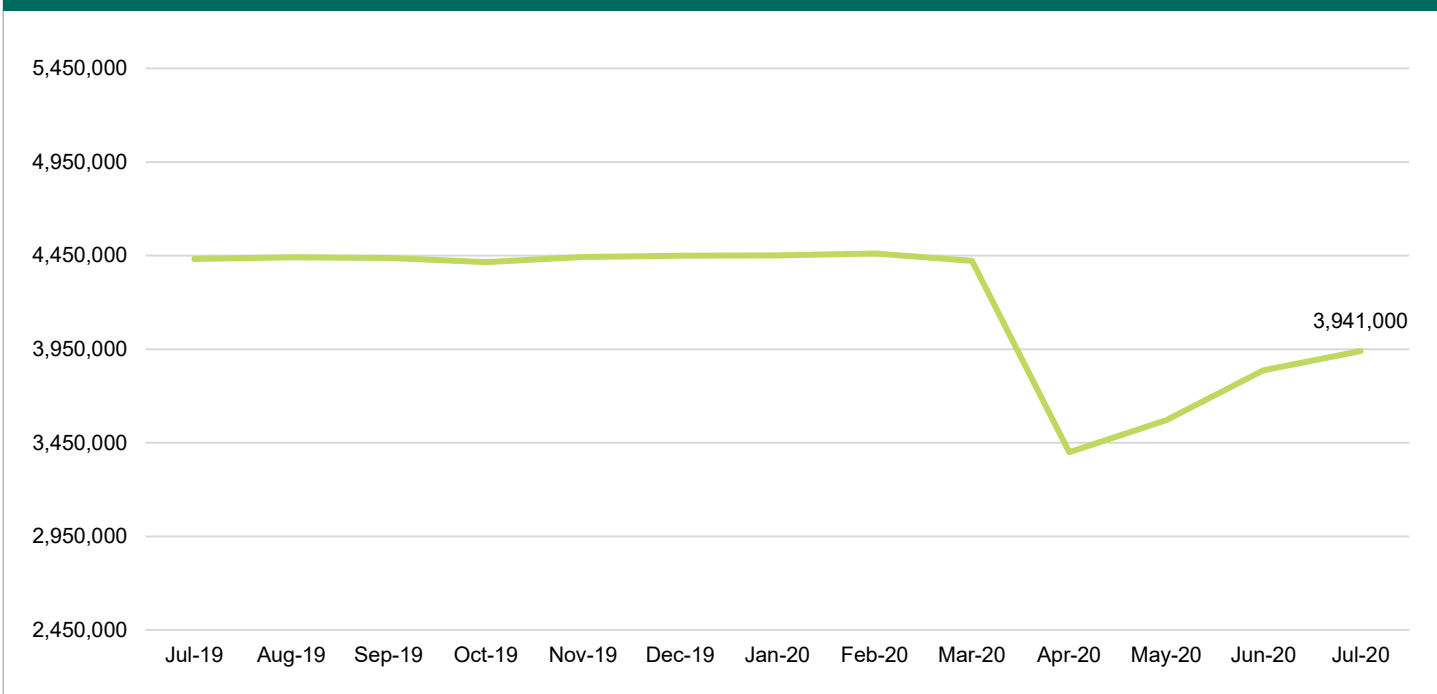
MICHIGAN LABOR FORCE ESTIMATES (SEASONALLY ADJUSTED)

	JULY 2020	JUNE 2020	JULY 2019	CHANGE OVER THE MONTH	CHANGE OVER THE YEAR
Labor Force	4,816,000	4,943,000	4,934,000	-127,000	-118,000
Employed	4,398,000	4,205,000	4,732,000	+193,000	-334,000
Unemployed	418,000	738,000	203,000	-320,000	+215,000
Jobless Rate	8.7	14.9	4.1	-6.2	+4.6

MICHIGAN JOBLESS RATE, JULY 2019–JULY 2020 (PERCENT)



MICHIGAN MONTHLY SEASONALLY ADJUSTED PAYROLL JOBS, JULY 2019–JULY 2020



MICHIGAN JOB TRENDS BY INDUSTRY SECTOR

Monthly Overview

Michigan recorded additional job gains this month, as total nonfarm jobs moved up by 103,200 or 2.7 percent in July. The state has added jobs each month since the very large pandemic-related job cut in April. However, Michigan July payroll jobs remained 520,000 below the pre-pandemic February level. July employment gains were seen in all major industry groups, with the exception of Information. Notable job level increases occurred in *Leisure and hospitality* (+28,300), *Professional and business services* (+27,400), and *Trade, transportation, and utilities* (+12,000). Total employment has continued to rebound in other major industries too, as July jobs rose in *Other services* (+11,900) and *Manufacturing* (+9,400). Several sub-industries showed job additions since last month, including *Accommodation and food services* (+23,300) and *Retail trade* (+8,900).

Over the Year Analysis

Total jobs at the statewide level were still down considerably since last year, due to the impact of the coronavirus. Michigan's seasonally adjusted total nonfarm payroll job level was 11.1 percent (-491,400) lower than it was this time last year. Major over-the-year job declines in the *Leisure and hospitality* (-164,800), *Manufacturing* (-66,500), *Professional and business services* (-65,100), and *Educational and health services* (-62,800) industries have contributed the most to the state's total job loss. Not all major job sectors cut jobs dramatically over the year, as industries such as *Information* (-5,700), *Financial activities* (-5,200), and *Construction* (-2,400) have had more minimal job reductions since July 2019.

Job Change by Major Sector

Although total employment in Michigan has partially recovered from the massive job loss attributed to COVID-19, job levels in all major industries were still down significantly since February 2020 pre-pandemic levels. Seasonally adjusted total nonfarm payroll jobs in Michigan declined by 520,100 or 11.7 percent since February, outpacing the national rate by 3.3 percentage points.

Like Michigan, all 11 national major industry sectors continued to exhibit job level reductions since February 2020. On a percentage basis, for both the United States and Michigan, the largest job level decreases occurred within

the *Leisure and hospitality* and *Mining and logging* major sectors. Substantial job losses in the *Professional and business services* and *Manufacturing* industries also contributed heavily to the numeric decline in payroll jobs since February.

Manufacturing jobs in Michigan (-10.3 percent) fell significantly more on a percentage basis than at the national level (-5.8 percent), whereas total employment in *Construction* exhibited similar trends over the same time frame. Large industry sector job changes occurred within *Professional and business services* and *Educational and health services*, where both industries have now moved down substantially since February, losing 7.6 percent and 6.6 percent respectively statewide and a larger 10.6 percent and 9.6 percent respectively in Michigan.

Significant Industry Employment Developments

OTHER SERVICES

Seasonally adjusted employment levels in the *Other services* sector rose 11,900 or 9.0 percent over the month, which was a departure from the industry's typical July trend. The increase was due mainly from continued job recalls within the sector since the significant job cuts due to the COVID-19 pandemic. Despite sustained job gains over the past three months, employment levels are still down by 20,700 (-12.5 percent) within the industry since the February 2020 pre-pandemic count. Total payroll jobs for this major industry remained well below its year-ago levels, declining by 22,700 or 13.6 percent since July 2019. Nationally, total employment for this industry increased by 149,000 or 2.9 percent since June but fell by 10.0 percent over the year.

HEALTH CARE AND SOCIAL ASSISTANCE

The number of *Health care and social assistance* jobs moved up over the month by 7,200 (+1.3 percent) on a seasonally adjusted basis, and rose by 47,500 since its yearly-low in April. However, total payroll jobs in this industry were still well below pre-pandemic levels, down by 7.8 percent since February 2020. Job gains occurred in health care in July in both *Ambulatory health care services* and *Hospitals*. On the national level, total jobs increased marginally by 191,400 (+1.0 percent) but were down 4.5 percent since July 2019.

PROFESSIONAL, SCIENTIFIC, AND TECHNICAL SERVICES

On a seasonally adjusted basis, a modest rebound occurred in July for the *Professional, scientific, and technical services* industry, moving up by 3,300 (+1.2 percent) since last month. July job gains now add to a total three-month job recovery of 28,300 since April 2020. However, jobs in this sector were still 17,200 or 5.8 percent lower than February pre-pandemic levels. On a non-seasonally adjusted basis, *Other professional, scientific, and technical services* and *Computer systems design and related activities* had the largest over the month job additions within the industry. Nationally, jobs in this sector edged up by only a marginal amount (+0.2 percent) in July, as the over-the-year job count declined (-2.8 percent).

Metropolitan Statistical Areas (MSAs)

Total nonfarm payroll jobs in most of Michigan's 14 Metropolitan Statistical Areas (MSAs) recorded job gains in July, on a not seasonally adjusted basis. Over-the-month percent job additions ranged from 0.2 percent in both the Flint and Kalamazoo metro areas to a high of 2.3 percent in the Bay City region. In contrast, jobs remained unchanged since last month in both the Battle Creek and Midland MSAs, while the Monroe (-0.6 percent) and Lansing (-0.2 percent) areas both recorded job declines.

Many metro areas experienced a modest rebound in both *Leisure and hospitality* and *Other services* jobs since last month, adding to the total job recovery since the historically, low pandemic job levels in April.

In following typical seasonal trends, every metro area, with the exception of Ann Arbor and Bay City, recorded July reductions in total *Government* jobs, with the largest over-the-month percent decline occurring in the Monroe region (-12.5 percent).

JIM BIRNEY

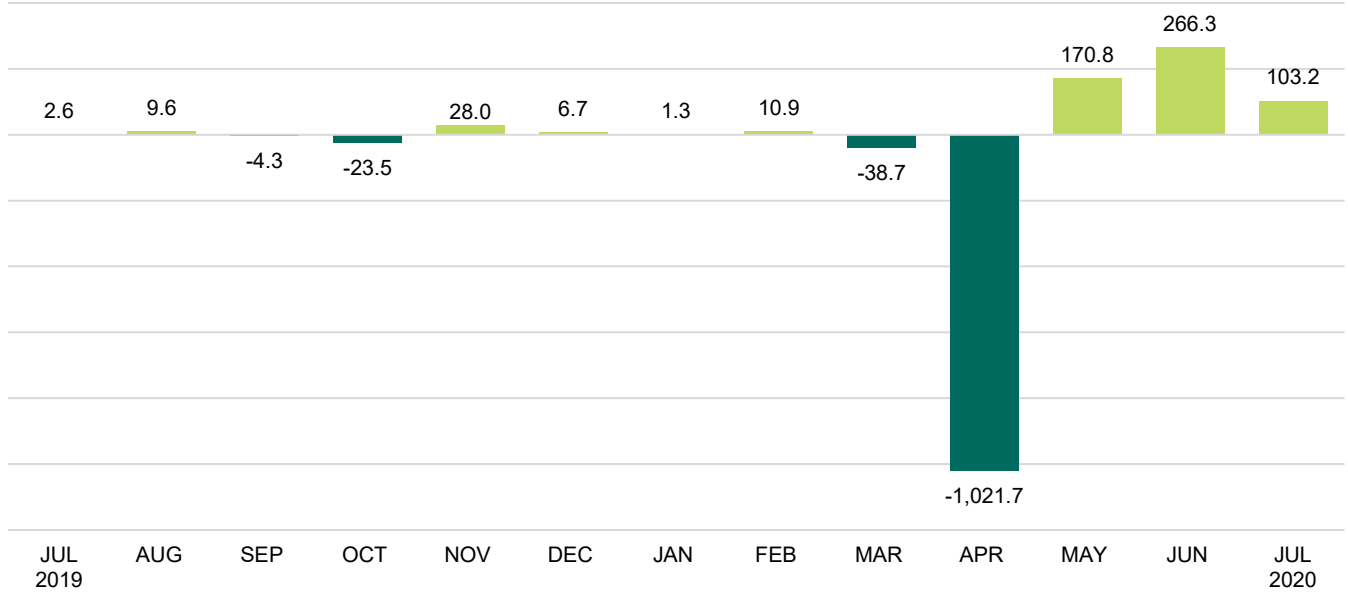
Economic Analyst



MICHIGAN PAYROLL JOBS (SEASONALLY ADJUSTED)

INDUSTRY	JULY 2020	JUNE 2020	JULY 2019	OVER THE MONTH		OVER THE YEAR	
				LEVEL	PERCENT	LEVEL	PERCENT
TOTAL NONFARM	3,941,400	3,838,200	4,432,800	103,200	2.7%	-491,400	-11.1%
Total Private	3,370,200	3,270,400	3,818,500	99,800	3.1%	-448,300	-11.7%
Private Service-Providing	2,633,000	2,545,400	3,011,300	87,600	3.4%	-378,300	-12.6%
GOODS-PRODUCING	737,200	725,000	807,200	12,200	1.7%	-70,000	-8.7%
Mining, Logging, and Construction	177,500	174,700	181,000	2,800	1.6%	-3,500	-1.9%
Mining and Logging	6,300	6,100	7,400	200	3.3%	-1,100	-14.9%
Construction	171,200	168,600	173,600	2,600	1.5%	-2,400	-1.4%
Manufacturing	559,700	550,300	626,200	9,400	1.7%	-66,500	-10.6%
Durable Goods	414,500	406,800	472,800	7,700	1.9%	-58,300	-12.3%
Transportation Equipment Manufacturing	167,500	106,400	190,000	61,100	57.4%	-22,500	-11.8%
Non-Durable Goods	145,200	143,500	153,400	1,700	1.2%	-8,200	-5.3%
SERVICE-PROVIDING	3,204,200	3,113,200	3,625,600	91,000	2.9%	-421,400	-11.6%
Trade, Transportation, and Utilities	744,000	732,000	796,000	12,000	1.6%	-52,000	-6.5%
Wholesale Trade	161,400	159,900	171,700	1,500	0.9%	-10,300	-6.0%
Retail Trade	428,900	420,000	463,600	8,900	2.1%	-34,700	-7.5%
Transportation, Warehousing, and Utilities	153,700	152,100	160,700	1,600	1.1%	-7,000	-4.4%
Information	49,600	50,200	55,300	-600	-1.2%	-5,700	-10.3%
Financial Activities	219,000	218,800	224,200	200	0.1%	-5,200	-2.3%
Finance and Insurance	169,000	169,700	168,200	-700	-0.4%	800	0.5%
Real Estate and Rental and Leasing	50,000	49,100	56,000	900	1.8%	-6,000	-10.7%
Professional and Business Services	588,100	560,700	653,200	27,400	4.9%	-65,100	-10.0%
Professional, Scientific, and Technical Services	281,400	278,100	298,300	3,300	1.2%	-16,900	-5.7%
Management of Companies and Enterprises	67,900	67,900	70,000	0	0.0%	-2,100	-3.0%
Administrative and Support and Waste Management and Remediation Services	238,800	214,700	284,900	24,100	11.2%	-46,100	-16.2%
Education and Health Services	618,000	609,600	680,800	8,400	1.4%	-62,800	-9.2%
Educational Services	57,000	55,800	74,400	1,200	2.2%	-17,400	-23.4%
Health Care and Social Assistance	561,000	553,800	606,400	7,200	1.3%	-45,400	-7.5%
Leisure and Hospitality	270,000	241,700	434,800	28,300	11.7%	-164,800	-37.9%
Arts, Entertainment, and Recreation	26,700	21,700	53,500	5,000	23.0%	-26,800	-50.1%
Accommodation and Food Services	243,300	220,000	381,300	23,300	10.6%	-138,000	-36.2%
Other Services	144,300	132,400	167,000	11,900	9.0%	-22,700	-13.6%
Government	571,200	567,800	614,300	3,400	0.6%	-43,100	-7.0%
Federal Government	52,400	52,300	52,400	100	0.2%	0	0.0%
State Government	178,800	176,100	194,800	2,700	1.5%	-16,000	-8.2%
Local Government	340,000	339,400	367,100	600	0.2%	-27,100	-7.4%

MICHIGAN OVER-THE-MONTH PAYROLL JOB CHANGE, JULY 2019–JULY 2020 (IN THOUSANDS)



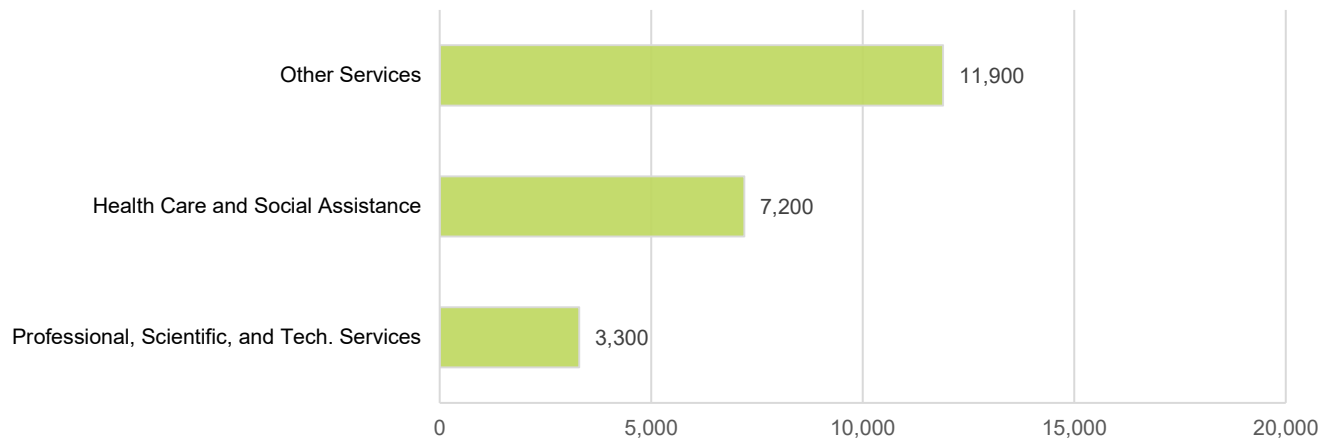
JOB CHANGE BY MAJOR INDUSTRY SECTOR SINCE FEBRUARY 2020 (IN THOUSANDS)

MAJOR INDUSTRY SECTOR	MICHIGAN				UNITED STATES			
	FEB 20	JULY 20	CHANGE		FEB 20	JULY 20	CHANGE	
			LEVEL	PERCENT			LEVEL	PERCENT
TOTAL NONFARM	4,461.5	3,941.4	-520.1	-11.7%	152,463	139,582	-12,881.0	-8.4%
Mining and Logging	7.4	6.3	-1.1	-14.9%	714	621	-93.0	-13.0%
Construction	182.2	171.2	-11.0	-6.0%	7,639	7,195	-444.0	-5.8%
Manufacturing	623.7	559.7	-64.0	-10.3%	12,852	12,112	-740.0	-5.8%
Trade, Transportation, and Utilities	804.8	744.0	-60.8	-7.6%	27,830	26,123	-1,707.0	-6.1%
Information	55.4	49.6	-5.8	-10.5%	2,894	2,564	-330.0	-11.4%
Financial Activities	228.8	219.0	-9.8	-4.3%	8,845	8,629	-216.0	-2.4%
Professional and Business Services	658.1	588.1	-70.0	-10.6%	21,550	19,902	-1,648.0	-7.6%
Educational and Health Services	683.5	618.0	-65.5	-9.6%	24,586	22,975	-1,611.0	-6.6%
Leisure and Hospitality	435.3	270.0	-165.3	-38.0%	16,867	12,527	-4,340.0	-25.7%
Other Services	165.0	144.3	-20.7	-12.5%	5,941	5,314	-627.0	-10.6%
Government	617.3	571.2	-46.1	-7.5%	22,745	21,620	-1,125.0	-4.9%

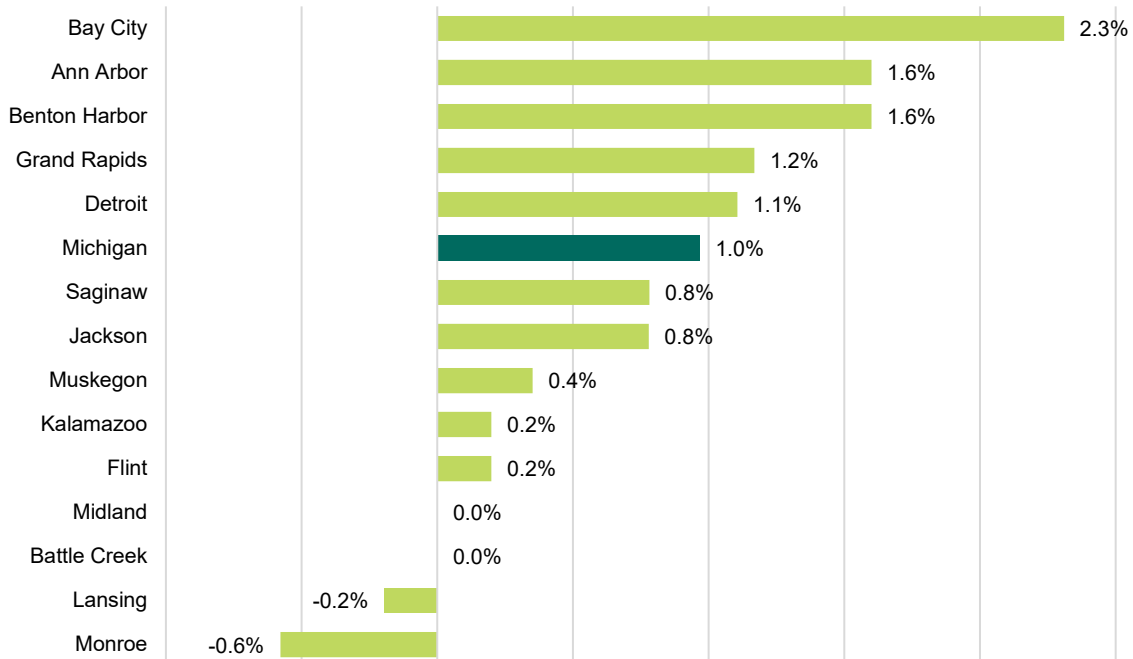




MICHIGAN OVER-THE-MONTH JOB CHANGE BY SELECT INDUSTRY, JUNE 2020–JULY 2020



METROPOLITAN AREA JOB CHANGE, JUNE 2020–JULY 2020 (NOT SEASONALLY ADJUSTED)



REGIONAL LABOR MARKET ANALYSIS

ANN ARBOR METROPOLITAN AREA

- The unemployment rate in the Ann Arbor region moved down by 2.8 percentage points to 7.9 percent in July and was tied for the lowest jobless rate among Michigan regions.
- The workforce in the metro area declined by 4,600 (-2.2 percent) over the month, due to a reduction in the total number of unemployed.

MONTHLY INDUSTRY DEVELOPMENTS

- Nonfarm jobs in Ann Arbor rose by 3,400 or 1.6 percent this month, tied for the second fastest rate of July job growth among Michigan metro areas.

INDUSTRY TRENDS

- *Leisure and hospitality* jobs increased by 1,600 or 12.9 percent in July, which was the largest over the month Michigan metro area percent job gain in this industry.

BATTLE CREEK METROPOLITAN AREA

- The Battle Creek jobless rate declined by 4.4 percentage points this month to 10.9 percent but was still 1.4 percentage points above the statewide rate (9.5 percent).
- Total labor force in the metro area moved down by 3,600 in July, as the total number of employed stayed relatively flat (-0.5 percent).

MONTHLY INDUSTRY DEVELOPMENTS

- Total regional jobs in the Battle Creek area remained unchanged this month.
- A slight uptick in *Goods producing* jobs was offset by a similar decline in the *Service providing* sector.

INDUSTRY TRENDS

- Although a majority of job sectors remained flat over the month, Battle Creek *Government* jobs moved down seasonally by 3.2 percent (-300) in July.

BAY CITY METROPOLITAN AREA

- In July, the regional jobless rate for the Bay City metro area decreased by 4.2 percentage points to 9.5 percent.
- Since July 2019, the unemployment rate remains elevated by 4.1 percentage points, slightly lower than the over-the-year increase at the statewide level (+4.4 percentage points).

MONTHLY INDUSTRY DEVELOPMENTS

- Total nonfarm jobs in the Bay City MSA moved up by 700 or 2.3 percent in July but were still down 11.9 percent over the year.

INDUSTRY TRENDS

- Area jobs in the *Educational and health services* sector rose slightly in July by 200 (+3.4 percent), which was the largest percent increase for this industry among all 14 Michigan metropolitan areas.

DETROIT-WARREN-DEARBORN METRO AREA

- The Detroit regional jobless rate moved down by 7.9 percentage points this month to 10.1 percent, the largest over the month rate drop among Michigan metro areas.
- Total labor force for the Detroit MSA remained relatively flat over the month, declining by only 0.4 percent (-9,000) since June.

MONTHLY INDUSTRY DEVELOPMENTS

- Detroit regional payroll jobs increased this month by 19,700 or 1.1 percent, which was similar to the rate of expansion statewide.
- Over the month, percent job gains were led by *Leisure and hospitality* (+11.7 percent) and *Other services* (+10.8 percent).

INDUSTRY TRENDS

- Despite rising by 258,700 since April, total nonfarm jobs in the Detroit metro area were still down 11.3 percent over the year (-229,100).

FLINT METROPOLITAN AREA

- The unemployment rate in the Flint labor market declined by 4.4 percentage points to 11.8 percent in July. This was the second highest metro area jobless rate in Michigan.
- Total workforce for the region moved down over the month but edged up marginally over the year (+0.9 percent).

MONTHLY INDUSTRY DEVELOPMENTS

- Metro area jobs in the Flint MSA remained relatively flat in July, rising by only 200 or 0.2 percent.
- Job gains in the *Manufacturing* (+600) and *Leisure and hospitality* (+1,100) sectors were offset by a seasonal decline in *Government* jobs (-1,900).

INDUSTRY TRENDS

- Payroll jobs fell sharply by 15,500 or 11.0 percent since July 2019 in the Flint region. Jobs dropped over the year in most detailed industries, and *Leisure and hospitality* registered the largest percentage job loss.

GRAND RAPIDS-WYOMING METRO AREA

- Joblessness in the Grand Rapids MSA declined by 3.6 percentage points this month to 8.4 percent. The regional jobless rate remained well above the pre-pandemic February 2020 level (2.5 percent).
- The total number of unemployed in the area fell sharply in July but remained more than double the July 2019 level of 22,800.

MONTHLY INDUSTRY DEVELOPMENTS

- Nonfarm jobs in the Grand Rapids region advanced in July by 5,900 or 1.2 percent, 0.2 percent above the growth rate statewide (+1.0 percent).

INDUSTRY TRENDS

- *Educational and health services* jobs in the metro area decreased by 700 (-0.8 percent) in July, as Grand Rapids was one of only three Michigan metro areas with a monthly job cut in this industry.

CIVILIAN LABOR FORCE AND NONFARM PAYROLL JOBS

	ANN ARBOR			BATTLE CREEK			BAY CITY		
	JULY 2020	JUNE 2020	JULY 2019	JULY 2020	JUNE 2020	JULY 2019	JULY 2020	JUNE 2020	JULY 2019
PLACE OF RESIDENCE									
Labor Force	203,300	207,900	197,100	62,000	65,600	62,600	49,800	51,600	50,500
Employment	187,200	185,700	189,000	55,300	55,600	59,400	45,000	44,500	47,800
Unemployment	16,100	22,200	8,200	6,700	10,000	3,300	4,700	7,100	2,700
Rate (percent)	7.9%	10.7%	4.2%	10.9%	15.3%	5.2%	9.5%	13.7%	5.4%
PLACE OF WORK									
Total Nonfarm Jobs	210,600	207,200	222,600	49,500	49,500	57,100	31,000	30,300	35,200
Mining, Logging, and Construction	4,500	4,500	5,100	1,700	1,600	1,900	1,400	1,400	1,500
Manufacturing	13,700	13,600	14,600	9,700	9,700	11,500	3,100	3,100	4,600
Trade, Transportation, and Utilities	25,800	25,600	27,000	8,500	8,500	9,200	7,200	7,000	7,500
Wholesale Trade	6,200	6,200	6,800	*	*	*	*	*	*
Retail Trade	15,600	15,400	16,000	5,600	5,500	5,700	4,600	4,300	4,800
Information	5,500	5,500	5,600	*	*	*	300	300	300
Financial Activities	6,600	6,600	7,000	1,100	1,100	1,200	1,200	1,200	1,300
Professional and Business Services	27,800	27,400	30,900	4,800	4,700	5,600	2,000	2,000	2,400
Educational and Health Services	27,200	27,200	29,200	9,600	9,700	10,600	6,100	5,900	6,500
Leisure and Hospitality	14,000	12,400	18,900	3,000	2,800	4,700	3,700	3,400	4,600
Other Services	5,800	5,400	6,500	1,800	1,800	2,000	1,100	1,100	1,300
Government	79,700	79,000	77,800	9,000	9,300	10,100	4,900	4,900	5,200
DETROIT-WARREN-DEARBORN									
FLINT									
GRAND RAPIDS-WYOMING									
	JULY 2020	JUNE 2020	JULY 2019	JULY 2020	JUNE 2020	JULY 2019	JULY 2020	JUNE 2020	JULY 2019
PLACE OF RESIDENCE									
Labor Force	2,042,000	2,051,000	2,193,000	186,200	197,000	184,600	592,100	613,400	584,100
Employment	1,836,000	1,682,000	2,076,000	164,300	165,000	173,300	542,600	539,600	561,400
Unemployment	206,000	368,000	116,000	21,900	32,000	11,200	49,500	73,800	22,800
Rate (percent)	10.1%	18.0%	5.3%	11.8%	16.2%	6.1%	8.4%	12.0%	3.9%
PLACE OF WORK									
Total Nonfarm Jobs	1,800,800	1,781,100	2,029,900	125,600	125,400	141,100	510,900	505,000	562,200
Mining, Logging, and Construction	75,000	73,600	80,900	5,600	5,600	6,300	29,000	29,100	27,300
Manufacturing	229,700	229,000	251,800	11,300	10,700	14,000	104,600	101,500	120,400
Trade, Transportation, and Utilities	350,500	344,100	380,900	28,400	28,200	29,100	91,600	90,700	98,800
Wholesale Trade	78,800	79,800	85,700	5,700	5,500	5,700	30,100	30,200	32,900
Retail Trade	190,800	185,300	210,100	18,600	18,700	19,200	44,900	44,000	49,000
Information	24,800	24,800	27,100	3,200	3,200	3,700	5,900	6,000	6,500
Financial Activities	118,000	117,600	122,800	5,800	5,800	6,000	26,300	26,200	26,900
Professional and Business Services	357,500	353,700	389,900	14,900	14,900	16,200	66,200	66,000	74,500
Educational and Health Services	274,600	273,700	316,300	23,500	23,500	26,500	85,000	85,700	91,300
Leisure and Hospitality	137,000	122,700	206,800	12,400	11,300	16,200	39,500	36,100	52,000
Other Services	69,900	63,100	75,700	5,100	4,900	5,400	21,000	19,400	23,000
Government	163,800	178,800	177,700	15,400	17,300	17,700	41,800	44,300	41,500

JACKSON METROPOLITAN AREA

- The unemployment rate in the Jackson labor market dropped by 4.3 percentage points in July to 10.1 percent, which was above the jobless rate statewide (9.5 percent).
- Despite the jobless rate decrease, the number of employed in the region was unchanged in July. Over the past year, employment was down a substantial 2,700.

MONTHLY INDUSTRY DEVELOPMENTS

- July nonfarm payroll jobs in Jackson increased by 400 or 0.8 percent, slightly lower than the statewide rate of gain (+1.0 percent).
- July job recalls within *Trade, transportation, and utilities* (+200) and *Leisure and hospitality* (+300) were partially offset by a seasonal reduction in *Government* (-300).

INDUSTRY TRENDS

- Jobs plunged by 6,000 over the past year with employment cuts across most industries.

LANSING-EAST LANSING METRO AREA

- Regional joblessness in the Lansing MSA moved down by 3.0 percentage points to 8.4 percent in July.
- Both the total number of employed and unemployed declined over the month, by 1,500 and 8,300, respectively.

MONTHLY INDUSTRY DEVELOPMENTS

- In the Lansing region, total nonfarm jobs moved up by 13,500 or 6.9 percent over the month, however, were still down over the year (-10.9 percent).

INDUSTRY TRENDS

- Lansing MSA jobs in *Trade, transportation, and utilities* receded by 900 (-2.7 percent) in July, which was the largest percent job reduction for this industry among all Michigan metro areas.

MONROE METROPOLITAN AREA

- The jobless rate in the Monroe metro area declined by 4.2 percentage points over the month to 9.2 percent in July.
- Employment levels were little changed in July (-300), and dropped significantly over the past year (-4,700).

MONTHLY INDUSTRY DEVELOPMENTS

- Nonfarm payroll jobs in the Monroe MSA inched down by 200 or 0.6 percent in July, while jobs in Michigan rose in July by 1.6 percent.
- Among Michigan metro areas, only Monroe and Lansing had job reductions in July.

INDUSTRY TRENDS

- Jobs dropped sharply by 6,000 (-14.9 percent) since July 2019 in the Monroe region, led by job cuts in *Leisure and hospitality* (-1,800).

KALAMAZOO-PORTAGE METRO AREA

- The Kalamazoo regional jobless rate fell by 3.2 percentage points to 8.7 percent in July.
- Total labor force in the metro area declined over the month (-3.6 percent) but rose over the year (+1.9 percent).

MONTHLY INDUSTRY DEVELOPMENTS

- In the Kalamazoo region, total payroll jobs inched up by only 300 or 0.2 percent in July, significantly less than the statewide monthly rate of gain.
- Several Kalamazoo industries cut jobs over the month, with seasonal job losses in *Government* (-1,200) and an employment reduction in *Retail trade* (-300).

INDUSTRY TRENDS

- Metro area jobs in the Kalamazoo MSA continued to remain below pre-pandemic levels, as nonfarm jobs in the region were down 8.1 percent (-11,900) over the year.

MIDLAND METROPOLITAN AREA

- The jobless rate in the Midland MSA fell by 3.2 percentage points over the month to 7.9 percent in July.
- In July, the region's total labor force dropped by 1,600 (-3.8 percent) but remained relatively flat since July 2019 (-0.7 percent).

MONTHLY INDUSTRY DEVELOPMENTS

- Total payroll jobs in the Midland metro area were stable over the month and fell sharply by 3,700 (-9.9 percent) since July 2019.

INDUSTRY TRENDS

- Although area jobs in the Government sector moved down by 100 (-3.6 percent) over the month, public sector positions were relatively unchanged over the year (+100).

MUSKEGON METROPOLITAN AREA

- The July Muskegon regional unemployment rate dropped by 4.9 percentage points to 12.8 percent. This was the highest rate in July among all Michigan metro areas.
- Unemployment levels soared over the last year in the Muskegon region by 5,900.

MONTHLY INDUSTRY DEVELOPMENTS

- In the Muskegon region, total nonfarm jobs remained mostly unchanged in July, edging up by only 200 or 0.4 percent.

INDUSTRY TRENDS

- Workers returned to jobs in the *Leisure and hospitality* industry in July, moving up by 600 (+11.3 percent). This was largely offset by a seasonal job cut in *Government*.

CIVILIAN LABOR FORCE AND NONFARM PAYROLL JOBS

	JACKSON			KALAMAZOO-PORTAGE			LANSING-EAST LANSING		
	JULY 2020	JUNE 2020	JULY 2019	JULY 2020	JUNE 2020	JULY 2019	JULY 2020	JUNE 2020	JULY 2019
PLACE OF RESIDENCE									
Labor Force	75,300	79,100	74,100	171,300	177,700	168,100	243,600	253,500	244,700
Employment	67,700	67,700	70,400	156,300	156,500	160,400	223,000	224,500	233,400
Unemployment	7,600	11,400	3,600	15,000	21,200	7,700	20,600	28,900	11,300
Rate (percent)	10.1%	14.4%	4.9%	8.7%	11.9%	4.6%	8.4%	11.4%	4.6%
PLACE OF WORK									
Total Nonfarm Jobs	51,700	51,300	57,700	135,200	134,900	147,100	205,700	206,100	229,400
Mining, Logging, and Construction	2,300	2,200	2,200	6,700	6,600	6,700	7,700	7,700	8,800
Manufacturing	8,400	8,400	9,900	20,300	20,400	23,300	16,100	16,100	19,200
Trade, Transportation, and Utilities	10,600	10,400	12,400	23,400	23,700	26,200	32,900	33,800	35,000
Wholesale Trade	*	*	*	5,900	5,900	6,400	5,900	5,900	6,500
Retail Trade	6,100	6,000	6,400	13,700	14,000	15,800	19,600	20,400	21,200
Information	200	200	200	700	700	700	2,800	2,800	3,000
Financial Activities	2,100	2,100	2,200	8,100	8,100	8,300	16,700	16,700	17,200
Professional and Business Services	5,200	5,200	5,100	16,400	16,300	16,900	21,700	21,200	23,200
Educational and Health Services	8,700	8,700	10,000	22,600	22,700	24,800	28,900	28,900	31,800
Leisure and Hospitality	4,500	4,200	5,500	16,300	14,800	16,700	16,100	14,500	19,800
Other Services	2,300	2,200	2,600	4,800	4,500	5,300	9,100	8,400	10,800
Government	7,400	7,700	7,600	15,900	17,100	18,200	53,700	56,000	60,600
MIDLAND									
MONROE									
MUSKEGON									
	JULY 2020	JUNE 2020	JULY 2019	JULY 2020	JUNE 2020	JULY 2019	JULY 2020	JUNE 2020	JULY 2019
PLACE OF RESIDENCE									
Labor Force	40,200	41,800	40,500	73,800	77,700	76,000	80,300	85,400	79,000
Employment	37,000	37,100	38,700	67,000	67,300	71,700	70,000	70,200	74,700
Unemployment	3,200	4,600	1,800	6,800	10,400	4,300	10,200	15,100	4,300
Rate (percent)	7.9%	11.1%	4.5%	9.2%	13.4%	5.7%	12.8%	17.7%	5.4%
PLACE OF WORK									
Total Nonfarm Jobs	33,800	33,800	37,500	34,400	34,600	40,400	57,000	56,800	65,200
Mining, Logging, and Construction	*	*	*	1,800	1,800	1,900	2,800	2,700	2,500
Manufacturing	*	*	*	4,700	4,800	5,600	11,600	11,500	14,000
Trade, Transportation, and Utilities	*	*	*	9,700	9,700	10,700	13,300	13,300	13,600
Wholesale Trade	*	*	*	1,700	1,700	1,800	*	*	*
Retail Trade	*	*	*	4,100	4,100	4,800	10,200	10,100	11,000
Information	*	*	*	*	*	*	200	200	300
Financial Activities	*	*	*	900	900	900	1,800	1,800	1,800
Professional and Business Services	*	*	*	4,000	3,900	5,000	3,400	3,500	3,400
Educational and Health Services	*	*	*	4,500	4,400	4,800	10,000	9,900	12,000
Leisure and Hospitality	*	*	*	3,000	2,700	4,800	5,900	5,300	8,700
Other Services	*	*	*	1,300	1,300	1,400	1,800	1,800	2,300
Government	2,700	2,800	2,600	4,200	4,800	4,900	6,200	6,800	6,600

NILES-BENTON HARBOR METRO AREA

- In the Niles-Benton Harbor labor market, the unemployment rate decreased by 3.9 percentage points to 9.9 percent in July.
- Employment levels moved up by 600 in July, but remain down dramatically since July 2019 due to the impact of the pandemic.

MONTHLY INDUSTRY DEVELOPMENTS

- Niles-Benton Harbor metro area jobs rebounded by 900 or 1.6 percent in July, above the statewide monthly rate of change.
- Area *Retail trade* jobs increased by 400 or 7.1 percent over the month but were still down 14.3 percent since July 2019.

INDUSTRY TRENDS

- Regional jobs in the *Professional and business services* sector declined by 300 (-5.8 percent) in July, which was the largest percent decrease for this industry among all Michigan metro areas.

SAGINAW METROPOLITAN AREA

- In July, the unemployment rate in the Saginaw labor market moved down by 4.0 percentage points to 10.6 percent.
- The total number of employed remained relatively flat in July (+0.3 percent) but has now declined by 5.5 percent since July 2019.

MONTHLY INDUSTRY DEVELOPMENTS

- Nonfarm jobs in the Saginaw region advanced by 600 or 0.8 percent in July. Over the past year, area total jobs fell by 11.5 percent, which was higher than the statewide rate of job loss.
- July job gains were led by *Leisure and hospitality* (+700), *Retail trade* (+400), and *Manufacturing* (+300).

INDUSTRY TRENDS

- Saginaw area *Trade, transportation, and utilities* jobs rebounded marginally this month (+300), but were still down by a significant 10.2 percent since July 2019.

CIVILIAN LABOR FORCE AND NONFARM PAYROLL JOBS

	NILES-BENTON HARBOR			SAGINAW					
	JULY 2020	JUNE 2020	JULY 2019	JULY 2020	JUNE 2020	JULY 2019			
PLACE OF RESIDENCE									
Labor Force	76,500	79,300	75,000	86,900	90,900	87,300			
Employment	68,900	68,300	71,300	77,800	77,600	82,300			
Unemployment	7,600	11,000	3,700	9,200	13,300	4,900			
Rate (percent)	9.9%	13.8%	5.0%	10.6%	14.6%	5.7%			
PLACE OF WORK									
Total Nonfarm Jobs	57,700	56,800	63,500	77,300	76,700	87,300			
Mining, Logging, and Construction	2,900	2,900	2,400	3,000	3,000	3,400			
Manufacturing	13,000	12,800	13,300	10,700	10,400	12,500			
Trade, Transportation, and Utilities	9,900	9,400	10,900	14,900	14,600	16,600			
Wholesale Trade	*	*	*	1,900	2,000	2,100			
Retail Trade	6,000	5,600	7,000	10,400	10,000	11,800			
Information	400	400	500	1,100	1,100	1,300			
Financial Activities	2,400	2,500	2,500	3,600	3,700	3,800			
Professional and Business Services	4,900	5,200	5,200	10,100	10,100	11,500			
Educational and Health Services	8,800	8,800	9,500	14,700	14,500	15,800			
Leisure and Hospitality	5,900	5,300	8,600	7,100	6,400	9,200			
Other Services	2,100	2,000	2,400	3,100	3,100	3,100			
Government	7,400	7,500	8,200	9,000	9,800	10,100			
UPPER PENINSULA									
	JULY 2020	JUNE 2020	JULY 2019	NORTHEAST MICHIGAN					
				JULY 2020	JUNE 2020	JULY 2019	NORTHWEST MICHIGAN		
							JULY 2020	JUNE 2020	JULY 2019
PLACE OF RESIDENCE									
Labor Force	142,700	146,200	139,100	83,800	86,800	85,800	160,800	163,600	161,500
Employment	131,000	128,700	131,000	75,200	74,000	80,400	146,800	142,200	154,400
Unemployment	11,700	17,600	8,100	8,600	12,800	5,400	14,000	21,400	7,100
Rate (percent)	8.2%	12.0%	5.8%	10.2%	14.8%	6.3%	8.7%	13.1%	4.4%

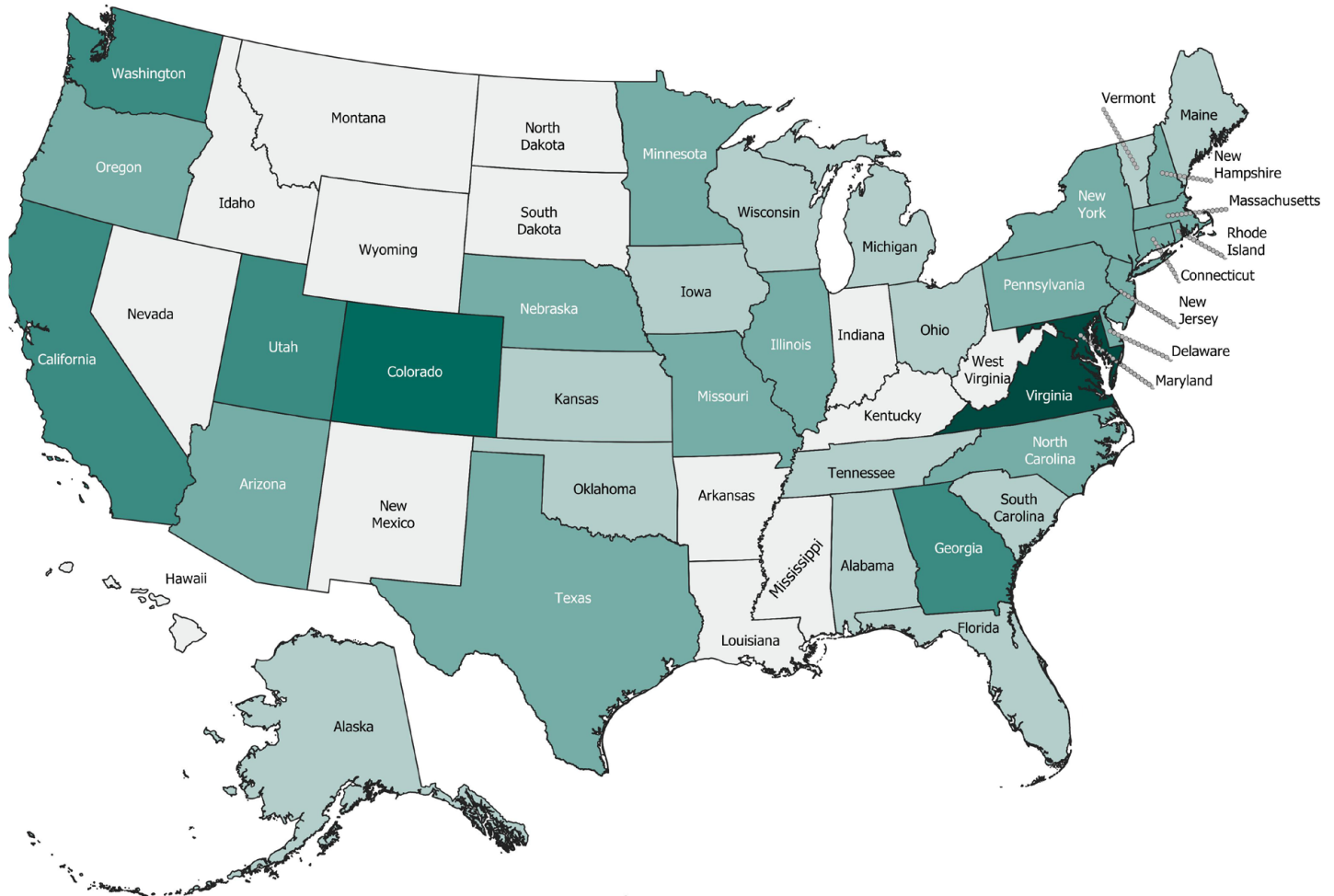
MAP OF THE MONTH:

EMPLOYMENT IN SELECT COMPUTER- AND IT-RELATED OCCUPATIONS

Share of Total Employment



Source: 2019 Occupational Employment Statistics Survey, U.S. Bureau of Labor Statistics



Michigan ranks 16th overall with 94,000 jobs in computer- and IT-related occupations that require an associate degree or less education (for more information, see our Relevant Rankings section on page 24). Michigan ranks 10th in total employment in all occupations, so the state is relatively underrepresented in these occupations. When looking at percentages, about 2.2 percent of employment in the state is in the 27 occupations identified in the feature article (page 16). This is good for the 32nd highest percentage, which is nearly tied with Oklahoma and just behind Alabama.

Some of the most well represented states in the nation are located in proximity to the country's capital. Maryland leads the way with 4.3 percent of all employment in the selected occupations. Virginia is 2nd with 4.2 percent and the District of Columbia is 5th with 3.3 percent. Colorado and Washington are 3rd and 4th with 3.7 percent and 3.5 percent, respectively. Many of the lowest percentages in the country are in largely rural states in the south and west with small populations. To crack the top 10 Michigan would need a 3 percent share of total employment to be accounted for by these occupations. If total

employment held steady this would require about 130,330 jobs or an increase of 36,330 jobs from the current count. Any increase is dependent on both an increase in supply as well as demand. The feature article tackles trends seen on both sides for these occupations.

EVAN LINSKEY
Economic Analyst

ASHLEY TARVER
Demographic Analyst



COMPUTER- AND IT-RELATED OCCUPATIONS THAT CAN REQUIRE AN ASSOCIATE DEGREE OR LESS EDUCATION

In times of high unemployment, many individuals choose to pursue an education that improves their chances of finding a career. This was most recently seen during the Great Recession, where total postsecondary program completers went from 128,900 in 2008 to 148,600 in 2012. The COVID-19 pandemic however, has brought forth a unique economic downturn compared to those experienced in the past. The jobless rate spiked rapidly during the month of April 2020. Though rates are slowly dropping, they remain high. Given the swift nature of the downturn, many are looking for new opportunities but may not have the time to get a four-year degree.

Having employees working remotely has been an option many businesses have utilized during the pandemic. Many of the occupations that can be done from home have a high reliance on computers, and a number of these jobs can be completed with an associate degree or less. The Occupational Information Network (O*NET) defines the required knowledge for these occupations as “Knowledge of circuit boards, processors, chips, electronic equipment, and computer hardware and software, including applications and programming.” This definition can be cross-referenced with a U.S. Bureau of Labor Statistics (BLS) table to find the proportion of jobs requiring a high level of computer and electronics knowledge while also having more than one-quarter of their total employment comprised by those with an associate degree or less. This analysis found that 2.2 percent (27 occupations)

of all employment in Michigan (94,000 jobs) fits these criteria (see Relevant Rankings on page 24). It is worth noting that many occupations benefit from a proficiency with computers, but do not have such a high requirement as applied in this article. Even though these middle education occupations made up 2.2 percent of employment, these jobs comprised 5.2 percent of all job advertisements posted in Michigan from August 2019 through July 2020 (Burning Glass Technologies 2019–2020).

Some level of education beyond a high school degree or equivalency is, on average, a key factor in achieving better economic outcomes. According to the Occupational Employment Statistics (OES) survey in 2019, persons in Michigan occupations that typically require a high school degree or equivalent would earn a median wage of about \$37,200. For jobs typically requiring a postsecondary nondegree award, the median annual wage in Michigan is \$38,190. And for those requiring an associate degree the median wage is \$53,450. Many of these IT occupations make even more than that, as will be described later in this article. Furthermore, with a high school degree or equivalent, the poverty rate was 14.7 percent according to the U.S. Census Bureau American Community Survey (ACS). This fell to 10 percent for individuals with some college or an associate degree. Occupations in this article are only a sample of the quality occupations that can be filled with a “two-year” degree or less.

In early 2018, the Bureau of Labor Market Information and Strategic Initiatives (LMISI) administered Michigan’s IT Talent Survey to analyze if certain IT-related occupations, which typically require a bachelor’s degree, could be attained with a postsecondary certificate or shorter degree. The survey covered 66 businesses in Michigan which is a small but notable sample said they would “definitely” or “probably” hire a candidate “without an IT-related bachelor’s degree, but with an IT-related award or certificate.” Another 9 percent were unsure. Responses varied by occupation, but with IT-related employment expected to increase at 81 percent of the firms surveyed, these businesses will likely have to expand their available talent pool to fill jobs over the long-term (Palmer et al 2018, 16).

Several state and federal programs are emerging that encourage and assist people to pursue additional education and new occupations. These are addressed in detail near the end of the article. As individuals look to reenter the workforce or improve their position, they should consider these IT-related occupations that may require less time to achieve. LMISI produces a statewide list every two years of 50 high-wage, high-demand occupations. In the latest list, 38 of the occupations in the publication Michigan’s Hot 50 require a bachelor’s degree or higher. However, the IT- and computer-focused occupational group is a significant source for quality jobs



without an absolute need for a bachelor's degree. Other high-demand occupations existing in this educational tier outside of IT- and computer-related occupations include *Respiratory therapist*, *Engineering technicians*, *Heavy and tractor-trailer truck drivers*.

Employment and Wages in Michigan

In 2019, Michigan wage data was available for 26 out of the 27 IT-related occupations requiring less than a bachelor's degree. Each occupation had wages above the median statewide wage (\$18.60) except for one, *Surveying and mapping technicians*, with a wage of \$17.68. Nearly 93 percent of employees in this occupation had an associate degree or less. At the higher-wage end, 18 of the occupations made more than \$25 an hour at the median. Five of the occupations had a median wage more than double the statewide wage. The second highest among those five, *Computer network architects*, had a median hourly wage greater than \$50 and about 42 percent of individuals in this job have less than a bachelor's degree.

No occupation is exceedingly large within this group. In total, the group provides roughly 94,000 jobs in the state. *Computer user support specialists* leads the way with 19,220 positions, making it the 50th largest occupation in the state. This IT-related occupational group comprises about 2.2 percent of all employment in the state. A few prominent occupations are discussed in more detail below.

COMPUTER USER SUPPORT SPECIALIST

Computer user support specialists, also called technical support specialists, analyze, troubleshoot, and evaluate computer network problems. They play an important role in the routine maintenance of their organization's

networks, such as performing file backups on the network. Maintenance can be performed daily, weekly, or monthly and is important to an organization's disaster recovery efforts. Solving an information technology problem promptly is important because organizations depend on their network systems. *Network support specialists* may assist computer users through phone, email, or in-person visits (BLS 2020). In 2019, there were 19,220 *Computer user support specialists* in Michigan and the occupation had a median wage of \$22.78, well above the statewide average. At the national level, 51.6 percent of workers in this occupation had an associate degree or less. This occupation is also closely related to *Computer network support specialists* with 2,260 jobs in Michigan. Short-term occupational employment projections show that this occupation is projected to expand by 2.4 percent, more than double the statewide rate of 1.1 percent growth. *Computer user support specialists* are expected to have about 1,950 annual job openings in Michigan.

NETWORK AND COMPUTER SYSTEMS ADMINISTRATORS

Computer networks are critical parts of almost every organization. Network and computer systems administrators are responsible for the day-to-day operation of these networks. They organize, install, and support an organization's computer systems, including local area networks, wide area networks, network segments, intranets, and other data communication systems (BLS 2020). Statewide, there were 6,680 Network and computer systems administrators. These jobs earned a median wage of \$36.73. At the national level, nearly 44 percent of all individuals working in the occupation had an associate degree or less. Short-term projections expect this occupation to grow 0.8 percent which was slightly slower

than the rate for all occupations. In the past 12 months, there were 192 online advertisements for this occupation that required an associate degree or less, while 610 job ads did not specify an educational requirement.

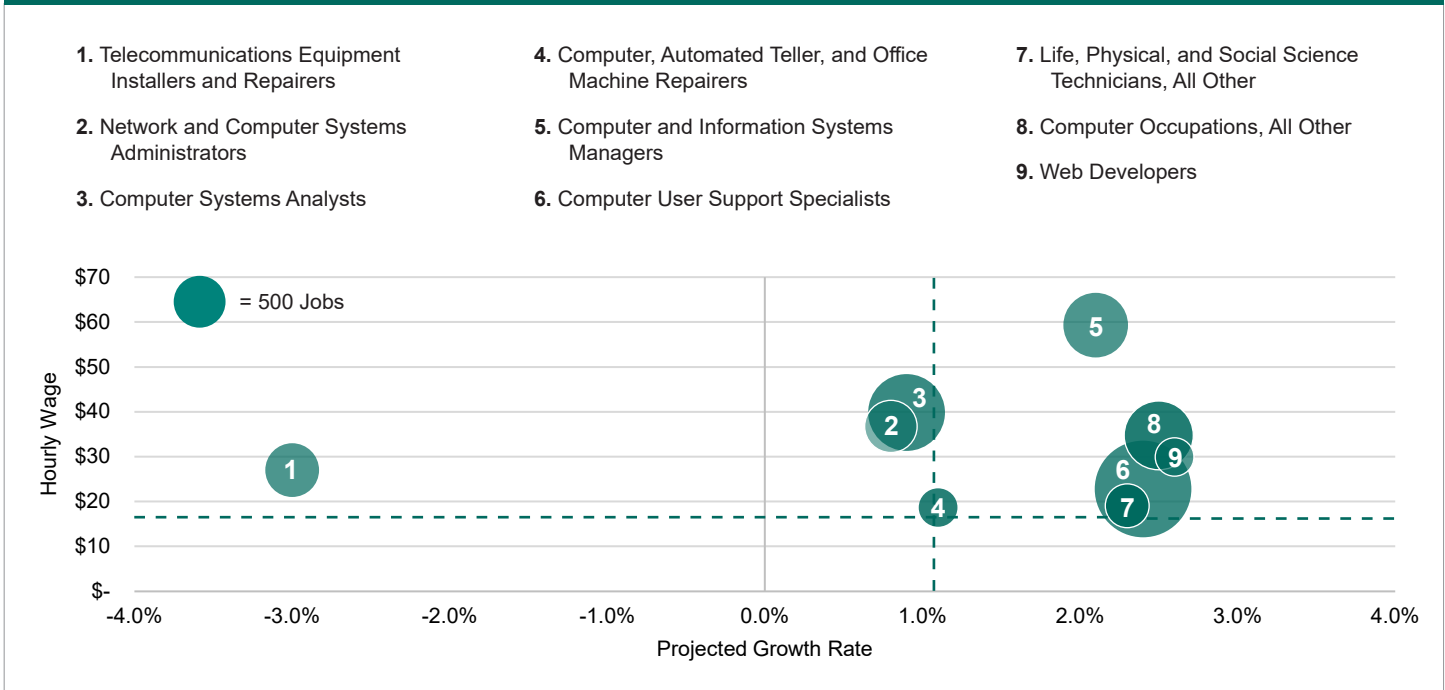
COMPUTER SYSTEMS ANALYSTS

Computer systems analysts, sometimes called systems architects, study an organization's current computer systems and procedures, and design solutions to help the organization operate more efficiently and effectively. They bring business and information technology together by understanding the needs and limitations of both (BLS 2020). Michigan had roughly 14,350 jobs in this occupation in 2019. The median wage for *Computer systems analysts* was \$39.85 an hour, more than double the statewide all-occupation median wage. At the national level, roughly a quarter of individuals in the occupation had an associate degree or less. In Michigan, 547 online job advertisements posted from July 1st, 2019 to June 30th, 2020 in this occupation were specifically highlighted requiring an associate or less. This was 13 percent of all advertisements for the occupation. Notably, 29 percent of advertisements did not have an educational minimum listed and some of those may also have required less education. In the latest short-term job projections, this occupation is anticipated to expand by 0.9 percent, slightly slower than the rate for all jobs.

Short-Term Occupational Projections

In the short-term, Michigan jobs among all occupations are projected to grow an average of 1.1 percent. The group of computer-related occupations requiring less than a bachelor's degree is projected to add jobs at a slightly faster rate (1.3 percent). These 27 IT occupations are expected to display mixed future job trends,

FIGURE 1: SELECTED MICHIGAN COMPUTER AND IT-RELATED OCCUPATIONS



Note: This figure includes occupations that show a favorable mix of projected long-term job growth, projected annual job openings, and median wages. It does not reflect current hiring demand. Wages displayed are median wages for 2017. Dotted lines denote average projected growth (+1.1%) and 2019 statewide median wage (\$18.60).

Source: Occupational Employment Statistics, Bureau of Labor Market Information and Strategic Initiatives, Department of Technology, Management & Budget; Short-Term Occupational Projections (2019–2021), Bureau of Labor Market Information and Strategic Initiatives, Department of Technology, Management & Budget

with 16 showing positive job gains, six remaining stable, and the other four projected to decline in jobs (one occupation has no data) (BLS 2019).

In total, the 27 IT-related occupations have roughly 9,570 annual openings. Openings come from three separate sources including labor force exits, transfers, and growth. Given the above average projected job expansion of this group, a larger percentage of openings should come from new jobs. The middle education IT and computer-related occupations also have an above average number of openings due to job transfers.

For more information on the latest projections, look for the recently published *Michigan's Hot 50* publication as well as the publication *Michigan's Career Outlook* on the Bureau of Labor Market Information and Strategic Initiatives (LMIS) website: www.Michigan.gov/LMI. The *Michigan's Career Outlook* brochure has two lists devoted to occupations requiring at least one month of training and education, but typically not more than two years.

Educational Completers and Programs

In 2019, 3,746 individuals in Michigan graduated with a postsecondary certificate or associate degree in programs related to these IT and

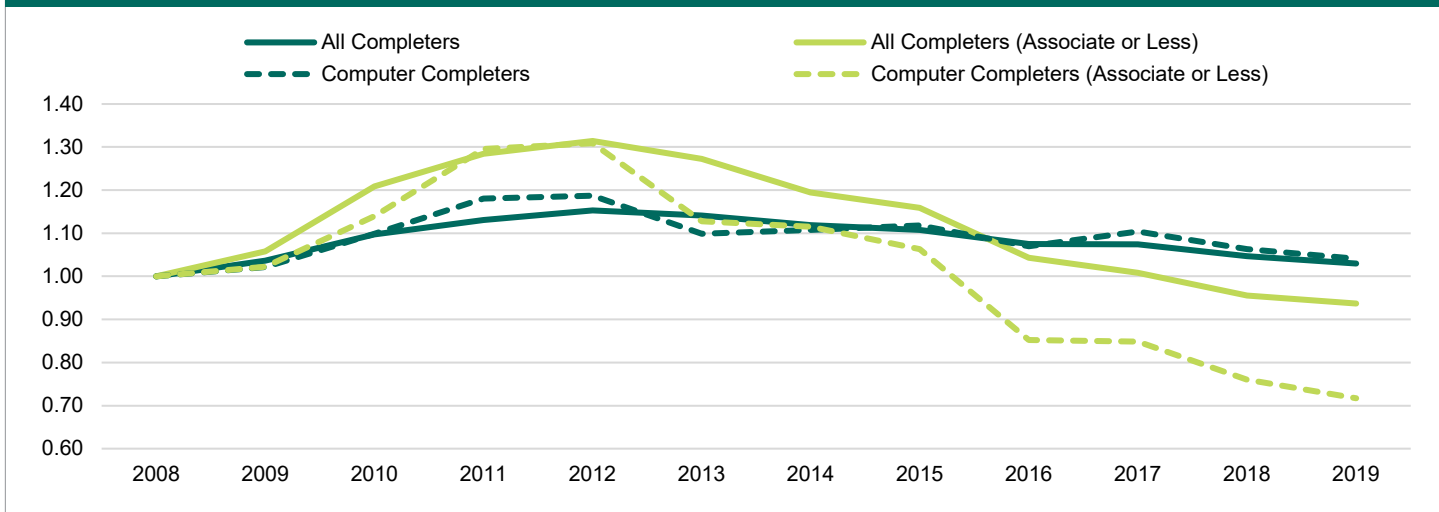
computer occupations. This was down from a peak of 6,840 graduates in 2012. This declining trend in the supply of graduates is counter to expected future demand for high-growth jobs requiring postsecondary education. However, another 7,875 degrees or certificates were earned in these programs at the bachelor's level or higher. In 2019, roughly 2.8 percent of all completers statewide were in programs related to the 27 IT-related occupations examined in this article. This was down from 2008 when 4.1 percent of all completers were in these middle education IT-related programs U.S. Department of Education, National Center for Education Statistics, Integrated Postsecondary Education Data System (IPEDS), (2020). To keep Michigan's labor force competitive, more individuals will likely need to graduate from these programs to ensure an adequate skilled workforce to fill future high-demand jobs.

The highest numbers of related graduates were in programs such as *Computer programming/programmer, general*; *Computer systems networking and telecommunications*; *Graphic design*; as well as *Automobile technology* and *Accounting technology* programs. These programs are overwhelmingly found in the state's community college system. Washtenaw Community College, Ferris State University, Macomb Community

College, Oakland Community College, and Lansing Community College make up the top five institutions by the number of program completers. In total, the state had 46 institutions with graduates in related programs. The gender breakdown of these program-related completers was far different than that of all degree completers in Michigan. Males comprised 71 percent of completers in programs related to these IT occupations. This was well above the male share of all degree completers of roughly 43 percent. When looking at only degrees/certification less than a bachelor's, males only represented 39 percent of completers. Women appear significantly underrepresented in these IT-related programs.

During economic downturns, more individuals are typically incentivized toward seeking higher education if their immediate job prospects are uncertain. Michigan program completers peaked in 2012 near the end of the Great Recession as individuals entered in and completed postsecondary programs (Figure 2). Completers in computer- and IT-related programs that are typically two years or less have continued to drop in recent years. This could signify a shortage of these types of graduates, less demand for these graduates, or a mixture of those two possibilities. Given the above-average demand for these occupations in both

FIGURE 2: MICHIGAN EDUCATIONAL PROGRAM COMPLETER INDEX



Source: Integrated Postsecondary Education Data System U.S. Department of Education, National Center for Education Statistics

projections and job ads, it seems likely that less graduates points to a shortage in supply. Also, as the economy rebounds, more people can successfully enter the labor force without additional schooling or training. It is uncertain how the current pandemic will impact enrollment and completions, but several federal and state programs are supporting individuals who are looking to pursue postsecondary education.

Online Job Ads

There were roughly 44,000 Michigan online job ads for the 27 middle education IT-related occupations from August 2019 through July 2020. This reflected 5.2 percent of all job ads posted in this period, and was well above the 2.2 percent of employment that these occupations encompass statewide. This demonstrates that online demand for these occupations is relatively high compared to job share. Michigan levels of online job advertisements in these occupations have been relatively stable over the past few years, ranging from 41,000 in 2014 to 49,000 in 2018. The most high-demand occupations in this group in terms of job ads were *Computer occupations, all other* (18,445), *Computer user support specialists* (4,928), *Computer systems analysts* (4,542), *Web developers* (2,339), and *Information security analysts* (2,316). In total, 10 of the occupations had more than 1,000 online ads. Roughly 14 percent of all ads posted for these occupations required less than a bachelor’s degree, though it is worth noting 33 percent of ads did not have an educational requirement in the listing (Burning Glass Technologies 2019–2020).

State and Federal Programs

These occupations and their required education also qualify for the state’s Sixty by 30 goal.

The program has a stated target to, “increase the number of working-age adults with a skill certificate or college degree from 45 percent today to 60 percent by 2030.” To keep the state workforce competitive in the world, Michigan is aiming to increase the number of individuals with a certificate or college degree. Given the direct correlation between education and income/poverty, these occupations are crucial as they can offer the chance to increase workforce opportunities, without the investment of a four-year degree. More information can be found at www.sixtyby30.org.

Some of these occupations line up with the Find Something New federal initiative as well. The initiative aims to help workers keep up with jobs that are changing at an accelerating pace. The occupations highlighted in this initiative can often be achieved with less than a bachelor’s degree, including certifications, intensive programs, and associate degrees. Some paths highlighted are even achieved through online learning programs. More information can be found at www.findsomethingnew.org.

Governor Gretchen Whitmer announced a series of initiatives to help Michigan workers and their families during the ongoing COVID-19 pandemic, including the Futures for Frontliners program. This program provides a tuition-free pathway to college or a technical certificate to essential workers who don’t have a college degree. This includes workers like the ones staffing our hospitals and nursing homes, stocking the shelves at grocery stores, providing childcare to critical infrastructure workers, manufacturing personal protection equipment, protecting public safety, picking up trash, or delivering supplies. More information can be

found in a press release from the governor’s office: <https://bit.ly/3ljZEDf>

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OCCUPATIONAL FOCUS

TELECOMMUNICATIONS EQUIPMENT INSTALLERS AND REPAIRERS

This month's Occupational Focus highlights *Telecommunications equipment installers and repairers*, which is a computer/IT related occupation with high-wage potential that requires less than a bachelor's degree. These workers have served a critical role in ensuring the internet and communication infrastructure is capable of supporting the large influx of people working remotely witnessed during the coronavirus pandemic.

According to the Bureau of Labor Statistics, *Telecommunications equipment installers and repairers* install, setup, rearrange, or remove switching, distribution, routing, and dialing equipment used in central offices or headends. They also service and repair telephone, cable television, internet, and other communications equipment at residences. Additionally, they may also install communications equipment or communications wiring in buildings.

Examples of job titles encompassed by this position include: broadband technician, central office technician, combination technician,

customer service technician (CST), field technician, outside plant technician, service technician, telecommunications technician.

Some of the responsibilities of this occupation include:

- Demonstrate equipment to customers and explain how it is to be used and respond to any inquiries or complaints.
- Test circuits and components of malfunctioning telecommunications equipment to isolate sources of malfunctions, using test meters, circuit diagrams, polarity probes, and other hand tools.
- Test repaired, newly installed, or updated equipment to ensure that it functions properly and conforms to specifications, using test equipment and observation.
- Climb poles and ladders, use truck-mounted booms, and enter areas such as manholes and cable vaults to install, maintain, or inspect equipment.

- Assemble and install communication equipment such as data and telephone communication lines, wiring, switching equipment, wiring frames, power apparatus, computer systems, and networks.

The typical education needed for becoming a *Telecommunications equipment installer and repairer* is a postsecondary education in electronics, telecommunications, or computer networking. According to the 2016–17 education attainment for workers 25 years and older, about two-thirds of all workers in this occupation have an educational attainment below that of an associate degree, while less than 17 percent have a bachelor's degree or higher. They also receive moderate-term on-the-job training after they are hired. Over their career, *Telecommunications equipment installers and repairers* will need to continue learning about new equipment, since technology changes frequently in this field. In addition, they may receive training sessions to learn about equipment, procedures, and technologies offered by equipment manufacturers or industry organizations.

BY THE NUMBERS

MICHIGAN TELECOMMUNICATIONS EQUIPMENT INSTALLERS AND REPAIRERS



6,380

TOTAL EMPLOYMENT 2019

9TH

NATIONAL EMPLOYMENT RANK



14.68

JOB PER 10,000 TOTAL

1.03

LOCATION QUOTIENT



\$56,120

MEDIAN ANNUAL WAGE

\$26.98

MEDIAN HOURLY WAGE



-3.0%

2019–2021 PROJECTED JOB GROWTH

600

PROJECTED ANNUAL OPENINGS



POSTSECONDARY NONDEGREE AWARD AND MODERATE-TERM ON-THE-JOB TRAINING
REQUIRED EDUCATION

Source: May 2019 Occupational Employment and Wage Estimates, U.S. Bureau of Labor Statistics; 2019–2021 Employment Projections; Bureau of Labor Market Information and Strategic Initiatives, Michigan Department of Technology, Management & Budget

Related Occupations include:

- *Radio, cellular, and tower equipment installers and repairers*
- *Electrical and electronics repairers, commercial and industrial equipment*
- *Electronic equipment installers and repairs, motor vehicles*
- *Audiovisual equipment installers and repairers*
- *Security and fire alarm systems installers*

There are 600 projected annual openings from 2019 to 2021 in Michigan for *Telecommunications equipment installers and repairers*, with most of those coming from replacements or job transfers. Although there is projected to be a small decrease in employment, the median annual wage is \$56,120, which is much higher than the statewide median annual wage for all the occupations requiring a postsecondary nondegree award (\$38,190). The recent surge

in data usage due to working from home during the pandemic means headend technicians are in need to maintain and upgrade internet and telecommunications infrastructures.

YAN XU

Economic Analyst

MICHIGAN TELECOMMUNICATIONS EQUIPMENT INSTALLERS AND REPAIRERS PER 10,000 EMPLOYED

AREA	JOB PER 10,000 EMPLOYED	JOB PER 10,000 EMPLOYED	MEDIAN ANNUAL WAGE
Michigan	6,380	14.68	\$56,120
Detroit-Warren-Dearborn	2,710	13.7	\$55,790
Flint	720	52.9	\$52,480
Grand Rapids-Wyoming	330	5.85	\$46,960
Jackson	30	5.8	\$47,780
Kalamazoo-Portage	110	7.47	\$50,220
Lansing-East Lansing	290	13.27	\$63,810
Muskegon	**	**	\$49,750
Saginaw	**	**	\$73,330
Upper Peninsula of Michigan	170	15.34	\$53,700
Northeast Lower Peninsula	70	9.25	\$57,050
Northwest Lower Peninsula	**	**	\$59,020
Balance of Lower Peninsula	210	7.54	\$40,590

Source: May 2019 Occupational Employment and Wage Estimates, U.S. Bureau of Labor Statistics

* Data is suppressed

MICHIGAN ONLINE JOB ADS INCREASE OVER THE YEAR IN JULY

During July, there were 144,788 job advertisements online in Michigan, a 17.5 percent increase from June's 123,232 online advertisements. There were 69,178 new postings that were specific to the month of July, which is not significantly different than June's 66,008 new postings, however, it is still a notable increase. Compared to July 2019, job advertisements in Michigan have grown by 9 percent (+11,924 postings) which is remarkable considering the events in 2020.

July's Supply/Demand Rate Improves

Michigan's supply/demand rate has continued to inch down since the early stages of the pandemic. In July, there were approximately 320 unemployed workers for every 100 open job advertisements, which creates a supply/demand rate of 3.20. Even though the supply/demand rate continues to decrease, this is still more than double February's pre-pandemic rate of 1.24.

Job Ad Posting by Education

Out of the 144,788 job advertisements in July, 71,897 (49.7 percent) had some sort of an educational requirement. Among July job advertisements, a high school diploma or vocational training was needed 58.8 percent of the time. This requirement continued to

increase as it was requested on 50.4 percent of July 2019 job ads and on 56.8 percent of them in June 2020. A bachelor's degree was the 2nd most requested educational level in July, being listed in 29.1 percent of ads. This is down from a year ago when a bachelor's degree was necessary for 35.3 percent of the online advertisements.

Job Ads by Occupation

Non-seasonally adjusted data by occupation is available through Burning Glass Technologies. Their system breaks job advertisement information down by broad occupation group as well as by detailed occupations. The occupational group with the most online job advertisements in July was *Sales and related occupations* with 17,750 postings. This was up 23.1 percent from the month of June. Following closely behind were *Office and administrative support* (14,721), *Healthcare practitioners and technical* (13,086), *Transportation and material moving* (12,246), and *Management* (12,029).

From July 2019 to July 2020, three occupation groups increased online job advertisements by over 80 percent. *Construction and extraction* had the largest percent increase at 86 percent (1,139 ads). Following behind was *Building and grounds cleaning and maintenance*, 83.4 percent increase (2,577 ads) and

Transportation and material moving, 80.8 percent increase (5471 ads).

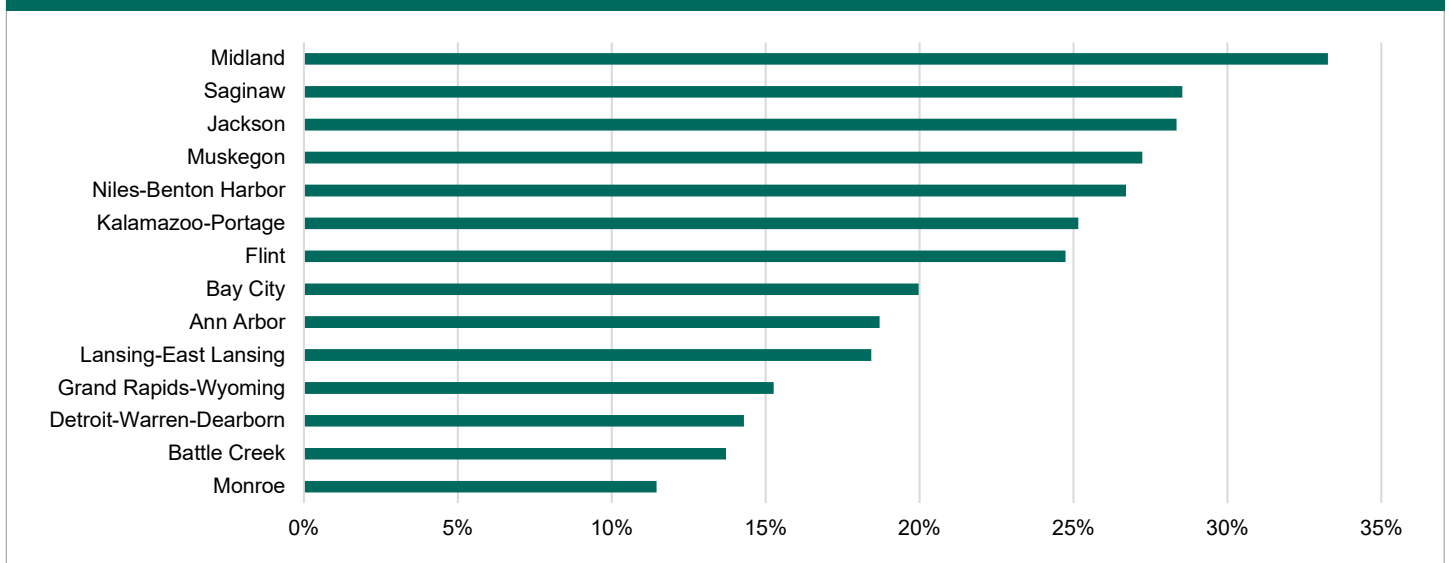
Comparing June and July job ads for detailed occupations, the top 5 remained the same except for *Laborers and freight, stock, and material movers, hand* (3,498) which dropped to 6th place in July and was replaced by *Heavy and tractor-trailer truck drivers* (3,579) as the 5th most posted occupation. *Retail salespersons* (5,762) replaced *Registered nurses* (4,649) as the most posted position. The top 20 occupations by available postings all had a positive percent increase over the month, ranging from 7.8 to 32.1 percent growth.

Regional Job Ads

Once again, each of Michigan's Metropolitan Statistical Areas (MSAs) had an increase in online job postings over the month. Midland had the largest percent increase of roughly 33 percent (+157 job ads) with a variety of industries showing substantial improvement. Among industries with the greatest gains in job ads were *Retail trade* (+50.0 percent), *Finance and insurance* (+138.5 percent), and *Manufacturing* (+42.5 percent).

TRISHA SCHLEGEL
Economic Analyst

MONTHLY CHANGE IN JOB ADS BY MICHIGAN METRO AREA, JUNE 2020–JULY 2020



Source: Conference Board Help Wanted OnLine®, Burning Glass Technologies

MICHIGAN ONLINE JOB ADS BY INDUSTRY, JULY 2020

All Other Industries, 36,671	Health Care and Social Assistance, 24,880	Retail Trade, 19,719	Accommodation and Food Services, 13,532	Manufacturing, 9,721
				Finance and Insurance, 7,105

Note: Roughly 33,600 postings did not have specific industry ties in the June 2020 data

Source: Conference Board Help Wanted OnLine®, Burning Glass Technologies

LABOR DEMAND BY OCCUPATION (NOT SEASONALLY ADJUSTED)

OCCUPATION CATEGORIES	JULY 2020	JUNE 2020	JULY 2019	OVER THE MONTH	
				LEVEL	PERCENT
TOTAL	139,636	118,845	127,651	20,791	17.5%
Administrative Support	14,721	12,011	12,611	2,710	22.6%
Office and Administrative Support	14,721	12,011	12,611	2,710	22.6%
Construction and Repair	8,560	7,266	6,260	1,294	17.8%
Construction and Extraction	2,463	2,198	1,324	265	12.1%
Installation, Maintenance, and Repair	6,097	5,068	4,936	1,029	20.3%
Farming, Fishing, and Forestry	218	219	185	(1)	-0.5%
Farming, Fishing, and Forestry	218	219	185	(1)	-0.5%
Healthcare	18,641	15,839	19,861	2,802	17.7%
Healthcare Practitioners and Technical	13,086	11,211	15,552	1,875	16.7%
Healthcare Support	5,555	4,628	4,309	927	20.0%
Management	12,029	10,536	13,502	1,493	14.2%
Management	12,029	10,536	13,502	1,493	14.2%
Production	6,419	5,528	4,297	891	16.1%
Production	6,419	5,528	4,297	891	16.1%
Professional	27,361	24,301	32,379	3,060	12.6%
Architecture and Engineering	3,473	3,092	4,884	381	12.3%
Arts, Design, Entertainment, Sports, and Media	3,265	2,868	3,045	397	13.8%
Business and Financial Operations	5,268	4,615	6,793	653	14.1%
Community and Social Services	1,907	1,663	1,795	244	14.7%
Computer and Mathematical	8,016	7,743	10,235	273	3.5%
Education, Training, and Library	3,903	3,077	4,094	826	26.8%
Legal	470	375	459	95	25.3%
Life, Physical, and Social Science	1,059	868	1,074	191	22.0%
Sales	17,750	14,421	17,212	3,329	23.1%
Sales and Related	17,750	14,421	17,212	3,329	23.1%
Service	21,691	19,295	14,569	2,396	12.4%
Building and Grounds Cleaning and Maintenance	5,667	5,299	3,090	368	6.9%
Food Preparation and Serving Related	9,833	8,513	7,147	1,320	15.5%
Personal Care and Service	3,934	3,489	2,708	445	12.8%
Protective Service	2,257	1,994	1,624	263	13.2%
Transportation	12,246	9,429	6,775	2,817	29.9%
Transportation and Material Moving	12,246	9,429	6,775	2,817	29.9%

Note: Some job ads do not fit in a major group designation, so topline numbers may appear different between the analysis and the table.

RELEVANT RANKINGS

IT- AND COMPUTER-RELATED OCCUPATIONS THAT CAN REQUIRE AN ASSOCIATE DEGREE OR LESS EDUCATION			
OCCUPATIONAL TITLE	PERCENT OF INDIVIDUALS IN THE OCCUPATION NATIONWIDE WHO HAVE AN ASSOCIATE DEGREE OR LESS	2019 EMPLOYMENT IN MICHIGAN	2019 MEDIAN WAGE IN MICHIGAN
Computer User Support Specialists	52%	19,220	\$22.78
Computer Systems Analysts	26%	14,350	\$39.85
Computer Occupations, All Other	44%	10,390	\$34.74
Computer and Information Systems Managers	26%	10,220	\$59.30
Network and Computer Systems Administrators	44%	6,680	\$36.73
Telecommunications Equipment Installers and Repairers, Except Line Installers	84%	6,380	\$26.98
Computer Programmers	26%	3,780	\$35.00
Computer Network Architects	42%	3,550	\$50.25
Database Administrators	28%	2,830	\$40.04
Web Developers	31%	2,340	\$29.92
Computer Network Support Specialists	52%	2,260	\$28.77
Computer, Automated Teller, and Office Machine Repairers	72%	2,180	\$18.67
Producers and Directors	25%	2,070	\$29.00
Life, Physical, and Social Science Technicians, All Other	51%	2,060	\$19.05
Information Security Analysts	33%	1,970	\$42.45
Surveying and Mapping Technicians	93%	980	\$17.68
Broadcast Technicians	64%	580	\$19.01
Multimedia Artists and Animators	42%	550	\$28.85
Music Directors and Composers	41%	390	\$23.63
Radio, Cellular, and Tower Equipment Installers and Repairers	84%	340	\$27.17
Electro-Mechanical Technicians	80%	340	\$27.07
Statistical Assistants	62%	160	\$25.51
Desktop Publishers	62%	150	\$20.00
Electrical and Electronics Installers and Repairers, Transportation Equipment	86%	140	\$29.20
Sound Engineering Technicians	64%	90	-
Electrical and Electronics Repairers, Commercial and Industrial Equipment	86%	-	\$32.52
Fine Artists, Including Painters, Sculptors, and Illustrators	42%	-	\$19.04

Note: Data is not available for all states

Source: Educational Attainment for Workers 25 Years and Older by Detailed Occupation, 2016–17, Table 5.3, U.S. Bureau of Labor Statistics; 2019 Occupational Employment Statistics: Michigan. U.S. Bureau of Labor Statistics

PERCENT OF INDIVIDUALS IN AN OCCUPATION WHO HAVE LESS THAN AN ASSOCIATE DEGREE BUT MORE THAN A HIGH SCHOOL DIPLOMA OR EQUIVALENT

RANK	STATE	PERCENT
1	Wyoming	37.6%
2	North Dakota	36.8%
3	Idaho	35.4%
4	Utah	34.9%
5	Alaska	34.8%
13	Michigan	32.8%
23	Oklahoma	30.6%
24	Wisconsin	30.3%
25	North Carolina	30.2%
26	Missouri	30.1%
27	South Carolina	29.9%
46	Vermont	24.5%
47	Maryland	24.5%
48	Delaware	23.9%
49	Pennsylvania	23.0%
50	Connecticut	22.9%

Source: American Community Survey (ACS) 2018 1-Year Estimates, U.S. Census Bureau

DATA SPOTLIGHT

2019 ANNUAL AVERAGES FROM THE QUARTERLY CENSUS OF EMPLOYMENT AND WAGES

The Quarterly Census of Employment and Wages (QCEW) program is a comprehensive count of establishments, employment, and wages by industry for all Michigan jobs covered under unemployment insurance laws. Each year, annual data is released reporting how these numbers have changed across industries statewide and in each county. With the publication of 4th quarter 2019 data, annual averages for 2019 have also been created for comparisons and analysis. Much of this data can be broken down by multiple levels of industry detail, select regions, counties, and public or private ownership. The analysis below focuses specifically on the private sector and examines the over the year change statewide, by county, and by industry within this sector.

While relatively small, the over the year change for private sector employment statewide was positive. According to 2019 data, statewide average private sector employment experienced slight growth with an increase from 3.77 million in 2018 to 3.79 million in 2019 (0.4 percent). The annual wage for the private sector also increased from \$53,600 to \$54,800 (2.1 percent). The number of establishments similarly advanced over the year, from 248,400 in 2018 to 261,500 in 2019

(5.4 percent). In context, Michigan was below national average in terms of both employment and wage growth, where nationally those numbers were 1.4 percent and 3.5 percent, respectively. However, the change in establishments was higher at 5.4 percent compared to 2.4 percent nationally. An important element of the data which helps to paint a fuller picture of the over the year change in Michigan is the break down by county and industry. The analysis below provides some highlights of the data in Michigan's industries as well as across select counties in 2019.

Industry

Across industries, much of the annual change was marginal, similar to the overall state change. Of the 19 private sector industries, 12 experienced a positive rate of growth in average employment over the year. The largest came within the *Transportation and warehousing* sector, where average employment rose at a rate of 8.2 percent over the year. *Administrative and waste services* had the greatest downturn in average employment with a dip of 2.2 percent. When comparing the size of industries based on average employment, *Manufacturing* was the largest industry in 2019

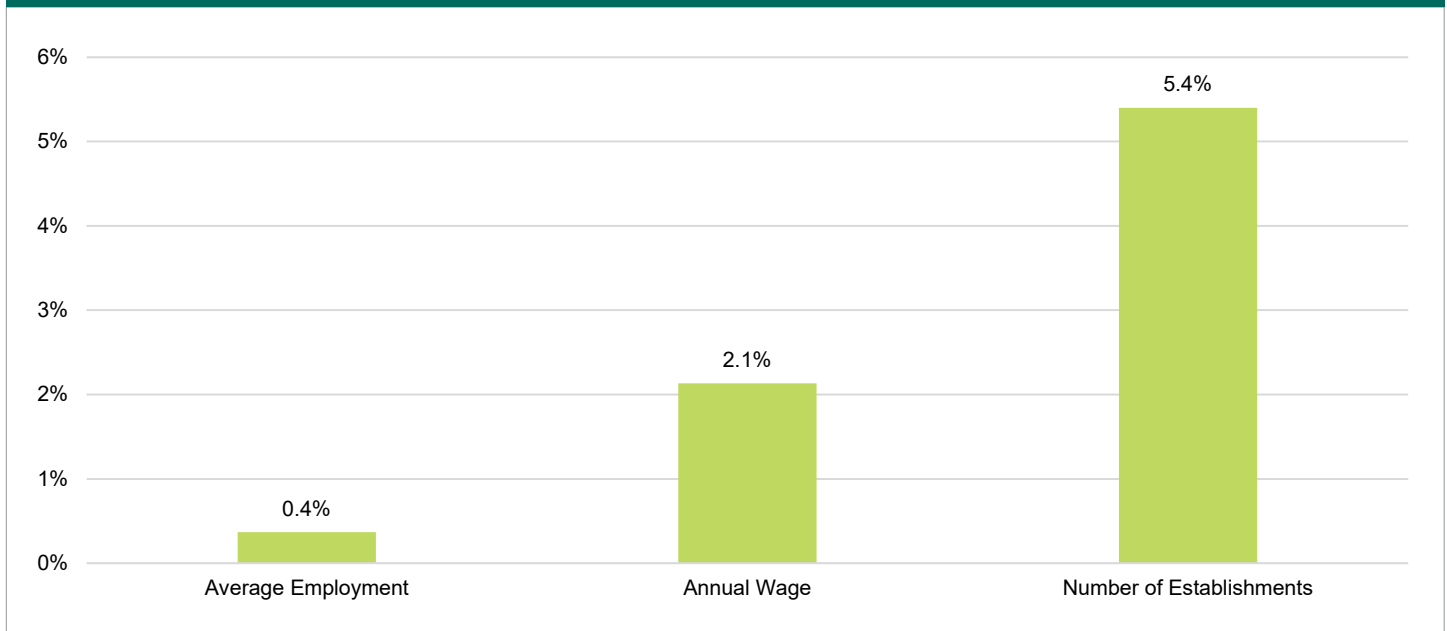
(625,800) and *Mining* the smallest (5,500). This is consistent with what was observed in 2018, where *Manufacturing* and *Mining* occupied the top and bottom spots, respectively.

The change in average annual wage was positive for all but one industry, *Management of companies and enterprises*, which declined by 1.3 percent. In spite of this, *Management of companies and enterprises* had the highest annual wage of all industries in 2019 at \$126,300. This mirrors 2018 numbers, where this industry also had the highest annual wage statewide. The *Utilities* industry was a close second at \$123,000, making these two the top paying industries in both 2018 and 2019. Among the industries who experienced annual wage growth over the year, the *Information* sector had the greatest rate of growth at 5.4 percent.

County Data

The majority of Michigan's counties experienced positive change over the year. Comparing average employment growth, the highest rates of job expansion were observed across the state's smaller counties. Lake County held the top growth rate of 10.2 percent between 2018 and 2019. Iosco County (6.9

TOTAL PRIVATE SECTOR CHANGE IN AVERAGE EMPLOYMENT, AVERAGE ANNUAL WAGE, AND NUMBER OF ESTABLISHMENTS, 2019



percent), Osceola County (6.5 percent), Alcona County (5.8 percent), and Wexford County (5.7 percent) all ranked behind Lake County in rate of average employment growth. The county with the highest annual wage in 2019 was Oakland County (\$64,200), just edging out Midland County (\$64,000) which held the top spot in 2018. Wayne County (\$62,600), Washtenaw County (\$58,800), and Macomb County (\$55,800) followed behind these two counties with the highest annual wages of 2019, which was the same top five in 2018. Looking at annual wage growth, Iosco County saw the most growth over the year, with wages increasing at a rate of 13.5 percent. Conversely, Ogemaw County experienced the largest contraction in annual wages with a decrease of

10.2 percent between 2018 and 2019.

Conclusion

The over-the-year change in Michigan, though small in magnitude, was mostly positive. The majority of industries in the private sector experienced an increase to some degree in terms of wage and employment growth. Even in areas where there was measured decline, the rate at which that decline occurred was mostly negligible. Examining counties across the state, they too experienced mostly positive change in all areas compared to 2018 while also following the trend of marginal decrease where present. Overall, the 2019 QCEW annual averages data showed relative stability and in some cases growth in

statewide numbers, across counties, and within most of Michigan's private sector industries.

For More Information

Data on Michigan's QCEW 2019 Annual Averages along with other historical industry, statewide, and smaller geographical level data can be accessed at <https://milmi.org/datasetsearch/QCEW>

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Economic Analyst

MICHIGAN OCCUPATIONAL GROUPS RANKED BY PERCENT CHANGE IN ANNUAL AVERAGE EMPLOYMENT

INDUSTRY	2018		2019		PERCENT CHANGE IN WAGE	PERCENT CHANGE IN EMPLOYMENT
	ANNUAL WAGE	AVERAGE EMPLOYMENT	ANNUAL WAGE	AVERAGE EMPLOYMENT		
Transportation and Warehousing	55,800	126,000	56,400	136,200	1.0%	8.2%
Management of Companies and Enterprises	127,900	68,400	126,300	70,500	-1.3%	3.0%
Finance and Insurance	80,100	148,500	82,700	152,800	3.2%	2.9%
Construction	62,300	168,600	63,500	173,000	1.8%	2.6%
Real Estate and Rental and Leasing	48,000	54,700	49,100	56,000	2.3%	2.3%
Utilities	120,800	20,300	123,100	20,600	1.9%	1.5%
Mining	81,800	5,500	82,100	5,500	0.3%	1.3%
Arts, Entertainment, and Recreation	34,200	53,200	34,500	53,500	0.9%	0.6%
Accommodation and Food Services	18,700	379,100	19,300	380,800	3.1%	0.4%
Health Care and Social Assistance	51,000	595,500	52,100	597,400	2.1%	0.3%
Professional and Technical Services	87,800	298,300	88,900	299,200	1.3%	0.3%
Other Services (except Public Administration)	33,300	140,000	34,300	140,400	3.1%	0.3%
Wholesale Trade	76,300	171,400	77,400	171,200	1.4%	-0.1%
Educational Services	39,100	64,000	39,200	63,800	0.3%	-0.3%
Manufacturing	67,500	627,600	68,500	625,800	1.4%	-0.3%
Agriculture, Forestry, Fishing & Hunting	33,200	30,300	34,600	30,100	4.1%	-0.8%
Retail Trade	31,100	469,200	32,000	463,400	3.0%	-1.2%
Information	73,600	56,200	77,500	55,300	5.4%	-1.7%
Administrative and Waste Services	36,800	291,600	37,800	285,200	2.5%	-2.2%

Source: Quarterly Census of Employment and Wages (QCEW), Bureau of Labor Market Information and Strategic Initiatives, Department of Technology, Management and Budget



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