

MICHIGAN'S LABOR MARKET NEWS

VOL. 73, ISSUE NO. 12
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Real Gross Domestic Product in Michigan

Feature Article | pg. 16

Map of the Month: Manufacturing Share of Total Private Wages

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Industry Focus: Manufacturing

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Michigan's annual average jobless rate for 2017 decreased to 4.5 percent.

DECEMBER 2017 JOBLESS RATE

MICHIGAN

4.7%

NATIONAL

4.1%

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BRUCE WEAVER
CO-EDITOR
Economic Manager
WeaverB1@michigan.gov



LEONIDAS MUREMBYA
REGIONAL CONTRIBUTOR
Economic Specialist
MurembyaL@michigan.gov



MARK REFFITT
PROJECT MANAGER
Economic Specialist
ReffittM@michigan.gov



JIM ASTALOS
DESIGNER
Economic Analyst
AstalosJ@michigan.gov



JASON PALMER
CONTRIBUTOR
Director
PalmerJ2@michigan.gov



JIM RHEIN
CONTRIBUTOR
Economic Specialist
RheinJ@michigan.gov



JEFFREY AULA
CONTRIBUTOR
Economic Analyst
AulaJ@michigan.gov



SHIBANI PUTATUNDA
REGIONAL CONTRIBUTOR
Economic Analyst
PutatundaS@michigan.gov



DYLAN SCHAFER
CONTRIBUTOR
Economic Analyst
SchaferD9@michigan.gov



KEVIN DOYLE
CONTRIBUTOR
Economic Specialist
DoyleK4@michigan.gov



MARCUS REASON
CONTRIBUTOR
Economic Analyst
ReasonM@michigan.gov

IT'S BIGGER THAN DATA.

The Bureau of Labor Market Information and Strategic Initiatives is the official source for high quality demographic and labor market information for the state of Michigan and its regions.

We administer the state's federal-state cooperative programs with the Bureau of Labor Statistics (BLS) and the Census Bureau and produce high-quality information and analysis through grants from the U.S. Department of Labor and from partner agencies in the state of Michigan.

We provide our national, state, and local partners and customers with *accurate, objective, reliable, timely, accessible, and transparent* information and insights.

The Michigan jobless rate inched upward by one-tenth of a percentage point to 4.7 percent in December, reflecting a 12,000 resident gain in the state's labor force. Over the month, payroll jobs climbed by 10,100 to 4,426,000, continuing a trend of monthly payroll job additions in Michigan. Monthly job advances were observed in the state's *Manufacturing* and *Construction* sectors, among others. Over the year, total payrolls were higher by 57,100, led by sizeable job additions in *Professional and business services*, *Leisure and hospitality*, *Construction*, and *Education and health services*.

This month, our feature story looks at *Real Gross Domestic Product (GDP)* in Michigan. Our author notes that GDP is an important macroeconomic indicator and a useful gauge of economic health. We learn that *Manufacturing* continues to be an economic engine across the state, even after the Great Recession's heavy impact on this sector's employment and output. Appropriately, our *Map of the Month* and *Industry Focus* sections also highlight Michigan's *Manufacturing* sector, while our *Ask the Economist* provides more detail on what GDP is and different types of GDP sources and measures.

The next issue of the Michigan's Labor Market News will not be published until late March due to our annual benchmark and revision process. What does that mean, exactly? Stay tuned for more information on this topic, as well as updated data for 2017, which we will feature in upcoming editions.

Let us know if there is something you would like to know more about.



JASON PALMER

DIRECTOR

Bureau of Labor Market Information
and Strategic Initiatives

JOBLESS RATE EDGES UP IN DECEMBER, MICHIGAN ANNUAL RATE DECLINES

The December seasonally adjusted Michigan unemployment rate inched upward by one-tenth of a percentage point to 4.7 percent. The number of employed advanced over the month by 5,000 while total unemployment also rose (+7,000). This pushed the state's workforce up by 12,000 in December.

Since December 2016, Michigan's jobless rate decreased by four-tenths of a percentage point. This was similar to the national trend, where the unemployment rate declined by six-tenths of a percentage point. Michigan's preliminary 2017 annual average unemployment rate of 4.5 percent also was down by 0.4 of a percentage point from the 2016 annual rate of 4.9 percent.

December marked the second consecutive month of total employment gains in the state after employment declined for five straight months from June through October. The December workforce advance was the state's fourth monthly increase in a row. Since August, Michigan's labor force grew by 54,000 or 1.1 percent.

The chart below shows the annual unemployment rate trends in Michigan since 2008. 2017 marked the eighth consecutive year of annual unemployment rate reductions in Michigan. The state's rate fell by 9.2 percentage points since the recent annual high of 13.7 percent recorded in 2009. Michigan's 2017 annual rate was the fifth lowest recorded for the state since 1976, and the lowest annual rate since the 3.6 percent rate posted in 2000.

From 2016 to 2017, the annual number of unemployed in Michigan declined by 18,000 or 7.4 percent. Nationally, the number of unemployed decreased by 9.9 percent over this period. Since the end of the Great Recession in 2009, the number of unemployed in Michigan fell by 450,000 or 67 percent.

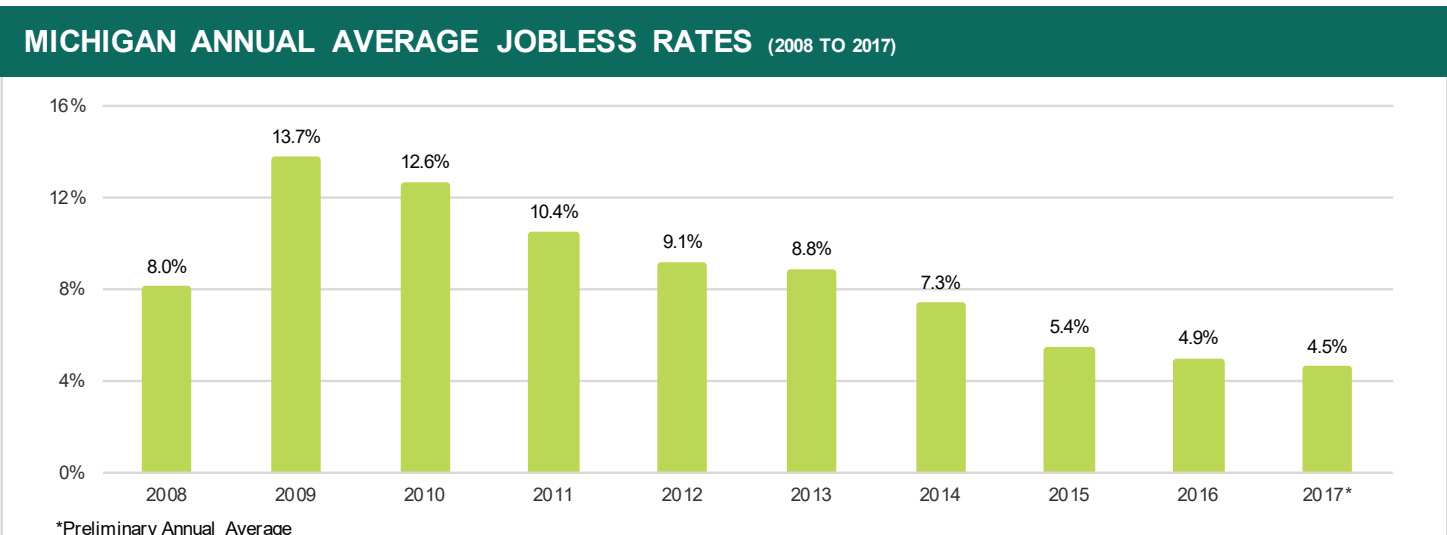
Since annual 2016, total employment in the state rose by 55,000 or 1.2 percent, which was similar to the national gain of 1.3 percent. Total employment in the state has risen for seven years in a row since 2011. Michigan's 2017 annual percentage employment addition was

the smallest since 2012, and was somewhat below the average yearly advance over this period of 66,000. Since 2010, total employment in the state increased by 460,000 or 11.0 percent.

The state's workforce expanded by 37,000 or 0.8 percent in 2017 after increasing by 79,000 or 1.7 percent during 2016. Michigan's labor force has grown for five consecutive years after declining every year from 2006 through 2012.

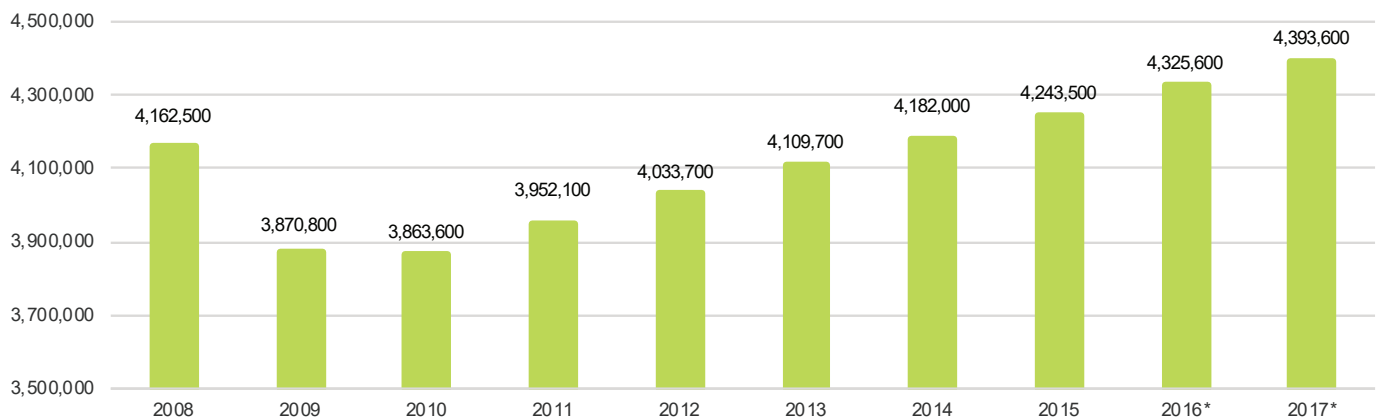
JIM RHEIN
Economic Specialist

| MICHIGAN LABOR FORCE ESTIMATES (SEASONALLY ADJUSTED) | | | | | |
|------------------------------------------------------|-----------|-----------|-----------|-----------------------|----------------------|
| | DEC 2017 | NOV 2017 | DEC 2016 | CHANGE OVER THE MONTH | CHANGE OVER THE YEAR |
| Labor Force | 4,887,000 | 4,875,000 | 4,862,000 | +12,000 | +25,000 |
| Employed | 4,656,000 | 4,651,000 | 4,616,000 | +5,000 | +40,000 |
| Unemployed | 231,000 | 224,000 | 246,000 | +7,000 | -15,000 |
| Jobless Rate | 4.7 | 4.6 | 5.1 | +0.1 | -0.4 |





MICHIGAN ANNUAL AVERAGE PAYROLL JOBS (2008 TO 2017)



*Preliminary Annual Averages

MICHIGAN JOB TRENDS BY INDUSTRY SECTOR

Monthly Overview

Michigan payroll jobs increased by 10,100 in December. The largest job gains were recorded in *Manufacturing* and *Construction* (+2,100 each), *Government* (+1,900), *Leisure and hospitality* (+1,400), and *Education and health services* (+1,100). Smaller additions were reported in *Professional and business services* (+700), *Financial activities* and *Other services* (+600 each), and *Mining and logging* (+100). Most other sectors showed little monthly job change.

Over the Year Analysis

Between December 2016 and December 2017, total nonfarm jobs increased by 57,100, or 1.3 percent. This was similar to the 1.4 percent growth rate nationally during this period. Over the year payroll job gains in Michigan were led by *Professional and business services* (+15,200), *Leisure and hospitality* (+8,700), *Construction* (+7,400), and *Education and health services* (+7,000). Jobs also advanced to a lesser extent in *Manufacturing* (+5,300), *Government* (+5,200), *Other services* (+3,600), *Financial activities* (+2,400), *Trade, transportation, and utilities* (+900), *Information* (+800), and *Mining and logging* (+600).

Michigan Fourth Quarter 2017 Percent Job Change

Total nonfarm employment advanced by 19,000 during the fourth quarter, or 0.4 percent. This marked the 31st consecutive quarter of job growth in the state. Nationally, payrolls edged up by 0.1 percent during the October through December period.

In Michigan, the industry sectors with larger than average job additions during the quarter included *Leisure and hospitality* (+1.8 percent), *Professional and business services* (+1.4 percent), *Construction* (+1.1 percent), and *Information* (+0.5 percent).

The broad sectors recording quarterly job gains slightly below the statewide average were *Education and health services*, *Financial activities*, and *Other services* (+0.2 percent

each) and *Manufacturing* (+0.1 percent).

Payroll levels were unchanged in *Trade, transportation, and utilities* and declined in *Government* and *Mining and logging* (-0.4 percent each). Employment in the state's key *Transportation equipment manufacturing* sector notched lower by 0.1 percent during the quarter.

Significant Industry Employment Developments

RETAIL TRADE

Payrolls in this sector increased by 400 in December. This gain was partly due to somewhat larger than typical hiring in *Clothing and clothing accessories stores* and *Food and beverage stores*. During the fourth quarter, jobs registered a seasonally adjusted decline of 700, as holiday-related hiring lagged slightly behind typical trends. Since December 2016, *Retail trade* employment levels were down by 3,100 or 0.7 percent. Nationally, employment decreased by 20,300 over the month and by 0.4 percent over the year.

INFORMATION

Employment levels in the Information sector notched lower by 100 in December or by 0.2 percent. Since reaching a series low of 52,400 jobs in June 2011, however, payrolls in this sector have expanded by 5,900 or 11.3 percent. This was somewhat below the 12.2 percent growth in total nonfarm jobs during this period. Despite this recent performance, however, job levels remain more than 20 percent below the series high of 74,100 set in September 2000. On a quarterly basis, job levels inched up by 300. Since December 2016, employment in this sector rose by 800 or 1.4 percent. Nationally, employment increased by 7,000 over the month but declined by 1.4 percent over the year.

TRANSPORTATION EQUIPMENT MANUFACTURING

Auto sector jobs moved lower by 500 over the month due to the impact of production-adjustment layoffs. During the fourth quarter, job levels were essentially flat. This followed a 2,700 contraction in the third quarter and

a 1,500 job decrease in the second quarter. Payrolls also declined by 2,600 since December 2016. Despite these recent downward movements, payrolls have grown by 72,100 or 68.2 percent since reaching a recessionary low of 105,700 in June 2009. This is significantly above the 15.3 percent growth in total nonfarm jobs during this period and highlights the impact this industry had on Michigan's job recovery since the recession. Nationally, job levels rose by 1,000 over the month but notched lower by 0.2 percent over the year.

METROPOLITAN STATISTICAL AREAS (MSAs)

On a *not-seasonally-adjusted* basis, total nonfarm jobs declined in December in every Metropolitan Statistical Area (MSA) except *Bay City* (unchanged) and *Grand Rapids* (+0.2 percent).

The metro areas reporting job reductions above the statewide average drop of 0.4 percent included *Monroe* (-1.1 percent), *Lansing, Midland, and Benton Harbor* (-0.8 percent each), and *Saginaw* (-0.5 percent).

Several Michigan metro areas registered December seasonal payroll job cuts in the *Leisure and hospitality* sector. The exceptions were the *Grand Rapids* and *Detroit* MSAs where job levels in this sector rose over the month. In the case of *Detroit*, however, the small monthly increase in *Leisure and hospitality* jobs was offset by a temporary automotive-related layoff.

JEFFREY AULA
Economic Analyst

MICHIGAN PAYROLL JOBS (SEASONALLY ADJUSTED)

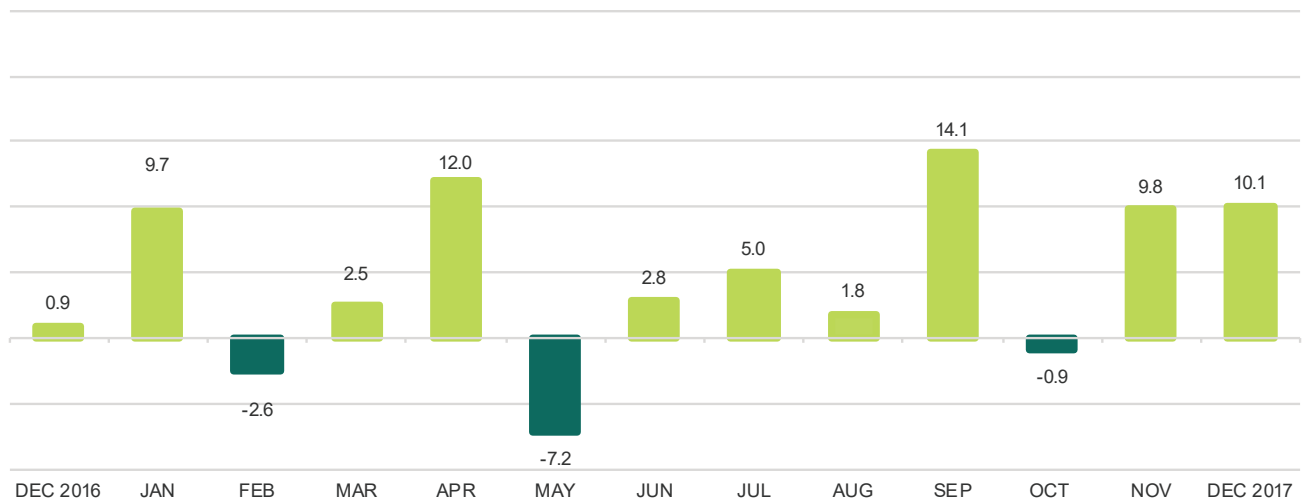
| INDUSTRY | DEC 2017 | NOV 2017 | DEC 2016 | OVER THE MONTH | | OVER THE YEAR | |
|--------------------------------------------------------------------------|------------------|------------------|------------------|----------------|-------------|---------------|-------------|
| | | | | LEVEL | PERCENT | LEVEL | PERCENT |
| TOTAL NONFARM | 4,426,000 | 4,415,900 | 4,368,900 | 10,100 | 0.2% | 57,100 | 1.3% |
| Total Private | 3,810,900 | 3,802,700 | 3,759,000 | 8,200 | 0.2% | 51,900 | 1.4% |
| Private Service-Providing | 3,031,400 | 3,027,500 | 2,992,800 | 3,900 | 0.1% | 38,600 | 1.3% |
| GOODS-PRODUCING | 779,500 | 775,200 | 766,200 | 4,300 | 0.6% | 13,300 | 1.7% |
| Mining, Logging, and Construction | 172,400 | 170,200 | 164,400 | 2,200 | 1.3% | 8,000 | 4.9% |
| Mining and Logging | 7,500 | 7,400 | 6,900 | 100 | 1.4% | 600 | 8.7% |
| Construction | 164,900 | 162,800 | 157,500 | 2,100 | 1.3% | 7,400 | 4.7% |
| Manufacturing | 607,100 | 605,000 | 601,800 | 2,100 | 0.3% | 5,300 | 0.9% |
| Durable Goods | 458,600 | 456,900 | 453,500 | 1,700 | 0.4% | 5,100 | 1.1% |
| Transportation Equipment Manufacturing | 177,800 | 178,300 | 180,400 | -500 | -0.3% | -2,600 | -1.5% |
| Nondurable Goods | 148,500 | 148,100 | 148,300 | 400 | 0.3% | 200 | 0.1% |
| SERVICE-PROVIDING | 3,646,500 | 3,640,700 | 3,602,700 | 5,800 | 0.2% | 43,800 | 1.2% |
| Trade, Transportation, and Utilities | 783,300 | 783,700 | 782,400 | -400 | -0.1% | 900 | 0.1% |
| Wholesale Trade | 173,100 | 173,300 | 170,500 | -200 | -0.1% | 2,600 | 1.5% |
| Retail Trade | 468,600 | 468,200 | 471,700 | 400 | 0.1% | -3,100 | -0.7% |
| Transportation, Warehousing, and Utilities | 141,600 | 142,200 | 140,200 | -600 | -0.4% | 1,400 | 1.0% |
| Information | 58,300 | 58,400 | 57,500 | -100 | -0.2% | 800 | 1.4% |
| Financial Activities | 219,000 | 218,400 | 216,600 | 600 | 0.3% | 2,400 | 1.1% |
| Finance and Insurance | 164,300 | 163,500 | 162,200 | 800 | 0.5% | 2,100 | 1.3% |
| Real Estate and Rental and Leasing | 54,700 | 54,900 | 54,400 | -200 | -0.4% | 300 | 0.6% |
| Professional and Business Services | 677,300 | 676,600 | 662,100 | 700 | 0.1% | 15,200 | 2.3% |
| Professional, Scientific, and Technical Services | 308,600 | 309,400 | 299,100 | -800 | -0.3% | 9,500 | 3.2% |
| Management of Companies and Enterprises | 62,100 | 62,000 | 61,800 | 100 | 0.2% | 300 | 0.5% |
| Administrative and Support and Waste Management and Remediation Services | 306,600 | 305,200 | 301,200 | 1,400 | 0.5% | 5,400 | 1.8% |
| Education and Health Services | 674,600 | 673,500 | 667,600 | 1,100 | 0.2% | 7,000 | 1.0% |
| Educational Services | 72,200 | 72,400 | 73,400 | -200 | -0.3% | -1,200 | -1.6% |
| Health Care and Social Assistance | 602,400 | 601,100 | 594,200 | 1,300 | 0.2% | 8,200 | 1.4% |
| Leisure and Hospitality | 443,100 | 441,700 | 434,400 | 1,400 | 0.3% | 8,700 | 2.0% |
| Arts, Entertainment, and Recreation | 50,800 | 49,300 | 53,700 | 1,500 | 3.0% | -2,900 | -5.4% |
| Accommodation and Food Services | 392,300 | 392,400 | 380,700 | -100 | 0.0% | 11,600 | 3.0% |
| Other Services | 175,800 | 175,200 | 172,200 | 600 | 0.3% | 3,600 | 2.1% |
| Government | 615,100 | 613,200 | 609,900 | 1,900 | 0.3% | 5,200 | 0.9% |
| Federal Government | 52,300 | 52,200 | 52,400 | 100 | 0.2% | -100 | -0.2% |
| State Government | 194,600 | 195,100 | 195,100 | -500 | -0.3% | -500 | -0.3% |
| Local Government | 368,200 | 365,900 | 362,400 | 2,300 | 0.6% | 5,800 | 1.6% |

PERCENT JOB CHANGE BY INDUSTRY SECTOR (QTR 3:2017 TO QTR 4:2017)

| INDUSTRY | PERCENTAGE JOB CHANGE |
|--------------------------------------|-----------------------|
| Leisure and Hospitality | 1.8% |
| Professional and Business Services | 1.4% |
| Construction | 1.1% |
| Information | 0.5% |
| Total Nonfarm | 0.4% |
| Other Services | 0.2% |
| Financial Activities | 0.2% |
| Educational and Health Services | 0.2% |
| Manufacturing | 0.1% |
| Trade, Transportation, and Utilities | 0.0% |
| Government | -0.4% |
| Mining and Logging | -0.4% |

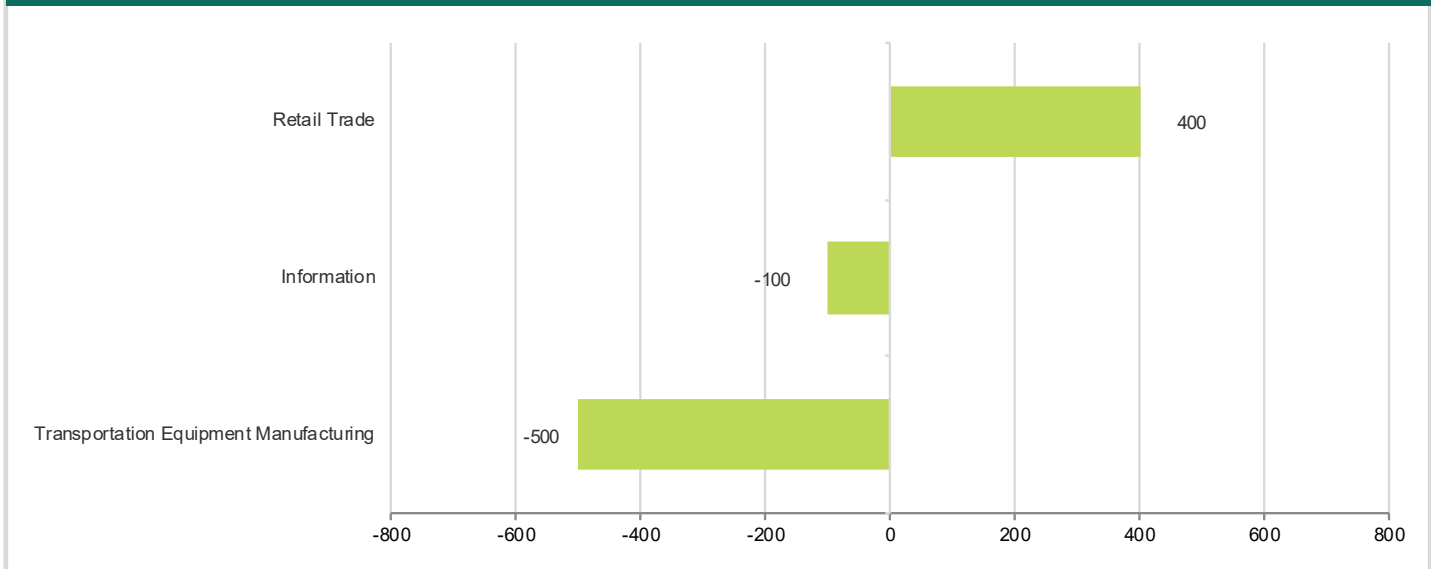


MICHIGAN OVER THE MONTH PAYROLL JOB CHANGE (IN THOUSANDS)

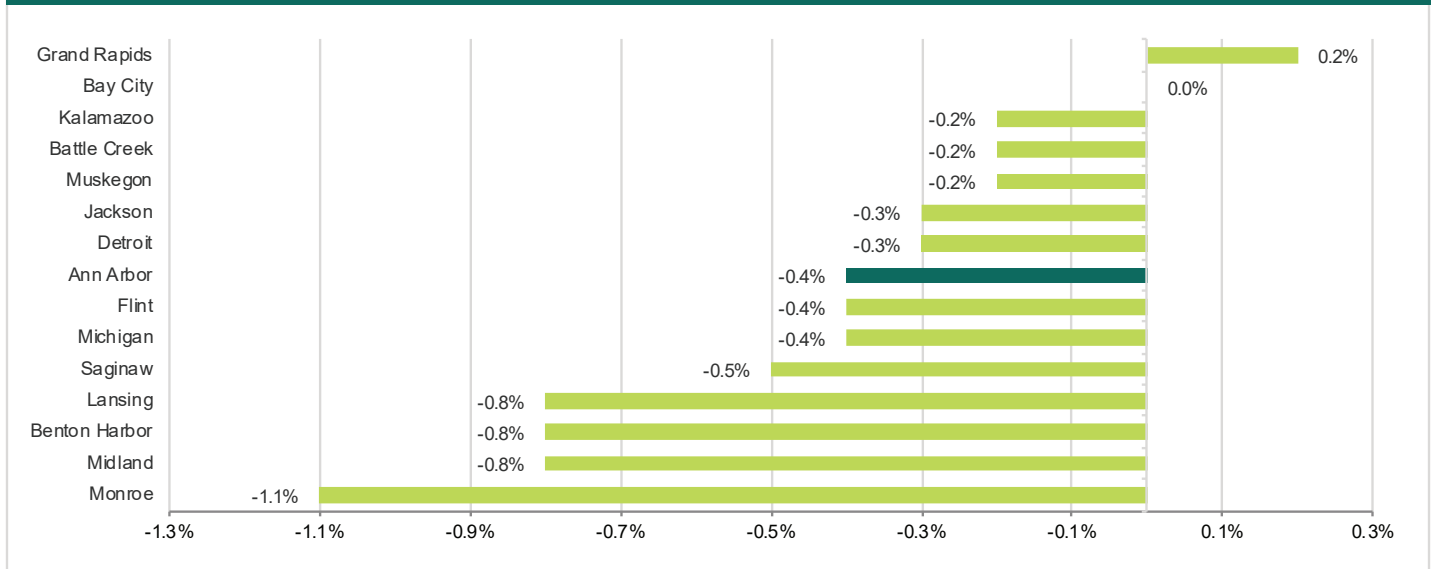




MICHIGAN OVER THE MONTH JOB CHANGE BY SELECT INDUSTRY (NOVEMBER TO DECEMBER 2017)



METROPOLITAN AREA JOB CHANGE NOVEMBER TO DECEMBER 2017 (NOT SEASONALLY ADJUSTED)



REGIONAL LABOR MARKET ANALYSIS

ANN ARBOR METROPOLITAN AREA

- Ann Arbor's jobless rate contracted slightly by one-tenth of a percentage point over the month to 3.0 percent, a rate 1.4 percentage points below that of Michigan.
- Ann Arbor was the only metro region to exhibit a decline in the unemployment rate for December 2017.

MONTHLY INDUSTRY DEVELOPMENTS

- Total nonfarm employment in the Ann Arbor metro area decreased by 1,000, or 0.4% over the month, primarily due to reductions in *Professional and business services*, *Government*, and *Mining, logging and construction*.

INDUSTRY TRENDS

- For the second consecutive month, the region's *Health care and social assistance* sector reached its peak level of 23,600 jobs in December.

BATTLE CREEK METROPOLITAN AREA

- The Battle Creek unemployment rate rose by four tenths of a percentage point to 4.8 percent, because of a decline in employment (-600) and a slight increase in unemployment (+300).
- Since December 2016, the local jobless rate was up by six tenths of a percentage point.

MONTHLY INDUSTRY DEVELOPMENTS

- In December, jobs in the Battle Creek MSA edged down 100 to 60,200. *Manufacturing* added 200 jobs, but *Construction* also cut 200 positions seasonally.
- Total nonfarm jobs in the Battle Creek metro area have advanced for eight consecutive years.

INDUSTRY TRENDS

- Since December 2009, jobs in *Durable goods manufacturing* grew by 58.8 percent; well above the rate of expansion statewide.

BAY CITY METROPOLITAN AREA

- The unemployment rate in Bay City increased by 0.8 percentage points over the month to 5.3 percent.
- Employment in Bay City declined by 1.8 percent between November and December, the largest over-the-month cut among Michigan metro areas.

MONTHLY INDUSTRY DEVELOPMENTS

- Payroll jobs in the Bay City metro area remained flat over the month, staying at a level of 36,200 jobs in December.
- A minor employment decline in the *Manufacturing* sector was offset by a modest increase of 100 jobs in *Trade, transportation, and utilities*.

INDUSTRY TRENDS

- Out of all Michigan metro areas, Bay City exhibited the largest reduction in payroll jobs over the year, edging down by 1.4 percent.

DETROIT-WARREN-DEARBORN METRO AREA

- Joblessness in the Detroit metro area increased half of a percentage point over the month to 4.2 percent.
- The region had the largest over-the-year decline in the number of unemployed among Michigan metro areas, down 12.1 percent since December 2016.

MONTHLY INDUSTRY DEVELOPMENTS

- December nonfarm employment declined by 5,900 or 0.3 percent, primarily due to large job cuts in *Mining, logging and construction* (-4,600), *Professional and business services* (-3,800), and *Government* (-1,600).

INDUSTRY TRENDS

- In December, Detroit's *Ambulatory health care services* sector matched November with an all-time high level of 105,000 jobs.

FLINT METROPOLITAN AREA

- Flint's unemployment rate advanced to 5.7 percent in December, up six-tenths of a percentage point.
- Total employment in the region declined by 1.6 percent over the year.

MONTHLY INDUSTRY DEVELOPMENTS

- Flint metro area jobs fell by 600 in December, or 0.4 percent, due to job cuts in *Professional and business services* (-300), *Educational and health services* (-300), and *Mining, logging and construction* (-200).

INDUSTRY TRENDS

- *General merchandise stores* in Flint added 400 jobs in the fourth quarter 2017, similar to the typical seasonal fourth quarter job advance registered in the prior three years.

GRAND RAPIDS-WYOMING METROPOLITAN AREA

- Unemployment in the Grand Rapids region edged up two-tenths of a percentage point to 3.4 percent in December, a rate exactly one percentage point below that of the state.
- The civilian labor force in the region increased by 1.1 percent since December 2016, well above the statewide rate of growth.

MONTHLY INDUSTRY DEVELOPMENTS

- Total payroll jobs in Grand Rapids rose by 1,400 over the month, or 0.2 percent.
- Employment gains were seen in most major industries, with the exception of *Mining, logging, and construction* (-500) and *Information* (which remained flat).

INDUSTRY TRENDS

- The region's *Trade, transportation, and utilities* sector reached a series high of 98,400 jobs in December 2017.

CIVILIAN LABOR FORCE AND NONFARM PAYROLL JOBS

| | ANN ARBOR | | | BATTLE CREEK | | | BAY CITY | | |
|--------------------------------------|-------------|-------------|-------------|--------------|-------------|-------------|-------------|-------------|-------------|
| | DEC 2017 | NOV 2017 | DEC 2016 | DEC 2017 | NOV 2017 | DEC 2016 | DEC 2017 | NOV 2017 | DEC 2016 |
| PLACE OF RESIDENCE | | | | | | | | | |
| Labor Force | 194,200 | 196,900 | 193,600 | 64,100 | 64,400 | 64,500 | 50,900 | 51,300 | 52,000 |
| Employment | 188,400 | 190,800 | 188,300 | 61,000 | 61,600 | 61,800 | 48,100 | 49,000 | 49,400 |
| Unemployment | 5,800 | 6,100 | 5,300 | 3,100 | 2,800 | 2,700 | 2,700 | 2,300 | 2,600 |
| Rate (percent) | 3.0 | 3.1 | 2.7 | 4.8 | 4.4 | 4.2 | 5.3 | 4.5 | 4.9 |
| PLACE OF WORK | | | | | | | | | |
| Total Nonfarm Jobs | 227,600 | 228,600 | 222,400 | 60,200 | 60,300 | 59,700 | 36,200 | 36,200 | 36,700 |
| Mining, Logging, and Construction | 4,100 | 4,300 | 3,900 | 1,300 | 1,500 | 1,300 | 1,000 | 1,000 | 1,000 |
| Manufacturing | 15,200 | 15,200 | 14,700 | 13,100 | 12,900 | 12,500 | 4,500 | 4,600 | 4,300 |
| Trade, Transportation, and Utilities | 26,300 | 26,300 | 26,100 | 9,300 | 9,300 | 9,600 | 7,500 | 7,400 | 7,800 |
| Wholesale Trade | 5,600 | 5,600 | 5,600 | * | * | * | * | * | * |
| Retail Trade | 17,000 | 17,000 | 16,900 | 5,800 | 5,800 | 5,900 | 5,300 | 5,300 | 5,300 |
| Information | 5,100 | 5,000 | 5,100 | * | * | * | 600 | 600 | 600 |
| Financial Activities | 7,100 | 7,100 | 7,000 | 1,300 | 1,300 | 1,300 | 1,200 | 1,200 | 1,300 |
| Professional and Business Services | 32,000 | 32,400 | 31,100 | 6,300 | 6,300 | 6,200 | 3,100 | 3,100 | 3,400 |
| Educational and Health Services | 27,500 | 27,600 | 27,200 | 11,300 | 11,300 | 11,200 | 6,500 | 6,500 | 6,600 |
| Leisure and Hospitality | 17,300 | 17,400 | 16,900 | 4,600 | 4,600 | 4,600 | 4,700 | 4,700 | 4,600 |
| Other Services | 6,400 | 6,400 | 6,400 | 2,100 | 2,000 | 2,000 | 1,400 | 1,400 | 1,400 |
| Government | 86,600 | 86,900 | 84,000 | 10,800 | 10,900 | 10,800 | 5,700 | 5,700 | 5,700 |
| DETROIT-WARREN-DEARBORN | | | | | | | | | |
| FLINT | | | | | | | | | |
| GRAND RAPIDS-WYOMING | | | | | | | | | |
| | DEC 2017 | NOV 2017 | DEC 2016 | DEC 2017 | NOV 2017 | DEC 2016 | DEC 2017 | NOV 2017 | DEC 2016 |
| PLACE OF RESIDENCE | | | | | | | | | |
| Labor Force | 2,090,800 | 2,094,700 | 2,068,200 | 181,100 | 182,100 | 182,700 | 574,800 | 576,500 | 568,600 |
| Employment | 2,003,400 | 2,017,100 | 1,969,000 | 170,800 | 172,900 | 173,600 | 555,100 | 557,800 | 551,500 |
| Unemployment | 87,500 | 77,700 | 99,200 | 10,300 | 9,200 | 9,100 | 19,700 | 18,600 | 17,100 |
| Rate (percent) | 4.2 | 3.7 | 4.8 | 5.7 | 5.1 | 5.0 | 3.4 | 3.2 | 3.0 |
| PLACE OF WORK | | | | | | | | | |
| Total Nonfarm Jobs | 2,032,000 | 2,037,900 | 1,999,900 | 141,400 | 142,000 | 141,300 | 568,400 | 567,000 | 552,500 |
| Mining, Logging, and Construction | 72,600 | 77,200 | 67,900 | 4,900 | 5,100 | 4,600 | 24,600 | 25,100 | 22,300 |
| Manufacturing | 249,100 | 249,700 | 244,900 | 12,500 | 12,300 | 12,100 | 115,400 | 115,000 | 113,300 |
| Trade, Transportation, and Utilities | 377,900 | 374,700 | 373,600 | 30,700 | 30,600 | 30,800 | 98,400 | 98,200 | 97,000 |
| Wholesale Trade | 88,000 | 87,600 | 86,900 | 5,800 | 5,800 | 5,700 | 31,200 | 31,200 | 31,000 |
| Retail Trade | 217,100 | 215,500 | 217,000 | 21,000 | 21,000 | 21,000 | 50,900 | 51,000 | 50,600 |
| Information | 27,800 | 28,000 | 28,000 | 3,900 | 3,900 | 3,900 | 5,100 | 5,100 | 5,200 |
| Financial Activities | 116,700 | 116,100 | 114,000 | 5,900 | 5,900 | 6,000 | 26,500 | 26,300 | 26,400 |
| Professional and Business Services | 406,400 | 410,200 | 395,400 | 15,400 | 15,700 | 15,300 | 82,300 | 82,100 | 78,800 |
| Educational and Health Services | 318,500 | 318,200 | 314,200 | 28,200 | 28,500 | 28,700 | 92,900 | 92,900 | 91,100 |
| Leisure and Hospitality | 196,400 | 195,800 | 194,200 | 15,800 | 15,800 | 15,200 | 51,000 | 50,300 | 48,300 |
| Other Services | 76,800 | 76,600 | 76,400 | 5,400 | 5,500 | 5,400 | 23,000 | 22,900 | 22,200 |
| Government | 189,800 | 191,400 | 191,300 | 18,700 | 18,700 | 19,300 | 49,200 | 49,100 | 47,900 |
| * Data Not Available | | | | | | | | | |

JACKSON METROPOLITAN AREA

- Joblessness in the Jackson MSA inched up three tenths of a percentage point in December to 4.4 percent, matching the statewide rate.
- Since December 2016, labor force trends in the region were little changed.

MONTHLY INDUSTRY DEVELOPMENTS

- December jobs in the Jackson MSA were down by 200 to a total of 58,900. Seasonal job cuts were recorded in *Government*, *Construction*, and private *Educational and health services*. *Manufacturing* employment rose by 200.
- Since December 2016, the Jackson MSA recorded a six percent job advance in *Manufacturing*.

INDUSTRY TRENDS

- *Retail trade* jobs contracted by 500 (or -7.0 percent) since December 2009 in the Jackson MSA. This was in contrast with a gain of 4.3 percent statewide.

KALAMAZOO-PORTAGE METROPOLITAN AREA

- The jobless rate in the Kalamazoo-Portage MSA edged up four tenths of a percentage point to 4.3 percent, similar to the statewide rate. Employment declined seasonally, while the number of jobseekers rose by 700.
- Over the past year, the jobless rate increased as the number of unemployed advanced (+800).

MONTHLY INDUSTRY DEVELOPMENTS

- In December, jobs in the Kalamazoo area inched down 300. 200 positions were added in *Manufacturing*, but were offset by an exact job cut in *Government*.
- Since December 2016, most major sectors added jobs or were stable, except for *Retail trade* where employment declined by 1.8 percent.

INDUSTRY TRENDS

- *Construction* jobs in the region bottomed out in 2012, but employment rose by about 2,000 over the last five years.

LANSING-EAST LANSING METROPOLITAN AREA

- The December Lansing metro area unemployment rate edged up by two-tenths of a percentage point to 3.9 percent.
- The area exhibited the third lowest unemployment rate out of all Michigan metro regions (behind Ann Arbor and Grand Rapids).

MONTHLY INDUSTRY DEVELOPMENTS

- Total nonfarm jobs in Lansing declined by 1,800 over the month, or 0.8 percent.
- Seasonal job cuts occurred in *Government* (-2,100) and *Leisure and hospitality* (-400).

INDUSTRY TRENDS

- Lansing's *Nondurable goods manufacturing* sector reached a ten-year high level of 5,700 jobs in December 2017.

MIDLAND METROPOLITAN AREA

- Joblessness in the Midland metro area increased by half a percentage point over the month to 4.6 percent, a rate 0.2 percentage points above the state's.
- Midland exhibited the second largest employment reduction over the year among Michigan metro areas, down by 2.3 percent since December 2016.

MONTHLY INDUSTRY DEVELOPMENTS

- Payroll jobs in the Midland region declined by 300 over the month, or 0.8 percent.

INDUSTRY TRENDS

- Midland is one of only two Michigan metro regions which registered a payroll job cut over the year, edging down by 0.8 percent.

MONROE METROPOLITAN AREA

- Monroe's jobless rate edged up by two-tenths of a percentage point between November and December to 4.1 percent.
- The number of unemployed in the region grew by 14.8 percent since December 2016.

MONTHLY INDUSTRY DEVELOPMENTS

- Payroll jobs in the Monroe region fell by 500 over the month, or 1.1 percent, with job cuts in *Manufacturing* (-200) and *Mining, logging, and construction* (-200).

INDUSTRY TRENDS

- *Financial activities* jobs in Monroe have shown slow but steady reductions, falling from 1,500 positions in 2008 to 900 jobs in 2017.

MUSKEGON METROPOLITAN AREA

- The Muskegon region's rate of unemployment rose seasonally by 0.4 percentage points in December to 5.3 percent.
- The civilian labor force declined by 0.5 percent over the month, a movement similar to that of Michigan's at 0.4 percent.

MONTHLY INDUSTRY DEVELOPMENTS

- Total nonfarm jobs in Muskegon were little changed in December, inching down by 100.
- A slight uptick in *Education and health services* jobs was offset by small reductions in *Manufacturing*, *Trade, transportation, and utilities*, and *Professional and business services*.

INDUSTRY TRENDS

- *Government* jobs in the region remained essentially flat in 2017 for the fourth consecutive year, and have dropped by 1,500 since 2008.

CIVILIAN LABOR FORCE AND NONFARM PAYROLL JOBS

| | JACKSON | | | KALAMAZOO-PORTAGE | | | LANSING-EAST LANSING | | |
|--------------------------------------|-------------|-------------|-------------|-------------------|-------------|-------------|----------------------|-------------|-------------|
| | DEC 2017 | NOV 2017 | DEC 2016 | DEC 2017 | NOV 2017 | DEC 2016 | DEC 2017 | NOV 2017 | DEC 2016 |
| PLACE OF RESIDENCE | | | | | | | | | |
| Labor Force | 73,900 | 74,600 | 73,700 | 169,500 | 170,300 | 169,000 | 246,200 | 249,400 | 247,400 |
| Employment | 70,600 | 71,500 | 70,600 | 162,100 | 163,600 | 162,400 | 236,700 | 240,200 | 239,100 |
| Unemployment | 3,200 | 3,100 | 3,100 | 7,400 | 6,700 | 6,600 | 9,500 | 9,200 | 8,200 |
| Rate (percent) | 4.4 | 4.1 | 4.2 | 4.3 | 3.9 | 3.9 | 3.9 | 3.7 | 3.3 |
| PLACE OF WORK | | | | | | | | | |
| Total Nonfarm Jobs | 58,900 | 59,100 | 57,600 | 152,600 | 152,900 | 149,200 | 237,800 | 239,600 | 235,200 |
| Mining, Logging, and Construction | 1,900 | 2,000 | 1,800 | 6,700 | 6,800 | 6,100 | 7,300 | 7,600 | 6,800 |
| Manufacturing | 10,600 | 10,400 | 10,000 | 22,000 | 21,800 | 21,500 | 20,900 | 20,700 | 20,900 |
| Trade, Transportation, and Utilities | 12,800 | 12,800 | 12,900 | 26,900 | 26,900 | 27,000 | 38,700 | 38,100 | 38,100 |
| Wholesale Trade | * | * | * | 7,000 | 7,000 | 6,900 | 6,000 | 6,000 | 6,000 |
| Retail Trade | 6,600 | 6,600 | 6,900 | 16,300 | 16,400 | 16,600 | 23,000 | 22,500 | 22,600 |
| Information | 300 | 300 | 300 | 900 | 900 | 900 | 2,900 | 2,900 | 2,900 |
| Financial Activities | 1,800 | 1,800 | 1,800 | 8,500 | 8,500 | 8,400 | 16,300 | 16,200 | 16,100 |
| Professional and Business Services | 4,900 | 4,900 | 4,800 | 19,500 | 19,600 | 18,400 | 21,800 | 21,700 | 22,000 |
| Educational and Health Services | 10,900 | 11,000 | 10,400 | 23,800 | 23,800 | 23,400 | 32,900 | 32,900 | 32,600 |
| Leisure and Hospitality | 5,600 | 5,600 | 5,300 | 15,900 | 16,000 | 15,500 | 20,100 | 20,500 | 19,700 |
| Other Services | 2,500 | 2,500 | 2,500 | 5,700 | 5,700 | 5,500 | 10,500 | 10,500 | 10,400 |
| Government | 7,600 | 7,800 | 7,800 | 22,700 | 22,900 | 22,500 | 66,400 | 68,500 | 65,700 |
| PLACE OF RESIDENCE | | | | | | | | | |
| Labor Force | 40,000 | 40,500 | 40,900 | 76,000 | 77,000 | 76,200 | 76,400 | 76,800 | 75,900 |
| Employment | 38,200 | 38,800 | 39,100 | 72,900 | 74,000 | 73,500 | 72,400 | 73,000 | 72,300 |
| Unemployment | 1,800 | 1,700 | 1,700 | 3,100 | 3,000 | 2,700 | 4,000 | 3,800 | 3,600 |
| Rate (percent) | 4.6 | 4.1 | 4.2 | 4.1 | 3.9 | 3.5 | 5.3 | 4.9 | 4.7 |
| PLACE OF WORK | | | | | | | | | |
| Total Nonfarm Jobs | 37,400 | 37,700 | 37,700 | 43,100 | 43,600 | 42,300 | 63,900 | 64,000 | 62,800 |
| Mining, Logging, and Construction | * | * | * | 2,000 | 2,200 | 1,800 | 2,100 | 2,100 | 2,000 |
| Manufacturing | * | * | * | 5,700 | 5,900 | 5,600 | 14,000 | 14,100 | 13,500 |
| Trade, Transportation, and Utilities | * | * | * | 11,300 | 11,300 | 11,000 | 13,500 | 13,600 | 13,700 |
| Wholesale Trade | * | * | * | 1,900 | 1,900 | 1,800 | * | * | * |
| Retail Trade | * | * | * | 5,400 | 5,400 | 5,300 | 10,600 | 10,700 | 11,000 |
| Information | * | * | * | * | * | * | 800 | 800 | 800 |
| Financial Activities | * | * | * | 900 | 900 | 900 | 1,700 | 1,700 | 1,700 |
| Professional and Business Services | * | * | * | 5,400 | 5,500 | 5,300 | 3,600 | 3,700 | 3,600 |
| Educational and Health Services | * | * | * | 5,500 | 5,500 | 5,400 | 11,200 | 11,000 | 11,100 |
| Leisure and Hospitality | * | * | * | 4,700 | 4,800 | 4,700 | 7,300 | 7,300 | 7,100 |
| Other Services | * | * | * | 1,500 | 1,500 | 1,500 | 2,200 | 2,200 | 2,200 |
| Government | 3,200 | 3,200 | 3,100 | 5,400 | 5,400 | 5,400 | 7,500 | 7,500 | 7,100 |
| * Data Not Available | | | | | | | | | |

NILES-BENTON HARBOR METROPOLITAN AREA

- A December seasonal increase in the number of unemployed (+400) pushed up the Niles-Benton Harbor jobless rate by five tenths of a percentage point to 5.0 percent. Labor force inched down 500 and employment fell 900.

MONTHLY INDUSTRY DEVELOPMENTS

- Niles-Benton Harbor MSA job levels in December dropped by 500 to a total of 62,400, mostly from job cuts in private *Educational and health services* and in *Leisure and hospitality*.
- Over the year, nonfarm payroll employment in the Niles-Benton Harbor MSA grew by 1.8 percent or 1,100.

INDUSTRY TRENDS

- The *Leisure and hospitality* sector locally has experienced steady job gains since 2011, adding 1,800 positions from 2011 to 2017.

SAGINAW METROPOLITAN AREA

- Saginaw's jobless rate advanced by half a percentage point in December to 5.2 percent.
- Metro area unemployment increased by 9.5 percent over the month.

MONTHLY INDUSTRY DEVELOPMENTS

- Nonfarm jobs in the Saginaw metro area declined by 500 over the month (-0.5 percent).
- Small declines were seen in most major industries in the region, including *Trade, transportation, and utilities* (-300), *Education and health services* (-200), and *Mining, logging, and construction* (-100).

INDUSTRY TRENDS

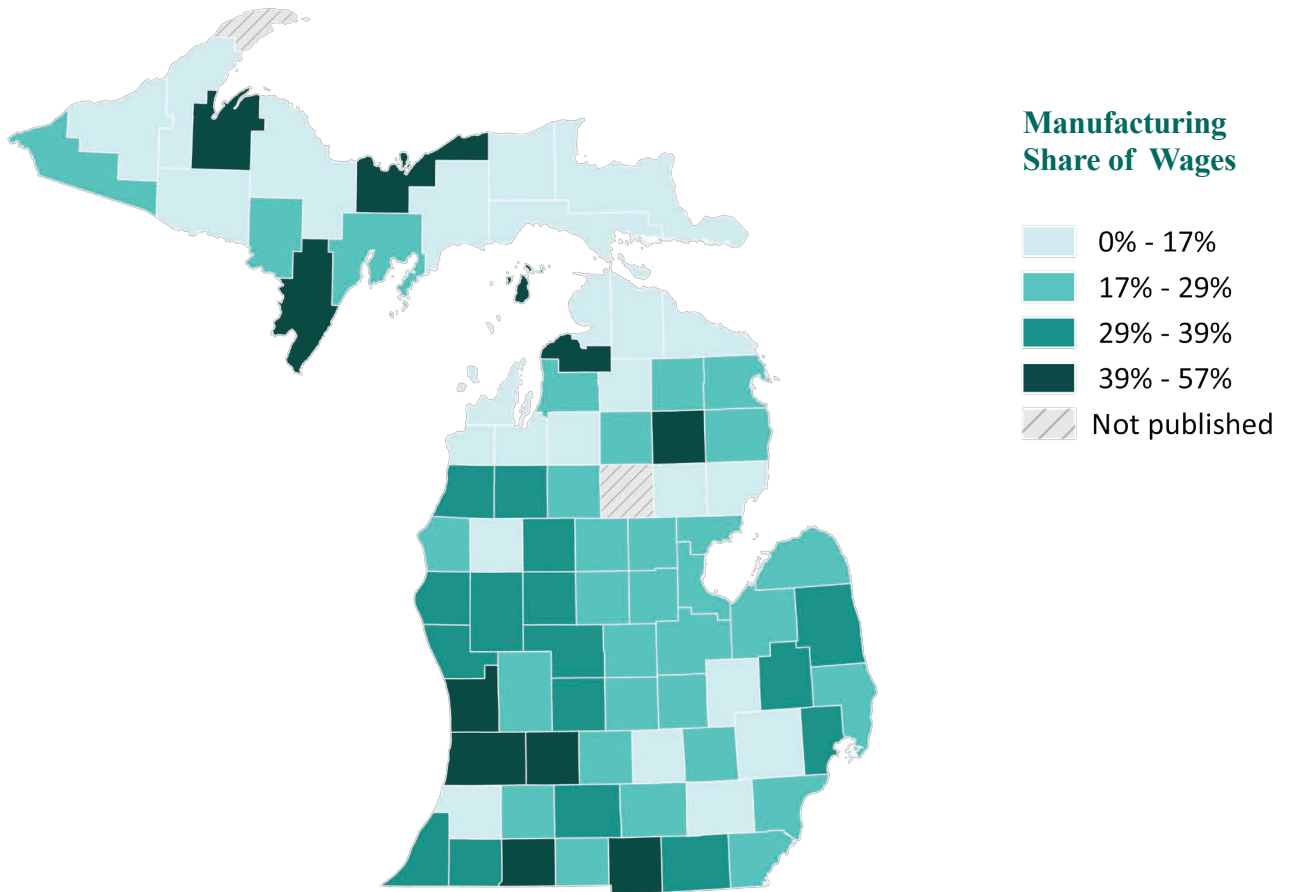
- Saginaw's *Financial activities* sector has remained stable at roughly 3,700 jobs for the last four years.

CIVILIAN LABOR FORCE AND NONFARM PAYROLL JOBS

| | NILES-BENTON HARBOR | | | SAGINAW | | | | | |
|--------------------------------------|---------------------|----------|----------|---------------------------|----------|----------|---------------------------|----------|----------|
| | DEC 2017 | NOV 2017 | DEC 2016 | DEC 2017 | NOV 2017 | DEC 2016 | | | |
| PLACE OF RESIDENCE | | | | | | | | | |
| Labor Force | 72,700 | 73,200 | 72,900 | 88,700 | 89,400 | 88,800 | | | |
| Employment | 69,000 | 69,900 | 69,600 | 84,100 | 85,200 | 84,700 | | | |
| Unemployment | 3,700 | 3,300 | 3,400 | 4,600 | 4,200 | 4,100 | | | |
| Rate (percent) | 5.0 | 4.5 | 4.6 | 5.2 | 4.7 | 4.6 | | | |
| PLACE OF WORK | | | | | | | | | |
| Total Nonfarm Jobs | 62,400 | 62,900 | 61,300 | 91,500 | 92,000 | 89,900 | | | |
| Mining, Logging, and Construction | 1,900 | 2,000 | 1,800 | 3,100 | 3,200 | 2,900 | | | |
| Manufacturing | 14,000 | 13,900 | 13,400 | 13,100 | 13,000 | 12,900 | | | |
| Trade, Transportation, and Utilities | 10,500 | 10,400 | 10,800 | 18,200 | 18,500 | 17,600 | | | |
| Wholesale Trade | * | * | * | 2,200 | 2,200 | 2,200 | | | |
| Retail Trade | 6,700 | 6,700 | 6,700 | 13,400 | 13,600 | 12,800 | | | |
| Information | 500 | 500 | 500 | 1,500 | 1,500 | 1,500 | | | |
| Financial Activities | 2,400 | 2,400 | 2,300 | 3,600 | 3,600 | 3,600 | | | |
| Professional and Business Services | 5,200 | 5,300 | 5,600 | 11,500 | 11,500 | 11,200 | | | |
| Educational and Health Services | 9,200 | 9,400 | 8,900 | 16,500 | 16,700 | 16,400 | | | |
| Leisure and Hospitality | 7,100 | 7,300 | 6,800 | 9,000 | 9,000 | 9,100 | | | |
| Other Services | 2,400 | 2,400 | 2,400 | 3,300 | 3,300 | 3,300 | | | |
| Government | 9,200 | 9,300 | 8,800 | 11,700 | 11,700 | 11,400 | | | |
| UPPER PENINSULA | | | | | | | | | |
| | DEC 2017 | NOV 2017 | DEC 2016 | NORTHEAST MICHIGAN | | | | | |
| | | | | DEC 2017 | NOV 2017 | DEC 2016 | NORTHWEST MICHIGAN | | |
| | | | | DEC 2017 | NOV 2017 | DEC 2016 | DEC 2017 | NOV 2017 | DEC 2016 |
| PLACE OF RESIDENCE | | | | | | | | | |
| Labor Force | 136,500 | 136,500 | 138,100 | 81,800 | 81,300 | 81,900 | 147,700 | 146,700 | 147,800 |
| Employment | 127,000 | 129,000 | 128,900 | 74,400 | 75,800 | 75,100 | 138,900 | 139,700 | 139,600 |
| Unemployment | 9,500 | 7,500 | 9,100 | 7,400 | 5,500 | 6,700 | 8,800 | 7,000 | 8,200 |
| Rate (percent) | 7.0 | 5.5 | 6.6 | 9.0 | 6.8 | 8.2 | 5.9 | 4.8 | 5.5 |

MAP OF THE MONTH:

SHARE OF WAGES FROM THE MANUFACTURING SECTOR BY COUNTY



This map displays the 2016 percentage of private sector wages derived from the *Manufacturing* sector.

Source: LMISI, Quarterly Census of Employment and Wages, (QCEW)

Manufacturing is a Key Source of Income

Michigan's *Manufacturing* sector is not only a key source of jobs to the statewide economy, but it also generates a large share of private wages to Michigan workers. *Manufacturing* in 2016 accounted for 18 percent of private sector jobs in Michigan, and generated about 21 percent of private wages. As the map shows, Michigan counties have a very wide degree of dependence on this sector for wages, ranging from under 10 percent to over 40 percent.

Regional Trends

The county map shows counties with high concentrations of wages from the *Manufacturing* sector in Southwest Michigan, West Michigan, and scattered parts of Northern Michigan. Conversely, counties with the lowest shares of wages from this sector are predominantly in Northern Michigan.

Michigan County Rankings

St. Joseph, Menominee, Hillsdale, Ottawa, and Allegan counties are all examples of counties with particularly high shares of wages contributed by the *Manufacturing* sector. Small rural counties more dependent on tourism-related jobs often have the lowest share of wages from *Manufacturing*. On a numeric basis, Wayne and Oakland led the way in the level of wages paid by *Manufacturing* firms located within these counties.

BRUCE WEAVER
Economic Manager



Real Gross Domestic Product (GDP) is an inflation-adjusted measure of economic production. It is an important macroeconomic indicator and a useful gauge of the health of a nation's, state's, or area's economy. This article uses annual data on real GDP and real GDP per capita reported by the Bureau of Economic

Analysis (BEA), the official source for these measures.

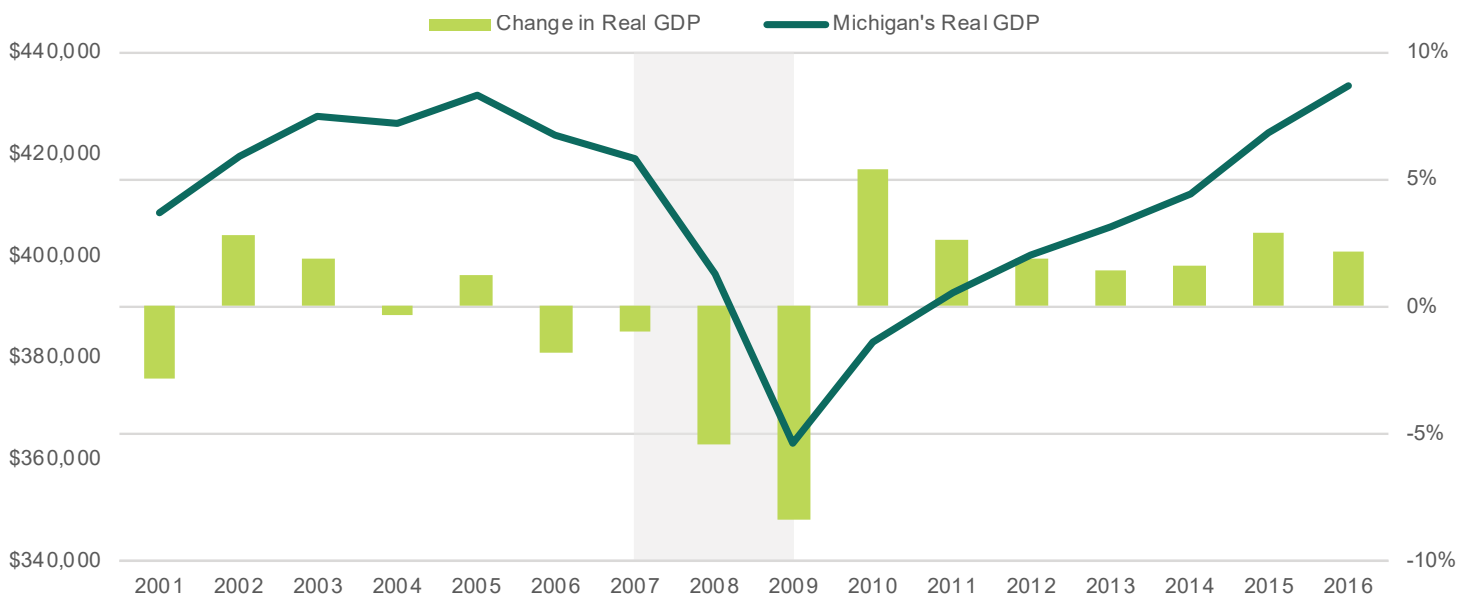
This information is used to discuss recent and long-term trends in real GDP and real GDP per capita to highlight particular Michigan industries, and to compare Michigan and its regions to the nation and other states.

Real GDP in Michigan and the United States

Michigan's real GDP measured \$433.5 billion in chained 2009 dollars in 2016. Of the 50 states in the U.S., Michigan ranked 13th in 2016, maintaining its 2015 rank. Since the reported

MICHIGAN'S REAL GDP (2001 - 2016)

*In millions of Chained 2009 dollars



Source: Bureau of Economic Analysis



\$424.3 billion in 2015, Michigan's real GDP increased by 2.2 percent in 2016. Michigan has seen growth in real GDP in recent years, particularly since the end of the Great Recession in 2009, with an overall gain in real GDP of 19.4 percent. However, it was not until 2015 that Michigan returned to the pre-recessionary levels

last seen in 2007.

In 2016, U.S. real GDP was \$16.4 trillion, up by a slightly lower 1.5 percent from the previous year. However, the U.S. recovered more quickly than Michigan following the Great Recession, passing its pre-recessionary level in 2011 when real GDP totaled \$14.8 trillion. Since the lows of 2009, the

U.S. has seen a 14.4 percent increase in its GDP.

Michigan's real GDP per capita in 2016 stood at \$43,665, up 2.1 percent from the previous year, greater than the 0.8 percent U.S. advance. Among the 50 states, Michigan ranked 5th in terms of real GDP per capita growth, but only 36th in the level of real GDP per capita overall.

MICHIGAN REAL GDP BY INDUSTRY SECTOR (MILLIONS)

| INDUSTRY | 2009 | 2015 | 2016 | % CHANGE FROM 2009 | % CHANGE FROM 2015 |
|-----------------------------------------------------------------|----------|----------|----------|--------------------|--------------------|
| Manufacturing | \$53,559 | \$83,746 | \$83,697 | 56.3% | -0.1% |
| Real Estate and Rental and Leasing | \$45,368 | \$50,114 | \$51,424 | 13.3% | 2.6% |
| Health Care and Social Assistance | \$33,888 | \$34,721 | \$35,532 | 4.9% | 2.3% |
| Professional, Scientific, and Technical Services | \$25,016 | \$32,788 | \$34,124 | 36.4% | 4.1% |
| Retail Trade | \$25,079 | \$27,449 | \$29,011 | 15.7% | 5.7% |
| Wholesale Trade | \$22,882 | \$27,801 | \$28,614 | 25.1% | 2.9% |
| Finance and Insurance | \$20,830 | \$22,768 | \$23,058 | 10.7% | 1.3% |
| Construction | \$11,900 | \$15,756 | \$16,457 | 38.3% | 4.4% |
| Administrative Support, Waste Management & Remediation Services | \$12,294 | \$14,744 | \$14,467 | 17.7% | -1.9% |
| Information | \$11,054 | \$12,131 | \$12,609 | 14.1% | 3.9% |
| Accommodation and Food Services | \$ 9,057 | \$11,004 | \$11,155 | 23.2% | 1.4% |
| Management of Companies and Enterprises | \$ 7,040 | \$ 9,122 | \$10,045 | 42.7% | 10.1% |
| Transportation and Warehousing | \$ 8,528 | \$ 9,898 | \$ 9,984 | 17.1% | 0.9% |
| Other Services, Except Government | \$ 9,490 | \$ 9,369 | \$ 9,448 | -0.4% | 0.8% |
| Utilities | \$ 7,958 | \$ 7,588 | \$ 8,223 | 3.3% | 8.4% |
| Agriculture, Forestry, Fishing, and Hunting | \$ 2,582 | \$ 2,951 | \$ 3,294 | 27.6% | 11.6% |
| Arts, Entertainment, and Recreation | \$ 3,259 | \$ 2,930 | \$ 3,070 | -5.8% | 4.8% |
| Educational Services | \$ 3,005 | \$ 2,841 | \$ 2,848 | -5.2% | 0.2% |
| Mining, Quarrying, & Oil & Gas Extraction | \$ 1,354 | \$ 2,401 | \$ 2,018 | 49.0% | -16.0% |

Michigan GDP Trends by Industry

OVER THE YEAR

A majority of Michigan's major industry sectors recorded slight gains in total real GDP during 2016. The *Agriculture, forestry, fishing, and hunting* sector experienced the greatest percentage change with an increase of 11.6 percent, while the *Management of companies & enterprises* sector followed closely with a percentage advance of 10.1 percent. The *Retail trade* sector had the largest numeric addition in real GDP dollars, up by \$1.56 billion over the past year. The *Professional, scientific, and technical services* sector followed closely behind, increasing by \$1.34 billion, along with the *Real estate and rental and leasing* sector (+\$1.31 billion).

The *Mining, quarrying, & oil & gas extraction* industry in Michigan experienced a sharp 2016 decrease in its total real GDP, down 16 percent. This reduction was slightly greater than the industry's decline nationally, where *Mining, quarrying, & oil & gas extraction* GDP fell by 13.3 percent. The *Administrative & support & waste management & remediation services* sector was the only additional sector with a notable reduction (-1.9 percent). Real GDP in the critical *Manufacturing* industry was practically unchanged during 2016, however it remained the largest contributor to the state's overall real GDP, measuring \$83.7 billion in 2016. No other major industry comes close in GDP, as Michigan's second largest industry, *Real estate and rental*

leasing, had a real GDP of \$51.4 billion.

SINCE THE GREAT RECESSION

Since the end of the Great Recession in 2009, many of Michigan's major industries have experienced a large change in reported real GDP. The *Manufacturing* sector had the largest percentage increase in real GDP, up 56.3 percent in 2016 from its lowest value in 2009. *Mining, quarrying, & oil & gas extraction* rebounded since 2009 with a 49 percent GDP advance. *Manufacturing* not only recorded the largest percentage increase, but it also had by far the greatest numeric GDP gain as well, up by \$30.1 billion since 2009. The second largest jump in real GDP during this period was in the *Professional, scientific, and technical services* sector, up by \$9.1 billion.

Manufacturing - A Large, Cyclical Industry in Michigan

The *Manufacturing* industry continues to be a key driver of Michigan's economy, yet it is often cited as a highly cyclical industry, meaning it is typically one of the first affected by an economic downturn. This was evident during the Great Recession, and particularly in Michigan. After 2007, at the start of the Great Recession, *Manufacturing* experienced a steep decline in real GDP, falling to its lowest level in 2009 at nearly \$53.6 billion. Average employment dropped significantly during the Great Recession, plunging from its reported 619,800 employed in 2007 to 464,100 in 2009. Since the end of the Great Recession in 2009,

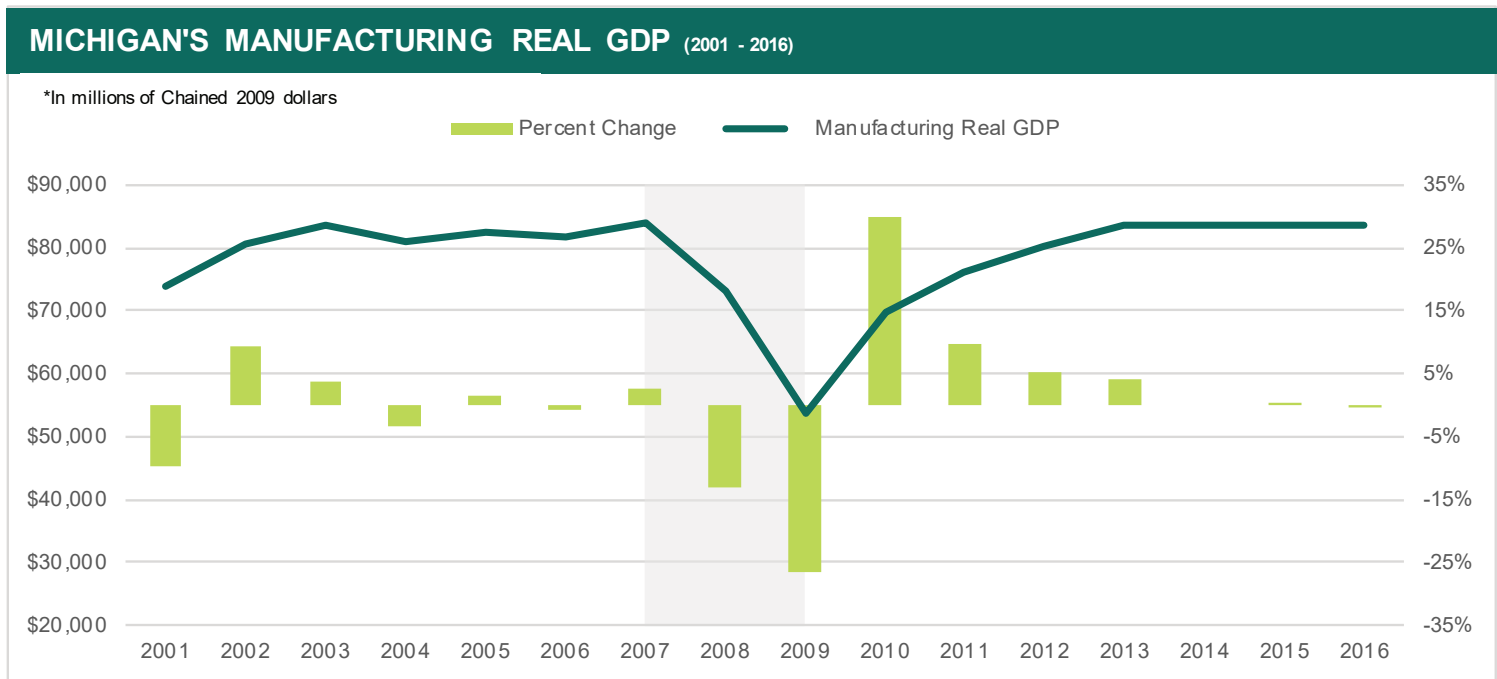
Manufacturing has recovered in many ways, nearly reaching its pre-recessionary real GDP value in 2013, but has yet to fully recover the lost employment incurred during this period. Michigan's *Manufacturing* sector experienced a relatively steady level of real GDP since 2013, accounting for nearly 20 cents of every dollar of GDP in Michigan's economy.

Michigan's *Manufacturing* industry has changed dramatically when comparing average employment between 2001 and 2016. In 2001, Michigan's *Manufacturing* sector employed 820,800 workers, while in 2016, it supplied only 600,000 jobs, registering a 26.9 percent drop in average employment during this span.

The number of firms in the sector has seen a sharp reduction as well, falling from a bit over 17,800 firms in 2001 to about 15,100 firms in 2016. Despite this drastic decrease in employment and the number of firms, Michigan *Manufacturing* has continued to add to its annual output. In 2001, the sector generated a real GDP of \$73.8 billion, but has since increased 13.4 percent by 2016 with a reported real GDP of \$83.7 billion in the sector.

Health Care - A Strong and Stable Industry in Michigan

Not all industries in Michigan experienced significant employment and real GDP cuts during the Great Recession as did *Manufacturing*. Michigan's *Health care and social assistance* sector has consistently been a strong and growing industry within the economy.



Source: Bureau of Economic Analysis

During the Great Recession, the sector was one of the few industries that managed to expand while other industries experienced declines. From the start of the Great Recession in 2007 to the end in 2009, real GDP grew by 4.5 percent within the sector. At the same time, while many other industries registered layoff activity, the *Health care and social assistance* sector managed to record a modest job gain of 2.3 percent between 2007 and 2009.

Between 2001 and 2016, the *Health care and social assistance* sector had a 28.9 percent increase in average annual employment. Real GDP within the sector rose by 25.2 percent, growing from a reported \$28.4 billion in 2001 to \$35.5 billion in 2016.

Other industries that experienced an increase in real GDP and employment between 2007 and 2009 included:

- *Agriculture, forestry, fishing, & hunting* real GDP rose by \$515 million, and average annual employment increased by 1,100.
- *Educational services* real GDP rose by \$9 million, and average annual employment grew by 1,200.

Michigan's *Mining, quarrying, & oil & gas extraction* industry recorded a real GDP gain of \$89 million between 2007 and 2009, but it declined in average annual employment during the same period.

Industries Affected by the Great Recession

The *Professional, scientific & technical services* industry is another major contributor to Michigan's overall output, amounting to \$34.1 billion in real GDP in 2016. Over the last 15 years, this sector has seen job growth of 10.5 percent to the 295,200 employed in 2016. The sector did register its lowest job count in 2009, employing an average of 220,200, but recovered back to its pre-recessionary levels by 2012. Similar to its drop in employment, the sector recorded a cut in real GDP, bottoming out at \$25 billion in 2009. Having recovered in the years since, the *Professional, scientific & technical* sector continues to be a staple of Michigan's economy by accounting for nearly eight percent of total real GDP in the state.

Professional, scientific, & technical services is not the only additional major industry to see a decline in real GDP and average annual employment between 2007 and 2009. Those that experienced some of the largest losses included:

- *Wholesale trade* lost \$4.5 billion, and employment decreased by 15,800.
- *Finance and insurance* declined by \$4.4 billion, and employment fell by 16,200.
- *Construction* decreased by nearly \$4.2 billion, and employment dropped by 38,600.

Michigan's Metropolitan Statistical Areas (MSAs)

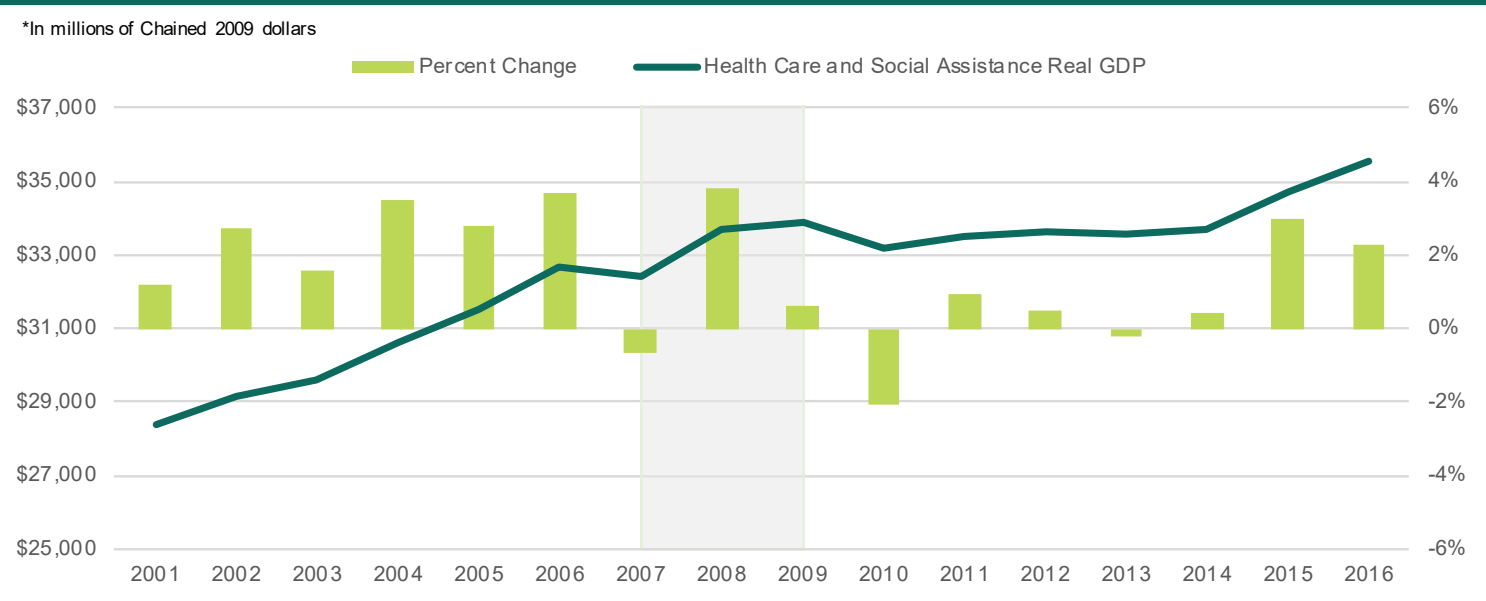
In 2016, the Detroit-Warren-Dearborn MSA generated a reported real GDP of \$223.8 billion, making it the largest contributor to Michigan's total real GDP. The Ann Arbor MSA has the second largest output of \$19.5 billion, which was similar to the Lansing-East Lansing MSA (\$19.4 billion). Of Michigan's 14 MSAs, the Bay City MSA had the lowest real GDP of \$2.9 billion.

A majority of Michigan's MSAs experienced an increase in their annual real GDP during 2016. The Lansing-East Lansing MSA experienced the greatest percentage advance of 4.0 percent with the Midland MSA following closely behind at 3.4 percent. Only three of Michigan's MSAs experienced a slight drop in real GDP, led by the Bay City MSA (-0.5 percent). Both the Monroe and Niles-Benton Harbor metro area's output decreased by 0.3 and 0.2 percent, respectively. The increase in the Lansing-East Lansing MSA GDP can be attributed to:

- a 14 percent increase in real GDP in its *Real estate and rental and leasing* sector.
- a 7.2 percent addition in the *Transportation and warehousing* sector.
- a 5.6 percent gain in the *Retail trade* sector.

The leading reasons for Midland's increase in real GDP was due to:

MICHIGAN'S HEALTHCARE AND SOCIAL ASSISTANCE REAL GDP (2001 - 2016)



Source: Bureau of Economic Analysis

MICHIGAN REAL GDP BY METROPOLITAN AREA (MILLIONS)

| AREA | 2009 | 2015 | 2016 | % CHANGE FROM 2009 | % CHANGE FROM 2015 |
|-----------------------------|-----------|-----------|-----------|--------------------|--------------------|
| Detroit-Warren-Dearborn, MI | \$185,535 | \$219,200 | \$223,835 | 20.6% | 2.1% |
| Grand Rapids-Wyoming, MI | \$39,924 | \$50,413 | \$51,589 | 29.2% | 2.3% |
| Ann Arbor, MI | \$18,617 | \$19,369 | \$19,508 | 4.8% | 0.7% |
| Lansing-East Lansing, MI | \$17,846 | \$18,625 | \$19,375 | 8.6% | 4.0% |
| Kalamazoo-Portage, MI | \$12,796 | \$13,954 | \$14,152 | 10.6% | 1.4% |
| Flint, MI | \$11,048 | \$12,002 | \$12,279 | 11.1% | 2.3% |
| Saginaw, MI | \$6,586 | \$7,159 | \$7,302 | 10.9% | 2.0% |
| Niles-Benton Harbor, MI | \$5,664 | \$6,007 | \$5,996 | 5.9% | -0.2% |
| Jackson, MI | \$4,713 | \$5,395 | \$5,464 | 15.9% | 1.3% |
| Battle Creek, MI | \$4,944 | \$5,224 | \$5,240 | 6.0% | 0.3% |
| Muskegon, MI | \$4,509 | \$5,138 | \$5,146 | 14.1% | 0.2% |
| Midland, MI | \$3,701 | \$4,548 | \$4,701 | 27.0% | 3.4% |
| Monroe, MI | \$3,703 | \$4,227 | \$4,213 | 13.8% | -0.3% |
| Bay City, MI | \$2,958 | \$2,882 | \$2,869 | -3.0% | -0.5% |

Source: Bureau of Economic Analysis

- a 23.5 percent rise in real GDP in the *Real estate and rental and leasing* sector.
- a 8.9 percent advance in the *Management of companies & enterprises* sector.

The Detroit-Warren-Dearborn MSA has continued to be by far the largest annual source of real GDP in the Michigan economy. In 2016, the industry sectors that were the greatest contributors to the Detroit-Warren-Dearborn MSA included *Manufacturing* (\$40.7 billion), *Real estate and rental and leasing* (\$30.3 billion), *Health care and social assistance* (\$17.5 billion), and *Wholesale trade* (\$17.1 billion).

The Detroit-Warren-Dearborn MSA employed more than 1.7 million workers on average in 2016, with over 14 percent of total employment concentrated in the *Manufacturing* sector. Illustrating the resilience of the *Manufacturing* sector in the Detroit-Warren-Dearborn MSA, real GDP has increased by 16.6 percent despite a massive 32.8 percent plunge in employment from 2001 to 2016. This was accomplished by significant investments in technology and workforce skills to boost productivity in this sector.

A majority of Michigan's 14 MSAs have added to real GDP since the recession lows of 2009. Only in the Bay City MSA has the nominal GDP gain since 2009 not kept pace with inflation. The Midland MSA had a large increase in real GDP of 27 percent, while the Grand Rapids MSA experienced an even larger jump of 29.2 percent during this same period. Despite this rebound, only half of Michigan's metro areas have surpassed pre-recessionary levels of real GDP.

Real GDP Comparisons with Other States

With a significant portion of Michigan's total real GDP coming from the *Manufacturing* sector, it is important to note that Michigan is the 7th highest contributor to the United States *Manufacturing* total real GDP. In 2016, 19.3 percent of Michigan's real GDP was produced in the *Manufacturing* sector, largely driven by the state's *Transportation equipment manufacturing* industry. This was exceeded only by Indiana (28.4 percent), Oregon (24 percent), Louisiana (20.1 percent), and North Carolina (19.4 percent). Similar to Michigan, Indiana's *Manufacturing* industry is largely driven by *Transportation equipment manufacturing*. *Computer and electronic component manufacturing* is one of Oregon's largest sources of industrial output, while *Chemical manufacturing* is one of North Carolina's largest contributors to the sector.

At a more regional level, when comparing Michigan's bordering states, Michigan had the second highest total real GDP (\$433.5 billion), behind only Ohio (\$553.2 billion). Ohio's largest contributors to its overall real GDP mirrored Michigan's: *Manufacturing* (\$92.6 billion), *Real estate and rental and leasing* (\$61.2 billion), and *Health care and social assistance* (\$46.6 billion). Indiana's most valuable industries included *Manufacturing* (\$86.6 billion), *Real estate and rental and leasing* (\$29.6 billion), and *Health care and social assistance* (\$24.4 billion). Wisconsin's largest GDP sectors were also *Manufacturing* (\$49.6 billion), *Real estate and rental and leasing* (\$34 billion), and *Health care and social*

assistance (\$23.8 billion).

Indiana experienced a slightly larger increase in real GDP during 2016 of 2.5 percent compared to Michigan's 2.2 percent. Indiana's notable gain in its real GDP could be largely attributed to a \$1.3 billion advance in its *Manufacturing* industry, as well as a \$1.24 billion addition in *Retail trade*. Ohio and Wisconsin had very similar 2016 output gains of 1.1 and 1.3 percent, respectively.

Conclusion

Michigan's economy has experienced major changes in its real GDP trends over the last 15 years. These changes can be seen clearly in its regions, industries, and the state as a whole. In recent years, Michigan has continued to add jobs and output as the state steadily recovered from the Great Recession. This continued growth was due to the resilience of many of Michigan's industries, which have prospered despite challenging economic conditions.

DYLAN SCHAFFER
Economic Analyst

INDUSTRY FOCUS:

MANUFACTURING

As noted in our feature article, the *Manufacturing* sector in Michigan plays a major role in the state's economy, with the industry recovering nearly all of its pre-recessionary GDP value. This sector consists of establishments engaged in the mechanical, physical, or chemical transformation of materials, substances, or components into new products.

A significant number of *Manufacturing* jobs are in large factories and plants. However, small manufacturers that offer specialized and personalized products that larger manufacturers cannot make are also an integral part of the sector. *Manufacturing* establishments may process materials or may contract with other establishments to process their materials for them.

- In 2017, jobs in *Manufacturing* in Michigan

reached 604,300, an increase of 4,100 or nearly one percent over year ago levels.

- Three quarters of jobs in the sector are in *Durable goods manufacturing* (products that are expected to last more than three years).
- Between 2001 and 2017, average *Manufacturing* employment plunged by nearly 28 percent (-207,100 jobs). However, since the lows of the Great Recession in 2009, total employment in the *Manufacturing* industry has recovered and advanced by 149,400 jobs, or 32 percent, over the last eight years.
- Short-term industry employment projections for Michigan indicate that the *Manufacturing* industry will edge up by

5,440 jobs, or 0.9 percent between the second quarters of 2016 and 2018.

- Long-term industry employment projections indicate that between 2014 and 2024, jobs in Michigan's *Manufacturing* industry will increase by 6.2 percent, amounting to an additional 35,090 positions. Job expansion in the sector will be below the 7.4 percent expected growth rate of all Michigan industries.
- In 2016, Michigan's occupational median wage for all *Manufacturing* workers stood at \$40,640 per year, or \$18.54 per hour.

JIM ASTALOS
Economic Analyst

Over 35,000 jobs are projected to be added to the state's *Manufacturing* sector between 2014 and 2024.

PROJECTED MICHIGAN JOB GROWTH 2014-2024

MANUFACTURING

+6.2%

ALL INDUSTRIES

+7.4%

MICHIGAN QUICK FACTS: MANUFACTURING

| | |
|----------------------------------------------------|------------------------------------------------------------|
| Total, Michigan Payroll Jobs - 2017 | 4,393,600 |
| Manufacturing Jobs - 2017 | 604,300 |
| Durable Goods Manufacturing Jobs - 2017 | 456,300 |
| Transportation Equipment Manufacturing Jobs - 2017 | 179,800 |
| Nondurable Goods Manufacturing Jobs - 2017 | 148,000 |
| Manufacturing Projected Job Change - 2016 - 2018 | +5,440 (+0.9%) |
| Manufacturing Projected Job Change - 2014 - 2024 | +35,090 (+6.2%) |
| Manufacturing – All Occupations Median Wage - 2016 | \$40,640 per year \$18.54 per hour |
| Manufacturing – All Occupations Wage Range - 2016 | \$23,050 - \$89,130 per year \$11.08 - \$42.88 per hour |

SEASONAL GROWTH IN MICHIGAN JOB ADS

Michigan saw sizeable gains in seasonally adjusted online job advertisements from November to December according to the Conference Board's Help Wanted Online Data Series. With holiday hiring continuing and a strong job market, ads went up by 6.8 percent, (+10,513) from the previous month.

The Michigan monthly gain exceeded the rate of change nationally (+4.9 percent). Other regional states were also in positive figures for seasonally adjusted ad growth. Michigan's growth rate lagged behind Illinois and Indiana (+7.7 percent), but exceeded Ohio and Wisconsin, averaging lower expansion of 3.7 percent.

Michigan's Ad Rate Moves Up

The number of job ads per 100 labor force participants, also referred to as the ad rate, jumped to 3.4 from 3.18 the month prior. The higher rate was an indication that the number of job ads grew more than the number of people entering the labor force. The advance in Michigan's ad rate was greater than the gain in the national rate from 2.93 to 3.07.

The supply/demand rate, or the number of

unemployed persons per job advertisement, edged down slightly in December to 1.35 from a rate of 1.44 in November. The declining ratio resulted from seasonally adjusted job ads rising more than the number of unemployed. All of Michigan's regional states also saw supply/demand rate reductions in December.

Non-Seasonally Adjusted Ads

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

Ten of the 14 Michigan MSAs had a drop in job ads with an average loss of 6.7 percent. The largest declines came from Monroe and Midland at 10.3 and 10.4 percent respectively. The Battle Creek MSA had the largest rise in job ads by far with an increase of 12.4 percent or 272 new ads. A non-seasonally adjusted reduction in job ads is typical in December, but the 2017 decrease was less than previous years for many occupational categories.

The number of non-seasonally adjusted total new ads and total available ads dropped in both categories from the previous month.

Among total available advertisements, ads fell 6.1 percent in December. All but one major occupational category saw a reduction in ads. *Professional* jobs had a gain of 650 available advertisements while the remaining occupational categories dropped by an average of 1,200. Among total new ads, Michigan had close to an 18 percent reduction in December. Every major occupational category had a reduction of new ads.

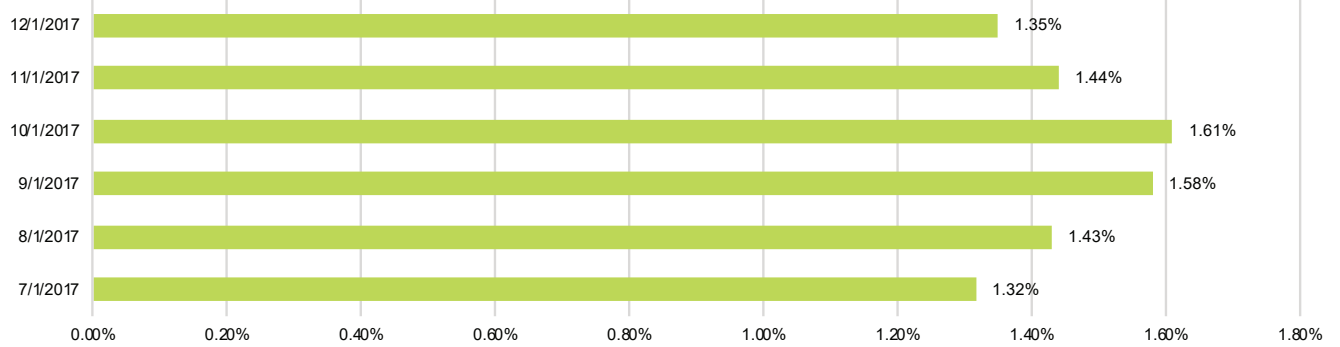
Of Michigan's job ads for December, over a third were less than 30 days old accounting for almost 54,000 ads. Roughly 27 percent of ads were 30 to 59 days old and 18.5 percent were 120 days old or more. Among advertisements by job type, a large majority were for full-time positions. Close to 78 percent of ads were for full-time employment with 17 percent for part-time work. Contract work and internships accounted for the remaining advertisements.

MARCUS REASON

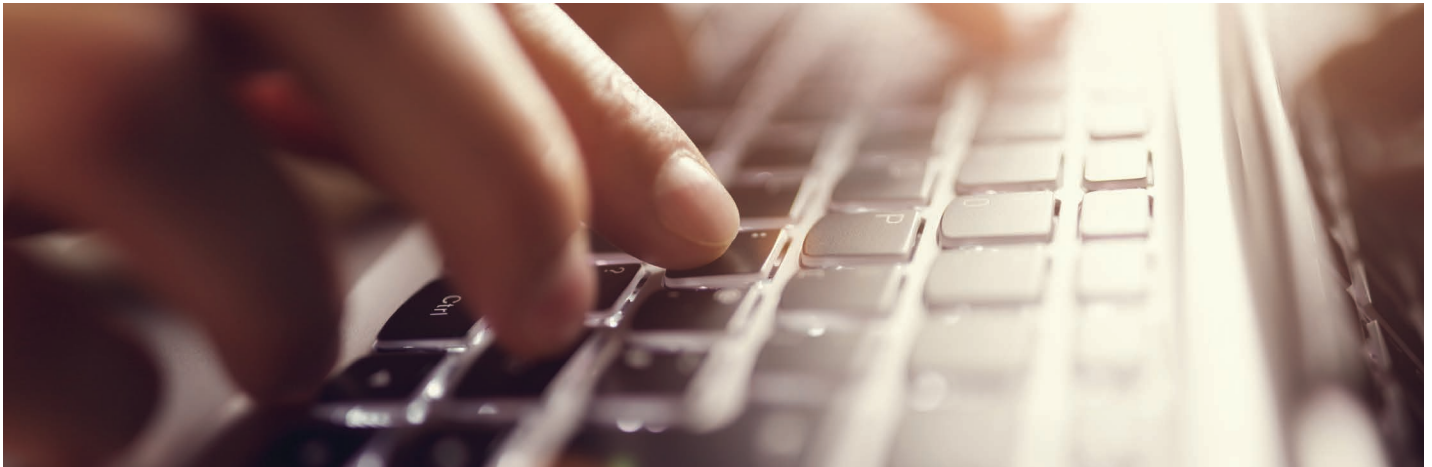
Economic Analyst



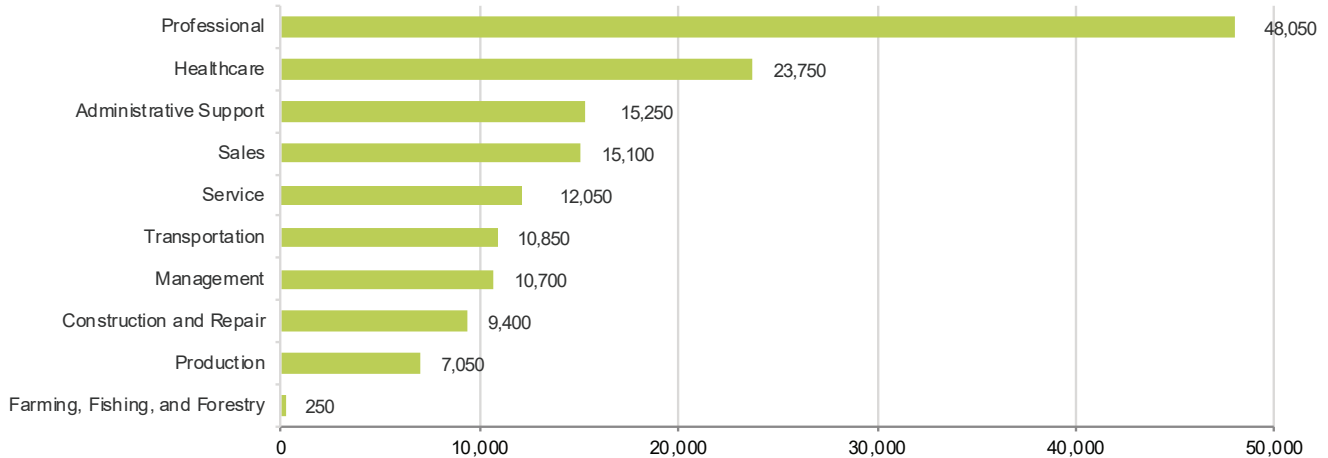
MICHIGAN SUPPLY / DEMAND RATE



Source: The Conference Board, Help Wanted Online® (HWOL)



TOTAL AVAILABLE ADS - DECEMBER 2017 (NOT SEASONALLY ADJUSTED)



Source: The Conference Board, Help Wanted Online® (HWOL)

RELEVANT RANKINGS

| REAL GROSS DOMESTIC PRODUCT BY STATE (2009 - 2016) (MILLIONS) | | |
|---------------------------------------------------------------|-------------|----------------------------|
| | 2016 LEVEL | PERCENT CHANGE 2009 - 2016 |
| 1 North Dakota | \$48,612 | 50% |
| 2 Texas | \$1,480,304 | 27% |
| 3 California | \$2,320,345 | 21% |
| 4 Oklahoma | \$174,033 | 21% |
| 5 Utah | \$136,979 | 21% |
| 7 Michigan | \$433,521 | 19% |
| 23 Florida | \$814,309 | 13% |
| 24 South Dakota | \$41,375 | 13% |
| 25 Idaho | \$60,687 | 13% |
| 26 Maryland | \$337,345 | 12% |
| 27 New York | \$1,279,691 | 11% |
| 46 Mississippi | \$95,944 | 2% |
| 47 Louisiana | \$208,105 | -1% |
| 48 Connecticut | \$227,592 | -3% |
| 49 Wyoming | \$35,133 | -5% |
| 50 Alaska | \$46,975 | -7% |

Source: Bureau of Economic Analysis

REAL GROSS DOMESTIC PRODUCT BY METRO AREA (2009 - 2016) (MILLIONS)

| | 2016 LEVEL | PERCENT CHANGE 2009 - 2016 |
|-----------------------------|------------|----------------------------|
| Grand Rapids-Wyoming MSA | \$51,589 | 29.2% |
| Midland MSA | \$4,701 | 27.0% |
| Detroit-Warren-Dearborn MSA | \$223,835 | 20.6% |
| Jackson MSA | \$5,464 | 15.9% |
| Muskegon MSA | \$5,146 | 14.1% |
| Monroe MSA | \$4,213 | 13.8% |
| Flint MSA | \$12,279 | 11.1% |
| Saginaw MSA | \$7,302 | 10.9% |
| Kalamazoo-Portage MSA | \$14,152 | 10.6% |
| Lansing-East Lansing MSA | \$19,375 | 8.6% |
| Battle Creek MSA | \$5,240 | 6.0% |
| Niles-Benton Harbor MSA | \$5,996 | 5.9% |
| Ann Arbor MSA | \$19,508 | 4.8% |
| Bay City MSA | \$2,869 | -3.0% |

Source: Bureau of Economic Analysis



ASK THE ECONOMIST

Q: Gross Domestic Product, or GDP, is widely used by policymakers and businesses to better understand the economy. Where can I find more information on what kinds of GDP data are available, how they are calculated, and how I might use this information?

A: Gross Domestic Product is produced by the Bureau of Economic Analysis (BEA)...

Gross Domestic Product (GDP) is a widely recognized measure of production and defined as the market value of all goods and services produced in a particular period of time. The BEA produces GDP estimates at the national, international, and regional levels, as well as by industry. At the regional level, GDP estimates are available by state and metropolitan areas. As you may have guessed by the term “current-dollar,” these data are often expressed in today’s dollars, not accounting for any type of inflationary impact that comes as a result of increasing prices of goods and services over time.

But there are times when current-dollar (or nominal) GDP doesn’t tell the whole story. The BEA also produces another widely-recognized type of GDP measure that takes into account the fact that, in the real world, prices for products change over time. Real GDP is an inflation-adjusted measure of each state’s gross product, based on the national prices of the goods and services produced. By applying national chain-weighted price deflators to current-dollar GDP based on prices and quantities of adjacent years, this allows prices to adjust based on inflation or deflation in the economy.

But even when accounting for inflation, a total GDP number may not tell the whole story. How could small states compare to bigger states? How might Michigan’s GDP compare to the U.S. as a whole? Real GDP per capita is one measure that can help “normalize” these data by allowing a direct comparison between the living standards and the economic well-being between other states and the nation as a whole. At a very basic level, this is simply the GDP of a given area divided by the resident population of the area. In short, GDP per capita is an area’s economic output per person, which can help users compare relative standards of living across economies of various sizes.

Is GDP data available for my area?

The BEA publishes statistics at the national, international, and regional levels, as well as by industry. Annual and quarterly statistics of current-dollar and real GDP are produced for all states. These estimates also include GDP by state for all major industries. The BEA publishes real GDP per capita annually as well. Some additional data provided by the BEA includes compensation of employees by industry, gross operating surplus, and contributions to percent

change in real GDP.

Sometimes, however, state and regional data are simply not helpful to users who may be looking for more localized information. In 2007, the BEA first began producing GDP statistics on an annual basis for metropolitan areas. Statistics are published annually for current-dollar and real GDP and real GDP per capita. GDP is available by metropolitan area in current-dollar, real GDP, and quantity indexes for 61 NAICS subsectors and 24 NAICS sectors.

The BEA does not publicly release estimates of GDP by county. According to the BEA, when computing GDP by metropolitan area, GDP by county is estimated as an intermediate step, but it is not considered a final estimate and there are a number of reasons why most of these data can’t be released as standalone statistics. However, for Michigan’s 83 counties, the BEA does provide some limited data at the county level. This includes per capita personal income, personal income, and components of personal income, which include net earnings, dividends, interest, and rent, and personal current transfer receipts. Each of these county-level data sets contribute to the calculation of total GDP.

How might a better understanding of GDP and how it is measured be useful to me?

Acting as a measure of an economy’s total output of its goods and services, GDP is useful in the monitoring of productivity, economic activity, and performance. Many of the statistics involved in calculating GDP help data users learn more about the consumption of goods, levels of investment, government spending, and the value of exported products and services. It is these statistics that allow all levels of government, business, and the American public to make informed decisions on hiring and investing, interest rates and trade policies, and more.

A general understanding of different types of GDP and how they are calculated and measured can benefit data users. Suppose, for example, as an economic development professional, you are asked by your organizational leadership (or perhaps local policy makers) to explain why the current-dollar GDP for your metro area increased in the past few years when other economic indicators fail to strongly support a corresponding increase in regional business activity. Because you understand the difference between current-

dollar and real GDP, you decide to take a look at real GDP, which shows little overall change during the time period in question, and confirms that inflation was the main culprit behind the rise in current-dollar GDP.

Below are two useful links with more information on GDP data, including detailed methodology at various levels of geography and an interactive data application for accessing and downloading these data.

[The Bureau of Economic Analysis \(BEA\)](https://www.bea.gov/)

<https://www.bea.gov/>

Provides access to the most up-to-date news, publications, and methodology on GDP at the national, international, regional, and industry level.

[The Bureau of Economic Analysis Interactive Data Application](https://www.bea.gov/itable/)

<https://www.bea.gov/itable/>

The interactive data application is a useful tool that allows easy access to all statistics provided by the BEA. The application allows you to navigate between the many data sets, of which you can print, save and export.

DYLAN SCHAFFER
Economic Analyst



STATE OF MICHIGAN

Department of Technology, Management & Budget

Bureau of Labor Market Information and Strategic Initiatives

Detroit Office

Cadillac Place
3032 West Grand Boulevard
Suite 9-150
Detroit, Michigan 48202
(313) 456-3100

Lansing Office

Victor Office Building, Floor 5
201 North Washington Square
Lansing, Michigan 48933
(517) 335-2472

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