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Department of Energy, Labor & Economic Growth  
Bureau of Labor Market Information & Strategic Initiatives

# Michigan Economic and Workforce Indicators

## Preface

The recent national recession has altered the economic and workforce landscape for years to come with economists forecasting a long and slow recovery. In Michigan, the impact has been longer and deeper than in other areas of the country, especially in the manufacturing, construction and business service industries. Nationally the recession ended in June of 2009, however many in Michigan wonder if the state's economy has hit bottom or turned the corner after a decade of economic turmoil.

In this edition of *Michigan Economic and Workforce Indicators*, we've taken a look at the Great Recession and its effect on the Michigan economy and workforce. This edition includes information from a relatively new data series, Online Advertised Job Vacancies, a workforce demand report that's created by scraping over 1,500 job boards from across the nation to provide a monthly measure of labor demand by state. In addition, we've profiled the dynamic Temporary Help industry, evaluating its part in the evolving labor market as temporary help becomes more diversified in industries, occupations and skill levels.

These indicators, along with many additional measures of labor market information, offer a window into Michigan's changing economy and workforce. Our intent is to help guide decisions, measure progress and provide a basis for maintaining Michigan as a leader.

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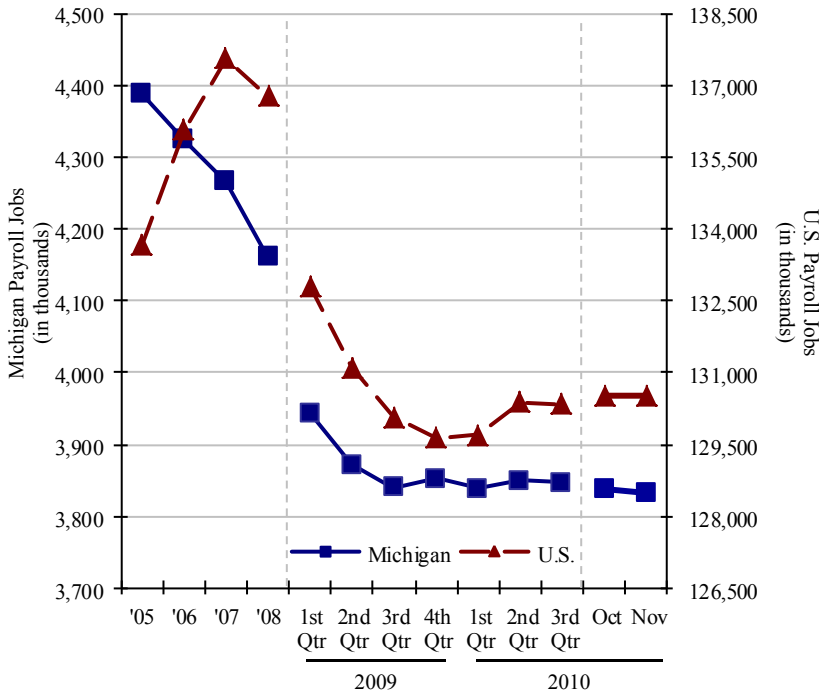
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# Michigan Job Trends

## Nonfarm Payroll Jobs

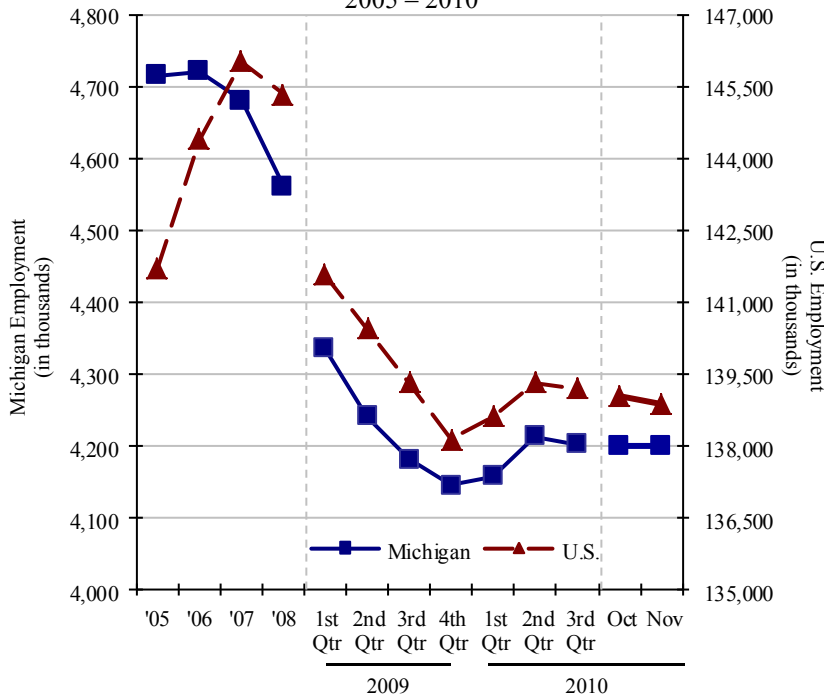
Michigan vs. U.S. Total Payroll Jobs  
2005 – 2010



Source: U.S. Bureau of Labor Statistics / DELEG

## Household Employment

Michigan vs. U.S. Total Household Employment  
2005 – 2010

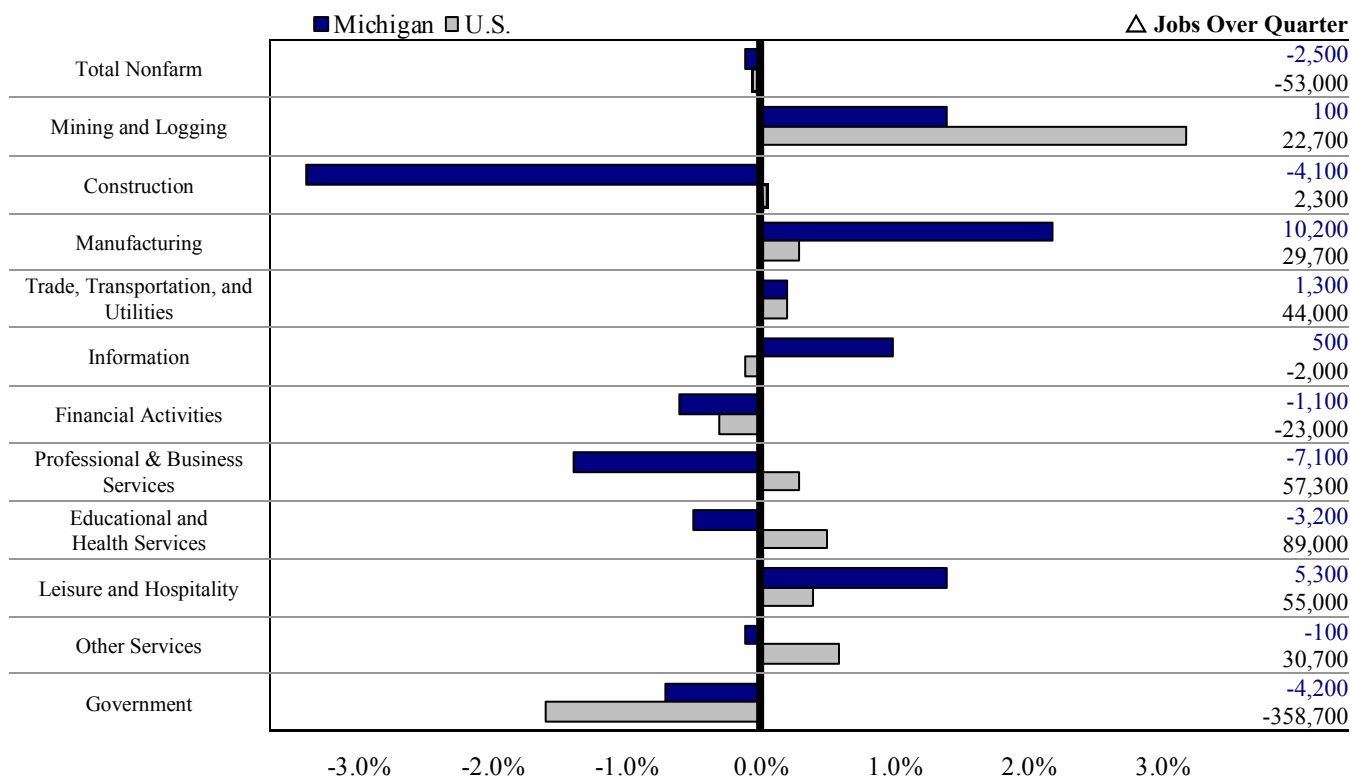


Source: U.S. Bureau of Labor Statistics / DELEG

- There are two government surveys that measure the state of the labor market. Both surveys show the end of rapid job losses and evidence of a very slow employment recovery since the official end of the recent recession (June 2009).
- The *nonfarm payroll or establishment* survey measures the total number of jobs supplied by establishments in the state and its metro areas. This survey excludes the self-employed and agriculture.
- For the Michigan economy, the period between June 2009 and November 2010 records a time of stabilization with the automotive industry recovering from bankruptcy. The restructured industry is now operating at reduced production and employment levels with the closure of several plants. Therefore, a full recovery to pre-bankruptcy job levels is not likely in the short run. The steep job losses from December 2007 to June 2009 (- 414,200) contrast with no job change from June 2009 to November 2010. Nonfarm payroll jobs are currently 10 percent below the December 2007 level.
- In November 2010, Michigan ranked 4<sup>th</sup> nationally in over-the-year job reductions among states (-19,200) and 7<sup>th</sup> in over-the-year percent job loss (-0.5 percent).
- Nationally, the steep job losses from December 2007 to June 2009 (- 7.3 million) stabilized to a reduction of just 101,000 jobs from June 2009 to November 2010. Nonfarm jobs are currently 5.4 percent below December 2007 levels.
- The *household survey* measures the number of Michigan residents who are employed. This survey is more comprehensive than the payroll survey, including all segments of employment including the self-employed.
- Michigan household employment reductions were substantial during the first half of 2009, with average monthly job cuts of over 30,000. Employment continued to fall in the second half of the year, but at a more modest pace.
- The first indications that employment trends in Michigan might finally show stabilization occurred during the first five months of 2010, as employment levels rose from January-May by a monthly average of 17,000. However, the second half of 2010 has not maintained this upward trend, as employment levels in Michigan remained essentially flat from July-November.
- Nationally, household employment fell in 2009 by 3.8 percent, about half the pace of the Michigan decline. However, from December 2009-November 2010, Michigan employment growth of 1.6 percent was double the U.S. advance of 0.8 percent.

## Payroll Jobs by Industry Sector

Michigan vs. U.S.  
Percent change, 2nd Quarter 2010 – 3rd Quarter 2010  
(Seasonally Adjusted)

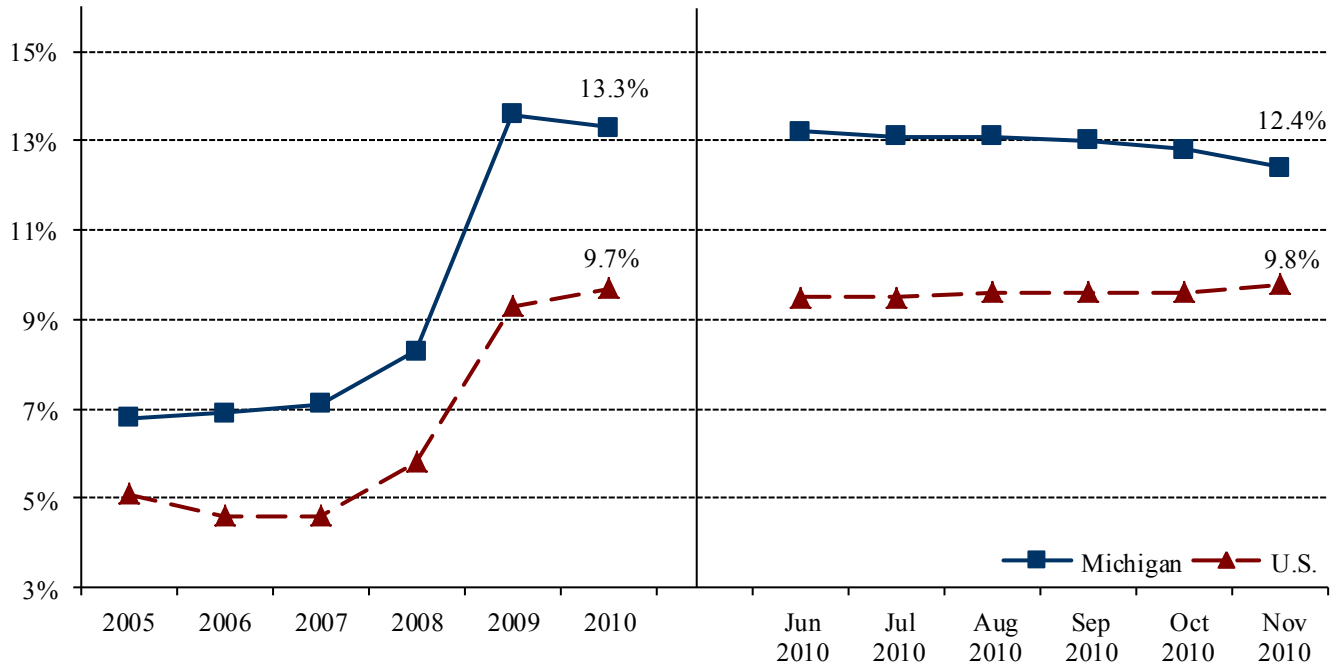


Source: U.S. Bureau of Labor Statistics / DELEG

- Total nonfarm jobs stabilized but remained weak in the third quarter 2010 in both Michigan and the U.S.. Between the second and third quarters of 2010, Michigan jobs edged down by 0.1 percent while nationally jobs were also flat. This is an improvement over the same time period in 2009 when both Michigan and the nation lost 0.8 percent of their payrolls.
- Over the year (3rd quarter 2009 to 3rd quarter 2010), private sector jobs in Michigan rose by 0.5 percent, with the goods producing sector gaining strength (+1.2 percent) and the private services sector showing modest gains (+0.4 percent). Government was a drag on the economy (-1.6 percent). Nationally, private sector payrolls expanded by 0.3 percent, with private service jobs growing by 0.6 percent. The goods producing sector remained weak (-1.1 percent) and government jobs contracted by -0.5 percent.
- The third quarter 2010 marked a modest recovery in the Manufacturing sector in Michigan (+2.2 percent) with transportation equipment manufacturing accounting for half of this gain. Nationally, Manufacturing showed weaker growth (+0.3 percent) in the third quarter with jobs in motor vehicle and parts accounting for 30 percent of the gains.
- In the private services sector, Administrative & Waste services (which includes the temporary help industry) has led the recovery nationally, expanding by 5.5 percent (+390,000 jobs) above 3rd quarter 2009 levels. In Michigan jobs in this sector rose by 7.6 percent (+17,400) over the same period. The outsourcing of certain local government education related jobs to the temporary help sector in Michigan caused 3rd quarter job trends in the sector to reflect the school calendar year. Leisure & Hospitality showed modest gains in the 3rd quarter in Michigan and nationally, with accommodation & food services growing by 1.1 percent over the year in Michigan.
- In September 2010, NBER announced the end of the national recession in June 2009. For Michigan, the second quarter 2009 marked a period of crisis for the automotive industry and the subsequent emergence of the New Chrysler and New GM. Since then the Michigan economy has embarked on a slow and cautious recovery following the sluggish growth of the national economy. Growth in GDP has averaged 2.9 percent since the end of the recession, less than half the average gain following other severe post-war recessions. Historically, sales of vehicles, which are critical to the Michigan economy, do not increase if the GDP annual growth is less than 3 percent. Low levels of household formations and consumer confidence with consumers reducing debt levels and rebalancing their finances have greatly impacted consumer spending. Economic uncertainty has led to cautious hiring by businesses at this point in the recovery.

# Unemployment Rates

Average Annual & Monthly Jobless Rates, Michigan and U.S.



(2010 jobless rate data above reflect January — November averages)

Source: U.S. Bureau of Labor Statistics / DELEG

- Unemployment rates in Michigan and the U.S. in late 2010 remain at historically high levels. Michigan’s 2010 jobless rate has ranked in the top three states nationally. The state jobless rate will likely average 13.3 percent during 2010, down slightly from 2009, but much higher than 2008 levels. The U.S. unemployment rate hit 9.8 percent in November 2010, and has about doubled since early 2008.
- In Michigan, jobless rates accelerated at an unprecedented pace in the first half of 2009, jumping by nearly 5.0 percentage points in just nine months from September 2008 to June 2009. This was by far the fastest nine-month rise in unemployment in Michigan in at least 40 years.
- Over the past year, however, Michigan’s unemployment rate has recorded a noticeable decline, falling by two full percentage points from 14.4 percent in November 2009 to 12.4 percent in November 2010. The improved financial health of the auto industry in Michigan was a major factor in this reduction. The state workforce has also declined during 2010, which limits potential increases in the jobless rate. The national jobless rate, in contrast, edged down by only 0.2 percentage points over this period.
- The gap between the Michigan and U.S. jobless rates has narrowed in recent quarters, from 4.6 percentage points in the 3rd quarter 2009 to 3.5 percentage points one year later. The University of Michigan RSQE November 2010 forecast anticipates a slow reduction in Michigan’s high rates of unemployment, with average rates of 12.4 percent in 2011 and 11.5 percent in 2012.

Jobless Rates By Quarter

Month	Michigan	U.S.	Gap
July	13.1	9.5	3.6
August	13.1	9.6	3.5
September	13.0	9.6	3.4
<b>3rd Quarter 2010</b>	<b>13.1</b>	<b>9.6</b>	<b>3.5</b>
April	14.0	9.9	4.1
May	13.6	9.7	3.9
June	13.2	9.5	3.7
<b>2nd Quarter 2010</b>	<b>13.6</b>	<b>9.7</b>	<b>3.9</b>
July	14.2	9.4	4.8
August	14.3	9.7	4.6
September	14.4	9.8	4.6
<b>3rd Quarter 2009</b>	<b>14.3</b>	<b>9.7</b>	<b>4.6</b>

Quarterly Rate Movements

	Michigan	U.S.
3rd Quarter 2010 Average Rate	13.1	9.6
Change Since Prior Quarter	-0.5	-0.1
Change Since 3rd Quarter 2009	-1.2	-0.1

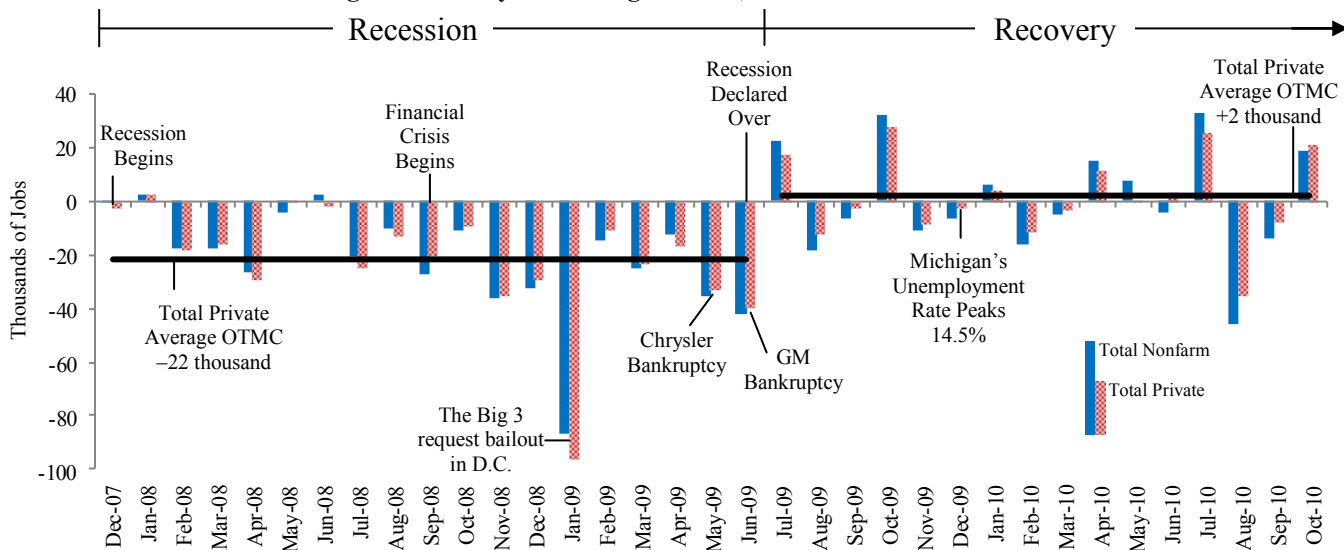
Source: U.S. Bureau of Labor Statistics / DELEG

# Michigan's Great Recession and Recovery

According to the National Bureau of Economic Research, the national recession that began in December 2007 officially ended in June 2009. The duration of this recession at 18 months makes it the longest since the 43 months of the Great Depression.

Michigan lost 414,200 jobs (9.8 percent) during this recession, giving it the third largest percentage of jobs lost nationally. Michigan's unemployment rate remained the highest in the nation, going from 7.1 to 13.9 percent. Every major industry sector except Education and Health Services lost jobs, with Manufacturing and Professional and Business Services producing the greatest job loss.

**Michigan's Monthly Net Change in Jobs, December 2007 — October 2010**



Source: U.S. Bureau of Labor Statistics / DELEG

- The Financial Crisis of September 2008 accelerated job losses in Michigan's already battered economy. The tightening of credit hindered both automobile sales and home building, leading to some of the largest job declines in Construction and Manufacturing that the state has recorded.
- Michigan's unemployment rate peaked at 14.5 percent in December 2009, but has declined steadily throughout 2010.
- Total post-recession nonfarm employment in Michigan and the U.S. has been essentially flat. Both show less than a 0.1 percent job loss from June 2009 to November 2010.

**Michigan Jobs by Industry: Recession Dec. 2007 — June 2009**

Industry	Start Dec-07	End Jun-09	Job Change	% Change
Total Nonfarm	4246.2	3832.0	-414.2	-9.8%
Mining & Logging	7.6	6.8	-0.8	-10.5%
Construction	162.7	124.5	-38.2	-23.5%
Manufacturing	606.1	434.1	-172.0	-28.4%
Trade, Trans, and Utilities	784.1	716.8	-67.3	-8.6%
Information	61.6	56.0	-5.6	-9.1%
Financial Activities	206.8	191.0	-15.8	-7.6%
Professional & Business Services	581.4	497.7	-83.7	-14.4%
Education & Health Services	603.4	611.1	7.7	1.3%
Leisure & Hospitality	405.6	378.6	-27.0	-6.7%
Other Services	176.9	168.7	-8.2	-4.6%
Government	650.0	646.7	-3.3	-0.5%

Source: U.S. Bureau of Labor Statistics / DELEG

## Comparisons to Previous Recessions

Year	Michigan Annual Average Unemployment Rate	Percentage of Michigan's Unemployed, Out of Work for 27 Weeks or More
1981	12.5	26.0
1982	15.6	25.3
1983	14.6	32.5
2008	8.3	28.2
2009	13.6	40.8
2010	13.3*	50.3**

\*Average year to date through November

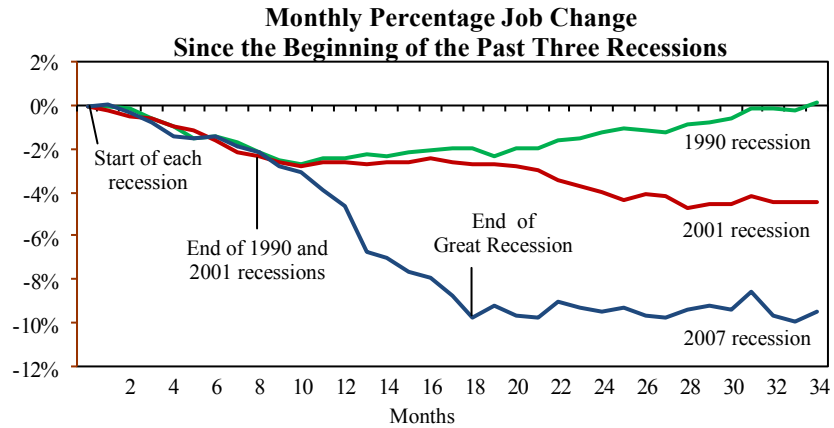
\*\*December 2009 — November 2010 average

Source: U.S. Bureau of Labor Statistics / DELEG

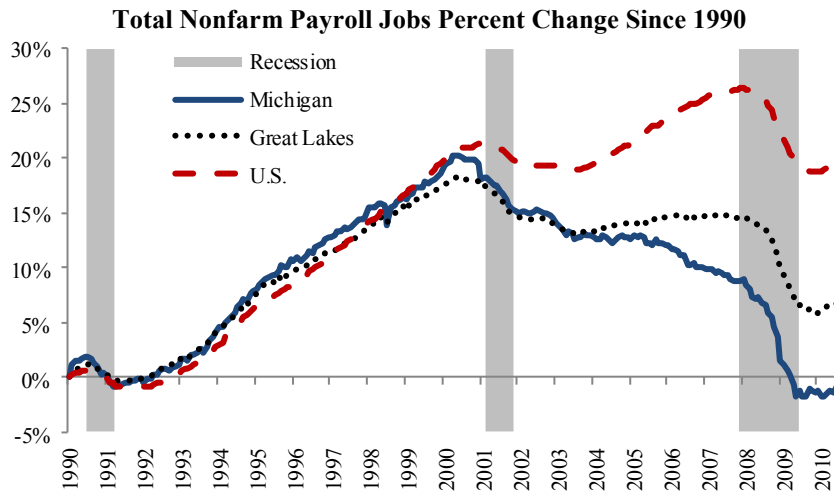
- Prior to the Great Recession, the longest post WWII recession began in 1981 and lasted for 16 months. Michigan's payroll employment decreased 5.2 percent and the unemployment rate peaked at 16.7 percent during that period.
- Michigan's labor force has been hit especially hard in the recent recession because of the duration of unemployment. Even though Michigan's unemployment rate did not exceed the peaks of the early 1980's recession, the percentage of unemployed people looking for work for 27 or more weeks was significantly higher.
- The percentage of long term unemployed, defined as 27 weeks or more, has climbed to above 50 percent through 2010 justifying the term "jobless recovery".

# Michigan's Great Recession and Recovery

- This Great Recession was twice as long, and almost four times as many jobs were lost compared to the previous two recessions of 1990 and 2001.
- It took 33 months to recover all of the jobs lost in the 1990 recession. During this decade, employment has not returned to the previous high reached prior to the 2001 recession.
- Although the 2001 recession lasted only 9 months nationally, Michigan's economy never recovered. The state has lost jobs every year since 2000.
- Only three detailed industries gained employment in each of the three recessions since 1990: Educational Services, Health Care & Social Assistance, and State Government.
- Michigan's job loss of -9.8 percent during the Great Recession matched Arizona and ranked nationally behind Nevada (-11.6 percent).
- The job losses experienced during the recent recession have pushed Michigan's payroll employment down to levels not seen since the late 1980s.



Source: U.S. Bureau of Labor Statistics / DELEG



Source: U.S. Bureau of Labor Statistics / DELEG

## Michigan's Recovery from the Great Recession Cyclically Sensitive Elements of the Labor Market

	Over the Year Change					
	Initial Unemployment Claims (thousands)	Private Employees Avg. Weekly Hours	Temporary Help Employment (thousands)	Total Nonfarm Employment (thousands)	Unemployment Rate (percentage points)	Average Duration of Unemployment (weeks)
2009:Q1	+13.2	-1.1	-26.3	-291.8	+5.2	+2.9
2009:Q2	+12.1	-1.2	-23.1	-353.9	+5.4	+4.5
2009:Q3	-0.2	-1.0	-7.3	-299.1	+6.5	+11.6
2009:Q4	-10.3	-0.3	+8.6	-204.3	+3.9	+10.8
2010:Q1	-11.2	-0.2	+18.3	-91.7	+1.5	+10.3
2010:Q2	-13.3	+0.5	+25.9	+16.2	-0.7	+19.1
2010:Q3	-4.1	+0.5	+11.6	-7.6	-1.4	+7.5

Note: Quarterly values are measured from the last month in the quarter

Source: U.S. Bureau of Labor Statistics / DELEG



\* For this publication the Great Lakes states are defined as Illinois, Indiana, Michigan, Ohio, and Wisconsin.



## Industry Highlights: Temporary Help Services

Temporary Help Services is part of the Employment Services industry in the Professional and Business Services sector. Temporary Help makes up about 60 percent of the Employment Services industry in Michigan, which also includes jobs in employment placement agencies and professional employer agencies.

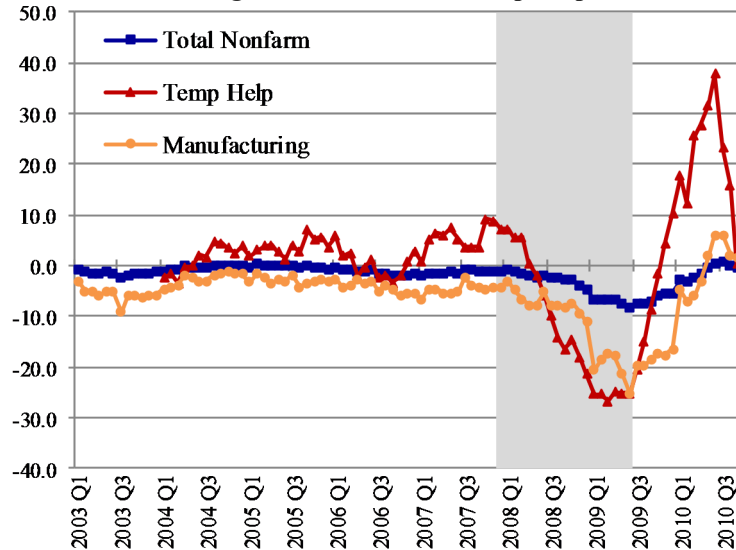
Temporary help workers, also referred to as contingent, contractual or seasonal workers, are actually employed by agencies that pay their salaries and are supplied to businesses for limited periods to fill temporary, part time or full time positions. In the past, temporary help consisted mostly of clerical and factory workers. However, with an evolving labor market, the role of temporary help has changed and has become more diversified in industries, occupations and skill levels. Jobs in this industry exhibit a great deal of volatility and it can be viewed as a coincident indicator which expands and contracts with the level of economic activity. This was one of the first industries to start adding jobs in Michigan and the U.S. economy with the recovery from the recession of December 2007. Temporary help services jobs fell 15.8 percent from 2008-2009, but jobs have rebounded by 14.5 percent from 2009-2010. When economic conditions are uncertain, some businesses utilize temporary workers prior to hiring permanent staff.

### Reasons for Gains in Temporary Help

- Just in time production and increased flexibility with focus on consumer demand especially in the manufacturing sector.
- Increase in specialization. Firms like to hire on a temporary basis to try out personnel before making a permanent commitment.
- Possible lower initial costs of a new temporary hire than a permanent hire, as the temporary help agency incurs the initial costs of recruitment, screening, training, etc.

**Industry Trends** Michigan job trends in the temporary help industry show a clear association with employment movements in the state's manufacturing sector. In addition, the seasonal job trends among temporary workers is changing as some local schools jobs have been outsourced to temporary help due to budget constraints.

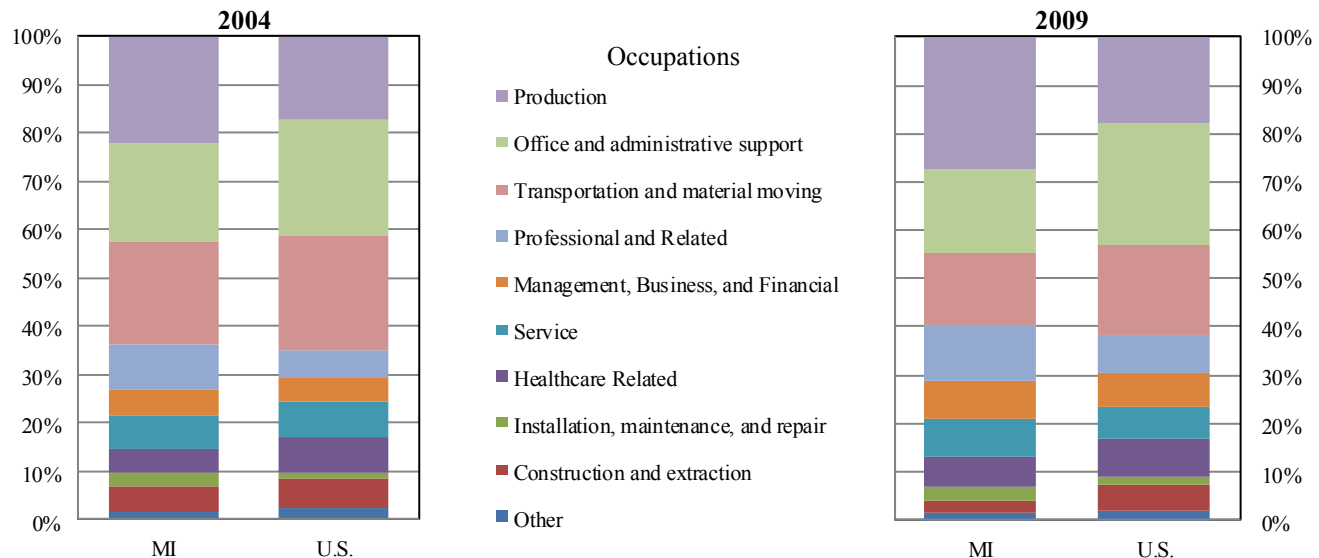
OTY Percent Change - Total Nonfarm, Temp Help & Manufacturing



Source: U.S. Bureau of Labor Statistics / DELEG

### Occupational Distribution of Employment Services Industry Michigan and United States: 2004 and 2009

Occupations in employment services are diversifying and shifting towards higher skill and higher paying jobs in Michigan. Job shares are down in occupations such as *Office & Administrative Support* and *Transportation & Material Moving*, and shifting higher in *Production*, *Professional*, and *Management, Business & Financial* occupations. Nationally, the highest growth occupations in the sector are legal; business and financial; computer and mathematical; education, training and library; and community and social occupations.

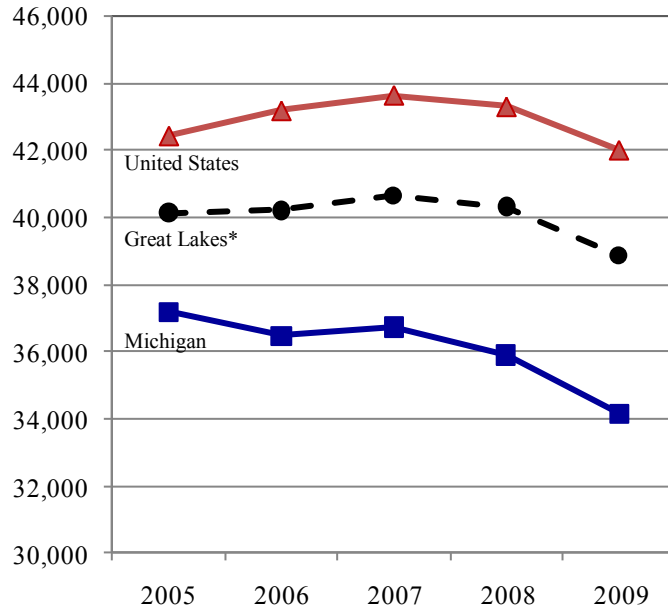


Source: U.S. Bureau of Labor Statistics / DELEG

# Gross Domestic Product by Industry

- As is well documented, the U.S., regional, and state economies all contracted from 2008 to 2009, bearing the brunt of the global economic recession. For Michigan, the 5.2 percent decline in output served as the second straight year of contraction, and the third in the last five years. The over the year change accounted for nearly \$18.5 billion in lost production. The U.S. economy shrank 2.1 percent from 2008 to 2009 (\$278 billion).
- Statewide overall losses in output were mitigated, in part, by gains in Natural Resources & Mining, Financial Services, and Government, which combined for an estimated \$1.0 billion in growth. The national economy was buoyed by similar sectors, but not Financial Services, which fell by 2.5 percent over the year. The Educational and Health Services and Information sectors also mitigated some of the national losses.
- Per capita output in each of the geographic areas declined for the second year in a row. Per capita personal income in Michigan dropped 4.8 percent from 2008 to 2009, to a level of \$34,157. Across the Great Lakes, the story was largely the same, with losses ranging from 2.5 percent in Wisconsin, to 4.1 percent in Indiana. The region was hit particularly hard in terms of per capita GDP, as the national average declined just 2.9 percent over the year.

**Inflation Adjusted Per Capita GDP: 2005 – 2009**

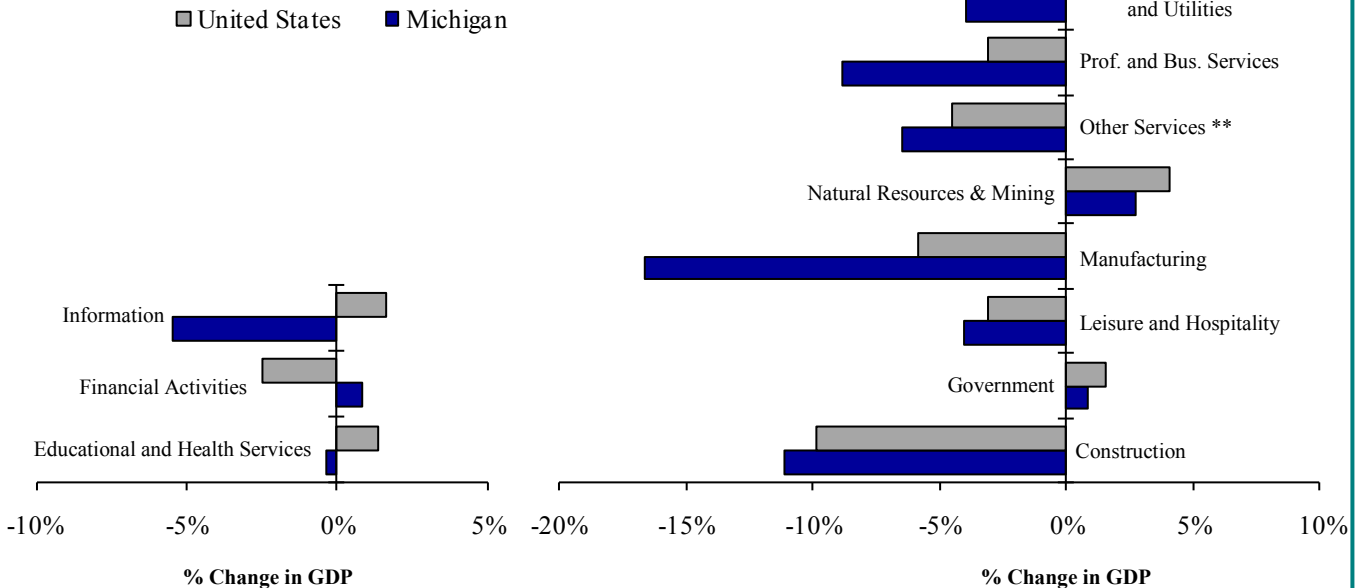


Source: Bureau of Economic Analysis

**Percent Change in GDP, 2008 – 2009 (Inflation Adjusted)**

**Opposite the U.S.**

**Following the U.S.**



Source: Calculated from Bureau of Economic Analysis data

\*\* "Other Services" includes firms in repair & maintenance, personal services, and membership & professional organizations

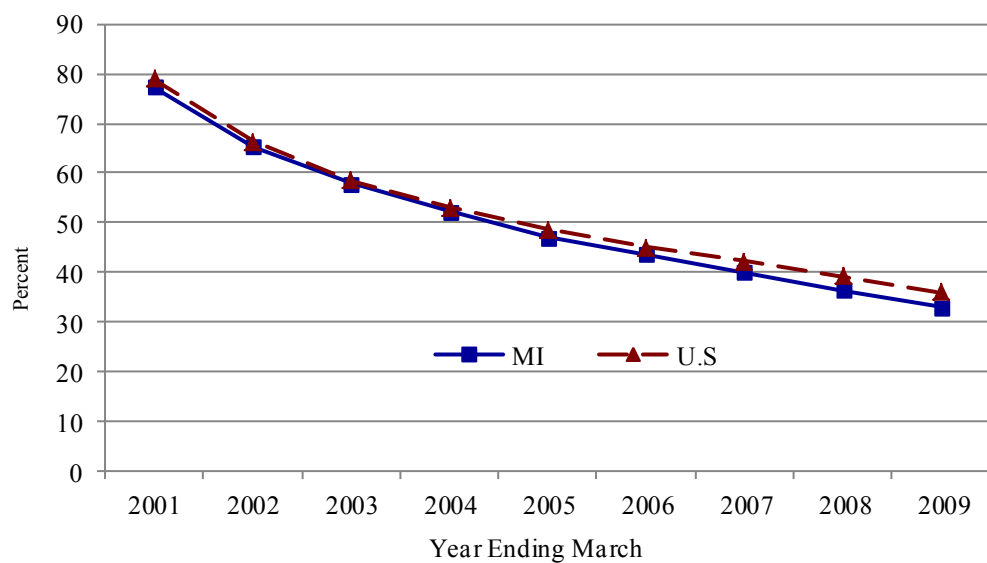
## Establishment Age and Survival

New data from the Bureau of Labor Statistics Business Employment Dynamics (BED) profile the survival and longevity of business establishments opening in a given year. These new data are tabulated at the establishment level. An establishment is an economic unit that produces goods or services, usually at a single physical location, and engages in one or predominantly one activity.

Out of the 18,419 establishments that opened in Michigan during the year ending March 2000, less than one third (6,065) registered positive employment for the year ending March 2009. In comparison, national data indicate that 36 percent of opening establishments retained positive employment during the same period. Less than four out of five Michigan firms (77.3 percent) that opened in March 2000 survived after the first year, and less than half (47.0 percent) continued to have employment in March 2005. This is slightly less than the national percentages of 78.9 percent and 48.6, respectively. The data reinforce the reality of the challenges of long term success faced by new start-up firms.

From 2000 through 2009, the survival rates of previous year existing firms indicate that a vast majority of establishments with positive employment in March of the previous year will have positive employment the following year. Year to year survival rates bottomed out during the 2001 recession at 77.3 percent. These rates increased in subsequent years to a high of 92.8 percent in 2006, then stabilized in the remaining years of the period. The 2000-2009 data show an average year to year survival rate of 89.3 percent, which demonstrates that each year, only one out of ten existing firms failed to maintain positive employment the following year.

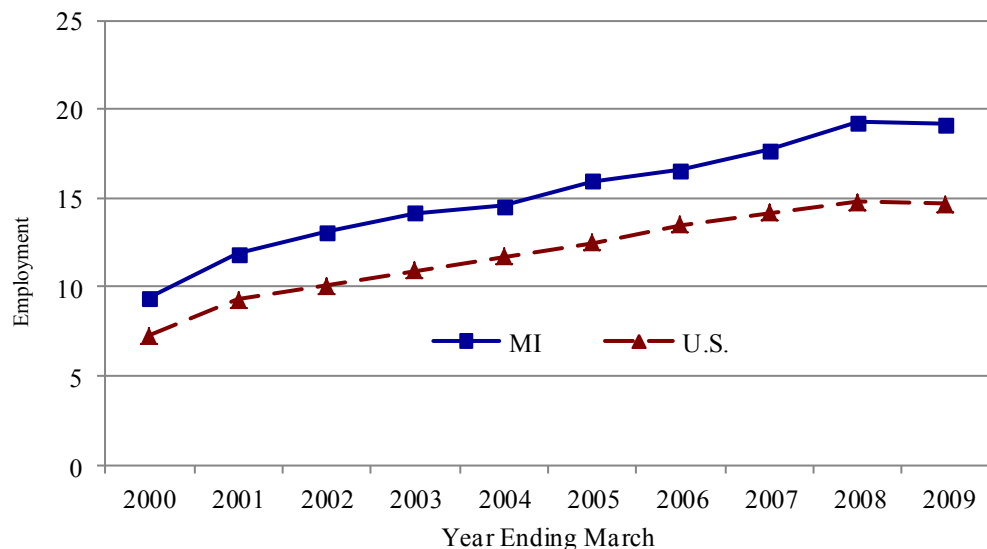
**Business Establishment Survival Rates Since Birth (Year 2000)**



Source: U.S. Bureau of Labor Statistics / DELEG

Average employment for Michigan's surviving firms more than doubled from 9.4 during the year of opening in March 2000 to 19.2 during March 2009, or an increase of 104 percent. Nationally, average employment for surviving establishments grew from 7.3 during the opening year of March 2000, to 14.7 (+101 percent). Both data indicate that as firms remain viable over longer periods of time, expansion occurs and new workers are added to payrolls.

**Average Employment of Surviving Establishments Since 2000**

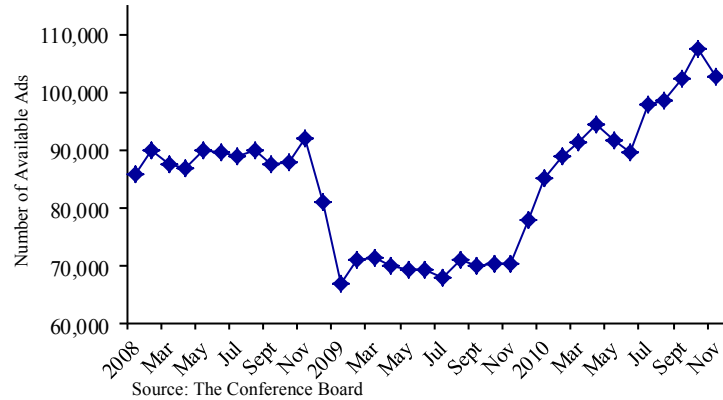


Source: U.S. Bureau of Labor Statistics / DELEG

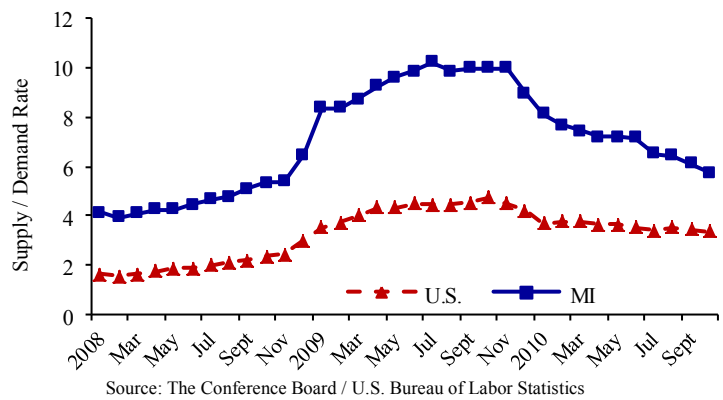
## Online Advertised Job Vacancies

- The Conference Board began publication of the Help Wanted Online Data Series™ (HWOL) in July 2005 as a developmental series and initiated a major expansion of the program in October 2006. HWOL fills a critical gap in the current U.S. economic indicators by providing timely monthly measures of labor demand (advertised vacancies). The program provides measures of levels and rates for both Total Online Ads and New Online Ads. The online vacancy program is one of the few economic indicators to provide occupational detail as well.
- According to the Conference Board’s Help Wanted Online (HWOL) data series there were a seasonally adjusted 102,586 online job postings in the state of Michigan for the month of November. After a four month span which saw an increase of just over 20 percent, Michigan’s ad volume declined by nearly 5,000. Despite the November decline, online job demand has been on an upward trajectory, increasing in 11 out of the past 14 months. Since the official end of the national recession in June of 2009, the number of monthly online job postings has increased by more than 33,000 (+48 percent).
- Beginning with large summer increases in online job demand and extending through October, the gap between the number of unemployed and advertised vacancies (supply/demand) has been decreasing. As of October 2010, there were just under 6 unemployed workers in Michigan for every online advertised vacancy. Although still among the highest in the nation, Michigan’s supply/demand rate has improved significantly from the 10.2 rate in July 2009. Statewide, there were more than 500,000 more unemployed workers than advertised vacancies.
- Michigan’s ad rate increased in the month of November to 2.13 ads per 100 participants in the labor force. While Michigan still trails the national average of 2.90 ads per 100 participants, the gap has begun to narrow over the past several months.

**Michigan’s Number Of Available Ads**



**Michigan’s Supply / Demand Rate**



### Online Labor Demand by Occupation, Non-Seasonally Adjusted

Occupation	Total Ads		New Ads	
	Nov-09	Nov-10	Nov-09	Nov-10
Total	74,443	108,888	47,633	70,809
Healthcare practitioners and technical	11,485	13,667	5,635	7,155
Management	6,751	12,885	4,227	7,865
Computer and mathematical	7,260	12,396	4,218	6,640
Sales and related	11,060	11,460	7,094	7,311
Office and administrative support	7,296	11,080	5,081	8,279
Architecture and engineering	3,143	7,132	1,751	4,556

Healthcare Practitioners and Technical Occupations is the most in demand occupational category in Michigan with nearly 13,700 active advertised vacancies, with Management Occupations ranking second. In the Healthcare category, Registered Nurses (6,045), Physical Therapists (1,252) and Occupational Therapists (722) have high levels of listed vacancies. Every occupational category in Michigan saw year-over-year increases in online demand.

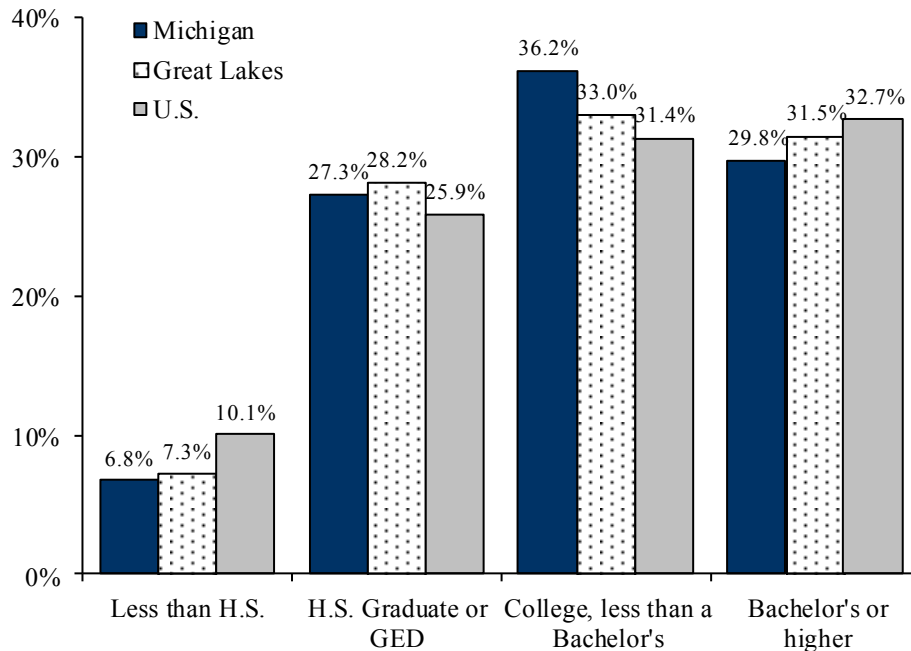
Source: The Conference Board

The most common way to display the relative tightness of the workforce is through a supply/demand rate (S/D), which measures the number of unemployed individuals versus the number of online ads. While this does not suggest that the occupations of the unemployed directly align with the occupations of the advertised vacancies, it does provide a way to gauge competition in the job market. Another way to measure the health of the job market is by looking at how many online ads are available in relation to the labor force. This measure is referred to as an “ad rate”, which is simply the number of ads per 100 participants in the labor force. It should also be noted that the Ad rate only provides a measure of relative tightness of the state’s labor markets and does not suggest that the occupations of the unemployed directly align with the occupations of the advertised vacancies.

## Workforce Education

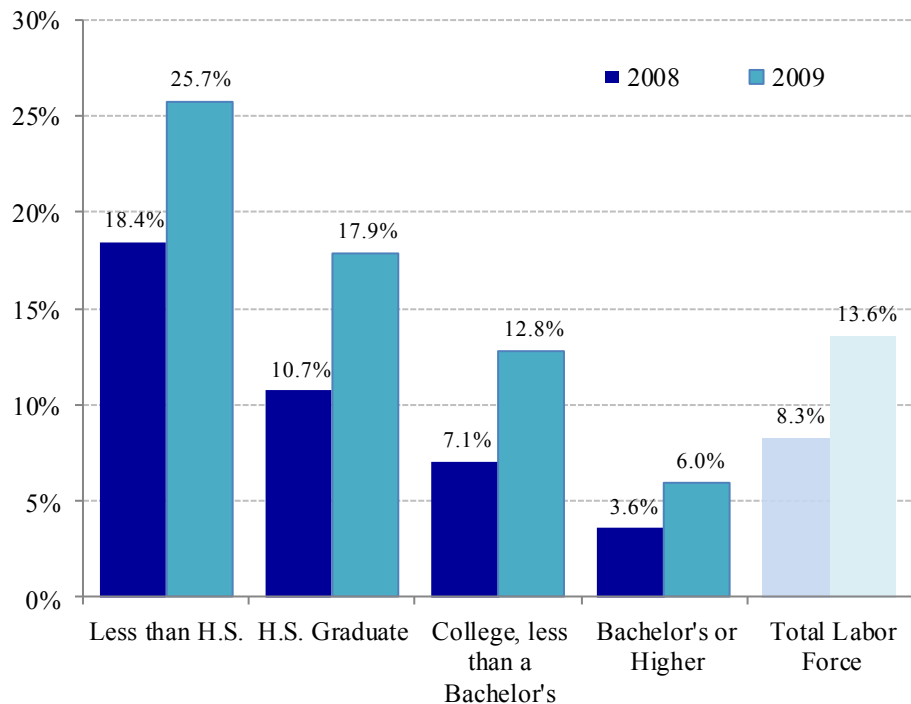
- Michigan remains below average in the share of workers with a bachelor's degree or higher, accounting for 30 percent of the prime-age workforce. The share of highly educated workers in Michigan lagged behind the Great Lakes average (31.5 percent), and the national share of nearly 33 percent.
- The state has a below-average proportion of high school dropouts (6.8 percent nationally) and a higher share of workers with some college, a vocational certificate or an associate's degree. The latter category has expanded somewhat since 2006, accounting for 34.2 percent of the workforce. Michigan topped the U.S. average and all Great Lakes states in this category in 2009.
- The number of individuals in the state workforce with at least some college (including bachelor's or higher) rose from roughly 2.61 million to 2.65 million between 2006 and 2009, up by 1.7 percent. By comparison, the same category grew by 7.1 percent nationally.
- Jobless rates by educational attainment illustrate the enormous difficulty that individuals with no post-secondary education face in finding jobs in Michigan. One in four workers with less than a diploma or GED and almost one in five high school graduates with no college were unemployed in 2009.
- By comparison, workers with some college but less than a bachelor's degree were unemployed at a roughly average rate, while those with a bachelor's degree or higher experienced a jobless rate less than half of the overall 2009 average (6.0 percent versus 13.6 percent).
- Jobless rates rose for persons in all educational levels during the severe 2009 downturn in Michigan. Rates jumped in 2009 by over 7 percentage points for the two lowest educational groups, while the corresponding jobless rate increase for the bachelor's or higher group was only 2.4 percentage points.

**Educational Attainment of the Labor Force 25-64 Years of Age, 2009**



Source: U.S. Census Bureau, 2009 American Community Survey

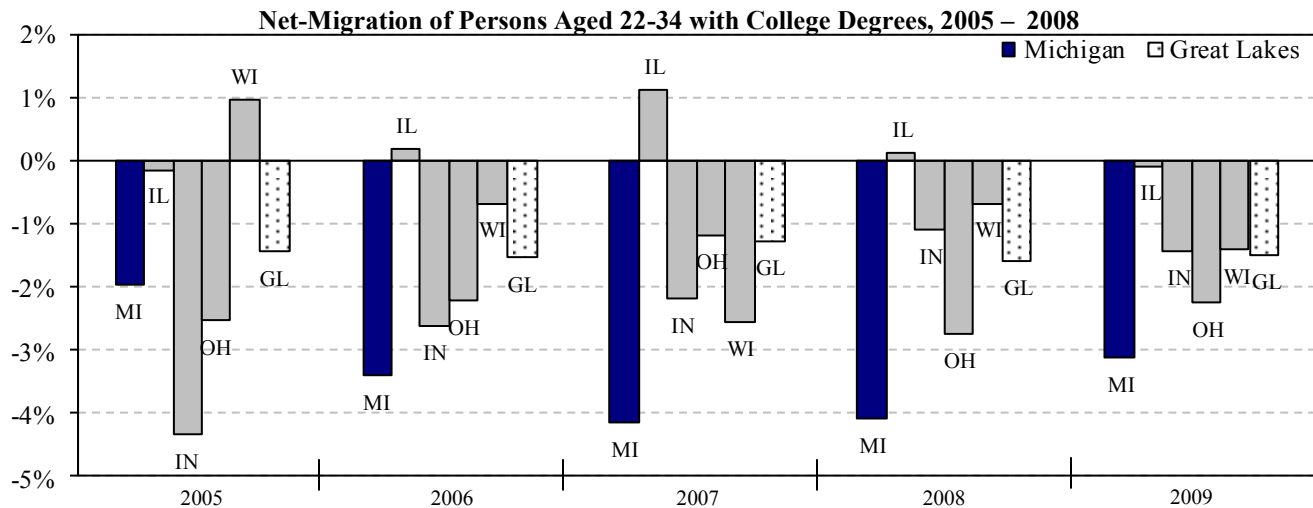
**Michigan Jobless Rates by Educational Attainment, 2008 to 2009**



Sources: U.S. Census Bureau, 2008 and 2009 American Community Survey

U.S. Bureau of Labor Statistics / DELEG

## Migration of Young Knowledge Population



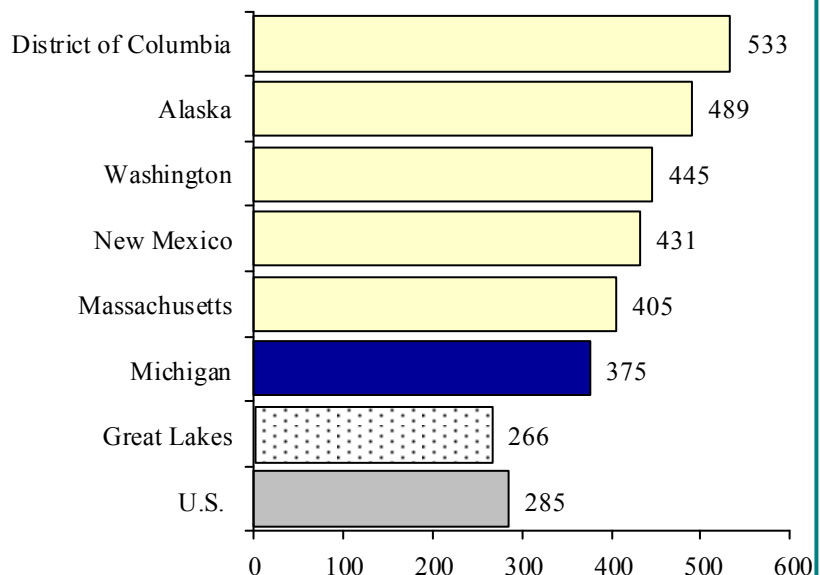
Source: U.S. Census Bureau, American Community Survey

- Net retention of the young, highly educated population in Michigan improved modestly from 2008 to 2009, with a net change of -3.1 percent, up 1 percent from a year ago. This stands as the fifth straight year of population contraction for residents with bachelor’s degrees age 22 to 34. This slowdown in the rate of population loss was driven by a 1.3 percent decline in the level of out-migration (from 8.5 percent in 2008 to 7.2 percent in 2009), while the level of in-migration held steady at 4.1 percent. An estimated 29,700 young, highly educated Michiganders left the state between 2008 and 2009, while only 16,800 moved in from outside the state, the lowest draw in the nation for young persons with degrees.
- For the fifth straight year, the Great Lakes region also remained a net loser of degree earning young persons (-1.5 percent). Of the Great Lakes states, only Illinois appears to have gained roughly as many young knowledge workers as it lost over 2009. Much of Illinois’ gains came at the expense of the other Great Lakes states, however. Illinois accounted for more than 1 out of 3 young knowledge workers who moved from one Great Lakes state to another in 2009 (37.8 percent). Michigan captured an estimated 14.0 percent of the same cohort.

## Engineering and Scientific Occupations

- Michigan ranked 9<sup>th</sup> in the share of total jobs in scientific and engineering (S&E) occupations during 2009. Although this is a high ranking, Michigan’s position relative to other states has slipped in recent years due to auto-related engineering losses. As recently as 2006, the state ranked 5<sup>th</sup>. In Michigan, engineering-related jobs comprise roughly 3 out of every 4 S&E positions, reflecting the importance of the state’s auto sector.
- Total scientist and engineer jobs in Michigan fell from almost 158,000 in 2008 to roughly 146,000 in 2009. This 7.5 percent decline was slightly worse than the total occupational job loss statewide of 6.0 percent. Great Lakes S&E jobs dropped by 4.9 percent while in the U.S. the loss was only 2.5 percent.
- While Michigan’s share of national S&E jobs has fallen from 4.6 percent in 2006 to 3.9 percent in 2009, the state still accounts for a large aggregate number of S&E jobs. Michigan was ranked 6<sup>th</sup> in terms of total S&E jobs with 146,120 in 2009. California was first with over 501,000 of these jobs.

**Number of Scientists and Engineers per 10,000 Jobs, May 2009**  
Michigan, U.S., Great Lakes & Top 5 States

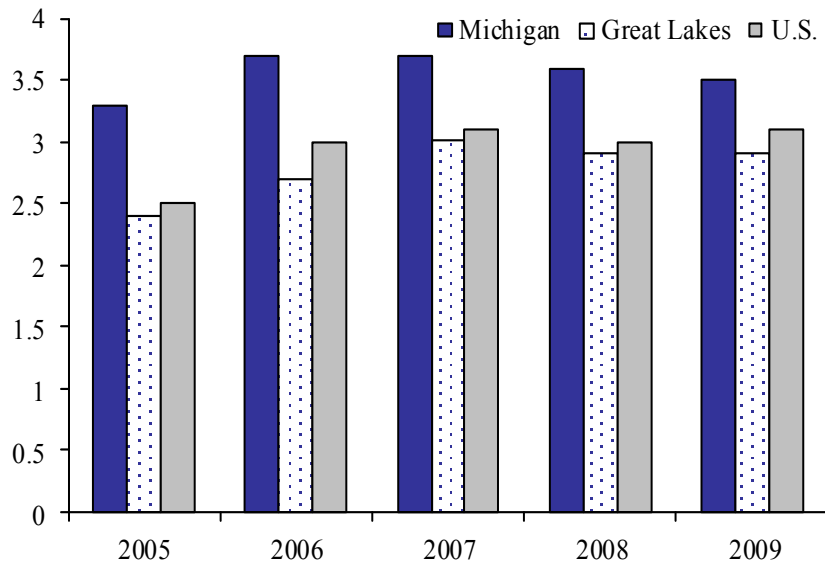


Source: U.S. Bureau of Labor Statistics, Occupational Employment Statistics  
Great Lakes States: Illinois, Indiana, Michigan, Ohio, Wisconsin

## Patents

- Michigan continues to lead all of the Great Lakes states in patents issued per capita, ahead of Wisconsin by 0.2 patents per 10,000 residents. Michigan fell to second in the Great Lakes in the number of patents issued in 2009 with 3,515, a decline of 67 over the previous year. Even though Michigan has fallen behind Illinois in the number of patents issued, Michigan issues 0.7 more patents per 10,000 residents than does Illinois.
- On a per capita basis, Michigan held at 13<sup>th</sup> nationally in 2009. The state's relative ranking has fallen slightly in the past 9 years; it was ranked 11<sup>th</sup> in 2000. Vermont, Washington and Idaho continue to top the list of states in patents per capita.
- Between 2008 and 2009, Michigan recorded a drop of 1.9 percent in the number of patents issued compared to an increase of 3.3 percent for the U.S. and a decrease of 1.1 percent for the Great Lakes region as a whole. Michigan was one of 19 states that saw a decrease in patent activity during this period, and has had a year-over-year increase only once since 2001 (2005—2006.)

Patents Issued per 10,000 Residents, 2005 — 2009



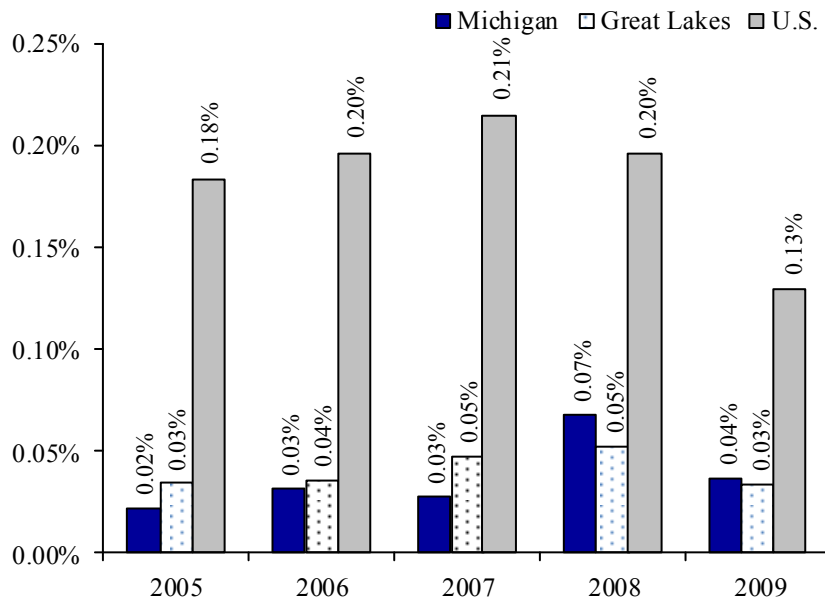
Source: U.S. Patent and Trademark Office and U.S. Census Bureau

With Michigan's economy being so heavily reliant on the automotive industry, it is of little surprise that the state's patent-related activity follows the trajectory of this industry. Motor vehicle-related patents, which rose dramatically in the late 1990's, have leveled off and have fallen each of the past three years.<sup>1</sup>

## Venture Capital

- Annual changes in venture capital (VC) expenditures can be highly volatile, and 2009 was no exception. After seeing a more than doubling of venture capital expenditures in the state from 2007-2008, Michigan fell by half in 2009. VC investments in 2009 of \$134 million, while modest in comparison to 2008's record \$256 million, were still among the highest on record. Michigan was not alone in this decline, with the United States and the Great Lakes region as a whole all seeing venture capital expenditures as a share of GDP falling to more modest levels. Overall, venture capital expenditures were down by 35 percent in the U.S.
- Among the Great Lakes states, Michigan ranked third in total venture capital dollars invested, behind Illinois and Indiana. Michigan ranked second in the region in venture capital as a percentage of GDP. With \$70 million invested in the IT sector (which normally accounts for a relatively minor share of the state's VC), Indiana nearly doubled their total VC expenditures for 2009.

Venture Capital as a Share of State Gross Domestic Product, 2005 — 2009



Source: PwC/NVCA MoneyTree Report, Bureau of Economic Analysis

- When looked at by industry, the main driver of the venture capital expenditures in Michigan continues to be Biotechnology, which accounted for \$74 million in 2009. 2008 was a tremendous year in the Energy sector for Michigan, accounting for \$112 million, and 2009 fell to a much more normal \$14 million. This was also true for Medical Devices and Equipment which fell from \$48.4 million to \$12 million.

<sup>1</sup> University of Michigan's RSQE forecast "The Michigan Economic Outlook for 2011-2012." pg. 8

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