



Winter 2008

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

Michigan Economic and Workforce Indicators

Introduction

Purpose

The environment facing Michigan workers and our state's businesses is more challenging than ever. Michigan competes for business establishments, capital, resources and jobs with other U.S. states and nations around the world.

To meet this competition, Michigan has introduced key initiatives and focused resources to address the challenges of the new knowledge-based, global economy. It is important that state policymakers have objective information on key economic indicators, with Michigan trends and comparative analysis.

There are reports today that address these issues, but none specifically focused on Michigan's labor market. This biannual report will address key labor market indicators that impact our workforce and provide analysis beyond the hard data. These indicators are intended to assess the state's relative strength and position, and provide policy makers, economic developers and community leaders with concise updates of the state's position.

Method

The indicators and brief analysis in this report are not all encompassing, but instead represent key workforce information indicators from reliable well-documented data sources. Taken together, these measures illustrate a comprehensive picture of Michigan's workforce and economic situation.

The labor market indicators center on five general categories – workforce, knowledge-based jobs, innovation, education and economics – each with a series of metrics that measure Michigan's labor market development. Fifteen metrics were selected to be reviewed and updated as new information becomes available, thus not all fifteen will appear in each edition of the report. Indicators may also be added or modified as pertinent new data sets are identified.

Highlights from this report:

Overall the indicators show the Michigan labor market continues to be challenged by the restructuring of the domestic automotive industry and more recently by the drop in the housing sector. Although several indicators lag behind national trends, Michigan has basic assets and infrastructure, such as R&D investment levels and workforce engineering skills that rank among the best in the nation.

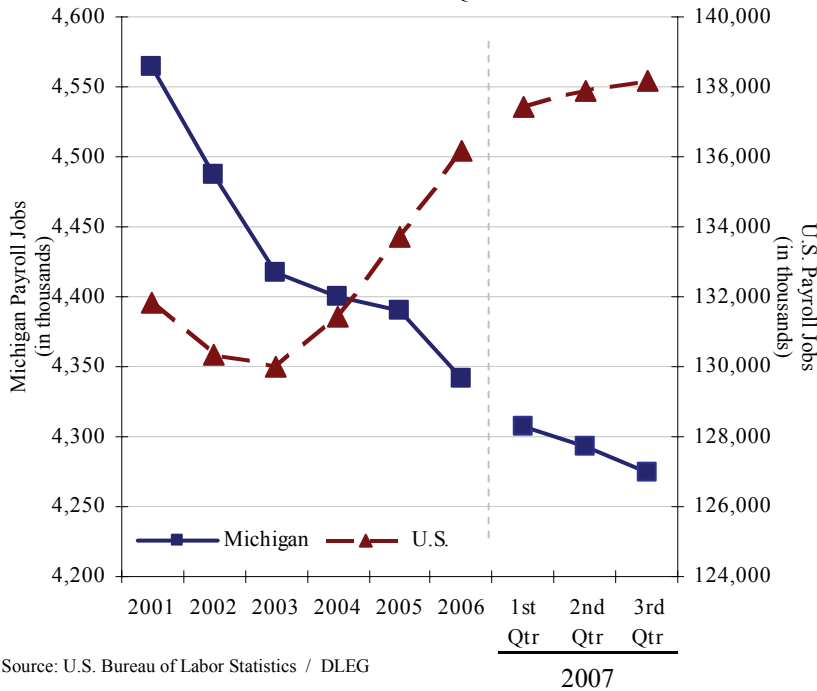
Table of Contents

Michigan's Job Trends	4
Payroll Jobs by Industry Sector	5
Unemployment Rates	6
Workforce Education	7
Engineering and Scientific Occupations	7
Industrial Research and Development (R&D)	8
Patents	8
Venture Capital	9
Per Capita Personal Income	9
 Special Workforce Reports	
Job Vacancy Survey 2006	10
Employment Forecasts 2004-2014	12

Michigan's Job Trends

Nonfarm Payroll Jobs

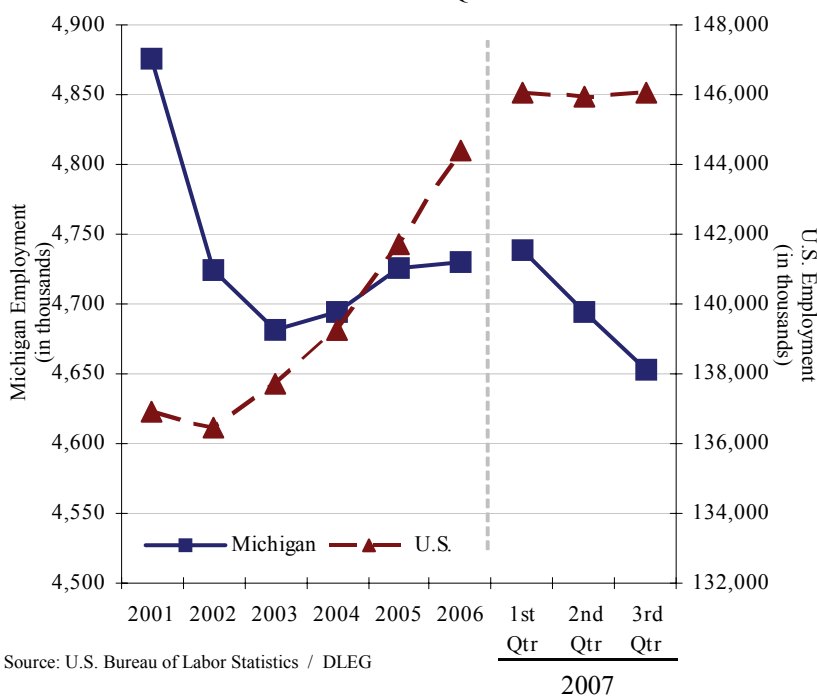
Michigan vs. U.S. Total Payroll Jobs
2001 - 2007 3rd Quarter



- Two government surveys are used to gather information on the state of the labor market. Both of them show that Michigan continues to lose employment due to the direct and indirect effects of the restructuring of the domestic auto industry.
- The *nonfarm payroll survey* measures the total number of jobs supplied by business establishments in the state and its metro areas. This survey excludes other segments such as the self-employed and agriculture. Since 2000, the peak year of employment in Michigan, the state has experienced six consecutive years of job loss, a trend that has continued in 2007. Although the duration is the longest since the 1930's, the severity is significantly less than the 444,000 job loss recorded during the three-year period from 1979 to 1982. From 2000 to the present quarter, payroll jobs declined 402,000 with 69 percent coming from the manufacturing sector.
- The U.S. nonfarm payroll job count reversed its downward trend from 2000 to 2003 and has steadily moved up at a 6.3 percent rate. Manufacturing jobs have declined by 19 percent in the U.S. since 2000, compared to 31 percent for Michigan. Unlike Michigan, the negative impact of manufacturing nationally has been mitigated by the more diverse nature of the nation's industry makeup.

Household Employment

Michigan vs. U.S. Total Household Employment
2001 - 2007 3rd Quarter



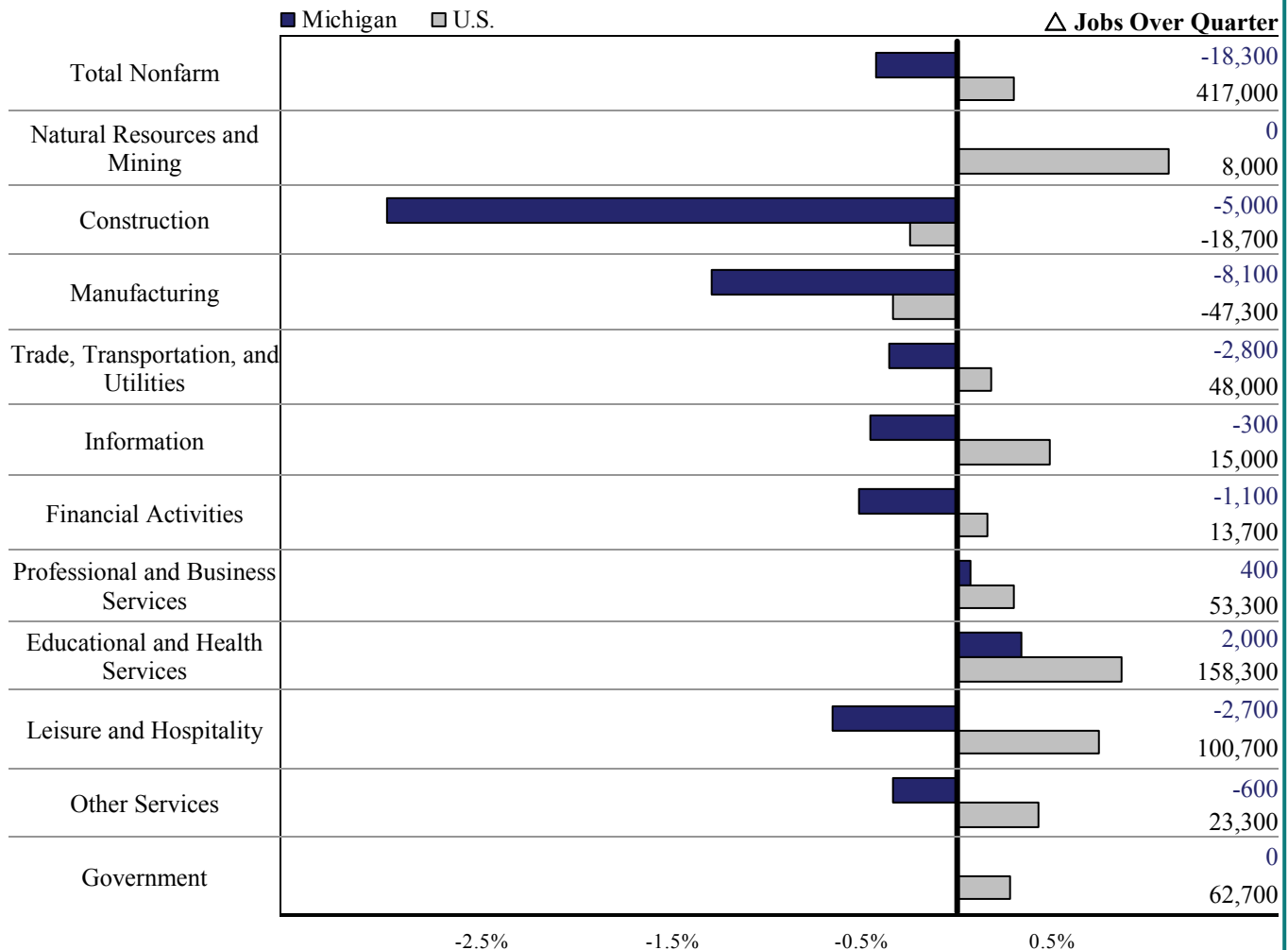
- The *household survey* measures the number of persons employed. This survey is more comprehensive than the payroll survey and provides information on the self employed and workforce demographics. These two surveys will generally display similar long-term employment trends, but because of different methodologies divergence can occur over a short time span, as can be seen in Michigan over the past three years.
- In 2007, both surveys indicate employment loss in Michigan. In the 3rd quarter of 2007, household employment fell by 40,000, and Michigan payroll jobs declined by 18,000. From the 3rd quarter 2006 to the 3rd quarter 2007, household employment dropped by 74,000 and payroll jobs were down by 61,000.
- The University of Michigan released an updated forecast of the state's economy in August. The outlook for the next two years in the job market continues to be dominated by weakness in the housing and domestic auto markets. The private non-manufacturing sector is expected to expand but not enough to offset job losses in manufacturing, resulting in continued payroll job declines for Michigan in 2008 followed by a small job gain in 2009.

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

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

Payroll Jobs by Industry Sector

Michigan vs. U.S.
Percent change, 2nd Quarter 2007-3rd Quarter 2007
Seasonally Adjusted



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

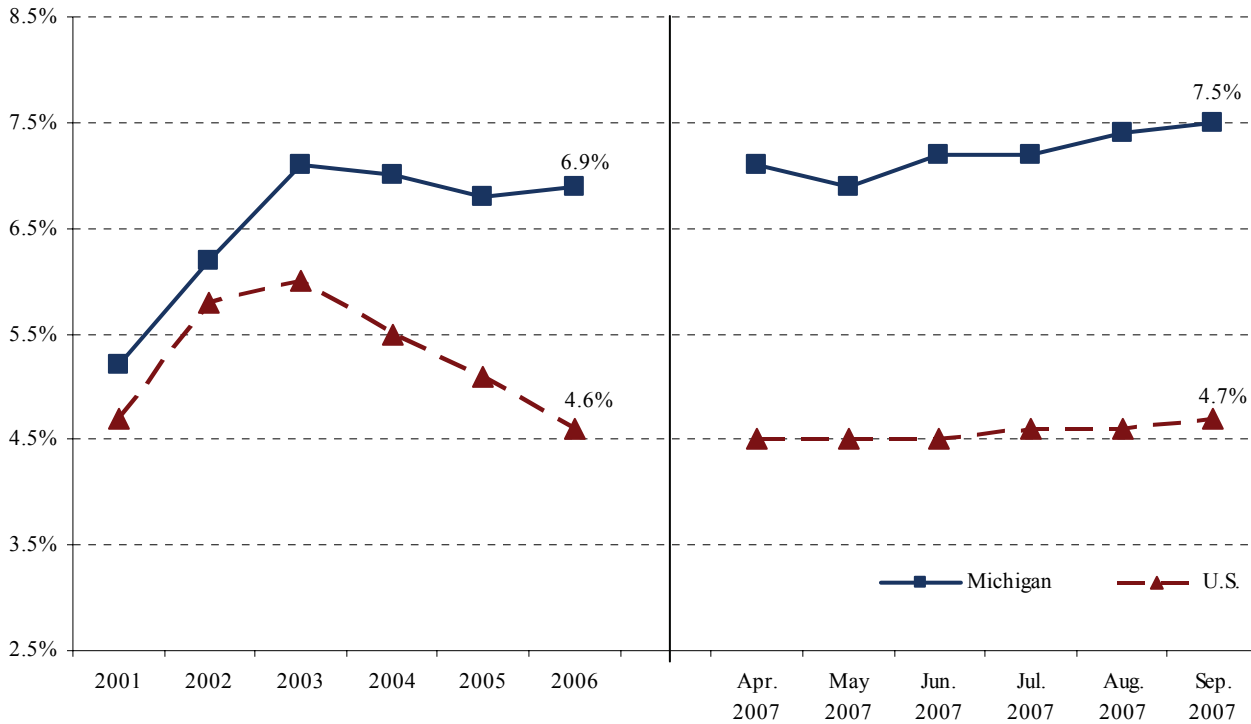
- Both Michigan and the U.S. continued to show weakness in the *Manufacturing* and *Construction* sectors in the 3rd quarter 2007¹ largely due to the slump in the housing market and retrenchment in the auto industry. Over the year (3rd quarter, 2006 – 3rd quarter, 2007), the only two sectors in Michigan to follow the national growth trend were *Education and Health Services* and *Leisure and Hospitality*, though at a much weaker pace.
- Between the second and third quarter 2007 Michigan lost 18,300 nonfarm payroll jobs with *Manufacturing* contributing 44 percent of the loss and *Construction* 27 percent. Job cuts in the auto sector caused 73 percent of the decline in manufacturing jobs. The annual retooling shutdowns occurred in July, and jobs did not fully bounce back later in the quarter due to inventory control production adjustments. The job loss over the year in the Michigan manufacturing sector was 3.7 percent as compared to a national reduction of 1.5 percent.
- Michigan's share of employment in transportation equipment manufacturing is over seven times the national average and every job lost in this sector leads to a loss of four jobs in other industries in the short run and five others in the long run.² As a result, the weakness in this industry has had a negative impact on the Michigan service sector. The only service sectors to record job gains over the year were *Education and Health Services*, with Michigan job growth of 1.8 percent compared to 3.3 percent nationally; and *Leisure and Hospitality* which edged up 0.7 percent compared with a national gain of 3 percent.

¹ Payroll employment numbers are produced on a monthly basis. The quarterly data cited is the average of three months data in the relevant quarter.

² Based on a report funded by the MEDC and W. E. Upjohn Institute: Michigan's Economic Competitiveness and Public Policy, August 2006.

Unemployment Rates

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



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

- Michigan’s annual average unemployment rate has trended noticeably upward since 2000, due largely to the impact of substantial structural changes in the state’s auto sector. Despite little change in the state jobless rate from 2003 to 2006, forecasters from the University of Michigan predict that the Michigan jobless rate will increase by over half of a percentage point to 7.6 percent in 2008, as the auto industry continues restructuring efforts.
- Over the past six months, rates have drifted slightly upward, averaging 7.4 percent in the 3rd quarter 2007. Two of the primary labor force trends in Michigan in 2007 were:
 - A decline in the state labor force, due in part to buyouts and early retirements in the auto sector.
 - Employment reductions over the past year due to job loss in manufacturing, and in construction due to the nationwide housing slowdown.
- Michigan jobless rates remain high relative to unemployment rates nationally. The gap between the Michigan and U.S. quarterly jobless rates increased from 2.3 to 2.8 percentage points between the 3rd quarter 2006 and the 3rd quarter of this year.

Jobless Rates By Quarter

Month	Michigan	U.S.	Gap
July	7.2	4.6	2.6
August	7.4	4.6	2.8
September	7.5	4.7	2.8
3rd Qtr. 2007	7.4	4.6	2.8
April	7.1	4.5	2.6
May	6.9	4.5	2.4
June	7.2	4.5	2.7
2nd Qtr. 2007	7.1	4.5	2.6
July	6.9	4.8	2.1
August	7.0	4.7	2.3
September	7.1	4.6	2.5
3rd Qtr. 2006	7.0	4.7	2.3

Quarterly Rate Movements

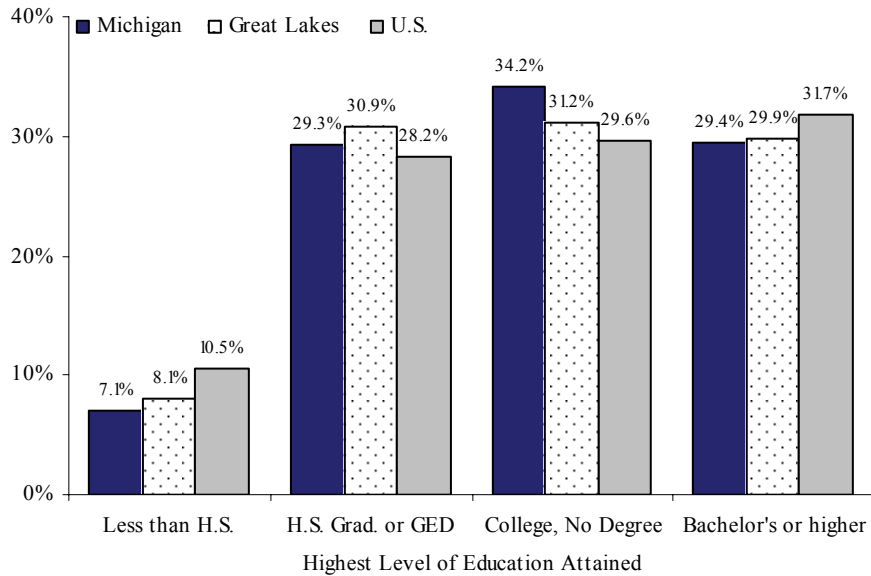
	Michigan	U.S.
3 rd Qtr. 2007 Average Rate	7.4	4.6
Change Since Prior Qtr.	0.3	0.1
Change Since 3 rd Qtr. 2006	0.4	-0.1

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

Workforce Education

- Relative to the U.S. and the Great Lakes region, Michigan has a higher proportion of labor force participants with some college, but less than a bachelor's degree. However, it also has a smaller proportion of persons in the workforce with a bachelor's degree or more.
- A possible explanation for this is the historical availability of good-paying jobs requiring less education in Michigan, which may have created a disincentive to complete a college education. Many of the state's future high-growth jobs will require a college degree.
- Within the Great Lakes region, Michigan ranks first in the share of individuals with some college but less than a bachelor's degree, and second to Illinois for workforce participants with at least a bachelor's degree.
- There is a direct correlation in Michigan between increased levels of education and lower rates of unemployment. Those with at least a bachelor's degree have a substantial advantage in today's job market.

Educational Attainment of the Labor Force 25-64 Years of Age, 2006



Source: U.S. Census Bureau, 2006 American Community Survey

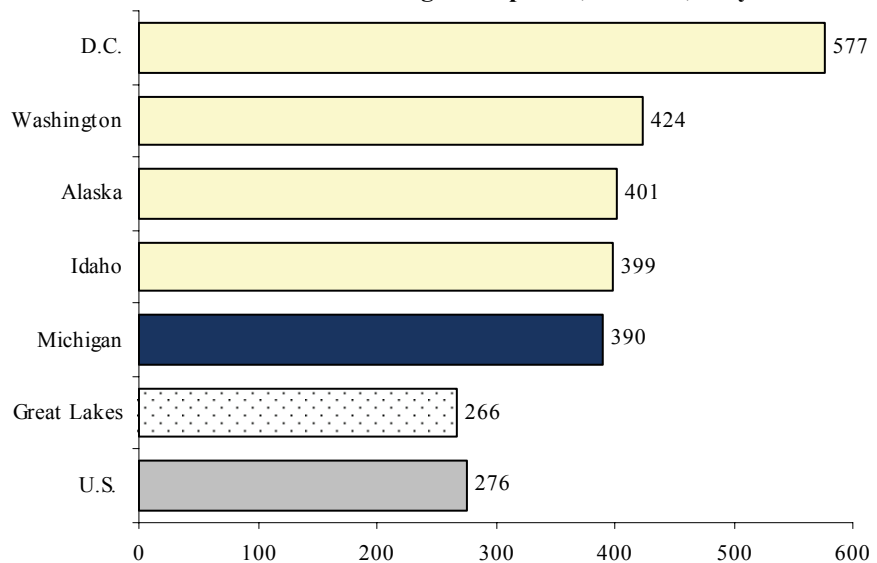
Michigan Unemployment Rates by Education, 2006	
Less than H.S.	17.1%
H.S. Graduate	10.1%
College, No Degree	6.9%
Bachelor's or Higher	3.4%

Source: U.S. Census Bureau, 2006 American Community Survey

Engineering and Scientific Occupations

- Michigan ranked 5th among U.S. states and Washington D.C. with a 3.90 percent share of total jobs in either engineering or scientific occupations. Washington D.C. was first with 5.77 percent.
- The state also placed 5th in terms of the overall number of jobs, with nearly 170,000 engineering and scientific jobs in 2006. California led the nation with over 480,000.
- Michigan outpaced all other regional states, and accounted for 30 percent of all scientific and engineering jobs in the five-state Great Lakes region.
- Michigan's high ranking was due to its heavy share of engineering jobs. The ratio of engineering positions to scientific jobs in the state stands above 4 to 1, the highest in the nation, and well above the U.S. ratio of 2 to 1.

Number of Scientists and Engineers per 10,000 Jobs, May 2006

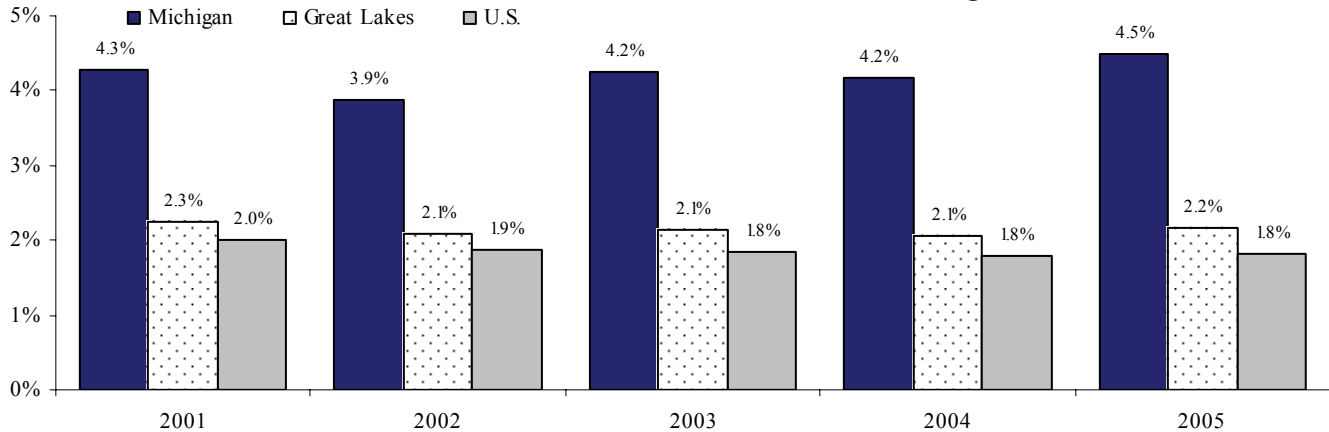


Source: U.S. Bureau of Labor Statistics, Occupational Employment Statistics

Great Lakes States: Illinois, Indiana, Michigan, Ohio, Wisconsin

Industrial Research and Development (R&D)

Total Funds for Industrial R&D as a Percent of Gross Domestic Product, Michigan, Great Lakes, and U.S.

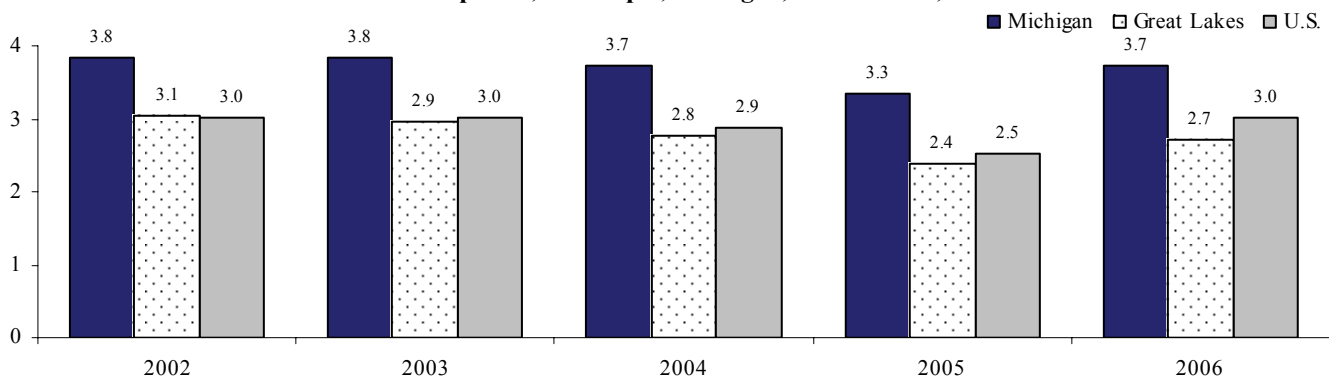


Sources: National Science Foundation and U.S. Bureau of Economic Analysis

- Michigan continued to lead the nation in industrial R&D spending per dollar of gross domestic product by state. Michigan ranked second only to California in 2005 with \$16.8 billion in total industrial R&D spending. Michigan’s industrial R&D grew by 10.4 percent from 2004 to 2005, outpacing the national growth rate of 8.6 percent.
- Motor vehicles, trailers and parts as an industry group accounted for 74 percent of industrial R&D spending in Michigan in 2005. Chemicals manufacturing, which includes pharmaceuticals, contributed 10 percent. Non-manufacturing industries accounted for just 6 percent of Michigan’s industrial R&D spending, nearly half of which was attributable to the professional, scientific and technical services sector.
- In the U.S., manufacturing industries accounted for 70 percent of total industrial R&D spending in 2005, led by chemicals, and computers and electronics products. Non-manufacturing industries with significant R&D spending were concentrated in professional, scientific and technical services, and information.

Patents

Patents Issued per 10,000 People, Michigan, Great Lakes, and U.S.

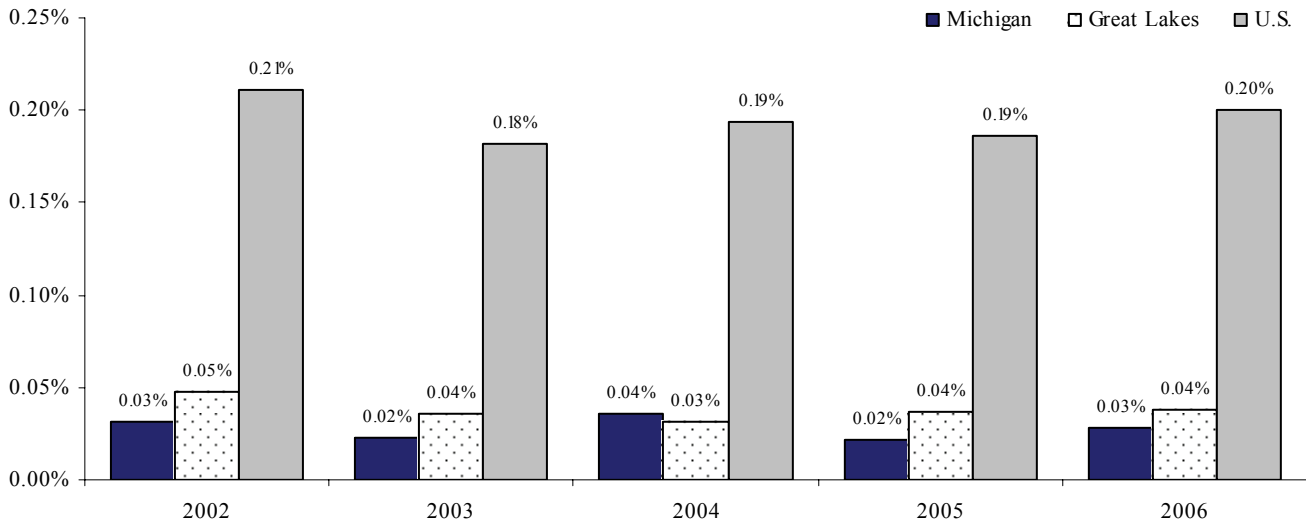


Source: U.S. Patent and Trademark Office and U.S. Census Bureau

- Idaho, Vermont and Massachusetts led the U.S. in patents per 10,000 people in 2006, but ranked lower in total number of patents by state. In 2006, Michigan had a total of 3,758 patents issued, ranking 5th in the U.S., one behind Massachusetts (4th) and far above Idaho (18th) and Vermont (32nd).
- Michigan ranked 12th in the U.S. in patents per 10,000 people in 2006, up only slightly from 15th place in 2005. The state’s relative ranking has mostly stagnated over the past 6 years; it was ranked 11th overall in 2000.
- Between 2004 and 2005, patents declined by 10 percent in the state, but this was the trend observed nationwide as well, with the U.S. reporting a drop of 11 percent in the same period. Both regions rebounded in 2006, although the nation saw an increase of over 20 percent in 2006 versus the statewide gain of 12 percent.
- Between 1994 and 2000, the state’s patents increased at a rate roughly half the U.S. overall (27 percent versus 52 percent), and between 2000 and 2006, the nation saw a growth rate more than six times the state’s rate (6 percent versus 1 percent).

Venture Capital

Venture Capital as a Percent of Gross Domestic Product, Michigan, Great Lakes, and U.S.



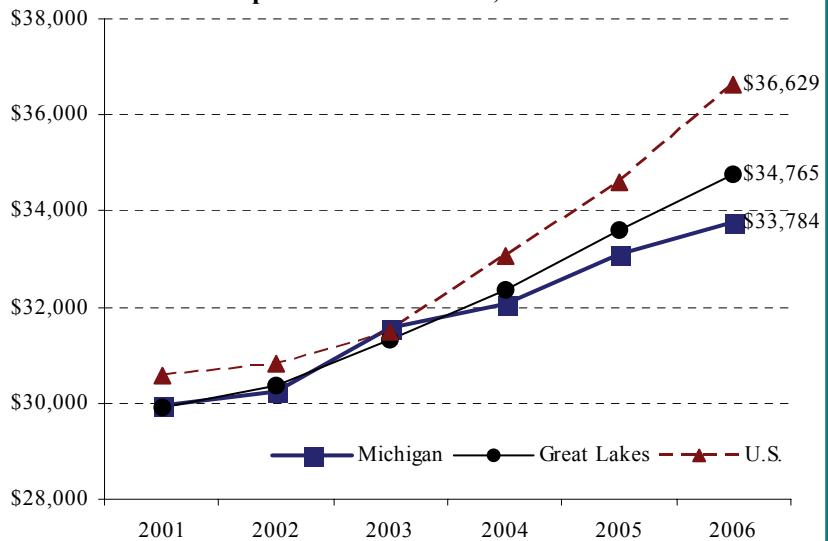
Sources: PwC/NVCA MoneyTree Report, Bureau of Economic Analysis

- Michigan ranked 22nd in the U.S. in total 2006 venture capital investments, with \$106 million. The industries attracting the most venture capital investment in Michigan over the last three years were industrial/energy, biotechnology, medical devices and equipment, and software. Boosting venture capital investment in Michigan is one of the strategies of the Michigan Economic Development Corporation’s 21st Century Jobs Fund.
- Among the Great Lakes states, Michigan ranked second in total venture capital dollars invested, and third in venture capital as a percent of gross domestic product in 2006.
- California leads the nation in venture capital investment. In 2006, California recorded \$12.7 billion in venture capital investment, nearly half of the U.S. total. Five states - California, Massachusetts, Texas, New York and Washington – each totaled more than \$1 billion in venture capital investment in 2006, and together accounted for almost three-quarters of total U.S. venture capital investment for the year.
- Historically, venture capital investment in the U.S. spiked in 1999-2000, and then declined sharply as the dot-com bubble burst. Annual venture capital investment in the U.S. since 2001 has been comparable to pre-1999 levels.

Per Capita Personal Income

- Per capita personal income in Michigan continues to notably lag the nation. In 2001, Michigan per capita income was 2.1 percent below the nation and ranked 20th among all states. By 2006, it slipped to 7.8 percent below the U.S. average and ranked 27th.
- Partially responsible for this continued decline in ranking is the economic restructuring currently taking place in the state’s auto manufacturing industry. Personal income measures have suffered as many good-paying jobs have been lost in this sector.
- From 2005 to 2006, Michigan’s per capita personal income grew only 2.0 percent while the U.S. gained 5.9 percent. However, average inflation for this period was roughly 3.2 percent, so **real** per capita income (adjusted for inflation) actually declined in Michigan, while it increased in the U.S.

Per Capita Personal Income, 2001 to 2006



Source: U.S. Bureau of Economic Analysis, Regional Economic Information System

Job Vacancy Survey 2006

Executive Summary

The Michigan economy has been slow to recover from the economic downturn in 2001, in large part due to its heavy concentration of employment in the auto industry. A good understanding of labor demand and the job characteristics of the Michigan economy will aid in the transition as workers move from one job to the next or jobseekers switch from the ranks of the unemployed to the employed.

The Bureau of Labor Market Information and Strategic Initiatives conducted a *Job Vacancy Survey* study of the Michigan economy. Collecting information on job vacancies across Michigan facilitates better understanding of issues such as reemployment difficulty, unmet demand or workforce shortages, and hiring difficulty. Based on a comprehensive survey of over 8,600 employers statewide, we estimate that there were roughly 84,000 job vacancies with employers, offering a median hourly wage of \$10.00 an hour.

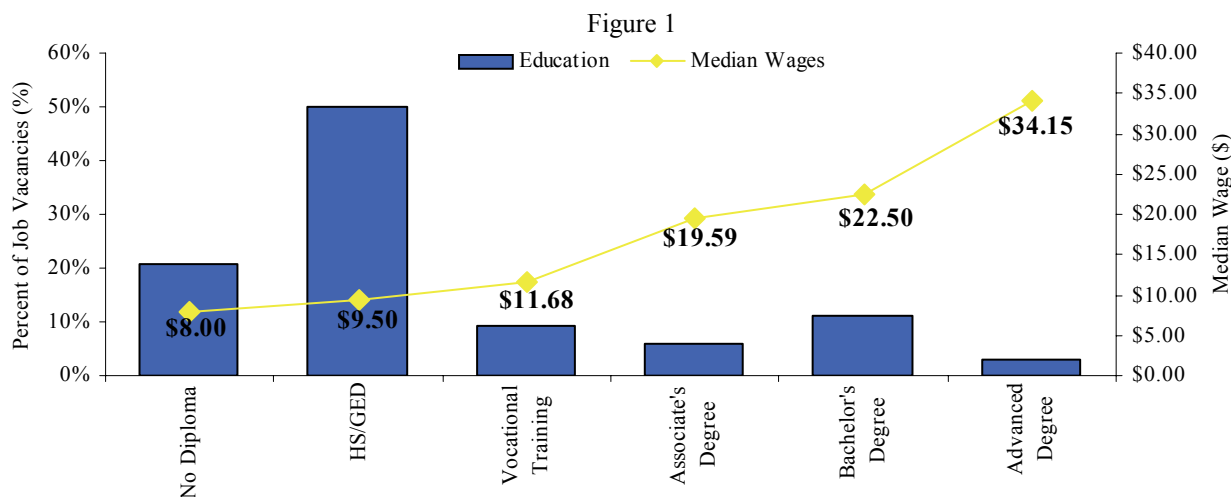
Questions addressed by this report:

- Which jobs are in demand?
- What education and work experience levels are required?
- What benefits are provided with part-time/full-time jobs?
- Which jobs require vocational training or higher?
- What specific education levels are needed for jobs requiring Vocational Training or higher?
- Which jobs have long-term shortages of qualified help?

Fast Facts/Key Findings

- **84,000 job vacancies** were estimated across an employment level of nearly 4,335,000, equating to a **vacancy rate of 1.9 percent** (slightly less than 2 job openings /100 employed people).
- **47 percent of the vacancies were located in Southeast Michigan**, 12 percent in both Mid-Michigan and West Michigan, about 8 percent in both Southwest Michigan and Northern Lower Michigan, 2 percent in the Upper Peninsula and 11 percent not assigned to a specific county.
- **29 percent or 24,360 job openings statewide require vocational training or higher** and offer a median hourly wage of \$16.83 (range \$11.68 - \$34.15). (See Figure 1)
- **71 percent or 59,640 job openings require a high school diploma/GED or no degree** and pay a median wage less than \$9.50/hour (range \$8.00 - \$9.50). (See Figure 1)

Job Vacancy Survey 2006 *(continued)*



- **Largest number of open positions requiring vocational training or more:**
 - Healthcare practitioners and technical – 5,719
 - Personal care and service – 4,186
 - Education training and library – 3,317
 - Healthcare support – 3,309

- **Occupational groups with a high number of open positions:**
 - Healthcare related occupations contribute 10.8 percent (over 9,000) of all open positions with an in-group vacancy rate of 2.6 percent.
 - Service related occupations contribute 19.5 percent (over 26,300) of all vacancies with an in-group vacancy rate of 2.0 percent.

- **1/3 of all open positions were designated as part time (27,700) mostly in the sales and related occupations.**

- **Health insurance is offered in 76 percent of the full time open positions and only 23 percent of the part time vacancies.**

- **Retirement or pension plans are available for 55 percent of the full time open positions and 14 percent of the part time vacancies.**

Full Report

The full Michigan Job Vacancy Survey report for 2006 is available on the web at: www.michigan.gov/lmi

Employment Forecasts 2004-2014

Michigan Outlook:

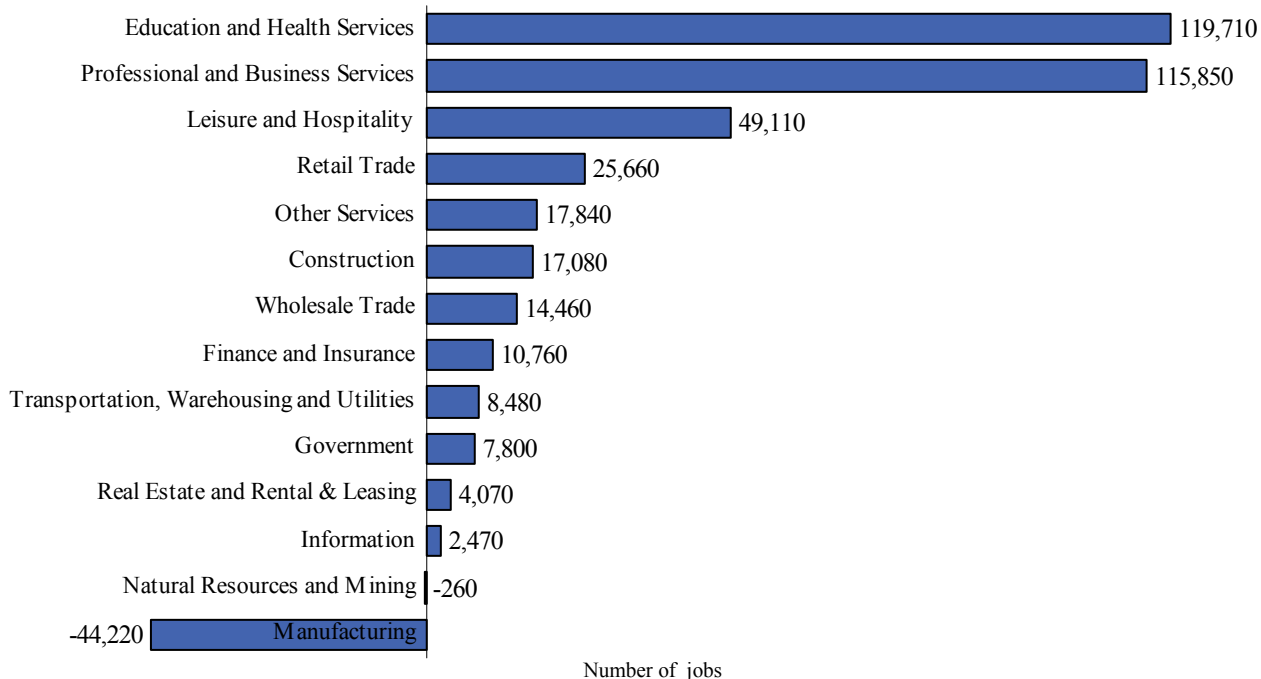
The Michigan employment picture is expected to improve over the forecast period despite the continuing drag from the manufacturing sector. Total employment in Michigan is projected to rise from 4.7 million in 2004 to nearly 5.1 million in 2014. This is slightly more than half the growth the State enjoyed during the 1990-2000 period when employment grew from 4.3 million in 1990 to 5.0 million in 2000. The rate of growth has slowed from 16.2 percent in 1990-2000 to 7.7 percent in the current forecast. Manufacturing, especially automotive and related manufacturing, continues to dampen expansion of Michigan's economy. The forecast of weaker population growth also contributes to a slowing down of the expanding service sector industries. The State's 7.7 percent employment growth for the forecast period tracks below the U.S. national forecast of 13 percent, but it is a welcome change considering the losses of the past few years.

Michigan's population is expected to edge up by nearly 4 percent during the 2004-2014 forecast period. This compares to a 6.9 percent rise in population experienced during the comparable 1990-2000 period. The labor force, or the number of people employed or seeking employment, is projected to grow by 381 thousand; a 7.5 percent increase over current levels. By contrast, the state's labor force rose by nearly 11 percent between 1990 and 2000. Michigan's population and labor force growth will not only be slower than in past periods, but will also trail behind the nation as a whole. Nationally, the population is projected to increase by nearly 9 percent and the labor force by 10 percent between 2004 and 2014.

Industry:

Job growth is projected in all industry sectors except for manufacturing and natural resources and mining. Manufacturing is expected to shed the most jobs, over 44 thousand during the forecast period, primarily in durable goods automotive and auto related industries. Even though annual vehicle sales are expected to increase from the 2004 level of 17.3 million to 17.6 million in 2014, process and productivity improvements along with industry right-sizing contribute to the State's job losses in the automotive manufacturing industry. While durable goods manufacturing is expected to reduce employment, nondurable goods manufacturing stays reasonably flat, with growth only in chemicals, plastics and rubber products manufacturing. Virtually all of Michigan's job growth is expected in service-producing industries, such as professional and business services, education and health services, and leisure and hospitality. Within the service sector, internet publishing and broadcasting, information services, and administrative and support services are expected to record the fastest growth rates with increases of 30.0 percent, 28.9 percent, and 27.9 percent, respectively. However, the most jobs will be created in administrative and support, education, and professional, scientific, and technical services with expected gains of 73.3, 44.6, and 37.3 thousand, respectively.

Michigan Job Growth, 2004-2014, by Industry Group



Employment Forecasts 2004-2014 *(continued)*

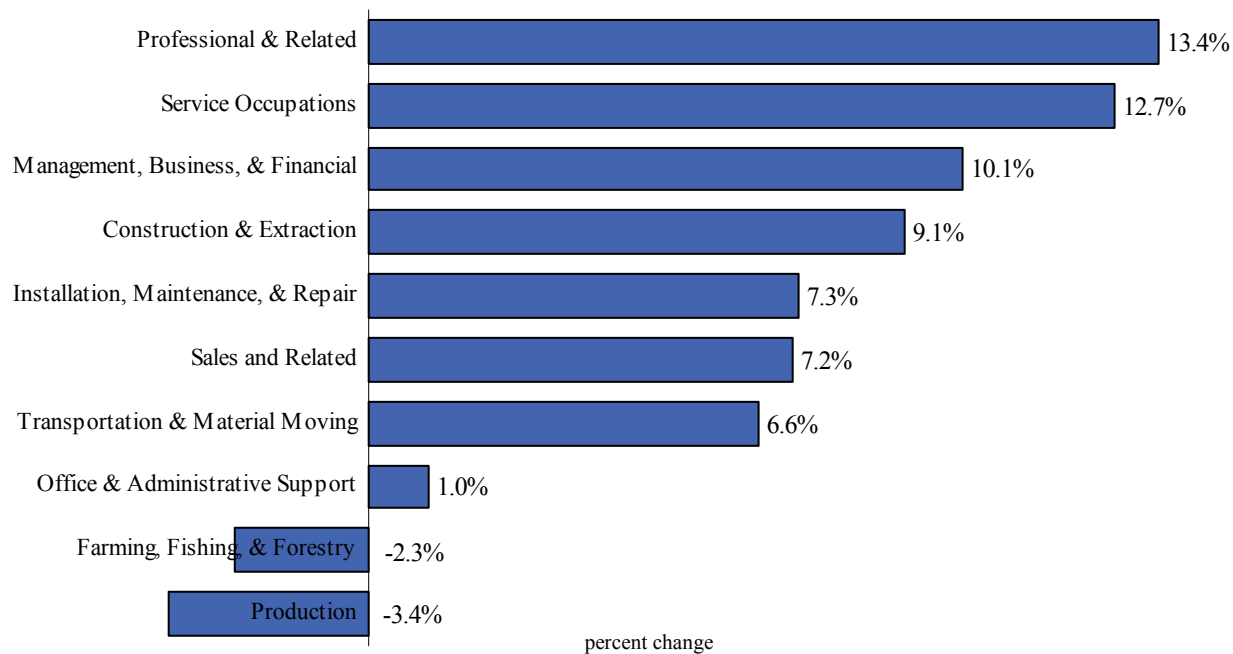
Occupations:

Michigan's economy will continue creating jobs for workers at all levels of education and training. Occupations requiring a postsecondary award (vocational training, associate's or higher degree) will, on average, have higher growth rates than occupations that require less education or training. Although occupations that call for a postsecondary education degree will grow at a faster pace, more than half of the new jobs will still be in areas that require less than a postsecondary degree. Occupations with the largest growth rate require educational attainment of an associate's degree or more, supporting demands from the new knowledge based economy. These positions tend to be in the faster growing services sector and are in diverse fields such as health, education, and business support services.

Most major occupational groups are projected to increase employment over the forecast period. The fastest growing group, professional and related occupations, is expected to create more than 126 thousand jobs, more than any other occupational group, followed by service occupations at nearly 110 thousand new jobs. Only production and farming, fishing, and forestry occupations are expected to post a job loss, totaling 3 percent or 17 thousand over the forecast period.

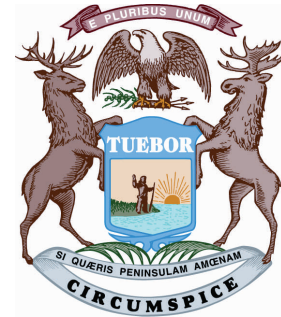
The profile of Michigan's employment growth rates by major occupational category matches that of the nation as a whole, albeit to a lesser degree. And like the national trend, jobs requiring postsecondary education and training in Michigan will provide the greatest rate of increase.

Michigan Employment Growth, 2004-2014, by Major Occupational Group



Additional Information

A complete report, detailing employment growth by educational attainment or industry and occupational forecasts by region, is available on the web at: www.michigan.gov/lmi



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