



2016 Michigan Economic **COMPETITIVENESS STUDY**



An analysis of issues to advance Michigan in a complex global economy

2016 Michigan Economic Competitiveness Study:

An Analysis of Issues to Advance Michigan in a
Complex Global Economy

Executive Brief

About the Michigan Chamber Foundation

The Michigan Chamber Foundation was established as a non-profit supporting organization to the Michigan Chamber of Commerce in 1985 for the following purposes:

- To plan and conduct non-partisan public education programs regarding free enterprise, productivity and basic economic issues affecting the state of Michigan;
- To establish and operate a leadership institute designed to provide promising future leaders assessment of Michigan's assets, challenges and opportunities to give participants the background and network of contacts necessary to make a positive impact on Michigan's future;
- To conduct non-partisan research and distribute policy studies on issues facing Michigan including, but not limited to, taxation, government regulation, government spending, health care and transportation.

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About Northwood University

Northwood University is committed to the most personal attention to prepare students for success in their careers and in their communities. It promotes critical thinking skills, personal effectiveness and the importance of ethics, individual freedom and responsibility.

Private, non-profit and accredited, Northwood University specializes in managerial and entrepreneurial education at one full-service, residential campus located in mid-Michigan. Adult Degree Programs are available in seven states with many course delivery options, including online. The DeVos Graduate School offers accelerated, evening and weekend programming in Michigan and Texas. The Alden B. Dow Center for Creativity and Enterprise provides system-wide expertise in family enterprise, entrepreneurship, creativity and innovation and new business development. International education is offered through study abroad and in Program Centers in Switzerland, China (Changchun and Wuxi), Malaysia and Sri Lanka.

The McNair Center for the Advancement of Free Enterprise and Entrepreneurship at Northwood University is a leading university think-tank, generating information, research, and programs focused on the study, advocacy and expansion of the market process and the creation and the cultivation of entrepreneurs.

Acknowledgements

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Dr. Adam Okulicz-Kozaryn, Associate Professor of Public Policy, Rutgers University

Mr. Adam N. Matzke, Economics and Finance graduate, Northwood University

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Introduction

The purpose of the study is to conduct a comprehensive analysis of the Michigan economy that builds upon research completed for 2012, 2013, 2014 and 2015 economic competitiveness studies and that provides benchmarks for measuring the state's economy against national and regional competitors.

The focus is on Michigan's economy as it compares to regional and national data over the last decade, as well as the trends that help forecast its future. Now in its fifth edition, Michigan is evaluated against over 200 metrics including Gross State Product (GSP) growth, tax policy, regulatory policy, employment growth and the cost of doing business. Researchers examined state tax structures, regulations and rules that govern business, educational attainment, workforce composition and the most current economic statistics available to give the most complete picture of the state's business climate.

The study also breaks out data comparing Right-To-Work states to Non-Right-To-Work states, Michigan to Great Lakes region states (Illinois, Indiana, Michigan, Ohio, and Wisconsin) and looks at some of the largest cities in the Great Lakes region as contributors to the state's economic success. **New with the 2016 study** is an analysis of the largest cities/GSP regions within the state of Michigan (see Exhibit 126).

The Michigan economy began its seventh year of economic recovery in the summer of 2016. Job growth has slowed a bit, but still averaged a healthy 2.2% growth in the first half of 2016. The University of Michigan projects good job growth for the second half of 2016 and solid job growth of 1.2% by the end of the first half of 2017. From December of 2010 to December of 2015, Michigan led the country in the creation of manufacturing jobs and was number 6th in the creation of private sector jobs with more than 490,000 jobs created. Michigan's unemployment rate has dropped more than 50% since late 2010, making it the top-performing state in this category at the end of 2016. Michigan remains the automotive management capital of the U.S. as well as its design and R&D center. In 2015, the U.S. automobile industry reached an all-time record for automobiles, SUVs and light trucks sold at just over 17,470,000 vehicles. Record breaking sales in 2015 were up 5.7%, with impressive gains by the Detroit three and a slowing, but promising 2016.

Methodology

Using statistical techniques called factor analysis, a process in which the values of observed economic data are expressed as functions of a number of possible causes or factors to find which are the most important to overall economic competitiveness, researchers studied the following factor categories: 1) General Macroeconomic Environment, 2) State Debt and Taxation, 3) Workforce Composition and Cost, 4) Labor and Capital Taxation 5) Regulatory Environment. These are the same five factor categories used in each year's installment of the study.

Factor 1 (General Macroeconomic Environment) - considers general measures of statewide economic health such as unemployment rates, labor force participation rates, per-capita income and life-satisfaction (another measure of well-being in addition to per-capita income).

Factor 2 (State Debt and Taxation) - considers state debt per capita, cost of living and tax burden per capita (tax burden considers state sales taxes, selective taxes, license taxes, corporate income taxes and state income taxes).

Factor 3 (Workforce Compensation and Cost) –considers percentage of the working population that is part of a union, percentage of the private working population that is a member of a union, percentage of the public working population that is a member of a union and cash payments to beneficiaries (including withdrawals of retirement contributions) of employee retirement, unemployment compensation, workers' compensation and disability benefit social insurance programs.

Factor 4 (Labor and Capital Formation) - considers employment growth, population growth, migration and organizational birth and death data.

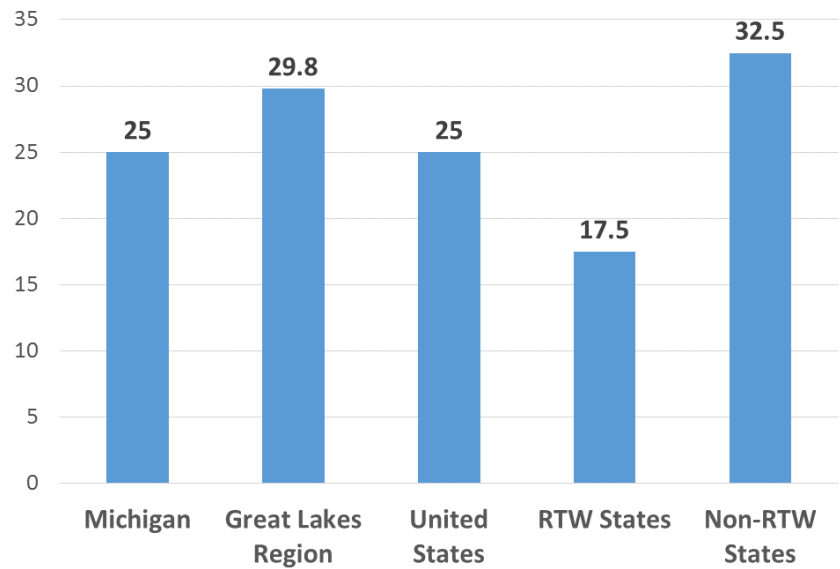
Factor 5 (Regulatory Environment) - is a composite of other indices that consider the business friendliness of a state's regulatory framework/environment.

The Northwood University Competitiveness Index

The Northwood University Competitiveness Index was developed for this study and is comprised of five factor categories measuring various areas of economic performance for all 50 states (1 is the most favorable and 50 is the least favorable). Unlike many other indices where the data and/or categories are assigned weights by the researchers, the Northwood Index assigns weights based on factor analysis which initially involved 200 variables. The weights are market sensitive and are susceptible to fluctuate with changes in economic conditions and data from year to year. Thus, the indices are based on these weights and are snapshots of current market conditions and key factors over said period. Therefore, the model delivers an overall ranking for a state, provides evidence of strengths and weaknesses relative to other states by category and the weights assigned in each category derived by the model may be useful in prioritizing efforts to improve a state’s relative competitiveness (see Exhibits 107 and 108).

Exhibit 107 : Northwood’s State Competitiveness Index Rank (2000-2016)			
Alabama	32	Montana	21
Alaska	29	Nebraska	6
Arizona	37	Nevada	17
Arkansas	19	New Hampshire	26
California	11	New Jersey	48
Colorado	4	New Mexico	38
Connecticut	49	New York	45
Delaware	40	North Carolina	18
Florida	33	North Dakota	5
Georgia	12	Ohio	30
Hawaii	47	Oklahoma	7
Idaho	9	Oregon	20
Illinois	35	Pennsylvania	42
Indiana	23	Rhode Island	50
Iowa	14	South Carolina	24
Kansas	28	South Dakota	16
Kentucky	43	Tennessee	13
Louisiana	27	Texas	1
Maine	44	Utah	2
Maryland	41	Vermont	39
Massachusetts	46	Virginia	8
Michigan	25	Washington	15
Minnesota	34	West Virginia	10
Mississippi	31	Wisconsin	36
Missouri	22	Wyoming	3

Exhibit 108 : Northwood's State Competitiveness Index Rank (2000-2016)



The research concluded and the analysis shows that Michigan's economy improved similarly to the U.S. economy and, while making gains in its overall competitiveness, still has strides to make relative to other states. **The overall factor analysis making up the Northwood University State Competitiveness Index shows Michigan moving from 47th in 2012 to 25th in 2016.**

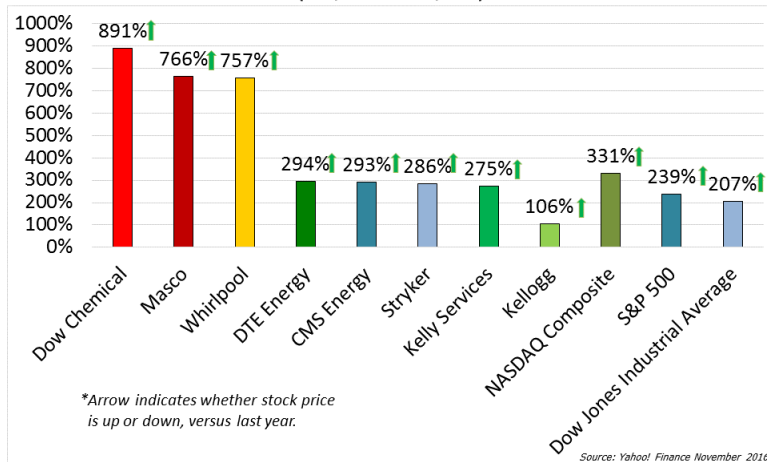
Overall, Michigan ranks 25th out of the 50 states in the Index. Consequently, the state's relatively strong performance in terms of Debt and Taxation and Regulatory Environment is outweighed by its relatively weak performance in the factor categories of Workforce Composition, Cost and Labor and Capital Formation. The key reason for Michigan's overall rank improvement in 2016 had much to do with a stronger Macroeconomic Environment and a Competitive Tax and Regulatory Environment.

New with the 2016 study is a snapshot of Michigan's overall economic performance since 2011. The above chart shows Michigan's economic performance through two difficult recessions being with data in 1998. Exhibit 117 shows that Michigan, driven by tax and regulatory reform and strong public policy, has been the 13th most competitive state economically since 2011, something all Michiganders played a role in and should be proud of (see Exhibit 127).

Exhibit 127: Northwood's State Competitiveness Index Rank (2011-2016)			
Alabama	37	Montana	15
Alaska	38	Nebraska	14
Arizona	26	Nevada	11
Arkansas	35	New Hampshire	28
California	27	New Jersey	46
Colorado	6	New Mexico	45
Connecticut	49	New York	47
Delaware	42	North Carolina	4
Florida	2	North Dakota	7
Georgia	12	Ohio	24
Hawaii	36	Oklahoma	33
Idaho	9	Oregon	10
Illinois	31	Pennsylvania	34
Indiana	8	Rhode Island	50
Iowa	22	South Carolina	20
Kansas	30	South Dakota	18
Kentucky	43	Tennessee	5
Louisiana	32	Texas	3
Maine	41	Utah	1
Maryland	39	Vermont	44
Massachusetts	17	Virginia	25
Michigan	13	Washington	16
Minnesota	23	West Virginia	48
Mississippi	40	Wisconsin	29
Missouri	21	Wyoming	19

GDP growth in Michigan over the last few years has been led by a resurgence in the automobile, agriculture, tourism sectors and manufacturing in general. In fact, Michigan-based Fortune 500 Company Stock Prices (Non-Automotive) on average have outperformed the three major stock indices since the trough of the “Great Recession” at 444% growth

Exhibit 123: Percent Increase in Michigan Based Fortune 500 Company Stock Price (Non-Automotive) (03/09 – 12/16)



compared to 259% growth for the stock market (see Exhibit 123). A careful analysis of factor categories 3 and 4 coupled with sound public policies designed to address said issues with workforce development and labor costs will enhance Michigan’s competitiveness.

Michigan’s economic performance in the five categories ranked as follows:

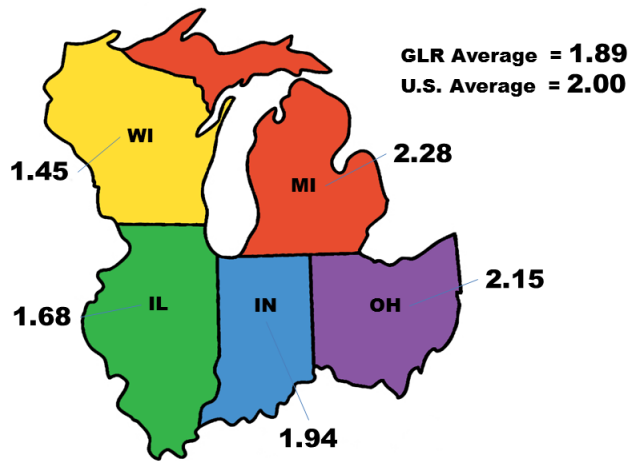
Exhibit 119: Michigan’s Economic Performance Ranking
(1998-2016 Data)

	2016	2015	2014	2013	2012
NU State Competitiveness Index: Michigan	25	29	30	39	47
Factor 1 – General Macroeconomic Environment	10	11	20	31	48
Factor 2 – State Debt and Taxation	13	13	12	14	10
Factor 3 – Workforce Composition and Cost	38	39	38	43	45
Factor 4 – Labor and Capital Formation	35	36	38	44	45
Factor 5 – Regulatory Environment	19	25	23	26	24

The factor analysis again shows Michigan improving in the General Macroeconomic Environment. This is largely due to relative improvements in Gross State Product growth and reductions in unemployment. Job growth in Michigan was positive in 2011, 2012, 2013, 2014 and 2016 with almost 500,000 jobs created since the end of 2010. Researchers believe much of this growth can be attributed to Michigan’s state business tax environment and regulatory structure. Michigan’s labor cost still remains among the highest nationally in some sectors while net population migration and new business startups are improving in Michigan since 2000, yet remain among the most challenging nationally. The 2016 Kauffman Foundation Entrepreneurial Index shows Michigan slightly lower than the national average, yet leading the Great Lakes Region. Michigan shows general promise in entrepreneurial activity, which can significantly improve rankings given continued development in economic attractiveness.

Michigan led the Great Lakes Region states in economic growth and was a strong performing state nationally over the last five years. It is also of note that the Great Lakes Region was the fifth best performing region in the country (out of eight regions) over the same period with good performance coming from Michigan, Indiana and Ohio. The

Exhibit 26: Gross State Product Growth (2011 - 2015)



region showed average growth in the Gross State Product (GSP) of 1.8% and Michigan GSP growth of 2.40%. The region did not outperform the U.S. national average in personal income growth per capita as it did in previous studies. The Great Lakes region realized only 1.89% growth compared to the national average of 2% over the last four years. Michigan's recovery outpaced the national average and was more broad-based, as many non-automotive Michigan Fortune 500 companies have dramatically improved in the stock market since the "Great Recession" trough of March 2009.

The 2016 study includes a feature analyzing eight of the Great Lake states' largest economic areas and principle cities. The Detroit and Grand Rapids economic areas show signs of strong economic improvement since 2009, after facing challenging economic times in the first decade of the 21st century, and outperformed Chicago, Cleveland, Indianapolis and Milwaukee. Grand Rapids was the top performing major Great Lakes Region city at 4.06% economic growth with Columbus, OH next at 3.6% growth, while Lansing exhibited good growth at 2.1% from 2009-2014, signaling economic recovery for the city.

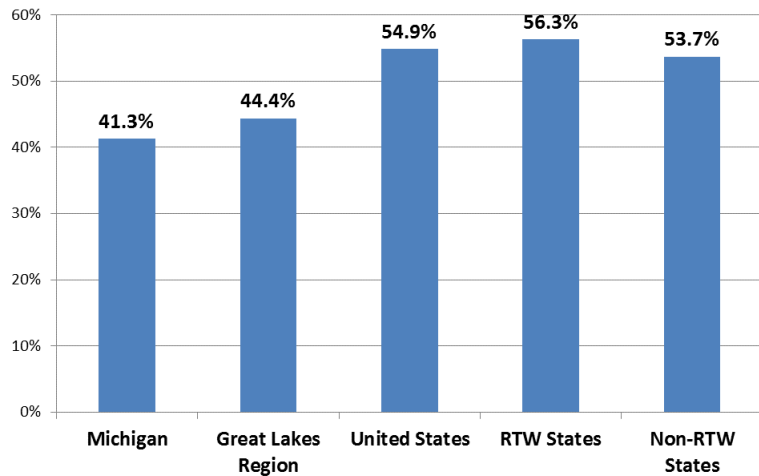
Key Findings

The following are examples of the many factors used in this study to evaluate the competitiveness of the Michigan economy relative to the U.S. as a whole, the Great Lakes Region, as well as Right-To-Work (RTW) states and Non-Right-To-Work (NRTW) states:

1. Growth in Personal Income

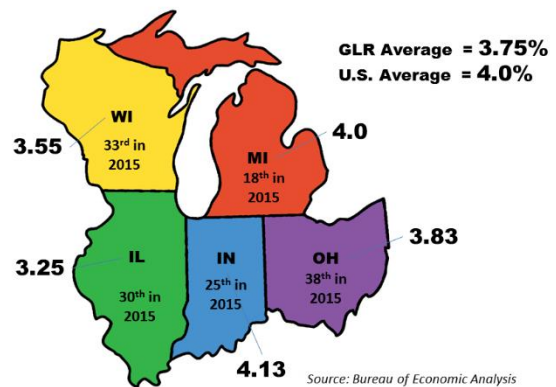
Personal income per capita growth in Michigan grew 41.3% from 2000-2015 while the U.S. average income grew at 54.9% over the same period. Personal income growth over the period grew at just over 56% in RTW states, at 53.7% in NRTW states and 44.4% in the Great Lakes region. Also of note, Michigan did not lead the Great Lakes region from 2010 – 2015 or the national average for per capita personal income growth (see Exhibits 36 and 37). However, increasing per capita income growth in Michigan over the last few years is still a leading indicator of a strengthening economy and job market.

Exhibit 36: Personal Income Per Capita Growth (2000-2015)



Source: Computed with data from Bureau of Economic Analysis (2000 - 2015)

Exhibit 37: Great Lakes Average Personal Income Per Capita Growth (2010-2015)



Source: Bureau of Economic Analysis

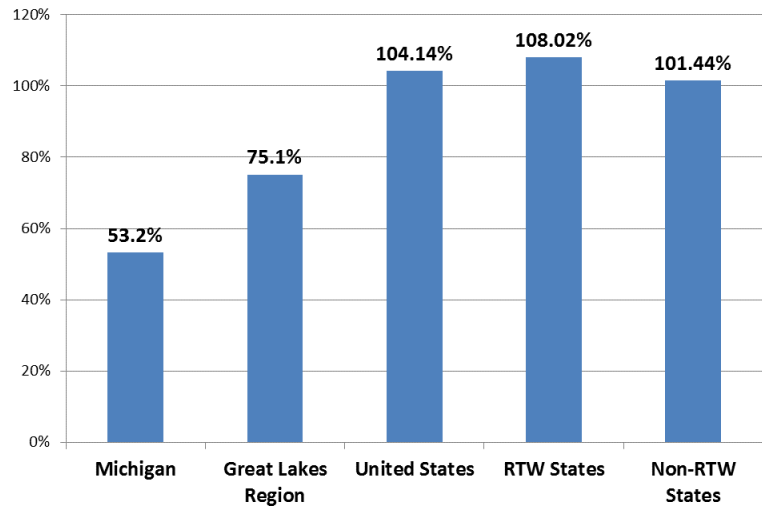
2. Real Gross State Product (GSP)

Growth

From 1998-2015, Michigan Real Gross State Product (GSP) lagged behind the national average significantly. While the U.S. economy grew from an overall real Gross Domestic Product (GDP) level of more than \$8 trillion in 1998 to just over \$16.6 trillion in 2015 or just over 100%, the Michigan economy grew by only 53%. Gross State Product grew at an average rate of roughly 104% over the same period in RTW states while realizing a slower growth rate in NRTW states of just 108% and 101% in the Great Lakes Region.

Michigan’s GSP growth was impressive from 2011-2015. The Michigan average of 2.28, leads the Great Lakes Region and was above the U.S. average of 2.0 for the same period. The Great Lakes Region average was just below the average of the U.S. over the same time period. If Michigan were its own economic region, it would have ranked third in economic growth trailing only the Southwest and Rocky Mountain regions of the U.S., signaling recent improvement in the Michigan economy (see Exhibits 19, 27, and 28).

Exhibit 19: Gross State Product Growth (1998-2015)



Source: Computed with data from Bureau of Economic Analysis (1998–2015)

Exhibit 27: U.S. GSP Growth in Great Lakes Region (2011 - 2015)

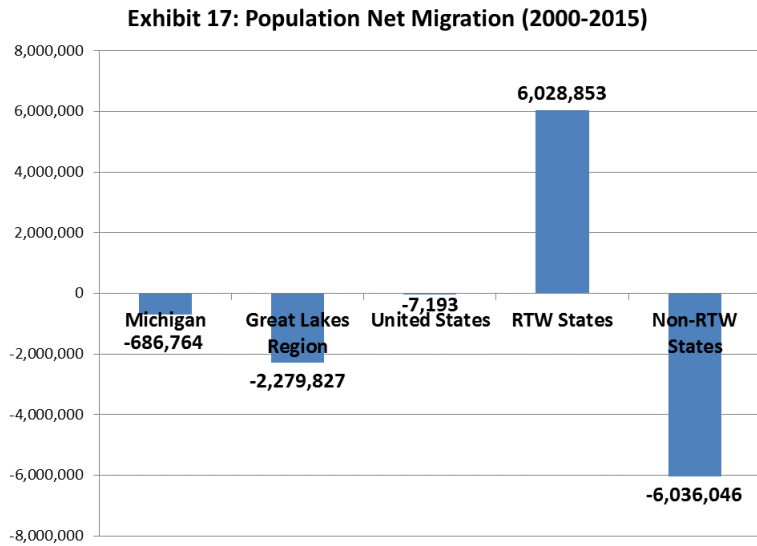
State	2011	2012	2013	2014	2015	Average Rank
Illinois	2.07	1.91	0.9	1.2	2.3	1.68
Indiana	2.19	3.30	2.1	0.4	1.7	1.94
Michigan	3.45	2.25	2.0	1.9	1.4	2.28
Ohio	2.88	2.16	1.8	2.1	1.8	2.15
Wisconsin	1.28	1.45	1.7	1.0	1.8	1.45
Great Lakes	2.43	2.17	1.6	1.4	1.8	1.89
U.S.	1.68	1.28	2.66	2.49	1.94	2.0

Exhibit 28: U.S. GSP Growth by Region (2011 - 2015)

Region	2011	2012	2013	2014	2015	Average
New England	1.04	1.24	1.3	1.6	1.3	1.3
Mid East	1.20	1.48	0.7	1.7	1.6	1.3
Great Lakes	2.43	2.17	1.6	1.4	2.14	1.95
Plains	1.96	2.74	2.5	1.3	1.3	1.96
South East	0.97	2.12	1.6	1.7	2.2	1.7
South West	2.97	4.07	3.3	4.3	3.1	3.55
Rocky Mountains	1.52	2.10	4.1	3.9	3.1	2.9
Far West	1.51	3.33	2.0	2.7	3.8	2.67
U.S.	1.68	1.28	2.66	2.49	1.9	2.0

3. Net Population Migration

Michigan’s population net migration from 2000-2015 was among the worst in the United States, ranking 47th with a loss of 686,784 people. Net migration is defined by the difference in people leaving a state relative to people migrating to a state over a given period of time. The overall U.S.

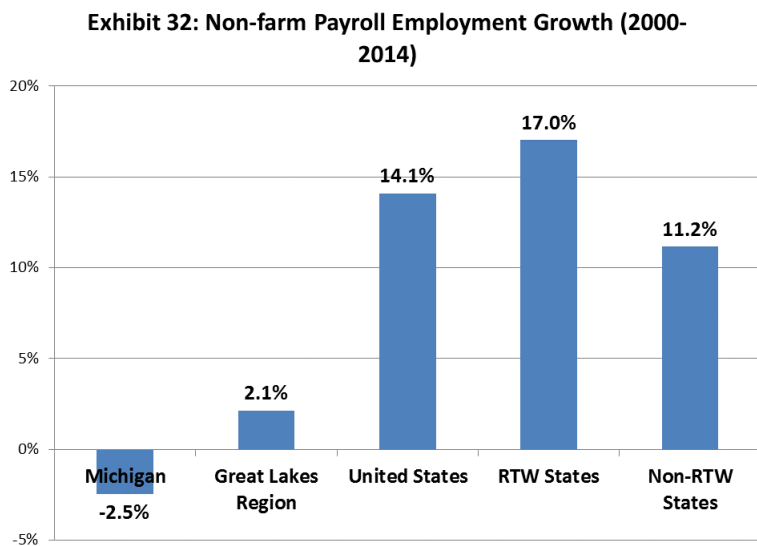


Source: Computed with data from Bureau of Labor Statistics (2000–2015)

population net migration for the same period was just over 7,193 people net negative with RTW states experiencing a positive net migration total of 6,028,853 and NRTW states suffering a net migration loss of 6,036,046 with the Great Lakes region realizing a loss of just under 2.3 million people. (see Exhibit 17). Even though population net migration is still negative, it is slowing with the net job creation that has taken place in Michigan over the last six years.

4. Job Growth by State

During the same period between 2000 and 2014, Michigan Non-Farm Employment growth declined 2.5% while U.S. overall growth grew 14.1%. RTW states saw employment growth at just under 17% while NRTW states job growth was 11.2%. The Great Lakes Region realized slightly positive growth (see Exhibit 32).

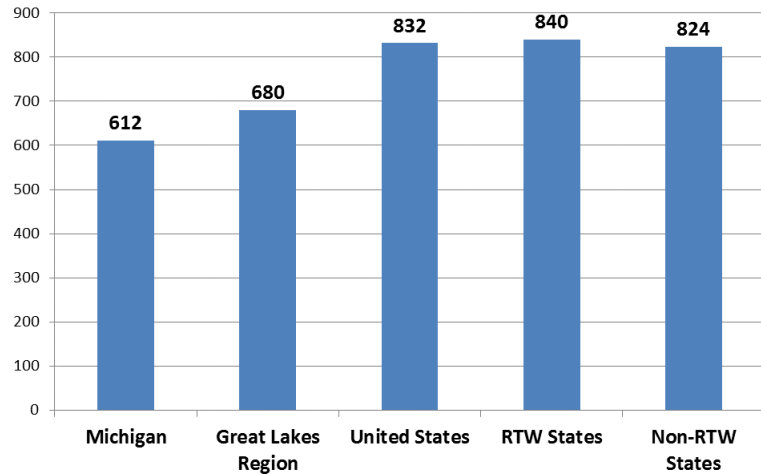


Source: Computed with data from Bureau of Economic Analysis (2000 - 2014)

5. Total Government Employees per 10,000 People

Michigan, as of 2015, has 612 government employees per 10,000 people, ranking it 4th best in the country again with this study (see Exhibit 61). This is a slight decrease from the 2014 study when Michigan had 616 government employees per 10,000 people, and is a sign of increasing government efficiency.

Exhibit 61: Total Government Employees per 10,000 People (2015)

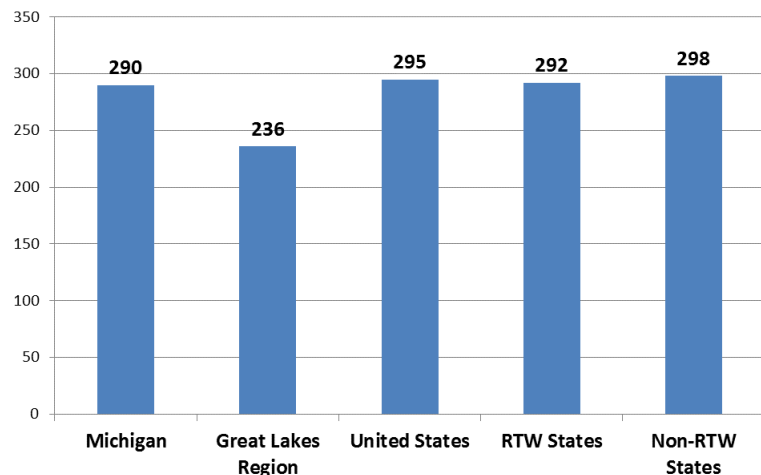


Source: Computed with data from Bureau of Economic Analysis (2016)

6. Index of Entrepreneurial Activity per 100,000

The Kauffman Foundation ranked new business activity per month per state per 100,000 people in 2016 with the national average being 295 and the Michigan average at 290. The RTW state average was 292, the NRTW state average was 298 and the Great Lakes Region was 236 (see Exhibit

Exhibit 87: Kauffman Index of Entrepreneurial Activity (2015)



Source: Computed with data from The Kauffman Foundation (2016)

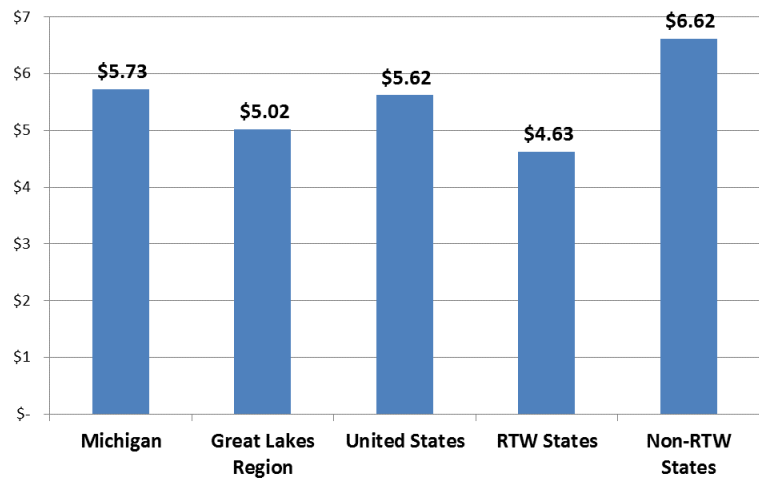
87). Since the “Great Recession,” the Michigan economy has shown strong growth in both income and gross state product clearly improving the environment to bring new business to Michigan and encouraging entrepreneurial growth as we no longer lag behind the national average and are far above Michigan’s average level of 180 in last year’s study.

7. Industrial Cost of Natural Gas

Michigan seems to be somewhat competitive in the area of average cost of electricity, but trails natural gas per unit relative to the Great Lakes Region and RTW averages. It was above the national average for electricity and below the RTW average price for electricity per unit in 2013. However, the RTW

average for natural gas was below the national, NRTW, Great Lakes Region and Michigan averages in industrial natural gas costs we studied for 2013 (see Exhibit 79). Michigan's industrial natural gas price increased from last year's study to this year's study, and so did the cost for the rest of the country leaving Michigan at a slight competitive disadvantage, continuing to suggest an opportunity for public policy debate relative to pricing structure.

Exhibit 79: Industrial Natural Gas Prices
(Avg. Jan.-Apr. 2016)



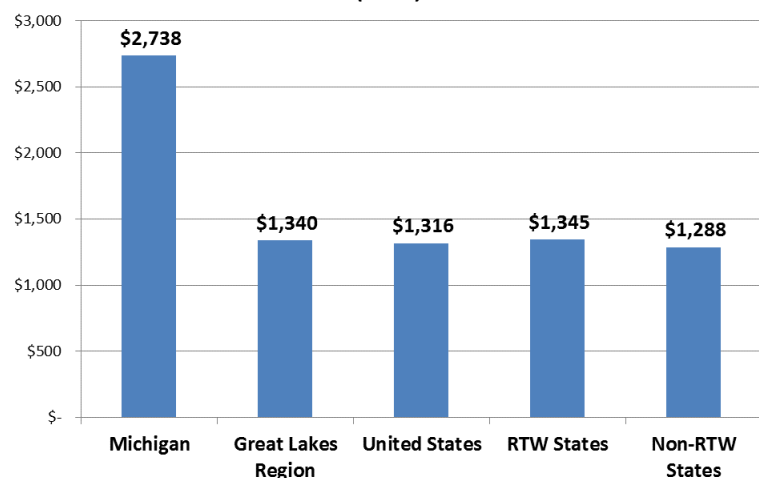
Source: Computed with data from U.S. Energy Information Administration (Average Jan.-Apr. 2016)

8. Automobile Insurance Cost

The cost of doing business in Michigan is high by a number of key metrics. The median price for an automobile insurance policy in Michigan is the highest in the country, according to a recent study released by CarInsuranceQuotes.com. The median average in Michigan is

\$2,738, the national average is just over \$1,316, the RTW average is \$1,345, the NRTW average is just under \$1,288 and the Great Lakes Region is \$1,272. Michigan requires long-term catastrophic care as a part of its no-fault coverage; the cost figures out to be 5.27% of median

Exhibit 67: Average Price of Annual Car Insurance Policy
(2016)



Source: Computed with data from CarInsuranceQuotes.com (2016)

household income to purchase insurance. New Hampshire is the best bargain at 1.28% of median household income (see Exhibit 68). Again with the 2016 study, we used the same broad measure of cost with Michigan remaining 50th as the most costly state. Again an area for public policy consideration and improvement.

9. State Business Tax Climate Index

The *State Business Tax Climate Index* is produced annually by the Tax Foundation, one of this country’s leading fiscal policy think tanks. The index is a measure of how each state’s tax law affects economic performance. An overall index rank of 1 means the state’s tax system is most favorable for business; a rank of 50 means least. Rankings are weighted and do not average across to total. The chart depicts a strong and improving climate for business in Michigan in 2016. Michigan Ranks 13th overall, 10th best relative to corpportate taxes, 14th in individual income taxes and 7th in sales tax. Michigan is number 2 in the Great Lakes Region trailing Indiana which is ranked 8th in the country (see Exhibit 106).

Exhibit 106: State Business Tax Climate Index 2016

State	Overall Index Rank	Corporate Tax Rank	Individual Income Tax Rank	Sales Tax Rank	Unemp. Insurance Tax Rank	Property Tax Rank
Wyoming	1	1	1	12	30	36
South Dakota	2	1	1	34	40	22
Alaska	3	30	1	5	21	21
Florida	4	17	1	17	3	20
Nevada	5	4	1	3	4	7
Montana	6	23	20	3	18	9
New Hampshire	7	48	9	2	44	43
Indiana	8	20	11	11	14	5
Utah	9	5	12	16	19	2
Texas	10	41	6	37	15	34
Great Lakes Region						
Michigan	13	11	15	7	48	26
Illinois	23	36	10	33	39	45
Ohio	42	26	47	30	6	11
Wisconsin	43	32	43	13	36	33

Source: Tax Foundation (2016)

A Snapshot of Key Great Lakes Region Cities

Using the most current data available, we took a close look at how key cities in the Great Lakes Region have functioned since 2000. We looked at eight cities from the five Great Lakes region states including Detroit, Grand Rapids and Lansing.

Michigan was clearly the hardest hit state economy in the country over the last 15 years. The data also shows that Detroit was one of the most— if not the most— adversely affected city while Grand Rapids and Lansing had economic challenges as well. The inspiring news is that Grand Rapids was the top performer of the eight cities we analyzed between 2009 and 2015, with Detroit close behind, and Columbus, OH in third place. Grand Rapids was also the only city in the region to outperform the national average for GDP growth 2008-11 while Detroit, Grand Rapids and Columbus, OH performed at a significantly higher level than the U.S. metro average 2009 to 2014 based on the Bureau of Economic Analysis data. Chicago, Cleveland, Indianapolis and Milwaukee all trailed Grand Rapids, Columbus and Detroit in economic growth from 2009-2014 with Milwaukee falling below the national average over the period (see Exhibit 121).

Exhibit 121: An Economic Snapshot of Key Great Lakes Region Cities (2000-2015)

	Metro Compounded Annual GDP Growth Rate (2000-2011)	Metro Compounded Annual GDP Growth Rate (2008-2011)	Metro Compounded Annual GDP Growth Rate (2009-2014)	Metro GDP (2015)	Rank Metro GDP (2011)	Rank Metro GDP (2015)	Number of Employers	City Population (City Proper) (2015)	City Median Household Income/State (2009-2013)
Chicago	0.64	-0.15	1.83	\$640 B	3	3	255,502	2,690,518	\$47,270/\$56,797
Cleveland	-0.15	-0.97	2.32	\$128 B	27	27	26,208	396,815	\$26,217/\$48,308
Columbus	0.53	-0.28	3.6	\$124 B	32	30	56,957	787,033	\$44,072/\$48,308
Detroit	-1.12	-1.25	3.4	\$245 B	14	14	50,588	677,116	\$26,325/\$48,411
Grand Rapids	0.10	0.63	4.06	\$54 B	66	56	15,528	188,040	\$39,227/\$48,411
Indianapolis	1.14	-0.32	2.6	\$134 B	28	25	63,805	853,173	\$41,962/\$48,248
Lansing	0.10	-0.30	2.1	\$21 B	112	117	8,363	114,297	\$36,054/\$48,411
Milwaukee	1.10	0.14	1.4	\$102 B	35	37	31,769	594,833	\$35,467/\$52,413
U.S. Metro Areas	1.48	0.24	2.0	\$14.6 T					

A Changing Michigan: Comparing the 2012-2016 Michigan Competitiveness Studies

Michigan is showing stronger growth and a brighter economic picture when comparing our 2016 study to our 2012-2016 studies. Seven of the nine key factors outlined in last year’s Executive Summary have shown some or much improvement (Factors 1, 2, 4, 5, 6, 7, and 9) in 2014, while the other factors outline areas for concern or improvement (Factors 3 and 8). It should be noted that the cost of natural gas has declined overall nationally since 2012 due to increases in the U.S. supply related to the discovery, drilling and processing of new deposits domestically. However, Michigan is still a high-cost state for industrial natural gas. It should also be noted that we used a broad-based metric again to measure automobile insurance costs in the 2016 study. Even with a broader based analysis, Michigan is the top cost state for automobile insurance in the country, and average cost increased slightly in 2016 (see Exhibit 122).

Exhibit 122: Comparison of Key Michigan Data from 2012 - 2015 Studies

	2012 Study	2013 Study	2014 Study	2015 Study	2016 Study
Average Personal Income Per Capita Growth	2000-2010 20.3%	2000-2012 27.5%	2000-2013 30.0%	2000-2014 35.1%	2000-2015 41.3%
Gross State Product Growth	1998-2011 26.5%	1998-2012 31.5%	1998-2013 42.1%	1998-2014 48.3%	1998-2015 53.2%
U.S. Population Net Migration	2001-2010 -554,374	2001-2012 -590,635	2001-2013 -619,174	2000-2014 -647,853	2000-2015 -686,764
U.S. Employment Growth	2001-2010 -16.90%	2001-2011 -13.90%	2001-2012 -5.8%	2000-2013 -4.3%	2000-2014 -2.5%
Total Government Employees Per 10,000 People	2010 657	2012 618	2013 630	2014 616	2015 612
The Kauffman Index of Entrepreneurial Activity	2011 220	2012 180	2013 290	2015 260	2016 290
Industrial Natural Gas Prices	2010 \$8.23	2012 \$7.42	2013 \$7.92	2015 \$6.58	2016 \$5.73
Median Price of Annual Car Insurance Policy	2012 \$4,490.00	2013 \$2,520.00	2014 \$2,551.00	2015 \$2,476.00	2016 \$2,738
Northwood University Competitiveness Index	2012 47	2013 39	2014 30	2015 29	2016 25

Michigan has made dramatic progress over the 5 years of the *Michigan Chamber Foundation's Competitiveness Study*. Michigan has moved from a ranking of 47 in 2012 to 25 in 2016. It is also important to note that when measuring Michigan's overall competitiveness from 2011-2016, Michigan ranks 13th. This is a clear tribute to effective public policy decisions in Lansing and a highly productive Michigan work force.

Michigan has also made tremendous progress in the five factor categories, improving an average of 9 places per category since 2012 (see Exhibit 119). Through early December of 2016, Michigan-based non-automotive, Fortune 500 companies have on average outperformed the Dow Jones Industrial Average, the NASDAQ Composite Index and the S&P 500 since the trough of the Great Recession (see Exhibit 123). Michigan has led the Great Lakes Region in average GDP growth and job creation since 2010. There is much yet to do in areas ranging from energy cost and infrastructure to the cost of automobile insurance, yet there is no doubt at the end of 2016 it can clearly be said that Michigan's economic comeback continued. If one reflects on where the state was just a decade ago, Michigan has truly experienced a remarkable transformation.

Conclusion

Economists fundamentally agree on the sources that drive economic growth. Robert Barro (1991) in his seminal paper, “Economic Growth in a Cross Section of Countries,” studied the key economic and political factors that determined 98 countries’ competitiveness that led to economic growth and standards of living. It is clear from this and other studies that economic growth is helped by investments in human capital, lower tax rates, a lower regulatory burden on businesses and emphasis on human development. It is also clear that the U.S. in recent times has been steadily falling behind in these critical investment areas, or at least unable to keep up with the investments vis-à-vis many of its competitors. One factor might be that government in the United States is becoming increasingly more important in the overall scheme of things as compared to the private sector. In addition, the federal government budget deficit and national debt are growing alarmingly high and the financing of the deficit has been instrumental in increasing the cost of capital, making it difficult for private businesses to invest in critical areas. Many economists would argue that this unprecedented increase in government spending and national debt that exceeds 104% of U.S. GDP has been the primary reason behind the relative decline in American competitiveness (see Exhibit 10).

U.S. economic growth began to slow toward the end of the 20th century and experienced additional challenges in the early 21st century. Government was becoming more significant to the U.S. economy with the U.S. experiencing the highest corporate income tax rate in the industrialized world according to the U.S. Tax Foundation. Taxes continue to plague American businesses disproportionately to its competitors. The 2016 Heritage Foundation/Wall Street Journal’s *Index of Economic Freedom* measures political freedom, prosperity and economic freedom across 10 metrics to gauge the economic success of 184 countries around the world. In 1995, the U.S. was ranked fourth in the world on the index, and in 2016 the U.S. fell to 12th.

It is important to understand how large and important the Michigan economy still is within the U.S. and global economy. Michigan’s 2016 GSP makes it one of the 27 largest economies in the world if it were a country. The 2016 study paints a more positive picture of Michigan’s competitive position relative to most other U.S. states in comparison to our 2012, 2013, 2014

and 2015 studies. Michigan's ranking on *The Northwood University Competitiveness Index* of 25 indicates Michigan has made strong progress driven by a more friendly tax and regulatory environment over the last couple of years since our initial study in 2012. **It is also important to note Michigan ranks 13th in overall competitiveness since 2011.** This study again indicates more time and study are needed to better determine the causal relationship between RTW legislation and competitiveness; for most of the time period measured in this study, Michigan was still a NRTW state. However, the study shows that RTW states generally were more productive than NRTW states. The research contained in this study should serve as a guidepost and tool for benchmarking for Michigan public policy leaders. For many years Michigan was the economic catalyst for much of the U.S. economy.

Michigan is once again moving in the right direction and deserves to be studied. A few good years of data do not make a trend nor spell "Mission Accomplished." Michigan continues to be: A) blessed with highly educated and skilled white and blue collar workforces, B) in possession of an improving tax and regulatory environment which is favorable for job creation, C) the center of the world's largest deposit of fresh water, D) at the center of waterway transportation for the Great Lakes Region, the Mississippi, and to Ontario, Canada, E) a hub for rail, trucking, cargo and air transportation, F) headquarters to many of the world's leading manufacturing and technology companies, G) home to world-class colleges and universities, and H) poised to realize an energy boom via safe oil and natural gas recovery if the public is afforded a rational and open debate.

Michigan has made it through the economically difficult first decade of the 21st century and continues to show strong signs of an economic turnaround. Michigan is showing that its economic growth is not only outpacing the other Great Lake states, but is a strong example for growth on a national level as well. There is no doubt that Michigan continues down a come-back path but it has not arrived yet. Can Michigan return to the position of greatness it once occupied in the U.S. business structure? We again answer unequivocally yes, but only if we continue to adopt growth-friendly public policies. Michigan must continue to set its sights high and benchmark best economic and political practices of this country's top performing states.

The good news is that many good things have happened in Michigan since last year's study causing other states to benchmark to our progress.

Finally, RTW has been an important factor, but not the answer or significant policy to date in advancing Michigan's economic competitiveness. Michigan's improvement on the Northwood University competitiveness index has been impressive since 2012 and is to be lauded.

However, it is important to understand that state policy can only "go so far" in driving a state economy forward in today's complex global economy. The U.S. federal government still takes the lion's share of income taxes placed on businesses and individuals and determines much of the regulatory burden faced by households and commerce in America today (see Exhibit 3).

Not only must Michigan continue to compete against an ever-changing, aggressive tax policy from other states trying to attract new business, it must also compete against international competitors whose federal tax policies are often more attractive as well (see Exhibit 6 and 7).

The United States is still the strongest and most vibrant economy in a world rattled with challenges, complexities and much uncertainty. It is a country burdened with the highest corporate income tax in the industrial world, a national debt that is approaching \$20 trillion (roughly 104% of GDP) and a regulatory environment that is increasing the cost of doing business relative to other countries. These and other factors have slowed U.S. growth for nearly a decade with U.S. GDP growth averaging less than 2% since 2006, while its historic yearly average growth rate since WWII is 3.23% (see Exhibit 24). Michigan's economic comeback has been and continues to be impressive. If Michigan, and the other 49 states, are to realize significant growth in the future, policy makers in Lansing will need congruent policies from Washington, policies that will complement and supplement pro-growth and pro-business policies at the state level, such as federal tax and regulatory reform.



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