/ SIXTEENTH ANNUAL EDITION /

2020 MICHIGAN ENTREPRENEURSHIP SCORE CARD

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2020 - Sixteenth Annual Edition

Michigan Entrepreneurship Score Card

Empowering Michigan Entrepreneurs

Michigan Celebrates Small Business

Growth Economics, Inc., in partnership with ROI – Research on Investment, Canada

The Michigan Entrepreneurship Score Card 2020 – Sixteenth Annual Edition is published by Michigan Celebrates Small Business.

The Score Card analytics and methodology were developed in 2004.

The 2020 – Sixteenth Annual Edition report was authored by Dr. Graham Toft, President of GrowthEcomonics Inc. and Loch McCabe, President of Shepherd Advisors.

The inaugural edition of the Entrepreneurship Score Card was created and produced in 2004-05 by the Small Business Foundation of Michigan. The Small Business Foundation of Michigan merged with Great Lakes Entrepreneur's Quest in 2014 to form MiQuest. In 2018 MiQuest became Michigan Celebrates Small Business.

Michigan Celebrates Small Business (MCSB) is on the forefront of championing small business and fostering the entrepreneurial spirit in Michigan. The MCSB's role is to serve as a catalyst for creating an entrepreneurial culture while inspiring the next generation of entrepreneurs.

Michigan Celebrates Small Business is grateful for the generous sponsors and supporters who help underwrite the production and distribution of the Michigan Entrepreneurship Score Card each year.

Letter From SBAM President Brian Calley

When the Score Card was first conceived more than 15 years ago, Michigan was in the midst of a long term economic slowdown. The Small Business Association of Michigan (SBAM) set an ambitious goal to start the long and difficult climb of becoming a "Top Ten" state for entrepreneurs.

We've long known that entrepreneurs drive innovation and economic activity while making Michigan communities vibrant places in which to live. They bring diversity to our economy which results in resiliency and job growth. To be "Top Ten" is still SBAM's goal today. To achieve this goal, policy makers need to be able to objectively and comprehensively measure Michigan's standing among our peers and to measure progress toward the goal.

This 2020 Michigan Entrepreneurship Score Card takes a comprehensive pre-COVID-19 look at more than 200 factors that impact the entrepreneurial climate, including transportation, workforce readiness, education, and business costs. The Michigan Entrepreneurial Score Card provides real insight and digestible data about Michigan's strengths and weaknesses. This knowledge will be key as we set out to recover from the devastating impacts of the pandemic.

While we have seen significant improvement since the Score Card was first developed more than 15 years ago, we also know that if you're standing still, you're falling behind. The risks of complacency have never been greater given the significant hurdles we are sure to face in the coming months and years.

As usual, this report focuses on three main composite indexes: Entrepreneurial Climate, Entrepreneurial Change, and Entrepreneurial Vitality. Monitoring and improving upon factors that impact these areas will show where Michigan is strong and where Michigan needs to do better. But this year we decided to add a section and dig deeper to investigate the states who have significantly improved over the last 10 years and maintained a superior ranking as compared to the rest of the country. What makes them special and what can Michigan learn from them?

This in-depth and detailed report will give readers a clear and accurate view of where Michigan's entrepreneurial economy stood relative to other states before the economic fallout of the global pandemic. And when studied carefully, it will reveal critical elements of a pathway forward.

SCORE CARD AUTHORS AND ADVISORS

The Michigan Entrepreneurship Score Card analytics and methodology were developed by:
DR. GRAHAM TOFT, President, GrowthEcomonics Inc.

The 2020 – Sixteenth Annual Edition Entrepreneurship Score Card was authored by:
DR. GRAHAM TOFT, President, GrowthEconomics, Inc.; and DR. NADINE JESERICH, ROI – Return on Investment
Mr. LOCH MCCABE, President, Shepherd Advisors,

Design and printing was provided by: VP DEMAND CREATION SERVICES, Traverse City, Michigan

Michigan Celebrates Small Business Vision

Michigan is THE State of Entrepreneurship

Michigan Celebrates Small Business Mission

To honor and recognize Michigan's small business people and those champions and advocates that support them.

Michigan Celebrates Small Business welcomes collaborative partnerships and invites entrepreneurs, business coaches, educators, and investors to become involved with current and developing initiatives.

For More Information: www.MichiganCelebrates.biz

Lori Birman, Vice President Membership & Development, Small Business Association of Michigan
800 362-5461, ext. 205, *Lori.Birman@SBAM.org*

Score Card Sponsors

Michigan Celebrates Small Business extends a special thank you to this year's Score Card financial sponsors. Without sponsorship support this publication would not be possible.

Blue Cross Blue Shield of Michigan

Blue Cross Blue Shield of Michigan is an independent licensee of the Blue Cross and Blue Shield Association. We're the largest health insurer in Michigan, serving 4.5 million people here and 1.6 million more in other states. And we have the largest network of doctors and hospitals in Michigan: 152 hospitals and more than 33,000 doctors.

DTE Energy

DTE Energy Company is a diversified energy company involved in the development and management of energy-related businesses and services nationwide. DTE's largest operating subsidiaries are DTE Electric and DTE Gas. These regulated utility companies provide electric and/or gas services to more than three million residential, business and Industrial customers throughout Michigan. Their electric and gas utility businesses have each been in operation for over a century. DTE has leveraged their wealth of experience and assets to develop a number of non-utility subsidiaries which provide energy-related services to business and industry nationwide.

MiBiz

For over 30 years, the mission of MiBiz has been to provide regional business news to executives, advisors, and owners in Western Michigan. With a print readership of over 32,500 and a growing digital presence that reaches more than 45,000 unique visitors each month, MiBiz is focused on becoming the top source for business intelligence and news in Grand Rapids, Kalamazoo, Battle Creek, Lansing and along the Lake Michigan shoreline. For subscription and advertising information, visit mibiz.com.

Michigan Association of State Universities

The Michigan Association of State Universities serves as the coordinating board for Michigan's 15 public universities, providing advocacy and fostering policy to maximize the collective value these institutions provide in serving the public interest and the State of Michigan.

Each year, Michigan's public universities serve nearly 290,000 students, providing excellent undergraduate and graduate education, internationally renowned research, and services to Michigan's employers, government leaders, non-profit organizations and citizens. Learn more at www.masu.org.

Michigan Municipal League

We love where you live — The Michigan Municipal League is dedicated to making Michigan's communities better by thoughtfully innovating programs, energetically connecting ideas and people, actively serving members with resources and services, and passionately inspiring positive change for Michigan's greatest centers of potential: its communities.

Michigan State Housing Development Authority (MSHDA)

MSHDA's mission is to enhance economic and community vitality through housing and historic preservation activities. By forging creative and collaborative partnerships, sharing knowledge and targeting resources, our investments help build a strong and vibrant Michigan and a better quality of life for the residents we serve.

Small Business Association of Michigan

The Small Business Association of Michigan is the only statewide and state-based association that focuses solely on serving the needs of Michigan's small business community. We have been successfully serving small businesses like yours in all 83 counties of Michigan since 1969. We're located in Lansing, just one block from the Capitol.

Our mission is the success of Michigan's small businesses. We do this through:

- Advocating for small business
- Bringing business owners together to share knowledge
- Creating collaboration and partnerships
- Delivering group buying power

Our 28,000+ members are as diverse as Michigan's economy. From accountants to appliance stores, manufacturers to medical, and restaurants to retailers, what unites the SBAM membership is the spirit of entrepreneurship ...a spirit that drove you to start and continue to operate your own business because you believe you can do something better than anyone else is doing it!

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Executive Summary

This 2020 – 16th Annual Edition of the Michigan Entrepreneurship Score Card reports a Michigan entrepreneurial economy that continues to grow, but with less 'gusto' than during the post-recession 2009-2013 period, and losing a bit more steam each year.

Michigan remained a top entrepreneurial performer among its Industrial Midwest neighbors, and near-term trend indicators for Michigan's entrepreneurial economy were broadly positive, before these recent, unprecedented times. Even so, each year the relative pace of Michigan's entrepreneurial economy overall continued to fall behind relative to more states nationally.

Given the extraordinary new challenges presented by the Coronavirus, can this trend be reversed? This edition of the Michigan Entrepreneurship Score Card looks closely at states that have outperformed most of the nation in recent years and includes new analysis to provide some clues about how. Uncertainty defines the horizon today, but what is certain is that the success of entrepreneurs is more important than ever.

Michigan's Entrepreneurial Climate, Change and Vitality

Over the past 16 years the Michigan Entrepreneurship Score Card team has used, tested and refined three distinct indexes:

- **CLIMATE:** *The factors that support the entrepreneurial economy*
- **CHANGE:** *The direction and momentum of growth in the entrepreneurial economy*
- **VITALITY:** *The level of entrepreneurial/small business activity as a share of a state's total business economy*

Without a doubt, the 2018 data year Michigan Entrepreneurship Score Card Indices have all improved markedly over 10 years. From being in the "Bottom 10" in 2008, Michigan's Entrepreneurial Climate, Change and Vitality rankings relative to other states improved significantly post-recession through 2012, before settling in the middle of the pack.

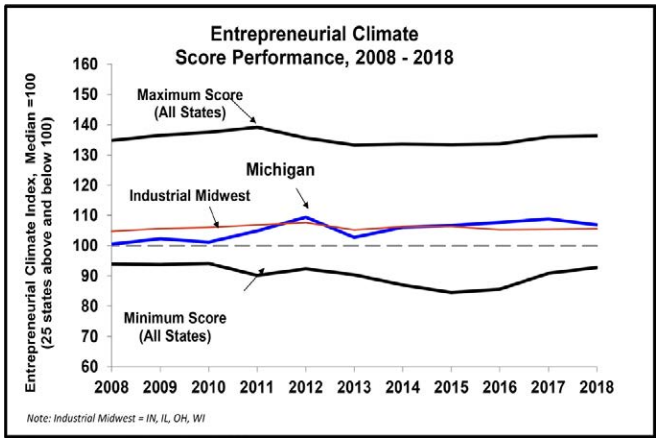
2020 Score Card – Michigan Entrepreneurial Climate, Change and Vitality Rankings Relative to Other States (1 is Highest Rank, 50 is Lowest Rank), 2008-2018

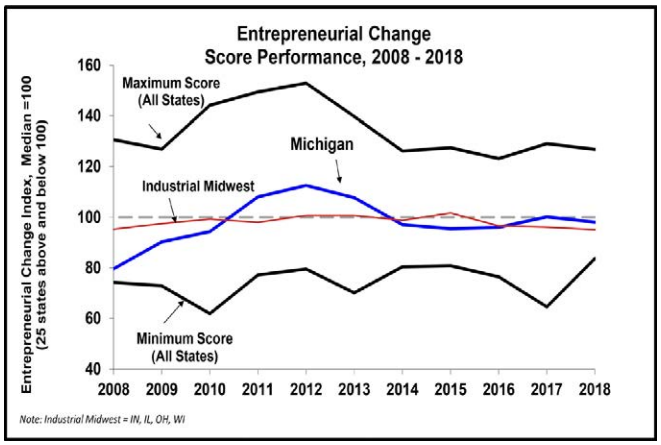
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Entrepreneurial Climate	41	33	34	28	18	29	23	22	19	17	22
Entrepreneurial Change	47	42	33	10	6	13	29	34	31	23	26
Entrepreneurial Vitality	43	33	38	34	13	27	31	29	33	35	36

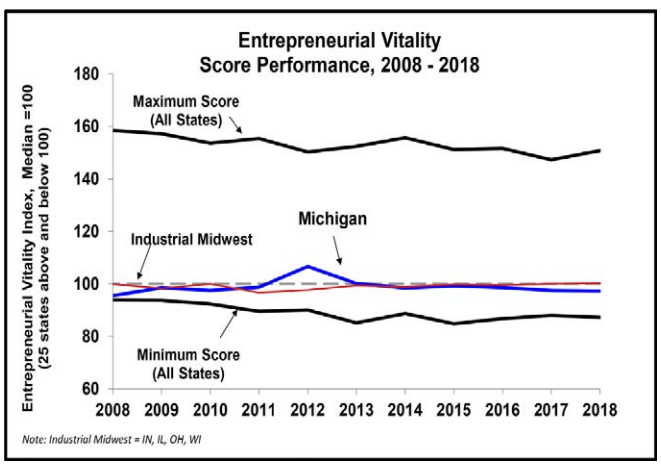
**Note: Yellow shading indicates "Top 10" ranking and Red shading indicates "Bottom 10" ranking. Annual rankings are revised as additional data becomes available.*

Does this mean that Michigan's entrepreneurial economy is "worse" now than a few years before? Not necessarily as Michigan continues to experience overall growth. It does mean however that Michigan's entrepreneurial economy rankings relative to other states have lost ground.

As is shown in the charts to the right, Michigan's Entrepreneurial Climate and Change are "in the middle" relative to all other states, while its Entrepreneurial Vitality lags.







Michigan Entrepreneurial Economy Trend Watch Indicators for 2020

The 2020 Score Card also reports out recently published quarterly data for eight specific "Trend Watch Indicators" that can give a "more current" sense of how Michigan's entrepreneurial economy is evolving today.

Going into 2020 and prior to the COVID-19 crisis, the eight Michigan Entrepreneurial Trend Watch Indicators point to encouraging signs of entrepreneurial growth in 2020, with several important cautions. **Michigan's entrepreneurial economy continues to be in a slight expansionary mode (see Indicators #1, #3, #7 and #8), but shows numerous signs of sluggishness (see Indicators #2, #4, #5 and #6).**

#1: Michigan's State Coincident Index (Latest Dec. 2019): Tracks a state's overall economic conditions by Philly Federal Reserve.

After trending down starting in early 2019, this indicator has been trending upward in the last 4-5 months of 2019.

#2: Michigan Economic Activity Index (Latest Nov. 2019): A composite published by Comerica Bank, "We expect ongoing modest growth for the Michigan economy in 2020. Year-over-year job growth was subdued in late 2019, at around 0.4 percent. We expect weak job growth in 2020 to be enough to keep the state's unemployment rate very low, averaging 3.7 percent this year." (Comerica)

#3: Michigan's State Leading Index (Latest Nov. 2019): Comprises metrics known to indicate forward movement by Philly Federal Reserve.

Going into 2020, Michigan's State Leading Index suggests that Michigan is headed for possible stronger economic growth over the next six months, with growth projected to be slower in neighbouring Midwest states, except Illinois.

#4: Michigan Breadth of Job Creation: Shows the percent of existing establishments adding net new jobs.

Michigan presents a slight but noticeable downward trend since 2014. While this is a not unexpected given today's maturing business cycle, it raises concerns if Michigan's rate further approaches the 25% threshold.

#5: Michigan Net Job Gains from Business Expansions Minus Contractions: Indicator of the degree to which existing businesses are taking on risks.

A more noticeable slowdown has been observed since early 2018.

#6: Michigan Business Expansion and Contraction Rates: Percent of existing businesses expanding and contracting.

The positive gap between expansion and contraction rates continues to narrow.

#7: Michigan Private Establishment Formation Rate: Rate of new business creation as a percentage of all businesses.

Rates have been on an upward trend since Q4 2018 to Q2 2019.

#8: Michigan Expansion/Later Stage Venture Capital: Expansion/Later Stage venture capital as a percent of state GDP.

Funding as a percentage of GDP has accelerated since late 2017.

Going into 2020, these eight Michigan Entrepreneurial Trend Watch Indicators pointed to some encouraging signs of continued entrepreneurial growth. While that growth has been halted due to the pandemic, these economic markers give us some indication of where some of our base strengths and weaknesses were, and where we might be best positioned to grow.

What Will It Take for Michigan to Become a Top Ten Entrepreneurial State?

Michigan's entrepreneurial economy has been basically stuck in the middle rankings for the past five years. While the risks of a prolonged economic downturn are real and present, the Score Card data can shed light on what the leading entrepreneurial economy states were doing. Their stories of progress might give Michigan leaders pointers as to how to rebuild in a post COVID-19 world.

To begin responding to this question, we looked at six states that:

- Are in the Top 15 states for Entrepreneurial Change,
- Underwent dramatic improvements in Entrepreneurial Change from Bottom Ten rankings to Top Ten rankings during the last decade, and
- Have economies that are roughly similar to Michigan's in size and make up, and do not have hard-to-repeat factors such as Microsoft and Amazon in Washington State, or fossil fuel reserves in Texas.

In a first scan of the Score Card data, six states stood out as worth learning more about: Colorado, Georgia, Maryland, North Carolina, Tennessee, and Utah. As we dug into the Score Card driver and metrics for each of these states, we learned:

- *There is no one or small number of policy or metric 'silver bullets' at work in all six states.* Each state showed different combinations of economic "secondary drivers"[1] that directly and indirectly supported the success of entrepreneurs and entrepreneurial ventures in that state.
- *Workforce, Education and Productivity are major drivers of entrepreneurial economy success in Colorado, Maryland and Utah.*
- *In contrast, above average and Top 10 Business Costs and Legal Environment rankings appear to be major contributors to solid entrepreneurial economy rankings for North Carolina and Tennessee.*
- *Georgia's Score Card data suggests a more unique path.* The data suggests that for Georgia other factors not fully captured by the Score Card's conventional economic development drivers are at play.

What is Michigan's combination of drivers to achieve and maintain Top 10 Entrepreneurial Economy rankings? Importantly, between 2009 and 2012, Michigan did undergo dramatic improvements in Entrepreneurial Climate, Change and Vitality rankings, driven in large part by the quality and availability of its *Workforce*. However, Michigan has not been able to keep the Climate, Change and Vitality gains it made.

[1] The Secondary Drivers measured in the Score Card are: Education, Workforce, Business Costs, Productivity, Legal Environment, Physical Infrastructure, Digital Connectivity, and Quality of Life.

At first glance, the Score Card data suggests that a high quality *Workforce* provides a foundation for Michigan's entrepreneurial economy. Yet, *Workforce* is not a sufficient driver by itself to build up and sustain Michigan's entrepreneurial economy. Improvements to other complementing drivers are warranted. Which drivers? While some have been highlighted in the *Insights* Section 2 of earlier Score Card reports, more research is required to more confidently identify a combination of drivers unique for Michigan entrepreneurial excellence.

		Entrep Change Improve				*Entrepreneurial Change Decline*					
MICHIGAN	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Entrepreneurial Climate	41	33	34	28	18	29	23	22	19	17	22
Entrepreneurial Change	**47**	**42**	**33**	**10**	**6**	**13**	**29**	**34**	**31**	**23**	**26**
Entrepreneurial Vitality	43	33	38	34	13	27	31	29	33	35	36
Education	34	37	29	28	24	28	27	28	27	33	25
Workforce Preparedness	12	15	13	9	9	9	11	9	9	9	9
Business Costs	44	45	38	40	24	27	27	25	28	33	29
Productivity/Labor Supply	47	46	46	47	45	45	43	43	42	41	42
Legal Environment	35	37	33	30	27	24	26	24	27	26	28
Physical Infrastructure	44	44	48	38	34	30	30	37	28	35	33
Digital Connectivity	36	43	45	44	42	41	44	46	46	44	42
Quality of Life	35	31	35	30	33	27	28	15	16	19	36

Looking at individual Score Card metrics across the six states and Michigan, ranking improvements in these five individual metrics seem to correlate with positive improvements in Entrepreneurial Change rankings:

- *Proprietor Income Growth per Proprietor*
- *Increase in High Performance Firms*
- *Small Business Growth*
- *Gross Domestic Product Growth*
- *Large Business Payroll Growth*

All six states and Michigan experienced significant improvements in their Entrepreneurial Change rankings. The corresponding rankings of each of these metrics also improved meaningfully, and sometimes very dramatically. But these five metrics are not the whole story. In each state, there are other metrics that also improved substantially.

In future Score Card reports, we hope to look into the drivers and individual metrics more closely, conducting regression and other analysis to better understand and zero in on the combinations of drivers and metrics that can help Michigan rebuild the strengths of its core entrepreneurial economy.

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MICHIGAN STATE HOUSING DEVELOPMENT AUTHORITY

Section 1: Michigan's Entrepreneurial Climate, Change & Vitality: 2008-2018

This year's Score Card is released with the backdrop of an ongoing pandemic but with nearly 11 years of gradual, solid U.S. economic recovery since the end of the Great Recession in 2009 along with three full years of the new federal Administration's policies favoring U.S.-based business growth. As we entered 2020, Michigan stood on solid ground with an unemployment rate of 3.9% as of December 2019 (2018 4%).

The Michigan Entrepreneurship Score Card seeks to document how well Michigan's entrepreneurial economy has been performing within Michigan's broader regional and national economic context.

Broadly, how has Michigan's "Entrepreneurial Economy" been doing? The short answer is "much better" than 10 to 15 years ago, but with cautionary signs continuing to emerge, even before the COVID-19 crisis. When the 2004-2005 Michigan Entrepreneurship Score Card was first released 15 years ago, Michigan's entrepreneurial conditions were already challenging relative to other states, and then worsened significantly during the Great Recession of 2007-09.

Since mid-2009, Michigan's entrepreneurial economy has been on a robust rebound, driven by a number of factors including:

- Recovery of the overall national economy, and
- The introduction in 2011-12 of more favorable business tax policies and a broad shift in the State's economic development priorities from "attraction" to "economic gardening," an approach that prioritizes augmenting the success of Michigan businesses.

Not surprisingly, the core 2018 Michigan Entrepreneurship Score Card's Indices have all improved markedly over 10 years. Indeed, as shown later in this chapter, Michigan's Entrepreneurial Climate, Change and Vitality indices bottomed out in 2007-08 and then grew rapidly to reach peaks in 2011-12. Since 2012, however, each index has moderated, suggesting that while Michigan is still growing, its etrepreneurial economy has been and continues to slowly lose ground relative to other states. **While some positive trends remained strong, overall risks to Michigan's future entrepreneurial economy continue to rise.**

Pre COVID-19 crisis, Michigan's entrepreneurial economy was actively being shaped by many transformative factors at work in what was a fast-paced economy. Some of these transformative factors that especially impact Michigan's manufacturing sector include:

- Rapidly changing manufacturing organization and production as companies increasingly turn to robotics and AI (artificial Intelligence). This in turn is necessitating new and different education and skills — and fewer, higher productivity workers.

- Rapidly changing vehicle technology platforms leading to more electric and autonomous vehicles that overall require less manufacturing due to fewer moving parts.
- Changing management–labor relations as reflected in the recent round of negotiations concerning the GM/UAW strike, resulting in higher labor costs.
- International trade disputes that have constrained and disrupted Michigan's export activities.
- A markedly changing political economy wherein both worker and resident partisan views across the political spectrum have polarized, making it harder to find common ground on the basic drivers necessary for free enterprise and democratic harmony. Controversies surrounding such issues as health care insurance, environmental quality, road funding and education/training complicate the business environment for small businesses and entrepreneurs.

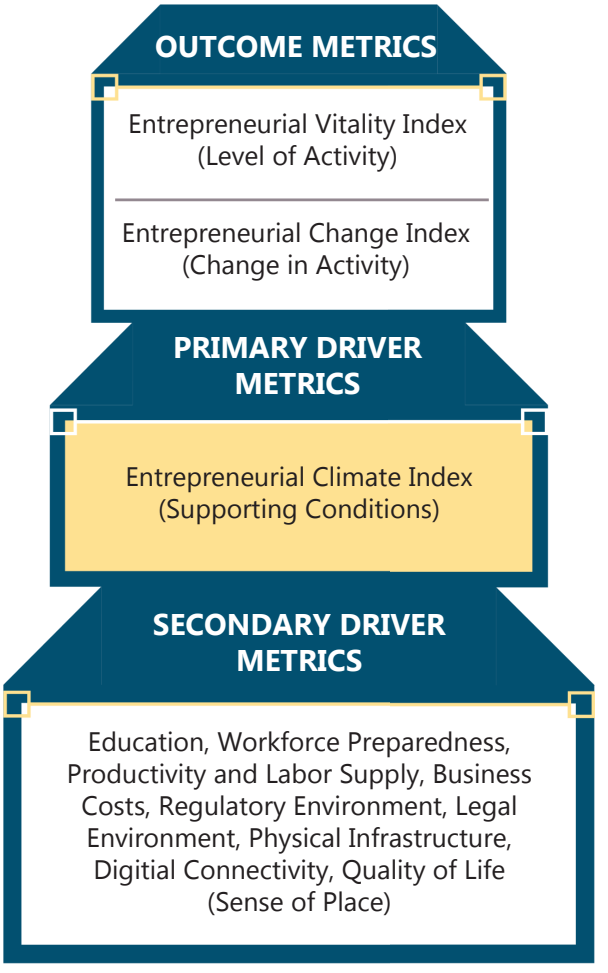
Michigan's Entrepreneurial Climate, Change and Vitality Indices

Michigan's entrepreneurial economy is complex, with many nuances and dimensions. As such, Michigan's entrepreneurial economy cannot be effectively understood through a single measure or metric. This challenge is compounded further when, as we do with the Score Card, we wish to understand how Michigan's entrepreneurial economy is positioned relative to the entrepreneurial economies of other states.

To better address this complexity over the past 15 years, the Michigan Entrepreneurial Score Card team developed and has used, tested and refined three distinct indices of Entrepreneurial 'Climate,' Entrepreneurial 'Change,' and Entrepreneurial 'Vitality.' Together, these three indices have continued to do a remarkably comprehensive and effective job capturing the 'health' of Michigan's entrepreneurial economy relative to other states.

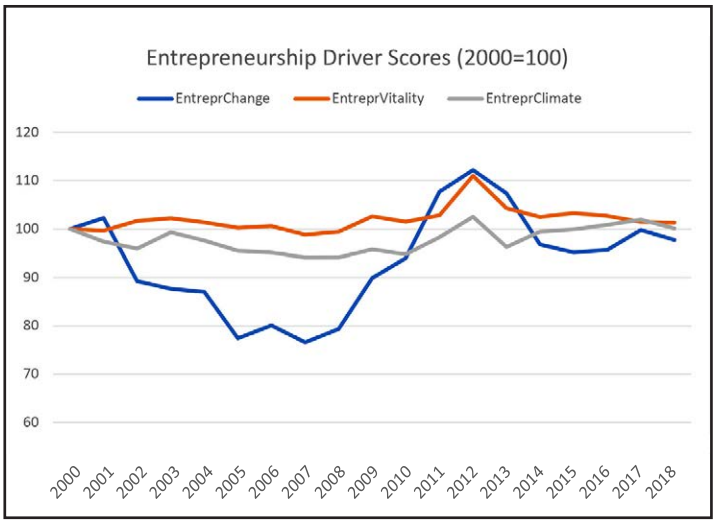
The following analysis looks at Michigan's performance through 2018 for which the most recent official economic statics are available and therefore does not factor in recent impacts of the pandemic. It does, however, provide some insight into strengths we can draw upon to recover more quickly and weaknesses we need to address to move forward.

While Entrepreneurial Climate, Change and Vitality are each described more fully later in this chapter, it's helpful to understand first how these indices relate to one another. As shown in this diagram, the Entrepreneurial Vitality and Change indices are 'outcome' metrics influenced by the set of "Primary Driver" metrics that make up the Entrepreneurial Climate Index. Entrepreneurial Climate is in turn affected by a very wide range of more than a hundred supportive, yet background, "Secondary Driver" metrics that are also presented in the Score Card.



The Entrepreneurial Vitality, Change and Climate indices track specific dynamics of Michigan's entrepreneurial economy that have different degrees of focus on Michigan's entrepreneurial economy in a given year. The separation of these indices is intentional, and a unique feature of the Michigan Entrepreneurship Score Card methodology.

Viewed over time, it becomes easier to see the relationships between Michigan's Entrepreneurial Climate, Change and Vitality scores. As shown below, Michigan's Entrepreneurial Climate and Change drivers have moved broadly in tandem since 2008. As Entrepreneurial Climate (which measures the health of underlying business conditions) improves, so follows the level of Entrepreneurial Change (which measures the relative direction of a state's entrepreneurial economy). It is not surprising that an Entrepreneurial Change response happens almost contemporaneously with changes in Entrepreneurial Climate given a free market environment.



Entrepreneurial Vitality is different. It is a measure of how large the entrepreneurial economy is relative to the entire economy. States like Michigan that have high economic concentrations of large corporate companies typically have lower levels of Entrepreneurial Vitality than other states that have relatively smaller concentrations of large corporations. Indications are that Michigan's Entrepreneurial Vitality follows Climate with a one to two-year lag, but in a much more subdued fashion and can be out of sync in any given year.

Scanning Michigan's Entrepreneurial Climate, Change and Vitality rankings over the past 10 years gives a sense of the "arc" of the early weakness, the gathering strength, and the current moderation of Michigan's entrepreneurial economy.

2020 Score Card – Michigan Entrepreneurial Climate, Change and Vitality Rankings Relative to Other States (1 is Highest Rank, 50 is Lowest Rank), 2008-2018

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
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Entrepreneurial Vitality	43	33	38	34	13	27	31	29	33	35	36

Note: The lighter Yellow shading indicates "Top 10" ranking and darker Red shading indicates "Bottom 10" ranking. Also, annual rankings are revised as additional data becomes available, and thus may change from year to year.

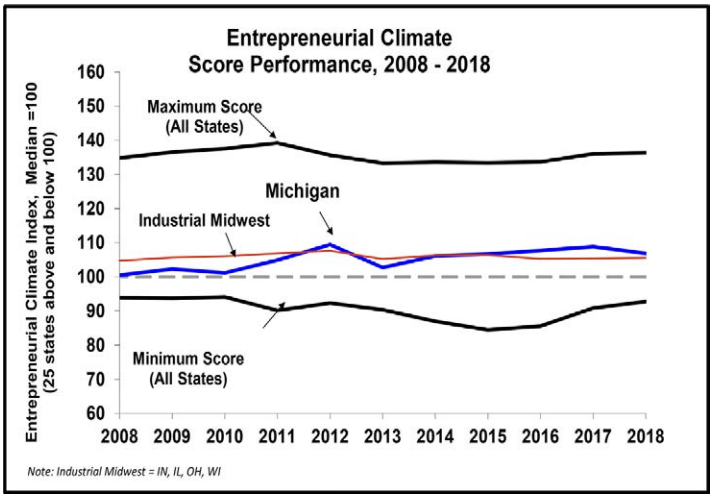
Michigan's Entrepreneurial Climate – Rank 22 (2018)

Michigan's Entrepreneurial Climate is a Primary Driver index made up of metrics that together give a composite indication of the underlying supporting conditions for the entrepreneurial economy relative to other states. As such, a high Entrepreneurial Climate rank for a state implies a favorable "pro-entrepreneurship climate" that fundamentally makes it more conducive for entrepreneurs to establish and grow their businesses in that state relative to other states.

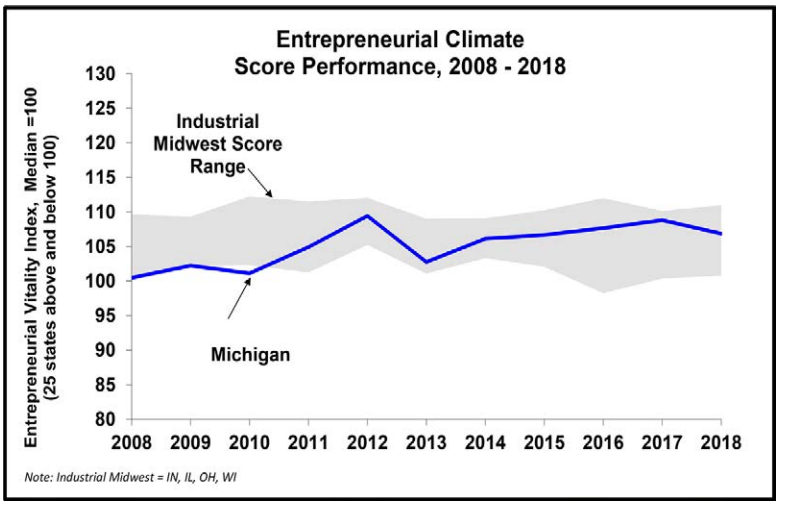
The Entrepreneurial Climate Index is comprised of three sub-indices related to innovation, capital access, and general business conditions. The Research and Innovation sub-index seeks to measure investment in and returns from a variety of innovation-focused activities. The Financial and Institutional Capital sub-index takes the pulse of actual cash flow as well as institutional support for small firms and startups. The General Business Growth sub-index captures the vitality and health of the underlying business economy that supports entrepreneurial dynamism.

Entrepreneurial Climate is also influenced by Secondary Driver metrics that include measurements of education, workforce and labor productivity, business costs, and infrastructure. And of course, Entrepreneurial Climate is affected by broader national and international economies as well.

Michigan has meaningfully improved its Entrepreneurial Climate since 2009. After being flat and then declining for most of the 2000s, Michigan's Entrepreneurial Climate experienced notable gains in 2010 through 2012, when Michigan outperformed its Midwest competitors average and its Entrepreneurial Climate rank rose to in be in the "Top 20" of states nationally.



Since 2012 however, Michigan has experienced a slow degradation of Entrepreneurial Climate momentum relative to other states, falling from a rank 18 position in 2012 to a rank 29 in 2013 due to several business financing indicators slumping. However, there have been small continuous improvements the past six years, driven mostly by pickups in Research & Innovation and General Business Growth. In 2018, Michigan's Entrepreneurial Climate saw a small slip from rank 17 in 2017 to a current rank of 22, in the middle of the Midwest group.[1] [2]



Factors that have contributed most to the relative improvement in Michigan's Entrepreneurial Climate between 2014 and 2017, in no particular order, include:

- Housing Construction Growth
- Export and FDI Employment Growth and export-related jobs
- Seed/Early Stage VC

However, 2018 data saw a sharp drop in housing construction growth, a slip in SBIC awards and funding and a lower rate and slowing in net new establishment entrants.

Despite improvements in 2017 in Seed/Early Stage Venture Capital investments, Michigan continues its historic vulnerability compared to other states in terms of lower than average capital access for its entrepreneurs, especially in bank commercial and industrial lending and private small business lending.

Michigan's Entrepreneurial Change – Rank 26 (2018)

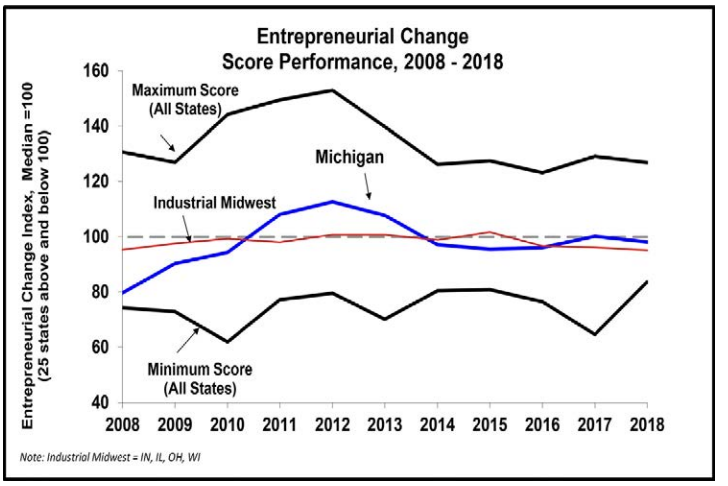
Entrepreneurial Change is a "movement" index that shows the general current direction a state's entrepreneurial economy is going relative to other states. Entrepreneurial Change speaks to the level of success entrepreneurs in Michigan are actually experiencing relative to other states. An improvement in a state's Entrepreneurial Change rank suggests that entrepreneurs in that state are actually generating more new firms, more new jobs and more new wealth at higher incremental rates compared to entrepreneurs in other lower rankings states.

Entrepreneurial Change is comprised of running three-year averages of variables that broadly indicate the direction of entrepreneurial economy growth or decline. The Entrepreneurial Change index includes incremental rates of change data for commercial enterprises including rates of change in business growth, start-ups, fast-growth/high tech businesses, payroll, and proprietor income.

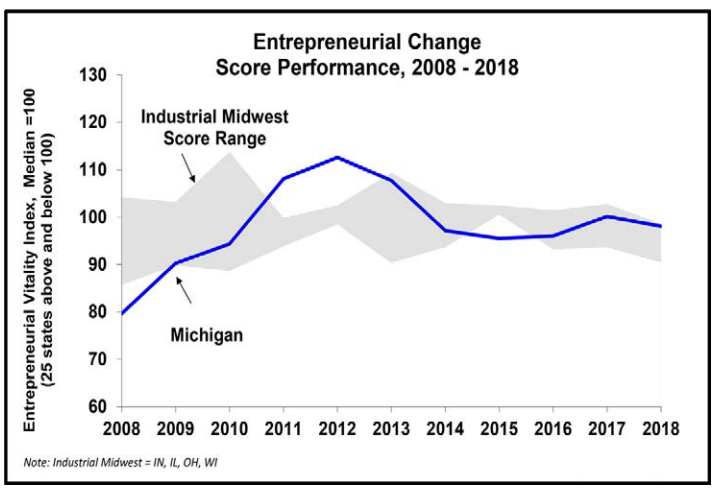
[1]Note: The Score Performance charts capture two things: where Michigan's score places among other states and how strong/weak that score is. Each Index is scaled so that the mid-point state/median score is 100. Typically, 25 states fall above and 25 states fall below 100 (if there are no missing data or identical values). The spread between the upper and lower lines shows the range of scores from top to bottom performing states. The median 100 does not necessarily lie "in the middle" of the score range as top performers might have exceptionally high values, or in the reverse case, poor performers may have exceptionally low values.

[2] The comparable Midwest Group includes Ohio, Indiana, Illinois, and Wisconsin

As Michigan's Entrepreneurial Climate began to improve quickly from the depths of the recession, Michigan's Entrepreneurial Change index also improved. Beginning in 2009, the Entrepreneurial Change Index picked up dramatically, suggesting that even as the recession dragged on, Michigan's entrepreneurs began to become more active. Then their rising rate of activity – and success – began to compound. Indeed, by 2011 and 2012, Michigan's Entrepreneurship Change rank had rocketed to "Top 10" ranks of 10th and 6th in the nation respectively, up from a "Bottom 10" rank of 47th in 2008 just a couple of years before.[3]



Beginning in 2009, the Entrepreneurial Change Index picked up dramatically, suggesting that even as the recession dragged on, Michigan's entrepreneurs began to become more active.



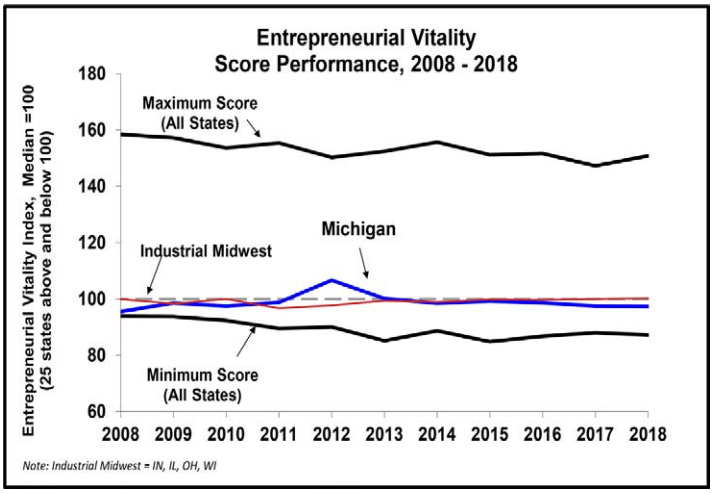
However, as Michigan's Entrepreneurship Climate cooled after 2012, so too did Michigan's Entrepreneurship Change ranking relative to other states. The relative decline was swift, losing steam in 2014 and falling to a national rank of 34 in 2015. Though other Industrial Midwest states saw their own slowdowns, Michigan lost growth momentum faster than others. Fortunately, it stabilized in 2016 and showed signs of improvement in 2017 to a rank of 23. But Michigan as well as its Midwest competitors saw a drop of scores in 2018. Michigan currently ranks 26, above all its Midwest competitors except Illinois.[3]

The factor that contributed most to Michigan's and Midwest 2018 drop in Entrepreneurial Change was a slowdown in net new establishments as well as a slower growth in self-employment income. Even though in both measures, Michigan performs above average and above all its Midwest competitors, its growth, or in the case of net new business, the lack of growth, has not been enough to keep with other non-Midwestern top performing states.

[3] Note that Scorecard rankings and ratings are not strictly comparable across Score Card reports due to annual updates along with historical data revisions. To compare previous years, always use the back year data reported in the Appendix B of the most current Score Card report (electronic edition only).

Michigan's Entrepreneurial Vitality – Rank 36 (2018)

The direction of Entrepreneurial Change in turn influences a state's relative share of entrepreneurial and small business activity as a share of the state's overall business economy – its Entrepreneurial Vitality. Entrepreneurial Vitality variables together present a broad measure of the level of a state's entrepreneurial activity relative to the state's entire economy.



When compared to measures of Entrepreneurial Vitality in other states, Michigan's Entrepreneurial Vitality ranking has remained in the "30's" range for most of decade with the exception of 2012, but with a notable worsening in 2017 and 2018.

Michigan's 2018 Entrepreneurial Score is below the median dashed line of 100 (where it is bunched tightly with many lower scoring states). The top performer state for Entrepreneurial Vitality is Massachusetts.

Indeed, the Entrepreneurial Vitality Index is a slow-to-change structurally driven outcome index that **captures the size of the entrepreneurial economy, relative to the state's overall economy.** Since Michigan's economy is comprised of a high portion of large corporations, it realistically may take a decade or more of steady and consistent entrepreneurial economy growth for Michigan's Entrepreneurial Vitality rankings to reach even a Top 20 status.

Metrics that contribute to a state's Entrepreneurial Vitality include:

- Self-employment
- Net business churn, or turnover
- Net new businesses
- Fast growing companies
- Investment awards
- 5-year survival rates
- University spinoffs

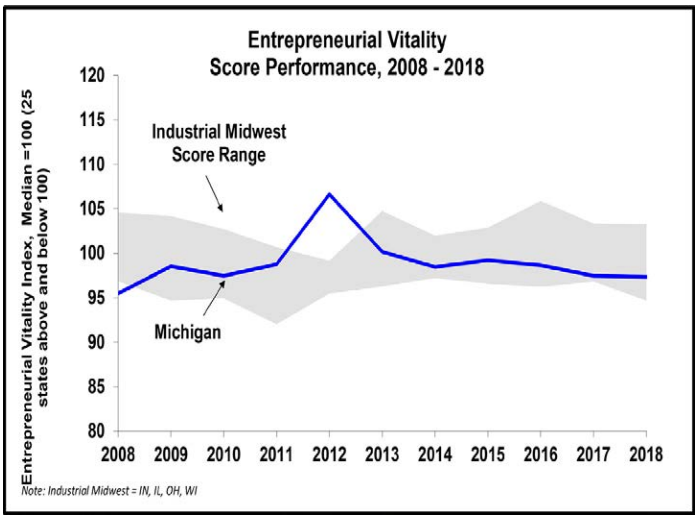
A key metric that has sustained Michigan's Entrepreneurial Vitality score for many years is its 5-year establishment survival rates metric, a Top 15 states performer from 2012 to 2016, and, Michigan's number of SBIR and STTR awards consistently ranked above average. In contrast,

Michigan's relative underperformance in other metrics such as establishment turnover rates, net new establishments, self-employment rates and university spinout businesses have consistently put downward pressure on Michigan's Entrepreneurial Vitality scores.

Michigan's strides in Entrepreneurial Vitality from 2010 to 2012 suggests that a more rapid rise in Vitality transformation is possible, though the subsequent drop in the state's performance since 2013 is evidence of how difficult it is to improve the relative ranking in this Index over the long term. After all, other states are improving their Entrepreneurial Vitality positions too.

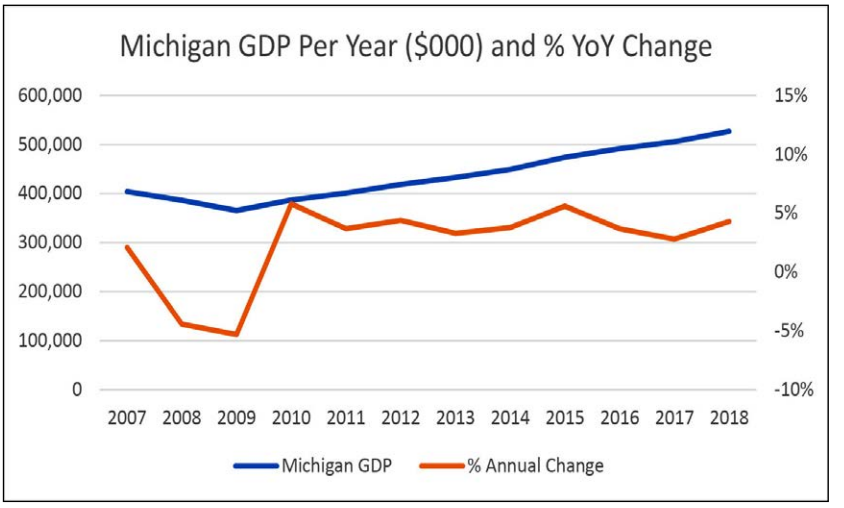
While comparisons with Top 10 Entrepreneurial Vitality states like Massachusetts, Virginia or California may not be realistic in the near term, comparisons with other top Entrepreneurial Vitality states like Florida, Utah and Colorado may be.

One key to increasing Michigan's Entrepreneurial Vitality over the long term is steady and consistent progress in improving Michigan's Entrepreneurial Change index. In Section 3 of this Score Card report, we begin to take an exploratory look at six states that are Top 15 Entrepreneurial Change states that have dramatically improved their Entrepreneurial Change rankings within the past decade. These states are Colorado, Georgia, Maryland, North Carolina, Tennessee and Utah. And all but Tennessee also achieved "Top 15" Entrepreneurial Vitality rankings in 2018.



Section 2: Michigan's Entrepreneurial Economy Trend Watch Indicators

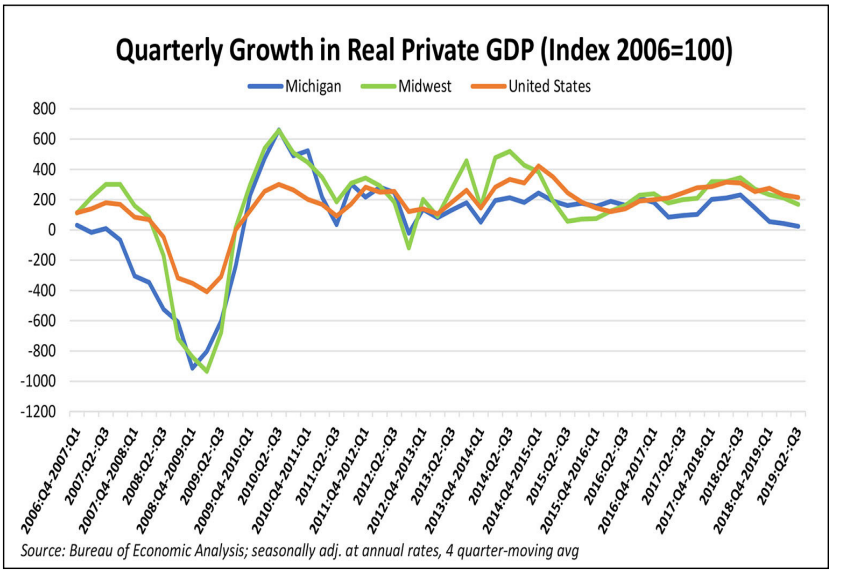
This year's Score Card is released with the backdrop of an international pandemic and 11 years of slow but solid U.S. economic recovery since the end of the Great Recession in 2009 along with the third full year of the new federal Administration's policies toward strengthening U.S.-based business growth. Michigan stood with a solid with an unemployment rate of 3.9% as of December 2019 (Dec 2018 4.0%), which is well below historical averages. Indeed, Michigan is experiencing skilled labor and managerial shortages across it's economy. While the condition of the state's economy has significantly weakened in 2020 due to the fallout from COVID-19, the following analysis gives some indication of where we might look to start the rebuilding process.



In 2016 and continuing into 2017 and 2018, Michigan's economy growth showed steady improvement but with less gusto. Previous Score Cards have observed that dynamism in the entrepreneurial economy parallel changes in the broader Michigan economy. While we do not know as yet to what extent a dynamic entrepreneurial economy is a causal factor in Michigan's economic progress, we do know it is a fellow traveler.

From 2006 through end-2009, Michigan's Gross Domestic Product[1] consistently grew at slower rates than GDP growth rates for the country and the Midwest region as a whole. Since 2010, Michigan's GDP growth rates more closely followed the rest of the Midwest. But Michigan's GDP growth has been falling behind again somewhat since mid-2014, suggesting that Michigan's slice of the national economic "pie" has not been growing as fast as its neighboring Midwest states. This is important as higher GDP growth rates broadly points to greater economic prosperity and small business growth.

A key contributor to GDP growth is changes to levels of employment -- the actual numbers of people working in Michigan from year to year. Indeed, *a critical driver for Michigan's GDP growth is the increases in new private sector employment.*

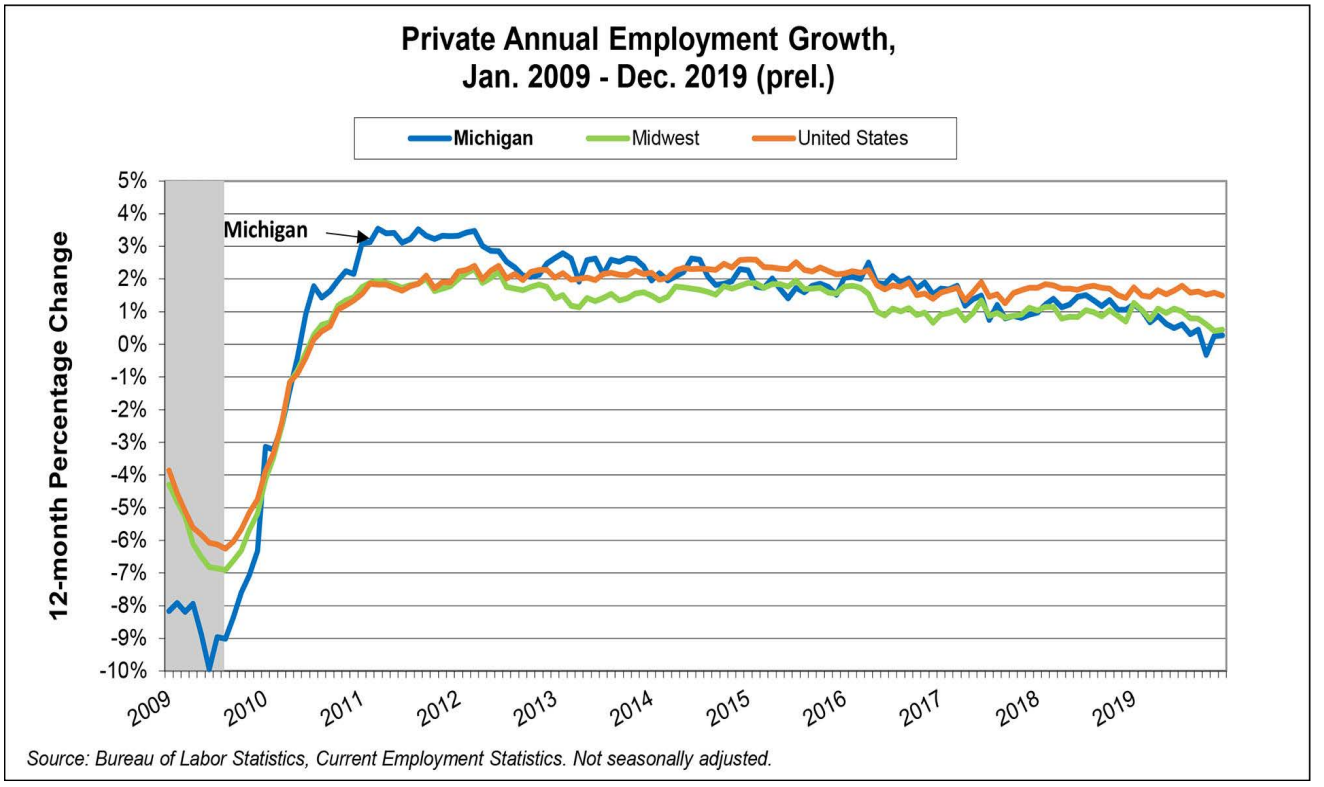


Source: Bureau of Economic Analysis; seasonally adj. at annual rates, 4 quarter-moving avg

[1]Gross Domestic Product (GDP) is the total monetary value of all final goods and services produced in a specific geography.

Between early 2010 and early 2014, Michigan's employment rate growth markedly exceeded that of the U.S. and rest of the Midwest.

However, Michigan job growth started to slow down mid-2014 and especially since mid-2016, in line with a Midwest slowdown. It has been below the US average though closely following Midwest trends between mid-2017 and early 2019. More recent 2019 numbers through December now point to a faster decline for Michigan than the rest of the Midwest.



Source: Bureau of Labor Statistics, Current Employment Statistics. Not seasonally adjusted.

Near-Term Trend Watch Indicators for 2020

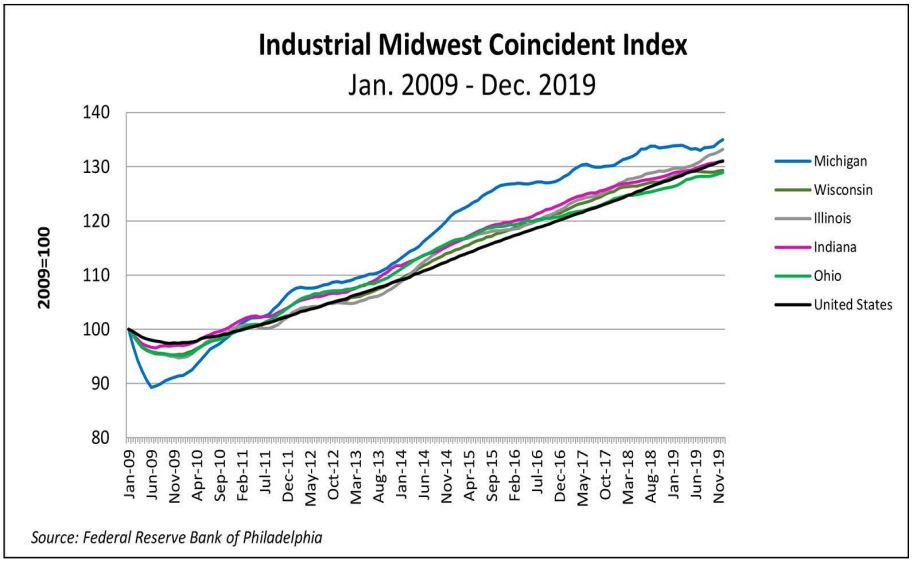
The Michigan Entrepreneurship Score Card has proven to be a valuable tool for understanding structural changes to Michigan's entrepreneurial economy over time. However, because it relies on data that takes up to two years for its providers to gather and process, we wish to share more recent quantitative evidence for analysis and decision-making.

As in last year's Score Card, we are reporting on a number of specific data points to help readers and policy makers become "more current" on the evolving state of Michigan's entrepreneurial economy. In this section, we describe eight specific "Trend Watch Indicators" we introduced last year to give insights into specific dynamics of Michigan's entrepreneurial economy over the relatively near term.

What do these Trend Watch Indicators suggest? While any initial prognosis is preliminary and should be treated with caution, our broad compilation of these Trend Watch Indicators suggest that Michigan's existing businesses continue to be resilient given the continued maturation of the business cycle. **Michigan's entrepreneurial economy continues to be in a slight expansionary mode (see Indicators #1, #3, #7 and #8), but is showing numerous signs of sluggishness (see Indicators #2, #4, #5 and #6). We also observe that the drops in new business formation rates (#7) and falling venture capital fund raising (#8) noted in last year's report have been arrested, now with upturns in both.**

Trend Watch Indicator #1: Michigan's State Coincident Index

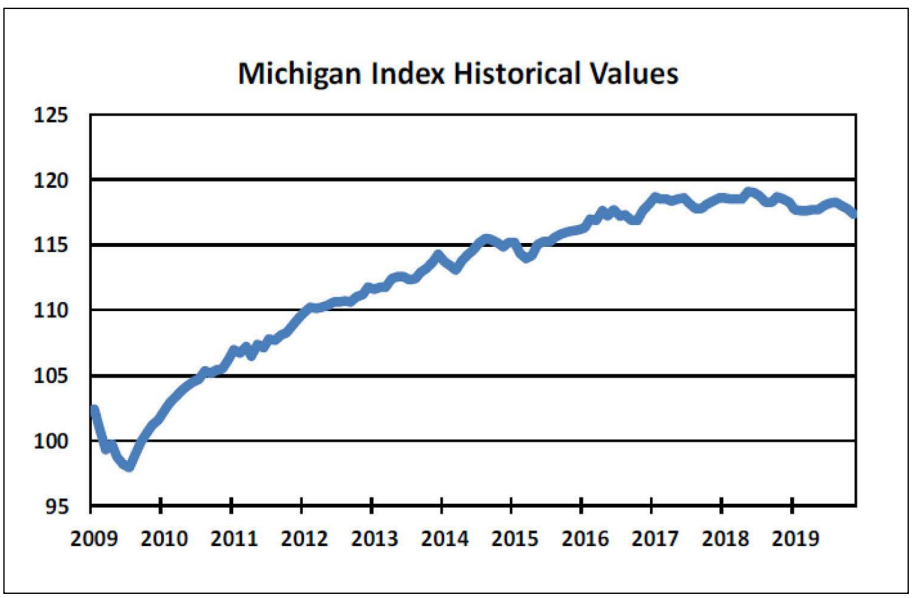
Looking at the most recent State Coincident Index for Michigan, the economic prognosis for Michigan looks to continue to trend positive. The State Coincident Index is a well-designed and tested monthly index of employment and wage/salary data prepared by the Federal Reserve Bank of Philadelphia. It is one of the best monthly trackers of a state's overall economic condition. What Michigan's Coincident Index shows is that after hurting badly before and during the Great Recession, Michigan's economy took off in late 2009. For six years, Michigan's economy grew at a rate exceeding that of most other Midwest states and of U.S in general. Some deceleration occurred in mid-2016, and since then the change in the Index has been more volatile, with shorter up and down cycles of 6-8 months. It has been trending upward again in the last 4-5 months of 2019.



Trend Watch Indicator #2: Comerica Bank's Michigan Economic Activity Index

We see additional recent economic dynamics in Comerica Bank's Michigan Economic Activity Index, prepared monthly by Dr. Robert A. Dye. This index indicates a more pronounced loss of momentum since the second half of 2018 with only a handful of upticks throughout 2019. The Index is currently at April 2016 levels.[2]

The February 2020 State Economic Outlook for Michigan remains cautious: "We expect ongoing modest growth for the Michigan economy in 2020. Year-over-year job growth was subdued in late 2019, at around 0.4 percent. We expect weak job growth in 2020 to be enough to keep the state's unemployment rate very low, averaging 3.7 percent this year." (Comerica)

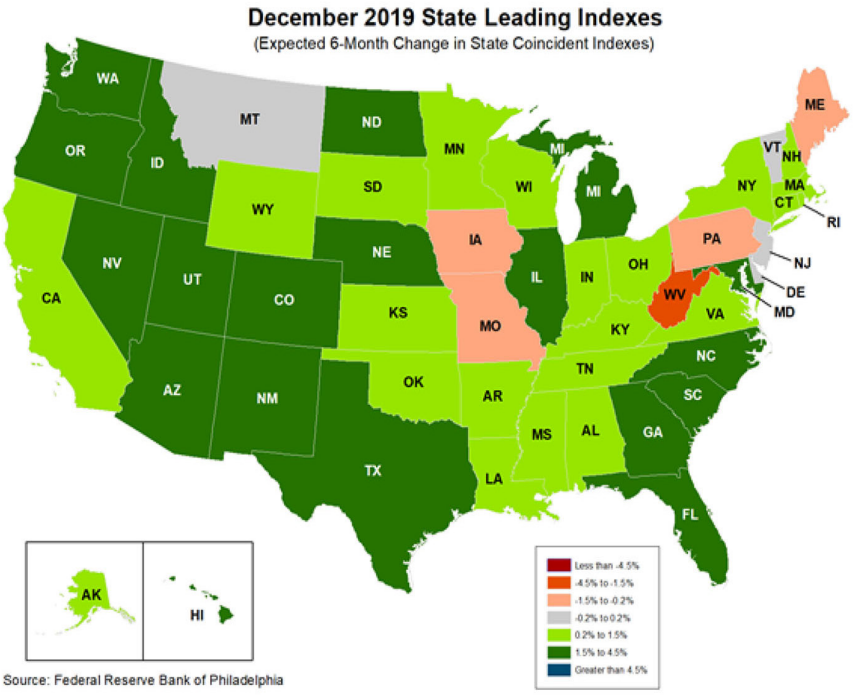


[2]*www.comerica.com/insights/economic-commentaries/state-indexes/michigan.html*

Trend Watch Indicator #3: Michigan's State Leading Index

Looking forward more directly to the next six months, one can use the State Leading Indexes[3] prepared by the Federal Reserve Bank of Philadelphia. The State Leading Index is a sister index to the State Coincident Index and comprises metrics known to indicate forward movement in the economy such as exports and housing permits.

Economic growth outlook in December 2019, measured as a 3-month change in the State Leading Index, forecasts Michigan with a dark green shading, which is the second BEST category for expected 6-month growth. Michigan's State's Leading Index was negative for 6 of the 12 months in 2019, but has been stronger in November and December.



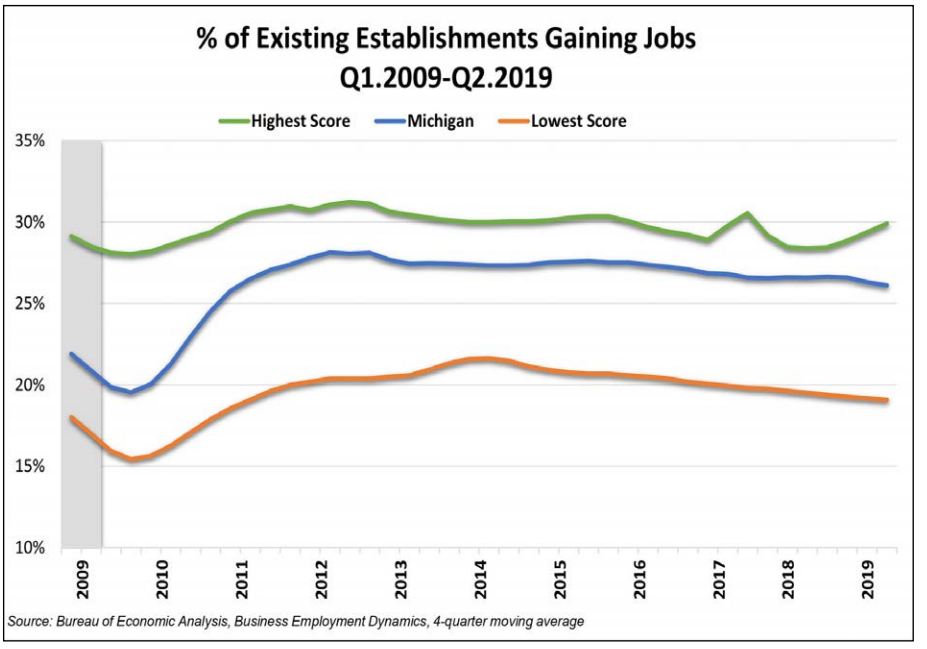
Source: Federal Reserve Bank of Philadelphia

Going into 2020, Michigan's State Leading Index suggests that Michigan is headed for possible stronger economic growth over the next six months, with growth projected to be slower in neighbouring Midwest states, except Illinois. While it is appropriate to say the state's economic outlook is positive going into 2020, it is important to observe similar positive outlooks were also reported in early 2017 and early 2018 which did not persist.

[3] *https://www.philadelphiafed.org/research-and-data/regional-economy/indexes/leading/*

Trend Watch Indicator #4: Breadth of Job Creation

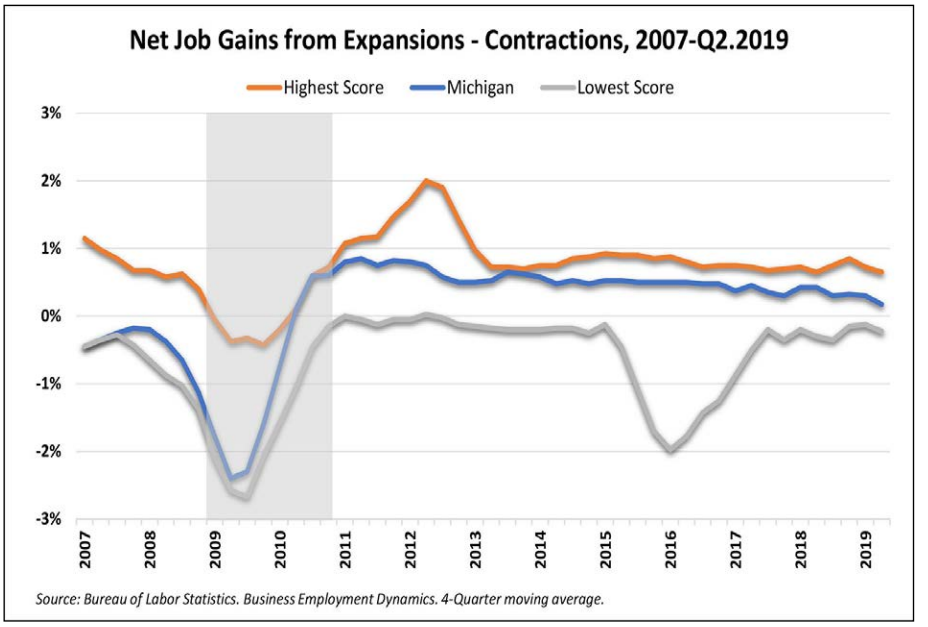
The percent of businesses (large and small) creating jobs in any quarter is a good measure of the job-creating dynamism of a state's economy. In good times, one usually sees at least 25% of existing businesses creating new net jobs in any quarter. This graph shows the percentage of establishments creating jobs by quarter, with Michigan bounded by the highest and lowest-performing states. These data have a three-quarter lag, so the graph below is up through Q2 2019.



After a rapid improvement starting in 2010, the Michigan job-creating engine plateaued in late 2012. Along with the highest and lowest performers, Michigan presents a slight but noticeable downward trend since 2014. While this is a not unexpected given today's maturing business cycle, it raises concerns if Michigan's rate further approaches the 25% threshold.

Trend Watch Indicator #5: Net Job Gains from Business Expansions Minus Contractions

This metric shows the net jobs created from expansions minus contractions relative to the total number of jobs. It is a good aggregate indicator of the degree to which 'businesses in place' are taking on risks and embracing the challenge of success and failure. In general, a higher rate implies a stronger entrepreneurial economy.

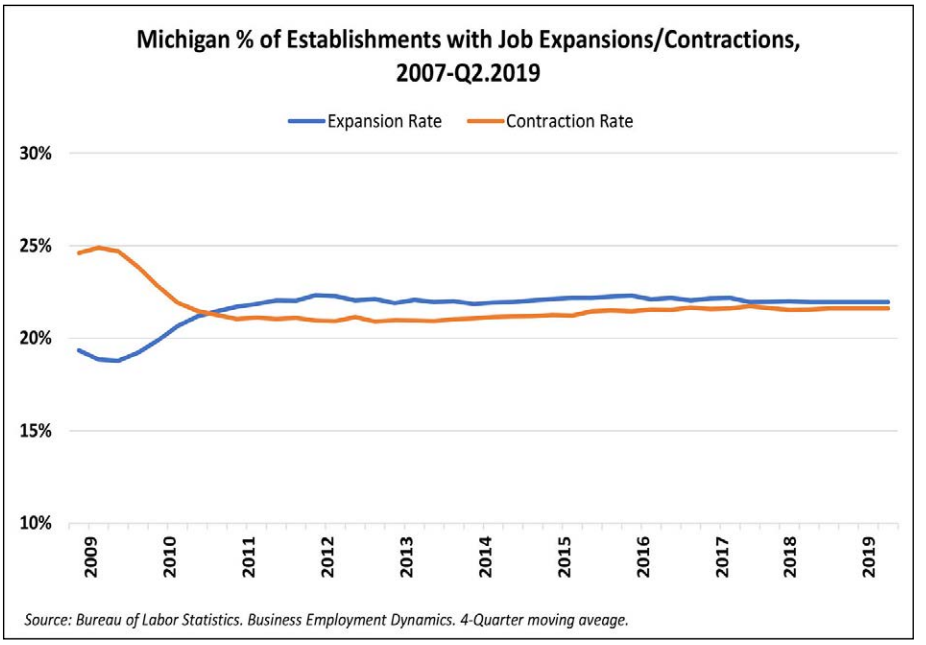


With the share of existing Michigan business creating jobs slowing down, the net job contribution rate of Michigan's businesses has been stagnant as well. Yet, Michigan's performance is and has been close to the highest scoring state. A more noticeable slowdown has been observed since early 2018. Whether this is just a repetition of the same trend as in the second half of 2013 or a more permanent decline remains to be seen.

Trend Watch Indicator #6: Business Expansion & Contraction Rates

One of the most conspicuous signs of a dynamic and strong business economy is a business expansion rate outperforming the contraction rate. Expansion and contraction rates below are measured in terms of net jobs.

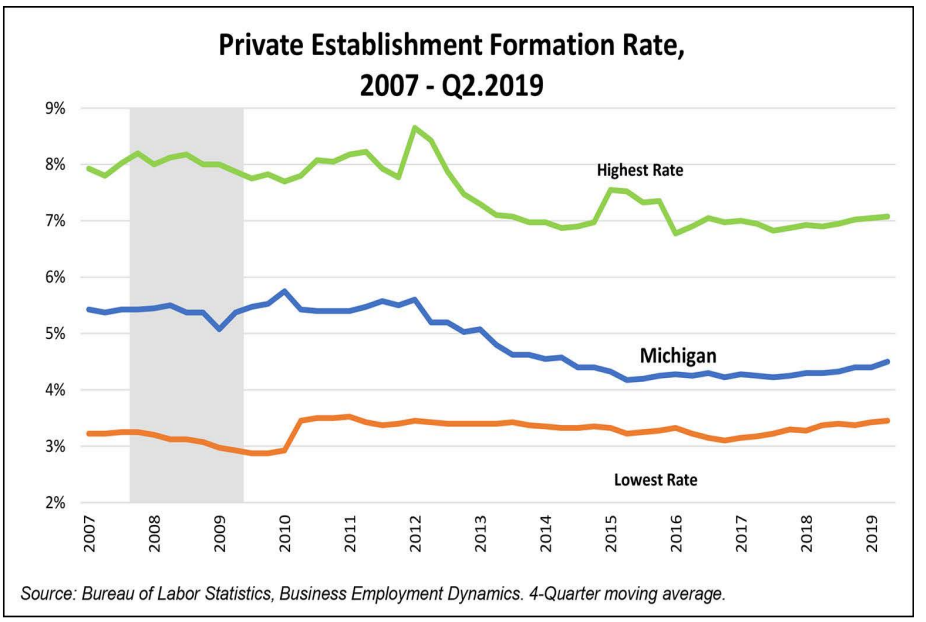
Michigan's expansion rate of existing business turned above the contraction rate in Q3 2010 and has not looked back throughout the post-recession recovery. Yet, the gap between expansion and contraction rates has continued to narrow to almost equal levels. It should be watched closely for signs of a potential emerging economic downturn.



Trend Watch Indicator 7: Michigan's Private Establishment Formation Rate

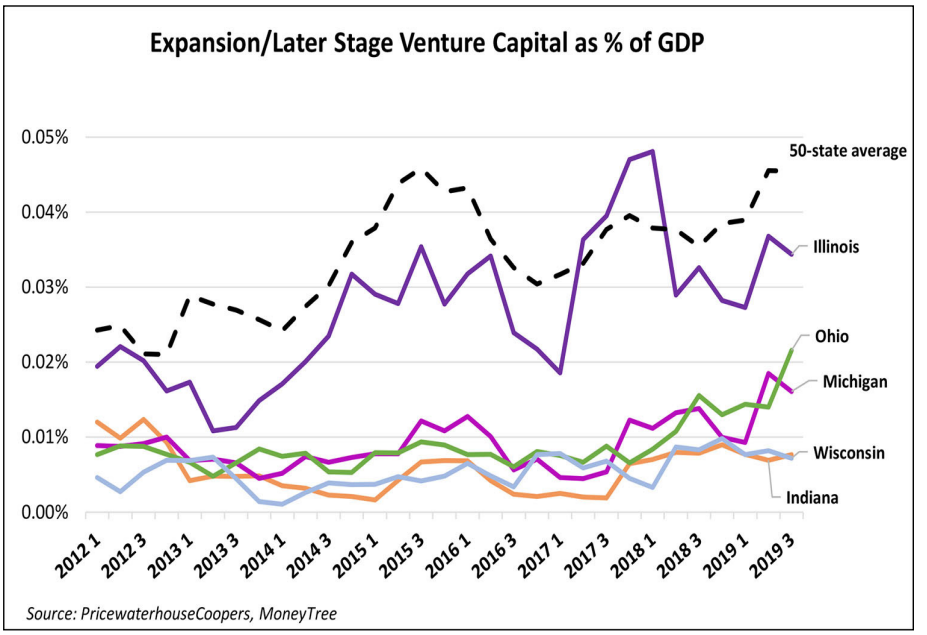
Michigan's Private Establishment Formation Rate shows the quarterly rate of new business creation as a percentage of all businesses. Michigan, in line with top performing states, has shown a significant trend decline since 2010, with stabilization since 2015.

The formation of new businesses is part of the "life blood" of any state's entrepreneurial economy. There is cause for concern given that Michigan's current establishment formation rates are considerably lower than even pre-recession establishment formation rates. However, rates have been on an upward trend since Q4 2018 to Q2 2019.



Trend Watch Indicator #8: Expansion/Later Stage Venture Capital

Only approximately 3,000 U.S. small businesses per year receive venture capital, and funding focuses largely on two sectors: information technology and health care. Consequently, tracking seed and start-up finance to judge a state's business dynamism can be debatable. However, local access to later stage funding rounds often makes it much easier for promising Stage 1 and 2 companies to raise and deploy additional investment capital to significantly accelerate their growth rates -- and turn them into solid job creators.



Michigan has not been highly successful in attracting expansion/later stage venture capital, placing notably below the 50-state average. However, it has performed usually near the middle or better among its Midwest peers, especially since 2013. The only neighboring state performing consistently better than Michigan has been Illinois. Funding as a percentage of GDP has accelerated since late 2017, a crucial input to the growth of technology-focused innovative companies.

In Summary

Going into 2020, these eight Michigan Entrepreneurial Trend Watch Indicators point to encouraging signs of entrepreneurial growth in 2020, with several important cautions. Two of the three "macro" indicators (#1, #2 and #3) are positive, as are two of the three business expansion indicators (#6, #7 and #8). And the two entrepreneurial job creation indicators (#4 and #5) are both trending negative.

What Will It Take for Michigan to Become a Top Ten Entrepreneurial State?

Section 3: Entrepreneurial Change States to Watch

Introduction

In the early 2000's, the Small Business Association of Michigan (SBAM) had the ambitious goal for Michigan to be counted among the "Top Ten" entrepreneurial states of the U.S.

Yet, at the time there was no method or tool SBAM could use to define and measure how well Michigan's entrepreneurial economy was actually performing. Undeterred, SBAM developed the Michigan Entrepreneurship Score Card as its own well-researched and data-rich tool to objectively assess Michigan's entrepreneurial economy, and to compare it to other states and over time.[1] And over the past 16 years, the Score Card has become recognized as an independent way for Michigan's leaders to annually check up on: 'How well is Michigan entrepreneurial economy doing?"

The Score Card has led to many insights over the last decade and half. One insight is that Michigan still has a long way to go for its entrepreneurial economy to be regularly counted among the "Top Ten."

While Michigan's entrepreneurial uptrend over the past 16 years has been real. Over the past 11 years, the Score Card data clearly shows that Michigan's Entrepreneurial Climate, Change and Vitality rankings have gone from the "Bottom Ten" states to the middle of the pack.

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Entrepreneurial Climate	41	33	34	28	18	29	23	22	19	17	22
Entrepreneurial Change	47	42	33	10	6	13	29	34	31	23	26
Entrepreneurial Vitality	43	33	38	34	13	27	31	29	33	35	36

So progress has been made. Yet, Michigan's entrepreneurial economy has been basically stuck in the middle rankings for the past five years. Given the recent and unprecedented challenges of the economic crisis caused by the Coronavirus pandemic, can we now use the Score Card data to shed light on what the leading entrepreneurial economy states have been doing, and can their stories of progress give Michigan leaders pointers as to how to do better over the next ten years?

The purpose of this exploratory section is to learn from looking deeper into the Score Card data. This section does not offer conclusive answers, but does point to some interesting insights, and suggests directions where more answers might be found. Our goal is to begin to ferret out promising courses of action for Michigan's policy makers and business leaders to consider as they consider the question, "What will it take for Michigan to become a Top Ten entrepreneurial state?"

When this new section was devised, there was no hint of the kinds of challenges we would all face in 2020. However, as we move forward in rebuilding the economy following the devastating economic impact of the virus and business shutdowns, such insight into how bottom states subsequently became top states may be more valuable and insightful than ever.

[1]The Score Card date base offers a unique starting point for benchmarking analysis. It comprises 15 years of continuous data on all states organized by 140 metrics. These data are refreshed annually incorporating newly released current and back-data. The data set is adjusted to accommodate changes in data definitions and data collections that occur from time to time thereby offering a truly 'living' data set.

Six Entrepreneurial States to Watch

In looking for other states that Michigan might learn from, we are interested in states that meet three criteria:

- Their 2018 data rankings are in the Top 15 states for Entrepreneurial Change
- Over the past ten years, they underwent very dramatic improvements in Entrepreneurial Change from Bottom Ten rankings to Top Ten rankings
- Their economies are roughly similar to Michigan's in size and make up, and they do not have hard-to-repeat factors like having both Microsoft and Amazon in Washington State, or fossil fuel reserves in Texas.

In a first scan of the Score Card data, six states stand out as worth learning more about: Colorado, Georgia, Maryland, North Carolina, Tennessee, and Utah.

Each of these states moved up noticeably in the Entrepreneurial Change Index between 2010 and 2018 Index. 2010 was chosen as the start year because after the Great Recession of 2007-09 state economies were severely disrupted in many different ways but by 2010 nearly all states had settled into a business expansion mode.

We chose to focus on the Entrepreneurial Change Index because it is a good measure of the direction and magnitude of entrepreneurial/small business growth. This is important because if Michigan is to become a Top Ten entrepreneurial state, then the direction and magnitude of its entrepreneurial/small business growth will have to improve.

In 2011 Michigan's Entrepreneurial Change scored above all of these other six states. By 2018 it scored below them all. Why? What has driven the steady Entrepreneurship Change progress of the other states? By undertaking a simple, basic benchmark analysis we want to find 'recipes' these states are using to continue improving their entrepreneurial economic success over this expansion phase of the current long business cycle.

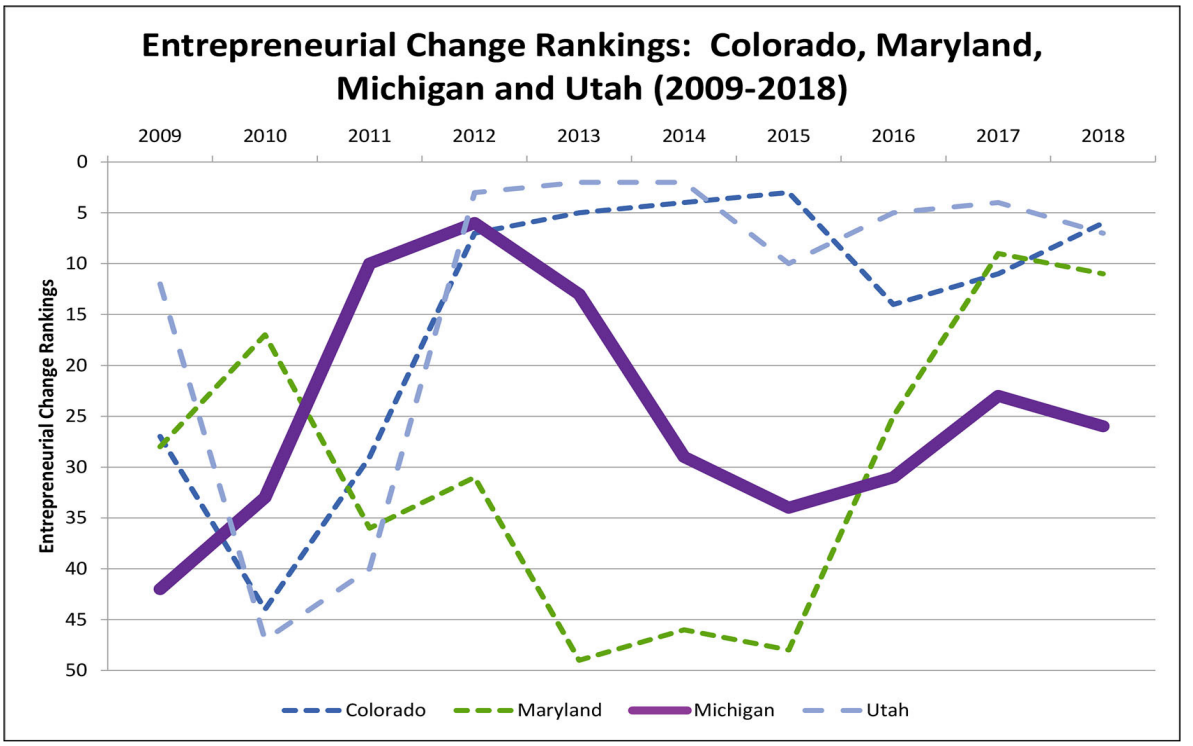
Digging Deeper Into Score Card Data

Entrepreneurial Change in a state's economy is affected by the Entrepreneurial Climate and supported by Entrepreneurial Vitality. In addition, each state has what the Score Card calls Secondary Drivers that to varying degrees directly and indirectly support the success of entrepreneurs and entrepreneurial ventures in that state. The Secondary Drivers considered by the Score Card method are: Education, Workforce, Business Costs, Productivity, Legal Environment, Physical Infrastructure, Digital Connectivity, and Quality of Life.[2]

A scan of the Climate and Vitality Indices and the Secondary Drivers for each state suggests themes that can help explain the notable "Bottom to Top" Entrepreneurial Change ranking improvements that happened in each state, and their ability to sustain high rates of Entrepreneurial Change over time.

[2]Much more information about these drivers and the metrics that contribute to them is in Sections 3, 4 and 5.

Over the last ten years, Colorado, Maryland and Utah each went through a period of dramatic Entrepreneurial Change ranking gains.



Unlike Michigan, however, each has held onto those gains. The 2008-18 Indices and Secondary Driver rankings for these states is below.[3]

Primary Metric Drivers

			Entrepreneurial Climate Shift								
COLORADO	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Entrepreneurial Climate	7	4	10	6	7	4	5	5	5	6	7
Entrepreneurial Change	**21**	**27**	**44**	**29**	**7**	**5**	**4**	**3**	**14**	**11**	**6**
Entrepreneurial Vitality	5	4	6	4	4	4	5	5	4	4	4
Education	3	14	15	35	3	23	25	20	8	8	9
Workforce	6	7	7	6	6	6	7	6	6	6	6
Business Costs	38	35	41	39	39	35	37	33	32	30	27
Productivity	6	7	9	7	9	5	6	3	6	5	3
Legal Climate	24	27	29	28	28	29	28	31	31	31	29
Physical Infrastructure	12	15	14	15	17	20	12	16	13	12	9
Digital Connectivity	18	24	19	19	20	18	20	19	23	25	22
Quality of Life	20	21	18	22	20	22	24	33	36	31	32

[3]In the State ranking tables, the lighter shading indicated a Top 10 ranking while the darker shading represents a Bottom 10 ranking relative to other states.

MARYLAND	2008	2009	2010	2011	2012	2013	2014	Entrep Climate Shift 2015	2016	2017	2018
Entrepreneurial Climate	12	8	5	7	16	17	13	8	8	8	5
Entrepreneurial Change	**26**	**28**	**17**	**36**	**31**	**49**	**46**	**48**	**25**	**9**	**11**
Entrepreneurial Vitality	6	6	7	6	6	6	8	6	5	5	6
Education	4	3	3	3	2	3	3	9	12	6	5
Workforce	4	4	4	3	3	3	2	3	2	2	2
Business Costs	46	48	45	43	42	39	38	35	34	32	24
Productivity	18	13	10	9	12	11	9	9	7	7	8
Legal Climate	29	26	34	40	40	39	40	38	38	36	37
Physical Infrastructure	8	10	13	8	7	6	7	32	20	6	4
Digital Connectivity	5	11	14	15	11	11	3	6	4	4	6
Quality of Life	8	11	16	17	15	12	17	30	30	22	21

UTAH	2008	2009	Entrep Climate Shift 2010	2011	2012	2013	2014	2015	2016	2017	2018
Entrepreneurial Climate	3	3	3	3	4	6	3	3	3	4	3
Entrepreneurial Change	**9**	**12**	**47**	**40**	**3**	**2**	**2**	**10**	**5**	**4**	**7**
Entrepreneurial Vitality	2	2	2	2	2	2	2	3	2	2	2
Education	20	19	13	27	34	26	29	19	20	17	17
Workforce	11	10	15	11	11	10	10	11	10	10	8
Business Costs	18	22	18	16	20	22	22	23	27	26	34
Productivity	20	21	16	17	22	19	18	16	12	11	11
Legal Climate	15	16	12	14	16	12	11	11	10	14	17
Physical Infrastructure	7	5	7	7	6	5	3	6	9	11	10
Digital Connectivity	8	20	12	9	8	10	6	5	7	8	4
Quality of Life	25	27	31	26	26	28	23	34	40	34	31

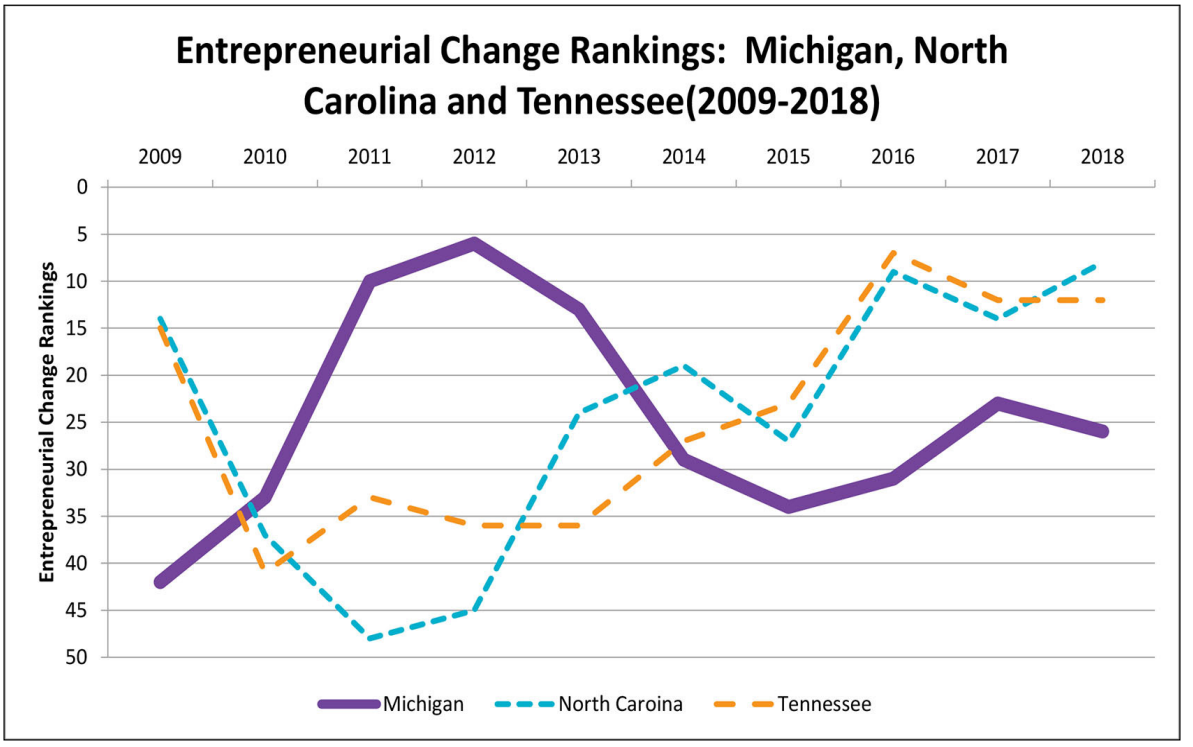
Looking at the Index and Secondary Driver rankings broadly, a couple of commonalities stand out. For instance, these three states have:

- Consistently strong Entrepreneurial Climate and Vitality rankings, indicating that their economies have pro-entrepreneurship biases (Climate) and significant entrepreneurship economy already in place (Vitality)
- Mediocre or comparatively low Business Costs drivers
- Strong Workforce drivers across the board, and strong Education and Productivity drivers in Colorado and Maryland.
- Physical Infrastructure is very strong in all three states, and Digital Connectivity is strong in Maryland and Utah.

Despite higher than average business costs, these three states significantly improved and then sustained their strong Entrepreneurial Change.

North Carolina and Tennessee - Business Costs and Legal Environment

North Carolina and Tennessee have managed to very steadily and impressively improved their Entrepreneurial Change rankings, especially over the past five years, while Michigan's rankings retreated.



The Index and Secondary Driver rankings of North Carolina and Tennessee suggest another path to Entrepreneurial Change Top 15 status. The 2008-18 Indices and Secondary Driver rankings for North Carolina and Tennessee are below.

NORTH CAROLINA	2008	2009	2010	2011	Entrepreneurial Climate Shift 2012	2013	2014	2015	2016	2017	2018
Entrepreneurial Climate	11	9	8	11	13	8	7	7	6	5	6
Entrepreneurial Change	**8**	**14**	**37**	**48**	**45**	**24**	**19**	**27**	**9**	**14**	**8**
Entrepreneurial Vitality	21	28	19	23	25	23	16	16	12	13	12
Education	22	27	18	32	19	30	15	18	13	18	20
Workforce	25	25	24	24	24	25	24	24	22	20	19
Business Costs	13	19	23	19	23	19	18	15	10	10	14
Productivity	13	18	19	22	21	21	19	20	19	18	20
Legal Climate	8	7	10	10	5	5	4	5	16	11	5
Physical Infrastructure	32	34	30	25	22	31	24	27	32	30	43
Digital Connectivity	21	31	32	25	29	35	40	37	35	34	27
Quality of Life	21	25	24	25	22	23	19	21	13	14	19

TENNESSEE	2008	2009	2010	2011	2012	Entrep Climate Shift 2013	2014	2015	2016	2017	2018
Entrepreneurial Climate	29	32	28	23	31	25	27	26	23	31	27
Entrepreneurial Change	**31**	**15**	**41**	**33**	**36**	**36**	**27**	**23**	**7**	**12**	**12**
Entrepreneurial Vitality	38	35	39	43	38	42	38	37	26	30	25
Education	46	48	47	43	40	37	45	42	36	35	29
Workforce	41	40	39	39	39	33	34	31	33	33	31
Business Costs	6	3	5	5	4	4	3	3	3	3	3
Productivity	25	28	26	27	26	27	28	30	31	30	29
Legal Climate	19	12	16	24	26	28	18	16	20	22	20
Physical Infrastructure	25	18	23	22	28	21	26	34	37	28	36
Digital Connectivity	44	49	49	48	47	45	45	48	43	43	43
Quality of Life	42	35	33	29	31	31	26	27	22	17	18

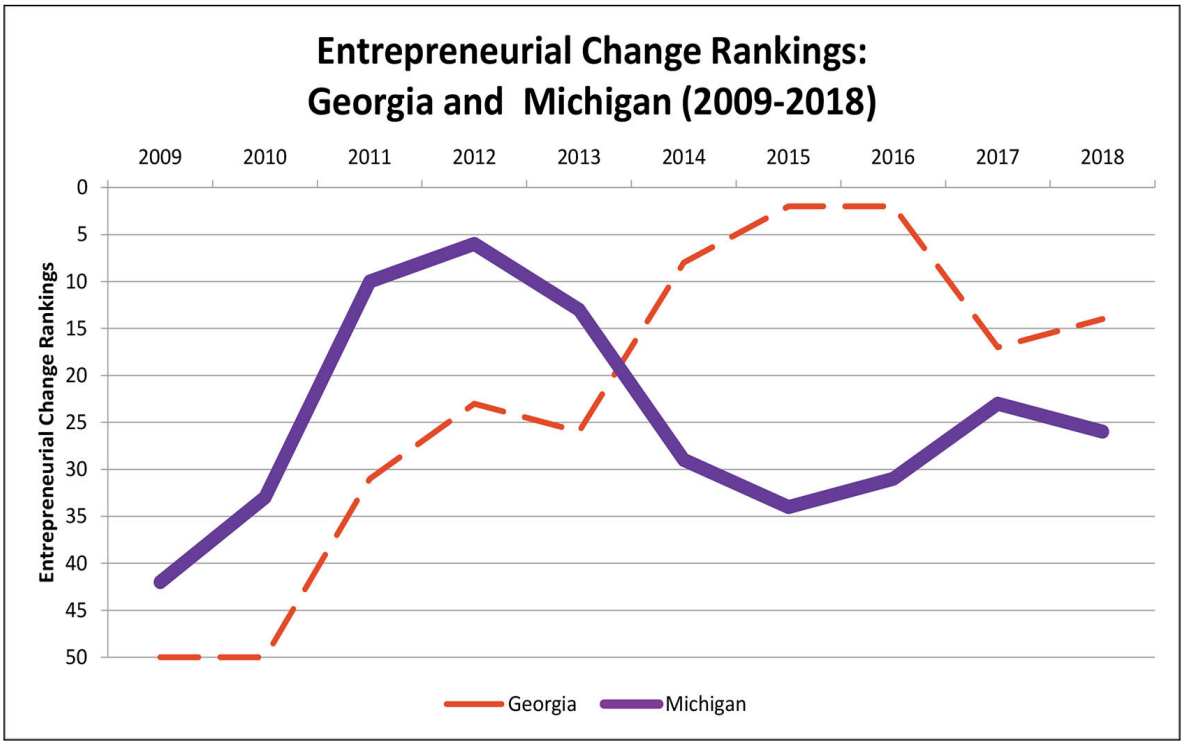
The Indices and Secondary Drivers of North Carolina and Tennessee over the past ten years point to a very different combination of Entrepreneurial Change success contributors. These two states have:

- Relatively stronger Business Cost drivers, especially for Tennessee, and Legal Environment drivers, especially for North Carolina.
- A strongly supportive Entrepreneurial Climate for North Carolina and decent Climate for Tennessee
- Moderate Productivity drivers in both states.
- Gains in Entrepreneurial Change despite only moderate rankings in Education and Workforce drivers in North Carolina, and relatively poor Education and Workforce driver rankings for Tennessee.

Although North Carolina and Tennessee have not had the Education, Workforce and Productivity strengths of Colorado, Maryland and Utah, their Business Costs and Legal advantages appear to significantly compensate, improving - and sustaining – their Entrepreneurial Change rankings.

Georgia

Like the other states, Georgia has also significantly improved its Entrepreneurial Climate, Change and Vitality over the past 10 years.



GEORGIA	2008	2009	Entrepreneurial Climate Shift 2010	2011	2012	2013	2014	2015	2016	2017	2018
Entrepreneurial Climate	40	31	30	29	35	18	22	13	17	16	17
Entrepreneurial Change	**48**	**50**	**50**	**31**	**23**	**26**	**8**	**2**	**2**	**17**	**14**
Entrepreneurial Vitality	25	21	17	20	17	17	11	9	10	14	14
Education	28	46	33	36	28	39	36	29	23	21	18
Workforce	24	23	21	23	22	23	21	22	23	23	22
Business Costs	24	27	24	25	22	30	31	29	31	29	32
Productivity	19	19	22	21	23	24	22	23	22	21	21
Legal Climate	26	24	24	25	25	25	29	30	35	35	35
Physical Infrastructure	28	21	19	20	18	24	22	14	17	22	24
Digital Connectivity	47	48	48	50	49	40	42	42	42	41	41
Quality of Life	41	39	44	44	38	37	41	44	44	30	43

Unlike the other states, however, the Score Card data as currently presented does not suggest a clear driver story for Georgia. Indeed, it suggests for Georgia that other factors not quite captured by the conventional economic development drivers are at play. Interestingly, a deeper look into the detailed metrics point to large improvements in the number of high performing companies, the number of building permits issued, internet speeds, and the affordability of two-year college tuitions as part of Georgia's story.

Michigan

Importantly, between 2009 and 2012, Michigan also underwent dramatic improvements in Entrepreneurial Climate, Change and Vitality, driven in large part by the quality and availability of its Workforce. However, Michigan has not been able to keep the Climate, Change and Vitality gains it made.

		Entrep Climate Shift				Entrepreneurial Climate Decline					
MICHIGAN	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Entrepreneurial Climate	41	33	34	28	18	29	23	22	19	17	22
Entrepreneurial Change	**47**	**42**	**33**	**10**	**6**	**13**	**29**	**34**	**31**	**23**	**26**
Entrepreneurial Vitality	43	33	38	34	13	27	31	29	33	35	36
Education	34	37	29	28	24	28	27	28	27	33	25
Workforce	12	15	13	9	9	9	11	9	9	9	9
Business Costs	44	45	38	40	24	27	27	25	28	33	29
Productivity	47	46	46	47	45	45	43	43	42	41	42
Legal Climate	35	37	33	30	27	24	26	24	27	26	28
Physical Infrastructure	44	44	48	38	34	30	30	37	28	35	33
Digital Connectivity	36	43	45	44	42	41	44	46	46	44	42
Quality of Life	35	31	35	30	33	27	28	15	16	19	36

At first glance, the Michigan Score Card data suggests that while a high quality Workforce provides a foundation, it is not sufficient by itself to build up Michigan's entrepreneurial economy. Other complementing driver improvements are warranted, as recommended in the Insights Section 2 of earlier Score Card reports. More research is required to identify a combination of drivers unique for Michigan entrepreneurial excellence.

Which Metrics Stand Out?

Comparing improvements in individual metrics across the six states, and for Michigan during its 2009-12 period, five individual metrics seem to be particularly well correlated with improvements in Entrepreneurial Change:

- Proprietor Income Growth per Proprietor – Increases in the nominal wealth of individual business owners.
- Increase in High Performance Firms – Growth in the number of firms that are achieving high rates of growth, as documented by third party sources.
- Small Business Growth – The increase in the number of small businesses with 99 or fewer employees.
- Gross Domestic Product Growth – Annual growth of a state's overall economy as measured by its nominal gross domestic product.
- Large Business Payroll Growth – Nominal payroll growth of firms in a state with 500 or more employees

As each of the six states and Michigan experienced significant improvements in their Entrepreneurial Change rankings, the corresponding rankings of each of these metrics also improved meaningfully, and sometimes very dramatically.

But these five metrics are not the whole story. In each state, there were other metrics that also improved substantially. For example, the Net Establishment Entrants Increase and Building Permits Growth rankings increased significantly in Georgia and Tennessee, while the State Business Tax Structure ranking improved markedly in North Carolina. Increases in its Foreign Business Growth ranking was very positive for Tennessee, while Utah made very substantial improvements in its Gender Equity and Racial Equity rankings.

In future Score Card reports, we hope to look at the Secondary Drivers and these metrics more closely, conducting regression and other analysis to better understand and zero in on the combinations of drivers and metrics that can help Michigan be more focused on and effective in building its core entrepreneurial economy.

DTE Foundation

BACKING ENTREPRENEURS

The DTE Foundation helps drive economic development in our communities. Through grant support, we provide the critical resources necessary to promote business development, expansion and longevity. By investing in organizations that support economic development, we're helping improve the well-being of those communities.

Proud to support Michigan Celebrates Small Business.

Section 4: Michigan's Entrepreneurship Score Card Metrics

The State of Michigan's Entrepreneurial Economy in 2018

This section reports specifically on the Michigan's Entrepreneurship Score Card rankings for data year 2018, the latest year for which complete cross-state data is available. The same framework for description is used with the three unique Indexes:

- **Entrepreneurial Climate** measures known primary conditions for fostering entrepreneurial growth. Entrepreneurial Climate consists of three sub-indexes know to be primary external factors affecting entrepreneurial initiative: Research and Innovation, Financial and Institutional Capital and General Business Growth.
- **Entrepreneurial Change** measures how much business growth has occurred in the recent three years, using a three-year running average of various metrics.
- **Entrepreneurial Vitality** measures how much small and entrepreneurial business activity occurs in Michigan relative to other states.

The Great Recession hit Michigan's economy and the Score Card results showed dismal rankings in the recessionary years of 2007-09. Nonetheless, we observed data indicating entrepreneurial efforts were underway during those years. We reported encouraging signs of local and regional innovation and entrepreneurship initiatives taking place statewide. Subsequent fruits of that labor, state-wide consensus building, improvements to programs and public policy changes, resulted in much improved Score Card results post-2009 through 2012.

The improvement over the rankings 10 years ago is remarkable in both Entrepreneurial Climate and Entrepreneurial Change. Yet, this year's report shows a leveling off of and slow decline from the dramatic improvement seen in the early post-recession years.

Michigan's Entrepreneurial Climate, now ranked 22, has slipped into a two- star rating, down from the previous year ranking of 17. After four years of continuous increase in its scores and rating, Michigan's Entrepreneurial Change started slipping in 2013, down to a rank of 34 in 2015. It recovered somewhat in 2016 to a rank of 30 with a current rank of 26 in 2018. Meanwhile, Entrepreneurial Vitality did not hold onto its improvement in rating in 2015 and 2016, slipping back to a one-star rating for both 2017 and 2018 data to a current rank of 36.

A further breakdown of each of these Michigan's Entrepreneurial Indexes follows.

Michigan's 2018 Score Card Rankings for Entrepreneurial Climate, Change, and Vitality – Summary Results

National Performance *(1=best out of 50)*	**2020 Score Card *Rank* *(2018 data)***	**Change in Rankings From 2008 Data Year**	**2020 Score Card *Rating* *(2018 data)***	**2019 Score Card *Rating* *(2017 data)***	**2018 Score Card *Rating* *(2016 data)***	**2017 Score Card *Rating* *(2015 data)***	**2016 Score Card *Rating* *(2014 data)***
Entrepreneurial Climate	22	**+19**	**	***	***	***	***
Entrepreneurial Change	26	**+21**	**	***	***	**	**
Entrepreneurial Vitality	36	**+7**	*	*	**	**	*

Note: The Score Card uses two methods to compare Michigan with the 49 other states rankings and ratings. Ranks are used because they are simple to understand and widely used.

- Rankings indicate Michigan's rank order among all 50 states (where 50 is last). But ranks may fail to discern competitive differences. As illustrated in the Methodology section, ten world-class male runners might each do better than 4 minutes in a one- mile race but finishing tenth place may not sound too impressive. Consequently, one needs a way to rate performance as well as rank it.
- The Score Card's Five-Star Ratings rate performance. Once underlying metric scores are calculated, the data is aggregated to produce state Index scores arrayed from high to low to determine the total range of scores. Each 20% of that range represents a star group – from five-star to one-star. For example, a five-star state is one that falls into the top 20 percent of the range of scores. Not too infrequently the data in the Score Card is distributed such that a few states score exceptionally well on a metric or index, followed by a moderate number of gradually declining scores then winding out with a large number of underperformers. In such case, a state might rank around midpoint yet only obtain 1-star or 2-star rating. Such is the case for Michigan's Vitality score above.

Entrepreneurial Climate

Michigan's Entrepreneurial Climate, which highlights supporting conditions for Michigan's entrepreneurial economy ranks 22 with a two-star rating. The current rank includes significant continued relative strength in general business growth, and in research/innovation to support current and future entrepreneurial initiatives compared to 10 years ago. The Financial and Institutional Capital component of Entrepreneurial Climate is the only one of the three components that scores below the mid-point.

The metrics detail underlying Michigan's Entrepreneurial Climate Index, plus the change in relative ranking from 10 years ago, and the page number where comparative metric detail for all 50 states can be found, is shown below:

Michigan's Entrepreneurial Climate Index
(Note: Index data is mostly from 2018, the last year all-state data is available)

Metrics	2018 Data Year	Change in Rank From 2008 Data Year	Lookup Page #
ENTREPRENEURIAL CLIMATE	**22**	**+19**	**54**
Research & Innovation	**13**	**+8**	**55**
University R&D Performance	7	+7	56
Patents per Worker	4	+4	56
Patents Per R&D Dollar*	27	+3	57
University Licenses to Small Businesses & Startups	15*	+3	57
NSF Funding Rate	26	-11	58
University Royalty/License Income	12*	+1	58
Industry R&D Performance	4*	+2	59
Federal R&D	28*	-7	59
Entrepreneurial Programs	6	+7	60
Financial & Institutional Capital	***39***	**-4**	61
Seed/Early Stage Venture Capital	27	-12	62
2nd/3rd Stage Venture Capital	25	+4	62
IPO Financing	31	+5	63
SBIC Financing	33	0	63
SBIR Financing	25	-4	64
STTR Financing	22	+4	64
Bank Commercial and Industrial Lending	38	-19	65
Private Small Business Lending	30	-10	65
Business Incubators	14*	+22	66

General Business Growth	**13**	+35	**67**
Gross Domestic Product Growth	22	+28	**68**
Manufacturing Capital Investment Growth	46**	+33	68
Foreign Business Employment Growth	3*	+33	69
Export Growth	7*	+7	69
Export-related Jobs	12*	+5	70
Large Business Payroll Growth	17**	+32	70
Building Permits Growth	29	+20	71
Fortune 500	12	-5	71
Private Business Profit Growth	12*	+36	72
Renewable Energy Use	32	+3	72
Green Industries	38	-2	73

** Data from 2017 was carried forward to 2018 for purposes of this report due to unavailability of more recent data.*

*** Data from 2016 was carried forward to 2018 for purposes of this report due to unavailability of more recent data.*

Entrepreneurial Change

Michigan's Entrepreneurial Change, which measures average growth of a number of key entrepreneurial growth/decline metrics over the past three years, showed marked improvement from ranking 33 in data year 2010 to ranking 6 in data year 2012, but recently down to rank 34 in 2015 with some signs of recovery to rank 23 in 2017 and rank 26 in 2018. All underlying metrics except the change in high performance firms improved when compared with the data from 10 years ago, indicating a long-term trend in broad improvement for Michigan's entrepreneurs. 2017 results reflect two metrics with 2016 data and three with 2018 data.

The metrics detail underlying Michigan's Entrepreneurial Change Index, plus the change in relative ranking from 2008 data, and the page number where the metric detail for all 50 states can be found, is shown below:

Michigan's Entrepreneurial Change Index

(Note: Index data is mostly from 2018, the last year all-state data is available)

	2018 Data Year	Change in Rank From 2008 Data Year	Page #
ENTREPRENEURIAL CHANGE	**26**	**21**	**44**
Small Business Growth	32**	+17	**45**
Small Business Payroll Growth	25**	+24	45
Increase in High Performance Firms	44	-1	46
Net Establishment Entrants Increase	20	+21	46
Proprietor's Income Growth per Proprietor	16	+17	47

*** Data from 2016 was carried forward to 2018 for purposes of this report due to unavailability of more recent data.*

Entrepreneurial Vitality

Michigan's Entrepreneurial Vitality is a measure of the general level of small business and entrepreneurial activity relative to all other states. Entrepreneurial Vitality provides a sense of the underlying structural strength of Michigan's entrepreneurial economy.

Even with the general economic recovery post-recession, Michigan's Entrepreneurial Vitality continues to be weak compared to most other states. As shown below, while the state continued to rank below midpoint. It nonetheless showed some improvement from 10 years ago until 2017. Contributing to that improvement has been noticeable gains in the state's five-year business survival rate and increased number of SBIC awards. At the same time, some other metrics of note both last year and this year are disappointing rankings for university spinouts, net establishment entrants, and self-employment rates.

The metrics detail underlying Michigan's Entrepreneurial Vitality Index, plus the change in relative ranking from 2008 data, and the page number where the metric detail for all 50 states can be found, is shown below:

Michigan's Entrepreneurial Vitality Index

(Note: Index data is mostly from 2018, the last year all-state data is available)

	2018 Data Year	Change in Rank From 2008 Data Year	Page #
ENTREPRENEURIAL VITALITY	**36**	**+7**	**48**
Net Establishment Entrants	30	+18	49
Establishment Turnover	37	-17	49
Self-Employment	39	-5	50
University/Research Institutions Spinoffs	41*	-26	50
High Performance Firms	24	+11	51
IPO Awards	37	-5	51
SBIR Awards	23	-2	52
STTR Awards	19	+1	52
SBIC Awards	27	+8	53
5-Year Establishment Survival	20	+21	53

** Data from 2017 was carried forward to 2018 for purposes of this report.*

Secondary Driver Metrics – Contributing to Michigan's Broader Entrepreneurial Economy

In the background, Michigan's entrepreneurial economy is indirectly supported and constrained by a host of state and national drivers. The Score Card focuses on the following state-level secondary drivers: education, workforce preparedness, business environment, connectivity, and quality of life. The underlying metrics of these secondary drivers, and the pages where it shows comparisons with other states, are shown below:

Education & Workforce Preparedness

	Rank	Page		Rank	Page
EDUCATION	**25**	**74**	**WORKFORCE PREPAREDNESS**	**9**	**84**
K-12 Education	**37**	**75**	High School Only Diploma Attainment	23***	**85**
Advanced Placement Score	27	76	Post-secondary pre-BA Attainment	16	85
Public High School Graduation Rate	42*	76	Bachelor's Degree Attainment	20	86
SAT Performance	39	77	Physical Science & Engineering Workers	1	86
ACT Score	6	77	Technologist and Technician Workers	21	87
NAEP Mathematics	36*	78	Innovation Workers Outside High Tech Empl.	32	87
NAEP Reading	35*	78	High-tech Manufacturing Employment	4	88
Postsecondary Education	**14**	**79**	High Tech Services Employment	11	88
4yr.+ Tech Credentials	6	80	Adult Education	37***	90
Pre-BA Tech Credentials	35	80	Skilled Immigrants	20	90
4-yr. Knowledge Degrees Excl. Tech Fields	10	81			
College Migration	37	81			
Top Ranked Undergraduate Programs	19	82			
Top Ranked Graduate Programs	7	82			
Two-Year College Costs	21*	83			
Four-Year College Costs	28*	83			

** Data from 2017 was carried forward to 2018 for purposes of this report. *** not included in calculations*

Compared to last year's report, the relative rankings for Education overall rose from 33 to 25 this year, with K-12 education falling from 36 to 37 but post-secondary education rising from 18 to 14. Ranking of Workforce Preparedness remained unchanged at 9.

Business Environment
(Costs of Business, Productivity & Labor Supply, Regulatory, Legal)

	Rank	Page		Rank	Page
BUSINESS COSTS	**29**	**91**	**PRODUCTIVITY & LABOR SUPPLY**	**42**	**97**
Unit Labor Cost	36	92	Net Domestic Migration Rate	32	98
Energy Costs	37	92	Prime Working Age Residents	45	98
Workers Compensation Premiums	2	93	Gross Domestic Product per Job	28	99
Workers' Compensation Costs	14*	93	Service Sector Productivity	31	99
Unemployment Insurance Costs	47	94	Manufacturing Value Added per Hour	39**	100
Unemployment Insurance Structure	49	94	Labor Force Participation	36	100
Business Tax Burden	2	95			
State Business Tax Structure	13	95			
Metro Industrial Rents	16	96			
Small Business Health Care Premiums	17	96			
LEGAL ENVIRONMENT	**28**	**101**			
Malpractice Costs	40	102			
Business Liability Costs	6*	102			
Liability System Reputation	32	103			

** Data from 2017 was carried forward to 2018 for purposes of this report.*

Compared to last year's report, Business Costs rankings improved from 32 to 29 this year, and the Legal Environment from 37th to 35th place, while Productivity & Labor supply slipped from 38th place last year to 42nd this year.

Getting Around, Getting Connected
(Physical Infrastructure and Digital Connectivity)

Quality of Life

** Data from 2017 was carried forward to 2018 for purposes of this report due to unavailability of more recent data.*

*** Data from 2016 was carried forward to 2018 for purposes of this report due to unavailability of more recent data.*

When it comes to getting around and getting connected, Michigan's rankings compared to other states showed small improvement. Physical Infrastructure rankings specifically rose from 35th last year to 33rd this year, while Digital Connectivity slightly improved from 44th last year to 42nd this year. Quality of Life sub-drivers also mostly fell, except for the Pocketbook Indicators, with the overall index falling from 19th place last year to 36th this year. The drop in the Clean Air metric influenced strongly the Health & Safety sub-driver and overall driver results.

LOOKING BACK – MOVING FORWARD

Much work remains to be done if Michigan is to be counted among the nation's top entrepreneurial states. States can only attain that status by sustained economic growth. In today's fast-changing economy, Michigan's sustained growth has to include an increasingly diverse and successful pool of innovative entrepreneurs.

Much can be learned from Michigan's accomplishments between 2014 and 2018. The table below lists the 14 Score Card metrics that stand out as five-year gainers for Michigan. Each of these metrics improved in rank by 10 points or more since 2014. The list includes many repeat top performers from last year's Score Card.

Michigan Metrics in Data Years 2017/18 with Top Competitive Ranking Gains Over Prior 5 Years (>+10 Ranks of Positive Change)

- **Entrepreneurial Change Index**
  - Net Establishment Entrants Increase
- **Entrepreneurial Vitality Index**
  - Net Establishment Entrants
- **Entrepreneurial Climate Index**
  - SBIC Awards
  - University Royalty/License Income
  - Export Growth
- **Education Driver**
  - ACT Score
  - Top Ranked Undergraduate Program
  - Bachelor's Degree Attainment
- **Legal Environment Driver**
  - Business Liability Costs
- **Digital Connectivity Driver**
  - Broadband Connection
- **Quality of Life Driver**
  - Generational Creative Class
  - Gender Equity
  - Racial Equity
  - Unemployment Rate

Section 5: Score Card Indexes and Detailed Metrics

ENTREPRENEURIAL CHANGE

A dynamic economy not only attracts new companies; it also experiences business failures as well as startups, and shows the willingness of individuals to undertake new enterprises and contribute to wealth creation. In fact, one characteristic of today's innovation economy is the degree to which it is "churning"—residents coming and going, new occupations forming while others decline, and businesses forming, relocating and disappearing. These are necessary factors for economic prosperity. This index measures change in five metrics averaged over the most recent three years of data. Metrics capture characteristics of commercial enterprises including numeric growth, start-ups, fast-growth/high tech, payroll, and proprietor income.

Midwest Performance

	2018	2016	2014
Illinois	**	***	***
Michigan	**	***	**
Wisconsin	**	***	***
Indiana	**	***	***
Ohio	*	**	**

Rank	State	2018	2016	2014
1	Washington	*****	**	***
2	Idaho	*****	*****	*****
3	Nevada	****	***	***
4	Texas	****	***	*****
5	Florida	****	****	****
6	Colorado	****	****	*****
7	Utah	****	****	*****
8	North Carolina	****	****	***
9	Oregon	****	****	****
10	Massachusetts	****	****	*
11	Maryland	***	***	*
12	Tennessee	***	****	**
13	Missouri	***	*****	***
14	Georgia	***	*****	****
15	Arizona	***	***	****
16	South Carolina	***	****	****
17	New Hampshire	***	***	**
18	Montana	***	****	****
19	Maine	***	****	**
20	Vermont	***	***	**
21	Alabama	***	***	**
22	Kentucky	***	**	**
23	Nebraska	**	***	*
24	Hawaii	**	***	***
25	Illinois	**	***	***
26	**Michigan**	**	***	**
27	Wisconsin	**	***	***
28	Delaware	**	****	**
29	Rhode Island	**	**	**
30	Arkansas	**	***	**
31	South Dakota	**	****	***
32	Alaska	**	***	**
33	California	**	***	****
34	Wyoming	**	**	****
35	Minnesota	**	****	***
36	New York	**	*****	****
37	Indiana	**	***	***
38	New Jersey	**	**	*
39	Iowa	**	**	**
40	Mississippi	**	**	**
41	Pennsylvania	*	**	**
42	Virginia	*	**	**
43	Oklahoma	*	*	****
44	Louisiana	*	**	***
45	New Mexico	*	**	**
46	Ohio	*	**	**
47	North Dakota	*	*	*****
48	Kansas	*	**	**
49	West Virginia	*	*	*
50	Connecticut	*	*	*

GROWTH IN NUMBER OF SMALL BUSINESSES

Rank	State	Score	Growth Rate	Change, 2013-2016 (Abs.)
	50-State Average		*0.68%*	*2.7%*
1	Utah	140.8	2.50%	5.7%
2	Missouri	140.1	2.47%	3.8%
3	Nevada	136.0	2.25%	4.7%
4	Florida	134.4	2.18%	3.8%
5	Colorado	133.1	2.11%	1.4%
6	Idaho	130.0	1.95%	3.4%
7	California	128.4	1.87%	4.5%
8	Delaware	128.1	1.85%	3.0%
9	Oregon	127.3	1.81%	3.8%
10	Texas	126.9	1.79%	3.9%
11	Washington	125.8	1.73%	5.6%
12	Arizona	121.3	1.50%	-1.5%
13	Georgia	120.4	1.45%	4.9%
14	North Carolina	117.8	1.32%	4.2%
15	South Carolina	115.2	1.19%	0.6%
16	Nebraska	109.8	0.91%	2.7%
17	Massachusetts	108.1	0.82%	3.3%
18	Montana	107.8	0.80%	1.8%
19	Virginia	105.3	0.68%	3.9%
20	New York	104.8	0.65%	2.2%
21	South Dakota	104.3	0.62%	1.4%
22	Maine	104.1	0.62%	2.8%
23	Alaska	104.0	0.61%	0.9%
24	Tennessee	101.9	0.50%	2.9%
25	Minnesota	100.3	0.42%	3.2%
26	Maryland	99.7	0.39%	1.3%
27	Illinois	98.5	0.33%	1.3%
28	Wyoming	98.1	0.31%	2.8%
29	Rhode Island	98.1	0.31%	1.8%
30	Hawaii	97.8	0.29%	2.1%
31	Alabama	96.4	0.22%	2.7%
32	**Michigan**	**94.9**	**0.14%**	**1.2%**
33	Wisconsin	94.8	0.14%	2.8%
34	New Hampshire	94.8	0.14%	3.2%
35	Pennsylvania	93.7	0.08%	3.0%
36	Arkansas	93.3	0.06%	3.4%
37	Kansas	92.8	0.03%	1.7%
38	Iowa	92.5	0.02%	2.6%
39	Kentucky	92.1	0.00%	2.4%
40	North Dakota	91.7	-0.02%	2.8%
41	Indiana	91.4	-0.04%	2.8%
42	New Jersey	91.3	-0.04%	2.1%
43	Oklahoma	91.0	-0.06%	3.3%
44	Louisiana	90.3	-0.10%	1.5%
45	Vermont	89.6	-0.13%	2.5%
46	Mississippi	88.3	-0.20%	2.1%
47	Connecticut	88.2	-0.20%	2.8%
48	Ohio	85.6	-0.34%	2.6%
49	New Mexico	80.9	-0.58%	2.6%
50	West Virginia	62.1	-1.54%	2.5%

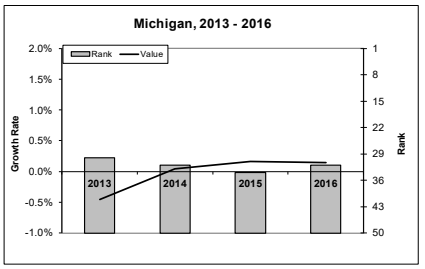
Growth in number of firms with 99 or fewer employees, 2016, three-year avg.

Small firms have been shown to be important contributors to job and economic growth as well as innovative activity. A growing presence of small businesses is therefore imperative for strong economic dynamism. The above table shows the annual growth rate in the number of small firms of 99 or fewer employees for each state, averaged over three years.

Source: U.S. Census Bureau

Midwest Performance, 2016

State	Growth Rate	Rank
Illinois	0.3%	27
Michigan	**0.1%**	**32**
Wisconsin	0.1%	33
Indiana	0.0%	41
Ohio	-0.34%	48



SMALL BUSINESS PAYROLL GROWTH

Rank	State	Score	Growth Rate	Change, 2013-2016 (Abs.)
	50-State Average		*3.4%*	*1.0%*
1	Oregon	129.1	6.2%	2.9%
2	Washington	124.4	5.7%	2.4%
3	Idaho	122.5	5.6%	2.1%
4	Utah	121.9	5.5%	0.5%
5	Nevada	121.9	5.5%	3.0%
6	Colorado	118.8	5.2%	1.1%
7	Florida	118.0	5.2%	1.0%
8	California	116.7	5.0%	1.9%
9	Arizona	115.9	5.0%	2.1%
10	South Carolina	115.0	4.9%	2.6%
11	Delaware	114.1	4.8%	3.1%
12	Georgia	110.7	4.5%	1.8%
13	North Carolina	109.9	4.4%	1.8%
14	New Hampshire	109.3	4.4%	2.7%
15	Montana	106.6	4.1%	-0.1%
16	Tennessee	106.4	4.1%	1.4%
17	Hawaii	104.8	4.0%	1.7%
18	South Dakota	104.0	3.9%	0.6%
19	Minnesota	103.3	3.8%	0.3%
20	Maine	102.8	3.8%	1.4%
21	Massachusetts	102.0	3.7%	0.7%
22	Maryland	100.7	3.6%	1.4%
23	Wisconsin	100.5	3.6%	1.6%
24	Missouri	100.4	3.6%	1.8%
25	**Michigan**	**100.2**	**3.6%**	**0.9%**
26	Arkansas	99.8	3.5%	1.5%
27	Indiana	99.2	3.5%	1.5%
28	Vermont	98.4	3.4%	1.1%
29	Iowa	98.3	3.4%	1.3%
30	Nebraska	98.2	3.4%	0.6%
31	Virginia	95.1	3.1%	0.3%
32	Rhode Island	95.0	3.1%	1.2%
33	Texas	94.8	3.1%	-2.0%
34	New York	93.5	3.0%	0.9%
35	Illinois	91.6	2.8%	1.0%
36	Alabama	90.9	2.7%	1.0%
37	Pennsylvania	90.1	2.7%	0.8%
38	Mississippi	89.4	2.6%	1.1%
39	Kentucky	89.4	2.6%	1.5%
40	New Jersey	89.2	2.6%	0.7%
41	Ohio	88.7	2.5%	0.3%
42	Connecticut	85.2	2.2%	1.4%
43	Kansas	84.4	2.1%	0.6%
44	Alaska	79.4	1.7%	-1.4%
45	New Mexico	74.0	1.2%	-1.1%
46	Louisiana	73.5	1.1%	-1.4%
47	Oklahoma	68.0	0.7%	-3.2%
48	Wyoming	62.9	0.2%	-4.1%
49	North Dakota	62.9	0.2%	-11.2%
50	West Virginia	60.6	0.0%	-1.6%

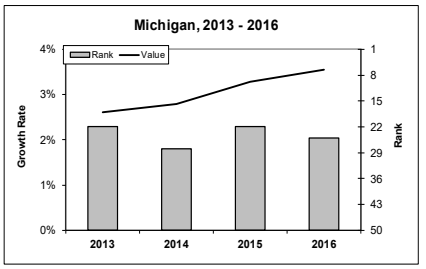
Growth in total nominal payroll of firms with 99 or fewer employees, 2016, three-year avg.

The goal of becoming a center for entrepreneurial business formation and growth goes beyond simple numbers of new firms. Through high performance, entrepreneurial firms can offer growing wages, high economic multiplier effects and related economic development. The above table measures the annual growth in total payroll of small businesses with 99 or fewer employees, averaged over three years.

Source: U.S. Census Bureau

Midwest Performance, 2016

State	Growth Rate	Rank
Wisconsin	3.6%	23
Michigan	**3.6%**	**25**
Indiana	3.5%	27
Illinois	2.8%	35
Ohio	2.5%	41



INCREASE IN HIGH PERFORMANCE FIRMS

Rank	State	Score	Average Increase	Change, 2015-2018 (Abs.)
	50-State Average		*-0.04*	*-0.09*
1	Maryland	144.0	2.33	5.3
2	Illinois	137.7	2.00	3.2
3	Tennessee	134.6	1.83	2.0
3	Texas	134.6	1.83	2.7
5	Florida	128.3	1.50	1.5
6	North Carolina	122.0	1.17	1.5
7	Idaho	115.7	0.83	0.3
8	Kentucky	112.6	0.67	0.7
8	Nevada	112.6	0.67	1.0
10	Colorado	109.4	0.50	0.5
10	Massachusetts	109.4	0.50	3.0
10	Missouri	109.4	0.50	-0.2
13	Georgia	106.3	0.33	-2.5
13	Wisconsin	106.3	0.33	-0.3
15	Alabama	103.1	0.17	0.0
15	Arkansas	103.1	0.17	0.2
15	Kansas	103.1	0.17	0.8
15	Maine	103.1	0.17	0.3
15	Montana	103.1	0.17	0.2
15	Nebraska	103.1	0.17	0.2
15	New Hampshire	103.1	0.17	0.2
15	North Dakota	103.1	0.17	0.2
15	Ohio	103.1	0.17	0.3
15	South Dakota	103.1	0.17	0.2
25	Alaska	100.0	0.00	0.0
25	Mississippi	100.0	0.00	0.2
25	New Mexico	100.0	0.00	-0.2
25	Rhode Island	100.0	0.00	0.8
29	Iowa	96.9	-0.17	0.0
29	Louisiana	96.9	-0.17	-0.8
29	Utah	96.9	-0.17	0.5
29	Vermont	96.9	-0.17	0.0
29	Wyoming	96.9	-0.17	-0.5
34	Hawaii	93.7	-0.33	-0.5
34	South Carolina	93.7	-0.33	-0.8
34	West Virginia	93.7	-0.33	-0.7
37	Connecticut	90.6	-0.50	1.5
37	Indiana	90.6	-0.50	-0.8
37	Oklahoma	90.6	-0.50	-0.7
37	Virginia	90.6	-0.50	0.3
41	Arizona	87.4	-0.67	-1.3
41	Delaware	87.4	-0.67	-0.5
43	Washington	84.3	-0.83	-1.3
44	**Michigan**	**81.1**	**-1.00**	**-2.2**
45	Oregon	78.0	-1.17	-2.2
45	Pennsylvania	78.0	-1.17	0.5
47	Minnesota	74.8	-1.33	-1.5
48	New Jersey	71.7	-1.50	-0.3
49	California	37.1	-3.33	-2.83
49	New York	37.1	-3.33	-12.12

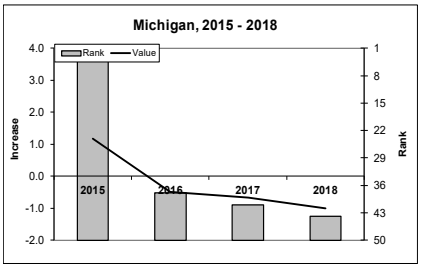
Change in number of firms with significant revenue/sales growth, 2018, three-year avg.

High-performance and especially technology-oriented companies tend to be more impervious to fluctuations in the overall economy and have a strong multiplier effect on the rest of the economy. The above table shows the absolute increase or decrease for the average number of privately held companies listed with the fastest-growing firms from *Inc.com*, and fastest-growing high-technology companies from Deloitte & Touche's *Fast 500*.

Source: Inc.com & Deloitte & Touche

Midwest Performance, 2018

State	Increase	Rank
Illinois	2.0	2
Wisconsin	0.3	13
Ohio	0.2	15
Indiana	-0.5	37
Michigan	**-1**	**44**



NET ESTABLISHMENT ENTRANTS INCREASE

Rank	State	Score	Change in Net Entrants Rates	Change, 2015-2018 (Abs.)
	50-State Average		*0.0%*	*-0.2%*
1	Washington	200.6	2.83%	2.4%
2	Idaho	136.7	1.00%	0.7%
3	Wyoming	135.6	0.97%	1.3%
4	North Dakota	134.2	0.93%	3.2%
5	Kentucky	115.7	0.40%	0.6%
5	Rhode Island	115.7	0.40%	0.0%
7	Vermont	114.7	0.37%	0.4%
8	Utah	113.3	0.33%	0.3%
9	Oklahoma	112.2	0.30%	0.8%
10	Alabama	111.2	0.27%	0.1%
10	Massachusetts	111.2	0.27%	0.2%
10	Nevada	111.2	0.27%	0.1%
13	Alaska	109.8	0.23%	0.7%
13	Louisiana	109.8	0.23%	0.3%
13	Texas	109.8	0.23%	0.4%
13	West Virginia	109.8	0.23%	0.3%
17	Tennessee	107.7	0.17%	0.0%
18	Mississippi	106.3	0.13%	-0.1%
18	Montana	106.3	0.13%	0.2%
20	**Michigan**	**105.2**	**0.10%**	**1.4%**
21	Arkansas	104.2	0.07%	-0.5%
22	South Carolina	102.8	0.03%	-0.7%
23	Minnesota	101.7	0.00%	-0.1%
23	Nebraska	101.7	0.00%	0.2%
25	North Carolina	100.7	-0.03%	-0.5%
26	New Hampshire	99.3	-0.07%	-0.4%
27	New Jersey	98.3	-0.10%	-0.7%
28	Colorado	97.2	-0.13%	-0.1%
28	Indiana	97.2	-0.13%	-0.8%
30	Arizona	95.8	-0.17%	-0.6%
30	California	95.8	-0.17%	0.4%
32	New Mexico	94.8	-0.20%	-0.4%
32	Pennsylvania	94.8	-0.20%	-0.6%
34	New York	93.7	-0.23%	-0.4%
34	South Dakota	93.7	-0.23%	-0.6%
36	Maine	92.3	-0.27%	-0.8%
36	Missouri	92.3	-0.27%	-0.4%
36	Oregon	92.3	-0.27%	-0.6%
39	Virginia	91.3	-0.30%	-1.2%
40	Florida	90.2	-0.33%	-1.1%
40	Iowa	90.2	-0.33%	-0.6%
42	Wisconsin	88.8	-0.37%	-0.4%
43	Georgia	87.8	-0.40%	-0.9%
43	Hawaii	87.8	-0.40%	-0.3%
43	Illinois	87.8	-0.40%	-1.3%
46	Maryland	84.3	-0.50%	-1.1%
47	Delaware	78.3	-0.67%	-0.8%
48	Ohio	76.2	-0.73%	-1.8%
49	Kansas	60.9	-1.17%	-2.2%
50	Connecticut	30.8	-2.03%	-2.4%

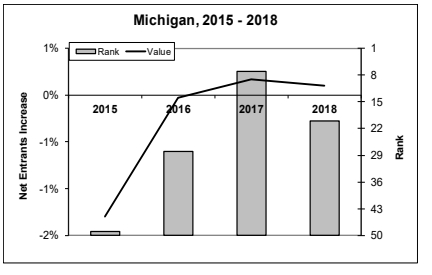
Change in the net of new establishments minus failed establishments, as a percentage of total establishments, 2018

The rate of net establishment entrants is one of the most common measures of entrepreneurial activity and its change indicates a very dynamic and optimistic entrepreneurial environment, coincident with high rates of net new business growth and economic multiplier effects. The above table shows the absolute change in net establishment entrants as a percentage of all establishments in the intial year.

Source: U.S. Bureau of Labor Statistics

Midwest Performance, 2018

State	Change in Net Entrants Rates	Rank
Michigan	**0.10%**	**20**
Indiana	-0.13%	28
Wisconsin	-0.37%	42
Illinois	-0.40%	43
Ohio	-0.73%	48



PROPRIETOR INCOME PER PROPRIETOR GROWTH

Rank	State	Score	Growth Rate	Change, 2015-2018 (Abs.)
	50-State Average		*0.7%*	*0.5%*
1	New York	140.9	7.8%	12.9%
2	Oregon	127.2	5.4%	1.9%
3	Connecticut	123.7	4.8%	10.6%
4	Massachusetts	118.4	3.9%	10.6%
5	Colorado	117.9	3.8%	-9.4%
6	Maryland	117.5	3.8%	5.1%
7	New Hampshire	116.1	3.5%	9.8%
8	New Jersey	115.2	3.4%	2.0%
9	Georgia	113.0	3.0%	-2.8%
10	Texas	112.7	3.0%	6.6%
11	Hawaii	112.0	2.8%	2.7%
12	North Carolina	111.3	2.7%	9.4%
13	Vermont	109.9	2.5%	7.8%
14	West Virginia	109.1	2.3%	3.5%
15	Maine	109.0	2.3%	3.9%
16	**Michigan**	**108.9**	**2.3%**	**1.5%**
17	Alabama	107.4	2.1%	4.3%
18	Florida	106.3	1.9%	1.7%
19	Arizona	105.0	1.6%	-3.8%
20	Pennsylvania	104.3	1.5%	-1.9%
21	Kansas	103.5	1.4%	3.8%
22	Missouri	102.5	1.2%	3.6%
23	Nevada	102.4	1.2%	4.0%
24	New Mexico	102.3	1.2%	3.5%
25	California	100.6	0.9%	3.0%
26	Wisconsin	99.4	0.7%	-0.9%
27	Utah	99.2	0.6%	-3.9%
28	Washington	99.0	0.6%	-2.7%
29	South Carolina	98.4	0.5%	-2.4%
30	Ohio	98.2	0.5%	0.1%
31	Kentucky	95.7	0.0%	-0.2%
32	Tennessee	95.2	0.0%	-3.4%
33	Montana	94.9	-0.1%	1.3%
34	Oklahoma	92.9	-0.4%	-4.4%
35	Minnesota	90.5	-0.8%	-2.0%
36	Idaho	89.7	-1.0%	-8.9%
37	Alaska	89.7	-1.0%	1.4%
38	Indiana	89.6	-1.0%	-1.5%
39	Iowa	86.2	-1.6%	-4.2%
40	Arkansas	84.8	-1.8%	-0.1%
41	Louisiana	83.7	-2.0%	-1.6%
42	Nebraska	83.6	-2.0%	-5.8%
43	Wyoming	82.9	-2.1%	-4.1%
44	Delaware	80.5	-2.5%	-5.3%
45	Rhode Island	78.8	-2.9%	2.9%
46	South Dakota	78.5	-2.9%	-8.1%
47	Mississippi	77.9	-3.0%	1.3%
48	Virginia	77.4	-3.1%	0.3%
49	Illinois	77.1	-3.1%	-11.5%
50	North Dakota	56.6	-6.6%	-6.0%

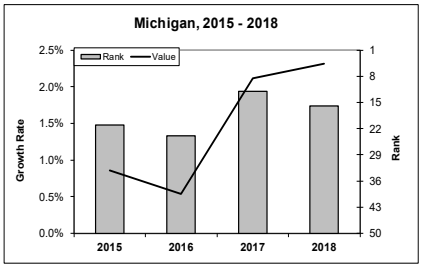
Percent change in proprietor's income per proprietor, 2018, three-year avg.

A healthy entrepreneurial economy is one with a strong presence of individual business owners. They put their money on the line daily and frequently seek creative solutions to market demands. This metric captures earnings from self-employment. The above table shows the rate at which proprietor's income per proprietor grew or contracted annually, averaged over three years.

Source: U.S. Bureau of Economic Analysis

Midwest Performance, 2018

State	Growth Rate	Rank
Michigan	**2.31%**	**16**
Wisconsin	0.68%	26
Ohio	0.47%	30
Indiana	-0.99%	38
Illinois	-3.13%	49



ENTREPRENEURIAL VITALITY

Entrepreneurial Vitality index is a composite measure of each state's level of entrepreneurial activity relative to the state's overall economy – broadly defined as the number of startups and entrepreneurial firms that form the backbone for a dynamic entrepreneurial system. The number of self-employed and the net business churn, or turnover, are both measures of start-up activity, whereas fast-growing companies and investment awards give insight into the successfulness of the innovative activities of incumbent and new firms.

Midwest Performance

	2018	2016	2014
Ohio	**	**	*
Illinois	**	**	**
Indiana	**	*	*
Michigan	*	**	*
Wisconsin	*	*	*

Rank	State	2018	2016	2014
1	Massachusetts	*****	*****	*****
2	Utah	*****	*****	****
3	California	****	****	****
4	Colorado	****	****	***
5	Virginia	****	***	****
6	Maryland	***	***	***
7	Washington	***	*	*
8	Arizona	***	***	**
9	Montana	***	**	**
10	Texas	***	***	**
11	Delaware	***	***	**
12	North Carolina	***	***	**
13	New Hampshire	***	**	***
14	Georgia	**	***	**
15	New Mexico	**	***	***
16	Florida	**	**	**
17	Idaho	**	**	**
18	Alabama	**	**	**
19	Nevada	**	**	**
20	Minnesota	**	**	**
21	New York	**	**	**
22	Ohio	**	**	*
23	Illinois	**	**	**
24	New Jersey	**	**	**
25	Tennessee	**	**	*
26	South Carolina	**	**	**
27	Pennsylvania	**	**	**
28	Oregon	**	**	**
29	Wyoming	**	*	**
30	Alaska	**	*	*
31	Indiana	**	*	*
32	Kentucky	**	**	*
33	Maine	**	**	*
34	Missouri	**	**	*
35	Rhode Island	**	*	*
36	**Michigan**	*	**	*
37	Oklahoma	*	**	**
38	Louisiana	*	*	*
39	North Dakota	*	*	**
40	Vermont	*	*	*
41	Hawaii	*	**	*
42	Wisconsin	*	*	*
43	Kansas	*	**	*
44	Iowa	*	*	*
45	Arkansas	*	*	*
46	Connecticut	*	**	***
47	South Dakota	*	*	*
48	Mississippi	*	*	*
49	Nebraska	*	*	*
50	West Virginia	*	*	*

NET ESTABLISHMENT ENTRANTS

Rank	State	Score	Churn Rate	Change, 2015-2018 (Abs.)
	50-State Average		*1.3%*	*0.0%*
1	Washington	203.4	8.5%	8.5%
2	Idaho	158.7	5.3%	3.0%
3	Utah	133.5	3.5%	1.0%
4	Rhode Island	129.3	3.2%	1.2%
5	Massachusetts	128.0	3.1%	0.8%
5	Nevada	128.0	3.1%	0.8%
7	Virginia	126.6	3.0%	-0.9%
8	Florida	116.8	2.3%	-1.0%
9	California	115.4	2.2%	-0.5%
9	South Carolina	115.4	2.2%	0.1%
9	Texas	115.4	2.2%	0.7%
12	Kentucky	112.6	2.0%	1.2%
12	Wyoming	112.6	2.0%	2.9%
14	Arizona	111.2	1.9%	-0.5%
14	Colorado	111.2	1.9%	-0.4%
14	North Carolina	111.2	1.9%	-0.1%
14	Tennessee	111.2	1.9%	0.5%
18	Alabama	108.4	1.7%	0.8%
19	Montana	107.0	1.6%	0.4%
20	Arkansas	104.2	1.4%	0.2%
20	Georgia	104.2	1.4%	-1.2%
20	New Hampshire	104.2	1.4%	-0.2%
23	Indiana	101.4	1.2%	-0.4%
23	Oregon	101.4	1.2%	-0.8%
25	Maine	100.0	1.1%	-0.8%
25	New Jersey	100.0	1.1%	-0.3%
25	South Dakota	100.0	1.1%	-0.7%
28	Louisiana	98.6	1.0%	0.7%
28	Vermont	98.6	1.0%	1.1%
30	**Michigan**	**97.2**	**0.9%**	**0.3%**
30	Missouri	97.2	0.9%	-0.8%
32	Nebraska	95.8	0.8%	0.0%
32	Wisconsin	95.8	0.8%	-1.1%
34	Minnesota	94.4	0.7%	0.0%
35	Alaska	93.0	0.6%	0.7%
36	North Dakota	91.6	0.5%	2.8%
36	Ohio	91.6	0.5%	-2.2%
38	Iowa	90.2	0.4%	-1.0%
38	New Mexico	90.2	0.4%	-0.6%
40	Illinois	88.8	0.3%	-1.2%
40	Mississippi	88.8	0.3%	0.4%
40	New York	88.8	0.3%	-0.7%
40	Oklahoma	88.8	0.3%	0.9%
44	Maryland	87.4	0.2%	-1.5%
45	Pennsylvania	86.0	0.1%	-0.6%
46	Delaware	81.8	-0.2%	-2.0%
47	Hawaii	79.0	-0.4%	-1.2%
47	West Virginia	79.0	-0.4%	0.7%
49	Kansas	76.2	-0.6%	-3.5%
50	Connecticut	10.6	-5.3%	-6.1%

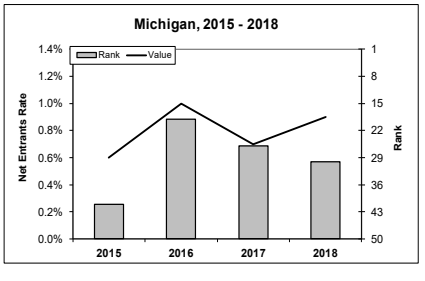
Net of new establishments minus failed establishments, as a percentage of total establishments, 2018

Business churn is one of the most common measures of entrepreneurial activity, and its growth indicates an increasingly dynamic economic environment. High growth areas in the innovation economy are coincident with high rates of new business growth. The above table shows net new establishments as a percentage of all establishments at the beginning of the year.

Source: U.S. Bureau of Labor Statistics

Midwest Performance, 2018

State	Net Entrants Rate	Rank
Indiana	1.2%	23
Michigan	**0.9%**	**30**
Wisconsin	0.8%	32
Ohio	0.5%	36
Illinois	0.3%	40



ESTABLISHMENT TURNOVER RATE

Rank	State	Score	Turnover Rate	Change, 2015-2018 (Abs.)
	50-State Average		*22.4%*	*0.5%*
1	Missouri	127.4	27.7%	4.6%
2	Florida	125.4	27.3%	0.4%
3	Utah	123.4	26.9%	1.6%
4	Nevada	122.4	26.7%	1.2%
5	Delaware	120.9	26.4%	0.0%
5	Georgia	120.9	26.4%	1.4%
7	Idaho	120.4	26.3%	0.4%
8	Colorado	119.4	26.1%	0.6%
9	Virginia	118.9	26.0%	-0.3%
10	California	116.9	25.6%	-0.7%
11	Arizona	116.4	25.5%	-0.3%
12	Washington	115.3	25.3%	2.9%
13	Montana	108.8	24.0%	3.4%
13	South Carolina	108.8	24.0%	2.1%
15	Connecticut	106.3	23.5%	4.7%
16	Massachusetts	105.3	23.3%	1.2%
17	Rhode Island	104.8	23.2%	-0.8%
18	Illinois	103.3	22.9%	-1.4%
18	North Carolina	103.3	22.9%	0.5%
20	Kentucky	102.8	22.8%	2.0%
21	New York	102.3	22.7%	-0.3%
22	New Mexico	101.8	22.6%	-0.2%
22	Oregon	101.8	22.6%	1.2%
22	Texas	101.8	22.6%	0.7%
25	Maine	100.3	22.3%	2.0%
26	Maryland	99.7	22.2%	-1.3%
27	New Jersey	99.2	22.1%	-1.5%
28	Oklahoma	98.2	21.9%	0.9%
29	Arkansas	97.7	21.8%	0.6%
30	Hawaii	96.7	21.6%	2.4%
30	Nebraska	96.7	21.6%	0.6%
30	New Hampshire	96.7	21.6%	0.2%
33	Vermont	95.7	21.4%	1.5%
34	Kansas	94.7	21.2%	-2.3%
34	Wyoming	94.7	21.2%	-1.3%
36	Tennessee	92.2	20.7%	1.5%
37	**Michigan**	**90.2**	**20.3%**	**-0.3%**
38	Alaska	88.7	20.0%	-0.7%
39	Minnesota	87.2	19.7%	-0.6%
40	Indiana	85.7	19.4%	0.6%
41	Louisiana	84.7	19.2%	-0.1%
41	West Virginia	84.7	19.2%	0.7%
41	Wisconsin	84.7	19.2%	-0.1%
44	Alabama	84.2	19.1%	1.0%
44	North Dakota	84.2	19.1%	-3.6%
46	South Dakota	82.1	18.7%	1.1%
47	Ohio	81.1	18.5%	1.0%
48	Mississippi	80.1	18.3%	-0.8%
48	Pennsylvania	80.1	18.3%	-0.4%
50	Iowa	75.6	17.4%	0.0%

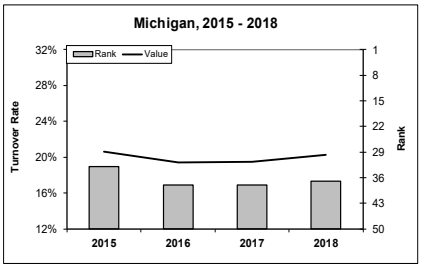
New establishments plus establishment terminations as a percent of total establishments, 2018

The turnover rate is an attempt to get at how dynamic an economy is by adding the formations to terminations and showing as a percent of all establishments. Some refer to this metric as 'churn.' It is widely understood that high-energy entrepreneurial economies have high turnover. But caution is warranted since occasionally flailing economies have high churn.

Source: U.S. Bureau of Labor Statistics

Midwest Performance, 2018

State	Turnover Rate	Rank
Illinois	22.9%	18
Michigan	**20.3%**	**37**
Indiana	19.4%	40
Wisconsin	0.192	41
Ohio	0.185	47



SELF-EMPLOYMENT

Rank	State	Score	Per 1,000 Labor Force	Change, 2015-2018 (%)
	50-State Average		*268.7*	*5.8%*
1	Wyoming	133.0	355.2	16.4%
2	Florida	120.1	320.6	7.9%
3	Montana	119.7	319.4	4.8%
4	Texas	119.5	318.7	7.5%
5	Colorado	118.5	316.1	2.7%
6	Louisiana	116.0	309.3	11.9%
7	Vermont	113.7	303.3	4.5%
8	California	113.2	301.7	4.6%
9	New Jersey	112.7	300.4	9.4%
10	Connecticut	112.6	300.1	4.4%
11	New York	112.1	298.7	6.5%
12	Utah	111.8	298.1	3.4%
13	Georgia	111.1	296.0	4.1%
14	Oklahoma	110.1	293.5	5.6%
15	Massachusetts	108.2	288.3	2.0%
16	Alaska	107.3	285.9	11.4%
17	Idaho	107.0	285.1	1.8%
18	Tennessee	106.7	284.1	6.1%
19	Hawaii	106.6	284.1	6.2%
20	Nevada	106.5	283.6	8.1%
21	Maine	105.3	280.4	3.8%
22	Mississippi	105.0	279.6	5.6%
23	Maryland	104.9	279.3	6.3%
24	South Dakota	103.9	276.7	5.1%
25	New Hampshire	100.2	266.7	4.5%
26	Kansas	99.8	265.5	4.9%
27	North Dakota	99.7	265.2	7.9%
28	Oregon	99.0	263.4	3.2%
29	North Carolina	96.2	256.0	5.3%
30	Arizona	96.1	255.6	3.2%
31	Alabama	95.6	254.2	4.5%
32	South Carolina	95.1	252.8	9.2%
33	Delaware	94.6	251.5	8.6%
34	Illinois	94.5	251.2	5.7%
35	Virginia	94.4	251.0	8.9%
36	Rhode Island	92.1	244.8	7.2%
37	Nebraska	91.6	243.4	5.9%
38	Arkansas	91.4	242.7	5.7%
39	**Michigan**	**91.1**	**242.0**	**2.0%**
40	Washington	90.9	241.5	6.5%
41	Missouri	89.7	238.2	7.6%
42	Pennsylvania	89.6	238.1	7.4%
43	Ohio	88.5	234.9	5.3%
44	New Mexico	87.6	232.6	3.3%
45	Minnesota	87.6	232.5	2.8%
46	Iowa	84.0	222.9	5.0%
47	Kentucky	83.8	222.4	3.4%
48	Wisconsin	77.7	205.9	3.2%
49	Indiana	77.6	205.7	4.9%
50	West Virginia	73.3	193.9	1.9%

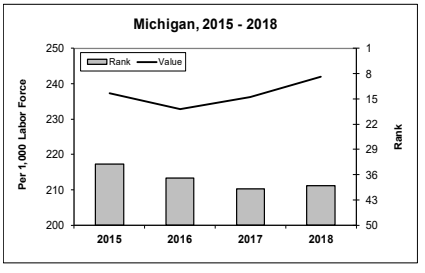
Number of non-farm proprietors per 1,000 labor force participants, 2018

The self-employed are the stock from which employer firms emerge, and high self-employment reflects entrepreneurial opportunities that are realized through an enabling environment. The above table shows the number of non-farm proprietors as a share of the labor force.

Source: U.S. Bureau of Economic Analysis

Midwest Performance, 2018

State	Per 1,000 Labor Force	Rank
Illinois	251.2	34
Michigan	**242.0**	**39**
Ohio	234.9	43
Wisconsin	205.9	48
Indiana	205.7	49



UNIVERSITY SPINOUT BUSINESSES

Rank	State	Score	Spinouts per $10 million R&D	Change, 2014-2017 (%)
	50-State Average		*2.7*	*0.42*
1	Utah	204.8	12.0	5.31
2	Alaska	159.6	7.8	6.38
3	New Mexico	124.4	4.6	-0.54
4	Indiana	121.2	4.3	0.24
5	South Carolina	120.6	4.2	0.19
6	Arizona	116.7	3.9	0.58
7	Montana	113.7	3.6	2.71
8	California	112.5	3.5	1.66
9	Louisiana	111.7	3.4	1.20
10	Colorado	111.2	3.4	1.12
11	Iowa	110.7	3.3	0.95
12	Oklahoma	109.6	3.2	0.67
13	Florida	109.4	3.2	-0.60
14	Kentucky	109.0	3.2	-1.06
15	North Carolina	108.2	3.1	0.81
16	Pennsylvania	107.1	3.0	0.05
17	Nevada	107.0	3.0	2.97
18	Connecticut	106.8	3.0	-2.77
19	Minnesota	104.3	2.7	0.98
20	Washington	103.9	2.7	1.12
21	Virginia	103.0	2.6	-0.16
22	Oregon	100.1	2.3	-0.13
23	Delaware	100.1	2.3	0.16
24	Arkansas	99.9	2.3	2.32
25	Alabama	99.5	2.3	1.45
26	Ohio	99.4	2.3	0.33
27	Illinois	98.4	2.2	0.20
28	Texas	97.7	2.1	0.18
29	West Virginia	96.3	2.0	-0.41
30	Rhode Island	95.5	1.9	1.15
31	Nebraska	94.4	1.8	-1.21
32	Massachusetts	93.1	1.7	0.12
33	New Jersey	92.4	1.6	-0.66
34	Georgia	92.2	1.6	-0.48
35	Missouri	92.1	1.6	0.10
36	New York	91.3	1.5	0.35
37	Tennessee	90.8	1.5	-0.18
38	Maryland	90.2	1.4	0.51
39	South Dakota	88.6	1.3	-0.55
40	Kansas	87.5	1.2	-0.49
41	**Michigan**	**87.4**	**1.2**	**-0.11**
42	Hawaii	87.3	1.2	0.38
43	Wisconsin	86.4	1.1	0.23
44	Mississippi	84.2	0.9	-0.34
45	New Hampshire	82.7	0.7	-0.07
46	Idaho	77.9	0.3	-1.31
(n/a)	Maine	(n/a)	(n/a)	-0.15
(n/a)	North Dakota	(n/a)	(n/a)	-2.01
(n/a)	Vermont	(n/a)	(n/a)	-0.24
(n/a)	Wyoming	(n/a)	(n/a)	0.00

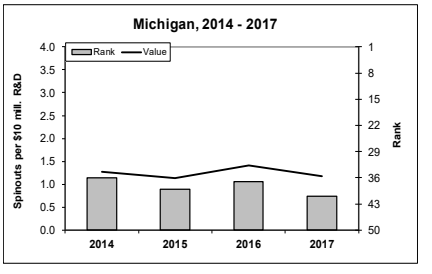
Average university spinout businesses per $10 million research and development funding, 2017

Academic institutions vary in the degree to which they encourage and support faculty and student spinout discoveries into new local business ventures. Silicon Valley has proven that state and local economies can benefit significantly from their proactive business growth policies and practices. The above table shows the three-year average of the number of start-ups initiated by universities per $1 billion research and development expenditures.

Source: Association of University Technology Managers

Midwest Performance, 2017

State	Spinouts per $10 million R&D	Rank
Indiana	4.3	4
Ohio	2.3	26
Illinois	2.2	27
Michigan	**1.2**	**41**
Wisconsin	1.1	43



HIGH PERFORMANCE FIRMS

Rank	State	Score	Per 100,000 Firms	Change, 2015-2018 (%)
	50-State Average		*5.1*	*13.9%*
1	Virginia	154.7	15.5	-6.6%
2	Massachusetts	152.7	15.0	6.4%
3	California	151.5	14.8	-9.7%
4	Utah	151.3	14.7	-7.4%
5	Maryland	148.7	14.2	81.5%
6	Georgia	143.2	13.0	3.0%
7	Idaho	137.4	11.7	119.6%
8	Washington	128.8	9.8	-15.8%
9	Colorado	125.8	9.2	11.6%
10	New York	125.6	9.1	-19.5%
11	Illinois	116.8	7.2	47.7%
12	Tennessee	116.4	7.1	361.9%
13	Florida	115.6	7.0	14.5%
14	Texas	114.8	6.8	21.3%
15	Nevada	114.8	6.8	128.7%
16	Arizona	113.7	6.5	-23.6%
17	North Carolina	111.3	6.0	47.5%
18	New Jersey	107.3	5.1	-31.1%
19	North Dakota	106.6	5.0	103.9%
20	New Hampshire	106.1	4.9	49.7%
21	Oregon	103.2	4.3	-47.8%
22	Connecticut	102.9	4.2	-33.0%
23	Pennsylvania	101.6	3.9	-28.1%
24	**Michigan**	**100.8**	**3.7**	**-31.6%**
25	Wisconsin	100.5	3.7	33.3%
26	Nebraska	99.5	3.5	48.6%
27	Kansas	99.4	3.4	33.7%
28	Alabama	99.1	3.4	24.0%
29	Ohio	98.5	3.2	9.5%
30	Indiana	98.4	3.2	-30.1%
31	Missouri	98.2	3.2	57.9%
32	South Carolina	97.8	3.1	-29.7%
33	Montana	97.8	3.1	98.6%
34	Maine	97.2	2.9	98.2%
35	Kentucky	97.0	2.9	100.0%
36	Wyoming	96.4	2.8	-49.6%
37	South Dakota	94.0	2.3	100.0%
38	Minnesota	93.3	2.1	-61.7%
39	Louisiana	92.1	1.9	-24.5%
40	Iowa	90.9	1.6	-33.5%
41	New Mexico	90.3	1.5	-49.7%
42	Arkansas	88.2	1.0	100.0%
43	Oklahoma	86.8	0.7	-74.8%
44	Alaska	83.6	0.0	0.0%
44	Delaware	83.6	0.0	-100.0%
44	Hawaii	83.6	0.0	-100.0%
44	Mississippi	83.6	0.0	0.0%
44	Rhode Island	83.6	0.0	0.0%
44	Vermont	83.6	0.0	-100.0%
44	West Virginia	83.6	0.0	-100.0%

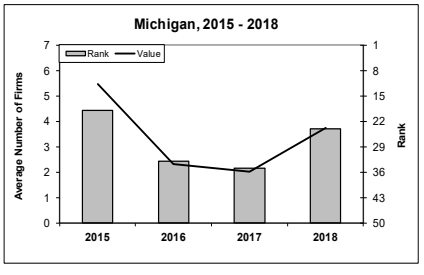
Number of firms with significant revenue/sales growth relative to the total number of firms, 2018

Just as new small companies are an important part of a state's economic dynamism, entrepreneurial firms that continuously innovate their products and processes have an equally significant role in contributing to growth and prosperity. The table above shows the average number of privately held companies listed with the fastest-growing firms from *Inc.com*, and fastest-growing high-technology companies from Deloitte & Touche's *Fast 500,* relative to the total number of firms.

Source: Inc.com & Deloitte & Touche

Midwest Performance, 2018

State	Per 100,000 Firms	Rank
Illinois	7.2	11
Michigan	**3.7**	**24**
Wisconsin	3.7	25
Ohio	3.2	29
Indiana	3.2	30



IPO AWARDS

Rank	State	Score	3-Year Total per 100,000 Firms	Change, 2015-2018 (Abs.)
	50-State Average		*6.3*	*-3.9*
1	Massachusetts	234.5	48.2	-1.2
2	California	151.4	21.4	-10.9
3	Colorado	126.0	13.2	-9.2
4	New York	125.1	12.9	-8.9
5	Nevada	121.2	11.6	-8.1
6	Texas	120.1	11.3	-11.6
7	Utah	118.8	10.8	-3.5
8	Washington	117.7	10.5	1.8
9	Arizona	117.0	10.3	-7.8
10	Minnesota	116.4	10.1	0.8
11	Virginia	115.7	9.9	-4.0
12	New Jersey	113.9	9.3	-15.5
13	Connecticut	111.1	8.4	-6.9
14	Pennsylvania	110.7	8.2	-4.4
15	Maryland	110.6	8.2	-7.4
16	West Virginia	108.1	7.4	7.4
17	Georgia	107.9	7.3	-2.4
18	Kentucky	107.7	7.3	5.8
19	North Carolina	106.5	6.9	-5.9
20	Maine	103.4	5.9	-0.1
21	New Mexico	103.2	5.8	2.9
22	Idaho	101.3	5.2	-0.1
23	Tennessee	101.0	5.1	-3.1
24	South Carolina	100.5	4.9	-2.6
25	Delaware	100.4	4.9	-10.1
26	Illinois	99.6	4.7	-5.1
27	Indiana	99.4	4.6	0.9
28	Oklahoma	98.0	4.1	-4.1
29	Rhode Island	97.9	4.1	-4.2
30	Alabama	97.7	4.1	1.3
31	Louisiana	96.6	3.7	1.2
32	Wisconsin	96.6	3.7	-4.6
33	Kansas	95.8	3.4	-10.3
34	Florida	95.6	3.4	-7.4
35	Ohio	95.2	3.2	-0.5
36	Oregon	95.1	3.2	1.0
37	**Michigan**	**94.1**	**2.9**	**-6.9**
38	Arkansas	91.3	2.0	-4.0
39	Iowa	90.1	1.6	-6.4
40	Missouri	87.6	0.8	-4.0
41	Alaska	85.2	0.0	-5.9
41	Hawaii	85.2	0.0	-8.0
41	Mississippi	85.2	0.0	0.0
41	Montana	85.2	0.0	0.0
41	Nebraska	85.2	0.0	-4.7
41	New Hampshire	85.2	0.0	-6.5
41	North Dakota	85.2	0.0	-4.9
41	South Dakota	85.2	0.0	0.0
41	Vermont	85.2	0.0	-5.5
41	Wyoming	85.2	0.0	0.0

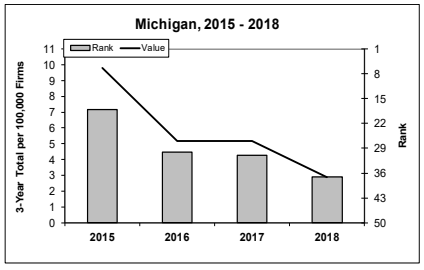
Number of initial public offerings per 100,000 firms over three years, 2018

An Initial Public Offering (IPO) occurs when a company decides to sell stocks to the general public. Companies that go public tend to have established a good performance track record and therefore reflect entrepreneurial success in the form of new and/or improved products or processes. The adjacent table shows thethree-year total of the number of IPOs as a share of all companies in the state.

Source: Crunchbase

Midwest Performance, 2018

State	3-Year Total per 100,000 Firms	Rank
Illinois	4.7	26
Indiana	4.6	27
Wisconsin	3.7	32
Ohio	3.2	35
Michigan	**2.9**	**37**



SBIR AWARDS

Rank	State	Score	Awards per 1,000 Firms	Change, 2015-2018 (%)
	50-State Average		*22.2*	*21.3%*
1	Massachusetts	219.4	109.4	-3.5%
2	New Hampshire	171.4	71.1	-7.1%
3	Maryland	162.9	64.4	0.6%
4	New Mexico	153.8	57.1	-2.0%
5	Virginia	150.5	54.4	1.1%
6	Colorado	147.6	52.2	5.7%
7	Delaware	146.2	51.1	13.8%
8	California	133.0	40.5	-2.4%
9	Alabama	128.2	36.7	-5.7%
10	Hawaii	127.6	36.2	17.7%
11	Ohio	118.9	29.3	7.3%
12	Utah	114.7	26.0	-0.4%
13	Connecticut	112.8	24.4	-9.2%
14	Pennsylvania	112.6	24.2	3.5%
15	Arizona	111.2	23.1	2.6%
16	North Carolina	110.1	22.3	20.6%
17	Montana	110.0	22.2	-3.8%
18	Vermont	109.6	21.9	36.2%
19	Oregon	107.9	20.5	3.6%
20	Rhode Island	106.6	19.5	-9.0%
21	Minnesota	105.9	18.9	22.2%
22	Washington	105.7	18.7	5.5%
23	**Michigan**	**103.9**	**17.3**	**-11.6%**
24	New Jersey	101.2	15.1	-2.6%
25	Kentucky	100.0	14.2	10.5%
26	Texas	99.7	13.9	-5.4%
27	Wyoming	99.0	13.4	89.8%
28	New York	98.5	13.0	-0.2%
29	Illinois	98.1	12.7	13.5%
30	Indiana	96.2	11.2	-4.8%
31	Wisconsin	94.8	10.1	-21.1%
32	West Virginia	94.4	9.7	191.0%
33	Iowa	94.0	9.4	26.5%
34	Georgia	93.8	9.2	2.8%
35	Florida	93.7	9.2	8.8%
36	Missouri	93.5	9.0	32.4%
37	Tennessee	92.9	8.6	9.2%
38	Arkansas	91.2	7.2	-36.5%
39	Maine	91.0	7.0	2.6%
40	South Carolina	90.8	6.9	-5.3%
41	Kansas	90.7	6.8	-20.9%
42	South Dakota	90.4	6.6	-23.7%
43	Oklahoma	90.2	6.4	4.7%
44	Nebraska	90.0	6.2	40.6%
45	Mississippi	89.0	5.4	670.6%
46	Idaho	88.3	4.9	-22.8%
47	Louisiana	87.9	4.6	28.9%
48	Nevada	87.8	4.5	-48.5%
49	North Dakota	86.1	3.1	19.9%
(n/a)	Alaska	(n/a)	(n/a)	(n/a)

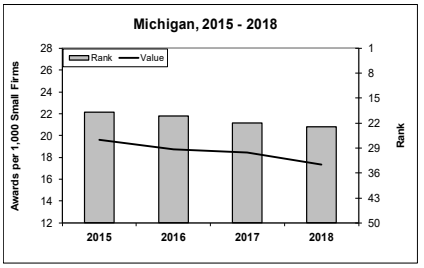
Three-year total of SBIR awards per 1,000 small firms, 2018

Robust research, development, and related commercialization correlate closely with market leadership, growth, and economic development for the communities in which the firms reside. The federal SBIR program provides grants to small businesses to conduct commercially viable R&D for breakthrough technology innovations, products, and processes. The above table gives the number of SBIR awards over three years in each state in relation to the number of firms with less than 500 employees.

Source: U.S. Small Business Administration

Midwest Performance, 2018

State	3-Year Total per 1,000 Small Firms	Rank
Ohio	29.3	11
Michigan	**17.3**	**23**
Illinois	12.7	29
Indiana	11.2	30
Wisconsin	10.1	31



STTR AWARDS

Rank	State	Score	Awards per 1,000 Firms	Change, 2015-2018 (%)
	50-State Average		*5.1*	*24.9%*
1	Massachusetts	203.0	20.33	-4.3%
2	Delaware	165.4	14.21	121.3%
3	Maryland	157.7	12.95	2.6%
4	New Mexico	156.9	12.82	11.3%
5	Alabama	155.5	12.60	20.7%
6	New Hampshire	153.7	12.30	9.0%
7	Virginia	150.5	11.79	-2.3%
8	Colorado	141.4	10.30	44.7%
9	Utah	134.2	9.13	54.4%
10	Ohio	132.2	8.80	23.8%
11	Montana	126.7	7.92	30.7%
12	Arizona	119.5	6.75	2.6%
13	California	118.7	6.61	-0.7%
14	Pennsylvania	114.5	5.93	25.1%
15	Wyoming	113.9	5.83	-8.2%
16	North Carolina	111.9	5.51	28.4%
17	Washington	108.5	4.95	21.2%
18	Tennessee	106.6	4.65	24.6%
19	**Michigan**	**105.1**	**4.41**	**10.2%**
20	Connecticut	103.8	4.19	4.1%
21	Texas	101.6	3.83	34.9%
22	Indiana	101.3	3.79	14.2%
23	Kentucky	101.2	3.78	-3.7%
24	New Jersey	101.2	3.77	5.8%
25	Alaska	100.5	3.66	98.9%
26	Missouri	99.5	3.50	102.1%
27	Minnesota	99.2	3.44	24.5%
28	Hawaii	98.2	3.29	98.6%
29	Illinois	97.3	3.14	9.5%
30	Wisconsin	97.1	3.11	-5.7%
31	Oregon	96.2	2.96	-19.8%
32	Georgia	96.1	2.95	-5.2%
33	Vermont	95.7	2.88	149.8%
34	Iowa	95.2	2.80	21.2%
35	New York	95.1	2.78	-0.5%
36	South Carolina	92.9	2.43	55.9%
37	Mississippi	92.4	2.35	-23.0%
38	Rhode Island	91.3	2.16	24.7%
39	Kansas	91.2	2.14	-7.4%
40	Florida	91.0	2.11	19.7%
41	South Dakota	89.5	1.88	99.2%
42	Arkansas	88.1	1.64	33.2%
43	Nevada	88.0	1.62	12.1%
44	Idaho	88.0	1.62	-34.9%
45	Maine	87.4	1.52	-44.9%
46	Nebraska	85.3	1.20	-38.1%
47	Oklahoma	85.0	1.14	-26.7%
48	Louisiana	84.2	1.02	302.6%
49	North Dakota	81.2	0.52	-74.5%
50	West Virginia	80.4	0.39	2.0%

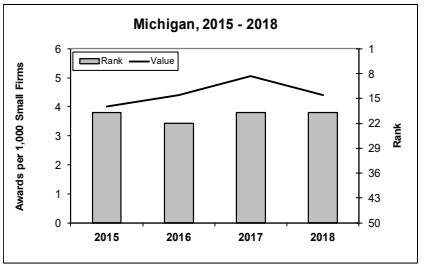
Three-year total of STTR awards per 1,000 small firms, 2018

The federal Small Business Technology Transfer program provides grants to small businesses to conduct commercially viable R&D of breakthrough technology innovations, products, and processes in collaboration with research universities and colleges. The above table shows a state's STTR awards over three years relative to the number of firms with less than 500 employees firms.

Source: U.S. Small Business Administration

Midwest Performance, 2018

State	3-Year Total per 1,000 Small Firms	Rank
Ohio	8.8	10
Michigan	**4.4**	**19**
Indiana	3.8	22
Illinois	3.1	29
Wisconsin	3.1	30



SBIC AWARDS

Rank	State	Score	Awards per 1,000 Firms	Change, 2015-2018 (%)
	50-State Average		*11.5*	*76.3%*
1	North Dakota	139.7	28.8	1022.0%
2	Utah	128.8	23.9	0.9%
3	Minnesota	128.6	23.8	95.0%
4	Massachusetts	127.8	23.4	-25.4%
5	Illinois	126.1	22.6	45.5%
6	Arizona	118.2	19.0	77.5%
7	Texas	117.6	18.7	23.3%
8	California	115.4	17.7	40.1%
9	Colorado	114.3	17.2	33.9%
10	Missouri	112.2	16.3	76.2%
11	Kansas	112.1	16.2	18.5%
12	North Carolina	111.2	15.8	-21.4%
13	Georgia	111.0	15.7	11.7%
14	Tennessee	109.4	15.0	9.1%
15	New Jersey	108.6	14.6	-22.6%
16	New York	107.9	14.3	-6.8%
17	Ohio	107.2	14.0	104.9%
18	Pennsylvania	106.6	13.7	42.1%
19	South Carolina	105.4	13.2	69.1%
20	Indiana	103.4	12.2	101.5%
21	Florida	103.0	12.1	25.1%
22	Connecticut	101.9	11.6	-15.3%
23	Oklahoma	101.8	11.5	-1.7%
24	Maryland	100.4	10.9	58.3%
25	Mississippi	100.2	10.8	411.6%
26	New Hampshire	99.8	10.6	23.9%
27	**Michigan**	**99.1**	**10.3**	**32.5%**
28	Wisconsin	96.8	9.2	30.7%
29	Montana	96.7	9.2	476.1%
30	Delaware	95.0	8.4	4.9%
31	Louisiana	94.7	8.3	-18.2%
32	Virginia	94.3	8.1	-8.3%
33	Oregon	94.1	8.0	-7.1%
34	Maine	91.9	7.0	107.4%
35	Rhode Island	91.7	6.9	-27.5%
36	Washington	91.5	6.8	0.2%
37	Arkansas	89.6	6.0	-39.6%
38	Idaho	89.6	5.9	114.9%
39	New Mexico	89.3	5.8	-31.7%
40	Nebraska	89.1	5.7	239.6%
41	Nevada	87.7	5.1	6.6%
42	Alaska	87.3	4.9	695.7%
43	Kentucky	85.2	3.9	-33.2%
44	Vermont	82.9	2.9	-64.3%
45	South Dakota	81.7	2.3	-64.4%
46	Iowa	81.3	2.1	-0.2%
47	Alabama	80.9	2.0	-48.5%
48	Wyoming	80.4	1.7	100.0%
(n/a)	Hawaii	(n/a)	(n/a)	(n/a)
(n/a)	West Virginia	(n/a)	(n/a)	(n/a)

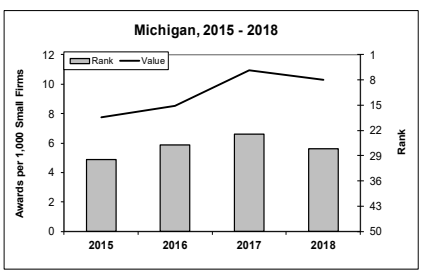
Three-year total of SBIC awards per 1,000 small firms, 2018

SBICs are private investment companies supported and regulated by the U.S. Small Business Administration. Their aim is to create investment pools of risk capital in local markets. One sign of entrepreneurial capital dynamics is the extent to which small businesses successfully access this program. The above table shows the awards given by SBICs over three years in relation to the number of firms with less than 500 employees in each state.

Source: U.S. Small Business Administration

Midwest Performance, 2018

State	3-Year Total per 1,000 Small Firms	Rank
Illinois	22.6	5
Ohio	14.0	17
Indiana	12.2	20
Michigan	**10.3**	**27**
Wisconsin	9.2	28



5-YEAR ESTABLISHMENT SURVIVAL RATE

Rank	State	Score	Survival Rate	Change, 2015-2018 (%)
	50-State Average		*50%*	*-0.1%*
1	Montana	138.2	56.0%	5.9%
2	Massachusetts	136.3	55.7%	-6.2%
3	Iowa	131.8	55.0%	-0.5%
4	Minnesota	130.6	54.8%	4.6%
5	California	120.4	53.2%	-4.1%
5	Maine	120.4	53.2%	3.5%
7	Ohio	119.7	53.1%	-1.7%
8	Oregon	117.2	52.7%	3.1%
9	Indiana	116.6	52.6%	4.0%
9	Wisconsin	116.6	52.6%	-6.6%
11	South Dakota	115.9	52.5%	1.7%
12	North Carolina	114.0	52.2%	2.8%
13	Alabama	113.4	52.1%	1.8%
13	Alaska	113.4	52.1%	0.8%
15	Pennsylvania	111.5	51.8%	9.5%
16	Texas	109.6	51.5%	-0.2%
17	Vermont	108.9	51.4%	0.2%
18	Hawaii	107.0	51.1%	-7.8%
19	Illinois	106.4	51.0%	0.8%
20	Louisiana	104.5	50.7%	4.3%
20	**Michigan**	**104.5**	**50.7%**	**-2.9%**
22	Oklahoma	103.8	50.6%	-0.8%
23	Florida	101.3	50.2%	1.8%
24	Arkansas	100.0	50.0%	11.9%
24	Colorado	100.0	50.0%	1.4%
24	Kentucky	100.0	50.0%	-3.5%
27	Delaware	99.4	49.9%	5.3%
27	Georgia	99.4	49.9%	-3.1%
27	Kansas	99.4	49.9%	3.3%
27	Mississippi	99.4	49.9%	2.3%
27	New York	99.4	49.9%	-2.0%
32	Idaho	97.5	49.6%	3.3%
32	Utah	97.5	49.6%	-1.8%
34	Tennessee	96.2	49.4%	4.7%
35	West Virginia	95.5	49.3%	-1.8%
36	South Carolina	93.0	48.9%	-1.4%
37	Wyoming	92.4	48.8%	6.1%
38	Maryland	91.7	48.7%	-2.6%
39	New Jersey	91.1	48.6%	4.1%
40	Nevada	87.9	48.1%	-2.0%
41	Arizona	86.6	47.9%	-1.2%
42	North Dakota	83.4	47.4%	-12.4%
42	Rhode Island	83.4	47.4%	-5.0%
44	Washington	82.8	47.3%	10.5%
45	New Hampshire	81.5	47.1%	-0.4%
46	Missouri	79.6	46.8%	-7.9%
47	Virginia	79.0	46.7%	-3.7%
48	Nebraska	77.1	46.4%	-15.0%
49	New Mexico	75.8	46.2%	2.4%
50	Connecticut	63.7	44.3%	-9.0%

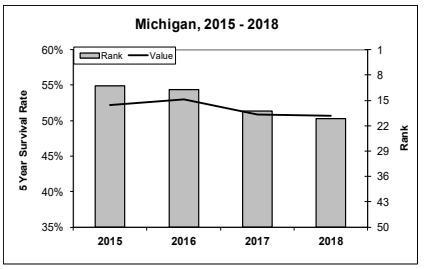
Five-year establishment survival rate, 2018

The long-term survival of a business reflects both the effective use of internal and external resources as well as a supportive business environment. On average, businesses that survive five years have a much higher chance of continuing for the long-haul. The above table shows the share of surviving establishment relative to five years ago.

Source: U.S. Bureau of Labor Statistics

Midwest Performance, 2018

State	Survival Rate	Rank
Ohio	53.1%	7
Indiana	52.6%	9
Wisconsin	52.6%	9
Illinois	51.0%	19
Michigan	**50.7%**	**20**



ENTREPRENEURIAL CLIMATE

The broader business climate and institutional environment provide the foundation upon which entrepreneurial activity grows. Elements of Entrepreneurial Climate include the general magnitude and effectiveness of investments in innovative activity, the availability of financial capital, and the general level of economic dynamism.

The Research and Innovation sub-index mainly measures investment in and returns to innovative activity, whereas the Financial and Institutional Capital sub-index takes a look at the actual cash flow as well as institutional support for small firms and startups. The General Business Growth sub-index captures the vitality and health of the economy that supports entrepreneurial dynamism.

Midwest Performance

	2018	2016	2014
Ohio	***	***	***
Illinois	**	***	***
Michigan	**	***	***
Wisconsin	**	**	**
Indiana	**	**	**

Rank	State	2018	2016	2014
1	Massachusetts	*****	*****	*****
2	California	*****	*****	*****
3	Utah	****	*****	****
4	New York	****	****	****
5	Maryland	****	****	***
6	North Carolina	****	****	***
7	Colorado	****	****	****
8	Washington	***	****	****
9	Texas	***	***	***
10	Oregon	***	***	***
11	Minnesota	***	***	***
12	Pennsylvania	***	***	***
13	Ohio	***	***	***
14	New Hampshire	***	***	***
15	Alabama	***	***	***
16	Illinois	**	***	***
17	Georgia	**	***	***
18	Virginia	**	***	***
19	New Mexico	**	**	**
20	Rhode Island	**	***	***
21	Idaho	**	**	***
22	**Michigan**	**	***	***
23	Arizona	**	***	**
24	Delaware	**	***	**
25	Florida	**	***	**
26	Vermont	**	***	**
27	Tennessee	**	***	***
28	New Jersey	**	**	***
29	South Dakota	**	***	***
30	Connecticut	**	***	***
31	Montana	**	***	**
32	Nevada	**	**	**
33	Wisconsin	**	**	**
34	Hawaii	**	**	**
35	Indiana	**	**	**
36	Iowa	**	**	***
37	Maine	**	**	*
38	Kansas	*	**	*
39	South Carolina	*	**	**
40	Missouri	*	**	**
41	Kentucky	*	**	*
42	Nebraska	*	*	**
43	Mississippi	*	*	*
44	Arkansas	*	*	*
45	Louisiana	*	*	*
46	Wyoming	*	*	*
47	Alaska	*	*	*
48	Oklahoma	*	*	**
49	North Dakota	*	*	***
50	West Virginia	*	*	**

RESEARCH AND INNOVATION

Midwest Performance

	2018	2016	2014
Michigan	***	***	***
Illinois	***	***	***
Wisconsin	**	**	***
Ohio	**	**	**
Indiana	*	*	**

Rank	State	2018	2016	2014
1	Massachusetts	*****	*****	*****
2	Maryland	*****	*****	*****
3	Pennsylvania	****	***	**
4	California	****	***	***
5	New Hampshire	***	***	***
6	Oregon	***	***	***
7	Washington	***	***	***
8	New York	***	****	***
9	Minnesota	***	***	***
10	New Mexico	***	***	***
11	Utah	***	****	****
12	Rhode Island	***	***	***
13	**Michigan**	***	***	***
14	Vermont	***	***	***
15	Alabama	***	**	**
16	Colorado	***	***	***
17	North Carolina	***	**	**
18	Illinois	***	***	***
19	Connecticut	***	**	**
20	New Jersey	**	**	**
21	Wisconsin	**	**	***
22	Virginia	**	**	**
23	Iowa	**	**	**
24	Arizona	**	**	**
25	Idaho	**	**	**
26	Montana	**	**	*
27	Texas	**	**	*
28	Ohio	**	**	**
29	Georgia	**	**	**
30	Tennessee	**	**	**
31	Missouri	**	*	*
32	North Dakota	**	**	**
33	Florida	**	*	*
34	Indiana	*	*	**
35	Kansas	*	*	*
36	Alaska	*	*	*
37	Nevada	*	*	**
38	South Carolina	*	*	*
39	Delaware	*	*	*
40	Nebraska	*	*	*
41	Wyoming	*	*	*
42	Maine	*	*	*
43	Hawaii	*	*	*
44	Mississippi	*	*	*
45	Louisiana	*	*	*
46	Arkansas	*	*	*
47	Kentucky	*	*	*
48	Oklahoma	*	*	*
49	South Dakota	*	*	*
50	West Virginia	*	***	****

UNIVERSITY RESEARCH AND DEVELOPMENT

Rank	State	Score	Spending per $100,000 GDP	Change, 2015-2018 (%)
	50-State Average		*$386*	*5.4%*
1	Maryland	181.0	$1,010	-0.9%
2	Massachusetts	143.9	$713	-2.4%
3	Rhode Island	130.7	$608	-23.9%
4	North Carolina	125.9	$569	1.7%
5	Pennsylvania	125.1	$563	19.2%
6	New Hampshire	124.6	$558	18.6%
7	**Michigan**	**120.8**	**$528**	**7.2%**
8	Alabama	115.1	$482	7.6%
9	Iowa	113.2	$467	9.8%
10	Connecticut	113.2	$467	11.2%
11	Wisconsin	112.1	$458	2.2%
12	Montana	112.0	$457	16.1%
13	Utah	111.8	$456	-7.1%
14	North Dakota	111.8	$456	15.0%
15	Nebraska	108.9	$432	7.3%
16	Georgia	107.1	$418	4.8%
17	Colorado	107.0	$418	4.4%
18	Mississippi	107.0	$417	8.3%
19	Indiana	106.1	$410	2.3%
20	Vermont	104.9	$401	2.9%
21	New York	104.5	$397	3.7%
22	Arizona	103.6	$390	5.4%
23	Missouri	102.7	$383	5.1%
24	Kansas	102.4	$381	3.2%
25	New Mexico	100.7	$367	-14.6%
26	Tennessee	99.3	$355	6.5%
27	Ohio	98.7	$351	-0.5%
28	Oregon	97.7	$342	-3.4%
29	California	97.3	$339	0.1%
30	South Carolina	95.5	$325	-0.3%
31	Washington	94.8	$320	-2.9%
32	Hawaii	94.6	$318	-20.9%
33	Virginia	94.4	$316	8.5%
34	Texas	94.0	$313	-2.5%
35	Alaska	92.6	$302	-6.2%
36	Illinois	92.0	$297	-1.2%
37	Louisiana	91.0	$289	2.3%
38	Wyoming	91.0	$289	91.3%
39	Kentucky	90.7	$287	6.5%
40	Delaware	90.2	$282	4.6%
41	West Virginia	89.0	$273	-3.5%
42	Minnesota	88.7	$271	-3.9%
43	Arkansas	88.3	$267	8.1%
44	Florida	87.7	$262	-0.3%
45	Oklahoma	86.8	$255	13.2%
46	South Dakota	82.7	$223	2.9%
47	Idaho	82.6	$222	-0.1%
48	New Jersey	82.2	$218	12.5%
49	Maine	79.6	$198	10.5%
50	Nevada	74.1	$154	40.6%

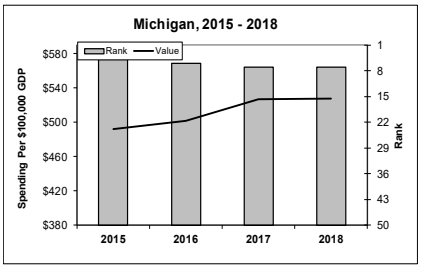
Research and development expenditures by universities per $100,000 gross domestic product, 2018

University or government-based R&D initiatives not only employ researchers but provide technology transfer, spin off companies, and give local businesses access to top talent and new knowledge. The above table shows the amount of research and development expenditures performed at universities per $100,000 of gross domestic product.

Source: National Science Foundation

Midwest Performance, 2018

State	Spending per $100,000 GDP	Rank
Michigan	**$527.7**	**7**
Wisconsin	$458.4	11
Indiana	$410.4	19
Ohio	$350.7	27
Illinois	$297.0	36



PATENTS PER INNOVATION WORKER

Rank	State	Score	Per 100,000 Workers	Change, 2015-2018 (%)
	50-State Average		*51.8*	*-5.4%*
1	California	147.8	141.5	-11.0%
2	Washington	134.5	115.4	-9.0%
3	Oregon	133.8	114.0	7.1%
4	**Michigan**	**127.3**	**101.3**	**7.2%**
5	Massachusetts	125.0	96.6	-4.7%
6	New Hampshire	124.4	95.5	1.9%
7	Connecticut	124.4	95.5	22.4%
8	Vermont	122.4	91.5	-21.5%
9	Minnesota	120.1	87.0	-11.7%
10	Idaho	112.5	72.1	-32.8%
11	New Jersey	109.5	66.2	-13.6%
12	Utah	109.0	65.3	-12.5%
13	Colorado	108.1	63.5	-19.1%
14	New York	107.7	62.7	-6.3%
15	Wisconsin	107.1	61.4	-4.2%
16	Texas	105.6	58.6	-5.1%
17	Arizona	105.6	58.6	-10.9%
18	Indiana	104.4	56.2	-5.6%
19	Ohio	104.0	55.4	0.0%
20	North Carolina	103.6	54.7	-9.7%
21	Rhode Island	103.6	54.6	-1.7%
22	Illinois	102.0	51.5	-16.0%
23	Pennsylvania	101.1	49.7	-1.8%
24	Nevada	101.0	49.4	-15.6%
25	Iowa	100.6	48.7	-3.6%
26	New Mexico	99.4	46.4	16.4%
27	Georgia	97.5	42.6	-3.4%
28	South Carolina	97.5	42.6	-0.4%
29	Kansas	97.2	42.1	-18.3%
30	Florida	96.0	39.7	-18.8%
31	Wyoming	95.5	38.6	10.6%
32	Maryland	95.3	38.3	-2.1%
33	Delaware	94.8	37.4	-29.9%
34	Virginia	92.2	32.3	5.3%
35	Missouri	91.9	31.5	1.6%
36	Montana	91.3	30.4	-4.8%
37	Kentucky	91.1	30.1	-4.9%
38	Tennessee	91.1	29.9	2.0%
39	Maine	89.6	27.1	-3.5%
40	Oklahoma	89.3	26.5	3.1%
41	South Dakota	89.0	26.0	-3.8%
42	Arkansas	88.2	24.3	17.1%
43	Louisiana	87.2	22.3	9.4%
44	North Dakota	86.4	20.8	-14.2%
45	Nebraska	85.9	19.7	-22.7%
46	Alabama	85.8	19.7	-8.6%
47	West Virginia	84.0	16.0	-5.0%
48	Hawaii	84.0	16.0	-19.7%
49	Mississippi	83.7	15.5	7.2%
50	Alaska	80.5	9.3	-3.7%

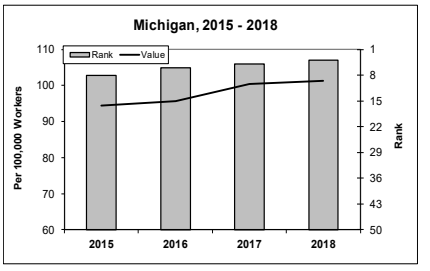
Number of patents per 100,000 innovation workers, 2018

Patent activity signals an inventive economic base, which is key to wealth and value creation in the innovation economy. The above table shows the number of patents awarded to individuals or companies in each state per 100,000 innovation workers as defined by the metrics Physical Sciences and Engineering Workers, Technology and Technician Workers, and Other Innovation Workers.

Source: U.S. Patent and Trademark Office

Midwest Performance, 2018

State	Per 100,000 Workers	Rank
Michigan	**101.3**	**4**
Wisconsin	61.4	15
Indiana	56.2	18
Ohio	55.4	19
Illinois	51.5	22



PATENTS PER R&D DOLLAR

Rank	State	Score	Patents per $1 mill. R&D	Change, 2015-2018 (%)
	50-State Average		*35.8*	-2.6%
1	Vermont	182.9	109.4	-12.9%
2	Nevada	164.6	92.1	-33.9%
3	Wyoming	127.6	57.1	26.7%
4	New Hampshire	127.6	57.1	44.1%
5	Minnesota	124.4	54.0	-10.4%
6	South Carolina	119.5	49.3	5.2%
7	Florida	119.3	49.2	-5.3%
8	Arkansas	119.1	49.0	-0.4%
9	Utah	119.0	48.9	27.9%
10	Maine	116.7	46.7	5.0%
11	Louisiana	116.3	46.3	16.7%
12	Kentucky	116.3	46.3	19.8%
13	Colorado	115.5	45.6	-12.1%
14	Montana	113.3	43.5	18.8%
15	Oregon	112.5	42.7	10.1%
16	New York	111.6	41.9	-0.1%
17	Texas	111.1	41.3	-7.3%
18	Oklahoma	110.7	41.0	-9.9%
19	South Dakota	109.0	39.4	-16.7%
20	Wisconsin	107.7	38.2	-8.9%
21	Arizona	105.8	36.3	-7.0%
22	Ohio	104.8	35.4	0.8%
23	Georgia	103.9	34.5	-17.4%
24	Illinois	100.9	31.7	-10.8%
25	Kansas	100.4	31.3	-15.2%
26	Idaho	99.6	30.5	-25.4%
27	**Michigan**	**99.1**	**30.1**	**-3.3%**
28	Indiana	99.1	30.0	0.8%
29	Washington	98.9	29.8	-15.2%
30	Connecticut	98.4	29.4	23.0%
31	Rhode Island	98.3	29.3	6.4%
32	California	98.2	29.2	-16.4%
33	Tennessee	98.1	29.1	12.7%
34	Iowa	97.8	28.8	-9.0%
35	West Virginia	96.8	27.8	11.8%
36	Virginia	96.7	27.8	26.3%
37	Pennsylvania	96.6	27.6	-2.9%
38	North Carolina	96.3	27.3	-11.5%
39	Nebraska	95.4	26.5	-14.5%
40	New Jersey	94.1	25.2	-20.4%
41	Hawaii	93.7	24.9	-8.6%
42	Massachusetts	93.2	24.4	-3.3%
43	North Dakota	89.5	20.9	-24.1%
44	Missouri	89.2	20.6	22.3%
45	Mississippi	89.1	20.5	11.0%
46	Delaware	80.8	12.7	-2.7%
47	Maryland	78.0	10.0	3.6%
48	Alabama	76.5	8.6	-30.8%
49	New Mexico	75.9	8.0	6.7%
50	Alaska	71.6	3.9	-71.6%

Number of patents per $1 million research and development investment, 2018

Although patents issued relate to the level of research and innovation in a region, the value derived from the innovations is also determined by the effectiveness at obtaining these patents. The above table shows the number of patents issued in the most recent year per $1 million of total research and development investment in each state.

Source: U.S. Patent and Trademark Office

UNIVERSITY LICENSES TO SMALL BUSINESSES

Rank	State	Score	Licenses per 100,000 Firms	Change, 2014-2017 (%)
	50-State Average		*247*	*47.3%*
1	North Dakota	164.9	837	1.9%
2	Oregon	152.9	714	-1.9%
3	New Hampshire	148.9	673	257.0%
4	Washington	137.1	553	305.2%
5	Iowa	136.7	549	55.6%
6	Maryland	133.0	511	40.7%
7	Massachusetts	130.1	482	27.9%
8	New Mexico	129.5	475	-0.5%
9	Pennsylvania	126.5	445	31.0%
10	North Carolina	124.4	423	49.1%
11	Arizona	122.0	398	39.0%
12	Utah	118.2	360	-29.3%
13	Minnesota	118.1	359	24.3%
14	Georgia	117.9	357	8.2%
15	**Michigan**	**117.2**	**350**	**44.8%**
16	Florida	109.7	273	76.7%
17	Montana	107.8	254	-25.5%
18	Tennessee	107.5	251	-16.1%
19	New York	105.8	234	7.6%
20	Nebraska	105.5	230	-28.5%
21	Ohio	104.0	216	13.8%
22	Arkansas	103.5	210	17.2%
23	Kansas	102.3	198	70.7%
24	Colorado	101.1	185	2.9%
25	Wisconsin	100.0	174	8.4%
26	Texas	99.8	172	11.6%
27	Alabama	98.6	160	57.8%
28	Illinois	98.4	159	13.5%
29	Virginia	96.3	137	20.7%
30	Louisiana	96.0	133	78.0%
31	New Jersey	95.6	129	11.0%
32	California	95.5	128	109.6%
33	Missouri	93.9	113	8.1%
34	Indiana	93.9	112	-46.5%
35	Kentucky	93.9	112	84.8%
36	Delaware	93.8	111	-16.7%
37	South Dakota	92.6	99	21.5%
38	Rhode Island	92.2	95	-29.5%
39	Vermont	91.9	92	23.8%
40	Hawaii	91.8	90	44.8%
41	Mississippi	91.6	89	0.5%
42	Idaho	91.4	87	-49.2%
43	South Carolina	91.3	86	32.8%
44	Oklahoma	89.7	69	32.1%
45	Maine	88.3	55	-36.4%
46	West Virginia	87.4	46	-95.9%
47	Connecticut	86.7	39	-18.1%
48	Alaska	85.9	31	-18.0%
49	Nevada	85.5	26	1098.9%
(n/a)	Wyoming	(n/a)	(n/a)	(n/a)

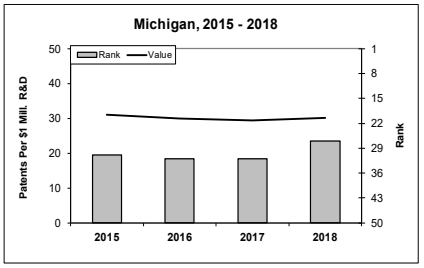
Average number of license and option relationships with startups and small businesses per 100,000 firms, 2017

Academic knowledge that is primarily funded with tax dollars in the form of grants is converted back into more money and economic growth when the successful research is licensed to firms for commercialization. The above table gives the three-year average number of license and option relationships per 100,000 firms with less than 500 employees.

Source: Association of University Technology Managers

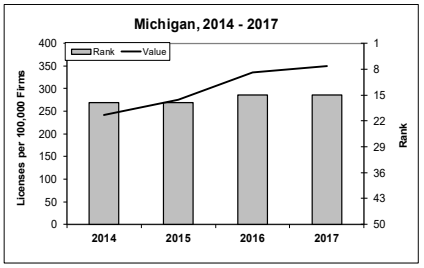
Midwest Performance, 2018

State	Patents per $1 mill. R&D	Rank
Wisconsin	38.2	20
Ohio	35.4	22
Illinois	31.7	24
Michigan	**30.1**	**27**
Indiana	30.0	28



Midwest Performance, 2017

State	Licenses per 100,000 Firms	Rank
Michigan	**350**	**15**
Ohio	216	21
Wisconsin	174	25
Illinois	159	28
Indiana	112	34



NSF PROPOSAL FUNDING RATE

Rank	State	Score	Funding Rate	Change, 2015-2018 (%)
	50-State Average		*20%*	*8%*
1	Alaska	145.9	38%	90.0%
2	Rhode Island	142.9	37%	2.8%
3	Hawaii	131.1	33%	43.5%
3	Vermont	131.1	33%	73.7%
5	Montana	125.2	31%	29.2%
6	Maine	122.2	30%	15.4%
7	Massachusetts	119.2	29%	7.4%
7	Minnesota	119.2	29%	3.6%
7	Wisconsin	119.2	29%	11.5%
10	California	116.3	28%	3.7%
10	Colorado	116.3	28%	12.0%
10	Delaware	116.3	28%	21.7%
13	Illinois	113.3	27%	-3.6%
13	New Hampshire	113.3	27%	3.8%
13	Oregon	113.3	27%	0.0%
16	Maryland	110.4	26%	0.0%
16	New Jersey	110.4	26%	8.3%
16	North Carolina	110.4	26%	8.3%
16	Washington	110.4	26%	-13.3%
20	Connecticut	107.4	25%	4.2%
21	New York	104.4	24%	-4.0%
22	Georgia	101.5	23%	-8.0%
22	Nebraska	101.5	23%	21.1%
22	Pennsylvania	101.5	23%	-11.5%
22	South Carolina	101.5	23%	21.1%
26	Indiana	98.5	22%	-8.3%
26	Louisiana	98.5	22%	0.0%
26	**Michigan**	**98.5**	**22%**	**-12.0%**
26	Utah	98.5	22%	-4.3%
30	Arizona	95.6	21%	-4.5%
30	Iowa	95.6	21%	0.0%
30	Mississippi	95.6	21%	23.5%
30	Texas	95.6	21%	0.0%
30	Virginia	95.6	21%	-4.5%
30	West Virginia	95.6	21%	5.0%
30	Wyoming	95.6	21%	0.0%
37	Arkansas	92.6	20%	25.0%
37	Kentucky	92.6	20%	17.6%
37	New Mexico	92.6	20%	5.3%
40	Florida	89.6	19%	-5.0%
40	Idaho	89.6	19%	18.8%
40	Missouri	89.6	19%	-5.0%
40	Ohio	89.6	19%	-13.6%
40	Tennessee	89.6	19%	-9.5%
45	Kansas	86.7	18%	-21.7%
45	Nevada	86.7	18%	5.9%
45	South Dakota	86.7	18%	0.0%
48	Alabama	83.7	17%	13.3%
49	North Dakota	80.8	16%	33.3%
49	Oklahoma	80.8	16%	-11.1%

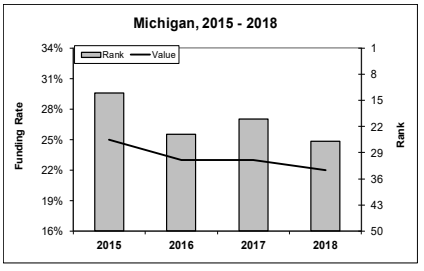
Share of National Science Foundation proposals funded, 2018

The NSF is the premier source of research grant funding in the U.S. Grant topics closely correlate with Michigan's technical core competencies and industrial strengths (i.e., Adv. Manufacturing, Materials & Electronics). NSF funding indicates strong academic and research institutions and a state's interest and capacity to support technology-related business development. The above table shows the rate of NSF proposals funded in each state.

Source: National Science Foundation

Midwest Performance, 2018

State	Funding Rate	Rank
Wisconsin	29%	7
Illinois	27%	13
Indiana	22%	26
Michigan	**22%**	**26**
Ohio	19%	40



UNIVERSITY ROYALTY/LICENSE INCOME

Rank	State	Score	Royalties per $1 mill. GDP	Change, 2014-2017 (%)
	50-State Average		*$254.7*	*24.0%*
1	Massachusetts	245.0	$1,410.6	-21.1%
2	Pennsylvania	241.9	$1,383.3	218.2%
3	New York	212.8	$1,123.7	-22.8%
4	Illinois	181.3	$842.0	-27.9%
5	New Jersey	165.6	$702.0	-14.9%
6	Minnesota	161.8	$668.4	-2.2%
7	California	153.8	$596.9	33.8%
8	Utah	145.5	$523.3	-55.3%
9	Texas	119.7	$293.2	55.6%
10	Missouri	119.7	$293.1	83.1%
11	Wisconsin	119.4	$290.3	-54.7%
12	**Michigan**	**119.3**	**$289.4**	**109.3%**
13	North Carolina	117.9	$277.1	-0.4%
14	Maryland	116.8	$266.7	57.8%
15	Kansas	114.8	$249.4	-5.7%
16	Washington	113.6	$238.2	-22.6%
17	Oregon	111.7	$221.1	-2.0%
18	Ohio	111.4	$219.0	24.9%
19	Florida	109.8	$204.6	46.8%
20	Tennessee	105.9	$169.3	-37.1%
21	Louisiana	103.6	$149.1	-5.0%
22	Alabama	103.2	$145.8	39.6%
23	Mississippi	101.1	$126.8	680.3%
24	New Hampshire	100.5	$121.6	-60.9%
25	Indiana	99.5	$112.6	-6.3%
26	South Dakota	99.5	$112.2	-37.9%
27	Nebraska	99.4	$111.9	-52.0%
28	Georgia	98.2	$100.7	-37.1%
29	North Dakota	98.0	$99.7	-16.7%
30	Oklahoma	97.3	$93.1	40.7%
31	Iowa	97.1	$91.2	-56.9%
32	Arkansas	95.7	$78.8	176.5%
33	Kentucky	95.1	$73.2	-6.9%
34	Arizona	94.9	$71.8	90.2%
35	Rhode Island	94.9	$71.6	-37.3%
36	Colorado	94.7	$69.8	-67.3%
37	Virginia	93.4	$58.0	11.5%
38	New Mexico	92.6	$50.6	-13.6%
39	Maine	92.5	$50.0	-50.8%
40	Vermont	92.2	$47.6	-2.3%
41	Idaho	90.4	$31.6	-24.8%
42	Montana	89.5	$23.3	-21.1%
43	West Virginia	89.2	$20.8	-99.3%
44	South Carolina	88.8	$17.2	-54.9%
45	Connecticut	88.3	$12.6	-16.6%
46	Hawaii	88.1	$11.3	44.5%
47	Nevada	87.8	$8.4	451.0%
48	Delaware	87.3	$4.1	-77.8%
(n/a)	Alaska	(n/a)	(n/a)	(n/a)
(n/a)	Wyoming	(n/a)	(n/a)	(n/a)

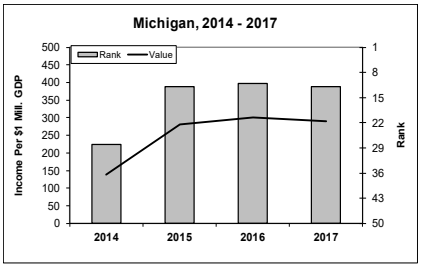
Average gross royalty and license income per $1 million gross domestic product, 2017

Research universities can be themselves entrepreneurial by capturing the value added from proprietary discoveries. The percent of a universities annual budget that is derived from royalty and licensing income is a key measure of its successful technology transfer and links to entrepreneurial businesses and impact on the local economy. The above table shows the three year average gross income per $1 million of gross domestic product.

Source: Association of University Technology Managers

Midwest Performance, 2017

State	Royalties per $1 mill. GDP	Rank
Illinois	$842.0	4
Wisconsin	$290.3	11
Michigan	**$289.4**	**12**
Ohio	$219.0	18
Indiana	$112.6	25



INDUSTRY RESEARCH AND DEVELOPMENT

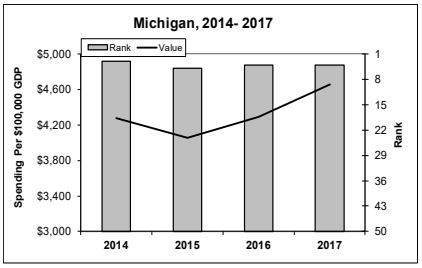
Rank	State	Score	Spending per $100,000 GDP	Change, 2014-2017 (%)
	50-State Average		*$1,675*	*33.7%*
1	California	145.9	$5,317	13.7%
2	Massachusetts	140.3	$4,854	-2.7%
3	Washington	138.5	$4,701	14.2%
4	**Michigan**	**138.0**	**$4,657**	**9.0%**
5	Oregon	128.8	$3,893	-1.3%
6	Connecticut	125.4	$3,606	-11.5%
7	Delaware	120.6	$3,208	-22.9%
8	New Jersey	119.1	$3,079	8.9%
9	Idaho	115.4	$2,774	5.4%
10	Minnesota	109.3	$2,258	-6.8%
11	Arizona	108.8	$2,220	-0.8%
12	Alaska	108.7	$2,209	1651.1%
13	North Carolina	108.5	$2,192	11.3%
14	Indiana	105.9	$1,974	-1.5%
15	Missouri	105.9	$1,973	-26.6%
16	Utah	105.5	$1,944	-15.0%
17	Illinois	105.3	$1,929	7.1%
18	Wisconsin	104.9	$1,896	15.0%
19	New Hampshire	104.8	$1,881	-41.0%
20	Iowa	104.1	$1,830	32.6%
21	Maryland	103.6	$1,783	-3.2%
22	Ohio	102.6	$1,699	0.3%
23	Pennsylvania	101.8	$1,637	-5.9%
24	Kansas	101.1	$1,577	4.2%
25	Colorado	100.5	$1,529	-9.5%
26	Rhode Island	99.5	$1,438	24.7%
27	Texas	99.2	$1,414	21.9%
28	Georgia	97.7	$1,290	18.3%
29	New Mexico	95.6	$1,118	58.9%
30	New York	95.3	$1,088	0.3%
31	Alabama	95.2	$1,084	-10.9%
32	Virginia	94.7	$1,044	-21.2%
33	Vermont	93.2	$919	-22.8%
34	Florida	91.1	$738	-6.0%
35	South Carolina	90.9	$727	7.4%
36	North Dakota	90.1	$655	29.0%
37	Kentucky	89.0	$568	-21.9%
38	Nebraska	89.0	$562	-7.3%
39	Maine	88.8	$546	-29.7%
40	Oklahoma	88.5	$525	44.4%
41	Tennessee	87.7	$459	-22.7%
42	South Dakota	87.7	$452	37.6%
43	Nevada	87.5	$442	-16.3%
44	Arkansas	87.4	$434	39.3%
45	West Virginia	86.4	$345	-25.2%
46	Montana	86.2	$330	-39.1%
47	Mississippi	85.7	$293	-6.6%
48	Wyoming	85.6	$278	57.6%
49	Hawaii	85.1	$236	-26.5%
50	Louisiana	83.9	$140	-22.7%

Industry research and development expenditures per $100,000 GDP, 2017

The fruits of local industry R&D investments often become evident only after many years, but they are essential to the long-term competitiveness and provide spillover effects to smaller firms that might not have the resources to conduct their own research. Industry R&D is also an indicator of the prevalence of scientists and researchers in the state. The above table shows total R&D performed by the industrial sector per $100,000 of GDP.
Source: National Science Foundation

Midwest Performance, 2017

State	Spending per $100,000 GDP	Rank
Michigan	**$4,657**	**4**
Indiana	$1,974	14
Illinois	$1,929	17
Wisconsin	$1,896	18
Ohio	$1,699	22



FEDERALLY FUNDED RESEARCH AND DEVELOPMENT

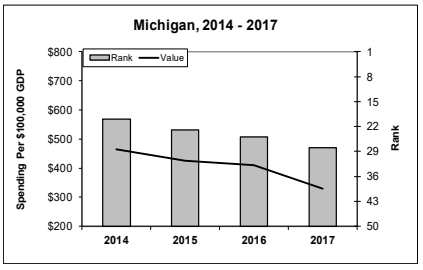
Rank	State	Score	Spending per $100,000 GDP	Change, 2014-2017 (%)
	50-State Average		*$712.9*	*-6.4%*
1	Alabama	250.0	$4,916.0	76.5%
2	Maryland	250.0	$4,845.3	-20.1%
3	New Mexico	250.0	$4,689.5	-10.4%
4	Virginia	183.4	$1,516.7	-25.2%
5	Rhode Island	160.3	$1,193.1	1.3%
6	Colorado	154.7	$1,113.6	-17.0%
7	Idaho	152.0	$1,075.6	-0.9%
8	Massachusetts	151.9	$1,075.0	-27.4%
9	Connecticut	145.6	$986.2	-3.8%
10	Tennessee	132.5	$802.4	6.1%
11	Utah	127.3	$729.2	-26.6%
12	California	120.5	$633.9	-15.4%
13	Missouri	118.0	$599.6	44.4%
14	Washington	116.4	$577.4	-38.2%
15	Pennsylvania	114.6	$551.6	-7.2%
16	Mississippi	110.6	$495.7	-28.2%
17	New Hampshire	109.8	$483.8	-7.8%
18	Alaska	106.9	$443.9	46.2%
19	Ohio	106.9	$443.4	-4.6%
20	North Carolina	105.9	$429.6	-6.4%
21	Arizona	105.3	$420.8	-35.6%
22	Hawaii	102.8	$386.6	-27.6%
23	Montana	102.3	$379.0	-15.8%
24	New Jersey	101.3	$365.7	-9.7%
25	Texas	100.4	$352.8	5.9%
26	Illinois	99.6	$341.2	-1.0%
27	New York	99.5	$340.5	-5.2%
28	**Michigan**	**98.8**	**$330.0**	**-28.8%**
29	Florida	98.8	$329.6	-0.9%
30	Iowa	98.2	$321.7	-4.5%
31	Minnesota	97.4	$310.6	-5.7%
32	Maine	96.5	$297.7	9.1%
33	Oregon	96.0	$290.6	-21.0%
34	Vermont	95.9	$289.0	-36.7%
35	South Carolina	94.5	$269.4	-9.0%
36	Georgia	93.7	$259.3	-12.3%
37	Delaware	93.7	$258.5	20.7%
38	Wisconsin	93.4	$254.7	-5.6%
39	Nevada	92.6	$243.1	-43.1%
40	Oklahoma	91.9	$233.0	23.2%
41	West Virginia	91.7	$230.8	-32.9%
42	Indiana	90.7	$216.7	-17.3%
43	Nebraska	89.8	$203.8	-15.2%
44	South Dakota	87.8	$175.7	5.0%
45	Kentucky	87.2	$167.2	-10.1%
46	North Dakota	87.0	$164.4	8.7%
47	Arkansas	86.5	$157.9	-15.8%
48	Louisiana	86.5	$157.9	17.4%
49	Kansas	86.1	$152.1	4.0%
50	Wyoming	85.7	$145.8	6.1%

Federal research and development funding per $100,000 GDP, 2017

Over 70 percent of U.S. Patents are based on publicly funded research. Federal funds can provide opportunities for innovation where the private or academic sector support is lacking or where a public benefit is at stake. The level of federal research grants to a state is a strong indication of its ability to achieve robust entrepreneurial dynamism. The above table shows total federal R&D funding per $100,000 of gross domestic product.
Source: National Science Foundation

Midwest Performance, 2017

State	Spending per $100,000 GDP	Rank
Ohio	$443.4	19
Illinois	$341.2	26
Michigan	**$330.0**	**28**
Wisconsin	$254.7	38
Indiana	$216.7	42



ENTRPRENEURIAL PROGRAMS

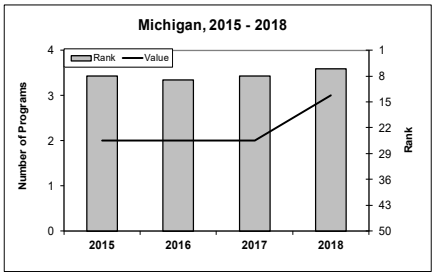
Rank	State	Score	Number of Programs	Change, 2015-2018 (Abs.)
	50-State Average		*1*	*0*
1	Texas	(n/a)	8	3
2	New York	(n/a)	5	-2
3	Illinois	(n/a)	4	0
3	Massachusetts	(n/a)	4	0
3	Utah	(n/a)	4	0
6	**Michigan**	**(n/a)**	**3**	**1**
6	North Carolina	(n/a)	3	1
8	Missouri	(n/a)	2	0
8	Ohio	(n/a)	2	0
8	Oklahoma	(n/a)	2	-1
11	California	(n/a)	1	0
11	Florida	(n/a)	1	0
11	Indiana	(n/a)	1	1
11	Iowa	(n/a)	1	1
11	Kansas	(n/a)	1	1
11	Maryland	(n/a)	1	-1
11	Mississippi	(n/a)	1	1
11	Pennsylvania	(n/a)	1	-2
11	Tennessee	(n/a)	1	0
11	Virginia	(n/a)	1	0
11	Washington	(n/a)	1	-1
22	Alabama	(n/a)	0	0
22	Alaska	(n/a)	0	0
22	Arizona	(n/a)	0	-2
22	Arkansas	(n/a)	0	0
22	Colorado	(n/a)	0	0
22	Connecticut	(n/a)	0	0
22	Delaware	(n/a)	0	0
22	Georgia	(n/a)	0	0
22	Hawaii	(n/a)	0	0
22	Idaho	(n/a)	0	0
22	Kentucky	(n/a)	0	0
22	Louisiana	(n/a)	0	0
22	Maine	(n/a)	0	0
22	Minnesota	(n/a)	0	0
22	Montana	(n/a)	0	0
22	Nebraska	(n/a)	0	0
22	Nevada	(n/a)	0	0
22	New Hampshire	(n/a)	0	0
22	New Jersey	(n/a)	0	0
22	New Mexico	(n/a)	0	0
22	North Dakota	(n/a)	0	0
22	Oregon	(n/a)	0	0
22	Rhode Island	(n/a)	0	0
22	South Carolina	(n/a)	0	0
22	South Dakota	(n/a)	0	0
22	Vermont	(n/a)	0	0
22	West Virginia	(n/a)	0	0
22	Wisconsin	(n/a)	0	0
22	Alabama	(n/a)	0	0

Top 50 entrepreneurial programs or curricula, 2018

A dynamic innovation economy does not only need workers with scientific and technical skills, but leaders and managers. Universities and colleges have seen the increasing need to provide these future entrepreneurs with the right knowledge to survive in today's economy. The above table shows the number of top 50 programs according to EntrePoint's Top Entrepreneurship Colleges. ** Not included in subdriver/driver calculations*
Source: Entrepreneur Magazine

Midwest Performance, 2018

State	Number of Programs	Rank
Illinois	4	3
Michigan	**3**	**6**
Ohio	2	8
Indiana	1	11
Wisconsin	0	22



FINANCIAL AND INSTITUTIONAL CAPITAL

Midwest Performance

	2018	2016	2014
Ohio	***	***	***
Illinois	**	**	**
Indiana	**	*	*
Wisconsin	*	*	*
Michigan	*	**	*

Rank	State	2018	2016	2014
1	Massachusetts	*****	*****	*****
2	California	*****	*****	*****
3	Utah	*****	*****	*****
4	North Carolina	****	****	****
5	Delaware	****	***	***
6	Colorado	****	***	****
7	New York	***	***	***
8	Texas	***	**	**
9	Maryland	***	**	**
10	Ohio	***	***	***
11	Alabama	***	***	***
12	Virginia	***	***	***
13	South Dakota	**	**	***
14	New Hampshire	**	***	***
15	New Mexico	**	**	**
16	Georgia	**	**	**
17	Washington	**	**	***
18	Rhode Island	**	****	****
19	Minnesota	**	**	**
20	Tennessee	**	**	**
21	Pennsylvania	**	**	**
22	Oregon	**	**	**
23	Montana	**	**	**
24	Illinois	**	**	**
25	Arizona	**	**	**
26	Nevada	**	*	*
27	Indiana	**	*	*
28	Connecticut	**	**	**
29	New Jersey	**	*	**
30	Wisconsin	*	*	*
31	Mississippi	*	*	*
32	Missouri	*	*	*
33	Florida	*	**	*
34	Kansas	*	*	*
35	South Carolina	*	*	*
36	Kentucky	*	*	*
37	Nebraska	*	*	**
38	Iowa	*	*	*
39	**Michigan**	*	**	*
40	Oklahoma	*	*	*
41	Maine	*	*	*
42	Idaho	*	*	*
43	North Dakota	*	*	*
44	Hawaii	*	*	*
45	Arkansas	*	*	*
46	Louisiana	*	*	*
47	Vermont	*	*	**
48	Wyoming	*	*	*
49	Alaska	*	*	*
50	West Virginia	*	*	*

SEED/EARLY STAGE VENTURE CAPITAL

Rank	State	Score	Financing per $1,000 GDP	Change, 2015-2018 (%)
	50-State Average		*$501.89*	*64.7%*
1	California	*250.0*	$3,721.90	29.5%
2	Massachusetts	*250.0*	$4,724.93	36.7%
3	New York	188.8	$1,754.36	37.6%
4	Maryland	179.9	$1,600.60	183.6%
5	Colorado	149.6	$1,076.31	14.0%
6	Washington	141.2	$930.65	9.9%
7	Utah	137.5	$866.80	-32.7%
8	North Carolina	133.3	$794.00	39.8%
9	New Hampshire	132.3	$776.56	175.8%
10	Georgia	128.1	$703.47	128.9%
11	Oregon	127.6	$694.69	61.1%
12	New Jersey	127.2	$689.05	272.3%
13	Pennsylvania	125.1	$651.60	193.3%
14	Minnesota	117.2	$514.83	108.4%
15	Delaware	115.5	$485.86	346.3%
16	Illinois	114.2	$462.94	31.6%
17	Connecticut	111.1	$409.91	83.6%
18	Texas	108.2	$360.13	35.4%
19	Tennessee	106.4	$329.03	73.9%
20	Virginia	105.9	$319.53	-19.2%
21	Vermont	105.4	$311.37	172.1%
22	Indiana	101.5	$242.83	24.9%
23	Idaho	101.2	$238.92	173.7%
24	Arkansas	100.8	$232.29	1095.0%
25	Ohio	100.4	$225.15	0.1%
26	Missouri	99.6	$210.08	36.1%
27	**Michigan**	**99.1**	**$202.87**	**119.6%**
28	Iowa	99.1	$201.57	100.0%
29	Florida	99.1	$201.33	109.2%
30	Kansas	98.5	$192.39	48.5%
31	Arizona	98.1	$183.95	-27.1%
32	Nebraska	94.9	$130.06	-68.0%
33	Maine	94.7	$125.98	100.0%
34	Kentucky	94.5	$122.14	187.4%
35	New Mexico	92.7	$91.40	-76.6%
36	Wisconsin	92.2	$82.80	-70.1%
37	Nevada	91.7	$74.44	-54.7%
38	Montana	91.6	$71.95	-84.3%
39	South Carolina	90.1	$46.09	-21.1%
40	Louisiana	88.7	$22.32	-48.5%
41	Oklahoma	88.1	$11.78	-92.3%
42	Alabama	87.7	$5.40	100.0%
43	Alaska	87.4	$0.00	0.0%
43	Hawaii	87.4	$0.00	0.0%
43	Mississippi	87.4	$0.00	0.0%
43	North Dakota	87.4	$0.00	-100.0%
43	Rhode Island	87.4	$0.00	-100.0%
43	South Dakota	87.4	$0.00	0.0%
43	West Virginia	87.4	$0.00	-100.0%
43	Wyoming	87.4	$0.00	0.0%

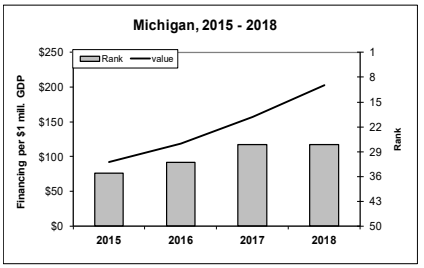
Seed and early stage venture capital financing per $1 mill. of gross domestic product, 2018

Venture capital is focused on high-risk, high-return investments. As an indicator of how new discoveries quickly find their way into innovations and prototypes, attention has turned to seed and start-up financing. The above table shows the total value of Series A or seed/angel funding for in-state projects per $1 million of private GDP.

Source: PriceWaterhouseCoopers

Midwest Performance, 2018

State	Financing per $1 mill. GDP	Rank
Illinois	$463	16
Indiana	$243	22
Ohio	$225	25
Michigan	**$203**	**27**
Wisconsin	$83	36



EXPANSION/LATER STAGE VENTURE CAPITAL

Rank	State	Score	Financing per $1,000 GDP	Change, 2015-2018 (%)
	50-State Average		*$1,285*	*31.5%*
1	California	250.0	$15,318	-0.3%
2	Massachusetts	250.0	$14,294	37.5%
3	New York	238.4	$5,254	25.1%
4	Utah	187.0	$3,467	-51.5%
5	Washington	174.7	$3,036	-16.0%
6	Colorado	163.1	$2,635	9.6%
7	Oregon	151.4	$2,228	190.9%
8	Maryland	134.5	$1,640	-29.2%
9	Minnesota	131.0	$1,517	42.8%
10	Illinois	123.3	$1,249	1.3%
11	North Carolina	122.6	$1,225	-18.2%
12	Tennessee	114.6	$947	119.8%
13	Arizona	113.4	$903	206.3%
14	Kansas	110.5	$804	145.4%
15	New Mexico	109.9	$783	50.4%
16	Florida	108.6	$737	54.0%
17	Virginia	107.1	$685	-6.2%
18	Georgia	106.8	$675	-49.7%
19	Missouri	106.3	$659	1.0%
20	Texas	104.4	$591	-34.0%
21	Pennsylvania	104.1	$582	-19.4%
22	Ohio	104.1	$581	44.0%
23	Connecticut	102.9	$540	-54.1%
24	New Hampshire	101.4	$487	-75.7%
25	**Michigan**	**100.2**	**$444**	**-9.0%**
26	Montana	99.8	$432	100.0%
27	Rhode Island	99.3	$414	-77.8%
28	Indiana	98.8	$396	73.6%
29	Wisconsin	96.8	$328	101.9%
30	Oklahoma	95.9	$294	1049.7%
31	New Jersey	94.8	$258	-85.4%
32	South Carolina	94.3	$241	174.7%
33	North Dakota	92.2	$165	100.0%
34	Nevada	90.5	$108	176.8%
35	Nebraska	89.8	$84	-64.9%
36	Iowa	89.5	$71	-6.5%
37	Vermont	89.4	$69	100.0%
38	Kentucky	88.5	$39	-77.9%
39	Maine	88.5	$36	-97.3%
40	Arkansas	87.7	$9	-54.0%
41	Alabama	87.4	$0	-100.0%
41	Alaska	87.4	$0	0.0%
41	Delaware	87.4	$0	-100.0%
41	Hawaii	87.4	$0	0.0%
41	Idaho	87.4	$0	-100.0%
41	Louisiana	87.4	$0	-100.0%
41	Mississippi	87.4	$0	0.0%
41	South Dakota	87.4	$0	0.0%
41	West Virginia	87.4	$0	0.0%
41	Wyoming	87.4	$0	0.0%

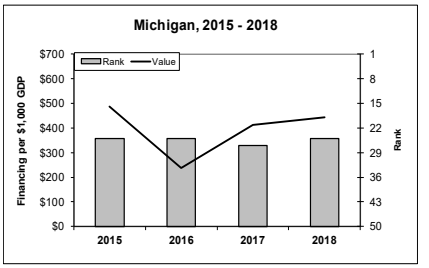
Expansion/Later stage venture capital financing per $1mill of private gross domestic product, 2018

Only about 3,000 U.S. small businesses per year receive venture capital, and funding focuses largely on two sectors: information technology and health care. States with small business growth other than in these sectors tend to score relatively low on this metric. The above table shows the total value of Series B and beyond VC funding and Growth Equity funding for in-state projects per $1mill. of private GDP.

Source: PriceWaterhouseCoopers

Midwest Performance, 2018

State	Financing per $1 mill. GDP	Rank
Illinois	$1,249	10
Ohio	$581	22
Michigan	**$444**	**25**
Indiana	$396	28
Wisconsin	$328	29



IPO FINANCING

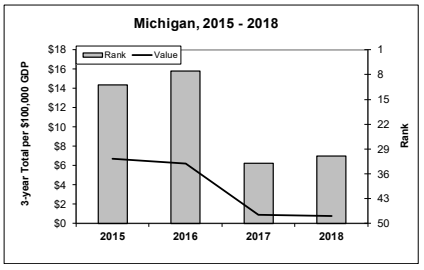
Rank	State	Score	3-year total per $100,000 GDP	Change, 2015-2018 (%)
	50-State Average		*2.6*	*$0.2*
1	Texas	*250.0*	$19.7	80.4%
2	Nevada	219.7	$15.5	814.0%
3	Massachusetts	195.9	$12.7	24.8%
4	California	142.5	$6.5	-14.0%
5	Iowa	142.0	$6.4	204.9%
6	New York	140.1	$6.2	21.6%
7	Wisconsin	134.0	$5.5	292.2%
8	Colorado	127.5	$4.7	-74.2%
9	Indiana	127.3	$4.7	196.9%
10	Minnesota	122.0	$4.1	522.8%
11	Georgia	117.8	$3.6	-56.3%
12	Utah	115.3	$3.3	-31.2%
13	North Carolina	111.8	$2.9	-53.7%
14	Virginia	111.1	$2.8	-68.2%
15	Kansas	111.0	$2.8	-75.6%
16	Kentucky	110.5	$2.7	100.0%
17	New Jersey	109.8	$2.6	-56.3%
18	Pennsylvania	109.8	$2.6	-50.7%
19	Maryland	108.6	$2.5	-52.9%
20	Florida	104.2	$2.0	-35.3%
21	South Carolina	104.1	$2.0	-49.1%
22	Connecticut	102.5	$1.8	-82.1%
23	Washington	101.0	$1.6	-35.3%
24	Idaho	100.2	$1.5	-65.4%
25	Arizona	100.0	$1.5	-76.4%
26	Delaware	100.0	$1.5	57.8%
27	Alabama	99.8	$1.5	-17.1%
28	Ohio	98.2	$1.3	42.0%
29	Louisiana	97.8	$1.2	100.0%
30	Tennessee	97.2	$1.2	-83.3%
31	**Michigan**	**94.2**	**$0.8**	**-88.1%**
32	Oregon	92.1	$0.6	100.0%
33	Illinois	90.7	$0.4	-91.0%
34	Oklahoma	90.6	$0.4	-91.3%
35	New Mexico	88.4	$0.1	100.0%
36	Alaska	87.4	$0.0	0.0%
36	Arkansas	87.4	$0.0	-100.0%
36	Hawaii	87.4	$0.0	-100.0%
36	Maine	87.4	$0.0	0.0%
36	Mississippi	87.4	$0.0	0.0%
36	Missouri	87.4	$0.0	-100.0%
36	Montana	87.4	$0.0	0.0%
36	Nebraska	87.4	$0.0	-100.0%
36	New Hampshire	87.4	$0.0	-100.0%
36	North Dakota	87.4	$0.0	0.0%
36	Rhode Island	87.4	$0.0	-100.0%
36	South Dakota	87.4	$0.0	0.0%
36	Vermont	87.4	$0.0	0.0%
36	West Virginia	87.4	$0.0	0.0%
36	Wyoming	87.4	$0.0	0.0%

Three-year total of initial public offerings per $100,000 gross domestic product, 2018

An initial public offering (IPO) occurs when a firm decides to sell stocks to the general public. Companies that go public tend to have established a good performance track record and therefore reflect successful new and/or improved products or processes. Although IPO numbers tend to be small, they provide a good indication of business growth. The above table shows IPOs accumulated over three years as a share of the state's most recent GDP. *Source: Crunchbase*

Midwest Performance, 2018

State	3-Year Total per $100,000 GDP	Rank
Wisconsin	$5.5	7
Indiana	$4.7	9
Ohio	$1.3	28
Michigan	**$0.8**	**31**
Illinois	$0.4	33



SBIC FINANCING

Rank	State	Score	Per $100,000 Small Business Payroll	Change, 2015-2018 (%)
	50-State Average		*$541*	*52.1%*
1	Utah	125.1	$997	-25.2%
2	Massachusetts	121.1	$932	-1.3%
3	Colorado	117.9	$879	-18.3%
4	Arizona	117.9	$879	97.3%
5	Illinois	117.2	$867	46.6%
6	California	116.8	$861	32.2%
7	Georgia	115.0	$831	-1.7%
8	Florida	113.1	$800	5.6%
9	Minnesota	112.6	$791	4.1%
10	Tennessee	112.1	$783	21.7%
11	North Carolina	109.7	$743	-22.1%
12	Maine	108.7	$727	244.5%
13	Texas	107.5	$708	-4.3%
14	South Carolina	107.0	$700	42.4%
15	New Jersey	106.7	$695	15.5%
16	Montana	106.3	$689	868.7%
17	Pennsylvania	105.3	$672	2.4%
18	Kansas	105.0	$667	37.3%
19	Nebraska	104.6	$659	220.7%
20	New Hampshire	103.3	$638	39.4%
21	Ohio	102.6	$627	63.5%
22	Idaho	101.5	$609	206.5%
23	Louisiana	101.5	$609	8.1%
24	Missouri	100.2	$588	-5.5%
25	New York	100.1	$586	1.7%
26	Oregon	99.9	$583	-20.9%
27	Wisconsin	98.7	$564	43.6%
28	Arkansas	95.3	$508	15.7%
29	Indiana	95.2	$505	8.6%
30	North Dakota	94.5	$494	855.1%
31	Connecticut	94.2	$490	-25.3%
32	Delaware	92.9	$468	-11.7%
33	**Michigan**	**92.2**	**$456**	**-19.9%**
34	Mississippi	91.6	$446	116.1%
35	Virginia	90.2	$424	39.6%
36	Oklahoma	89.9	$418	-3.3%
37	Kentucky	86.9	$369	89.1%
38	Vermont	86.0	$354	-49.1%
39	Maryland	85.8	$351	3.1%
40	Alabama	84.3	$327	-14.2%
41	New Mexico	82.2	$292	18.9%
42	South Dakota	81.3	$277	-62.6%
43	Rhode Island	81.2	$275	-34.6%
44	Washington	79.6	$249	-41.9%
45	Alaska	78.2	$226	-17.4%
46	Nevada	77.1	$208	-53.1%
47	Iowa	74.0	$157	-10.4%
48	Wyoming	69.1	$77	100.0%
49	Hawaii	64.4	$0	-100.0%
49	West Virginia	64.4	$0	-100.0%

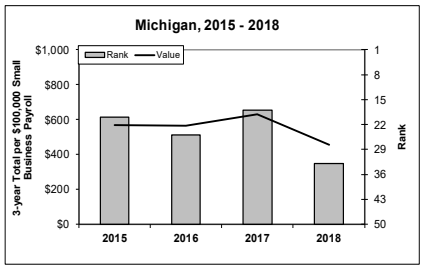
Three-year total of SBIC financing per $100,000 of small business payroll, 2018

Small Business Investment Companies (SBIC) are private investment companies supported and regulated by the U.S. Small Business Administration. Their aim is to create investment pools of risk capital in local markets. One sign of entrepreneurial capital dynamics is the SBIC's level of financing. The above table shows SBIC funding over three years in each state relative to the annual payroll of firms with < 500 employees.

Source: U.S. Small Business Association

Midwest Performance, 2018

State	Per $100,000 Small Business Payroll	Rank
Illinois	$867	5
Ohio	$627	21
Wisconsin	$564	27
Indiana	$505	29
Michigan	**$456**	**33**



SBIR FINANCING

Rank	State	Score	Per $100,000 small business payroll	Change, 2015-2018 (%)
	50-State Average		*$257.3*	*55.1%*
1	Massachusetts	194.0	$1,034.6	19.9%
2	New Mexico	164.3	$762.7	35.5%
3	New Hampshire	161.0	$732.9	-12.7%
4	Maryland	152.1	$651.4	17.5%
5	Colorado	150.9	$640.8	25.1%
6	Delaware	146.4	$599.9	96.5%
7	Virginia	142.7	$565.6	26.7%
8	Hawaii	129.1	$441.4	119.6%
9	California	128.7	$437.8	18.8%
10	Alabama	125.8	$411.9	2.6%
11	Utah	122.7	$383.0	24.2%
12	Montana	118.4	$344.2	-2.0%
13	North Carolina	117.3	$334.0	37.1%
14	Vermont	117.2	$332.6	27.2%
15	Oregon	114.6	$309.6	11.9%
16	Ohio	113.1	$295.5	19.8%
17	Pennsylvania	111.6	$281.4	27.1%
18	Arizona	109.9	$266.5	20.9%
19	Rhode Island	109.1	$258.8	26.8%
20	Washington	108.4	$252.7	35.8%
21	Connecticut	106.0	$230.6	15.1%
22	Wyoming	105.2	$223.0	125.1%
23	Kentucky	103.4	$206.8	36.4%
24	Minnesota	103.0	$203.1	39.9%
25	**Michigan**	**102.6**	**$199.1**	**11.3%**
26	New Jersey	97.4	$152.5	6.5%
27	New York	97.1	$148.9	17.9%
28	Texas	95.7	$136.9	15.7%
29	Georgia	95.5	$134.7	14.2%
30	Florida	95.2	$131.6	13.7%
31	Missouri	95.0	$130.6	67.9%
32	Illinois	94.9	$129.2	33.2%
33	West Virginia	94.2	$122.4	185.4%
34	Wisconsin	93.8	$119.0	-19.0%
35	Indiana	93.5	$116.8	-14.0%
36	Iowa	93.4	$115.9	26.3%
37	Arkansas	93.3	$114.2	-10.7%
38	South Carolina	92.7	$109.4	6.7%
39	Maine	91.8	$100.5	21.4%
40	South Dakota	91.3	$96.3	31.5%
41	Oklahoma	91.0	$93.4	35.6%
42	Tennessee	90.9	$92.8	14.2%
43	Nebraska	89.7	$81.4	131.4%
44	Idaho	89.5	$80.1	60.5%
45	Kansas	87.9	$65.1	-25.7%
46	Mississippi	87.5	$61.6	1234.3%
47	Nevada	87.2	$58.8	-31.8%
48	Louisiana	85.9	$46.7	80.6%
49	North Dakota	82.9	$19.4	120.3%
50	Alaska	81.6	$8.1	-65.8%

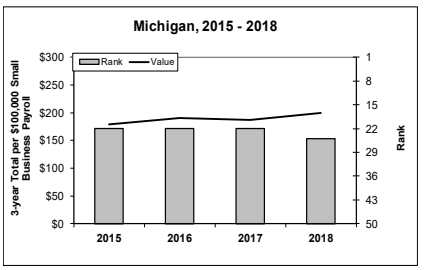
Three-year total of SBIR financing per $100,000 of gross domestic product, 2018

The federal Small Business Innovation Research program provides grants to small firms to conduct commercially viable R&D of breakthrough technology innovations, products, and processes. The above table gives the total value of SBIR funding accumulated over three years in each state proportional to the annual payroll of firms with less than 500 employees.

Source: U.S. Small Business Administration

Midwest Performance, 2018

State	Per $100,000 Small Business Payroll	Rank
Ohio	$295.5	16
Michigan	**$199.1**	**25**
Illinois	$129.2	32
Wisconsin	$119.0	34
Indiana	$116.8	35



STTR FINANCING

Rank	State	Score	Per $100,000 small business payroll	Change, 2015-2018 (%)
	50-State Average		*$42*	*49%*
1	New Mexico	194.7	$157	39%
2	Massachusetts	170.2	$123	5%
3	Utah	167.5	$120	112%
4	Delaware	164.2	$115	199%
5	Alabama	156.6	$105	22%
6	New Hampshire	151.6	$98	34%
7	Maryland	149.6	$95	47%
8	Colorado	145.7	$90	83%
9	Virginia	141.8	$85	26%
10	Montana	128.5	$67	27%
11	North Carolina	127.9	$66	53%
12	Ohio	122.6	$59	35%
13	California	116.8	$51	17%
14	Arizona	115.0	$48	-3%
15	Kentucky	112.2	$45	33%
16	Pennsylvania	111.4	$44	52%
17	Minnesota	105.3	$35	21%
18	Oregon	105.2	$35	-31%
19	Tennessee	104.7	$35	63%
20	Washington	103.7	$33	10%
21	Texas	101.7	$31	62%
22	**Michigan**	**101.7**	**$31**	**26%**
23	Connecticut	101.2	$30	-16%
24	Wisconsin	100.6	$29	27%
25	South Carolina	100.2	$28	-5%
26	Illinois	99.8	$28	32%
27	New Jersey	99.4	$27	21%
28	Indiana	99.2	$27	37%
29	Arkansas	99.1	$27	460%
30	Nebraska	98.2	$26	11%
31	Georgia	97.7	$25	-29%
32	New York	97.3	$25	20%
33	Missouri	96.9	$24	143%
34	Alaska	96.2	$23	381%
35	Wyoming	95.9	$23	-58%
36	Florida	94.7	$21	15%
37	Hawaii	92.6	$18	85%
38	Rhode Island	91.3	$16	7%
39	Mississippi	91.3	$16	-32%
40	Vermont	91.0	$16	50%
41	Kansas	90.9	$16	6%
42	South Dakota	90.0	$15	182%
43	Iowa	89.1	$13	14%
44	Nevada	88.8	$13	5%
45	Idaho	85.6	$9	-60%
46	Louisiana	84.8	$8	511%
47	Oklahoma	84.4	$7	-57%
48	Maine	84.1	$7	-50%
49	North Dakota	80.7	$2	-89%
50	West Virginia	80.2	$1	-84%

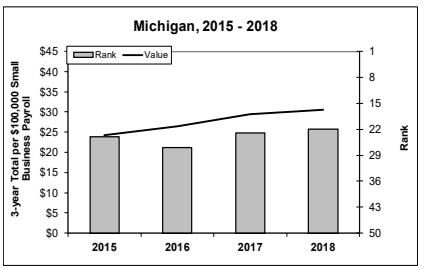
Three-year total of STTR financing per $100,000 of small business payroll, 2018

The federal Small Business Technology Transfer program provide grants to small firms to conduct commercially viable R&D of breakthrough technology innovations, products, and processes in collaboration with research universities and colleges. The table gives the total value of STTR funding accumulated over three years relative a state's annual payroll of firms with less than 500 employees.

Source: U.S. Small Business Administration

Midwest Performance, 2018

State	Per $100,000 Small Business Payroll	Rank
Ohio	$59	12
Michigan	**$31**	**22**
Wisconsin	$29	24
Illinois	$28	26
Indiana	$27	28



BANK COMMERCIAL AND INDUSTRIAL LENDING

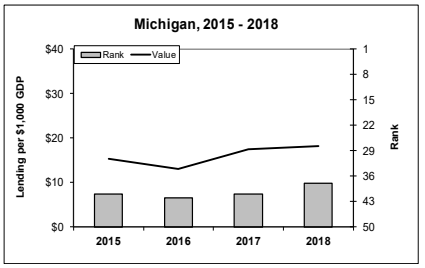
Rank	State	Score	Lending per $1,000 GDP	Change, 2015-2018 (%)
	50-StateAverage		*$228.1*	*8.1%*
1	South Dakota	*250.0*	$5,162.5	7.4%
1	Delaware	*250.0*	$1,849.7	8.8%
1	Utah	*250.0*	$642.4	-12.1%
1	Rhode Island	*250.0*	$536.5	21.9%
1	Ohio	*250.0*	$502.9	11.4%
1	North Carolina	*250.0*	$481.8	7.2%
7	Alabama	194.7	$282.2	-4.7%
8	Virginia	135.8	$134.2	0.0%
9	Mississippi	135.5	$133.5	11.9%
10	Illinois	122.2	$100.0	25.3%
11	Georgia	121.6	$98.5	-14.3%
12	Oklahoma	121.2	$97.4	9.6%
13	Missouri	114.2	$79.9	12.3%
14	Arkansas	114.2	$79.8	44.3%
15	North Dakota	113.5	$78.1	31.9%
16	Nebraska	111.1	$72.0	6.8%
17	Montana	110.6	$70.8	21.2%
18	Connecticut	109.3	$67.6	20.6%
19	Hawaii	107.7	$63.7	-15.0%
20	Tennessee	106.3	$60.0	46.7%
21	Iowa	104.1	$54.5	11.1%
22	Kansas	103.0	$51.8	8.6%
23	New York	102.8	$51.2	3.0%
24	Wisconsin	101.0	$46.8	-2.8%
25	Louisiana	100.1	$44.4	-7.4%
26	Texas	99.9	$44.1	-6.7%
27	Indiana	97.8	$38.8	22.9%
28	California	96.8	$36.1	-4.7%
29	Maine	96.6	$35.8	13.1%
30	Pennsylvania	96.5	$35.5	0.8%
31	West Virginia	95.7	$33.4	-20.3%
32	Massachusetts	95.1	$31.9	14.8%
33	Minnesota	93.3	$27.4	-4.4%
34	Kentucky	92.1	$24.3	8.1%
35	Nevada	91.5	$22.8	18.5%
36	Florida	91.4	$22.7	-10.6%
37	Wyoming	91.0	$21.7	22.0%
38	**Michigan**	**89.6**	**$18.2**	**18.6%**
39	New Mexico	89.2	$17.1	-25.5%
40	Alaska	89.2	$17.0	24.0%
41	Oregon	89.1	$16.9	-16.0%
42	New Jersey	89.1	$16.7	20.6%
43	Arizona	88.4	$15.1	5.4%
44	Washington	88.4	$15.0	4.0%
45	Colorado	88.1	$14.3	34.5%
46	South Carolina	87.6	$13.0	30.2%
47	Idaho	87.5	$12.7	23.2%
48	Maryland	87.4	$12.5	20.0%
49	Vermont	86.6	$10.5	-33.7%
50	New Hampshire	85.8	$8.5	-5.5%

Total bank lending to commercial and industrial customers per $1,000 gross domestic product, 2018

Commercial and industrial lending by banks forms the backbone of debt financing to businesses of various sizes and needs. Although the above data is reported by bank headquarters, therefore states with fewer bank head offices will not perform as well, a factor worth taking into account. The adjacent table shows the total commercial and industrial lending per $1,000 of GDP. *Source: Federal Deposit Insurance Corporation*

Midwest Performance, 2018

State	Lending per $1,000 GDP	Rank
Ohio	$502.9	5
Illinois	$100.0	10
Wisconsin	$46.8	24
Indiana	$38.8	27
Michigan	**$18.2**	**38**



PRIVATE LENDING TO SMALL BUSINESSES

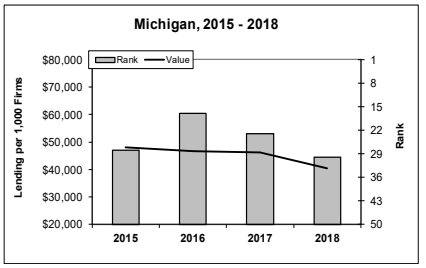
Rank	State	Score	Lending per 1,000 Firms	Change, 2015-2018 (%)
	50-State Average		*$44,621*	*-14.3%*
1	South Dakota	154.2	$73,291	-51.8%
2	Tennessee	139.6	$64,981	12.7%
3	Alabama	139.5	$64,910	-4.1%
4	Mississippi	139.3	$64,821	-15.3%
5	North Dakota	130.3	$59,696	-46.3%
6	Texas	126.5	$57,494	5.6%
7	Maine	122.3	$55,154	-13.7%
8	North Carolina	120.4	$54,022	-17.6%
9	South Carolina	118.5	$52,959	-3.8%
10	Idaho	118.1	$52,745	-28.9%
11	Montana	116.9	$52,040	-46.3%
12	Oklahoma	114.7	$50,812	-27.8%
13	Louisiana	113.7	$50,249	-9.8%
14	Hawaii	110.9	$48,646	-15.4%
15	Indiana	110.3	$48,263	-19.3%
16	Georgia	109.9	$48,057	-10.1%
17	Nebraska	108.2	$47,086	-61.2%
18	Pennsylvania	106.5	$46,115	-10.8%
19	West Virginia	105.8	$45,751	-6.7%
20	Colorado	105.5	$45,530	-8.1%
21	Kentucky	104.3	$44,873	-8.7%
22	Missouri	104.3	$44,852	-24.8%
23	Virginia	102.7	$43,986	-9.7%
24	Wyoming	100.6	$42,762	-33.3%
25	California	100.1	$42,505	-7.5%
26	Ohio	99.9	$42,335	-6.2%
27	Arizona	99.5	$42,122	0.1%
28	Delaware	99.2	$41,954	-5.3%
29	Alaska	98.8	$41,718	-21.1%
30	**Michigan**	**96.6**	**$40,455**	**-15.8%**
31	Florida	96.1	$40,170	16.1%
32	New Jersey	96.0	$40,151	2.3%
33	Maryland	95.6	$39,899	1.3%
34	Connecticut	95.4	$39,823	0.0%
35	Illinois	95.2	$39,683	-9.3%
36	Wisconsin	93.2	$38,540	3.3%
37	Kansas	92.4	$38,062	-19.2%
38	Iowa	91.9	$37,803	-54.4%
39	Minnesota	90.9	$37,253	-23.4%
40	Washington	89.9	$36,653	-19.1%
41	Nevada	88.4	$35,823	-13.4%
42	New Hampshire	87.2	$35,148	-2.1%
43	New Mexico	86.7	$34,865	-1.5%
44	Oregon	85.9	$34,359	-26.6%
45	Vermont	84.5	$33,563	-10.6%
46	Massachusetts	84.0	$33,304	-7.5%
47	Arkansas	82.6	$32,511	-24.9%
48	Utah	81.6	$31,914	-16.0%
49	Rhode Island	80.0	$31,014	-2.6%
50	New York	78.8	$30,350	5.1%

Private loans to small businesses per 1,000 firms, 2018

While public programs are helpful, the bulk of small business lending for startup and operation comes from private capital markets. Banks and private credit institutions play a particularly important role to finance businesses with less than 500 employees. The above table shows the total value of private loans to small businesses in each state in relation to the total number of firms. *Source: U.S. Small Business Administration*

Midwest Performance, 2018

State	Lending per 1,000 Firms	Rank
Indiana	$48,263	15
Ohio	$42,335	26
Michigan	**$40,455**	**30**
Illinois	$39,683	35
Wisconsin	$38,540	36



BUSINESS INCUBATORS*

Rank	State	Score	Incubators per $10,000 firms	Change, 2014-2017 (%)
	50-State Average		*4*	(n/a)
1	Oregon	138.1	9	(n/a)
2	New Mexico	129.9	8	(n/a)
3	Massachusetts	126.5	7	(n/a)
4	Colorado	124.5	7	(n/a)
5	Tennessee	116.8	6	(n/a)
6	Hawaii	115.9	6	(n/a)
7	New York	115.5	6	(n/a)
8	Maryland	111.6	6	(n/a)
9	Alabama	111.3	6	(n/a)
10	California	108.7	6	(n/a)
11	Georgia	108.6	6	(n/a)
12	Wisconsin	108.6	6	(n/a)
13	North Carolina	108.0	5	(n/a)
14	**Michigan**	**107.7**	**5**	**(n/a)**
15	Ohio	107.1	5	(n/a)
16	Virginia	106.9	5	(n/a)
17	Washington	106.7	5	(n/a)
18	Florida	105.8	5	(n/a)
19	Pennsylvania	105.8	5	(n/a)
20	Oklahoma	104.7	5	(n/a)
21	Arizona	103.4	5	(n/a)
22	South Carolina	103.3	5	(n/a)
23	Missouri	103.1	5	(n/a)
24	Louisiana	102.2	5	(n/a)
25	Maine	101.3	5	(n/a)
26	West Virginia	98.7	4	(n/a)
27	Vermont	98.5	4	(n/a)
28	Utah	97.8	4	(n/a)
29	Mississippi	97.3	4	(n/a)
30	New Hampshire	97.0	4	(n/a)
31	Illinois	96.6	4	(n/a)
32	Iowa	96.1	4	(n/a)
33	Indiana	93.5	4	(n/a)
34	Rhode Island	92.1	4	(n/a)
35	Connecticut	90.1	3	(n/a)
36	Texas	89.1	3	(n/a)
37	Minnesota	88.9	3	(n/a)
38	North Dakota	85.6	3	(n/a)
39	Kentucky	83.5	3	(n/a)
40	Nebraska	83.5	3	(n/a)
41	Kansas	83.3	3	(n/a)
42	South Dakota	82.9	3	(n/a)
43	Nevada	81.2	3	(n/a)
44	Delaware	80.6	2	(n/a)
45	Idaho	79.6	2	(n/a)
46	New Jersey	78.4	2	(n/a)
47	Arkansas	78.1	2	(n/a)
48	Montana	77.9	2	(n/a)
49	Wyoming	73.5	2	(n/a)
50	Alaska	68.9	1	(n/a)

Business incubators per 10,000 firms, 2017

A business incubator is an enterprise whose mission is to help build promising fledgling companies into successful businesses. Often sponsored by government or nonprofit agencies, the facilities and services of business incubators give entrepreneurs a head start on the way to being profitable, thereby helping to build the local economy. The above table shows the number of incubators per 10,000 firms in each state.
Source: National Business Incubation Association

Midwest Performance, 2017

State	Incubators per 10,000 Firms	Rank
Wisconsin	5.5	12
Michigan	**5.4**	**14**
Ohio	5.4	15
Illinois	4.2	31
Indiana	3.9	33

GENERAL BUSINESS GROWTH

Midwest Performance

	2018	2016	2014
Michigan	***	****	****
Ohio	***	****	***
Illinois	***	****	****
Indiana	**	***	****
Wisconsin	**	***	***

Rank	State	2018	2016	2014
1	California	*****	*****	*****
2	Idaho	*****	****	****
3	Washington	****	*****	*****
4	Oregon	****	****	****
5	Florida	****	*****	****
6	Texas	****	****	*****
7	Colorado	****	****	****
8	New York	****	*****	*****
9	Georgia	****	****	****
10	North Carolina	****	****	***
11	Minnesota	****	****	****
12	Arizona	***	***	***
13	**Michigan**	***	****	****
14	Hawaii	***	****	***
15	Ohio	***	****	***
16	Illinois	***	****	****
17	Maine	***	***	***
18	Massachusetts	***	****	***
19	Vermont	***	****	**
20	Nevada	***	***	***
21	Utah	***	***	**
22	South Dakota	***	****	****
23	Virginia	***	***	***
24	Maryland	***	***	**
25	Tennessee	***	****	****
26	Pennsylvania	***	***	***
27	New Hampshire	***	***	***
28	South Carolina	***	***	***
29	New Jersey	***	***	***
30	Kansas	**	***	**
31	Indiana	**	***	****
32	Alabama	**	***	**
33	Montana	**	***	***
34	Iowa	**	****	****
35	Rhode Island	**	***	**
36	Connecticut	**	***	***
37	West Virginia	**	*	*
38	Kentucky	**	***	***
39	New Mexico	**	**	**
40	Wisconsin	**	***	***
41	Wyoming	**	*	*
42	Arkansas	**	**	***
43	Alaska	**	**	**
44	Missouri	**	***	***
45	Nebraska	**	**	***
46	Louisiana	**	**	**
47	Delaware	**	***	**
48	Mississippi	**	**	**
49	Oklahoma	*	**	****
50	North Dakota	*	*	*****

GROSS DOMESTIC PRODUCT GROWTH

Rank	State	Score	Growth Rate	Change, 2015-2018 (Abs.)
	50-State Average		*3.6%*	*0.3%*
1	Washington	139.9	6.4%	0.9%
2	Utah	135.6	6.0%	1.0%
3	Oregon	130.7	5.7%	0.5%
4	California	128.1	5.5%	-0.5%
5	Nevada	128.1	5.5%	1.4%
6	Arizona	127.4	5.4%	2.0%
7	Idaho	125.5	5.3%	0.7%
8	Colorado	125.4	5.3%	0.1%
9	Florida	122.8	5.1%	-0.1%
10	Georgia	119.6	4.9%	-0.1%
11	Texas	118.9	4.8%	1.2%
12	South Carolina	117.2	4.7%	-0.5%
13	Hawaii	111.8	4.3%	0.3%
14	Massachusetts	111.2	4.2%	0.0%
15	Tennessee	109.5	4.1%	-0.3%
16	Maine	109.1	4.1%	1.2%
17	Maryland	107.7	4.0%	0.9%
18	New York	106.7	3.9%	-0.1%
19	Minnesota	105.8	3.8%	0.0%
20	North Carolina	105.7	3.8%	-0.8%
21	Indiana	102.4	3.6%	0.1%
22	**Michigan**	**102.4**	**3.6%**	**-0.7%**
23	New Hampshire	102.2	3.6%	-0.4%
24	Ohio	100.5	3.4%	-0.7%
25	Alabama	100.4	3.4%	1.0%
26	Kansas	99.6	3.4%	0.6%
27	New Mexico	99.1	3.3%	2.0%
28	West Virginia	98.9	3.3%	2.9%
29	Pennsylvania	98.2	3.3%	-0.2%
30	Louisiana	98.2	3.3%	3.1%
31	Virginia	97.9	3.3%	0.4%
32	Wisconsin	97.5	3.2%	-0.5%
33	Oklahoma	94.7	3.0%	0.5%
34	Montana	94.2	3.0%	-0.2%
35	New Jersey	94.2	3.0%	-0.1%
36	Illinois	93.9	3.0%	-0.3%
37	South Dakota	93.1	2.9%	-0.3%
38	Mississippi	91.1	2.7%	0.7%
39	Kentucky	90.9	2.7%	-0.1%
40	Alaska	90.3	2.7%	6.9%
41	Vermont	90.1	2.7%	0.6%
42	Missouri	90.0	2.7%	-0.5%
43	Arkansas	89.7	2.6%	-0.3%
44	Nebraska	87.0	2.4%	-1.6%
45	Rhode Island	83.8	2.2%	-1.0%
46	Iowa	81.9	2.1%	-2.3%
47	Connecticut	80.6	2.0%	-0.2%
48	Wyoming	72.0	1.3%	1.9%
49	Delaware	70.1	1.2%	-3.6%
50	North Dakota	65.3	0.8%	-1.7%

Annual growth in nominal gross domestic product, 2018, three-year average.

Ultimately, economic prosperity hinges on economic growth, and economic growth reflects the health of the overall economic system. Recent performance can often be a predictor of near-term trends. The above table shows the average of the last three year's of annual growth in each state's nominal gross domestic product.

Source: U.S. Bureau of Economic Analysis

MANUFACTURING CAPITAL INVESTMENT GROWTH

Rank	State	Score	Growth Rate	Change, 2013-2016 (Abs.)
	50-State Average		*3.5%*	*-6.4%*
1	Louisiana	139.6	26.3%	16.3%
2	Alaska	136.1	24.3%	36.7%
3	Montana	132.3	22.2%	-16.0%
4	Wyoming	122.6	16.5%	12.7%
5	Idaho	116.4	13.0%	-16.8%
6	Iowa	115.4	12.4%	1.6%
7	Delaware	115.2	12.3%	-15.5%
8	Florida	114.8	12.1%	10.5%
9	Pennsylvania	112.2	10.6%	5.0%
10	Oklahoma	110.4	9.5%	-0.4%
11	New Jersey	110.0	9.2%	8.8%
12	Alabama	108.9	8.6%	6.4%
13	Virginia	108.6	8.4%	7.1%
14	Ohio	108.5	8.4%	-2.3%
15	Connecticut	108.4	8.4%	4.5%
16	West Virginia	108.4	8.3%	-0.2%
17	Rhode Island	107.0	7.5%	5.4%
18	Texas	106.3	7.1%	1.1%
19	Arkansas	105.6	6.7%	3.8%
20	Hawaii	105.6	6.7%	-4.8%
21	Colorado	104.7	6.2%	0.4%
22	South Dakota	104.3	6.0%	-3.3%
23	Kentucky	100.6	3.9%	-15.4%
24	Maine	100.4	3.7%	-4.4%
25	Arizona	100.1	3.6%	-34.7%
26	Maryland	99.9	3.4%	19.8%
27	Massachusetts	99.5	3.2%	-1.2%
28	Nebraska	99.2	3.0%	2.0%
29	Mississippi	97.0	1.8%	10.3%
30	Minnesota	95.9	1.1%	-2.6%
31	North Dakota	95.8	1.1%	-7.9%
32	Tennessee	95.5	0.9%	-9.4%
33	Illinois	95.1	0.7%	1.8%
34	North Carolina	94.1	0.1%	-9.7%
35	Utah	93.8	-0.1%	6.5%
36	Vermont	93.4	-0.3%	-10.8%
37	Washington	88.0	-3.4%	-0.5%
38	Oregon	87.4	-3.8%	-70.7%
39	Nevada	87.2	-3.9%	-4.8%
40	Wisconsin	87.0	-4.0%	-16.7%
41	New Hampshire	86.4	-4.4%	-14.1%
42	South Carolina	85.8	-4.7%	-22.3%
43	California	85.7	-4.8%	-11.2%
44	Missouri	83.2	-6.2%	-25.8%
45	Georgia	82.7	-6.5%	-14.0%
46	**Michigan**	**78.4**	**-9.0%**	**-18.4%**
47	Kansas	77.8	-9.3%	-30.5%
48	New Mexico	71.1	-13.2%	7.5%
49	New York	69.4	-14.1%	-48.6%
50	Indiana	66.5	-15.8%	-53.6%

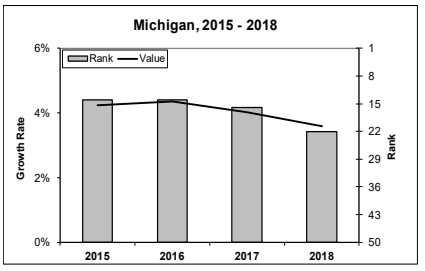
Growth in nominal capital expenditures per production employee, 2016, three-year average.

Manufacturing firms' investment in new capital equipment often indicates innovations and increased efficiency and productivity. The above table shows the annual growth in nominal capital expenditures in manufacturing per production employee, averaged over three years.

Source: U.S. Census Bureau

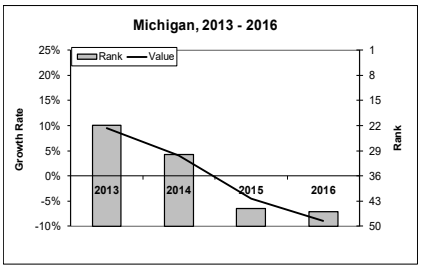
Midwest Performance, 2018

State	Growth Rate	Rank
Indiana	3.6%	21
Michigan	**3.6%**	**22**
Ohio	3.4%	24
Wisconsin	3.2%	32
Illinois	3.0%	36



Midwest Performance, 2016

State	Growth Rate	Rank
Ohio	8.4%	14
Illinois	0.7%	33
Wisconsin	-4.0%	40
Michigan	**-9.0%**	**46**
Indiana	-15.8%	50



FOREIGN BUSINESS EMPLOYMENT GROWTH

Rank	State	Score	GrowthRate	Change, 2014-2017(Abs.)
	50-StateAverage		*3.4%*	*1.1%*
1	Missouri	142.3	12.3%	9.7%
2	New Mexico	137.4	11.2%	19.1%
3	**Michigan**	**132.8**	**10.2%**	**0.7%**
4	Minnesota	129.7	9.5%	5.9%
5	Mississippi	125.8	8.7%	0.5%
6	Hawaii	125.2	8.6%	2.0%
7	Washington	121.1	7.7%	3.3%
8	North Carolina	118.4	7.1%	7.8%
9	Georgia	114.4	6.2%	8.6%
10	California	113.4	6.0%	7.4%
11	Kansas	111.7	5.6%	25.3%
12	Montana	109.0	5.0%	12.0%
13	Arizona	108.7	5.0%	0.4%
14	Idaho	108.0	4.8%	4.8%
15	Connecticut	107.9	4.8%	2.3%
16	Florida	106.9	4.6%	-9.5%
17	Virginia	105.6	4.3%	-7.7%
18	West Virginia	105.2	4.2%	4.2%
19	Ohio	103.3	3.8%	5.0%
20	Nebraska	102.3	3.6%	3.6%
21	Pennsylvania	102.3	3.6%	7.4%
22	Indiana	102.2	3.6%	-9.1%
23	Kentucky	101.7	3.4%	-2.8%
24	Texas	100.0	3.1%	0.4%
25	Colorado	98.3	2.7%	-7.7%
26	South Carolina	98.2	2.7%	8.3%
27	New Jersey	98.0	2.6%	-3.5%
28	South Dakota	97.8	2.6%	1.1%
29	Alabama	97.5	2.5%	2.7%
30	Rhode Island	97.1	2.4%	-3.8%
31	Illinois	97.0	2.4%	-1.7%
32	Maine	96.0	2.2%	-1.4%
33	Massachusetts	95.2	2.0%	-1.4%
34	Oregon	94.9	2.0%	-6.4%
35	New York	94.0	1.8%	0.6%
36	Tennessee	93.7	1.7%	-4.8%
37	Wisconsin	93.2	1.6%	-7.2%
38	Louisiana	91.9	1.3%	9.5%
39	Arkansas	91.8	1.3%	4.1%
40	New Hampshire	88.4	0.6%	-3.8%
41	Nevada	83.1	-0.6%	-9.9%
42	Maryland	81.6	-0.9%	-3.6%
43	Alaska	79.2	-1.5%	-1.5%
44	Iowa	74.3	-2.5%	-1.1%
45	Oklahoma	68.9	-3.7%	-4.5%
46.0	Utah	67.4	-4.0%	-11.4%
47.0	Delaware	65.3	-4.5%	-3.6%
(n/a)	Wyoming	(n/a)	(n/a)	(n/a)
(n/a)	Vermont	(n/a)	(n/a)	(n/a)
(n/a)	North Dakota	(n/a)	(n/a)	(n/a)

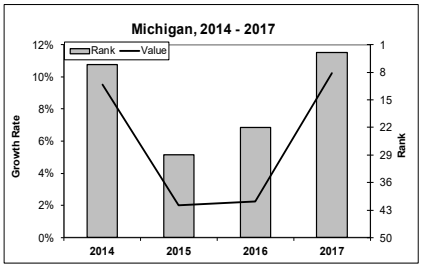
Growth in employment in foreign-owned firms as a percentage of total employment, 2017

As the world's economy becomes increasingly interdependent, the impact is not just increased trade. Large multinational firms locate production facilities across the globe. Foreign investment can be an important source of well-paying jobs. The above table gives a measurement of the year-to-year growth in the percentage of workers in each state who work for bank and non-bank, foreign-majority-owned companies.

Source: U.S. Bureau of Economic Analysis

Midwest Performance, 2017

State	Growth Rate	Rank
Michigan	**10.2%**	**3**
Ohio	3.8%	19
Indiana	3.6%	22
Illinois	2.4%	31
Wisconsin	1.6%	37



EXPORT INTENSITY GROWTH

Rank	State	Score	Growth Rate	Change, 2014-2017 (Abs.)
	50-State Average		*-3.8%*	*-2.7%*
1	Wyoming	217.0	8.9%	15.5%
2	Alaska	163.5	2.9%	-4.6%
3	West Virginia	161.6	2.6%	10.1%
4	Oklahoma	149.1	1.2%	2.6%
5	New Mexico	137.4	-0.1%	-1.3%
6	North Dakota	132.6	-0.6%	4.1%
7	**Michigan**	**121.1**	**-1.9%**	**-0.2%**
8	Rhode Island	113.6	-2.8%	-0.1%
9	Maryland	113.4	-2.8%	-1.2%
10	Connecticut	113.3	-2.8%	-4.6%
11	Texas	112.9	-2.8%	-2.0%
12	Ohio	112.6	-2.9%	-2.1%
13	New Hampshire	111.5	-3.0%	-2.5%
14	Kentucky	110.5	-3.1%	-3.6%
15	Missouri	108.6	-3.3%	-5.6%
16	Alabama	106.6	-3.5%	-3.2%
17	New York	106.2	-3.6%	-4.6%
18	New Jersey	103.8	-3.9%	-1.9%
19	Massachusetts	103.6	-3.9%	-3.9%
20	Indiana	102.8	-4.0%	-4.2%
21	South Carolina	102.2	-4.0%	-2.1%
22	Arkansas	101.4	-4.1%	-6.0%
23	Colorado	101.0	-4.2%	-2.7%
24	Pennsylvania	100.8	-4.2%	-3.7%
25	Florida	100.4	-4.2%	-5.6%
26	Georgia	99.6	-4.3%	-3.8%
27	Minnesota	99.5	-4.3%	-4.7%
28	Virginia	99.1	-4.4%	-3.5%
29	North Carolina	98.9	-4.4%	-3.3%
30	Vermont	97.8	-4.5%	-0.3%
31	Utah	96.7	-4.7%	8.4%
32	Tennessee	96.3	-4.7%	-5.6%
33	California	95.8	-4.8%	-5.9%
34	Idaho	94.1	-5.0%	-3.1%
35	Mississippi	92.2	-5.2%	-4.8%
36	Nevada	91.4	-5.3%	-6.7%
37	Delaware	90.8	-5.3%	-3.2%
38	Iowa	90.5	-5.3%	-4.5%
39	Maine	88.8	-5.5%	-2.9%
40	Hawaii	88.1	-5.6%	-8.2%
41	Wisconsin	87.9	-5.6%	-5.0%
42	Arizona	87.7	-5.7%	-5.3%
43	Oregon	87.4	-5.7%	2.7%
44	Louisiana	87.2	-5.7%	-7.9%
45	Kansas	85.2	-6.0%	-3.3%
46	Illinois	80.2	-6.5%	-4.6%
47	South Dakota	78.5	-6.7%	-2.4%
48	Nebraska	76.9	-6.9%	-3.4%
49	Montana	68.6	-7.8%	-7.8%
50	Washington	63.5	-8.4%	-11.6%

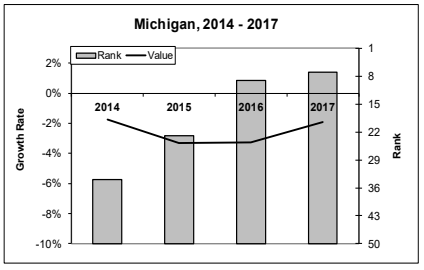
Growth in export value as a percentage of gross domestic product, 2017, three-year average.

Healthy trade is a hallmark of the global economy. States with a manufacturing base that can produce for global demand are well positioned for sustained growth. The above table shows the average over the last three years in the one-year growth rate in the share of each state's gross domestic product that is accounted for by merchandise export income by estimated origin of production.

Source: Brookings Institution

Midwest Performance, 2017

State	Growth Rate	Rank
Michigan	**-1.9%**	**7**
Ohio	-2.9%	12
Indiana	-4.0%	20
Wisconsin	-5.6%	41
Illinois	-6.5%	46



EXPORT-RELATED JOBS

Rank	State	Score	Share of Total Private Jobs	Change, 2014-2017 (%)
	50-State Average		*3.8%*	*-6.4%*
1	Hawaii	171.2	8.0%	-8.9%
2	New York	137.0	5.9%	-4.1%
3	California	136.7	5.8%	-5.1%
4	Massachusetts	129.9	5.4%	-4.3%
5	Washington	128.5	5.3%	-18.7%
6	Oregon	127.4	5.3%	-9.5%
7	Iowa	125.7	5.2%	-4.1%
8	Indiana	121.7	4.9%	-6.9%
9	Nebraska	118.4	4.7%	-8.6%
10	Connecticut	116.6	4.6%	-6.9%
11	Nevada	116.1	4.6%	-12.8%
12	**Michigan**	**115.7**	**4.5%**	**5.2%**
13	Illinois	115.2	4.5%	-10.4%
14	North Carolina	113.1	4.4%	-6.3%
15	Delaware	112.0	4.3%	-6.3%
16	Florida	110.3	4.2%	-9.1%
17	Texas	110.0	4.2%	-6.9%
18	Georgia	109.2	4.1%	-5.7%
19	Minnesota	109.0	4.1%	-6.6%
20	South Dakota	108.8	4.1%	-12.8%
21	New Jersey	107.6	4.0%	-6.1%
22	Wisconsin	104.2	3.8%	-6.5%
23	Ohio	103.4	3.8%	-5.0%
24	New Hampshire	103.1	3.7%	-3.3%
25	Pennsylvania	100.9	3.6%	-5.6%
26	Idaho	99.1	3.5%	-4.4%
27	South Carolina	98.5	3.5%	-5.9%
28	Kansas	98.5	3.5%	-15.3%
29	Alabama	97.8	3.4%	-3.1%
30	Tennessee	97.8	3.4%	-4.2%
31	Kentucky	97.6	3.4%	0.0%
32	Maryland	97.2	3.4%	-3.2%
33	Arizona	97.0	3.4%	-7.8%
34	Utah	96.8	3.3%	-6.6%
35	Colorado	96.2	3.3%	-10.3%
36	Arkansas	95.5	3.3%	-4.9%
37	North Dakota	94.2	3.2%	-15.6%
38	Missouri	93.9	3.2%	-10.1%
39	Louisiana	93.7	3.2%	-10.7%
40	Virginia	92.4	3.1%	-7.3%
41	Wyoming	91.9	3.0%	6.0%
42	Mississippi	89.9	2.9%	-5.5%
43	Rhode Island	87.7	2.8%	-6.3%
44	Oklahoma	87.4	2.8%	-5.3%
45	West Virginia	84.4	2.6%	3.9%
46	Vermont	83.9	2.5%	-3.7%
47	New Mexico	81.3	2.4%	0.7%
48	Alaska	79.9	2.3%	-4.5%
49	Montana	79.6	2.3%	-11.4%
50	Maine	75.0	2.0%	-8.8%

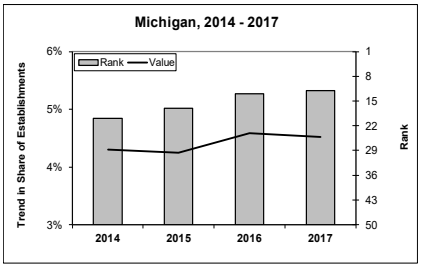
Percent of private industry jobs that are export related, 2017

International business activity exposes the state to the woes of exchange rate fluctuations, but it can also be a substantial contributor to a state's workforce. The above table shows the percent of private industry jobs that are related to the export of manufactured products and services.

Source: U.S. International Trade Administration

Midwest Performance, 2017

State	Share of Total Private Jobs	Rank
Indiana	4.9%	8
Michigan	**4.5%**	**12**
Illinois	4.5%	13
Wisconsin	3.8%	22
Ohio	3.8%	23



LARGE BUSINESS PAYROLL GROWTH

Rank	State	Score	Growth Rate	Change, 2013-2016 (Abs.)
	50-State Average		*3.2%*	*-0.7%*
1	Utah	120.3	6.0%	1.3%
2	Florida	119.5	5.9%	2.9%
3	Washington	119.5	5.9%	1.5%
4	Georgia	118.8	5.8%	2.1%
5	California	117.9	5.7%	1.1%
6	Delaware	116.1	5.5%	3.4%
7	South Carolina	115.4	5.4%	1.8%
8	Tennessee	113.2	5.2%	0.5%
9	Nevada	112.2	5.1%	3.1%
10	Oregon	111.3	5.0%	4.1%
11	Hawaii	111.2	4.9%	1.6%
12	Massachusetts	110.1	4.8%	1.5%
13	Iowa	110.0	4.8%	-0.2%
14	New Hampshire	109.2	4.7%	2.0%
15	North Carolina	109.2	4.7%	1.2%
16	New York	107.3	4.5%	0.9%
17	**Michigan**	**107.2**	**4.5%**	**0.1%**
18	Arizona	107.1	4.5%	0.9%
19	Idaho	104.6	4.2%	0.6%
20	Maryland	104.3	4.1%	1.5%
21	Colorado	103.7	4.1%	-0.6%
22	Wisconsin	103.0	4.0%	0.0%
23	Maine	101.2	3.8%	2.3%
24	Minnesota	100.7	3.7%	-0.7%
25	Nebraska	100.1	3.7%	-2.1%
26	Illinois	99.9	3.6%	-0.1%
27	Rhode Island	99.8	3.6%	1.5%
28	Ohio	99.5	3.6%	-1.1%
29	Indiana	98.9	3.5%	-0.1%
30	Alabama	98.0	3.4%	0.0%
31	Pennsylvania	97.3	3.3%	-0.4%
32	Virginia	95.3	3.1%	0.7%
33	Vermont	94.8	3.0%	0.7%
34	Kentucky	94.4	3.0%	-0.4%
35	New Jersey	93.8	2.9%	-0.1%
36	South Dakota	93.0	2.8%	-3.4%
37	Kansas	92.9	2.8%	-1.3%
38	Missouri	90.8	2.6%	-0.3%
39	Montana	89.2	2.4%	-2.3%
40	Connecticut	87.4	2.2%	1.3%
41	Arkansas	86.6	2.1%	-1.9%
42	Mississippi	83.1	1.7%	-1.4%
43	Texas	78.3	1.1%	-6.9%
44	New Mexico	75.9	0.8%	-1.1%
45	Louisiana	72.0	0.4%	0.0%
46	West Virginia	69.5	0.1%	-2.4%
47	Oklahoma	57.8	-1.3%	-10.1%
48	North Dakota	55.0	-1.6%	-18.8%
49	Wyoming	40.3	-3.3%	-4.6%
50	Alaska	8.3	-7.0%	-10.7%

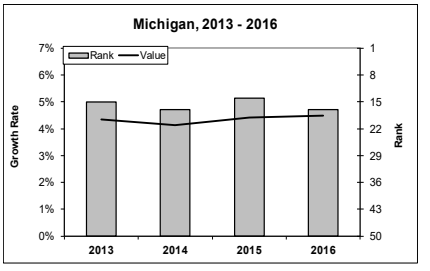
Growth in total nominal payroll of firms with 500 or more employees, 2016, three-year average.

While new businesses are key to sustained growth, older, established large firms tend to pay high wages and offer strong benefits packages. Further, large businesses are invariably the customers of small businesses. As they grow, so does the whole local/regional economy. The above table shows annual growth in the total payroll of firms with 500 or more employees, averaged over three years.

Source: U.S. Census Bureau

Midwest Performance, 2016

State	Growth Rate	Rank
Michigan	**4.5%**	**17**
Wisconsin	4.0%	22
Illinois	3.6%	26
Ohio	3.6%	28
Indiana	3.5%	29



BUILDING PERMITS GROWTH

Rank	State	Score	Growth Rate	Change, 2015-2018 (Abs.)
	50-State Average		*3.1%*	*-11.3%*
1	Idaho	138.3	14.5%	5.3%
2	Arizona	127.4	11.4%	14.3%
3	Utah	122.4	9.9%	-17.5%
4	Rhode Island	121.4	9.7%	-6.4%
5	Kentucky	120.4	9.4%	-14.5%
6	Colorado	118.7	8.9%	-14.2%
7	Minnesota	118.6	8.8%	-16.5%
8	Alaska	118.3	8.8%	-19.0%
9	Georgia	116.6	8.3%	-0.9%
10	North Carolina	116.2	8.2%	-11.9%
11	Maine	115.5	8.0%	-8.8%
12	Florida	114.9	7.8%	4.4%
13	Nevada	111.7	6.9%	3.8%
14	Ohio	110.0	6.4%	-4.0%
15	Arkansas	108.2	5.9%	2.1%
16	New Hampshire	108.0	5.8%	-13.4%
17	Indiana	105.0	4.9%	-6.8%
18	Louisiana	104.0	4.7%	-8.1%
19	California	103.6	4.6%	-19.9%
20	Illinois	103.0	4.4%	-21.0%
21	Delaware	102.9	4.3%	-24.7%
22	Wisconsin	102.6	4.3%	-12.6%
23	Tennessee	101.8	4.0%	-12.7%
24	Washington	101.7	4.0%	-13.3%
25	Virginia	100.1	3.5%	-4.2%
26	Kansas	99.9	3.5%	-16.9%
27	South Dakota	99.8	3.5%	-5.7%
28	Oregon	99.6	3.4%	-6.0%
29	**Michigan**	**99.5**	**3.4%**	**-7.3%**
30	South Carolina	99.3	3.3%	-0.6%
31	Maryland	98.3	3.0%	-2.0%
32	West Virginia	94.8	2.0%	-24.2%
33	Vermont	94.8	2.0%	-15.8%
34	Texas	94.7	2.0%	-16.0%
35	Alabama	93.2	1.6%	-9.1%
36	New Mexico	92.9	1.5%	-2.7%
37	Montana	90.7	0.8%	-7.0%
38	Pennsylvania	90.1	0.7%	-11.5%
39	Mississippi	89.3	0.4%	-6.5%
40	Wyoming	85.2	-0.7%	-19.1%
41	Hawaii	85.1	-0.7%	-28.8%
42	Iowa	84.5	-0.9%	3.7%
43	Massachusetts	84.2	-1.0%	-7.6%
44	Nebraska	83.1	-1.3%	-6.4%
45	New Jersey	78.1	-2.8%	-7.1%
46	Missouri	77.8	-2.9%	-19.7%
47	Oklahoma	76.4	-3.2%	-22.1%
48	Connecticut	63.9	-6.9%	-24.6%
49	New York	39.56894	-13.8%	-25.2%
50	North Dakota	27.11763	-17.4%	-58.2%

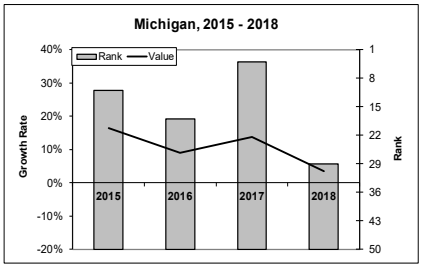
Growth in number of new privately owned housing units per 100,000 residents, 2018, three-year average.

Building permits are seen as an early indicator for the health of the housing market, a sector that tends to be one of the first to respond to fluctuations in the economy. The construction of new privately owned housing is a good indicator of general confidence in the market. The above table shows the three-year average in the annual growth in the number of permits for new privately owned housing units per 100,000 residents in a state.

Source: U.S. Census Bureau

Midwest Performance, 2018

State	Growth Rate	Rank
Ohio	6.4%	14
Indiana	4.9%	17
Illinois	4.4%	20
Wisconsin	4.3%	22
Michigan	**3.4%**	**29**



FORTUNE 500 HEADQUARTERS

Rank	State	Score	Number of firms	Change, 2015-2018 (Abs.)
	50-State Average		*10.0*	*0*
1	California	250.0	54	1
1	New York	250.0	56	3
3	Texas	241.5	49	-2
4	Illinois	200.6	36	0
5	Ohio	162.9	24	0
6	Virginia	153.5	21	0
7	New Jersey	150.3	20	1
7	Pennsylvania	150.3	20	0
9	Florida	147.2	19	2
10	Georgia	144.0	18	0
11	Minnesota	140.9	17	0
12	Massachusetts	137.7	16	4
12	**Michigan**	**137.7**	**16**	**-2**
14	Connecticut	131.4	14	-5
15	North Carolina	125.2	12	0
16	Washington	122.0	11	1
17	Colorado	118.9	10	0
17	Missouri	118.9	10	0
17	Tennessee	118.9	10	-1
20	Wisconsin	115.7	9	-1
21	Indiana	112.6	8	1
22	Arizona	106.3	6	2
22	Arkansas	106.3	6	0
24	Oklahoma	103.1	5	0
25	Nebraska	100.0	4	-1
25	Nevada	100.0	4	2
25	Rhode Island	100.0	4	0
28	Delaware	96.9	3	1
28	Maryland	96.9	3	-1
30	Idaho	93.7	2	1
30	Iowa	93.7	2	-1
30	Kansas	93.7	2	-1
30	Kentucky	93.7	2	-2
30	Louisiana	93.7	2	0
30	Oregon	93.7	2	-1
36	Alabama	90.6	1	0
37	Alaska	87.4	0	0
37	Hawaii	87.4	0	0
37	Maine	87.4	0	0
37	Mississippi	87.4	0	0
37	Montana	87.4	0	0
37	New Hampshire	87.4	0	0
37	New Mexico	87.4	0	0
37	North Dakota	87.4	0	0
37	South Carolina	87.4	0	-1
37	South Dakota	87.4	0	0
37	Utah	87.4	0	0
37	Vermont	87.4	0	0
37	West Virginia	87.4	0	0
37	Wyoming	87.4	0	0

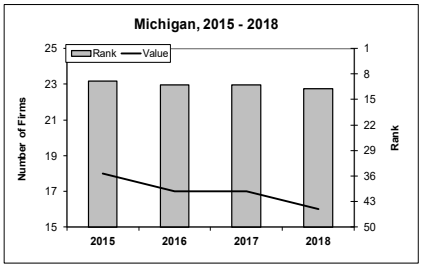
Total number of Fortune 500 headquarters, 2018

At the top of the large-firm pyramid are the Fortune 500 corporations, who typically employ large numbers of well-educated, well-compensated workers. They often provide business for large numbers of local suppliers. They also tend to be philanthropic stewards for their local communities. The above table shows the total number of Fortune 500 companies that were headquartered in each state.

Source: Fortune Magazine

Midwest Performance, 2018

State	Number of firms	Rank
Illinois	36	4
Ohio	24	5
Michigan	**16**	**12**
Wisconsin	9	20
Indiana	8	21



PRIVATE BUSINESS PROFIT GROWTH

Rank	State	Score	Growth Rate	Change, 2014-2017 (Abs.)
	50-State Average		*0.7%*	*-0.5%*
1	Oregon	120.5	3.8%	4.2%
2	Hawaii	120.5	3.8%	3.6%
3	Maryland	120.4	3.8%	4.0%
4	South Carolina	115.9	3.2%	1.3%
5	Kansas	114.3	2.9%	2.3%
6	California	114.2	2.9%	0.7%
7	New Hampshire	113.5	2.8%	0.9%
8	Georgia	112.7	2.7%	1.2%
9	Washington	111.9	2.6%	0.6%
10	New York	111.4	2.6%	-2.1%
11	Connecticut	109.3	2.3%	3.1%
12	**Michigan**	**108.6**	**2.2%**	**-0.7%**
13	Florida	108.4	2.2%	1.9%
14	New Jersey	108.1	2.1%	0.8%
15	Arizona	108.0	2.1%	1.6%
16	Vermont	107.9	2.1%	3.8%
17	Tennessee	107.6	2.0%	-0.7%
18	Wisconsin	107.0	2.0%	-1.4%
19	North Carolina	106.7	1.9%	0.7%
20	Massachusetts	106.5	1.9%	0.7%
21	Nevada	103.3	1.5%	4.8%
22	Pennsylvania	103.2	1.5%	-2.1%
23	Maine	102.6	1.4%	0.8%
24	West Virginia	101.0	1.2%	-0.3%
25	Ohio	100.5	1.1%	-1.8%
26	Alabama	99.5	1.0%	-0.1%
27	Rhode Island	99.4	1.0%	0.3%
28	Utah	98.3	0.8%	0.5%
29	Virginia	97.2	0.7%	-0.2%
30	Colorado	96.5	0.6%	-1.5%
31	Mississippi	95.5	0.4%	0.4%
32	Illinois	94.7	0.3%	-2.5%
33	Minnesota	93.8	0.2%	-2.8%
34	Iowa	92.9	0.1%	-4.8%
35	Kentucky	92.7	0.1%	-2.0%
36	South Dakota	91.3	-0.1%	-1.1%
37	Delaware	91.1	-0.2%	-2.5%
38	Indiana	87.7	-0.6%	-2.8%
39	Nebraska	86.6	-0.8%	-1.8%
40	Missouri	85.9	-0.9%	-2.3%
41	Idaho	85.9	-0.9%	-2.4%
42	Wyoming	84.1	-1.1%	4.2%
43	Montana	80.7	-1.6%	-1.9%
44	Louisiana	80.1	-1.6%	2.0%
45	Arkansas	78.8	-1.8%	-4.6%
46	Alaska	78.7	-1.8%	1.9%
47	New Mexico	78.6	-1.8%	-2.1%
48	Texas	72.1	-2.7%	-4.2%
49	Oklahoma	56.89734	-4.7%	-10.4%
50	North Dakota	44.34205	-6.4%	-14.4%

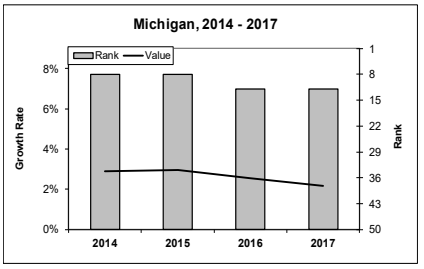
Growth in private industry gross operating surplus per worker, 2017, three-year average

Gross operating surplus per employee is a good proxy for private sector profitability. It includes business income of private domestic enterprises; net interest & miscellaneous payments; business net current transfer payments; capital consumption allowances; consumption of fixed capital; current surplus/deficit of government enterprises. The above table shows the three-year average of the annual growth rate per worker.

Source: U.S. Bureau of Economic Analysis

Midwest Performance, 2017

State	Growth Rate	Rank
Michigan	**2.2%**	**12**
Wisconsin	2.0%	18
Ohio	1.1%	25
Illinois	0.3%	32
Indiana	-0.6%	38



RENEWABLE ENERGY

Rank	State	Score	Share in Total Generation	Change, 2015-2018 (%)
	50-State Average		*21.8%*	*40.6%*
1	Vermont	222.6	99.2%	0.4%
2	Idaho	197.2	81.0%	10.0%
3	Washington	192.2	77.4%	2.9%
4	Maine	185.3	72.4%	11.5%
5	South Dakota	185.0	72.2%	-5.4%
6	Oregon	180.8	69.1%	3.0%
7	Montana	151.7	48.2%	19.0%
8	California	143.1	42.1%	46.9%
9	Kansas	135.6	36.6%	51.3%
10	Iowa	133.5	35.1%	5.7%
11	Oklahoma	132.5	34.4%	54.7%
12	North Dakota	130.0	32.6%	41.1%
13	Alaska	125.1	29.1%	5.9%
14	Nevada	121.0	26.2%	39.2%
15	New York	120.8	26.0%	17.4%
16	New Mexico	117.0	23.3%	170.4%
17	Colorado	116.6	23.0%	28.7%
18	Minnesota	116.1	22.6%	9.2%
19	Nebraska	110.8	18.8%	54.3%
20	New Hampshire	109.1	17.6%	10.2%
21	Texas	108.3	17.0%	63.0%
22	Tennessee	104.1	14.0%	-1.1%
23	Arizona	100.6	11.5%	22.2%
24	North Carolina	100.4	11.3%	78.3%
25	Utah	100.2	11.2%	152.0%
26	Wyoming	99.8	10.9%	15.6%
27	Alabama	98.9	10.3%	19.6%
28	Hawaii	98.8	10.1%	0.7%
29	Massachusetts	97.1	9.0%	78.6%
30	Maryland	97.0	8.9%	41.6%
31	Georgia	95.8	8.0%	37.4%
32	**Michigan**	**95.1**	**7.5%**	**9.8%**
33	Wisconsin	95.1	7.5%	1.1%
34	Arkansas	93.9	6.6%	-25.2%
35	Illinois	93.6	6.4%	14.4%
36	Kentucky	93.1	6.1%	35.2%
37	Virginia	92.7	5.8%	16.4%
38	South Carolina	92.6	5.7%	17.8%
39	West Virginia	92.1	5.4%	40.8%
40	Indiana	92.0	5.2%	8.0%
41	Missouri	91.2	4.7%	46.2%
42	Pennsylvania	90.0	3.9%	28.0%
43	Louisiana	89.8	3.7%	10.6%
44	Mississippi	88.5	2.8%	19.5%
45	Connecticut	88.0	2.4%	74.1%
46	Rhode Island	87.8	2.3%	475.8%
47	Florida	87.6	2.1%	73.8%
48	Ohio	87.2	1.9%	11.1%
49	New Jersey	86.6	1.4%	58.2%
50	Delaware	85.9	0.9%	28.3%

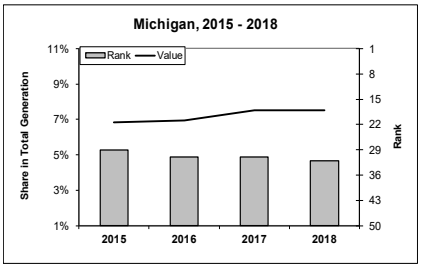
Renewable energy net generation per 1,000 MwH of total net electricity generation, 2018

With the continuing depletion of natural energy resources and increasing environmental concerns, investments in renewable energy have to be a part of every state, region and country's long-term economic strategy. The above table shows the share of renewable energy resources in the total net electric-power generation in each state.

Source: U.S. Energy Information Administration

Midwest Performance, 2018

State	Share in Total Generation	Rank
Michigan	**7.5%**	**32**
Wisconsin	7.5%	33
Illinois	6.4%	35
Indiana	5.2%	40
Ohio	1.9%	48



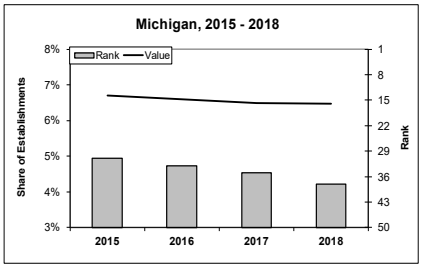
GREEN INDUSTRIES

Rank	State	Score	Share of All Establ.	Change, 2015-2018 (%)
	50-State Average		*7.2%*	*3.1%*
1	Colorado	139.9	9.7%	4.0%
2	Utah	132.3	9.2%	5.4%
3	Vermont	131.9	9.2%	2.7%
4	Idaho	130.3	9.1%	2.0%
5	Arizona	125.0	8.7%	13.6%
6	North Carolina	125.0	8.7%	2.0%
7	Oregon	122.6	8.6%	7.1%
8	Maryland	122.3	8.5%	2.7%
9	Florida	120.2	8.4%	1.0%
10	North Dakota	119.5	8.3%	2.4%
11	Montana	114.6	8.0%	5.4%
12	South Carolina	113.8	8.0%	5.3%
13	Maine	110.5	7.7%	4.1%
14	Texas	110.0	7.7%	-1.1%
15	Illinois	110.0	7.7%	0.2%
16	South Dakota	109.6	7.7%	9.3%
17	Indiana	108.7	7.6%	4.9%
18	New Hampshire	108.3	7.6%	3.0%
19	Alabama	107.5	7.5%	2.8%
20	Arkansas	105.8	7.4%	-0.1%
21	Kansas	104.8	7.4%	4.5%
22	Louisiana	102.5	7.2%	-0.9%
23	Georgia	101.4	7.1%	0.8%
24	Tennessee	100.6	7.1%	5.2%
25	New Mexico	100.3	7.1%	0.2%
26	Wyoming	99.7	7.0%	-0.9%
27	Minnesota	98.6	7.0%	3.3%
28	Delaware	98.5	6.9%	5.7%
29	Mississippi	98.3	6.9%	-1.3%
30	Virginia	97.7	6.9%	-1.6%
31	Nevada	97.5	6.9%	3.7%
32	Massachusetts	96.6	6.8%	-0.4%
33	Washington	96.3	6.8%	6.9%
34	Rhode Island	96.1	6.8%	11.6%
35	Ohio	95.0	6.7%	2.5%
36	Nebraska	94.0	6.6%	7.3%
37	Alaska	93.8	6.6%	10.4%
38	**Michigan**	**91.4**	**6.5%**	**-3.4%**
39	Iowa	91.3	6.5%	6.7%
40	Pennsylvania	90.5	6.4%	4.2%
41	Oklahoma	88.0	6.2%	1.2%
42	New Jersey	87.3	6.2%	-2.5%
43	Connecticut	86.0	6.1%	-1.9%
44	Wisconsin	84.6	6.0%	7.8%
45	California	84.6	6.0%	2.2%
46	Kentucky	84.4	6.0%	1.1%
47	Hawaii	84.0	6.0%	-2.0%
48	West Virginia	78.7	5.6%	1.4%
49	Missouri	77.6	5.5%	4.0%
50	New York	76.7	5.5%	3.3%

Share of establishments in green-related industries, 2018
The green economy is expected to be one of the next strong growth sectors nationwide and globally. The higher the price of fossil fuels the more attractive alternative technologies become. This metric focuses on businesses engaged primarily in creating green technology; see Appendix for more detail. The table above shows such green industries as a share of all industries, measured by number of establishments.
Source: U.S. Bureau of Labor Statistics

Midwest Performance, 2018

State	Share of Establishments	Rank
Illinois	7.7%	15
Indiana	7.6%	17
Ohio	6.7%	35
Michigan	**6.5%**	**38**
Wisconsin	6.0%	44



EDUCATION

Information, knowledge, and ideas are critical assets for success in the innovation economy. Having a strong human capital base is a necessary, but not sufficient condition for success. States, or even countries, may be endowed with a well-educated population, but lack some other necessary conditions, such as a free enterprise system that cultivates creativity and entrepreneurship. Nevertheless, those states and countries performing well in the innovation economy present strong scores in human capital assets. Those falling short in economic progress but possessing abundant human capital can use this attribute to their advantage. For example, countries such as Ireland, Australia, and India are capitalizing on respective strong human capital assets as means to economic progress.

Comprised of sub-drivers K-12 Education and Postsecondary Education, the Education Driver seeks to measure the human capital base of a state.

Midwest Performance

	2018	2016	2014
Indiana	****	****	****
Ohio	****	****	****
Wisconsin	****	****	****
Illinois	***	***	***
Michigan	***	***	***

Rank	State	2018	2016	2014
1	Massachusetts	*****	*****	*****
2	Indiana	****	****	****
3	Pennsylvania	****	****	****
4	Rhode Island	****	*****	*****
5	Maryland	****	****	*****
6	Virginia	****	****	****
7	Ohio	****	****	****
8	Delaware	****	****	****
9	Colorado	****	****	***
10	Connecticut	****	****	****
11	New Hampshire	****	****	*****
12	Wisconsin	****	****	****
13	New York	****	****	***
14	Washington	***	****	****
15	Iowa	***	***	****
16	Vermont	***	***	****
17	Utah	***	***	***
18	Georgia	***	***	***
19	Illinois	***	***	***
20	North Carolina	***	****	****
21	Florida	***	**	***
22	New Jersey	***	***	****
23	South Carolina	***	***	***
24	South Dakota	***	***	***
25	**Michigan**	***	***	***
26	Maine	***	***	****
27	Alabama	***	**	***
28	Nebraska	***	***	****
29	Tennessee	***	**	**
30	Arizona	***	***	***
31	California	***	***	***
32	Minnesota	***	***	****
33	Kentucky	***	**	***
34	Wyoming	***	**	***
35	Montana	***	****	****
36	Missouri	***	***	****
37	North Dakota	**	***	***
38	Kansas	**	***	***
39	Idaho	**	**	***
40	Texas	**	**	***
41	Alaska	**	*	***
42	Oregon	**	**	***
43	West Virginia	**	*	**
44	Arkansas	**	**	***
45	Hawaii	**	**	**
46	Nevada	**	*	**
47	Louisiana	**	*	*
48	Oklahoma	**	*	***
49	Mississippi	*	*	*
50	New Mexico	*	*	**

K-12 EDUCATION

Midwest Performance

	2018	2016	2014
Wisconsin	****	****	****
Indiana	****	****	****
Illinois	***	***	***
Ohio	***	***	****
Michigan	***	**	**

Rank	State	2018	2016	2014
1	Massachusetts	*****	*****	*****
2	New Jersey	*****	*****	*****
3	Virginia	*****	****	****
4	Vermont	****	*****	*****
5	New Hampshire	****	*****	*****
6	Connecticut	****	*****	*****
7	Maryland	****	****	*****
8	Pennsylvania	****	****	****
9	Minnesota	****	****	****
10	Wisconsin	****	****	****
11	Indiana	****	****	****
12	Illinois	***	***	***
13	New York	***	***	***
14	Maine	***	***	****
15	Nebraska	***	***	***
16	Utah	***	***	***
17	Iowa	***	***	****
18	Washington	***	***	****
19	Colorado	***	***	***
20	North Carolina	***	***	***
21	Rhode Island	***	***	***
22	Kansas	***	***	***
23	Kentucky	***	***	***
24	Wyoming	***	**	***
25	South Dakota	***	***	***
26	Missouri	***	***	***
27	Florida	***	***	***
28	Montana	***	***	***
29	Ohio	***	***	****
30	Delaware	***	***	****
31	California	***	**	***
32	Tennessee	***	***	**
33	Georgia	***	**	**
34	Texas	***	***	***
35	North Dakota	***	***	***
36	Hawaii	***	**	**
37	**Michigan**	***	**	**
38	Oregon	**	**	**
39	Idaho	**	**	***
40	Arizona	**	**	**
41	Nevada	**	*	*
42	South Carolina	**	**	**
43	Arkansas	**	**	***
44	Alabama	**	**	**
45	West Virginia	**	**	**
46	Alaska	**	**	**
47	Mississippi	*	*	*
48	Louisiana	*	*	*
49	Oklahoma	*	*	**
50	New Mexico	*	*	*

ADVANCED PLACEMENT SCORE

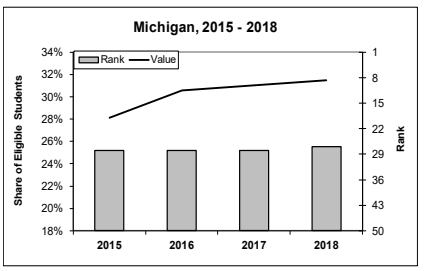
Rank	State	Score	Share of Eligible Students	Change, 2015-2018 (%)
	50-State Average		*33.9%*	*10.4%*
1	Maryland	133.2	70.2%	3.8%
2	Massachusetts	126.2	62.5%	11.5%
3	Connecticut	125.6	61.8%	9.8%
4	New Jersey	122.4	58.4%	18.5%
5	Illinois	121.5	57.3%	24.7%
6	Virginia	120.6	56.3%	3.0%
7	Florida	119.2	54.8%	8.4%
8	New York	117.8	53.2%	14.9%
9	California	116.0	51.2%	14.0%
10	Georgia	112.0	46.8%	4.7%
11	Texas	108.6	43.1%	15.8%
12	Colorado	107.6	41.9%	5.0%
13	Vermont	107.3	41.5%	7.7%
14	Wisconsin	107.0	41.3%	10.1%
15	Delaware	106.8	41.0%	4.9%
16	Rhode Island	106.5	40.7%	11.5%
17	North Carolina	105.4	39.5%	3.0%
18	Pennsylvania	104.8	38.9%	19.8%
19	Hawaii	104.8	38.8%	17.8%
20	Ohio	102.7	36.5%	9.8%
21	Minnesota	102.0	35.7%	1.5%
22	South Carolina	101.4	35.1%	15.2%
23	Utah	101.1	34.7%	6.2%
24	Washington	100.7	34.3%	7.0%
25	Maine	100.2	33.7%	-3.4%
26	New Hampshire	99.8	33.3%	2.2%
27	**Michigan**	**98.2**	**31.5%**	**12.0%**
28	Indiana	97.9	31.2%	14.2%
29	Nevada	97.7	31.0%	16.0%
30	Kentucky	97.6	30.9%	-4.2%
31	Arizona	95.7	28.7%	15.0%
32	Arkansas	94.1	26.9%	14.7%
33	Tennessee	93.7	26.5%	10.7%
34	Oregon	92.0	24.7%	8.7%
35	Missouri	90.8	23.4%	14.7%
36	Alabama	89.8	22.2%	11.9%
37	Idaho	87.0	19.1%	11.8%
38	South Dakota	87.0	19.1%	12.6%
39	Nebraska	86.4	18.5%	8.2%
40	Montana	86.4	18.4%	14.4%
41	North Dakota	86.1	18.1%	60.3%
42	Iowa	85.6	17.6%	-2.6%
43	Oklahoma	85.3	17.3%	7.3%
44	New Mexico	84.9	16.8%	11.2%
45	Louisiana	84.7	16.6%	5.5%
46	Alaska	84.4	16.2%	-8.6%
47	West Virginia	84.2	16.1%	1.5%
48	Kansas	84.1	16.0%	4.4%
49	Wyoming	82.7	14.3%	16.6%
50	Mississippi	78.4	9.6%	18.3%

Passing AP test scores per eligible student, 2018

The Advanced Placement (AP) exams assess students' mastery over college-level subject matter in a wide variety of subjects. A score of three or higher out of five typically allows a student to earn college credit in that subject. The AP program allows high school students to take and earn credits on multiple subject tests. The above table shows the number of AP tests completed with "passing" scores (3+) per student in 11th and 12th grade. It should be noted that a relatively small share of students take AP tests. *Source: The College Board*

Midwest Performance, 2018

State	Share of Eligible Students	Rank
Illinois	57.3%	5
Wisconsin	41.3%	14
Ohio	36.5%	20
Michigan	**31.5%**	**27**
Indiana	31.2%	28



PUBLIC HIGH SCHOOL GRADUATION RATE

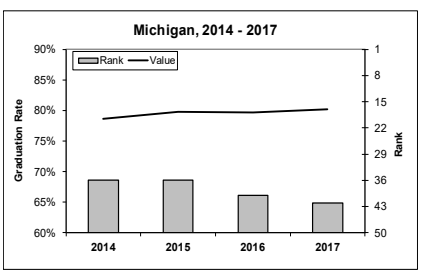
Rank	State	Score	Share of Eligible Students	Change, 2014-2017 (%)
	50-State Average		*84.7%*	*2.7%*
1	Iowa	117.5	91.0%	0.6%
2	New Jersey	115.7	90.5%	2.1%
3	Tennessee	113.2	89.8%	3.0%
4	Texas	112.8	89.7%	1.6%
4	Kentucky	112.8	89.7%	2.5%
6	West Virginia	111.8	89.4%	5.8%
7	Alabama	111.4	89.3%	3.5%
8	Vermont	110.7	89.1%	1.5%
8	Nebraska	110.7	89.1%	-0.7%
10	New Hampshire	110.0	88.9%	0.9%
11	Wisconsin	108.9	88.6%	0.0%
12	Missouri	107.8	88.3%	1.1%
12	Massachusetts	107.8	88.3%	2.6%
14	Arkansas	106.8	88.0%	1.3%
15	Connecticut	106.4	87.9%	1.0%
16	Maryland	105.7	87.7%	1.5%
17	North Dakota	103.9	87.2%	0.0%
18	Illinois	103.2	87.0%	1.2%
19	Virginia	102.9	86.9%	1.9%
19	Maine	102.9	86.9%	0.5%
19	Delaware	102.9	86.9%	-0.1%
22	Pennsylvania	101.8	86.6%	1.3%
22	North Carolina	101.8	86.6%	3.2%
24	Kansas	101.4	86.5%	0.9%
25	Wyoming	100.4	86.2%	9.7%
26	Utah	99.6	86.0%	2.5%
27	Montana	98.9	85.8%	0.5%
28	Ohio	93.2	84.2%	2.9%
29	Rhode Island	92.9	84.1%	4.1%
30	Indiana	91.8	83.8%	-4.7%
31	South Dakota	91.4	83.7%	1.2%
32	South Carolina	91.1	83.6%	4.4%
33	Mississippi	88.9	83.0%	7.0%
34	Minnesota	87.9	82.7%	1.8%
34	Hawaii	87.9	82.7%	1.1%
34	California	87.9	82.7%	2.1%
37	Oklahoma	87.5	82.6%	-0.1%
38	Florida	86.4	82.3%	8.1%
39	New York	84.7	81.8%	5.1%
40	Nevada	81.4	80.9%	(n/a)
41	Georgia	80.4	80.6%	11.2%
42	**Michigan**	**78.9**	**80.2%**	**2.0%**
43	Idaho	77.2	79.7%	3.1%
44	Washington	76.1	79.4%	1.5%
45	Colorado	75.0	79.1%	2.3%
46	Alaska	71.8	78.2%	10.0%
47	Louisiana	71.5	78.1%	4.7%
48	Arizona	71.1	78.0%	3.0%
49	Oregon	66.5	76.7%	6.5%
50	New Mexico	46.5	71.1%	3.8%

Public high school graduation rate, 2017

The number of students who stay in school and successfully receive their high school diploma within four years is an important indicator of performance for a state's K-12 education system. High school completion is a vital credential for finding and retaining employment. It is also an important prerequisite for postsecondary schooling, which provides the additional education needed to thrive in today's innovation and technology-based economy. See Appendix for the methodology of this metric. *Source: National Center for Education Statistics*

Midwest Performance, 2017

State	Graduation Rate	Rank
Wisconsin	88.6%	11
Illinois	87.0%	18
Ohio	84.2%	28
Indiana	83.8%	30
Michigan	**80.2%**	**42**



SAT PERFORMANCE

Rank	State	Score	Actual Less Predicted Score	Change, 2014-2018 (Abs.)
	50-State Average		0.8	*(n/a)*
1	Massachusetts	130.0	77.4	(n/a)
2	Virginia	125.3	66.4	(n/a)
3	Minnesota	120.7	55.8	(n/a)
4	Vermont	118.9	51.7	(n/a)
5	New Jersey	117.4	48.1	(n/a)
6	Oregon	115.1	42.8	(n/a)
7	Wisconsin	111.9	35.4	(n/a)
8	Arizona	111.9	35.4	(n/a)
9	Hawaii	111.3	34.1	(n/a)
10	Pennsylvania	110.0	31.0	(n/a)
11	Nevada	109.9	30.9	(n/a)
12	North Carolina	109.9	30.8	(n/a)
13	Tennessee	109.0	28.7	(n/a)
14	Indiana	107.7	25.7	(n/a)
15	New Hampshire	107.5	25.4	(n/a)
16	Montana	106.9	23.8	(n/a)
17	Washington	106.5	23.0	(n/a)
18	South Dakota	105.4	20.4	(n/a)
19	New York	105.2	19.9	(n/a)
20	Maryland	103.5	16.1	(n/a)
21	Connecticut	103.2	15.3	(n/a)
22	Alaska	103.1	15.0	(n/a)
23	Kansas	102.1	12.8	(n/a)
24	Nebraska	101.9	12.4	(n/a)
25	California	100.0	8.0	(n/a)
26	Georgia	100.0	7.9	(n/a)
27	Missouri	99.9	7.8	(n/a)
28	Kentucky	98.2	3.8	(n/a)
29	Utah	97.3	1.8	(n/a)
30	Iowa	95.0	-3.6	(n/a)
31	Colorado	93.7	-6.7	(n/a)
32	Wyoming	92.4	-9.6	(n/a)
33	Mississippi	92.0	-10.6	(n/a)
34	North Dakota	91.2	-12.5	(n/a)
35	Louisiana	90.8	-13.4	(n/a)
36	Illinois	88.9	-17.7	(n/a)
37	Maine	88.7	-18.3	(n/a)
38	South Carolina	86.8	-22.6	(n/a)
39	**Michigan**	**84.6**	**-27.7**	**(n/a)**
40	Texas	83.3	-30.6	(n/a)
41	Ohio	83.0	-31.3	(n/a)
42	Florida	82.8	-31.7	(n/a)
43	Rhode Island	81.1	-35.7	(n/a)
44	Idaho	80.2	-37.7	(n/a)
45	Delaware	76.8	-45.7	(n/a)
46	Alabama	75.7	-48.3	(n/a)
47	New Mexico	71.2	-58.6	(n/a)
48	Arkansas	70.4	-60.4	(n/a)
49	West Virginia	58.4	-88.3	(n/a)
50	Oklahoma	28.9	-156.3	(n/a)

Average SAT score relative to predicted score, 2018

The Scholastic Assessment Test (SAT) is the standardized test most frequently taken by high school seniors and gauges their likely success in college. In states where fewer students take the SAT, those who do choose to take it are more likely to be students who would score well. To correct for this bias, all 50 states' average SAT scores are compared to a score predicted by a participation-based formula. A positive score implies better-than-predicted performance. 2016 started with a new test system.

Source: The College Board

Midwest Performance, 2018

State	Actual less Predicted Score	Rank
Wisconsin	35.4	7
Indiana	25.7	14
Illinois	-17.7	36
Michigan	**-27.7**	**39**
Ohio	-31.3	41

ACT SCORE

Rank	State	Score	Actual Less Predicted Score	Change, 2015-2018 (Abs.)
	50-StateAverage		*-2.06*	*-2.02*
1	Connecticut	127.3	2.60	-0.64
1	Massachusetts	127.3	2.60	-0.94
3	New Hampshire	124.3	2.04	-1.19
4	Rhode Island	122.5	1.71	-0.34
5	New York	121.3	1.49	-1.15
6	**Michigan**	**120.7**	**1.38**	**2.30**
7	Illinois	120.1	1.27	1.69
7	Maine	120.1	1.27	-1.08
9	New Jersey	119.6	1.16	-0.70
10	Vermont	119.0	1.05	-1.10
11	Delaware	118.4	0.93	-1.41
11	Virginia	118.4	0.93	-1.12
13	Colorado	117.2	0.71	1.33
14	Pennsylvania	116.0	0.49	-1.36
15	California	110.0	-0.63	-1.99
16	Idaho	109.4	-0.74	-2.20
16	Indiana	109.4	-0.74	-1.80
18	Maryland	108.2	-0.97	-2.72
19	Washington	107.0	-1.19	-3.04
20	Iowa	103.9	-1.75	-2.61
20	South Dakota	103.9	-1.75	-2.42
22	Georgia	102.7	-1.98	-1.85
22	Minnesota	102.7	-1.98	-1.85
24	Kansas	101.5	-2.20	-2.87
25	Oregon	100.9	-2.32	-2.78
26	Missouri	99.1	-2.66	-1.64
26	West Virginia	99.1	-2.66	-2.13
28	Texas	97.3	-3.00	-2.37
29	Utah	96.0	-3.22	-2.21
29	Wisconsin	96.0	-3.22	-2.50
31	Alaska	94.8	-3.45	-2.24
31	Florida	94.8	-3.45	-2.14
33	Nebraska	94.2	-3.56	-3.73
33	Ohio	94.2	-3.56	-4.33
35	North Dakota	93.6	-3.68	-2.76
36	Kentucky	93.0	-3.79	-2.58
36	Montana	93.0	-3.79	-2.87
36	Wyoming	93.0	-3.79	-2.58
39	Tennessee	90.5	-4.25	-3.23
40	Arkansas	89.9	-4.36	-3.35
40	New Mexico	89.9	-4.36	-3.05
42	Arizona	88.1	-4.71	-3.59
42	Hawaii	88.1	-4.71	-2.21
42	North Carolina	88.1	-4.71	-2.60
45	Alabama	87.5	-4.82	-2.72
45	Oklahoma	87.5	-4.82	-4.00
47	Louisiana	86.9	-4.93	-3.23
47	South Carolina	86.9	-4.93	-2.24
49	Mississippi	84.4	-5.39	-2.60
50	Nevada	81.3	-5.97	-2.49

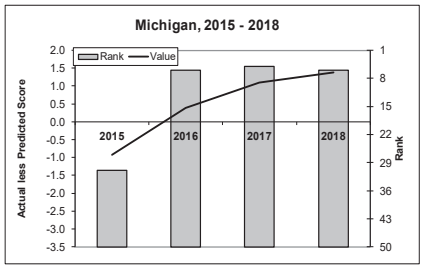
Average ACT score relative to predicted score, 2018

Like the SAT, the American College Test (ACT) is a widely-accepted standardized college entrance exam. The ACT is common in many states where SAT participation is low, so it is important to consider it in the same way that the SAT is considered and correct for any participation bias. This metric corrects for the bias by comparing the states' mean scores to a score predicted by a participation-based formula. A positive score implies performance above the predicted.

Source: ACT

Midwest Performance, 2018

State	Actual less Predicted Score	Rank
Michigan	**1.38**	**6**
Illinois	1.27	7
Indiana	-0.74	16
Wisconsin	-3.22	29
Ohio	-3.56	33



NAEP MATHEMATICS

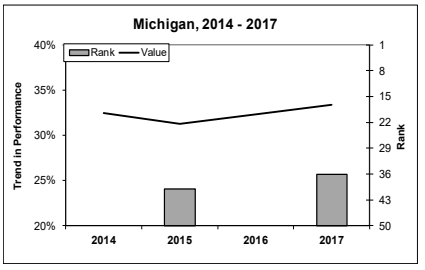
Rank	State	Score	% "Proficient" or Above	Change, 2013-2017 (Abs.)
	50-State Average		*36.8%*	*-2.1%*
1	Massachusetts	130.5	51.3%	-5.2%
2	Minnesota	126.4	49.5%	-3.8%
3	New Jersey	120.5	46.8%	-2.3%
4	New Hampshire	119.9	46.6%	-6.2%
5	Virginia	117.1	45.3%	2.6%
6	Nebraska	115.9	44.8%	4.6%
7	Wyoming	115.6	44.6%	1.8%
8	Indiana	111.7	42.9%	-2.1%
9	North Dakota	111.4	42.7%	-1.6%
10	Utah	110.1	42.2%	2.1%
11	Washington	109.4	41.8%	-3.3%
12	Iowa	108.4	41.4%	-0.3%
13	Pennsylvania	107.2	40.9%	-2.3%
14	Vermont	107.0	40.8%	-8.4%
15	Ohio	106.8	40.7%	-3.4%
16	Wisconsin	106.6	40.6%	-2.9%
17	South Dakota	106.5	40.5%	1.2%
18	Colorado	106.0	40.3%	-5.6%
19	Montana	103.9	39.4%	-3.0%
20	Kansas	102.2	38.6%	-5.4%
21	North Carolina	101.8	38.4%	-2.3%
22	Florida	101.6	38.3%	2.6%
23	Maine	101.1	38.1%	-5.4%
24	Connecticut	101.0	38.1%	-3.1%
25	Idaho	100.3	37.8%	-0.3%
26	Maryland	99.7	37.5%	-4.5%
27	Texas	98.8	37.1%	-2.5%
28	Illinois	95.3	35.5%	-2.2%
29	Missouri	94.8	35.3%	-0.4%
30	New York	93.4	34.7%	-1.3%
31	Rhode Island	92.9	34.4%	-4.8%
32	Kentucky	92.7	34.3%	-1.4%
33	Arizona	91.3	33.7%	-1.4%
34	Oregon	90.8	33.5%	-3.8%
35	Georgia	90.6	33.4%	-1.0%
36	**Michigan**	**90.5**	**33.4%**	**-0.3%**
37	Tennessee	89.3	32.8%	-1.1%
38	Hawaii	89.0	32.7%	-6.5%
39	Delaware	87.9	32.2%	-5.2%
40	Alaska	84.0	30.4%	-4.4%
41	California	83.4	30.2%	0.1%
42	Oklahoma	82.3	29.7%	-1.0%
43	West Virginia	81.7	29.4%	0.0%
44	Arkansas	81.0	29.1%	-4.4%
45	South Carolina	81.0	29.1%	-3.9%
46	Nevada	81.0	29.1%	-2.1%
47	Mississippi	75.1	26.5%	2.8%
48	Alabama	74.1	26.0%	1.2%
49	New Mexico	69.0	23.7%	-2.9%
50	Louisiana	66.9	22.8%	-0.8%

Percent of 4th and 8th graders scored "proficient" and above in mathematics, 2017

The National Assessment of Educational Progress (NAEP) is an achievement testing program in a variety of subjects administered intermittently to the nation's 4th, 8th, and 12th graders by the U.S. Department of Education. NAEP scores reflect the achievement of students of all social, economic, and educational backgrounds. The above table shows fourth- and eight-graders' average of rates of proficiency on the NAEP Math Assessment. *Source: National Center for Education Statistics*

Midwest Performance, 2017

State	% "Proficient" or Above	Rank
Indiana	42.9%	8
Ohio	40.7%	15
Wisconsin	40.6%	16
Illinois	35.5%	28
Michigan	**33.4%**	**36**



NAEP READING

Rank	State	Score	% "Proficient" or Above	Change, 2013-2017 (Abs.)
	50-State Average		*35.7%*	*0.8%*
1	Massachusetts	140.2	50.1%	2.3%
2	New Jersey	133.3	47.6%	3.5%
3	New Hampshire	123.1	44.0%	-0.1%
4	Vermont	122.5	43.9%	0.4%
5	Connecticut	120.8	43.2%	-0.6%
6	Indiana	114.1	40.9%	4.6%
7	Washington	112.3	40.2%	-0.5%
8	Colorado	112.2	40.2%	0.0%
9	Pennsylvania	111.8	40.1%	-1.0%
10	Virginia	111.6	40.0%	0.2%
11	Utah	110.9	39.7%	1.6%
12	Wyoming	110.1	39.5%	2.1%
13	Minnesota	109.3	39.2%	-1.8%
14	Ohio	108.4	38.9%	0.9%
15	Maryland	108.4	38.9%	-4.6%
16	Idaho	107.1	38.4%	2.8%
17	Nebraska	106.5	38.2%	1.3%
18	Florida	106.3	38.1%	2.0%
19	Rhode Island	106.1	38.1%	1.3%
20	Maine	105.1	37.7%	0.1%
21	Wisconsin	103.5	37.2%	1.6%
22	Kansas	103.0	37.0%	0.3%
23	Iowa	102.0	36.6%	-0.7%
24	Montana	101.3	36.4%	-1.1%
25	Missouri	100.1	36.0%	0.5%
26	Kentucky	99.9	35.9%	-1.2%
27	North Carolina	99.4	35.7%	1.8%
28	South Dakota	99.4	35.7%	2.0%
29	Illinois	99.1	35.6%	0.8%
30	New York	97.5	35.1%	-0.9%
31	Georgia	97.4	35.0%	2.3%
32	Oregon	96.7	34.8%	-0.3%
33	Delaware	95.3	34.3%	-1.4%
34	North Dakota	92.8	33.4%	-0.7%
35	**Michigan**	**92.0**	**33.1%**	**1.5%**
36	Tennessee	88.7	32.0%	-1.4%
37	California	87.9	31.7%	3.6%
38	Hawaii	86.0	31.0%	1.9%
39	Arizona	84.4	30.4%	2.7%
40	West Virginia	83.4	30.1%	3.8%
41	Arkansas	83.0	30.0%	-1.0%
42	South Carolina	82.1	29.7%	0.9%
43	Alabama	81.9	29.6%	1.7%
44	Nevada	81.4	29.4%	0.6%
45	Oklahoma	78.8	28.5%	-0.7%
46	Texas	78.4	28.3%	-1.3%
47	Alaska	75.1	27.2%	-2.1%
48	Mississippi	71.6	25.9%	5.2%
49	Louisiana	70.9	25.7%	2.2%
50	New Mexico	67.8	24.6%	2.8%

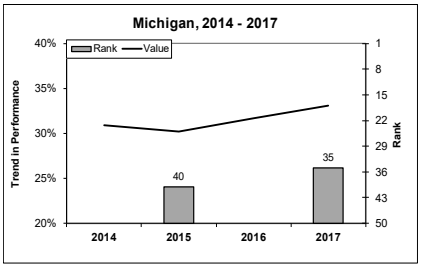
Percent of 4th and 8th graders scored "proficient" and above in reading, 2017

The National Assessment of Educational Progress (NAEP) testing program's unselective nature makes it a highly desirable metric for comparing achievement and studying educational progress. The above table shows averages of the percentages of fourth- and eighth-grade students who scored at least "proficient" on the NAEP Reading Assessments.

Source: National Center for Education Statistics

Midwest Performance, 2017

State	% "Proficient" or Above	Rank
Indiana	40.9%	6
Ohio	38.9%	14
Wisconsin	37.2%	21
Illinois	35.6%	29
Michigan	**33.1%**	**35**



POSTSECONDARY EDUCATION

Midwest Performance

	2018	2016	2014
Indiana	*****	*****	***
Ohio	*****	****	***
Wisconsin	****	****	***
Michigan	****	***	***
Illinois	***	***	**

Rank	State	2018	2016	2014
1	Massachusetts	*****	****	****
2	Rhode Island	*****	*****	*****
3	Indiana	*****	*****	***
4	Ohio	*****	****	***
5	Delaware	*****	****	***
6	Pennsylvania	*****	****	****
7	South Carolina	*****	****	***
8	Alabama	****	****	***
9	Colorado	****	****	***
10	New York	****	****	***
11	Arizona	****	****	****
12	Georgia	****	****	***
13	Wisconsin	****	****	***
14	**Michigan**	****	***	***
15	Washington	****	****	***
16	Maryland	****	***	****
17	Iowa	****	***	****
18	Utah	***	***	**
19	Florida	***	**	**
20	South Dakota	***	***	***
21	North Carolina	***	****	****
22	Tennessee	***	**	**
23	California	***	****	***
24	Alaska	***	*	***
25	Connecticut	***	***	***
26	Virginia	***	**	**
27	Oklahoma	***	**	***
28	Illinois	***	***	**
29	New Hampshire	***	****	***
30	Kentucky	***	**	**
31	Louisiana	***	**	**
32	Wyoming	***	**	***
33	Maine	***	***	***
34	Montana	**	****	****
35	Nebraska	**	***	***
36	Missouri	**	***	***
37	West Virginia	**	*	**
38	Idaho	**	**	**
39	Arkansas	**	**	**
40	North Dakota	**	***	***
41	Vermont	**	**	**
42	Nevada	**	**	***
43	Oregon	**	**	**
44	Minnesota	**	**	***
45	Kansas	**	**	**
46	Texas	**	**	**
47	Mississippi	**	*	*
48	Hawaii	*	**	**
49	New Mexico	*	**	**
50	New Jersey	*	*	**

4Y+ TECH CREDENTIALS

Rank	State	Score	Percent of BA degrees and above	Change, 2015-2018 (%)
	50-State Average		*20.4%*	*10.4%*
1	Maryland	134.4	27.6%	6.7%
2	Montana	127.8	26.3%	17.6%
3	Delaware	127.7	26.2%	42.6%
4	Washington	121.7	25.0%	10.1%
5	Wyoming	120.8	24.8%	4.0%
6	**Michigan**	**117.6**	**24.2%**	**14.1%**
7	Colorado	116.1	23.9%	10.8%
8	New Jersey	115.3	23.7%	12.1%
9	Pennsylvania	115.0	23.6%	11.8%
10	Alaska	114.4	23.5%	12.8%
11	South Dakota	112.3	23.1%	13.0%
12	Massachusetts	110.9	22.8%	14.3%
13	California	109.7	22.6%	14.6%
14	Wisconsin	107.5	22.1%	9.2%
15	Georgia	107.0	22.0%	11.0%
16	Texas	106.0	21.8%	9.8%
17	Connecticut	105.0	21.6%	18.2%
18	North Carolina	104.8	21.5%	9.0%
19	Indiana	104.5	21.5%	7.2%
20	Ohio	103.9	21.4%	15.7%
21	Idaho	102.1	21.0%	6.3%
22	Oklahoma	101.5	20.9%	13.7%
23	Vermont	101.3	20.8%	16.6%
24	New Mexico	100.8	20.7%	6.3%
25	New York	100.8	20.7%	13.0%
26	South Carolina	99.2	20.4%	6.9%
27	Oregon	98.2	20.2%	22.9%
28	Louisiana	96.7	19.9%	8.4%
29	North Dakota	96.1	19.8%	-1.7%
30	Alabama	96.1	19.8%	8.6%
31	Illinois	94.9	19.5%	11.6%
32	Rhode Island	93.8	19.3%	12.5%
33	Iowa	93.4	19.2%	18.7%
34	Maine	91.3	18.8%	-0.8%
35	Kansas	90.9	18.7%	8.2%
36	Virginia	90.6	18.6%	3.7%
37	Missouri	89.1	18.3%	7.0%
38	Nevada	88.9	18.3%	9.0%
39	Arkansas	88.4	18.2%	19.6%
40	Florida	87.9	18.1%	6.2%
41	Nebraska	85.3	17.5%	17.0%
42	Mississippi	83.8	17.2%	3.0%
43	West Virginia	81.0	16.7%	16.6%
44	Hawaii	80.7	16.6%	3.0%
45	Kentucky	79.3	16.3%	16.4%
46	Arizona	78.5	16.2%	9.3%
47	Utah	77.5	15.9%	-13.7%
48	Tennessee	76.1	15.7%	5.3%
49	Minnesota	73.2	15.1%	3.4%
50	New Hampshire	70.8	14.6%	-2.3%

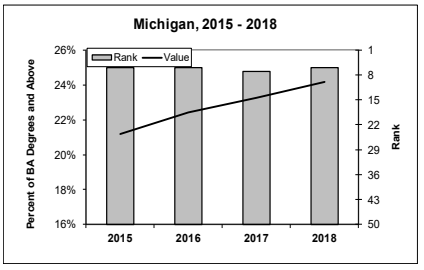
Percent of bachelor's and above degrees/certificates earned in technology-related fields, 2018

A highly-skilled workforce is only as useful as it is able to match the skills required by the innovation economy, the ability to create or invent new products and processes. The above table provides the percent of students with a bachelor's, graduate degree, first professional degree or related certificates who graduated in a field relevant to tech-based economic development. See Appendix for more detail.

Source: National Center for Education Statistics

Midwest Performance, 2018

State	% of BA+ Degrees & Certificates	Rank
Michigan	**24.2%**	**6**
Wisconsin	22.1%	14
Indiana	21.5%	19
Ohio	21.4%	20
Illinois	19.5%	31



PRE-BA TECH CREDENTIALS

Rank	State	Score	% of AS Degrees and Equivalent	Change, 2015-2018 (%)
	50-State Average		*21.3%*	*-0.6%*
1	Louisiana	156.2	39.0%	8.0%
2	Kentucky	145.3	35.4%	18.2%
3	South Dakota	144.6	35.2%	21.0%
4	Wyoming	143.6	34.8%	-20.5%
5	Alabama	128.4	29.7%	7.5%
6	North Dakota	124.8	28.5%	-3.1%
7	Nebraska	124.4	28.4%	6.9%
8	Illinois	123.1	27.9%	-1.1%
9	Nevada	121.7	27.5%	-4.5%
10	Georgia	120.3	27.0%	-7.4%
11	Colorado	113.5	24.7%	-8.4%
12	Oklahoma	110.7	23.8%	-2.7%
13	Wisconsin	110.5	23.7%	-6.4%
14	Texas	107.9	22.8%	-0.5%
15	Arkansas	107.3	22.6%	3.1%
16	Virginia	107.1	22.5%	8.4%
17	Montana	106.0	22.2%	-1.8%
18	Washington	105.7	22.1%	-10.3%
19	South Carolina	105.4	22.0%	-9.7%
20	Ohio	105.1	21.9%	0.2%
21	Mississippi	105.0	21.8%	4.8%
22	Idaho	101.6	20.7%	-5.1%
23	Iowa	101.2	20.6%	9.1%
24	Arizona	101.1	20.5%	-5.0%
25	Pennsylvania	100.3	20.3%	-11.0%
26	Tennessee	99.7	20.0%	-12.2%
27	Vermont	99.6	20.0%	121.1%
28	North Carolina	99.3	19.9%	-4.9%
29	New Hampshire	98.8	19.7%	3.1%
30	Alaska	97.7	19.4%	1.4%
31	Maine	97.5	19.3%	-20.5%
32	California	97.5	19.3%	-4.0%
33	Missouri	96.4	18.9%	-2.3%
34	Delaware	95.9	18.8%	1.0%
35	**Michigan**	**95.5**	**18.6%**	**-6.7%**
36	New Mexico	92.8	17.7%	3.1%
37	Minnesota	92.6	17.6%	-4.4%
38	Massachusetts	92.1	17.5%	2.1%
39	Kansas	91.6	17.3%	-0.4%
40	Indiana	88.3	16.2%	-18.4%
41	West Virginia	88.2	16.2%	-22.4%
42	Rhode Island	87.3	15.9%	-13.3%
43	Maryland	87.1	15.8%	0.4%
44	Oregon	85.6	15.3%	-22.7%
45	Utah	79.9	13.4%	1.1%
46	New York	79.3	13.2%	2.9%
47	Hawaii	78.7	13.0%	-0.1%
48	Florida	76.8	12.4%	-6.9%
49	Connecticut	76.2	12.1%	-15.0%
50	New Jersey	74.6	11.6%	-2.7%

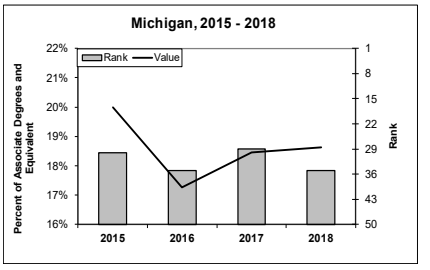
Percent of less than four year degrees and certificates earned in technology-related fields, 2018

Technology support occupations such as technicians that require an Associate degree or less are predicted to experience exceptional employment growth at relatively high wages all over the U.S., making the process of innovation and technological progress more efficient. The above table shows the percent less than four years pre- baccalaureate /vocational awards and certificates in technology related fields. See Appendix.

Source: National Center for Education Statistics

Midwest Performance, 2018

State	% of <4Y Degrees & Certificates	Rank
Illinois	27.9%	8
Wisconsin	23.7%	13
Ohio	21.9%	20
Michigan	**18.6%**	**35**
Indiana	16.2%	40



4Y KNOWLEDGE DEGREES EX. TECH FIELDS

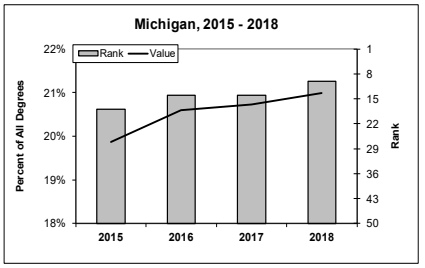
Rank	State	Score	Percent of All Degrees	Change, 2015-2018 (%)
	50-State Average		*18.1%*	*-1.8%*
1	Delaware	139.8	26.5%	7.4%
2	New Hampshire	122.0	23.0%	-22.8%
3	Pennsylvania	118.9	22.4%	12.6%
4	Nebraska	118.5	22.3%	-3.0%
5	Massachusetts	116.2	21.9%	0.6%
6	Rhode Island	114.8	21.6%	-7.6%
7	Missouri	113.2	21.3%	1.7%
8	Arizona	112.7	21.2%	-2.9%
9	Oklahoma	112.7	21.2%	4.6%
10	**Michigan**	**111.7**	**21.0%**	**5.6%**
11	Alabama	109.3	20.5%	-5.1%
12	New York	109.1	20.5%	-2.5%
13	Connecticut	109.0	20.5%	1.8%
14	South Carolina	108.1	20.3%	-2.2%
15	Indiana	108.0	20.3%	-10.8%
16	Maryland	103.8	19.4%	-6.1%
17	Alaska	103.0	19.3%	15.5%
18	Florida	102.6	19.2%	3.5%
19	Ohio	101.6	19.0%	-0.7%
20	Utah	101.2	18.9%	-15.7%
21	Iowa	100.5	18.8%	1.4%
22	Minnesota	100.1	18.7%	3.7%
23	Georgia	100.1	18.7%	-5.2%
24	Colorado	100.1	18.7%	-6.2%
25	Illinois	100.1	18.7%	-0.5%
26	Wisconsin	99.9	18.7%	-5.8%
27	Hawaii	99.1	18.5%	5.1%
28	North Dakota	98.1	18.3%	-5.9%
29	West Virginia	97.3	18.1%	1.6%
30	Virginia	95.9	17.9%	2.6%
31	New Jersey	93.6	17.4%	-3.8%
32	Kansas	91.4	17.0%	-2.6%
33	Montana	88.5	16.4%	0.0%
34	Louisiana	88.2	16.4%	12.5%
35	Tennessee	87.8	16.3%	-0.8%
36	Texas	87.3	16.2%	-8.5%
37	Oregon	87.0	16.1%	7.8%
38	South Dakota	83.3	15.4%	-9.7%
39	Washington	82.9	15.3%	0.6%
40	North Carolina	82.8	15.3%	-9.5%
41	Idaho	81.9	15.1%	-8.8%
42	Maine	81.1	15.0%	-2.8%
43	Vermont	79.8	14.7%	-5.9%
44	Nevada	79.1	14.6%	-8.4%
45	California	77.9	14.3%	-13.4%
46	Mississippi	77.4	14.2%	-8.2%
47	Kentucky	77.1	14.2%	-9.4%
48	Arkansas	73.9	13.5%	-4.7%
49	New Mexico	69.5	12.7%	-8.6%
50	Wyoming	63.5	11.5%	27.2%

Percent of degrees earned in quasi-science and quasi-technical fields, 2018
Many more general educational programs directly or indirectly contribute to the innovation economy such as management, economics, science teachers, etc. The above table shows these other innovation economy degrees as a percent of all degrees. A full description of fields chosen is given in the Methodology section of the Appendix.

Source: National Center for Education Statistics

Midwest Performance, 2018

State	Percent of All Degrees	Rank
Michigan	**21.0%**	**10**
Indiana	20.3%	15
Ohio	19.0%	19
Illinois	18.7%	25
Wisconsin	18.7%	26



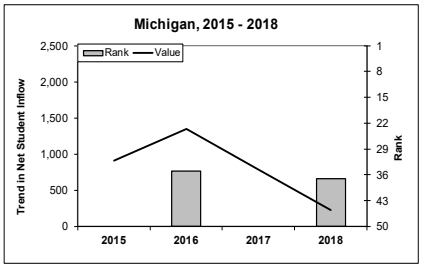
COLLEGE MIGRATION

Rank	State	Score	Net Student Inflow	Change, 2014-2018 (Abs.)
	50-State Average		*1604.8*	*-461*
1	Utah	139.2	14,448	7,400
2	Pennsylvania	134.1	12,920	-4,039
3	Ohio	133.4	12,698	8,087
4	Arizona	130.5	11,820	-8,721
5	Indiana	126.2	10,520	1,793
6	New York	122.9	9,514	2,384
7	New Hampshire	120.9	8,922	5,484
8	Iowa	120.4	8,780	-3,759
9	Alabama	116.3	7,520	-1,341
10	Massachusetts	114.1	6,858	-2,231
11	Rhode Island	111.8	6,153	9
12	Florida	111.2	5,966	-230
13	South Carolina	109.0	5,323	-492
14	West Virginia	107.3	4,798	-4,598
15	Kansas	106.3	4,493	-1,261
16	North Carolina	104.8	4,054	-321
17	Mississippi	103.8	3,753	1,218
18	Oklahoma	102.7	3,395	-1,642
19	Virginia	102.4	3,308	-2,905
20	Oregon	101.7	3,108	-1,354
21	Wisconsin	101.2	2,943	340
22	Colorado	100.7	2,791	2,227
23	Vermont	100.3	2,664	-144
24	Arkansas	100.2	2,663	-1
25	North Dakota	100.0	2,601	-202
26	Idaho	100.0	2,575	1,559
27	Kentucky	98.5	2,120	-1,240
28	Tennessee	97.5	1,821	859
29	Missouri	96.7	1,579	-2,706
30	South Dakota	96.6	1,573	220
31	Montana	96.2	1,431	149
32	Delaware	95.9	1,342	-341
33	Nebraska	95.9	1,337	275
34	Louisiana	95.8	1,309	420
35	Maine	95.3	1,174	604
36	Wyoming	93.8	705	-59
37	**Michigan**	**92.2**	**225**	**-259**
38	New Mexico	89.9	-473	-569
39	Alaska	85.3	-1,867	-871
40	Hawaii	85.1	-1,918	-404
41	Nevada	83.9	-2,291	-256
42	Washington	83.4	-2,425	806
43	Georgia	79.3	-3,684	1,468
44	Connecticut	78.8	-3,838	1,411
45	Minnesota	74.4	-5,150	-637
46	Maryland	70.5	-6,331	2,091
47	California	68.5	-6,964	-11,121
48	Texas	40.8	-15,353	-7,198
49	Illinois	24.8	-20,198	-3575
50	New Jersey	-2.6	-28,473	628

Net in-migration of first-time freshmen, 2018
A net student inflow into a state to attend college signals a perception of quality of a state's higher education institutions and helps reduce pressure on the tax rolls and keep in-state tuition increases in-line. The above table, based on Fall enrollments and updates every two years, shows the difference between the number of students who migrated into a state's schools and those who migrated out over one year. States with positive figures were net receivers of students.
Source: National Center for Education Statistics

Midwest Performance, 2018

State	Net Student Inflow	Rank
Indiana	11,294	4
Ohio	6,946	10
Wisconsin	2,842	26
Michigan	**1,346**	**35**
Illinois	-19,195	49



U.S. NEWS TOP UNDERGRADUATE PROGRAMS

Rank	State	Score	Ranked Colleges	Change, 2015-2018 (Abs.)
	50-State Average		*3.7*	*0*
1	Rhode Island	170.9	23	-2
2	Massachusetts	146.1	16	0
3	Maine	134.1	13	-4
4	South Carolina	125.2	10	5
5	Connecticut	122.6	10	-3
6	New York	116.8	8	-1
7	Missouri	116.0	8	4
8	Maryland	114.6	8	0
9	Indiana	111.5	7	-4
10	North Carolina	111.3	7	-2
11	Iowa	111.1	7	-6
12	Virginia	109.4	6	-1
13	Arkansas	107.8	6	4
14	California	107.1	5	-1
15	Ohio	104.4	5	0
16	Vermont	103.8	5	0
17	South Dakota	103.8	5	1
18	Minnesota	103.8	5	-5
19	**Michigan**	**102.7**	**4**	**1**
20	New Hampshire	101.8	4	0
20	Florida	101.3	4	2
22	Illinois	101.1	4	0
23	Pennsylvania	100.5	4	-1
24	Oregon	100.5	4	-2
25	Georgia	100.4	4	0
26	Tennessee	99.6	3	-1
27	Utah	99.4	3	3
28	Texas	97.8	3	0
29	Nebraska	96.6	3	-2
30	New Jersey	96.0	2	-5
31	Oklahoma	94.7	2	0
32	Kentucky	93.4	2	1
33	Alabama	93.1	2	-2
34	Kansas	93.0	2	2
35	Colorado	92.5	1	-3
36	Washington	92.2	1	-4
37	Wisconsin	92.1	1	-1
38	Wyoming	87.3	0	0
39	West Virginia	87.3	0	0
39	North Dakota	87.3	0	0
39	New Mexico	87.3	0	0
39	Nevada	87.3	0	0
39	Montana	87.3	0	-2
39	Mississippi	87.3	0	-3
39	Louisiana	87.3	0	-9
39	Idaho	87.3	0	0
39	Hawaii	87.3	0	0
39	Delaware	87.3	0	0
39	Arizona	87.3	0	-2
39	Alaska	87.3	0	0

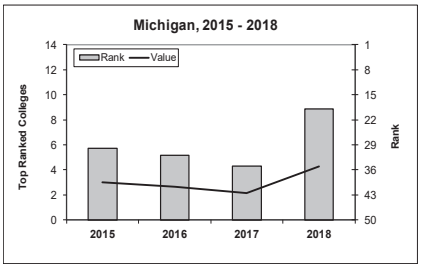
Number of undergraduate programs ranked in top 20 percent in U.S. News Graduate School Report per 100 educational institutions, 2018

No uniform "exit exams" exist through which to compare students' post-graduate knowledge and assess the quality of higher education institutions. *U.S. News and World Report* magazine publishes one of the more popular guides on U.S. Colleges. The above table gives the number of undergraduate programs in each state ranked in the top 20 percent both at the national and regional level.

Source: U.S. News and World Report Magazine

Midwest Performance, 2018

State	Top Colleges per 100 Institutions	Rank
Indiana	7	9
Ohio	5	15
Michigan	**4**	**19**
Illinois	4	22
Wisconsin	1	37



U.S. NEWS TOP GRADUATE PROGRAMS

Rank	State	Score	Ranked Graduate Programs	Change, 2015-2018 (Abs.)
	50-State Average		*36.2*	*7*
1	Rhode Island	145.8	123	15
2	Massachusetts	129.6	92	12
3	Maryland	128.0	89	12
4	Utah	121.8	77	25
5	Connecticut	121.2	76	2
6	Indiana	120.7	75	16
7	**Michigan**	**115.1**	**64**	**13**
8	Illinois	113.4	61	11
9	Wisconsin	111.0	56	13
10	North Carolina	110.6	55	10
11	Washington	109.3	53	10
12	Colorado	108.7	51	8
13	Pennsylvania	108.2	50	11
14	Delaware	107.9	50	33
15	Arizona	107.6	49	8
16	Minnesota	107.3	49	13
17	New York	107.3	49	2
18	California	106.5	47	5
19	New Jersey	106.4	47	-3
20	Iowa	105.0	44	2
21	Texas	103.7	42	4
22	Georgia	103.0	41	12
23	Tennessee	102.6	40	9
24	Virginia	101.9	38	8
25	Missouri	101.0	37	8
26	Oregon	99.0	33	3
27	Ohio	98.0	31	5
28	Alabama	97.1	29	9
29	New Hampshire	96.5	28	2
30	Nebraska	95.3	26	1
31	Kansas	95.0	25	0
32	Florida	94.6	24	4
33	South Carolina	92.9	21	6
34	Kentucky	92.6	20	3
35	Hawaii	90.7	17	6
36	Oklahoma	90.5	16	6
37	New Mexico	88.7	13	0
38	Alaska	88.5	13	13
39	Wyoming	87.8	11	11
40	Louisiana	87.6	11	-2
41	North Dakota	87.2	10	0
42	Idaho	85.5	7	7
43	Arkansas	85.0	6	-2
44	Mississippi	84.9	6	1
45	West Virginia	84.5	5	2
46	Vermont	84.4	5	5
46	South Dakota	84.4	5	-5
48	Nevada	82.0	0	0
48	Montana	82.0	0	0
48	Maine	82.0	0	0

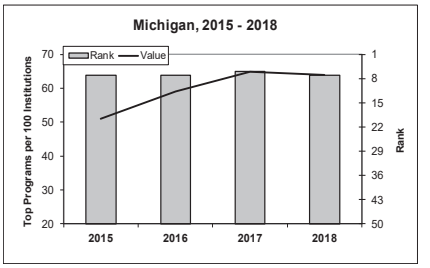
Number of graduate programs ranked in top categories in U.S. News Graduate School Report per 100 educational institutions, 2018

Judging the quality of graduate institutions and their programs is just as problematic as attempting to gauge the quality of undergraduate programs. The above table shows the count of graduate and first-professional schools that were ranked top-tier relative to the number of postsecondary educational institutions.

Source: U.S. News and World Report Magazine

Midwest Performance, 2018

State	Top Programs per 100 Institutions	Rank
Indiana	75	6
Michigan	**64**	**7**
Illinois	61	8
Wisconsin	56	9
Ohio	31	27



TWO-YEAR COLLEGE TUITION GROWTH

Rank	State	Score	Growth Rate Differential	Change, 2014-2017 (Abs.)
	50-State Average		*-0.6%*	*-2.2%*
1	Florida	122.8	-6.6%	11.1%
2	Ohio	122.7	-6.6%	5.1%
3	Tennessee	119.4	-5.7%	-3.4%
4	Arizona	118.9	-5.6%	6.7%
5	Alabama	118.4	-5.4%	8.4%
6	Georgia	117.5	-5.2%	0.3%
7	Colorado	117.2	-5.1%	8.4%
8	Indiana	116.8	-5.0%	0.4%
9	South Carolina	116.8	-5.0%	2.9%
10	Alaska	116.5	-5.0%	4.2%
11	California	114.7	-4.5%	0.1%
12	Delaware	113.9	-4.3%	-1.6%
13	West Virginia	113.7	-4.2%	-0.3%
14	Illinois	107.2	-2.6%	-3.4%
15	New York	105.9	-2.2%	1.2%
16	Massachusetts	105.7	-2.2%	1.1%
17	Wisconsin	105.6	-2.1%	1.4%
18	Idaho	105.4	-2.1%	-5.4%
19	Kentucky	103.4	-1.6%	3.7%
20	Hawaii	103.1	-1.5%	-7.4%
21	**Michigan**	**102.8**	**-1.4%**	**4.7%**
22	Pennsylvania	101.9	-1.2%	2.0%
23	North Carolina	101.4	-1.1%	-2.6%
24	Utah	100.5	-0.8%	-0.9%
25	Washington	100.2	-0.7%	-2.0%
26	Arkansas	99.8	-0.6%	-0.3%
27	Iowa	99.3	-0.5%	-4.0%
28	Maine	98.9	-0.4%	1.5%
29	Maryland	97.4	0.0%	-5.7%
30	Minnesota	97.4	0.0%	-4.1%
31	Louisiana	95.9	0.4%	-2.8%
32	Nevada	95.5	0.5%	-5.6%
33	Virginia	95.0	0.6%	-2.7%
34	New Jersey	93.9	0.9%	-2.4%
35	Connecticut	93.6	1.0%	-4.8%
36	Vermont	91.8	1.4%	-6.1%
37	South Dakota	91.8	1.4%	-9.5%
38	Texas	91.3	1.6%	-11.2%
39	Wyoming	86.6	2.8%	-4.8%
40	Kansas	86.4	2.8%	-3.4%
41	Rhode Island	85.5	3.1%	7.4%
42	Oregon	85.0	3.2%	-7.2%
43	North Dakota	84.8	3.3%	-18.9%
44	Montana	84.6	3.3%	-12.2%
45	Oklahoma	83.4	3.6%	-12.3%
46	New Hampshire	82.8	3.8%	-5.0%
47	New Mexico	76.4	5.4%	-10.3%
48	Mississippi	75.9	5.5%	-9.8%
49	Nebraska	75.1	5.8%	-5.9%
50	Missouri	66.5	8.0%	-2.6%

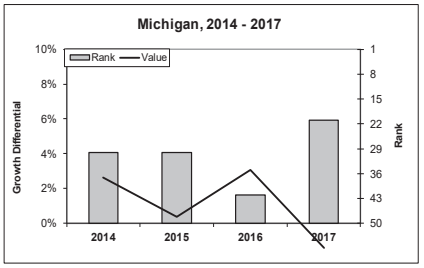
Growth in average tuition at public two-year institutions of higher education relative to median household income growth, 2017

Since higher education is key to higher pay and economic advancement in the innovation economy, access to education is crucial to a state's economic development. As education costs continue to increase at rates two to three times that of inflation, cost remains an important determinant of access. The above table shows the differential between the yearly growth in average yearly tuition charge for a full-time student at a public two-year college relative to the growth in real median household income.

Source: National Center for Education Statistics

Midwest Performance, 2017

State	Yearly Tuition	Rank
Ohio	-6.6%	2
Indiana	-5.0%	8
Illinois	-2.6%	14
Wisconsin	-2.1%	17
Michigan	**-1.4%**	**21**



FOUR-YEAR COLLEGE COSTS GROWTH

Rank	*State*	*Score*	*Growth Rate Differential*	Change, 2014-2017 (Abs.)
	50-State Average		-0.8%	-2.8%
1	Washington	137.5	-7.7%	-10.4%
2	Indiana	125.5	-5.3%	-9.3%
3	Delaware	125.3	-5.3%	-4.7%
4	Ohio	124.8	-5.2%	-5.9%
5	Tennessee	122.6	-4.8%	-9.3%
6	Illinois	121.6	-4.6%	-9.6%
7	California	121.0	-4.5%	-4.1%
8	Florida	120.1	-4.3%	-8.1%
9	Colorado	119.7	-4.2%	-10.0%
10	South Carolina	119.1	-4.1%	-6.9%
11	Alabama	113.9	-3.1%	-7.2%
12	Georgia	113.8	-3.1%	-5.3%
13	Mississippi	112.4	-2.8%	-14.3%
14	Arizona	109.1	-2.2%	-4.0%
15	Massachusetts	109.1	-2.1%	-5.0%
16	Alaska	107.9	-1.9%	-3.3%
17	Wisconsin	107.8	-1.9%	-2.8%
18	Nevada	105.8	-1.5%	1.4%
19	West Virginia	105.7	-1.5%	-7.1%
20	New York	105.5	-1.5%	-6.1%
21	Montana	103.4	-1.0%	1.2%
22	Texas	103.3	-1.0%	-3.5%
23	New Jersey	101.8	-0.7%	-1.2%
24	Rhode Island	101.2	-0.6%	-1.6%
25	Pennsylvania	100.6	-0.5%	-3.5%
26	Utah	99.4	-0.3%	-4.3%
27	Maine	98.2	0.0%	0.5%
28	**Michigan**	**97.7**	**0.1%**	**-0.5%**
29	Wyoming	97.6	0.1%	-3.7%
30	Iowa	97.6	0.1%	-0.1%
31	Maryland	96.5	0.3%	2.0%
32	Idaho	95.5	0.5%	-1.6%
33	Kentucky	95.0	0.6%	-2.1%
34	South Dakota	94.1	0.8%	-3.7%
35	Arkansas	93.6	0.9%	-0.3%
36	North Carolina	92.7	1.0%	0.9%
37	New Hampshire	91.8	1.2%	-1.1%
38	Virginia	91.4	1.3%	-4.6%
39	Oklahoma	90.2	1.5%	0.2%
40	Minnesota	89.8	1.6%	2.4%
41	Missouri	88.9	1.8%	3.1%
42	Vermont	87.9	2.0%	2.0%
43	Connecticut	87.9	2.0%	-1.0%
44	Hawaii	87.5	2.0%	2.7%
45	Kansas	83.8	2.8%	-0.6%
46	Nebraska	83.5	2.8%	1.3%
47	Oregon	83.2	2.9%	1.0%
48	New Mexico	83.1	2.9%	1.7%
49	North Dakota	76.2	4.2%	5.5%
50	Louisiana	75.5	4.4%	-1.7%

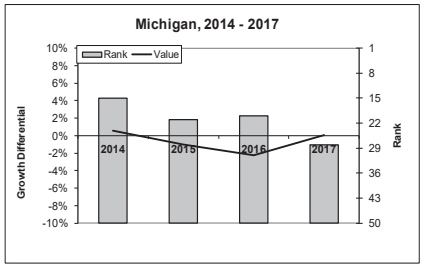
Growth in total tuition, fees, room, board at public four-year institutions of higher education relative to median household income growth, 2017

Cost is a key determinant of access to the opportunities afforded by a college education. In the case of undergraduate degrees, the price of room and board, books and incidental expenses all contribute to the bottom line that students and their families must pay. The table above shows the differential between the yearly growth in the cost of one year of full-time education at a four-year public college or university relative to the growth in real median household income.

Source: National Center for Education Statistics

Midwest Performance, 2017

State	Yearly Costs	Rank
Indiana	-5.3%	2
Ohio	-5.2%	4
Illinois	-4.6%	6
Wisconsin	-1.9%	17
Michigan	**0.1%**	**28**



WORKFORCE PREPAREDNESS

States can have excellent Education scores, yet still lack in Workforce Preparedness. In such cases, the education system is not in tune with the demands of the work place or better opportunities can be found elsewhere and the educated move out of state (brain drain). Research indicates that Workforce Preparedness is closely correlated with entrepreneurial dynamism, and hence economic prosperity and growth. For illustration, studies repeatedly show strong positive correlation between bachelor degree attainment in the workforce and state per capita income growth. This driver attempts to measure both formal educational attainment and skill levels of the incumbent workforce.

Midwest Performance

	2018	2016	2014
Michigan	****	****	****
Illinois	***	***	***
Ohio	**	**	**
Indiana	**	**	**
Wisconsin	**	**	**

Rank	State	2018	2016	2014
1	Massachusetts	*****	*****	*****
2	Maryland	*****	*****	*****
3	Virginia	*****	*****	*****
4	Washington	*****	*****	*****
5	California	*****	*****	*****
6	Colorado	*****	****	****
7	New Jersey	****	****	****
8	Utah	****	****	****
9	**Michigan**	****	****	****
10	Connecticut	****	****	****
11	Arizona	****	***	***
12	New York	****	****	****
13	Minnesota	***	****	****
14	Illinois	***	***	***
15	New Hampshire	***	***	***
16	Texas	***	***	***
17	Oregon	***	***	***
18	Florida	***	***	***
19	North Carolina	***	***	**
20	Rhode Island	***	***	***
21	Kansas	***	***	**
22	Georgia	**	**	***
23	New Mexico	**	***	***
24	Delaware	**	**	***
25	Ohio	**	**	**
26	Pennsylvania	**	**	**
27	South Carolina	**	**	**
28	Idaho	**	**	**
29	Missouri	**	**	**
30	Nebraska	**	**	**
31	Tennessee	**	**	**
32	Wisconsin	**	**	**
33	Vermont	**	**	**
34	Alabama	**	**	**
35	Indiana	**	**	**
36	Iowa	**	**	**
37	North Dakota	**	**	*
38	Oklahoma	**	**	**
39	Kentucky	*	*	*
40	Hawaii	*	**	*
41	Maine	*	*	*
42	Montana	*	*	*
43	Wyoming	*	*	*
44	Nevada	*	*	*
45	Alaska	*	*	*
46	South Dakota	*	*	*
47	Louisiana	*	*	*
48	West Virginia	*	*	*
49	Arkansas	*	*	*
50	Mississippi	*	*	*

HIGH SCHOOL ONLY DIPLOMA ATTAINMENT*

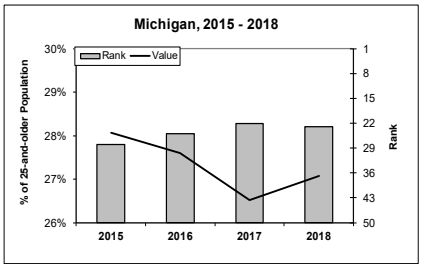
Rank	State	Score	% of 25-and-older Population	Change, 2015 - 2018 (%)
	50-StateAverage		27.7%	-1.1%
1	Minnesota	123.4	21.7%	2.3%
2	California	122.6	21.9%	-3.2%
3	Colorado	121.9	22.0%	-3.2%
4	Arizona	121.4	22.2%	-5.1%
5	Virginia	119.6	22.6%	-2.9%
6	Nebraska	118.1	23.0%	-0.2%
7	Oregon	117.6	23.2%	-10.2%
8	Washington	116.0	23.6%	0.2%
9	Massachusetts	114.7	23.9%	0.1%
10	New York	114.2	24.0%	0.9%
11	Maryland	113.8	24.1%	-0.1%
12	Kansas	112.6	24.4%	4.7%
13	Texas	111.6	24.7%	-2.4%
14	North Carolina	111.3	24.8%	-8.5%
15	Illinois	111.3	24.8%	-0.4%
16	Utah	111.0	24.8%	-2.1%
17	Connecticut	107.8	25.7%	3.5%
18	Rhode Island	105.5	26.2%	1.9%
19	Iowa	104.0	26.6%	-4.0%
20	Idaho	103.9	26.7%	0.9%
21	New Jersey	103.9	26.7%	-1.0%
22	Montana	102.7	27.0%	-6.7%
23	**Michigan**	**102.3**	**27.1%**	**-3.5%**
24	North Dakota	101.8	27.2%	7.5%
25	Georgia	101.4	27.3%	1.5%
26	South Carolina	98.6	28.0%	-5.0%
27	Hawaii	96.9	28.5%	-7.9%
28	New Mexico	96.8	28.5%	4.5%
29	New Hampshire	96.3	28.6%	2.5%
30	South Dakota	95.8	28.7%	3.7%
31	Vermont	94.8	29.0%	0.0%
32	Tennessee	93.4	29.3%	-4.7%
33	Mississippi	93.1	29.4%	-2.2%
34	Florida	92.8	29.5%	0.7%
35	Missouri	90.9	30.0%	-0.7%
36	Kentucky	89.6	30.3%	-5.0%
37	Wisconsin	89.3	30.4%	8.8%
38	Wyoming	87.8	30.8%	-3.3%
39	Ohio	87.4	30.9%	-9.7%
40	Pennsylvania	87.1	31.0%	-5.3%
41	Arkansas	85.9	31.3%	-5.1%
42	Louisiana	85.8	31.3%	-2.2%
43	Alabama	85.4	31.4%	0.1%
44	Oklahoma	85.1	31.5%	-4.8%
45	Maine	84.6	31.6%	-3.3%
46	Alaska	83.6	31.8%	7.2%
47	Indiana	82.1	32.2%	-4.9%
48	Delaware	79.3	32.9%	5.3%
49	Nevada	77.9	33.3%	5.7%
50	West Virginia	60.1	37.9%	0.9%

Percent of 16-and-older labor force holding only a high-school diploma, 2018

A high school diploma is the minimum required education for today's economy and, increasingly, even a diploma is becoming insufficient. Real wages of those without a diploma have been declining precipitously for the last three decades. The above table shows the percentage of each state's adult population that has earned a high school diploma or the equivalent (but not above). ** Not included in subdriver/driver calculations*
Source: U.S. Census Bureau

Midwest Performance, 2018

State	% of 16-and-older Labor Force	Rank
Illinois	24.8%	15
Michigan	**27.1%**	**23**
Wisconsin	30.4%	37
Ohio	30.9%	39
Indiana	32.2%	47



POST–SECONDARY PRE-BA ATTAINMENT

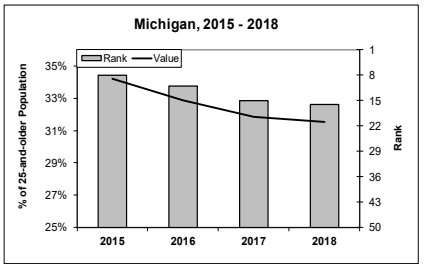
Rank	State	Score	% of Population 25 years and older	Change, 2015 – 2018 (%)
	50-StateAverage		29.4%	-1.6%
1	North Dakota	124.6	35.5%	-2.4%
2	Idaho	123.6	35.3%	1.1%
3	Mississippi	122.4	35.0%	5.2%
4	Wyoming	121.0	34.6%	-1.8%
5	Utah	119.9	34.4%	-0.6%
6	Iowa	119.1	34.2%	-1.5%
7	Minnesota	114.2	33.0%	1.2%
8	Arizona	113.6	32.9%	4.6%
9	Wisconsin	112.9	32.7%	-6.5%
10	Nevada	112.8	32.7%	2.4%
11	Nebraska	112.5	32.6%	-2.9%
12	New Mexico	112.0	32.5%	-1.8%
13	Montana	111.8	32.5%	1.2%
14	South Dakota	109.5	31.9%	-10.3%
15	Oregon	109.5	31.9%	0.9%
16	**Michigan**	**107.9**	**31.5%**	**-7.8%**
17	Kansas	105.7	31.0%	-4.5%
18	Alaska	105.4	30.9%	-2.0%
19	Hawaii	104.0	30.6%	-4.8%
20	North Carolina	103.9	30.6%	5.2%
21	Alabama	103.0	30.4%	-0.8%
22	Arkansas	102.6	30.3%	4.2%
23	South Carolina	101.0	29.9%	-2.7%
24	Ohio	100.9	29.9%	4.2%
25	Kentucky	100.1	29.7%	1.7%
26	Louisiana	99.9	29.7%	3.7%
27	Florida	99.6	29.6%	-2.6%
28	Washington	98.5	29.3%	-2.6%
29	California	98.1	29.2%	-0.2%
30	Texas	97.7	29.1%	-0.1%
31	Indiana	97.1	29.0%	2.7%
32	Tennessee	97.0	29.0%	2.8%
33	Maine	95.5	28.6%	0.5%
34	Oklahoma	95.0	28.5%	-1.6%
35	Missouri	94.1	28.3%	-4.3%
36	Illinois	91.2	27.6%	-4.0%
37	Colorado	91.2	27.6%	-1.1%
38	Georgia	88.5	26.9%	-7.6%
39	West Virginia	85.4	26.2%	1.7%
40	Rhode Island	85.4	26.2%	0.6%
41	Virginia	82.5	25.5%	-6.6%
42	Delaware	81.7	25.3%	-5.0%
43	Maryland	81.1	25.2%	-3.0%
44	Pennsylvania	79.6	24.9%	-0.4%
45	New Hampshire	79.1	24.7%	-10.5%
46	Connecticut	73.4	23.4%	-10.0%
47	New York	73.2	23.3%	-5.2%
48	Vermont	72.7	23.2%	-3.5%
49	New Jersey	69.0	22.3%	-2.7%
50	Massachusetts	62.6	20.9%	-4.1%

Percent of 16-and-older labor force with an associate degree or equivalent or some college attainment, 2018

Many mistakenly focus exclusively on bachelor degree attainment as a measure of a state's human capital quality. In fact, some of the most critical occupations for industry success lie in the often fast-growing mid-level categories like highly-skilled tradesmen, technicians, etc. This metric measures those with post high school, pre-bachelor formal education and training– including partial college attendance, as a percentage of the adult workforce. *Source: U.S. Census Bureau*

Midwest Performance, 2018

State	% of 16-and-older Labor Force	Rank
Wisconsin	32.7%	9
Michigan	**31.5%**	**16**
Ohio	29.9%	24
Indiana	29.0%	31
Illinois	27.6%	36



BACHELOR'S DEGREE ATTAINMENT

Rank	State	Score	% of 25-and-older Population	Change, 2015 – 2018 (%)
	50-StateAverage		34.5%	3.7%
1	Massachusetts	144.1	49.2%	3.3%
2	New Jersey	133.1	45.3%	7.1%
3	New York	130.6	44.4%	4.6%
4	Colorado	129.9	44.2%	6.4%
5	Maryland	129.2	43.9%	0.7%
6	Connecticut	129.2	43.9%	3.6%
7	Virginia	127.2	43.2%	6.4%
8	Vermont	123.9	42.0%	1.3%
9	New Hampshire	118.9	40.2%	3.6%
10	Illinois	117.7	39.8%	4.8%
11	Washington	114.6	38.7%	2.9%
12	Rhode Island	113.7	38.4%	2.7%
13	Minnesota	112.7	38.0%	-3.4%
14	California	109.8	37.0%	4.3%
15	Pennsylvania	108.9	36.7%	6.0%
16	Oregon	107.2	36.1%	6.5%
17	Hawaii	106.1	35.7%	12.1%
18	Kansas	106.0	35.7%	2.9%
19	Georgia	105.9	35.6%	3.9%
20	**Michigan**	**104.8**	**35.3%**	**13.2%**
21	North Carolina	104.1	35.0%	5.9%
22	South Carolina	102.5	34.4%	13.3%
23	Nebraska	102.4	34.4%	2.1%
24	Montana	101.5	34.1%	7.2%
25	Maine	100.1	33.6%	2.9%
26	Missouri	99.9	33.5%	2.5%
27	Tennessee	99.1	33.2%	6.0%
28	Texas	98.5	33.0%	6.4%
29	Florida	98.2	32.9%	2.6%
30	Delaware	d97.1	32.5%	-1.7%
31	Ohio	96.8	32.4%	10.2%
32	Iowa	95.3	31.9%	7.2%
33	North Dakota	95.3	31.9%	-1.7%
34	Utah	95.2	31.8%	4.7%
35	Arizona	94.9	31.7%	4.8%
36	Alaska	92.5	30.9%	-5.2%
37	Kentucky	92.3	30.8%	-1.1%
38	South Dakota	91.0	30.3%	3.2%
39	Indiana	89.6	29.8%	5.1%
40	Oklahoma	89.4	29.8%	10.9%
41	Alabama	87.9	29.2%	7.5%
42	Idaho	87.4	29.0%	5.2%
43	New Mexico	85.7	28.4%	-1.9%
44	Wisconsin	85.3	28.3%	0.0%
45	Louisiana	84.6	28.0%	-1.2%
46	Arkansas	84.3	27.9%	6.7%
47	West Virginia	82.6	27.3%	-5.3%
48	Wyoming	81.3	26.9%	5.7%
49	Mississippi	77.0	25.4%	-1.9%
50	Nevada	72.6	23.8%	-6.3%

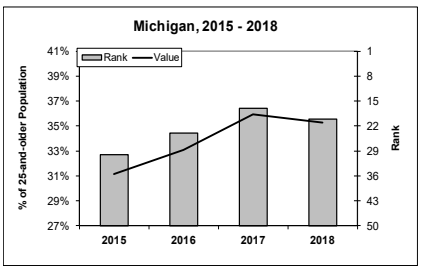
Percent of 16-and-older labor force holding a bachelor's degree or higher, 2018

No state can hope to transition into the innovation economy without a ready and plentiful stock of college graduates. A lack of them also suppresses overall state income and wages, as the average income for those without a college degree has been sluggish or worse in recent decades. The adjacent table shows the percentage of the adult population that holds at least a bachelor's degree or the equivalent.

Source: U.S. Census Bureau

Midwest Performance, 2018

State	% of 16-and-older labor force	Rank
Illinois	39.8%	10
Michigan	**35.3%**	**20**
Ohio	32.4%	31
Indiana	29.8%	39
Wisconsin	28.3%	44



PHYSICAL SCIENCE AND ENGINEERING WORKERS

Rank	State	Score	Percent of Occupations	Change, 2015-2018 (%)
	50-State Average		1.5%	4.3%
1	**Michigan**	**142.6**	**2.78%**	**6.6%**
2	Maryland	135.3	2.56%	4.6%
3	Massachusetts	133.6	2.51%	-0.3%
4	Washington	123.2	2.19%	-9.8%
5	Colorado	119.6	2.09%	-5.2%
6	Virginia	115.8	1.97%	4.6%
7	California	115.0	1.95%	-6.7%
8	Connecticut	113.8	1.91%	-3.8%
9	New Hampshire	113.1	1.89%	18.4%
10	Oregon	112.3	1.87%	25.6%
11	Minnesota	111.3	1.84%	7.8%
12	Alabama	110.7	1.82%	4.1%
13	Delaware	110.6	1.82%	39.1%
14	Wisconsin	109.2	1.78%	2.6%
15	Pennsylvania	109.1	1.77%	5.7%
16	South Carolina	108.4	1.75%	-0.3%
17	Rhode Island	108.1	1.74%	7.0%
18	Utah	107.6	1.73%	3.2%
19	New Jersey	106.6	1.70%	5.1%
20	Alaska	106.3	1.69%	-5.6%
21	Texas	104.6	1.64%	-0.9%
22	New Mexico	104.4	1.63%	-9.1%
23	Ohio	101.1	1.53%	7.3%
24	Illinois	100.6	1.52%	-1.5%
25	Arizona	100.1	1.50%	-4.7%
26	North Carolina	99.9	1.50%	11.0%
27	Indiana	99.9	1.50%	2.3%
28	Idaho	97.4	1.42%	15.3%
29	Missouri	96.2	1.38%	4.5%
30	Kansas	95.7	1.37%	11.3%
31	Nebraska	94.8	1.34%	10.3%
32	Vermont	93.5	1.30%	40.8%
33	Montana	93.2	1.30%	4.6%
34	New York	93.0	1.29%	-5.5%
35	Georgia	92.4	1.27%	-8.1%
36	Oklahoma	92.1	1.26%	-7.8%
37	North Dakota	91.0	1.23%	31.7%
38	Kentucky	89.2	1.18%	14.3%
39	Tennessee	88.9	1.17%	-9.3%
40	Hawaii	88.8	1.16%	5.7%
41	Iowa	87.7	1.13%	21.8%
42	Wyoming	87.6	1.13%	-13.9%
43	Maine	86.3	1.09%	14.3%
44	South Dakota	85.8	1.07%	8.7%
45	West Virginia	82.7	0.98%	15.3%
46	Arkansas	81.6	0.95%	-0.6%
47	Florida	81.6	0.95%	-10.5%
48	Louisiana	81.0	0.93%	-21.2%
49	Mississippi	79.6	0.89%	-4.4%
50	Nevada	72.5	0.68%	-10.9%

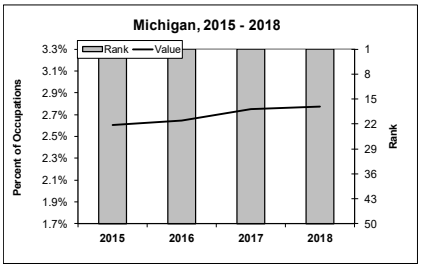
Percent of physical sciences and engineering occupations, 2018

Researchers and skilled scientific workers are an integral part of the innovation economy and can be a key asset in attracting high-value added industries with the promise of a highly-skilled workforce. Equally essential is the retention of skilled college graduates, avoiding a "brain drain," and being able to attract out-of-state workers. The above table provides the percentage of workers in physical sciences and engineering occupations that require at least a bachelor's degree. See Appendix for more detail.

Source: U.S. Bureau of Labor Statistics

Midwest Performance, 2018

State	Percent of Occupations	Rank
Michigan	**2.8%**	**1**
Wisconsin	1.8%	14
Ohio	1.5%	23
Illinois	1.5%	24
Indiana	1.5%	27



TECHNOLOGY AND TECHNICIAN WORKERS

Rank	State	Score	Percent of Occupations	Change, 2015-2018 (%)
	50-State Average		*3.27%*	*1.02%*
1	Virginia	150.5	5.48%	-1.6%
2	Washington	140.3	5.01%	-8.1%
3	Colorado	137.6	4.89%	5.5%
4	Maryland	130.7	4.57%	0.8%
5	Massachusetts	126.0	4.35%	-8.8%
6	Delaware	123.0	4.22%	6.4%
7	New Hampshire	119.0	4.03%	16.6%
8	Minnesota	116.6	3.92%	-1.5%
9	North Carolina	115.5	3.87%	3.2%
10	Arizona	114.6	3.83%	-9.6%
11	Texas	114.2	3.81%	-8.9%
12	Utah	113.9	3.80%	0.0%
13	California	113.7	3.79%	-7.7%
14	New Jersey	113.3	3.77%	0.3%
15	Georgia	110.0	3.62%	-3.9%
16	Missouri	106.6	3.46%	1.5%
17	Oregon	106.5	3.46%	9.0%
18	Connecticut	105.8	3.43%	-4.1%
19	Kansas	105.6	3.42%	-1.2%
20	Ohio	104.8	3.38%	-3.3%
21	**Michigan**	**103.7**	**3.33%**	**-3.4%**
22	New York	103.2	3.31%	2.3%
23	Wisconsin	102.7	3.28%	0.5%
24	Pennsylvania	101.9	3.25%	-4.6%
25	Nebraska	101.3	3.22%	2.1%
26	Illinois	98.7	3.10%	0.7%
27	Idaho	98.6	3.10%	35.9%
28	Florida	97.5	3.05%	1.4%
29	Alabama	97.1	3.02%	-2.7%
30	Oklahoma	95.4	2.95%	-4.1%
31	West Virginia	95.4	2.95%	16.4%
32	South Carolina	94.7	2.92%	0.0%
33	Vermont	94.3	2.90%	2.7%
34	Maine	93.9	2.88%	2.4%
35	Iowa	93.0	2.84%	7.0%
36	New Mexico	92.7	2.82%	-3.1%
37	Rhode Island	92.5	2.81%	-9.3%
38	Indiana	91.9	2.79%	4.7%
39	Tennessee	91.7	2.78%	-5.3%
40	South Dakota	91.3	2.76%	2.9%
41	Alaska	88.8	2.64%	-3.2%
42	Montana	88.3	2.62%	7.5%
43	Kentucky	87.3	2.58%	-5.0%
44	Arkansas	86.7	2.55%	-3.5%
45	North Dakota	86.2	2.52%	10.0%
46	Wyoming	82.2	2.34%	1.9%
47	Nevada	79.6	2.22%	16.7%
48	Mississippi	76.8	2.09%	-6.0%
49	Louisiana	75.8	2.05%	-2.68%
50	Hawaii	72.0	1.87%	3.88%

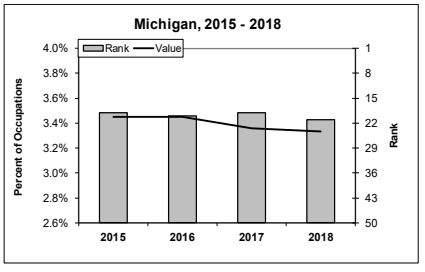
Percent of workers in technology and technician occupations, 2018

The number of technologists and technicians is an indicator of a state's support network for the innovation economy and its ability to put ideas into practice. The above table shows the percentage of workers in technology and technician occupations that require an associate's degree or postsecondary vocational certification. See Appendix for more detail.

Source: U.S. Bureau of Labor Statistics

Midwest Performance, 2018

State	Percent of Occupations	Rank
Ohio	3.4%	20
Michigan	**3.3%**	**21**
Wisconsin	3.3%	23
Illinois	3.1%	26
Indiana	2.8%	38



INNOVATION WORKERS OUTSIDE HIGH TECH EMPL.

Rank	State	Score	Percent of Occupations	Change, 2015-2018 (%)
	50-State Average		*10.98%*	*4.23%*
1	Massachusetts	145.0	15.40%	4.2%
2	Illinois	133.0	14.17%	10.7%
3	Utah	130.3	13.89%	14.2%
4	Connecticut	124.1	13.25%	-1.4%
5	Maryland	124.0	13.25%	2.9%
6	Colorado	122.6	13.09%	3.6%
7	Washington	121.7	13.00%	7.4%
8	California	119.6	12.78%	2.2%
9	Virginia	119.0	12.73%	3.3%
10	Minnesota	118.8	12.70%	-0.8%
11	Arizona	117.8	12.60%	11.2%
12	New York	117.2	12.54%	4.5%
13	Oregon	113.7	12.18%	2.6%
14	Georgia	113.3	12.14%	0.9%
15	New Jersey	111.4	11.94%	0.0%
16	Rhode Island	105.5	11.33%	4.9%
17	Nebraska	104.9	11.27%	12.9%
18	Delaware	104.5	11.23%	-0.8%
19	Tennessee	103.0	11.07%	7.4%
20	New Hampshire	102.5	11.03%	1.3%
21	Florida	101.8	10.95%	13.5%
22	Iowa	101.7	10.94%	1.5%
23	Maine	101.6	10.93%	3.9%
24	Alaska	101.0	10.87%	4.0%
25	Oklahoma	100.5	10.82%	0.8%
26	Vermont	99.5	10.71%	8.8%
27	Hawaii	99.2	10.68%	-1.9%
28	North Carolina	98.7	10.63%	2.9%
29	Texas	98.4	10.60%	8.8%
30	Ohio	98.4	10.60%	2.3%
31	Idaho	97.3	10.49%	0.7%
32	**Michigan**	**96.9**	**10.44%**	**2.0%**
33	Kansas	96.8	10.44%	3.6%
34	North Dakota	96.7	10.43%	20.2%
35	Missouri	96.5	10.40%	-0.3%
36	Pennsylvania	96.0	10.35%	5.9%
37	Wisconsin	95.9	10.34%	1.9%
38	Arkansas	94.0	10.14%	4.4%
39	New Mexico	89.9	9.72%	-5.1%
40	Indiana	87.7	9.50%	0.4%
41	Kentucky	86.0	9.32%	2.0%
42	Nevada	84.1	9.13%	1.0%
43	South Carolina	82.3	8.94%	-2.2%
44	Montana	81.8	8.89%	7.8%
45	Mississippi	80.2	8.72%	5.0%
46	Wyoming	79.1	8.61%	9.0%
47	Louisiana	78.5	8.54%	4.3%
48	West Virginia	78.0	8.50%	7.6%
49	Alabama	77.3	8.43%	4.2%
50	South Dakota	76.9	8.39%	3.2%

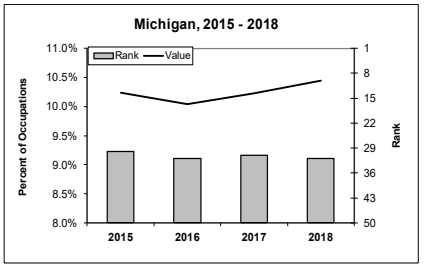
Percent of workers in quasi-science and quasi-technical occupations, 2018

There are many support and quasi-technical occupations that are building blocks of an innovative state, such as managers and teachers. They might be less essential to high-tech enterprises but are important sources of entrepreneurial talent. The above table shows these other innovation economy workers as a percent of all workers. See Appendix for more detail.

Source: U.S. Bureau of Labor Statistics

Midwest Performance, 2018

State	Percent of Occupations	Rank
Illinois	14.2%	2
Ohio	10.6%	30
Michigan	**10.4%**	**32**
Wisconsin	10.3%	37
Indiana	9.5%	40



HIGH-TECH MANUFACTURING EMPLOYMENT

Rank	State	Score	% of Total Mfg. Employment	Change, 2015-2018 (%)
	50-StateAverage		*43.0%*	*0.1%*
1	Arizona	121.8	54.6%	-1.4%
2	Washington	121.3	54.4%	-4.4%
3	Indiana	119.5	53.5%	0.3%
4	**Michigan**	**118.0**	**52.8%**	**2.2%**
5	California	115.4	51.5%	2.4%
6	Massachusetts	115.1	51.4%	-0.6%
7	NewHampshire	114.5	51.1%	1.5%
8	Utah	113.5	50.7%	-0.3%
9	Louisiana	113.2	50.5%	-0.7%
10	Kentucky	110.3	49.2%	10.0%
11	Connecticut	109.7	48.9%	-3.6%
12	RhodeIsland	109.6	48.8%	6.3%
13	Texas	108.7	48.4%	-3.4%
14	Wyoming	108.3	48.2%	-3.5%
15	Florida	107.1	47.6%	-0.1%
16	Kansas	105.7	47.0%	-0.9%
17	Tennessee	105.2	46.7%	1.2%
18	SouthCarolina	104.8	46.5%	5.8%
19	Ohio	101.7	45.1%	-1.1%
20	Colorado	101.5	45.0%	0.7%
21	Nevada	101.3	44.9%	20.2%
22	Alabama	101.1	44.8%	-2.5%
23	WestVirginia	100.9	44.7%	2.6%
24	Maryland	100.7	44.6%	3.6%
25	NewYork	100.6	44.6%	-0.6%
26	Oregon	99.4	44.0%	-0.2%
27	Oklahoma	98.5	43.6%	4.7%
28	Vermont	95.7	42.2%	-1.4%
29	NewJersey	95.2	42.0%	-2.7%
30	NewMexico	95.0	41.9%	-8.7%
31	Minnesota	93.2	41.0%	-0.6%
32	Illinois	92.9	40.9%	-1.6%
33	NorthDakota	92.9	40.9%	1.0%
34	Virginia	92.0	40.5%	0.0%
35	Missouri	91.8	40.4%	6.3%
36	Iowa	89.8	39.4%	-5.7%
37	SouthDakota	89.7	39.4%	-2.2%
38	Idaho	87.9	38.5%	1.1%
39	Pennsylvania	87.1	38.1%	-2.3%
40	NorthCarolina	84.4	36.9%	-0.1%
41	Mississippi	81.1	35.3%	-3.0%
42	Wisconsin	79.3	34.5%	-1.6%
43	Montana	78.3	34.0%	1.3%
44	Nebraska	77.4	33.6%	-5.3%
45	Georgia	76.4	33.1%	1.3%
46	Delaware	75.7	32.8%	-14.7%
47	Maine	74.4	32.1%	2.1%
48	Arkansas	64.1	27.3%	-1.8%
49	Hawaii	50.5	20.8%	6.8%
50	Alaska	25.6	9.0%	12.5%

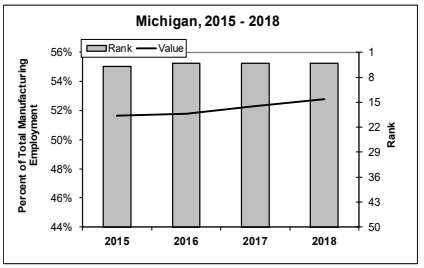
Percent of total covered manufacturing employment in high-tech manufacturing industries, 2018

Advanced manufacturing describes a high value-added application of information to industrial production. The greater efficiency that results and higher skill levels required typically yield higher wages. Additionally, a workforce skilled in advanced manufacturing techniques helps attract similar employers. The above table gives the percentage of each state's manufacturing workers that are employed in R&D and STEM intensive manufacturing industries. See Appendix for more detail.

Source: U.S. Bureau of Labor Statistics

Midwest Performance, 2018

State	% of Total Mfg Employment	Rank
Indiana	53.5%	3
Michigan	**52.8%**	**4**
Ohio	45.1%	19
Illinois	40.9%	32
Wisconsin	34.5%	42



HIGH-TECH SERVICES EMPLOYMENT

Rank	State	Score	% of Total Services Employment	Change, 2015-2018 (%)
	50-StateAverage		*6.2%*	*3.6%*
1	Virginia	160.9	13.3%	2.0%
2	Maryland	145.6	11.4%	3.0%
3	Washington	145.6	11.4%	8.4%
4	Massachusetts	144.5	11.3%	8.1%
5	Colorado	138.0	10.4%	4.7%
6	California	130.5	9.5%	5.6%
7	NewMexico	129.9	9.5%	4.4%
8	Utah	129.0	9.3%	9.8%
9	NorthCarolina	114.5	7.6%	9.0%
10	NewJersey	114.4	7.6%	-0.8%
11	**Michigan**	**113.2**	**7.4%**	**-1.3%**
12	Texas	113.1	7.4%	3.6%
13	Georgia	109.6	7.0%	2.0%
14	Illinois	107.1	6.6%	3.2%
15	Alabama	106.2	6.5%	7.7%
16	NewHampshire	106.1	6.5%	11.5%
17	Kansas	106.1	6.5%	5.4%
18	NewYork	103.6	6.2%	4.2%
19	Missouri	103.3	6.2%	10.2%
20	Connecticut	103.3	6.2%	0.9%
21	Arizona	102.6	6.1%	7.2%
22	Minnesota	101.9	6.0%	12.7%
23	Pennsylvania	101.9	6.0%	3.8%
24	Florida	101.4	6.0%	9.0%
25	Idaho	100.2	5.8%	5.4%
26	Oregon	99.8	5.8%	4.2%
27	SouthCarolina	96.6	5.4%	6.4%
28	Nebraska	96.4	5.3%	0.5%
29	Vermont	96.2	5.3%	5.5%
30	Delaware	95.8	5.3%	-16.7%
31	RhodeIsland	95.1	5.2%	-7.3%
32	Ohio	94.1	5.1%	5.1%
33	Tennessee	93.7	5.0%	6.1%
34	Wisconsin	93.5	5.0%	5.7%
35	Alaska	92.6	4.9%	-12.5%
36	Montana	91.0	4.7%	7.2%
37	Maine	89.2	4.4%	9.4%
38	Indiana	88.6	4.4%	5.7%
39	NorthDakota	88.3	4.3%	-4.0%
40	Oklahoma	87.9	4.3%	3.6%
41	Kentucky	86.7	4.1%	-2.7%
42	Louisiana	86.2	4.1%	-1.5%
43	Iowa	84.5	3.9%	5.2%
44	Hawaii	83.6	3.8%	-3.2%
45	Wyoming	83.2	3.7%	2.2%
46	Arkansas	83.0	3.7%	0.8%
47	WestVirginia	82.7	3.6%	8.4%
48	Nevada	82.6	3.6%	8.0%
49	SouthDakota	79.2	3.2%	13.2%
50	Mississippi	75.0	2.7%	-7.5%

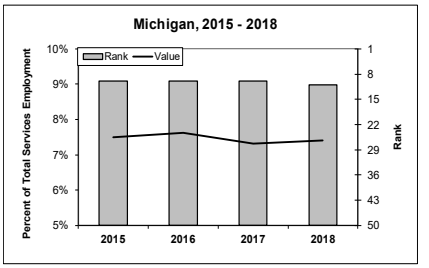
Percent of total covered service-providing employment in high-tech service industries, 2018

Information technology has been important in creating new approaches to industrial production, but it spawned a revolution in many services industries even earlier. Most information technology firms are categorized as services. Thus, the share of services employment in high-tech areas is an important indicator of an innovation economy base. The above table gives the percentage of each state's service-providing workers that are employed in R&D and STEM intensive service industries. See Appendix.

Source: U.S. Bureau of Labor Statistics

Midwest Performance, 2018

State	% of Total Services Employment	Rank
Michigan	**7.4%**	**11**
Illinois	6.6%	14
Ohio	5.1%	32
Wisconsin	5.0%	34
Indiana	4.4%	38



ARCHIVED: HIGH-TECH MANUFACTURING

Rank	State	Score	%of Total Mfg. Employment	Change, 2015-2018 (%)
	50-StateAverage		*34.2%*	*0.5%*
1	**Michigan**	**134.0**	**50.6%**	**0.8%**
2	Connecticut	128.7	48.2%	-0.4%
3	Washington	128.1	47.9%	-5.5%
4	Arizona	123.7	45.9%	-2.3%
5	California	116.4	42.6%	2.5%
6	Kansas	116.2	42.5%	-1.8%
7	Indiana	114.2	41.6%	1.6%
8	Kentucky	113.7	41.4%	1.6%
9	Maryland	112.9	41.0%	4.2%
10	Texas	112.5	40.9%	-2.8%
11	Massachusetts	112.0	40.6%	-1.6%
12	Oklahoma	110.8	40.1%	2.9%
13	New Hampshire	109.2	39.3%	2.7%
14	Ohio	109.1	39.3%	1.1%
15	South Carolina	109.0	39.3%	7.4%
16	North Dakota	108.1	38.8%	-0.5%
17	Missouri	106.4	38.1%	0.2%
18	West Virginia	105.7	37.8%	3.4%
19	Tennessee	104.5	37.2%	1.1%
20	Florida	104.1	37.0%	0.8%
21	Louisiana	103.7	36.9%	-4.1%
22	Colorado	101.2	35.7%	2.1%
23	Vermont	100.9	35.6%	-3.7%
24	Oregon	100.7	35.5%	-0.7%
25	Virginia	100.2	35.3%	-0.6%
26	Alabama	99.8	35.1%	-2.8%
27	New Jersey	99.7	35.0%	-2.7%
28	New York	99.5	34.9%	-0.2%
29	Rhode Island	99.2	34.8%	11.1%
30	Iowa	98.7	34.6%	-6.6%
31	Illinois	96.3	33.5%	-1.6%
32	Idaho	95.7	33.2%	0.3%
33	Maine	95.2	33.0%	3.9%
34	Mississippi	95.2	33.0%	-2.0%
35	Utah	93.4	32.2%	-2.3%
36	Minnesota	92.6	31.8%	-0.2%
37	North Carolina	90.6	30.9%	0.5%
38	South Dakota	89.6	30.5%	-1.8%
39	Wyoming	88.9	30.1%	2.1%
40	New Mexico	88.3	29.9%	-11.4%
41	Nebraska	83.0	27.4%	-5.8%
42	Wisconsin	82.9	27.4%	-1.6%
43	Pennsylvania	81.9	26.9%	-3.0%
44	Georgia	81.5	26.8%	0.1%
45	Delaware	81.2	26.6%	-8.3%
46	Arkansas	67.6	20.5%	-2.8%
47	Montana	63.0	18.4%	10.8%
48	Nevada	57.2	15.8%	-12.1%
49	Hawaii	46.3	10.8%	17.0%
50	Alaska	36.0	6.1%	38.0%

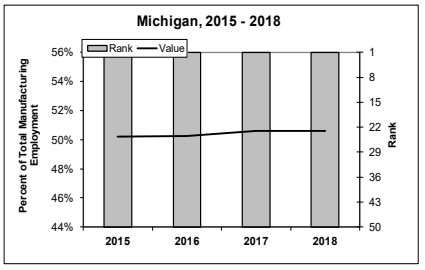
Percent of total covered manufacturing employment in high-tech manufacturing industries, 2018

Definition/methodology as per in previous years. This old definition is not used in Score Card aggregates.

Source: U.S. Bureau of Labor Statistics

Midwest Performance, 2017

State	% of Total Mfg Employment	Rank
Michigan	**50.6%**	**1**
Indiana	41.6%	7
Ohio	39.3%	14
Illinois	33.5%	31
Wisconsin	27.4%	42



ARCHIVED: HIGH-TECH SERVICES EMPLOYMENT

Rank	State	Score	% of Total Services Employment	Change, 2015-2018 (%)
	50-StateAverage		*6.9%*	*2.5%*
1	Virginia	161.4	14.0%	1.1%
2	Washington	147.6	12.2%	7.5%
3	Maryland	146.3	12.1%	2.1%
4	Massachusetts	145.9	12.0%	7.6%
5	Colorado	145.3	12.0%	3.9%
6	California	130.8	10.1%	3.6%
7	Utah	127.7	9.7%	7.8%
8	New Mexico	126.7	9.6%	4.0%
9	Texas	119.6	8.7%	3.6%
10	New Jersey	118.5	8.6%	-2.8%
11	Georgia	116.8	8.4%	0.1%
12	North Carolina	116.2	8.3%	7.7%
13	**Michigan**	**114.4**	**8.1%**	**-2.7%**
14	New Hampshire	111.2	7.7%	9.7%
15	Illinois	110.0	7.5%	1.7%
16	Minnesota	106.4	7.1%	12.9%
17	Alabama	106.3	7.0%	4.8%
18	Missouri	105.9	7.0%	7.2%
19	Kansas	105.8	7.0%	3.6%
20	Florida	105.0	6.9%	6.3%
21	New York	103.8	6.7%	4.2%
22	Arizona	103.4	6.7%	6.1%
23	Pennsylvania	103.0	6.6%	2.6%
24	Connecticut	102.8	6.6%	-0.2%
25	Oregon	100.1	6.3%	4.0%
26	Idaho	99.9	6.2%	2.0%
27	Alaska	99.6	6.2%	-11.5%
28	South Carolina	99.4	6.2%	5.4%
29	Ohio	99.0	6.1%	5.5%
30	Wisconsin	98.1	6.0%	5.2%
31	Nebraska	97.6	6.0%	2.6%
32	Delaware	96.4	5.8%	-16.0%
33	Vermont	95.8	5.7%	3.2%
34	Tennessee	95.4	5.7%	4.2%
35	Rhode Island	94.4	5.6%	-8.1%
36	Montana	93.5	5.4%	5.0%
37	North Dakota	90.6	5.1%	-3.3%
38	Kentucky	90.3	5.0%	-1.2%
39	Indiana	90.3	5.0%	2.7%
40	Maine	89.5	4.9%	11.5%
41	Oklahoma	89.1	4.9%	1.2%
42	Louisiana	87.8	4.7%	-1.6%
43	Iowa	86.9	4.6%	4.8%
44	Wyoming	86.3	4.5%	0.5%
45	South Dakota	84.5	4.3%	10.4%
46	West Virginia	84.2	4.3%	2.7%
47	Hawaii	83.5	4.2%	-4.0%
48	Arkansas	82.6	4.1%	-5.4%
49	Nevada	81.2	3.9%	7.8%
50	Mississippi	77.5	3.4%	-6.3%

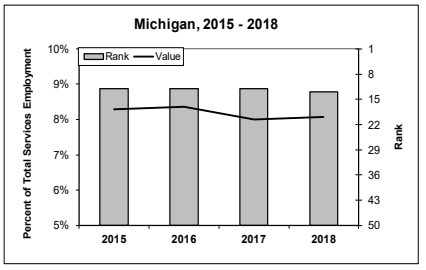
Percent of total covered services employment in high-tech manufacturing industries, 2018

Definition/methodology as per in previous years. This old definition is not used in Score Card aggregates.

Source: U.S. Bureau of Labor Statistics

Midwest Performance, 2017

State	% of Total Services Employment	Rank
Michigan	**8.1%**	**13**
Illinois	7.5%	15
Ohio	6.1%	29
Wisconsin	6.0%	30
Indiana	5.0%	39



ADULT EDUCATION*

Rank	State	Score	Percent	Change, 2011-2015 (%)
	50-State Average		*2.40%*	*-15.0%*
1	Arizona	213.7	6.23%	-34.9%
2	Utah	209.3	6.07%	30.2%
3	New Hampshire	184.8	5.15%	156.9%
4	Minnesota	158.9	4.18%	-13.3%
5	West Virginia	157.7	4.14%	-6.1%
6	Idaho	134.8	3.28%	37.0%
7	Iowa	133.5	3.23%	-55.6%
8	New Mexico	128.6	3.05%	-27.5%
9	Colorado	128.0	3.03%	-22.1%
10	Kansas	124.0	2.88%	-1.1%
11	Virginia	123.0	2.84%	-12.9%
12	Nebraska	119.5	2.71%	-15.0%
13	Maryland	116.0	2.58%	-16.1%
14	Illinois	115.7	2.57%	-21.0%
15	Alaska	114.7	2.53%	-11.8%
16	Missouri	113.2	2.47%	-29.1%
17	California	113.0	2.47%	-14.2%
18	Oregon	109.8	2.34%	-23.7%
19	Massachusetts	109.2	2.32%	-8.5%
20	Alabama	109.2	2.32%	-20.9%
21	Delaware	105.2	2.17%	-4.1%
22	Vermont	103.2	2.10%	-1.7%
23	Wyoming	102.5	2.07%	-24.0%
24	Kentucky	102.3	2.06%	-30.6%
25	Indiana	101.0	2.01%	-30.0%
26	Texas	99.0	1.94%	-19.1%
27	North Dakota	98.5	1.92%	-19.5%
28	Florida	98.3	1.92%	-23.9%
29	South Dakota	98.3	1.91%	-24.9%
30	Washington	98.2	1.91%	-20.0%
31	Wisconsin	98.1	1.91%	-24.4%
32	North Carolina	97.9	1.90%	-25.1%
33	Oklahoma	97.2	1.88%	-22.0%
34	Georgia	96.7	1.85%	-29.5%
35	Hawaii	95.7	1.82%	-16.6%
36	Maine	95.7	1.82%	-15.1%
37	**Michigan**	**95.6**	**1.81%**	**-34.0%**
38	New York	95.4	1.81%	-13.4%
39	Ohio	94.5	1.77%	-30.3%
40	Arkansas	93.4	1.73%	-28.4%
41	Connecticut	92.5	1.70%	-10.5%
42	Mississippi	92.4	1.69%	-25.2%
43	Rhode Island	88.7	1.56%	-16.4%
44	Nevada	88.3	1.54%	-25.4%
45	Pennsylvania	87.5	1.51%	-17.0%
46	Louisiana	87.3	1.50%	-20.2%
47	Tennessee	87.1	1.49%	-28.6%
48	Montana	87.1	1.49%	-16.3%
49	South Carolina	85.6	1.44%	-23.9%
50	New Jersey	85.3	1.43%	-20.9%

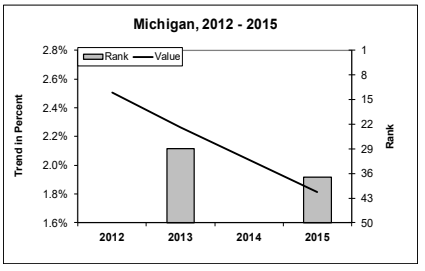
Postsecondary enrollment of 30-year-olds and above to a state's above-30 population, 2015

Continuous skill development and knowledge accrual is an important component of innovation economies. The needs of employers are changing too quickly for workers to rely on past education. Adult college is an important source of lifelong learning. This figure is published every two years. * *Not included in subdriver/driver calculations*

Source: National Center for Education Statistics

Midwest Performance, 2015

State	Percent	Rank
Illinois	2.57%	14
Indiana	2.01%	25
Wisconsin	1.91%	31
Michigan	**1.81%**	**37**
Ohio	1.77%	39



SKILLED IMMIGRANTS

Rank	State	Score	Percent of Population	Change, 2015-2018(%)
	50-StateAverage		1.5%	10.9%
1	NewJersey	174.7	5.4%	13.9%
2	California	161.7	4.7%	4.5%
3	NewYork	157.6	4.4%	1.8%
4	Florida	150.7	4.0%	12.5%
5	Maryland	143.4	3.6%	-1.8%
6	Virginia	137.9	3.3%	11.8%
7	Massachusetts	136.6	3.2%	14.1%
8	Hawaii	135.2	3.1%	18.0%
9	Illinois	133.2	3.0%	20.7%
10	Connecticut	128.2	2.7%	-0.4%
11	Nevada	123.1	2.4%	-5.7%
12	Texas	118.6	2.1%	11.8%
13	Washington	118.5	2.1%	2.6%
14	Delaware	116.4	2.0%	42.2%
15	Arizona	116.3	2.0%	28.6%
16	RhodeIsland	115.2	1.9%	-4.5%
17	Georgia	109.7	1.6%	19.0%
18	NewHampshire	109.0	1.5%	35.3%
19	Colorado	108.2	1.5%	32.0%
20	**Michigan**	**108.0**	**1.5%**	**17.7%**
21	Pennsylvania	107.2	1.4%	2.4%
22	Minnesota	106.5	1.4%	8.9%
23	NorthCarolina	104.6	1.3%	24.2%
24	Oregon	103.7	1.2%	-5.2%
25	Alaska	101.9	1.1%	-1.1%
26	Ohio	98.1	0.9%	-1.2%
27	Utah	97.1	0.8%	18.6%
28	Kansas	96.9	0.8%	-11.8%
29	Vermont	96.2	0.8%	-1.5%
30	Tennessee	96.2	0.8%	-2.1%
31	NewMexico	96.1	0.8%	-4.4%
32	Missouri	95.7	0.8%	21.1%
33	Indiana	95.5	0.8%	28.7%
34	Iowa	95.0	0.7%	12.0%
35	SouthCarolina	94.5	0.7%	-2.5%
36	Wisconsin	94.4	0.7%	9.2%
37	Nebraska	93.1	0.6%	43.2%
38	Maine	92.6	0.6%	28.6%
39	Louisiana	92.6	0.6%	11.2%
40	Idaho	92.4	0.6%	16.4%
41	Oklahoma	91.9	0.5%	14.8%
42	Kentucky	90.0	0.4%	10.5%
43	Arkansas	90.0	0.4%	-21.2%
44	SouthDakota	88.9	0.4%	55.6%
45	NorthDakota	88.2	0.3%	20.1%
46	Alabama	87.7	0.3%	-21.2%
47	Montana	87.6	0.3%	-1.7%
48	Wyoming	86.9	0.2%	-28.8%
49	WestVirginia	86.7	0.2%	8.8%
50	Mississippi	85.1	0.1%	41.1%

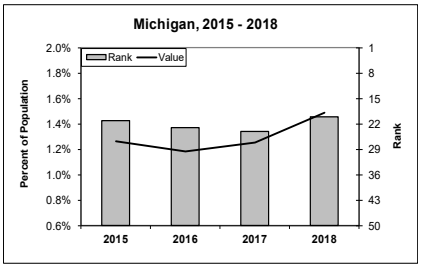
Permanent or temporary foreign-born residents with a bachelor's degree or higher as a percent of the total population, 2018

Silicon Valley has proven that highly skilled foreign workers can be an integral part of an innovation network. With states facing inevitable demographic shifts, the ability to attract well-educated workers from other countries becomes increasingly relevant. In recent years, this has become all the more critical due to federal curtailment of the entry quota for holders of H1B visas.

Source: U.S. Bureau of Labor Statistics

Midwest Performance, 2018

State	Percent of Population	Rank
Illinois	3.0%	9
Michigan	**1.5%**	**20**
Ohio	0.9%	26
Indiana	0.8%	33
Wisconsin	0.7%	36



BUSINESS COSTS*

While national monetary policies must keep a close watch on inflation trends on a near-term basis, long-term national and global trends would appear to be disinflationary due in large part to global overcapacity. Productive-capacity investments made during the boom times of the 1990s, along with a global shift to free enterprise economics, have combined to put downward pressure on prices for standardized products and services. The result is that many businesses have lost their pricing power. Their response is to improve productivity and to control costs. Doing both requires innovation and tight financial management.

Some argue that business costs are no longer as important a factor in location and expansion decisions as in previous decades. To the contrary, intense competition forces businesses to routinely consider lower cost areas in which to operate, including overseas locations, while concurrently investing in new technologies and methods to improve productivity, thus lowering costs at current locations. The Business Costs Driver is based on 10 metrics, weighted according to their relative importance in the "typical business" cost equation.

Midwest Performance

	2018	2016	2014
Ohio	***	***	***
Indiana	**	***	***
Illinois	**	**	**
Michigan	**	**	**
Wisconsin	*	**	*

** Metrics are given unequal weights in the calculation of this driver grade. Weighting is 57 percent unit labor costs; 6 percent business taxes; 6 percent state business tax structure; 12 percent industrial rents; 7 percent energy costs; 2.5 percent worker's compensation premiums; 2.5 percent worker's compensation costs; 5 percent healthcare premiums; 1 percent unemployment insurance costs and 1 percent unemployment insurance tax structure. See Data Sources appendix for more details.*

Rank	State	2018	2016	2014
1	Wyoming	*****	*****	*****
2	South Dakota	****	*****	*****
3	Tennessee	****	*****	****
4	Louisiana	****	****	***
5	Mississippi	***	****	***
6	Washington	***	***	***
7	Texas	***	***	***
8	Nevada	***	***	****
9	Kansas	***	***	**
10	Hawaii	***	**	**
11	Arkansas	***	***	***
12	Ohio	***	***	***
13	Connecticut	***	***	**
14	North Carolina	***	***	**
15	Oklahoma	**	***	***
16	Indiana	**	***	***
17	Idaho	**	***	***
18	Montana	**	**	***
19	Iowa	**	**	**
20	West Virginia	**	***	***
21	Alabama	**	**	**
22	New Mexico	**	**	**
23	Illinois	**	**	**
24	Maryland	**	**	**
25	South Carolina	**	**	**
26	Virginia	**	**	**
27	Colorado	**	**	**
28	Kentucky	**	**	**
29	**Michigan**	**	**	**
30	Pennsylvania	**	**	**
31	Delaware	**	**	**
32	Georgia	**	**	**
33	Minnesota	**	**	**
34	Utah	**	**	**
35	Nebraska	**	**	***
36	New Jersey	**	**	*
37	California	**	**	**
38	New York	**	**	**
39	Oregon	*	**	*
40	Wisconsin	*	**	*
41	Missouri	*	*	**
42	Alaska	*	*	*
43	Arizona	*	**	**
44	Florida	*	**	*
45	North Dakota	*	*	**
46	Rhode Island	*	*	*
47	Maine	*	*	*
48	Vermont	*	*	*
49	New Hampshire	*	*	*
50	Massachusetts	*	*	*

UNIT LABOR COSTS

Rank	State	Score	Index	Change, 2015-2018 (%)
	50-StateAverage		*100.0*	*0.0%*
1	Wyoming	161.3	86.7	-5.5%
2	Tennessee	135.5	92.5	0.3%
3	South Dakota	131.1	93.5	1.9%
4	Hawaii	130.3	93.7	-2.0%
5	Louisiana	128.1	94.2	-2.1%
6	Connecticut	119.5	96.1	-0.4%
7	Mississippi	118.4	96.4	0.4%
8	Texas	118.0	96.5	0.3%
9	Washington	116.9	96.7	1.2%
10	Nevada	115.2	97.1	-0.2%
11	Kansas	112.9	97.6	-1.5%
12	Alaska	110.1	98.2	-2.4%
13	Ohio	108.5	98.6	0.3%
14	West Virginia	105.2	99.3	1.2%
15	New Jersey	105.1	99.4	-1.2%
16	California	104.9	99.4	-0.2%
17	Iowa	104.0	99.6	0.9%
18	Arkansas	103.9	99.6	0.5%
19	New York	103.8	99.7	0.9%
20	Montana	103.7	99.7	1.0%
21	Indiana	102.9	99.8	0.5%
22	Idaho	102.9	99.8	1.0%
23	Oklahoma	102.5	99.9	0.8%
24	New Mexico	101.0	100.3	-0.6%
25	North Carolina	100.0	100.5	0.3%
26	Alabama	99.3	100.7	-0.6%
27	Illinois	98.7	100.8	0.6%
28	Pennsylvania	97.4	101.1	-0.7%
29	South Carolina	96.0	101.4	0.3%
30	Maryland	95.8	101.4	-1.7%
31	Rhode Island	95.8	101.4	0.2%
32	Kentucky	93.0	102.1	0.4%
33	Virginia	92.8	102.1	-0.3%
34	Colorado	92.3	102.2	-0.4%
35	Minnesota	92.1	102.3	-1.3%
36	**Michigan**	**91.2**	**102.5**	**0.9%**
37	Nebraska	90.3	102.7	3.3%
38	Vermont	90.1	102.7	-0.5%
39	North Dakota	88.9	103.0	1.7%
40	Georgia	87.7	103.3	0.9%
41	Wisconsin	87.6	103.3	0.4%
42	New Hampshire	86.7	103.5	-1.3%
43	Maine	86.2	103.6	-0.3%
44	Oregon	86.0	103.6	-0.8%
45	Arizona	84.5	104.0	0.7%
46	Florida	84.2	104.0	-0.2%
47	Utah	83.4	104.2	2.2%
48	Massachusetts	82.6	104.4	0.1%
49	Missouri	80.7	104.8	0.6%
(n/a)	Delaware	(n/a)	(n/a)	(n/a)

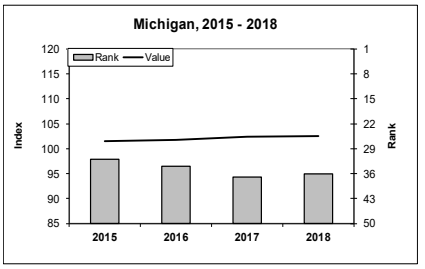
Unit labor cost index, 2018

The single largest cost affecting most ezmployers is labor. The real cost of labor, however, is not the simple hourly wage, but the cost per unit of output. If the labor force is sufficiently productive, high wages do not mean high unit labor costs. The measure of unit labor costs is derived both from the total value of output and from the total cost of labor. Higher values mean more expensive labor per unit of output, and a value of 100 is equal to the U.S. average. It is adjusted for the industry mix in each state.

Source: Bureau of Economic Analysis

Midwest Performance, 2018

State	Index	Rank
Ohio	98.6	13
Indiana	99.8	21
Illinois	100.8	27
Michigan	**102.5**	**36**
Wisconsin	103.3	41



ENERGY COSTS

Rank	State	Score	Perkilowatthour	Change, 2015 - 2018 (%)
	50-StateAverage		*$0.092*	*1.6%*
1	Arkansas	120.8	$0.066	-8.0%
2	Oklahoma	120.2	$0.067	2.9%
3	Washington	120.1	$0.067	6.9%
4	Texas	119.9	$0.067	-1.4%
5	Nevada	119.2	$0.068	-13.5%
6	Utah	117.5	$0.069	-4.5%
7	Louisiana	115.7	$0.071	0.9%
8	Idaho	115.3	$0.071	0.0%
9	Oregon	114.1	$0.072	0.0%
10	North Carolina	111.9	$0.074	-2.2%
11	Virginia	111.0	$0.075	0.1%
12	Montana	109.4	$0.076	-1.6%
13	Kentucky	108.7	$0.077	3.4%
14	West Virginia	108.0	$0.077	6.4%
15	Pennsylvania	106.6	$0.078	-6.1%
16	Georgia	105.8	$0.079	0.2%
17	New Mexico	105.7	$0.079	-4.6%
18	Illinois	105.3	$0.079	1.5%
19	Iowa	104.9	$0.080	8.8%
20	Tennessee	103.7	$0.081	-0.9%
21	South Carolina	103.3	$0.081	-0.3%
22	Wyoming	103.2	$0.081	2.6%
23	Nebraska	102.7	$0.081	1.0%
24	Mississippi	101.9	$0.082	-4.0%
24	Missouri	101.9	$0.082	6.5%
26	Florida	100.7	$0.083	-4.9%
27	North Dakota	99.3	$0.084	1.1%
28	Ohio	97.9	$0.085	0.2%
29	Arizona	97.7	$0.086	3.2%
30	Alabama	97.3	$0.086	2.3%
31	South Dakota	96.9	$0.086	5.2%
32	Colorado	96.1	$0.087	1.2%
33	Delaware	95.5	$0.087	-5.0%
34	Minnesota	94.8	$0.088	8.8%
35	Indiana	92.9	$0.090	8.1%
36	Wisconsin	92.5	$0.090	-2.5%
37	**Michigan**	**92.4**	**$0.090**	**3.9%**
38	Kansas	90.9	$0.091	3.1%
39	Maryland	90.8	$0.091	-4.5%
40	New York	88.4	$0.093	-5.1%
41	Maine	77.2	$0.103	1.4%
42	New Jersey	69.3	$0.109	-4.9%
43	Vermont	66.6	$0.111	4.4%
44	New Hampshire	44.7	$0.130	5.5%
45	California	24.7	$0.146	5.9%
46	Connecticut	22.8	$0.148	5.6%
47	Rhode Island	16.8	$0.153	8.2%
48	Massachusetts	8.1	$0.160	9.3%
49	Alaska	7.6	0.1603	11.6%
50	Hawaii	-14.3	0.1784	12.0%

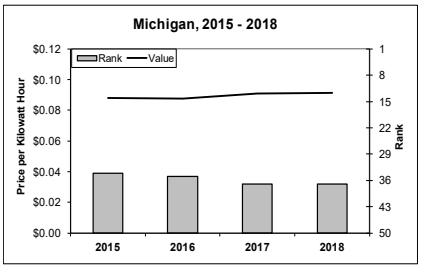
Average industrial and commercial energy price per kilowatt-hour, 2018

Although of less importance than labor, health insurance, and taxes, energy costs are nonetheless a core concern of employers. Like the other metrics in this section, energy prices are also highly variable across states. The above table shows the average industrial and commercial energy costs per kilowatt-hour.

Source: Energy Information Administration

Midwest Performance, 2018

State	Per Kilowatt Hour	Rank
Illinois	$0.080	18
Ohio	$0.086	28
Indiana	$0.090	35
Wisconsin	$0.090	36
Michigan	**$0.091**	**37**



WORKERS' COMPENSATION COSTS

Rank	State	Score	Rate per $100 of payroll	Change, 2013 - 2017 (%)
	50-StateAverage		*$1.73*	*-8.8%*
1	North Dakota	127.3	$0.82	-6.8%
2	Indiana	125.8	$0.87	-17.9%
3	Arkansas	124.8	$0.90	-16.7%
4	West Virginia	121.4	$1.01	-26.3%
5	Utah	119.9	$1.06	-19.1%
6	Kansas	117.1	$1.15	-25.8%
6	Oregon	117.1	$1.15	-16.1%
8	Nevada	116.1	$1.18	-6.3%
9	Texas	115.2	$1.21	-24.8%
10	Virginia	113.0	$1.28	9.4%
11	Arizona	112.4	$1.30	-18.8%
12	Maryland	111.5	$1.33	-18.9%
13	Massachusetts	110.2	$1.37	17.1%
14	**Michigan**	**109.9**	**$1.38**	**-17.9%**
15	Ohio	109.3	$1.40	-19.5%
16	Colorado	108.4	$1.43	-4.7%
17	New Mexico	106.2	$1.50	-24.6%
18	Kentucky	105.9	$1.51	0.0%
19	Tennessee	105.6	$1.52	-22.1%
20	Mississippi	105.0	$1.54	-3.1%
21	Iowa	101.9	$1.64	-12.8%
22	Alabama	101.6	$1.65	-8.8%
23	Minnesota	100.9	$1.67	-16.1%
24	Missouri	100.6	$1.68	-15.2%
25	Nebraska	100.0	$1.70	-4.5%
25	New Hampshire	100.0	$1.70	-22.0%
27	Oklahoma	99.7	$1.71	-32.9%
28	South Dakota	99.1	$1.73	-7.0%
29	Illinois	96.9	$1.80	-23.4%
30	Florida	96.6	$1.81	-0.5%
30	Idaho	96.6	$1.81	-10.0%
32	Maine	95.7	$1.84	-14.4%
32	North Carolina	95.7	$1.84	-0.5%
34	Pennsylvania	95.3	$1.85	-7.5%
35	Washington	94.7	$1.87	-6.5%
35	Wyoming	94.7	$1.87	6.3%
37	South Carolina	92.2	$1.95	-2.5%
38	Hawaii	90.4	$2.01	8.6%
38	Montana	90.4	$2.01	-9.0%
40	Wisconsin	90.1	$2.02	5.2%
41	Louisiana	89.1	$2.05	-8.1%
42	Vermont	87.9	$2.09	-10.3%
43	Rhode Island	84.8	$2.19	10.1%
44	Connecticut	84.5	$2.20	-23.3%
45	Georgia	82.3	$2.27	29.7%
46	Delaware	75.2	$2.50	8.2%
47	Alaska	74.8	$2.51	-6.3%
48	New Jersey	64.6	$2.84	0.7%
49	California	63.7	$2.87	-17.5%
50	New York	57.1	$3.08	12.0%

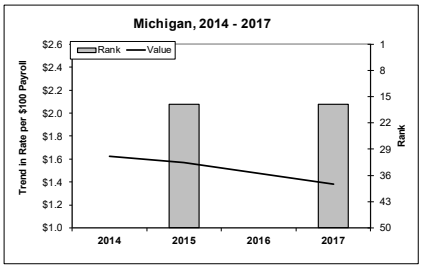
Average workers' compensation rate paid per $100 of payroll, 2017

Workers' compensation and unemployment insurance costs are largely reflected in unit labor costs. When firms evaluate state and local taxes, they frequently lump in compensation and unemployment insurance costs. However, businesses do take these factors into account separately when making relocation and expansion decisions and are therefore shown separately in this report. The table shows a state's average workers' compensation rate paid per $100 of payroll, published every two years.

Source: Oregon Department of Consumer & Business Services

Midwest Performance, 2017

State	Rate per $100 of Payroll	Rank
Indiana	$0.87	2
Michigan	**$1.38**	**14**
Ohio	$1.40	15
Illinois	$1.80	29
Wisconsin	$2.02	40



WORKERS' COMPENSATION PREMIUMS

Rank	State	Score	Benefits per $100 of Covered Wages	Change, 2015-2018 (%)
	50-StateAverage		*$0.81*	*-7%*
1	Texas	127.7	$0.27	-16%
2	**Michigan**	**119.2**	**$0.42**	**-28%**
3	Utah	118.7	$0.43	-12%
4	Arkansas	118.1	$0.44	-8%
4	Indiana	118.1	$0.44	-10%
6	Massachusetts	115.3	$0.49	-8%
6	Tennessee	115.3	$0.49	-16%
6	Virginia	115.3	$0.49	-8%
9	North Carolina	111.9	$0.55	-25%
10	Arizona	111.3	$0.56	-13%
11	Colorado	110.7	$0.57	-11%
11	Nevada	110.7	$0.57	-15%
13	New Hampshire	110.2	$0.58	-15%
14	South Dakota	109.6	$0.59	-9%
15	Georgia	106.8	$0.64	-15%
15	Rhode Island	106.8	$0.64	-15%
17	Maryland	106.2	$0.65	-16%
18	Minnesota	105.1	$0.67	-15%
19	Ohio	104.5	$0.68	-24%
20	Illinois	104.0	$0.69	-22%
21	Kansas	102.8	$0.71	-8%
22	Kentucky	101.7	$0.73	-17%
22	Oregon	101.7	$0.73	-13%
24	Alabama	101.1	$0.74	-15%
24	Nebraska	101.1	$0.74	-13%
26	North Dakota	98.9	$0.78	-11%
27	Mississippi	98.3	$0.79	-12%
28	Connecticut	96.0	$0.83	-13%
29	Oklahoma	95.5	$0.84	-31%
30	Missouri	93.2	$0.88	5%
31	Florida	92.7	$0.89	-14%
31	Wisconsin	92.7	$0.89	-14%
33	Delaware	91.0	$0.92	229%
33	New Mexico	91.0	$0.92	-6%
33	Pennsylvania	91.0	$0.92	-15%
36	Louisiana	90.4	$0.93	1%
37	New Jersey	89.8	$0.94	-8%
38	Iowa	89.3	$0.95	-7%
39	New York	88.7	$0.96	-2%
40	Idaho	86.4	$1.00	-7%
40	Maine	86.4	$1.00	-10%
42	Vermont	83.0	$1.06	-12%
43	Hawaii	81.3	$1.09	5%
43	South Carolina	81.3	$1.09	-11%
45	California	80.8	$1.10	-17%
46	Washington	72.9	$1.24	-16%
47	Montana	64.4	$1.39	-9%
48	Alaska	63.8	$1.40	-1%
49	Wyoming	59.9	$1.47	2%
50	West Virginia	59.3	$1.48	-6%

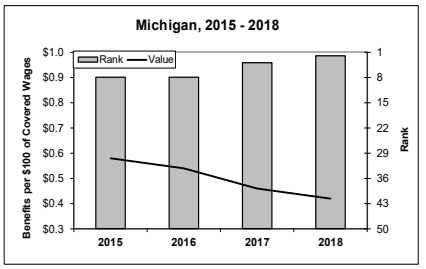
Average workers' compensation benefits paid per $100 of covered wages, 2018

A state's worker's compensation benefits structure drives the premium schedule for business, alongside other policy considerations. While this measure is a cost to the state, it directly affects employer costs if the program is to maintain solvency. There is definite correlation between this metric and the Workers' Compensation Premiums metric. The table shows a state's average workers' benefits rate paid per $100 of covered wages.

Source: National Academy of Social Insurance

Midwest Performance, 2018

State	Benefits per $100 of Covered Wages	Rank
Michigan	**$0.42**	**2**
Indiana	$0.44	4
Ohio	$0.68	19
Illinois	$0.69	20
Wisconsin	$0.89	31



UNEMPLOYMENT INSURANCE COSTS

Rank	State	Score	Rate	Change, 2015-2018 (%)
	50-StateAverage		*1.75%*	*-24.33%*
1	Utah	121.2	0.49%	-47.3%
2	Mississippi	120.0	0.55%	-48.6%
3	South Dakota	119.6	0.57%	-25.0%
4	North Carolina	118.8	0.61%	-73.1%
5	Idaho	115.4	0.78%	-40.0%
6	Florida	115.2	0.79%	-62.2%
7	New Hampshire	113.8	0.86%	-18.1%
8	New Mexico	113.0	0.90%	-66.2%
9	Nebraska	112.4	0.93%	-26.8%
10	Oklahoma	112.0	0.95%	5.6%
11	Washington	110.0	1.05%	-28.6%
12	Hawaii	109.6	1.07%	-23.6%
13	Tennessee	108.8	1.11%	-17.2%
14	Minnesota	107.8	1.16%	-24.2%
15	Missouri	107.6	1.17%	-41.5%
16	Iowa	106.0	1.25%	-3.1%
17	North Dakota	105.2	1.29%	37.2%
18	Kansas	104.8	1.31%	-44.3%
19	Montana	104.4	1.33%	-10.1%
19	Alabama	104.4	1.33%	-35.7%
21	South Carolina	103.8	1.36%	-28.4%
22	Virginia	103.6	1.37%	-40.9%
23	Georgia	102.0	1.45%	-30.6%
24	Delaware	101.6	1.47%	-27.6%
25	Louisiana	100.2	1.54%	-4.3%
26	Colorado	99.8	1.56%	-29.7%
26	Arkansas	99.8	1.56%	-42.2%
28	Wyoming	99.2	1.59%	13.6%
28	Alaska	99.2	1.59%	-26.7%
30	Wisconsin	96.0	1.75%	-46.8%
31	Indiana	95.6	1.77%	-29.2%
32	New Jersey	95.4	1.78%	-33.1%
33	Maine	94.8	1.81%	-30.1%
34	Oregon	92.2	1.94%	-23.0%
35	Nevada	91.0	2.00%	-2.4%
36	Kentucky	90.8	2.01%	-36.8%
37	Maryland	89.8	2.06%	-30.9%
38	Texas	87.8	2.16%	-10.0%
39	Ohio	85.6	2.27%	-11.7%
40	Arizona	85.4	2.28%	-1.7%
41	New York	80.4	2.53%	-38.9%
42	Illinois	79.8	2.56%	-24.9%
43	Rhode Island	78.2	2.64%	-26.3%
44	Massachusetts	71.5	2.98%	13.7%
45	West Virginia	70.3	3.04%	4.1%
46	Vermont	68.1	3.15%	-18.6%
47	**Michigan**	**67.3**	**3.19%**	**-19.0%**
48	Connecticut	63.3	3.39%	-11.9%
49	California	45.9	4.26%	-12.7%
50	Pennsylvania	29.9	5.06%	-16.4%

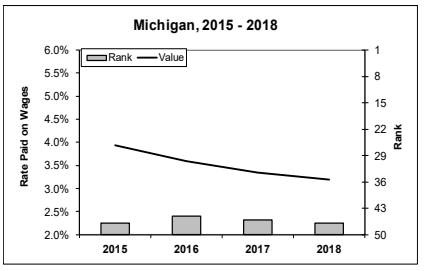
Average employer contributions as a percentage of taxable wages, 2018

Unemployment insurance costs are another major labor cost factor that is often only evaluated in combination with compensation costs. However, businesses do take these factors into account separately when making relocation and expansion decisions. The above table shows the average unemployment insurance rate paid by the employer in each state paid on taxable wages.

Source: U.S. Department of Labor

Midwest Performance, 2018

State	Rate	Rank
Wisconsin	1.8%	30
Indiana	1.8%	31
Ohio	2.3%	39
Illinois	2.6%	42
Michigan	**3.2%**	**47**



UNEMPLOYMENT INSURANCE TAX STRUCTURE

Rank	State	Score	Index	Change, 2015-2018 (%)
	50-StateAverage		*5.0*	*0.6%*
1	Oklahoma	137.6	6.41	-2.3%
2	Florida	129.0	6.06	-2.1%
3	Delaware	126.3	5.95	-0.5%
4	Louisiana	123.8	5.85	-1.3%
5	Mississippi	123.6	5.84	0.5%
6	Ohio	121.1	5.74	-1.7%
7	North Carolina	119.4	5.67	0.5%
8	Missouri	118.1	5.62	1.4%
9	Nebraska	117.4	5.59	-0.9%
10	New Mexico	116.4	5.55	-4.5%
11	Indiana	115.9	5.53	1.3%
12	Arizona	112.9	5.41	-5.9%
12	Alabama	112.9	5.41	6.5%
14	North Dakota	112.5	5.39	-0.6%
14	Kansas	112.5	5.39	-4.3%
16	Utah	111.7	5.36	2.7%
17	California	108.0	5.21	-5.4%
18	Washington	107.8	5.20	0.2%
18	Texas	107.8	5.20	-5.5%
20	Vermont	107.3	5.18	-3.2%
21	Montana	106.5	5.15	-2.6%
22	Tennessee	104.8	5.08	0.0%
23	Connecticut	104.3	5.06	-2.7%
24	Maine	101.6	4.95	14.8%
25	Minnesota	100.1	4.89	-1.0%
26	Hawaii	99.9	4.88	-4.3%
27	South Carolina	99.6	4.87	1.5%
27	Maryland	99.6	4.87	-2.0%
29	Rhode Island	99.4	4.86	36.9%
30	West Virginia	98.6	4.83	-6.2%
31	New York	98.2	4.81	0.4%
31	New Jersey	98.2	4.81	0.2%
33	Iowa	97.4	4.78	0.6%
34	Arkansas	96.9	4.76	11.7%
35	Alaska	96.7	4.75	-7.8%
36	Wyoming	96.2	4.73	-1.5%
37	Oregon	95.9	4.72	-6.0%
38	Georgia	94.2	4.65	4.3%
39	South Dakota	93.2	4.61	5.3%
40	Colorado	92.7	4.59	-4.2%
41	Wisconsin	92.5	4.58	-3.0%
42	Virginia	92.0	4.56	1.8%
42	Illinois	92.0	4.56	0.9%
44	New Hampshire	89.0	4.44	5.5%
45	Nevada	83.1	4.20	-2.3%
46	Pennsylvania	81.6	4.14	23.6%
47	Kentucky	79.7	4.06	0.7%
48	Idaho	79.2	4.04	-1.9%
49	**Michigan**	**74.5**	**3.85**	**2.7%**
50	Massachusetts	63.4	3.40	-11.9%

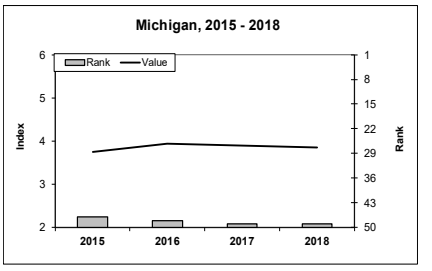
Tax Foundation Unemployment Insurance Tax Index, 2018

The Tax Foundation in its annual State Unemployment Insurance Tax Index scores states higher that have fewer the distortions, a simpler tax structure, a broader base and lower rates, with a maximum score of 10. The Unemployment Insurance Tax Index is made up of two sub-indexes - the unemployment insurance tax rate sub-index and the tax base sub-index. See Appendix for more detail.

Source: Tax Foundation

Midwest Performance, 2018

State	Index	Rank
Ohio	5.74	6
Indiana	5.53	11
Wisconsin	4.58	41
Illinois	4.56	42
Michigan	**3.85**	**49**



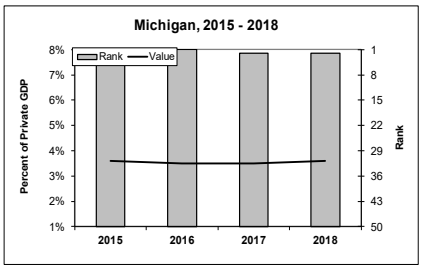
BUSINESS TAX BURDEN

Rank	State	Score	Percent	Change, 2015-2018 (%)
	50-StateAverage		*5.0%*	*2.7%*
1	Missouri	123.3	3.4%	-5.6%
2	**Michigan**	**119.6**	**3.6%**	**0.0%**
2	North Carolina	119.6	3.6%	2.9%
4	Georgia	117.7	3.7%	0.0%
4	Indiana	117.7	3.7%	2.8%
4	Utah	117.7	3.7%	-2.6%
7	Connecticut	115.8	3.8%	8.6%
8	Ohio	114.0	3.9%	-2.5%
9	Maryland	112.1	4.0%	5.3%
9	Massachusetts	112.1	4.0%	-2.4%
9	Oregon	112.1	4.0%	11.1%
12	Virginia	110.2	4.1%	2.5%
13	Wisconsin	108.4	4.2%	-4.5%
14	Tennessee	106.5	4.3%	0.0%
15	California	104.7	4.4%	-2.2%
15	Delaware	104.7	4.4%	-2.2%
15	Minnesota	104.7	4.4%	-2.2%
18	Colorado	102.8	4.5%	2.3%
18	Idaho	102.8	4.5%	0.0%
18	Iowa	102.8	4.5%	0.0%
21	Alabama	100.9	4.6%	2.2%
21	Arizona	100.9	4.6%	-6.1%
21	Arkansas	100.9	4.6%	4.5%
21	Illinois	100.9	4.6%	-4.2%
21	Kentucky	100.9	4.6%	-2.1%
26	Kansas	99.1	4.7%	-7.8%
26	Pennsylvania	99.1	4.7%	4.4%
28	Nebraska	97.2	4.8%	9.1%
28	New Hampshire	97.2	4.8%	14.3%
28	Oklahoma	97.2	4.8%	4.3%
28	Rhode Island	97.2	4.8%	-11.1%
28	South Carolina	97.2	4.8%	-4.0%
33	Washington	93.5	5.0%	-9.1%
34	South Dakota	91.6	5.1%	8.5%
35	Louisiana	89.8	5.2%	26.8%
36	Florida	87.9	5.3%	8.2%
36	New Jersey	87.9	5.3%	3.9%
38	Montana	84.2	5.5%	1.9%
39	Hawaii	82.3	5.6%	-8.2%
39	Texas	82.3	5.6%	16.7%
41	New York	80.4	5.7%	-1.7%
42	Nevada	76.7	5.9%	9.3%
43	Alaska	71.1	6.2%	77.1%
44	Mississippi	69.3	6.3%	-1.6%
45	West Virginia	65.5	6.5%	3.2%
46	Maine	58.1	6.9%	3.0%
46	New Mexico	58.1	6.9%	-2.8%
48	Vermont	45.0	7.6%	-1.3%
49	Wyoming	39.4	7.9%	-2.5%
50	North Dakota	18.9	9.0%	-9.1%

State and local business taxes per dollar of private economic activity, 2017
Taxes, typically highly varied across states, are a key component of states' competitive positions, especially for businesses. A business-friendly tax policy helps to attract firms. The measure for business taxes is taken from a study prepared by Ernst & Young for the Council on State Taxation. The above table shows the share of state and local business taxes in proportion to total business revenue for the most current fiscal year as represented by gross domestic product.
Source: Ernst & Young

Midwest Performance, 2017

State	Percent of Private GDP	Rank
Michigan	**3.6%**	**2**
Indiana	3.7%	4
Ohio	3.9%	8
Wisconsin	4.2%	13
Illinois	4.6%	21



STATE BUSINESS TAX STRUCTURE

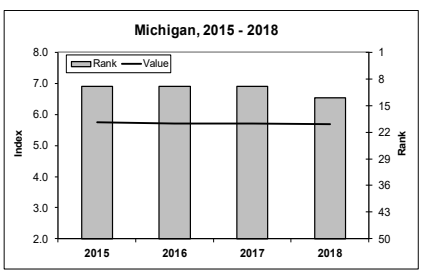
Rank	State	Score	Index	Change, 2015-2018 (%)
	50-StateAverage		*5.2*	*0.0%*
1	Wyoming	179.7	9.58	-2.1%
1	South Dakota	179.7	9.58	-2.1%
3	North Carolina	121.7	6.34	5.1%
4	South Carolina	115.9	6.02	8.7%
5	Colorado	114.7	5.95	5.9%
6	Missouri	114.1	5.92	-2.8%
7	Utah	113.6	5.89	-2.8%
8	Georgia	112.2	5.81	0.2%
9	Montana	111.5	5.77	4.2%
10	Virginia	110.7	5.73	-1.2%
10	Hawaii	110.7	5.73	0.0%
10	Florida	110.7	5.73	5.7%
13	**Michigan**	**110.0**	**5.69**	**-1.0%**
14	Mississippi	108.2	5.59	-1.8%
15	Arizona	107.7	5.56	4.7%
16	North Dakota	107.3	5.54	0.4%
17	New York	107.2	5.53	-4.7%
18	Indiana	107.0	5.52	9.3%
19	Oklahoma	105.7	5.45	-5.7%
20	Kentucky	105.2	5.42	8.6%
21	Nevada	103.8	5.34	14.1%
22	Alabama	103.6	5.33	1.1%
23	New Mexico	103.4	5.32	2.5%
24	West Virginia	102.3	5.26	-1.3%
25	Alaska	100.4	5.15	0.2%
26	Maryland	99.6	5.11	-4.7%
27	Tennessee	99.1	5.08	-5.8%
28	Idaho	97.9	5.01	-4.0%
29	Nebraska	96.8	4.95	-1.6%
30	Oregon	94.4	4.82	-2.4%
31	Wisconsin	94.3	4.81	-1.4%
32	Maine	92.7	4.72	6.3%
32	Kansas	92.7	4.72	-1.0%
34	Connecticut	92.5	4.71	-2.1%
35	Louisiana	91.6	4.66	-4.3%
36	Rhode Island	91.0	4.63	-4.7%
37	Illinois	89.3	4.53	-8.3%
38	California	89.1	4.52	-6.4%
39	Massachusetts	88.2	4.47	-4.9%
40	Arkansas	86.9	4.40	-4.8%
41	Vermont	86.8	4.39	-0.7%
42	Washington	85.1	4.30	3.6%
43	Ohio	84.2	4.25	9.5%
44	Minnesota	83.3	4.20	-4.5%
45	Pennsylvania	80.7	4.05	-1.7%
46	New Hampshire	77.8	3.89	2.1%
47	Iowa	77.3	3.86	5.5%
48	Texas	76.2	3.80	14.5%
49	New Jersey	73.1	3.63	-18.4%
50	Delaware	59.9	2.89	-3.0%

Tax Foundation Corporate Tax Index, 2018
The Tax Foundation in its annual State Business Tax Climate Index evaluates that the fewer the distortions, the simpler the tax structure, the broader the base and the lower the rates, the higher the index score, with a maximum of 10. The Corporate Tax Index is made up of two sub-indexes - the tax rate sub-index and the tax base sub-index. See Appendix for more detail.

Source: Tax Foundation

Midwest Performance, 2018

State	Index	Rank
Michigan	**5.69**	**13**
Indiana	5.52	18
Wisconsin	4.81	31
Illinois	4.53	37
Ohio	4.25	43



METRO INDUSTRIAL RENTS

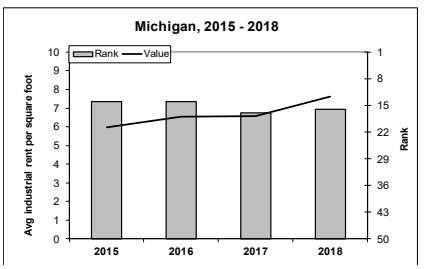
Rank	State	Score	Growth Rate	Change, 2015-2018 (%)
	50-StateAverage		*$8.00*	*17.3%*
1	Alabama	102.8	$4.62	-8.5%
2	Ohio	102.6	$4.79	-4.8%
3	Missouri	102.2	$5.14	0.8%
4	Illinois	102.2	$5.15	-8.4%
5	South Carolina	102.2	$5.15	6.5%
6	Wisconsin	102.0	$5.37	24.3%
7	Connecticut	101.4	$5.79	-3.8%
8	Nebraska	101.4	$5.80	15.4%
9	Georgia	101.3	$5.90	-9.0%
10	Indiana	100.8	$6.32	30.7%
11	Maryland	100.7	$6.40	-1.2%
12	Idaho	100.5	$6.55	-4.3%
13	North Carolina	100.3	$6.77	38.2%
14	Tennessee	99.7	$7.20	22.5%
15	New Mexico	99.4	$7.45	26.8%
16	**Michigan**	**99.2**	**$7.63**	**27.8%**
17	Texas	98.3	$8.38	-6.9%
18	Arizona	98.1	$8.59	34.6%
19	California	97.6	$8.95	5.3%
20	Nevada	97.1	$9.42	42.1%
21	Massachusetts	96.6	$9.77	11.1%
22	Colorado	96.4	$9.93	34.1%
23	Washington	93.7	$12.23	52.0%
24	Hawaii	90.8	$14.63	36.7%
25	Florida	90.4	$14.91	50.7%
26	New York	90.2	$15.14	36.3%
(n/a)	Wyoming	(n/a)	(n/a)	(n/a)
(n/a)	West Virginia	(n/a)	(n/a)	(n/a)
(n/a)	Virginia	(n/a)	(n/a)	(n/a)
(n/a)	Vermont	(n/a)	(n/a)	(n/a)
(n/a)	Utah	(n/a)	(n/a)	(n/a)
(n/a)	South Dakota	(n/a)	(n/a)	(n/a)
(n/a)	Rhode Island	(n/a)	(n/a)	(n/a)
(n/a)	Pennsylvania	(n/a)	(n/a)	(n/a)
(n/a)	Oregon	(n/a)	(n/a)	(n/a)
(n/a)	Oklahoma	(n/a)	(n/a)	(n/a)
(n/a)	North Dakota	(n/a)	(n/a)	(n/a)
(n/a)	New Jersey	(n/a)	(n/a)	(n/a)
(n/a)	New Hampshire	(n/a)	(n/a)	(n/a)
(n/a)	Montana	(n/a)	(n/a)	(n/a)
(n/a)	Mississippi	(n/a)	(n/a)	(n/a)
(n/a)	Minnesota	(n/a)	(n/a)	(n/a)
(n/a)	Maine	(n/a)	(n/a)	(n/a)
(n/a)	Louisiana	(n/a)	(n/a)	(n/a)
(n/a)	Kentucky	(n/a)	(n/a)	(n/a)
(n/a)	Kansas	(n/a)	(n/a)	(n/a)
(n/a)	Iowa	(n/a)	(n/a)	(n/a)
(n/a)	Delaware	(n/a)	(n/a)	(n/a)
(n/a)	Arkansas	(n/a)	(n/a)	(n/a)
(n/a)	Alaska	(n/a)	(n/a)	(n/a)

Metro Industrial Rents average, 2018

Industrial occupancy costs rank high as a site-location factor, after availability of transportation and utilities, availability of labor, and site characteristics. The best available method of comparison is to use regularly reported rents for major metro areas in each state. The above table lists the average industrial rent per square foot for the main metropolitan area in each state.

Midwest Performance, 2018

State	Avg industrial rent per square foot	Rank
Ohio	$4.8	2
Illinois	$5.1	4
Wisconsin	$5.4	6
Indiana	$6.3	10
Michigan	**$7.6**	**16**



SMALL BUSINESS HEALTH CARE PREMIUMS

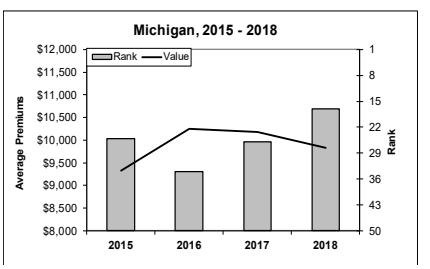
Rank	State	Score	Dollars	Change, 2015-2018 (%)
	50-StateAverage		*$10,702*	*17.1%*
1	Idaho	122.2	$8,472	77.8%
2	Colorado	122.1	$8,485	-18.0%
3	Mississippi	121.3	$8,568	69.9%
4	Minnesota	120.5	$8,650	-13.2%
5	Arkansas	120.3	$8,665	36.9%
6	Tennessee	120.1	$8,685	14.4%
7	Hawaii	118.5	$8,847	-7.5%
8	Montana	117.1	$8,980	-6.5%
9	North Carolina	117.0	$8,989	17.1%
10	Georgia	116.5	$9,046	-3.7%
11	Washington	116.4	$9,054	11.2%
12	New Mexico	115.5	$9,138	-1.8%
13	Missouri	115.1	$9,184	6.0%
14	Maine	112.4	$9,452	-6.7%
15	Utah	111.2	$9,568	-6.3%
16	Illinois	110.7	$9,624	-3.8%
17	**Michigan**	**108.6**	**$9,831**	**5.3%**
18	Kansas	106.7	$10,017	18.0%
19	Maryland	106.2	$10,069	19.1%
20	Wisconsin	104.8	$10,210	8.5%
21	Nevada	102.6	$10,422	31.5%
22	Oklahoma	101.9	$10,492	34.0%
23	Delaware	101.4	$10,542	5.3%
24	North Dakota	100.7	$10,618	13.6%
25	Iowa	100.0	$10,683	21.3%
26	Kentucky	100.0	$10,685	31.9%
27	Vermont	99.4	$10,743	8.9%
28	Nebraska	98.9	$10,792	5.0%
29	Louisiana	98.9	$10,794	19.4%
30	Connecticut	98.9	$10,798	-10.8%
31	Pennsylvania	97.7	$10,912	-2.7%
32	Ohio	96.5	$11,033	11.0%
33	Alabama	94.9	$11,196	20.7%
34	Virginia	93.2	$11,362	30.6%
35	Indiana	92.8	$11,400	27.5%
36	South Carolina	92.6	$11,423	34.2%
37	Florida	91.9	$11,494	-2.2%
38	Oregon	90.9	$11,586	51.2%
39	Arizona	88.9	$11,787	10.8%
40	Rhode Island	88.3	$11,852	29.1%
41	West Virginia	88.0	$11,873	44.3%
42	California	87.1	$11,969	13.6%
43	Wyoming	85.4	$12,141	40.0%
44	New Hampshire	82.6	$12,415	13.3%
45	Texas	81.7	$12,502	14.5%
46	Massachusetts	81.3	$12,547	12.3%
47	South Dakota	76.8	$12,992	38.4%
48	Alaska	69.1	$13,760	53.9%
49	New Jersey	63.2	14348.5	0.15133
50	New York	42.3	16421.5	0.23997

Average of mean single and family premiums for firms with 99 or fewer employees, 2018

As health care costs continue to escalate, the cost of employer-provided health insurance is increasingly becoming a concern for employers. The variation of these costs from state-to-state often receives scant attention. But health care insurance costs can be a significant determinant of firms' willingness to locate to or remain in a given state. The above table is an average of total single and family coverage health insurance premiums across all plan types for companies with 99 or fewer employees.
Source: U.S. Department of Health and Human Services

Midwest Performance, 2018

State	Average Premium	Rank
Illinois	9,624	16
Michigan	**9,831**	**17**
Wisconsin	10,210	20
Ohio	11,033	32
Indiana	11,400	35



PRODUCTIVITY AND LABOR SUPPLY

One of the fundamental drivers of economic health is quantity and quality of labor available in a state. The Workforce Preparedness Driver measures quality of labor. This Driver measures the inflow and availability of labor in a state and the efficiency with which workers produce goods and services. High productivity, coupled with a good supply of skilled labor, is necessary to maintain a rising standard of living and to keepthe cost of doing business competitive.

Productivity measures for state comparison are particularly difficult to come by. Four metrics are used, two for overall productivity, another for manufacturing and a fourth for the services sector. They are supplemented with two general measures of labor supply.

Midwest Performance

	2018	2016	2014
Illinois	***	****	****
Wisconsin	**	**	***
Indiana	**	**	***
Ohio	**	**	***
Michigan	**	**	**

Rank	State	2018	2016	2014
1	Washington	*****	*****	*****
2	California	*****	*****	*****
3	Colorado	*****	****	*****
4	Delaware	*****	*****	*****
5	Massachusetts	****	****	****
6	New York	****	*****	*****
7	Texas	****	****	*****
8	Maryland	****	****	****
9	Connecticut	****	****	****
10	Nevada	****	****	****
11	Utah	****	****	***
12	Virginia	****	****	****
13	Minnesota	****	****	****
14	Louisiana	***	****	****
15	North Dakota	***	***	*****
16	New Jersey	***	****	****
17	Alaska	***	****	***
18	Arizona	***	***	***
19	Illinois	***	****	****
20	North Carolina	***	***	***
21	Georgia	***	***	***
22	Oregon	***	***	***
23	Nebraska	***	***	***
24	Wyoming	***	***	****
25	New Hampshire	***	***	***
26	Hawaii	***	***	**
27	Iowa	***	***	***
28	Pennsylvania	***	***	***
29	Tennessee	***	***	***
30	South Dakota	***	***	***
31	Wisconsin	**	***	***
32	Kansas	**	***	**
33	Indiana	**	**	***
34	Ohio	**	**	**
35	Rhode Island	**	**	***
36	Florida	**	***	***
37	Missouri	**	**	**
38	Idaho	**	**	**
39	Oklahoma	**	**	**
40	New Mexico	**	**	*
41	South Carolina	**	**	**
42	**Michigan**	**	**	**
43	Montana	**	**	**
44	Kentucky	**	*	**
45	Alabama	*	*	**
46	Vermont	*	*	*
47	Maine	*	*	*
48	West Virginia	*	*	*
49	Arkansas	*	*	*
50	Mississippi	*	*	*

NET DOMESTIC MIGRATION RATE

Rank	State	Score	Migration per 1,000 residents	Change, 2015-2018 (Abs)
	50-StateAverage		*0.1*	*0.1*
1	Nevada	144.4	15.8	9.3
2	Idaho	138.9	1.0	4.4
3	Arizona	133.0	11.7	1.5
4	South Carolina	128.4	10.0	3.5
5	Colorado	121.9	7.7	3.1
6	Delaware	120.4	7.1	5.5
7	North Carolina	118.7	6.5	3.7
8	Oregon	118.5	6.4	0.4
9	Florida	118.1	6.3	-0.6
10	Washington	117.9	6.2	3.0
11	Tennessee	117.1	5.9	2.5
12	Montana	116.4	5.7	5.7
13	Utah	114.9	5.1	0.1
14	Georgia	111.9	4.0	3.8
15	Maine	110.0	3.3	1.6
16	New Hampshire	108.8	2.9	1.3
17	Texas	108.8	2.9	-3.3
18	Minnesota	104.2	1.2	1.8
19	Alabama	104.1	1.2	2.7
20	Arkansas	103.1	0.8	2.7
21	South Dakota	102.9	0.7	0.9
22	Indiana	102.3	0.5	1.9
23	Kentucky	101.4	0.2	1.0
24	Vermont	100.6	-0.1	1.3
25	Wisconsin	100.4	-0.2	1.4
26	Missouri	99.6	-0.5	1.1
27	Iowa	98.4	-0.9	-0.6
28	Ohio	98.0	-1.0	1.6
29	Oklahoma	97.7	-1.1	0.6
30	Virginia	97.7	-1.2	1.2
31	Pennsylvania	96.5	-1.6	-1.0
32	**Michigan**	**96.3**	**-1.7**	**0.8**
33	Nebraska	96.1	-1.7	-3.8
34	Rhode Island	94.0	-2.5	-0.2
35	New Mexico	93.2	-2.8	-1.8
36	North Dakota	92.2	-3.1	-2.3
37	Mississippi	90.9	-3.6	3.0
38	Massachusetts	90.6	-3.7	-0.5
39	West Virginia	90.2	-3.9	-1.2
40	California	90.0	-4.0	-0.4
41	Maryland	89.7	-4.1	-3.4
42	Kansas	89.0	-4.3	-4.7
43	New Jersey	85.3	-5.7	0.8
44	Louisiana	84.4	-6.0	-0.2
45	Connecticut	84.3	-6.0	-21.4
46	Wyoming	83.4	-6.4	-1.7
47	Hawaii	76.9	-8.7	-5.5
48	Illinois	76.3	-8.9	-2.2
49	New York	75.6	-9.2	-0.4
50	Alaska	60.9	-14.6	-10.5

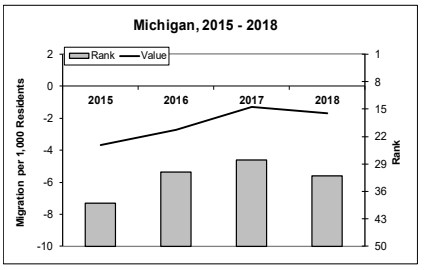
Net domestic migration per 1,000 residents, 2018

The net domestic migration rate measures the difference between in-migration to an area and out-migration from the same area during a time period. It is an overall indicator of the attractiveness of the state as individuals vote with their feet on what they consider a preferable living and working environment. The table above shows the net domestic migration during a time period as a percentage of an area's population at the midpoint of the time period.

Source: U.S. Census Bureau

Midwest Performance, 2018

State	Migration per 1,000 Residents	Rank
Indiana	0.5	22
Wisconsin	-0.2	25
Ohio	-1.0	28
Michigan	**-1.7**	**32**
Illinois	-8.9	48



PRIME WORKING AGE RESIDENTS

Rank	State	Score	Share in Population	Change ,2015-2018 (%)
	50-StateAverage		*26.0%*	*0.8%*
1	Colorado	139.8	29.3%	2.3%
2	Alaska	137.3	29.1%	2.2%
3	Washington	132.4	28.7%	3.9%
4	California	131.3	28.6%	1.4%
5	Utah	130.8	28.5%	1.4%
6	Texas	127.4	28.2%	0.5%
7	Nevada	124.6	27.9%	1.0%
8	Oregon	119.0	27.4%	2.3%
9	North Dakota	117.8	27.3%	3.0%
10	New York	116.1	27.2%	0.0%
11	Georgia	114.7	27.0%	-0.4%
12	Hawaii	113.6	26.9%	-2.2%
13	Virginia	112.5	26.8%	-0.9%
14	Illinois	111.8	26.8%	-0.1%
15	Massachusetts	109.5	26.5%	1.3%
16	Maryland	109.0	26.5%	-0.7%
17	Louisiana	109.0	26.5%	-0.9%
18	Minnesota	106.5	26.3%	1.5%
19	Oklahoma	106.2	26.2%	1.1%
20	Tennessee	103.7	26.0%	0.6%
21	Nebraska	103.5	26.0%	1.6%
22	Arizona	103.1	26.0%	0.7%
23	North Carolina	102.8	25.9%	-0.3%
24	Wyoming	102.5	25.9%	-1.8%
25	New Jersey	101.4	25.8%	-0.4%
26	New Mexico	98.6	25.6%	2.6%
27	Idaho	98.4	25.5%	0.3%
28	Rhode Island	97.9	25.5%	0.9%
29	Missouri	97.9	25.5%	1.3%
30	Mississippi	97.4	25.4%	0.2%
31	Indiana	97.1	25.4%	1.1%
32	Kentucky	96.4	25.3%	-0.3%
33	Kansas	95.6	25.3%	0.6%
34	Arkansas	95.0	25.2%	-0.3%
35	Alabama	94.3	25.2%	-1.2%
36	South Carolina	94.1	25.1%	-0.1%
37	South Dakota	93.8	25.1%	2.5%
38	Florida	93.7	25.1%	0.6%
39	Ohio	93.3	25.1%	0.8%
40	Pennsylvania	91.7	24.9%	1.3%
41	Wisconsin	90.6	24.8%	0.7%
42	Delaware	90.4	24.8%	-0.2%
43	Montana	89.6	24.7%	3.3%
44	Iowa	88.9	24.7%	1.2%
45	**Michigan**	**88.1**	**24.6%**	**1.7%**
46	Connecticut	86.3	24.4%	0.2%
47	New Hampshire	79.6	23.8%	1.6%
48	West Virginia	78.4	23.7%	-2.6%
49	Maine	75.4	23.4%	2.2%
50	Vermont	72.9	23.2%	3.2%

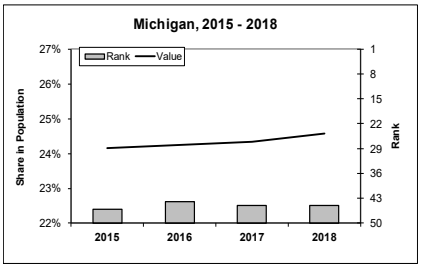
Proportion of the population ages 25 to 44, 2018

The age structure of the population of a state reflects its attractiveness to young skilled workers as Richard Florida proposes in his book, "The Rise of the Creative Class." The table shows the percentage of the population age 25 to 44.

Source: U.S. Census Bureau

Midwest Performance, 2018

State	Share in Population	Rank
Illinois	26.8%	14
Indiana	25.4%	31
Ohio	25.1%	39
Wisconsin	24.8%	41
Michigan	**24.6%**	**45**



GROSS DOMESTIC PRODUCT PER JOB

Rank	State	Score	Dollars per Job	Change, 2015-2018 (%)
	50-StateAverage		*$94,937*	*6.5%*
1	New York	149.6	$131,483	6.9%
2	Washington	140.1	$124,077	10.8%
3	California	139.7	$123,780	10.0%
4	Delaware	139.2	$123,389	-1.1%
5	Alaska	133.8	$119,200	8.7%
6	Connecticut	132.9	$118,472	4.2%
7	Massachusetts	130.8	$116,870	7.6%
8	New Jersey	124.5	$111,919	4.2%
9	Maryland	121.6	$109,668	7.6%
10	Illinois	120.5	$108,812	6.3%
11	Texas	112.3	$102,422	7.2%
12	Hawaii	110.1	$100,733	9.8%
13	Pennsylvania	109.7	$100,427	6.0%
14	Virginia	109.3	$100,068	4.6%
15	Minnesota	105.5	$97,175	8.0%
16	Wyoming	104.8	$96,587	4.0%
17	North Dakota	104.5	$96,385	4.7%
18	Colorado	104.3	$96,205	7.9%
19	Ohio	103.1	$95,292	7.1%
20	New Hampshire	102.0	$94,379	6.8%
21	Georgia	102.0	$94,375	7.2%
22	Louisiana	101.6	$94,133	8.3%
23	Rhode Island	100.8	$93,450	3.2%
24	North Carolina	100.3	$93,092	5.3%
25	Oregon	100.0	$92,854	9.3%
26	Nebraska	100.0	$92,851	4.9%
27	Indiana	99.5	$92,454	6.3%
28	**Michigan**	**98.9**	**$92,011**	**6.7%**
29	Nevada	98.7	$91,826	5.9%
30	Iowa	97.4	$90,854	4.8%
31	Arizona	96.7	$90,253	7.8%
32	Wisconsin	96.3	$90,004	6.7%
33	New Mexico	96.2	$89,906	7.9%
34	Tennessee	94.3	$88,385	5.7%
35	Oklahoma	92.4	$86,896	6.9%
36	Kansas	92.1	$86,717	8.7%
37	Utah	91.8	$86,435	8.0%
38	West Virginia	90.8	$85,665	10.2%
39	South Dakota	90.0	$85,042	5.5%
40	Missouri	89.1	$84,374	4.6%
41	Florida	87.9	$83,391	5.9%
42	Alabama	86.6	$82,383	6.3%
43	South Carolina	86.5	$82,299	6.4%
44	Kentucky	85.6	$81,604	5.2%
45	Arkansas	79.9	$77,212	4.7%
46	Maine	78.9	$76,440	8.5%
47	Vermont	77.7	$75,468	6.3%
48	Idaho	76.0	$74,179	6.7%
49	Montana	75.1	$73,457	5.1%
50	Mississippi	72.6	$71,511	5.9%

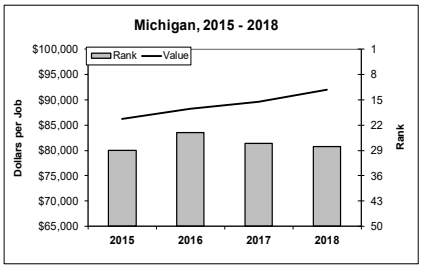
Gross domestic product per job, 2018

Measuring productivity in exact fashion is, unfortunately, a very difficult task at the state level. No single measure is available for the total output per hour worked in all industries at the state level. However, one crude but telling way to estimate productivity is to divide a state's total economic output by its total number of jobs. The above table shows the nominal gross domestic product–the total value of goods and services produced in a state–per job held.

Source: U.S. Bureau of Economic Analysis

Midwest Performance, 2018

State	Dollars per Job	Rank
Illinois	$108,812	10
Ohio	$95,292	19
Indiana	$92,454	27
Michigan	**$92,011**	**28**
Wisconsin	$90,004	32



SERVICE SECTOR PRODUCTIVITY

Rank	State	Score	Dollars per Job	Change, 2015-2018 (%)
	50-StateAverage		*$86,679*	*2.1%*
1	New York	158.2	$131,211	3.4%
2	Delaware	148.7	$123,500	-5.6%
3	Washington	144.7	$120,284	12.0%
4	California	137.7	$114,572	6.5%
5	Connecticut	136.7	$113,723	1.2%
6	Massachusetts	131.7	$109,670	5.2%
7	New Jersey	124.5	$103,806	-1.3%
8	Alaska	121.7	$101,540	2.7%
9	Illinois	120.6	$100,635	1.5%
10	Maryland	116.4	$97,295	2.9%
11	Hawaii	115.8	$96,759	5.0%
12	Pennsylvania	110.1	$92,125	2.0%
13	New Hampshire	108.7	$91,002	2.1%
14	Virginia	108.3	$90,656	-1.0%
15	Minnesota	107.9	$90,314	4.5%
16	Nebraska	107.5	$89,998	3.9%
17	Colorado	107.2	$89,774	3.3%
18	Georgia	105.3	$88,244	2.2%
19	Rhode Island	103.4	$86,654	-1.2%
20	North Dakota	103.0	$86,401	-0.2%
21	South Dakota	102.0	$85,542	2.4%
22	Nevada	100.9	$84,664	0.8%
23	Ohio	100.7	$84,484	1.7%
24	Oregon	100.5	$84,354	7.1%
25	Texas	100.1	$84,043	-0.4%
26	Iowa	99.9	$83,805	5.2%
27	Wisconsin	98.9	$83,030	4.1%
28	Kansas	97.0	$81,453	3.6%
29	North Carolina	96.9	$81,406	2.1%
30	Wyoming	96.1	$80,742	-2.0%
31	**Michigan**	**95.8**	**$80,474**	**2.8%**
32	Arizona	95.6	$80,382	1.3%
33	Missouri	95.6	$80,369	1.8%
34	Tennessee	95.2	$80,009	0.6%
35	Utah	93.6	$78,712	4.5%
36	Florida	91.4	$76,952	0.4%
37	Indiana	90.1	$75,847	1.7%
38	Louisiana	88.3	$74,435	0.6%
39	Vermont	88.1	$74,253	2.6%
40	Maine	88.0	$74,194	4.4%
41	New Mexico	87.7	$73,915	0.7%
42	Oklahoma	87.5	$73,786	-2.5%
43	Arkansas	86.8	$73,185	0.6%
44	Kentucky	85.8	$72,348	1.8%
45	West Virginia	85.7	$72,270	3.4%
46	Alabama	84.9	$71,633	1.5%
47	South Carolina	82.3	$69,536	0.4%
48	Montana	81.6	$68,948	4.0%
49	Idaho	79.4	$67,206	3.1%
50	Mississippi	75.2	$63,791	-0.2%

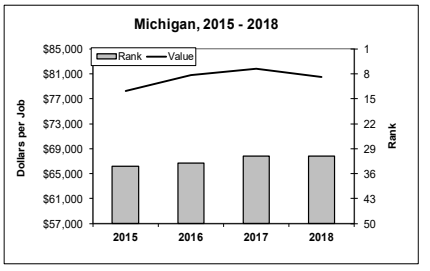
Private service-providing industries GDP per job, 2018

No comparable value-added productivity measure similar to the Annual Survey of Manufacturers is collected for service-providing industries. The best measure of service productivity that is annually available is the gross domestic product of service-producing industries per service job. The above table gives the gross domestic product of all private service-producing industries divided by service-producing jobs. See Appendix for more detail.

Source: U.S. Bureau of Economic Analysis

Midwest Performance, 2018

State	Dollars per Job	Rank
Illinois	$100,635	9
Ohio	$84,484	23
Wisconsin	$83,030	27
Michigan	**$80,474**	**31**
Indiana	$75,847	37



MANUFACTURING VALUE ADDED PER HOUR

Rank	State	Score	Dollars per Hour	Change, 2013-2016 (%)
	50-State Average		*$150.6*	*2.4%*
1	Louisiana	180.6	$283.5	-3.9%
2	Texas	139.5	$213.2	-2.4%
3	Maryland	131.9	$200.3	9.8%
4	Wyoming	129.2	$195.7	5.1%
5	Connecticut	122.2	$183.8	6.5%
6	Washington	122.2	$183.8	-3.7%
7	Virginia	120.2	$180.4	0.7%
8	California	119.9	$179.8	6.2%
9	North Carolina	118.8	$177.9	0.0%
10	Arizona	117.6	$175.8	-4.5%
11	Massachusetts	117.2	$175.2	4.4%
12	West Virginia	115.9	$172.9	12.8%
13	New Mexico	111.9	$166.1	-59.3%
14	Colorado	110.0	$162.9	1.5%
15	Delaware	109.7	$162.4	-0.4%
16	New Jersey	108.4	$160.2	7.3%
17	Florida	107.3	$158.3	10.4%
18	Utah	105.0	$154.4	1.7%
19	Kansas	104.6	$153.7	22.5%
20	Nevada	104.1	$152.8	-8.5%
21	New York	103.6	$151.9	15.1%
22	Hawaii	103.3	$151.4	78.1%
23	Illinois	101.9	$149.0	3.2%
24	Iowa	100.2	$146.2	-4.2%
25	North Dakota	100.1	$146.0	-11.8%
26	New Hampshire	99.9	$145.6	10.6%
27	Montana	99.3	$144.5	-12.9%
28	Pennsylvania	99.0	$144.1	5.5%
29	Minnesota	98.9	$143.9	0.0%
30	Tennessee	98.5	$143.2	-0.8%
31	Missouri	96.0	$139.0	3.9%
32	Indiana	95.9	$138.8	-2.4%
33	Ohio	94.9	$137.1	2.5%
34	South Carolina	93.6	$134.9	9.4%
35	Nebraska	92.8	$133.4	-3.9%
36	Georgia	91.9	$131.9	3.1%
37	Oklahoma	90.6	$129.8	5.1%
38	Oregon	89.9	$128.6	-28.4%
39	**Michigan**	**89.2**	**$127.3**	**(n/a)**
40	Alabama	88.5	$126.1	-3.6%
41	Wisconsin	88.3	$125.8	-5.6%
42	South Dakota	87.8	$124.9	22.1%
43	Kentucky	86.1	$122.1	-6.4%
44	Rhode Island	83.8	$118.1	-3.2%
45	Vermont	80.7	$112.9	12.5%
46	Maine	80.5	$112.5	-0.2%
47	Idaho	79.5	$110.8	-1.5%
48	Alaska	77.3	$107.1	26.1%
49	Arkansas	76.2	$105.2	3.3%
50	Mississippi	75.5	$104.0	-3.4%

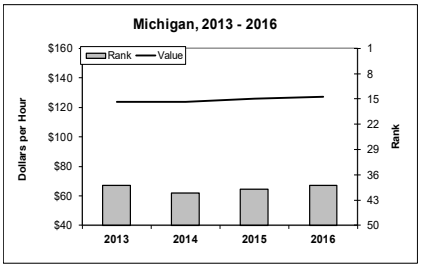
Value added per manufacturing production hour, 2016

Manufacturing productivity plays a central role in Michigan and its Midwestern competitors. The measure of value added, which is the difference between the value of inputs and the resultant outputs, per hour worked is less sensitive to business cycles and varying labor-market structures than output per worker. Value added also reflects the capacity of a manufacturing base for high wages. The figures shown here are value added per production hour worked in manufacturing industries.

Source: U.S. Census Bureau

Midwest Performance, 2016

State	Dollars per Hour	Rank
Illinois	$149.0	23
Indiana	$138.8	32
Ohio	$137.1	33
Michigan	**$127.3**	**39**
Wisconsin	$125.8	41



LABOR FORCE PARTICIPATION RATE

Rank	State	Score	Participation Rate	Change, 2015-2018 (%)
	50-StateAverage		*63.4%*	*0.0%*
1	Minnesota	126.3	69.9%	-0.1%
2	North Dakota	124.8	69.5%	-2.7%
3	Colorado	123.6	69.2%	3.6%
3	Nebraska	123.6	69.2%	-1.0%
5	South Dakota	121.6	68.7%	-1.0%
6	Iowa	120.4	68.4%	-2.3%
6	New Hampshire	120.4	68.4%	-0.1%
8	Utah	120.0	68.3%	0.1%
9	Wisconsin	118.5	67.9%	-0.1%
10	Massachusetts	117.3	67.6%	3.7%
11	Maryland	115.7	67.2%	0.4%
12	Kansas	113.8	66.7%	-1.3%
12	Vermont	113.8	66.7%	-0.4%
14	Connecticut	111.4	66.1%	0.5%
15	Alaska	107.9	65.2%	-2.7%
15	Virginia	107.9	65.2%	0.5%
17	Indiana	106.7	64.9%	1.6%
18	Wyoming	105.9	64.7%	-4.1%
19	Illinois	105.1	64.5%	-0.3%
19	Rhode Island	105.1	64.5%	-0.5%
21	Idaho	103.5	64.1%	0.3%
22	Texas	103.1	64.0%	0.3%
23	Washington	102.8	63.9%	1.1%
24	Missouri	101.6	63.6%	-2.2%
25	Maine	100.4	63.3%	1.1%
26	Georgia	99.6	63.1%	2.6%
27	Nevada	99.2	63.0%	0.2%
28	Montana	98.0	62.7%	-1.4%
29	Pennsylvania	97.6	62.6%	-0.3%
30	Delaware	97.2	62.5%	0.0%
31	California	96.9	62.4%	0.5%
31	New Jersey	96.9	62.4%	-2.5%
31	Ohio	96.9	62.4%	0.0%
34	Oregon	96.5	62.3%	1.1%
35	Hawaii	95.7	62.1%	0.2%
36	Arizona	92.9	61.4%	2.3%
36	**Michigan**	**92.9**	**61.4%**	**1.7%**
38	North Carolina	92.1	61.2%	0.0%
38	Oklahoma	92.1	61.2%	-0.8%
40	New York	91.4	61.0%	0.3%
41	Tennessee	91.0	60.9%	2.5%
42	Florida	85.1	59.4%	0.7%
43	Kentucky	83.9	59.1%	2.8%
44	Louisiana	82.3	58.7%	-3.0%
45	South Carolina	79.6	58.0%	-2.4%
46	Arkansas	79.2	57.9%	0.0%
47	New Mexico	78.0	57.6%	-0.7%
48	Alabama	76.4	57.2%	0.7%
49	Mississippi	70.1	55.6%	0.2%
50	West Virginia	63.1	53.8%	1.7%

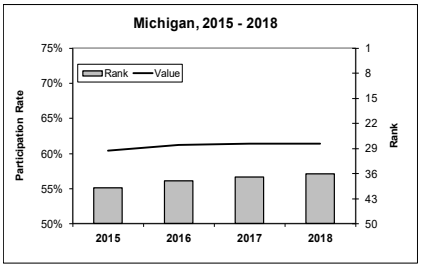
Percent of non-institutionalized population in the labor force, 2018

The labor force participation rate is an indicator of the available workforce and the labor pool that is looking for work. A declining participation rate implies less potential income earners and therefore less spending in the state, slowing down economic growth. The table shows the share of the non-institutionalized civilian population that is working or unemployed.

Source: U.S. Bureau of Labor Statistics

Midwest Performance, 2018

State	Participation Rate	Rank
Wisconsin	67.9%	9
Indiana	64.9%	17
Illinois	64.5%	19
Ohio	62.4%	31
Michigan	**61.4%**	**36**



LEGAL ENVIRONMENT

A state must find the right mix of size, taxing power, program, and expenditure to provide high return on investment in the form of public assets and services, while at the same time interfering minimally in the day-to-day dealings of the marketplace.

Next to tax policy, legal and regulatory policy is probably the most important aspect of business climate. The metrics chosen to reflect the legal environment measure the consequences (e.g. liability costs) of a state's legal environment. This driver does not seek to score policies or practices per se. However, it does take advantage of liability ratings (from U.S. Chamber of Commerce/Harris) that do include judgments on regulatory policies and practices.

Midwest Performance

	2017	2015	2013
Indiana	*****	*****	*****
Wisconsin	*****	*****	****
Ohio	****	****	****
Michigan	****	****	****
Illinois	*	*	*

Rank	State	2018	2016	2014
1	South Dakota	*****	*****	*****
2	Nebraska	*****	*****	*****
3	Maine	*****	*****	*****
4	Idaho	*****	*****	*****
5	North Carolina	*****	*****	*****
6	North Dakota	*****	*****	*****
7	Indiana	*****	*****	*****
8	Oregon	*****	*****	****
9	Washington	*****	*****	****
10	Wisconsin	*****	*****	****
11	Minnesota	*****	*****	*****
12	Alaska	*****	*****	*****
13	Wyoming	*****	*****	****
14	Kansas	*****	*****	*****
15	Arkansas	*****	****	****
16	New Mexico	*****	****	****
17	Utah	*****	*****	*****
18	Virginia	*****	*****	****
19	Iowa	*****	*****	*****
20	Tennessee	*****	****	****
21	Vermont	*****	*****	****
22	New Hampshire	****	*****	*****
23	Oklahoma	****	****	****
24	Ohio	****	****	****
25	Kentucky	****	****	****
26	South Carolina	****	****	****
27	Arizona	****	****	****
28	**Michigan**	****	****	****
29	Colorado	****	****	****
30	Hawaii	****	****	***
31	Alabama	****	****	****
32	Texas	****	****	****
33	Nevada	****	****	****
34	Montana	****	***	***
35	Georgia	****	****	****
36	Massachusetts	****	****	***
37	Maryland	****	***	***
38	Mississippi	***	****	****
39	California	***	****	***
40	Connecticut	***	***	**
41	Pennsylvania	***	***	***
42	Delaware	***	***	****
43	Missouri	***	***	***
44	Rhode Island	***	***	***
45	Louisiana	***	***	**
46	New Jersey	**	**	**
47	West Virginia	**	**	**
48	New York	**	**	**
49	Illinois	*	*	*
50	Florida	*	*	*

MALPRACTICE COSTS

Rank	State	Score	Index	Change, 2015-2018 (%)
	50-StateAverage	*0.14*		*21.0%*
1	Nebraska	124.4	-1.51	-2.5%
2	Minnesota	119.2	-1.21	-12.7%
3	Wisconsin	118.1	-1.14	-4.4%
4	South Dakota	117.1	-1.09	-20.3%
5	Kansas	115.3	-0.98	-11.5%
6	Indiana	114.6	-0.94	-1.7%
7	North Dakota	113.9	-0.90	-19.5%
8	Idaho	113.1	-0.85	-5.8%
9	Arkansas	113.0	-0.85	8.4%
10	Iowa	111.5	-0.76	-22.4%
11	Alabama	109.3	-0.63	-9.3%
12	Tennessee	109.0	-0.61	1.1%
13	Mississippi	108.2	-0.56	-28.4%
14	Louisiana	107.9	-0.54	-20.3%
15	California	106.4	-0.46	-21.0%
16	Oregon	105.1	-0.38	-28.3%
17	Vermont	104.3	-0.34	-22.2%
18	Maine	102.8	-0.25	-42.7%
19	Colorado	102.5	-0.23	36.0%
20	North Carolina	102.0	-0.20	-15.7%
21	New Mexico	101.6	-0.18	-26.9%
22	South Carolina	101.5	-0.17	-60.1%
23	Alaska	100.5	-0.11	-82.2%
24	Texas	100.2	-0.09	80.7%
25	Oklahoma	100.1	-0.09	-7.9%
26	Hawaii	99.9	-0.08	-83.6%
27	Washington	98.8	-0.01	-72.5%
28	Utah	98.7	-0.01	-61.2%
29	Kentucky	97.1	0.09	-177.2%
30	Virginia	95.2	0.20	78.0%
31	Missouri	94.9	0.22	126.3%
32	Ohio	93.6	0.29	-11.3%
33	Wyoming	92.6	0.35	-34.1%
34	Georgia	91.6	0.41	34.2%
35	Montana	88.4	0.60	-6.5%
36	New Hampshire	88.1	0.62	88.3%
37	Nevada	86.8	0.69	1105.6%
38	Massachusetts	86.2	0.72	12.8%
39	Pennsylvania	85.4	0.77	31.1%
40	**Michigan**	**85.3**	**0.77**	**9.0%**
41	Arizona	82.4	0.94	75.6%
42	Delaware	81.1	1.02	135.6%
43	New Jersey	77.5	1.23	25.7%
44	West Virginia	75.3	1.36	55.0%
45	Maryland	73.8	1.45	-1.7%
46	Rhode Island	70.8	1.62	56.2%
47	Illinois	66.9	1.85	-18.2%
48	Connecticut	62.6	2.10	-2.2%
49	New York	58.7	2.33	20.1%
50	Florida	53.3	2.65	4.2%

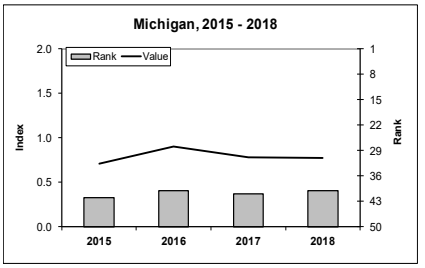
Index of medical malpractice insurance rates across three disciplines, 2018

Malpractice insurance rates strongly affect the health care industry, both in quality and cost. Malpractice insurance itself is in turn, strongly affected by the regulatory limits and civil-suit policies set by states. The above table presents an index of the relative costs of medical malpractice insurance for three specialties. Higher values correspond to relatively more expensive coverage.

Source: Medical Liability Monitor

Midwest Performance, 2018

State	Index	Rank
Wisconsin	-1.14	3
Indiana	-0.94	6
Ohio	0.29	32
Michigan	**0.77**	**40**
Illinois	1.85	47



BUSINESS LIABILITY COSTS

Rank	State	Score	Dollars per 100,000 GDP	Change, 2014-2017 (%)
	50-StateAverage		*$189*	*0.9%*
1	Washington	122.3	$136	-4.1%
2	North Carolina	118.6	$143	-0.1%
3	Kentucky	118.6	$143	1.0%
4	Ohio	116.4	$147	-5.9%
5	Oregon	116.4	$147	-2.9%
6	**Michigan**	**115.5**	**$149**	**-10.1%**
7	Indiana	112.6	$155	-0.8%
8	South Dakota	112.2	$156	6.2%
9	Utah	111.8	$156	0.1%
10	New Mexico	110.2	$159	2.5%
11	New Hampshire	109.6	$161	3.6%
12	Arizona	108.7	$162	1.0%
13	Wyoming	108.6	$162	-3.3%
14	Maine	107.7	$164	1.0%
15	South Carolina	107.6	$164	8.3%
16	Virginia	106.9	$166	3.7%
17	Kansas	106.6	$166	-8.0%
18	Tennessee	106.0	$167	-4.4%
19	Arkansas	105.2	$169	-0.7%
20	California	104.2	$171	-1.7%
21	Georgia	103.9	$171	-1.5%
22	Idaho	103.5	$172	7.2%
23	Nebraska	102.7	$174	-0.9%
24	Alaska	100.9	$177	4.7%
25	Nevada	100.0	$179	2.7%
26	Maryland	100.0	$179	-3.8%
27	Texas	98.9	$181	-0.2%
28	Alabama	97.6	$184	-2.8%
29	Mississippi	95.9	$187	-1.1%
30	Minnesota	95.5	$188	-3.6%
31	North Dakota	95.5	$188	-0.7%
32	Wisconsin	94.8	$189	-2.7%
33	Iowa	93.8	$191	3.3%
34	Oklahoma	92.5	$193	1.9%
35	Vermont	90.4	$197	-7.7%
36	Massachusetts	89.8	$198	-5.7%
37	Pennsylvania	88.0	$202	1.4%
38	Colorado	83.9	$210	1.7%
39	Hawaii	82.7	$212	-12.6%
40	Missouri	82.5	$213	10.1%
41	Louisiana	80.6	$216	-1.1%
42	Montana	78.3	$221	2.8%
43	West Virginia	76.6	$224	28.3%
44	Connecticut	75.2	$227	-1.4%
45	Rhode Island	70.4	$236	3.4%
46	New Jersey	65.8	$245	-2.4%
47	Illinois	63.7	$249	-2.6%
48	New York	50.1	$275	1.6%
49	Delaware	39.1	$296	25.4%
50	Florida	31.1	$311	13.5%

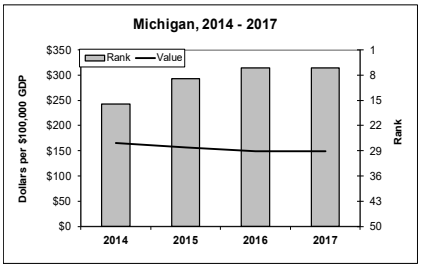
Average business-liability coverage paid per $100,000 of gross domestic product, 2017

Like malpractice and the health care industry, business liability insurance costs can strongly influence the competitiveness of the private market as a whole. It can also be indicative of the greater regulatory environment and attitudes of a state. The above table shows the total amount of liability coverage paid, including product liability, workers' compensation and other liability coverage, per $100,000 of gross domestic product.

Source: Insurance Information Institute

Midwest Performance, 2017

State	Dollars per $100,000 GDP	Rank
Ohio	$147	4
Michigan	**$149**	**6**
Indiana	$155	7
Wisconsin	$189	32
Illinois	$249	47



LIABILITY SYSTEM REPUTATION

Rank	State	Score	Score	Change, 2014-2018 (%)
	50-StateAverage		69.0	9.7%
1	Delaware	132.5	76.3	-0.3%
2	Maine	119.9	73.8	8.5%
2	Connecticut	119.9	73.8	12.0%
4	Wyoming	116.4	73.1	4.9%
4	Alaska	116.4	73.1	7.3%
6	North Dakota	113.8	72.6	6.9%
7	Montana	113.3	72.5	19.8%
8	Nebraska	112.3	72.3	-1.0%
9	Idaho	111.8	72.2	2.4%
10	South Dakota	110.8	72.0	3.6%
11	Vermont	109.3	71.7	-2.8%
12	Virginia	107.3	71.3	4.4%
13	Wisconsin	106.8	71.2	6.9%
13	Oklahoma	106.8	71.2	16.7%
15	Hawaii	106.3	71.1	13.2%
16	North Carolina	105.3	70.9	1.0%
17	Arizona	104.8	70.8	8.3%
18	Utah	104.3	70.7	2.5%
18	New Hampshire	104.3	70.7	0.0%
18	Minnesota	104.3	70.7	4.0%
18	Colorado	104.3	70.7	4.3%
22	New Mexico	103.8	70.6	27.9%
22	Iowa	103.8	70.6	-2.2%
24	Rhode Island	103.3	70.5	9.1%
25	Oregon	100.3	69.9	14.2%
26	Washington	99.7	69.8	9.4%
27	Maryland	99.2	69.7	9.1%
28	Massachusetts	98.7	69.6	2.7%
29	Nevada	98.2	69.5	15.1%
29	Arkansas	98.2	69.5	20.5%
31	Indiana	95.2	68.9	1.8%
32	**Michigan**	**94.7**	**68.8**	**5.0%**
32	Kansas	94.7	68.8	1.8%
34	Tennessee	92.2	68.3	4.0%
35	Ohio	89.2	67.7	5.5%
35	New York	89.2	67.7	2.1%
37	South Carolina	88.7	67.6	13.8%
38	Texas	86.2	67.1	14.7%
39	Pennsylvania	83.6	66.6	12.1%
40	Kentucky	83.1	66.5	12.7%
41	Georgia	81.1	66.1	5.9%
42	Alabama	78.6	65.6	19.1%
43	New Jersey	77.6	65.4	10.3%
44	Missouri	72.6	64.4	13.8%
45	West Virginia	67.0	63.3	36.7%
46	Florida	62.0	62.3	11.3%
47	Mississippi	60.0	61.9	9.9%
48	California	51.5	60.2	20.6%
49	Louisiana	50.4	60.0	29.0%
50	Illinois	48.4	59.6	24.2%

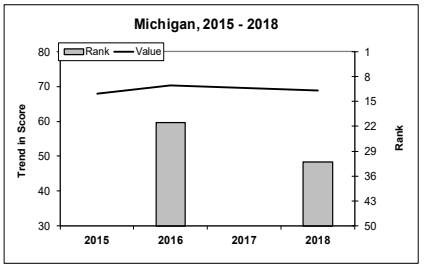
Total Score in State Liability Systems Ranking Study, 2018

Harris Interactive conducts a yearly survey for the U.S. Chamber Institute of Legal Reform to assess how fair and reasonable a state's tort liability system is thought to be by corporate attorneys. The above table shows each state's final score rating in the State Liability Systems Ranking Study.

Source: Harris Interactive

Midwest Performance, 2018

State	Score	Rank
Wisconsin	71.2	13
Indiana	68.9	31
Michigan	**68.8**	**32**
Ohio	67.7	35
Illinois	59.6	50



PHYSICAL INFRASTRUCTURE

In the innovation economy, infrastructure can be broadly defined to include both traditional physical infrastructure, such as roads, water and sewer, and "virtual" infrastructure (the digital economy). The former are covered under this driver. The metrics chosen attempt to measure outcomes, productivity, and level of service rather than inputs, such as capital expenditures per resident.

Midwest Performance

	2018	2016	2014
Illinois	*****	*****	****
Wisconsin	****	***	***
Indiana	***	***	***
Ohio	***	***	***
Michigan	***	***	***

Rank	State	2018	2016	2014
1	Nevada	*****	*****	*****
2	Washington	*****	****	*****
3	Illinois	*****	*****	****
4	Maryland	*****	****	*****
5	Oregon	*****	*****	****
6	Minnesota	*****	*****	****
7	Hawaii	*****	*****	****
8	New Jersey	****	****	****
9	Colorado	****	****	****
10	Utah	****	****	*****
11	Wyoming	****	****	****
12	Arizona	****	****	****
13	Massachusetts	****	****	*****
14	Virginia	****	****	****
15	Montana	****	****	*****
16	Connecticut	****	***	****
17	Missouri	****	****	***
18	Idaho	****	***	***
19	Florida	****	***	****
20	North Dakota	****	****	****
21	Texas	****	***	***
22	Wisconsin	****	***	***
23	Alaska	***	***	***
24	Georgia	***	****	***
25	New York	***	*****	*****
26	Kansas	***	***	***
27	Alabama	***	***	***
28	Delaware	***	****	****
29	Indiana	***	***	***
30	Ohio	***	***	***
31	California	***	***	***
32	Kentucky	***	**	***
33	**Michigan**	***	***	***
34	Arkansas	***	***	**
35	Nebraska	***	***	***
36	Tennessee	***	***	***
37	New Mexico	***	*	***
38	Vermont	***	****	***
39	New Hampshire	***	***	**
40	South Dakota	***	***	***
41	South Carolina	***	*	***
42	Pennsylvania	***	***	***
43	North Carolina	***	***	***
44	Iowa	***	**	**
45	Mississippi	**	***	**
46	Oklahoma	**	*	**
47	Maine	*	*	*
48	Louisiana	*	*	*
49	Rhode Island	*	*	**
50	West Virginia	*	*	**

HIGHWAY QUALITY

Rank	State	Score	Rough Highway Miles per 1,000	Change, 2015-2018 (%)
	50-StateAverage		*159.5*	*-2.4%*
1	Nevada	117.0	38.6	-28.5%
2	Kansas	116.3	42.6	8.8%
3	North Dakota	114.3	53.0	-13.6%
4	Idaho	113.7	56.2	-30.9%
5	Alabama	113.4	57.8	3.0%
6	Florida	112.7	61.3	12.9%
7	Kentucky	112.5	62.6	5.5%
8	Georgia	111.8	66.0	4.5%
9	Missouri	111.0	70.3	-3.0%
10	Utah	110.2	74.6	11.4%
11	Montana	109.4	78.9	10.8%
12	New Hampshire	109.2	79.9	-26.7%
13	Tennessee	108.3	84.6	9.6%
14	Oregon	107.7	87.7	-11.1%
15	Minnesota	107.4	89.4	-22.2%
16	Vermont	106.3	94.9	2.5%
17	South Dakota	106.1	96.0	-18.1%
18	North Carolina	103.5	110.1	3.0%
19	Nebraska	103.2	111.7	4.0%
20	Arizona	102.6	114.8	24.3%
21	Indiana	102.3	116.2	-1.1%
22	New Mexico	102.2	116.8	21.7%
23	South Carolina	100.3	126.6	12.5%
24	Virginia	100.3	126.6	-12.3%
25	Arkansas	100.0	128.4	-14.9%
26	Oklahoma	99.2	132.8	-33.3%
27	Mississippi	99.0	133.9	-6.0%
28	West Virginia	98.9	134.3	-4.4%
29	Maine	98.1	138.6	26.7%
30	Delaware	97.6	141.1	58.2%
31	Colorado	96.6	146.1	-16.5%
32	Iowa	95.3	153.1	-9.5%
33	Texas	93.9	160.5	-2.9%
34	Ohio	88.6	188.3	2.2%
35	Illinois	87.7	193.3	(n/a)
36	Maryland	87.3	195.2	-9.9%
37	Pennsylvania	85.2	206.3	-5.3%
38	**Michigan**	**84.8**	**208.2**	**-1.4%**
39	Washington	83.7	214.3	-0.7%
40	Connecticut	82.1	222.6	-39.7%
41	Wisconsin	79.5	236.3	-7.4%
42	Louisiana	75.8	255.6	-1.9%
43	New York	73.0	270.8	-6.1%
44	Alaska	71.8	277.0	9.0%
45	New Jersey	56.0	360.0	-7.6%
46	California	55.5	362.9	-3.7%
47	Massachusetts	49.4	395.2	-4.5%
48	Hawaii	42.0	434.0	-0.5%
49	Rhode Island	27.8	508.8	-3.2%
(n/a)	Wyoming	(n/a)	(n/a)	(n/a)

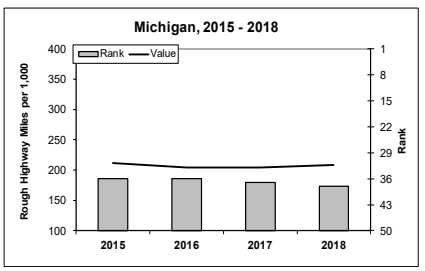
Miles graded "rough" or worse per 1,000 miles of highway, 2018

Poor highway conditions reduce the convenience, speed, and efficiency of a highway network. They also eventually require repair that can become increasingly costly as conditions worsen. The U.S. government measures highway quality in terms of miles of rough road bed. The above table shows the number of miles in each state graded rough or worse per 1,000 total miles of state and interstate highway.

Source: Federal Highway Administration

Midwest Performance, 2018

State	Rough Highway Miles per 1,000	Rank
Indiana	116.2	21
Ohio	188.3	34
Illinois	193.3	35
Michigan	**208.2**	**38**
Wisconsin	236.3	41



BRIDGE QUALITY

Rank	State	Score	Percent	Change,2015-2018 (%)
	50-StateAverage		*7.9%*	*-6.8%*
1	Texas	123.2	1.3%	-6.2%
2	Nevada	122.9	1.4%	-12.7%
3	Arizona	121.1	1.8%	-31.0%
4	Utah	119.7	2.2%	-25.2%
5	Vermont	118.9	2.4%	-40.6%
6	Florida	117.8	2.6%	39.9%
7	Georgia	115.1	3.3%	-12.9%
8	Delaware	112.7	3.9%	-26.7%
9	Alabama	111.4	4.3%	-8.6%
10	Tennessee	111.2	4.3%	-8.5%
11	Arkansas	110.2	4.6%	-3.9%
12	Washington	110.0	4.6%	6.3%
13	Virginia	109.9	4.6%	-35.5%
14	Minnesota	108.5	5.0%	-15.3%
15	Maryland	108.0	5.1%	-7.3%
16	Oregon	107.8	5.2%	7.4%
17	Kansas	107.8	5.2%	-17.0%
18	Colorado	107.0	5.4%	-1.0%
19	Ohio	106.2	5.6%	-19.3%
20	New Mexico	105.4	5.8%	-11.5%
21	Indiana	103.6	6.2%	-26.8%
22	Hawaii	101.1	6.9%	32.8%
23	Idaho	100.5	7.0%	-10.5%
24	California	100.4	7.0%	-4.0%
25	Kentucky	100.3	7.1%	-6.1%
26	Connecticut	99.7	7.2%	-13.7%
27	Wisconsin	99.0	7.4%	-7.8%
28	Montana	99.0	7.4%	28.2%
29	New Jersey	96.4	8.1%	-1.8%
30	Wyoming	95.8	8.2%	-26.3%
31	South Carolina	94.8	8.5%	-7.7%
32	Illinois	94.7	8.5%	5.3%
33	Missouri	94.1	8.6%	1.9%
34	Nebraska	93.3	8.8%	-14.1%
35	New Hampshire	92.7	9.0%	-11.6%
36	Massachusetts	91.8	9.2%	5.9%
37	Mississippi	91.1	9.4%	3.9%
38	Alaska	89.7	9.7%	-0.4%
39	New York	88.6	10.0%	-10.8%
40	North Carolina	88.0	10.2%	-11.0%
41	**Michigan**	**86.1**	**10.7%**	**-6.6%**
42	North Dakota	85.7	10.8%	-10.2%
43	Oklahoma	84.8	11.0%	-18.4%
44	Louisiana	76.8	13.0%	2.1%
45	Maine	76.3	13.1%	-8.2%
46	Pennsylvania	62.7	16.6%	-19.6%
47	South Dakota	62.2	16.7%	-8.1%
48	Iowa	51.6	19.4%	-0.4%
49	West Virginia	49.7	19.9%	35.3%
50	Rhode Island	37.0	23.1%	0.4%

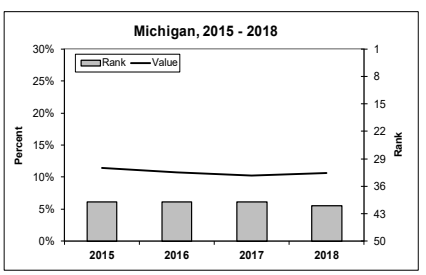
Percent of bridges characterized as "deficient," 2018

Like road quality, bridge quality is an important indicator of the health of a state's physical infrastructure. Furthermore, bridges requiring significant repair or replacement can pose an acute challenge to traffic flows. The table presented here shows the number percentage of each state's bridges categorized as "poor" by the U.S. government.

Source: Federal Highway Administration

Midwest Performance, 2018

State	Percent	Rank
Ohio	5.6%	19
Indiana	6.2%	21
Wisconsin	7.4%	27
Illinois	8.5%	32
Michigan	**10.7%**	**41**



TRANSIT USE

Rank	State	Score	Percent of Workers	Change, 2015-2018 (%)
	50-StateAverage		*2.9%*	*-11.5%*
1	New York	250.0	27.8%	-0.2%
1	New Jersey	250.0	11.6%	5.3%
3	Massachusetts	230.9	10.1%	2.1%
4	Illinois	217.9	9.2%	1.9%
5	Maryland	201.4	8.1%	-8.6%
6	Washington	177.9	6.5%	6.3%
7	Hawaii	171.2	6.0%	-6.9%
8	Pennsylvania	158.6	5.2%	-5.1%
9	California	153.5	4.8%	-4.6%
10	Connecticut	148.0	4.4%	-6.4%
11	Virginia	144.2	4.2%	-7.4%
12	Oregon	142.6	4.1%	-4.1%
13	Minnesota	131.8	3.3%	-1.5%
14	Colorado	124.1	2.8%	-7.2%
15	Nevada	122.4	2.7%	-21.4%
16	Delaware	115.1	2.2%	-26.0%
17	Utah	114.6	2.2%	-8.3%
18	Rhode Island	113.5	2.1%	-20.1%
19	Georgia	110.3	1.9%	-4.5%
20	Florida	105.6	1.6%	-16.6%
21	Arizona	105.2	1.5%	-19.8%
22	Wisconsin	103.2	1.4%	-17.1%
23	Ohio	101.4	1.3%	-15.9%
24	Alaska	100.8	1.2%	-16.4%
25	Texas	100.8	1.2%	-12.4%
26	Vermont	99.2	1.1%	9.9%
27	Missouri	99.0	1.1%	-22.0%
28	New Mexico	98.7	1.1%	1.4%
29	Wyoming	98.6	1.1%	-34.9%
30	**Michigan**	**98.1**	**1.1%**	**-15.2%**
31	Louisiana	97.1	1.0%	-20.2%
32	Kentucky	96.0	0.9%	-7.7%
33	North Carolina	95.2	0.9%	-13.0%
34	Indiana	94.3	0.8%	-17.1%
35	New Hampshire	94.2	0.8%	-2.5%
36	West Virginia	93.9	0.8%	4.1%
37	Iowa	93.8	0.8%	-24.5%
38	Idaho	92.2	0.7%	-15.5%
39	Montana	90.9	0.6%	-24.9%
40	Nebraska	90.7	0.6%	-18.5%
41	Tennessee	90.5	0.5%	-23.9%
42	Maine	90.4	0.5%	-18.9%
43	North Dakota	89.8	0.5%	20.6%
44	South Carolina	89.2	0.4%	-18.3%
45	South Dakota	87.8	0.4%	-22.9%
46	Kansas	87.7	0.3%	-27.6%
47	Oklahoma	87.4	0.3%	-13.4%
48	Arkansas	86.8	0.3%	-25.9%
49	Alabama	86.6	0.3%	-20.9%
50	Mississippi	86.5	0.3%	-9.0%

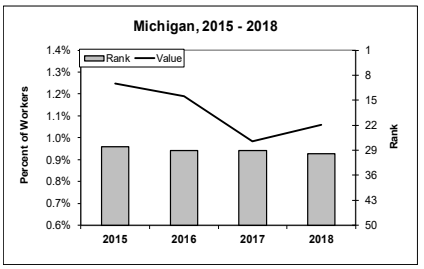
Percent of those earning 100% or more above federal poverty level that take public transportation to work, 2018

In the last half of the 20th century the landscape of U.S. cites was shaped by sprawl. The automobile became, and remains, the primary means for transport to work from the suburbs to office /industry centers. But now, after years of neglect, public transit is experiencing a resurgence, offering convenience, predictable travel time and energy efficiency, enhancing quality of life. This metric measures the percentage of those who are not working at home and take public transportation to work.

Source: U.S. Census Bureau

Midwest Performance, 2018

State	Percent of Workers	Rank
Illinois	9.2%	4
Wisconsin	1.4%	22
Ohio	1.3%	23
Michigan	**1.1%**	**30**
Indiana	0.8%	34



MAJOR MARKET AIR ACCESS

Rank	State	Score	Nonstop Flights per 1,000 Residents	Change, 2015-2018 (%)
	50-StateAverage		*12.9*	*5.9%*
1	Nevada	147.3	36.3	1.8%
2	Alaska	139.7	32.6	6.5%
3	Hawaii	129.9	27.8	16.7%
4	Montana	123.8	24.8	5.1%
5	North Dakota	121.3	23.6	-13.5%
6	Colorado	118.6	22.3	6.5%
7	Utah	111.2	18.7	1.1%
8	Oregon	109.6	17.9	17.5%
9	Wyoming	109.2	17.6	-0.3%
10	Kentucky	108.3	17.2	19.7%
11	Vermont	107.7	17.0	5.0%
12	Virginia	106.8	16.5	0.3%
13	Maine	106.6	16.4	16.9%
14	Idaho	105.2	15.7	10.7%
15	Massachusetts	103.8	15.0	8.6%
16	Washington	103.3	14.8	7.4%
17	Tennessee	103.1	14.7	15.0%
18	South Dakota	102.8	14.6	-4.4%
19	Arizona	102.7	14.5	-7.5%
20	Florida	102.0	14.2	3.5%
21	Missouri	101.7	14.0	10.2%
22	Minnesota	101.7	14.0	1.4%
23	Illinois	101.1	13.7	-1.2%
24	California	100.6	13.4	7.0%
25	North Carolina	100.4	13.4	1.3%
26	Nebraska	99.6	13.0	10.2%
27	Georgia	98.9	12.6	1.4%
28	Rhode Island	98.7	12.6	15.2%
29	New York	94.5	10.5	-0.5%
30	New Mexico	93.5	10.0	17.4%
31	**Michigan**	**93.4**	**9.9**	**7.5%**
32	Texas	92.8	9.7	-3.5%
33	Wisconsin	90.7	8.6	3.0%
34	Pennsylvania	90.5	8.5	-7.5%
35	Louisiana	89.5	8.0	6.9%
36	Indiana	89.3	7.9	6.5%
37	South Carolina	89.0	7.8	7.2%
38	Ohio	88.0	7.3	0.7%
39	Maryland	87.8	7.2	9.8%
40	New Hampshire	87.7	7.2	-14.7%
41	New Jersey	87.6	7.1	3.2%
42	Iowa	87.6	7.1	-3.0%
43	Connecticut	84.1	5.4	-5.5%
44	Oklahoma	84.1	5.4	2.7%
45	Arkansas	83.0	4.8	4.4%
46	Alabama	82.5	4.6	10.4%
47	West Virginia	80.7	3.7	20.7%
48	Kansas	80.0	3.4	4.4%
49	Mississippi	77.2	2.0	0.2%
50	Delaware	73.1	0.0	62.2%

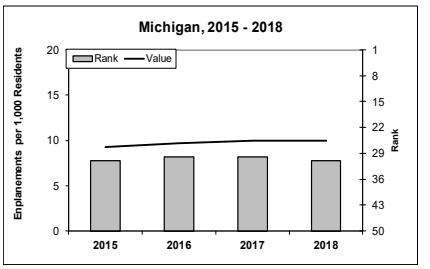
Nonstop departures to largest commercial and technology markets per 1,000 residents, 2018

The convenience of flying to major business centers has a large effect on states' competitive positions. Employers prefer states and regions with relatively easy access to the nation's largest financial, legal, and government centers. Nonstop flights to the top 20 venture capital hubs were tallied, and the counts are shown here as a proportion of each state's population. See Appendix for more detail.

Source: U.S. Department of Transportation

Midwest Performance, 2018

State	Flights per 1,000 Residents	Rank
Illinois	13.7	23
Michigan	**9.9**	**31**
Wisconsin	8.6	33
Indiana	7.9	36
Ohio	7.3	38



AIRPORT PERFORMANCE

Rank	State	Score	Percent Delayed	Change, 2015-2018 (%)
	50-StateAverage		*19.0%*	*6.7%*
1	Alaska	144.3	8.9%	-37%
2	Hawaii	142.3	9.4%	-2%
3	Montana	128.7	12.7%	30%
4	Idaho	127.9	12.8%	-8%
5	Washington	125.4	13.4%	-11%
6	Utah	122.5	14.1%	12%
7	Oregon	122.5	14.2%	2%
8	Wyoming	120.1	14.7%	3%
9	North Dakota	114.7	16.0%	10%
10	Kansas	113.8	16.2%	-9%
11	Minnesota	113.3	16.4%	8%
12	Mississippi	111.8	16.7%	7%
13	Nebraska	111.3	16.8%	5%
14	Oklahoma	109.9	17.2%	-1%
15	Wisconsin	109.2	17.4%	7%
16	**Michigan**	**109.2**	**17.4%**	**1%**
17	Arkansas	106.3	18.1%	-7%
18	New Mexico	106.0	18.1%	-4%
19	Iowa	105.7	18.2%	-6%
20	Indiana	105.4	18.3%	7%
21	New Hampshire	103.8	18.7%	17%
22	Alabama	102.7	18.9%	14%
23	South Dakota	102.1	19.1%	12%
24	California	100.5	19.4%	-2%
25	Louisiana	100.0	19.6%	10%
26	Connecticut	99.8	19.6%	19%
27	Georgia	99.6	19.7%	10%
28	South Carolina	98.8	19.9%	11%
28	Arizona	98.8	19.9%	8%
30	Rhode Island	98.3	20.0%	20%
31	Ohio	97.9	20.1%	14%
32	Colorado	96.8	20.3%	-10%
33	Missouri	96.5	20.4%	9%
34	Kentucky	95.7	20.6%	17%
35	Texas	95.4	20.7%	-6%
36	Virginia	93.5	21.1%	12%
37	Tennessee	91.6	21.6%	13%
38	Pennsylvania	90.0	22.0%	19%
39	Nevada	89.7	22.1%	4%
40	Florida	88.5	22.3%	9%
41	North Carolina	88.1	22.4%	25%
42	Vermont	87.2	22.7%	19%
43	Maine	84.4	23.3%	30%
44	New York	83.9	23.5%	5%
45	West Virginia	81.8	24.0%	17%
46	Maryland	80.7	24.2%	-4%
47	Massachusetts	77.6	25.0%	26%
48	Illinois	77.5	25.0%	-0.7%
49	New Jersey	71.2	26.5%	5.5%
(n/a)	Delaware	(n/a)	(n/a)	(n/a)

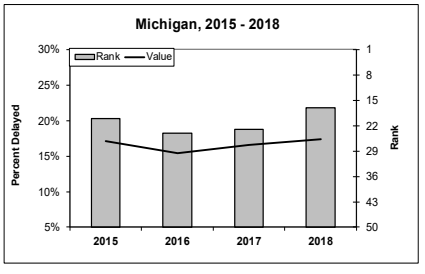
Percent of arrivals and departures delayed, 2018

Infrastructure must not only be available but offer efficient service. While the ”Major Market Access” metric measures the availability of flights to major commercial and technology hubs, this metric measures quality of service in the form of timeliness. The above table shows the percentage of arrivals and departures delayed due to air carrier delay, security delay, or national aviation system delay.

Source: U.S. Bureau of Transporation Statistics

Midwest Performance, 2017

State	Percent Delayed	Rank
Wisconsin	17.4%	15
Michigan	**17.4%**	**16**
Indiana	18.3%	20
Ohio	20.1%	31
Illinois	25.0%	48



WATER QUALITY

Rank	State	Score	Percent of Population	Change, 2015-2018 (%)
	50-StateAverage		*0.1*	*28.5%*
1	Hawaii	116.1	0.0%	-97.3%
2	Maryland	114.1	0.9%	-96.8%
3	Nevada	113.8	1.1%	18.6%
4	Illinois	113.7	1.1%	-49.9%
5	Iowa	113.2	1.3%	-90.0%
6	Virginia	111.6	2.0%	-72.3%
7	Alabama	111.3	2.2%	-53.6%
8	Vermont	111.0	2.3%	-71.4%
9	South Dakota	110.9	2.3%	-48.1%
10	Indiana	110.9	2.3%	-44.2%
11	**Michigan**	**110.8**	**2.4%**	**-6.3%**
12	Missouri	109.9	2.8%	-74.8%
13	Maine	109.0	3.2%	16.3%
14	Connecticut	108.8	3.3%	53.1%
15	Minnesota	107.8	3.7%	227.4%
16	South Carolina	106.5	4.2%	-39.2%
17	Florida	106.4	4.3%	-65.4%
18	Wisconsin	105.6	4.6%	-27.4%
19	Texas	105.1	4.9%	-76.5%
20	Ohio	105.0	4.9%	-74.4%
21	North Carolina	104.4	5.2%	6.5%
22	Washington	103.8	5.5%	-5.5%
23	Wyoming	103.3	5.7%	38.8%
24	New Hampshire	102.8	5.9%	-39.2%
25	Tennessee	100.7	6.8%	-3.3%
26	Colorado	99.3	7.4%	25.2%
27	Arizona	97.8	8.0%	-69.0%
28	Montana	96.7	8.5%	-23.1%
29	Alaska	96.5	8.6%	-43.3%
30	Idaho	95.9	8.9%	-38.3%
31	Mississippi	95.3	9.1%	8.3%
32	New Jersey	95.0	9.3%	-31.0%
33	Rhode Island	94.3	9.6%	28.5%
34	Georgia	93.8	9.8%	39.8%
35	Kansas	93.1	10.1%	-13.2%
36	Arkansas	92.1	10.5%	-46.7%
37	West Virginia	91.5	10.8%	26.2%
38	Kentucky	91.5	10.8%	-62.8%
39	Delaware	88.3	12.2%	546.4%
40	Nebraska	81.0	15.4%	-26.6%
41	California	81.0	15.4%	85.8%
42	Oregon	78.9	16.3%	291.2%
43	North Dakota	78.5	16.5%	97.5%
44	Pennsylvania	77.0	17.1%	88.4%
45	New Mexico	75.3	17.9%	55.5%
46	Massachusetts	75.2	17.9%	-3.9%
47	Oklahoma	70.9	19.8%	-27.3%
48	Louisiana	64.9	22.4%	-27.3%
49	Utah	54.6	0.26919	0.164877
50	New York	14.6	0.44402	12.0264

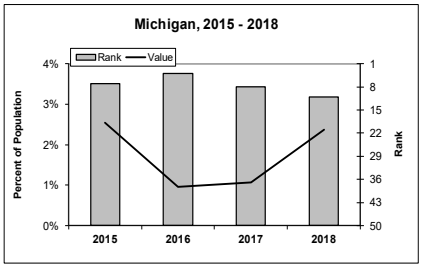
Percent of population served by water systems with reported health violations, 2018

Water treatment and provision is a large cost for municipalities and states. Much of this cost is, rightly, to ensure that water quality meets health standards. The above table shows the percentage of each state’s population that was served by community water systems that have recorded health-standard violations.

Source: U.S. Environmental Protection Agency

Midwest Performance, 2018

State	Percent of Population	Rank
Illinois	1.1%	4
Indiana	2.3%	10
Michigan	**2.4%**	**11**
Wisconsin	4.6%	18
Ohio	4.9%	20



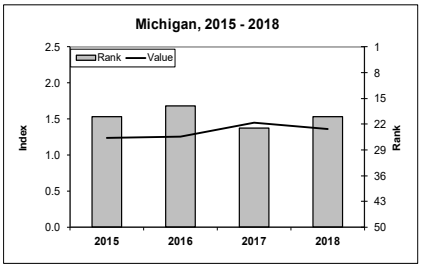
ENERGY RELIABILITY

Rank	State	Score	Index	Change, 2015-2018 (%)
	50-StateAverage		*1.7*	*16%*
1	Wisconsin	121.2	0.70	-3%
2	Utah	120.3	0.73	19%
3	Arizona	116.6	0.87	-16%
4	Missouri	113.4	0.99	-23%
5	Massachusetts	112.6	1.02	135%
6	Colorado	112.6	1.02	-12%
7	Oregon	112.5	1.03	-32%
8	North Dakota	109.9	1.13	-10%
9	Minnesota	108.4	1.18	10%
10	Delaware	107.4	1.22	3%
11	Iowa	107.4	1.22	23%
12	South Dakota	106.3	1.26	58%
13	Arkansas	105.9	1.28	-26%
14	Pennsylvania	105.4	1.30	43%
15	Nebraska	105.1	1.31	79%
16	Wyoming	105.0	1.31	-23%
17	Nevada	105.0	1.31	29%
18	Maryland	104.1	1.35	11%
19	Kansas	104.0	1.35	-86%
20	**Michigan**	**103.7**	**1.36**	**10%**
21	Ohio	103.3	1.38	19%
22	Connecticut	103.2	1.38	-17%
23	Washington	101.1	1.46	-20%
24	Illinois	100.9	1.47	-9%
25	New Mexico	100.7	1.48	48%
26	New Jersey	99.4	1.53	18%
27	California	98.9	1.54	59%
28	Rhode Island	98.2	1.57	28%
29	Texas	98.2	1.57	-76%
29	New York	98.2	1.57	40%
31	South Carolina	92.0	1.81	25%
32	New Hampshire	89.6	1.90	64%
33	Alabama	88.9	1.92	-15%
34	Idaho	88.5	1.94	-13%
35	Mississippi	88.5	1.94	-21%
36	Indiana	86.8	2.00	19%
37	Oklahoma	86.7	2.01	12%
38	Kentucky	85.2	2.06	14%
39	Montana	84.9	2.08	-14%
40	Florida	81.4	2.21	-10%
41	Louisiana	80.4	2.25	2%
42	North Carolina	78.6	2.32	64%
43	Tennessee	76.8	2.39	-3%
44	Hawaii	76.2	2.41	(n/a)
45	Virginia	74.6	2.47	69%
46	Georgia	74.5	2.47	42%
47	Alaska	64.8	2.84	24%
48	Vermont	50.4	3.39	163%
49	West Virginia	47.0	3.52	57%
50	Maine	32.4	4.07	3%

System Average Interruption Frequency Index, 2018
In an information technology world, reliable power distribution has become an increasingly important consideration in business attraction and retention. The above table lists the System Average Interruption Frequency (SAIFI) Index across all utility providers which represents the average number of interruptions per customer, including major event days.
Source: U.S. Energy Administration Information

Midwest Performance, 2018

State	Index	Rank
Wisconsin	0.81	1
Ohio	1.26	17
Illinois	1.44	22
Michigan	**1.45**	**23**
Indiana	1.76	31



DIGITAL CONNECTIVITY

Important building blocks of the innovation economy and technology-based economic development are not only traditional/public works infrastructure but “virtual” infrastructure, information highways, and IT services. The ability to connect and communicate directly relates to the innovative and entrepreneurial capacity of a state. The following metrics give an overview of the access to and use of the Internet and computers, focusing on outcome measures rather than underlying infrastructure investments.

Midwest Performance

	2018	2016	2014
Illinois	**	**	**
Indiana	*	**	*
Michigan	*	*	*
Wisconsin	*	*	**
Ohio	*	*	*

Rank	State	2018	2016	2014
1	South Dakota	*****	**	***
2	North Dakota	****	*****	*****
3	Wyoming	****	*****	****
4	Utah	****	****	****
5	Massachusetts	****	****	****
6	Maryland	***	****	****
7	Rhode Island	***	****	****
8	Vermont	***	****	***
9	Kansas	***	****	**
10	Iowa	***	***	***
11	Alaska	***	****	****
12	Hawaii	***	****	***
13	Idaho	***	***	***
14	California	***	***	***
15	New Hampshire	***	****	***
16	New Jersey	***	***	***
17	Montana	***	***	***
18	Oregon	***	***	***
19	Virginia	***	***	***
20	Delaware	***	***	***
21	New York	**	***	**
22	Colorado	**	**	***
23	Washington	**	***	**
24	Illinois	**	**	**
25	Connecticut	**	***	***
26	Texas	**	**	**
27	North Carolina	**	**	*
28	Minnesota	**	**	**
29	Nebraska	**	**	**
30	Maine	**	**	**
31	Alabama	**	**	**
32	Pennsylvania	**	**	**
33	Nevada	**	**	**
34	Mississippi	**	**	**
35	Missouri	**	**	*
36	Arkansas	**	**	**
37	Louisiana	*	**	*
38	Indiana	*	**	*
39	Oklahoma	*	**	**
40	Florida	*	*	*
41	Georgia	*	*	*
42	**Michigan**	*	*	*
43	Tennessee	*	*	*
44	New Mexico	*	**	*
45	Wisconsin	*	*	**
46	South Carolina	*	*	*
47	Kentucky	*	*	*
48	Arizona	*	*	*
49	West Virginia	*	*	*
50	Ohio	*	*	*

BROADBAND CONNECTIONS

Rank	State	Score	Lines per Household	Change, 2014-2017 (%)
	50-StateAverage		*3.12*	*17.8%*
1	Kansas	145.2	3.98	60.8%
2	Hawaii	144.3	3.96	19.7%
3	California	142.3	3.92	21.2%
4	New Jersey	131.2	3.69	16.8%
5	Alaska	127.3	3.61	17.2%
6	New York	125.9	3.58	26.0%
7	Massachusetts	123.0	3.52	22.7%
8	Maryland	121.5	3.49	19.8%
9	Texas	119.1	3.44	18.4%
10	Connecticut	117.7	3.41	18.4%
10	Florida	117.7	3.41	27.3%
12	Utah	115.2	3.36	11.2%
13	Illinois	112.8	3.31	20.3%
14	Delaware	109.9	3.25	9.8%
15	Georgia	109.4	3.24	20.1%
15	Washington	109.4	3.24	15.2%
17	Nevada	108.9	3.23	18.2%
18	Colorado	106.5	3.18	12.5%
19	Louisiana	105.1	3.15	14.5%
20	Oregon	102.7	3.10	18.8%
20	Virginia	102.7	3.10	11.0%
22	Minnesota	102.2	3.09	19.8%
22	Pennsylvania	102.2	3.09	20.9%
24	Rhode Island	101.7	3.08	18.9%
25	Kentucky	101.2	3.07	16.1%
26	Arizona	98.8	3.02	15.9%
26	Vermont	98.8	3.02	21.8%
28	**Michigan**	**97.3**	**2.99**	**21.3%**
29	Alabama	96.9	2.98	23.4%
29	New Hampshire	96.9	2.98	12.4%
29	Wyoming	96.9	2.98	17.1%
32	Missouri	96.4	2.97	18.4%
33	Idaho	95.4	2.95	13.4%
33	Oklahoma	95.4	2.95	13.3%
35	Mississippi	93.5	2.91	18.7%
35	Ohio	93.5	2.91	16.6%
35	Tennessee	93.5	2.91	16.0%
38	North Carolina	92.0	2.88	15.5%
39	New Mexico	91.5	2.87	19.8%
40	Indiana	90.6	2.85	15.2%
41	Iowa	89.1	2.82	14.9%
41	Maine	89.1	2.82	23.3%
43	Wisconsin	88.6	2.81	16.4%
44	South Carolina	88.1	2.80	17.7%
45	North Dakota	87.7	2.79	3.0%
46	Nebraska	87.2	2.78	11.5%
47	Arkansas	85.7	2.75	11.7%
48	Montana	81.4	2.66	12.3%
49	South Dakota	80.9	2.65	9.6%
50	West Virginia	71.7	2.46	12.9%

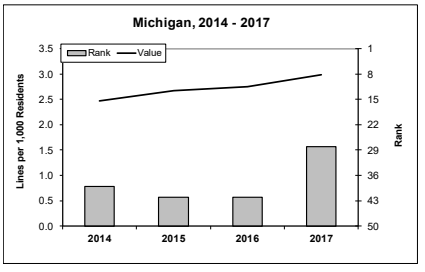
Number of broadband Internet lines per household, 2017

The term "broadband" is a catch-all phrase that encompasses cable and wireless Internet access, DSL, ISDN, T-1, and T-3. Once the province only of larger businesses and early-adopter individuals, broadband's high download speeds are increasingly available to the everyday user and small business. Available and inexpensive broadband is becoming vital to economic competitiveness. The adjacent table shows the number of broadband lines per household in each state.

Source: Federal Communications Commission

Midwest Performance, 2017

State	Lines per 1,000 Residents	Rank
Illinois	3.31	13
Michigan	**2.99**	**28**
Ohio	2.91	35
Indiana	2.85	40
Wisconsin	2.81	43



BROADBAND COVERAGE

Rank	State	Score	Providers per 100,000 Residents	Change, 2014-2017 (%)
	50-State Average		*12.3*	*-86.5%*
1	Iowa	184.1	46.4	-382.0%
2	North Dakota	175.3	42.4	-637.5%
3	Wyoming	165.6	38.0	197.6%
4	South Dakota	155.5	33.3	-550.2%
5	Montana	142.9	27.6	-573.0%
6	Nebraska	139.5	26.0	-213.7%
7	Vermont	138.6	25.7	-151.6%
8	Idaho	138.6	25.6	109.3%
9	Maine	125.0	19.5	366.0%
10	Kansas	124.5	19.2	-43.5%
11	Alaska	120.9	17.6	-278.7%
12	New Mexico	114.9	14.8	-147.5%
13	Oregon	114.1	14.5	34.4%
14	New Hampshire	113.4	14.1	-15.0%
15	Arkansas	113.0	14.0	-52.3%
16	Oklahoma	110.8	13.0	32.9%
17	Minnesota	109.1	12.2	-119.4%
18	Kentucky	107.5	11.4	-56.7%
19	Mississippi	106.6	11.1	68.6%
20	Utah	105.0	10.3	-91.3%
21	Missouri	103.5	9.7	57.2%
22	West Virginia	102.9	9.4	70.2%
23	Alabama	101.7	8.8	-109.6%
24	Wisconsin	100.5	8.3	-284.6%
25	Indiana	99.5	7.8	-23.9%
26	Louisiana	97.8	7.0	-5.4%
27	South Carolina	97.6	7.0	12.6%
28	Tennessee	97.4	6.8	-33.7%
29	Washington	97.2	6.8	-133.7%
30	Delaware	96.0	6.2	195.8%
31	Georgia	95.6	6.0	-0.9%
32	Illinois	95.4	5.9	-27.3%
33	**Michigan**	**95.4**	**5.9**	**-2.8%**
34	Ohio	95.2	5.8	-37.8%
35	Nevada	94.8	5.7	-315.8%
36	Virginia	94.3	5.4	-46.1%
37	Arizona	93.9	5.3	-98.9%
38	North Carolina	93.0	4.9	3.9%
39	Pennsylvania	92.1	4.5	-55.3%
40	Texas	90.3	3.6	-3.4%
41	Colorado	89.8	3.4	-615.8%
42	New Jersey	89.2	3.1	-13.4%
43	New York	88.9	3.0	-16.3%
44	Connecticut	88.5	2.8	-276.8%
45	Maryland	88.2	2.6	-20.4%
46	Florida	87.3	2.2	-37.4%
47	California	86.1	1.7	1.5%
48	Massachusetts	85.9	1.6	-2.4%
(n/a)	Hawaii	(n/a)	(n/a)	0.0
(n/a)	Rhode Island	(n/a)	(n/a)	0.0

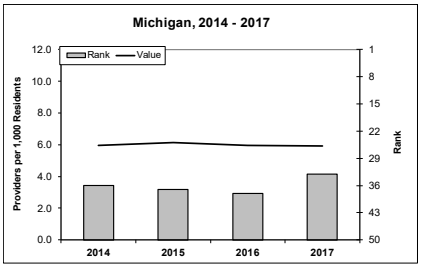
High-speed internet providers per 100,000 residents, 2017

A good geographic coverage of broadband makes sure that all parts of the state have the opportunity to be part of digital and mobile technology transformations. At the same time, the access has to be at a reasonable cost and service, and some extent of competition is more likely to assure such an outcome. The table above shows the number of high-speed Internet providers relative to the population.

Source: Federal Communications Commission

Midwest Performance, 2017

State	Providers per 100,000 Residents	Rank
Wisconsin	8.3	24
Indiana	7.8	25
Illinois	5.9	32
Michigan	**5.9**	**33**
Ohio	5.8	34



INTERNET SPEED

Rank	State	Score	Peak Connection Speed	Change, 2013-2016 (%)
	50-State Average		*68*	*29%*
1	Delaware	129.6	93	58.0%
2	Massachusetts	126.7	91	38.0%
3	Maryland	126.0	90	45.3%
4	Virginia	124.1	89	37.5%
5	Rhode Island	122.6	87	44.8%
6	New Jersey	122.5	87	37.6%
7	Utah	121.8	87	41.2%
8	New York	116.1	82	36.4%
9	Washington	115.4	81	38.0%
10	California	112.1	79	36.9%
11	Pennsylvania	107.7	75	29.1%
12	North Dakota	106.5	74	39.1%
13	New Hampshire	105.6	73	31.2%
14	Texas	105.5	73	31.6%
15	Connecticut	105.2	73	34.0%
16	**Michigan**	**105.0**	**73**	**23.7%**
17	Wyoming	104.0	72	38.5%
18	Oregon	103.6	72	38.7%
19	Illinois	103.0	71	30.0%
20	Vermont	102.3	71	38.0%
21	Colorado	102.1	71	34.1%
22	Georgia	101.2	70	39.5%
23	Florida	101.2	70	29.3%
24	Nevada	100.8	70	28.3%
25	Indiana	100.1	69	24.9%
26	Minnesota	99.9	69	29.0%
27	Arizona	99.9	69	28.0%
28	North Carolina	99.1	68	36.3%
29	Tennessee	97.9	67	27.9%
30	Missouri	97.1	67	33.2%
31	South Dakota	96.2	66	16.9%
32	Kansas	93.8	64	31.0%
33	Hawaii	92.5	63	23.4%
34	Wisconsin	91.6	62	33.6%
35	Alaska	90.1	61	19.6%
36	Oklahoma	89.6	60	27.8%
37	South Carolina	88.9	60	25.4%
38	Montana	88.6	59	25.1%
39	Nebraska	87.8	59	18.8%
40	Alabama	87.4	58	21.0%
41	Iowa	86.4	58	23.4%
42	Louisiana	84.7	56	24.1%
43	West Virginia	84.3	56	20.4%
44	New Mexico	83.2	55	23.4%
45	Idaho	79.6	52	15.7%
46	Maine	77.8	51	16.7%
47	Kentucky	76.1	49	16.8%
48	Arkansas	75.5	49	21.7%
49	Mississippi	75.1	48	15.7%
50	Ohio	70.0	44	-51.7%

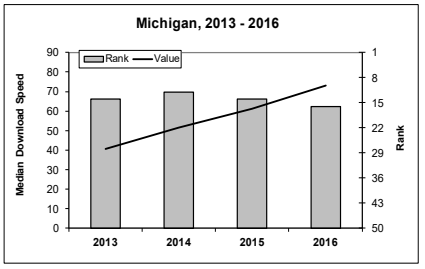
Average peak connenction speed in megabits per second, 2016

Fully benefiting from today's information highway is not only a matter of access and competitive ISP services but speed. Even though broadband coverage has reached most areas of the nation, states and regions vary considerably in quality of the service indicated by connectivity characteristics and speed. The above table lists the average peak connection speed in megabits per second in each state – provided annually by Akamai in their State of the Internet report.

Source: Akamai

Midwest Performance, 2016

State	Average Connection Speed	Rank
Michigan	**73**	**16**
Illinois	71	19
Indiana	69	25
Wisconsin	62	34
Ohio	44	50



NEXT GENERATION INTERNET

Rank	State	Score	Number per 100,000 establ.	Change, 2015-2018 (%)
	50-StateAverage		*6.0*	*22.3%*
1	South Dakota	*250.0*	31.5	100.0%
2	Maryland	135.4	11.0	-0.4%
3	North Dakota	129.7	10.0	2.0%
4	Alabama	126.4	9.5	15.8%
5	Utah	125.4	9.3	95.0%
6	North Carolina	124.7	9.2	96.7%
7	Mississippi	123.6	9.0	0.0%
8	Massachusetts	119.9	8.4	18.8%
9	Rhode Island	119.1	8.2	-0.4%
10	Colorado	118.0	8.1	80.1%
11	Arkansas	117.1	7.9	-0.1%
12	Virginia	116.9	7.9	19.2%
13	Idaho	116.4	7.8	46.4%
14	West Virginia	114.0	7.4	1.8%
15	Pennsylvania	111.2	6.9	59.8%
16	New Hampshire	108.7	6.5	-0.2%
17	South Carolina	106.6	6.2	64.0%
18	Montana	106.5	6.2	-0.7%
19	Alaska	104.7	5.9	-0.6%
20	New Mexico	104.4	5.8	0.6%
21	Nevada	104.4	5.8	-2.0%
22	Wyoming	102.9	5.6	0.9%
23	Vermont	102.6	5.5	-0.1%
24	Kansas	100.4	5.2	0.2%
25	Tennessee	100.1	5.1	65.0%
26	Illinois	99.9	5.1	44.1%
27	Louisiana	99.1	4.9	0.6%
28	Delaware	98.9	4.9	-1.7%
29	Iowa	98.2	4.8	49.6%
30	Missouri	98.1	4.8	-1.3%
31	Kentucky	95.7	4.4	50.2%
32	Oregon	95.1	4.3	-2.1%
33	California	95.0	4.3	57.5%
34	Texas	94.4	4.1	4.5%
35	Oklahoma	94.3	4.1	0.7%
36	Hawaii	93.2	3.9	-0.9%
37	New York	92.7	3.9	11.9%
38	Ohio	92.2	3.8	0.4%
39	Arizona	91.9	3.7	30.9%
40	Indiana	91.6	3.7	-0.1%
41	Wisconsin	91.5	3.7	33.3%
42	Maine	87.1	2.9	-0.9%
43	**Michigan**	**86.8**	**2.9**	66.6%
44	Connecticut	86.2	2.8	0.4%
45	Washington	85.2	2.6	31.0%
46	Minnesota	84.6	2.5	49.4%
47	Nebraska	83.3	2.3	-1.0%
48	Georgia	83.0	2.3	-1.5%
49	New Jersey	81.8	2.1	33.2%
50	Florida	81.6	2.0	-2.1%

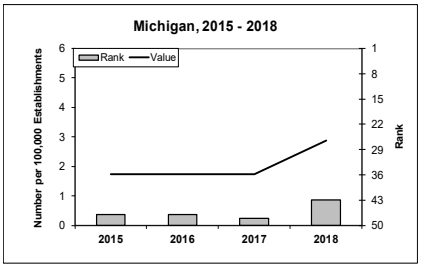
Number of Abilene network participants & connectors per 100,000 establishments, 2017

What broadband is to the dial-up modem, the Abilene network, or "Internet2," is to broadband. With a transmission speed that is magnitudes beyond anything available to the average consumer or firm, universities and private research labs use it to conduct complex joint research projects. The availability and use of the network hints at future competitiveness in the information-technology arena. The above table lists the number of primary network participants relative to the total number of businesses.

Source: Abilene Network

Midwest Performance, 2018

State	Number per 100,000 Establ.	Rank
Illinois	5.1	26
Ohio	3.8	38
Indiana	3.7	40
Wisconsin	3.7	41
Michigan	**2.9**	**43**



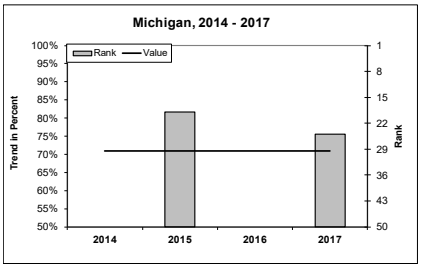
RURAL INTERNET ACCESS

Rank	State	Score	Percent	Change, 2013-2017 (%)
	50-State Average		*74%*	*59.4%*
1	Wyoming	119.2	87%	87.0%
2	Utah	117.8	86%	86.0%
3	Oregon	116.3	85%	85.0%
4	Montana	114.8	84%	84.0%
4	New Hampshire	114.8	84%	84.0%
4	Washington	114.8	84%	84.0%
7	Idaho	113.3	83%	83.0%
8	New Jersey	111.8	82%	82.0%
9	Minnesota	108.9	80%	80.0%
10	Colorado	107.4	79%	79.0%
10	Illinois	107.4	79%	79.0%
12	Nebraska	105.9	78%	78.0%
12	North Dakota	105.9	78%	78.0%
14	California	104.4	77%	77.0%
14	New York	104.4	77%	77.0%
14	Wisconsin	104.4	77%	77.0%
17	Indiana	103.0	76%	76.0%
17	Iowa	103.0	76%	76.0%
19	South Dakota	101.5	75%	75.0%
19	Texas	101.5	75%	75.0%
21	North Carolina	100.0	74%	74.0%
22	Louisiana	98.5	73%	73.0%
22	Maryland	98.5	73%	73.0%
24	Kansas	97.0	72%	72.0%
25	Arkansas	95.6	71%	71.0%
25	Florida	95.6	71%	71.0%
25	**Michigan**	**95.6**	**71%**	**0.0%**
28	Oklahoma	94.1	70%	70.0%
28	South Carolina	94.1	70%	70.0%
30	Georgia	92.6	69%	69.0%
30	Missouri	92.6	69%	69.0%
30	Ohio	92.6	69%	69.0%
33	Mississippi	91.1	68%	68.0%
33	Tennessee	91.1	68%	68.0%
33	Virginia	91.1	68%	68.0%
36	Alabama	86.7	65%	65.0%
36	Kentucky	86.7	65%	65.0%
38	Pennsylvania	85.2	64%	64.0%
38	West Virginia	85.2	64%	64.0%
40	New Mexico	83.7	63%	63.0%
41	Arizona	82.2	62%	62.0%
(n/a)	Alaska	(n/a)	(n/a)	0.00
(n/a)	Connecticut	(n/a)	(n/a)	0.00
(n/a)	Delaware	(n/a)	(n/a)	0.00
(n/a)	Hawaii	(n/a)	(n/a)	0.00
(n/a)	Maine	(n/a)	(n/a)	0.00
(n/a)	Massachusetts	(n/a)	(n/a)	0.00
(n/a)	Nevada	(n/a)	(n/a)	0.00
(n/a)	Rhode Island	(n/a)	(n/a)	0.00
(n/a)	Vermont	(n/a)	(n/a)	0.00

Percent of farms with Internet access, 2017
The percentage of farms with Internet access expresses a number of important factors about a state's digital infrastructure. In a parallel to rural electrification in the 1930s, chief among these factors are questions about the "last mile"—the extent to which reliable, cheap or convenient Internet access has reached rural areas—and the development of community-access portals in more rural areas. The above table shows the percentage of farms that use computers for Internet access, published every two years.
Source: U.S. Department of Agriculture

Midwest Performance, 2017

State	Number per 100,000 Establ.	Rank
Illinois	79%	10
Wisconsin	77%	14
Indiana	76%	17
Michigan	**71%**	**25**
Ohio	69%	30



QUALITY OF LIFE (SENSE OF PLACE)

Quality of Life (or "Sense of Place") has been gaining increased attention from those responsible for economic development. Amenity value caught the attention of thoughtful professionals and public officials, particularly with the release of Richard Florida's 2002 book, "The Rise of the Creative Class." States, regions, and cities have become increasingly concerned about how to attract not just businesses, but individual entrepreneurs and young skilled workers in general who increasingly put emphasis on quality of life in their location decisions. Also, they will soon become very aware of the mobility of experienced, energetic retiring/semi-retiring baby boomers looking for places to call home that offer opportunities to continue to work, play, contribute to society, and make money. In short, amenity economics is back! Quality of life is a desirable attribute in its own right–pursuit of the good life, but it is increasingly important as a factor when attracting and retaining the "right" kinds of workers and companies to sustain future growth. In this way, good quality of life begets better quality of life.

Comprised of sub-drivers in Civic Energy and Harmony, Lifestyle and Play, Pocketbook Indicators, and Health and Safety, this driver seeks to measure the overall quality of life in each state. Quality of life often varies considerably within states. Consequently, future scores for this driver could be broken out by region.

Midwest Performance

	2018	2016	2014
Wisconsin	****	***	***
Michigan	***	***	**
Ohio	**	**	**
Indiana	**	**	*
Illinois	**	*	**

Rank	State	2018	2016	2014
1	Vermont	*****	*****	*****
2	Iowa	*****	****	*****
3	South Dakota	*****	****	*****
4	Wyoming	*****	****	****
5	Montana	*****	****	****
6	Massachusetts	*****	****	***
7	Nebraska	*****	****	****
8	Minnesota	****	****	****
9	Florida	****	****	****
10	Rhode Island	****	****	***
11	New Hampshire	****	****	****
12	North Dakota	****	***	***
13	Maine	****	****	***
14	Wisconsin	****	***	***
15	Idaho	****	***	**
16	Arkansas	****	***	**
17	Alabama	****	***	**
18	Tennessee	****	***	**
19	North Carolina	****	***	***
20	Kansas	****	***	***
21	Maryland	****	**	***
22	Louisiana	****	**	***
23	South Carolina	***	**	**
24	Virginia	***	***	***
25	Alaska	***	***	***
26	Missouri	***	***	***
27	Pennsylvania	***	**	***
28	Oregon	***	***	**
29	West Virginia	***	**	**
30	Oklahoma	***	**	**
31	Utah	***	**	***
32	Colorado	***	**	**
33	Connecticut	***	**	**
34	Delaware	***	**	**
35	Washington	***	***	**
36	**Michigan**	***	***	**
37	Hawaii	***	**	*
38	Mississippi	**	**	**
39	Ohio	**	**	**
40	New Jersey	**	**	*
41	New Mexico	**	**	*
42	Indiana	**	**	*
43	Georgia	**	**	**
44	California	**	*	*
45	Illinois	**	*	**
46	Kentucky	**	***	**
47	Arizona	*	*	*
48	New York	*	*	*
49	Texas	*	*	*
50	Nevada	*	*	*

CIVIC ENERGY AND HARMONY

Midwest Performance

	2018	2016	2014
Illinois	****	***	****
Wisconsin	***	***	***
Ohio	***	***	*
Michigan	***	***	**
Indiana	**	**	*

Rank	State	2018	2016	2014
1	Maryland	*****	*****	*****
2	Colorado	*****	*****	****
3	Virginia	*****	****	****
4	Montana	*****	****	***
5	Massachusetts	****	*****	****
6	Connecticut	****	****	****
7	Utah	****	***	****
8	Iowa	****	****	****
9	Georgia	****	****	***
10	Vermont	****	*****	*****
11	Oregon	****	****	****
12	New York	****	****	***
13	New Hampshire	****	****	****
14	Rhode Island	****	****	****
15	Wyoming	****	****	***
16	Illinois	****	***	****
17	Minnesota	****	****	****
18	Missouri	***	***	***
19	Nebraska	***	****	***
20	Pennsylvania	***	***	***
21	Maine	***	***	***
22	New Jersey	***	****	***
23	South Dakota	***	***	***
24	Delaware	***	***	***
25	Washington	***	****	****
26	California	***	***	***
27	Alabama	***	**	*
28	Alaska	***	***	***
29	Wisconsin	***	***	***
30	Arkansas	***	**	**
31	North Carolina	***	***	***
32	Florida	***	**	**
33	Ohio	***	***	*
34	**Michigan**	***	***	**
35	North Dakota	***	**	**
36	Kansas	***	**	***
37	Idaho	***	***	**
38	Texas	***	**	**
39	South Carolina	***	**	**
40	Oklahoma	***	**	**
41	Tennessee	**	***	**
42	Arizona	**	**	**
43	New Mexico	**	**	*
44	Mississippi	**	*	*
45	Indiana	**	**	*
46	Louisiana	**	*	**
47	Hawaii	**	*	*
48	Kentucky	*	**	*
49	West Virginia	*	**	*
50	Nevada	*	*	*

CHARITABLE GIVING

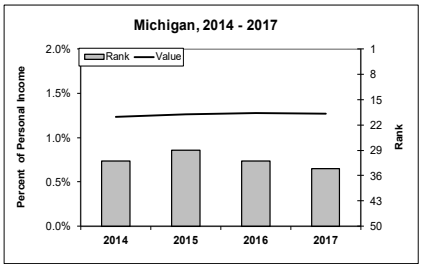
Rank	State	Score	Percent	Change,2014-2017 (%)
	50-StateAverage		*1.45%*	*7.2%*
1	Utah	185.0	3.15%	1.6%
2	Georgia	156.9	2.59%	24.8%
3	Arkansas	144.6	2.34%	63.9%
4	Wyoming	129.4	2.03%	-5.6%
5	Alabama	126.3	1.97%	13.3%
6	Florida	117.5	1.79%	(n/a)
7	Maryland	116.1	1.76%	3.9%
8	Mississippi	114.7	1.73%	10.7%
9	Idaho	114.0	1.72%	10.5%
10	South Carolina	113.4	1.71%	8.1%
11	New York	112.4	1.69%	0.9%
12	Texas	109.7	1.63%	18.9%
13	North Carolina	108.3	1.60%	5.6%
14	Oklahoma	108.0	1.60%	4.7%
15	South Dakota	106.8	1.57%	16.5%
16	Virginia	106.1	1.56%	8.3%
17	Tennessee	104.2	1.52%	3.1%
18	Connecticut	103.3	1.50%	5.6%
19	Oregon	102.4	1.48%	0.1%
20	California	102.0	1.47%	3.2%
21	Missouri	101.2	1.46%	7.0%
22	Nevada	101.1	1.46%	8.7%
23	Kansas	101.1	1.46%	-1.3%
24	Massachusetts	100.4	1.44%	6.2%
25	Colorado	100.2	1.44%	11.9%
26	Washington	99.8	1.43%	-10.6%
27	Montana	98.4	1.40%	4.3%
28	Minnesota	98.2	1.40%	3.1%
29	Nebraska	98.1	1.39%	7.6%
30	Arizona	96.6	1.36%	8.7%
31	Illinois	95.5	1.34%	1.0%
32	New Jersey	91.9	1.27%	13.7%
33	Delaware	91.9	1.27%	7.2%
34	**Michigan**	**91.9**	**1.27%**	**3.1%**
35	Louisiana	91.6	1.26%	11.6%
36	Iowa	90.1	1.23%	8.2%
37	Kentucky	89.6	1.22%	4.3%
38	Indiana	88.7	1.21%	5.0%
39	Wisconsin	87.2	1.17%	-1.3%
40	Pennsylvania	85.4	1.14%	4.6%
41	Ohio	84.6	1.12%	2.8%
42	New Mexico	83.8	1.11%	8.6%
43	North Dakota	81.2	1.05%	14.1%
44	Hawaii	79.9	1.03%	8.3%
45	Vermont	78.9	1.01%	7.8%
46	Rhode Island	75.0	0.93%	-1.8%
47	New Hampshire	72.9	0.89%	2.4%
48	Maine	71.5	0.86%	5.7%
49	Alaska	69.7	0.82%	3.1%
50	West Virginia	66.4	0.76%	1.7%

Itemized contributions as percent of personal income, 2017

The contributions of each resident to charitable causes are a sign of community involvement and the tie of the residents to their home state. Although charitable deductions on federal income tax returns do not indicate the location of the use of those funds, they provide a general sense of a state's civic participation. The above table shows the amount of itemized charitable deductions as a percent of the state's personal income.
Source: Internal Revenue Service

Midwest Performance, 2017

State	Percent of Personal Income	Rank
Illinois	1.33%	27
Michigan	**1.28%**	**30**
Indiana	1.16%	36
Wisconsin	1.12%	39
Ohio	1.09%	40



VOTER TURNOUT

Rank	State	Score	Percent	Change, 2014-2018 (%)
	50-StateAverage		*51.8%*	*34.6%*
1	Minnesota	131.5	64.2%	27.9%
2	Colorado	128.5	63.0%	18.0%
3	Montana	126.0	62.0%	32.5%
4	Wisconsin	125.3	61.7%	9.2%
5	Oregon	124.8	61.5%	20.6%
6	Maine	121.5	60.2%	3.8%
7	Washington	118.3	58.9%	43.0%
8	North Dakota	117.6	58.6%	33.8%
9	**Michigan**	**115.6**	**57.8%**	**35.4%**
10	Iowa	115.3	57.7%	16.1%
11	Vermont	110.8	55.9%	44.1%
12	Georgia	108.6	55.0%	44.4%
13	Florida	108.3	54.9%	28.6%
14	Virginia	108.1	54.8%	50.1%
15	New Hampshire	107.6	54.6%	14.7%
15	Massachusetts	107.6	54.6%	24.1%
15	Alaska	107.6	54.6%	1.5%
18	Connecticut	107.1	54.4%	28.6%
19	Maryland	106.6	54.2%	30.6%
20	Missouri	104.6	53.4%	67.9%
21	South Dakota	104.4	53.3%	19.8%
22	New Jersey	103.9	53.1%	70.7%
23	Utah	101.1	52.0%	75.7%
24	Nebraska	100.6	51.8%	27.6%
25	Pennsylvania	100.4	51.7%	43.6%
26	Illinois	99.6	51.4%	27.2%
26	Delaware	99.6	51.4%	49.4%
28	Kansas	99.1	51.2%	20.5%
29	Ohio	98.4	50.9%	45.0%
30	Idaho	96.1	50.0%	27.9%
31	North Carolina	95.1	49.6%	21.3%
31	California	95.1	49.6%	65.3%
33	Arizona	93.9	49.1%	47.0%
34	Wyoming	92.9	48.7%	25.8%
35	Kentucky	92.7	48.6%	10.5%
36	Rhode Island	91.4	48.1%	15.6%
37	Nevada	89.9	47.5%	63.8%
38	New Mexico	89.4	47.3%	32.5%
38	Alabama	89.4	47.3%	43.8%
40	Indiana	88.4	46.9%	68.7%
41	Texas	86.9	46.3%	63.6%
42	South Carolina	84.2	45.2%	29.9%
42	New York	84.2	45.2%	60.3%
44	Tennessee	83.9	45.1%	57.7%
45	Louisiana	83.2	44.8%	2.3%
46	Mississippi	80.4	43.7%	51.2%
47	West Virginia	77.5	42.5%	36.2%
47	Oklahoma	77.5	42.5%	42.6%
49	Arkansas	74.7	41.4%	3.5%
50	Hawaii	69.5	39.3%	8.6%

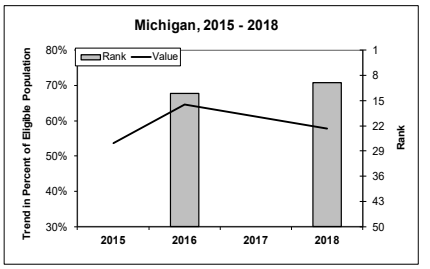
Percent of eligible voters' turnout at general elections, 2018

High voter turnout indicates that the residents take an interest in the development of the state, and is the key to a responsive government. The above table shows the average percent of the eligible population that voted in general elections for the highest office.

Source: George Mason University

Midwest Performance, 2018

State	Percent of Eligible Population	Rank
Wisconsin	61.7%	4
Michigan	**57.8%**	**9**
Illinois	51.4%	26
Ohio	50.9%	29
Indiana	46.9%	40



GENDER EQUITY

Rank	State	Score	Percent	Change, 2015-2018 (%)
	50-StateAverage		*44.3%*	*4.9%*
1	Maryland	152.9	54.3%	5.4%
2	Massachusetts	144.8	52.7%	3.7%
3	Virginia	136.5	51.1%	5.5%
4	Vermont	134.3	50.6%	5.8%
5	Colorado	131.7	50.1%	4.5%
6	New Jersey	127.7	49.3%	5.4%
7	New York	120.9	48.0%	4.5%
8	Alaska	120.3	47.8%	7.8%
9	New Hampshire	116.9	47.2%	1.0%
10	Connecticut	116.8	47.1%	-3.1%
11	Rhode Island	116.8	47.1%	7.1%
12	Ohio	112.8	46.4%	15.4%
13	Minnesota	111.4	46.1%	-3.4%
14	Washington	110.7	45.9%	-2.8%
15	Maine	109.6	45.7%	5.3%
16	Montana	107.5	45.3%	13.2%
17	Pennsylvania	107.0	45.2%	8.7%
18	Oregon	106.0	45.0%	7.3%
19	**Michigan**	**105.5**	**44.9%**	**9.3%**
20	Illinois	104.2	44.6%	3.7%
21	Missouri	103.5	44.5%	1.6%
22	South Dakota	103.4	44.5%	4.2%
23	North Carolina	101.1	44.0%	3.1%
24	Utah	100.9	44.0%	0.8%
25	Oklahoma	100.0	43.8%	7.6%
26	Alabama	100.0	43.8%	26.8%
27	California	99.6	43.7%	0.0%
28	South Carolina	97.6	43.3%	14.6%
29	Nebraska	97.4	43.3%	1.1%
30	Texas	97.0	43.2%	5.4%
31	Wisconsin	95.8	43.0%	9.4%
32	Delaware	95.2	42.9%	5.1%
33	Kansas	94.8	42.8%	2.5%
34	Iowa	93.0	42.4%	0.0%
35	Kentucky	91.3	42.1%	11.4%
36	Arkansas	91.1	42.0%	13.2%
37	Indiana	91.0	42.0%	13.3%
38	New Mexico	90.8	42.0%	4.8%
39	Georgia	90.8	42.0%	0.3%
40	Louisiana	90.3	41.9%	5.3%
41	Arizona	89.5	41.7%	-4.5%
42	Tennessee	89.4	41.7%	-1.0%
43	North Dakota	89.3	41.7%	0.2%
44	Mississippi	86.5	41.1%	8.4%
45	Wyoming	85.8	41.0%	5.4%
46	West Virginia	84.1	40.7%	-4.8%
47	Hawaii	80.5	39.9%	10.7%
48	Florida	78.5	39.5%	-0.1%
49	Idaho	76.4	39.1%	6.4%
50	Nevada	42.0	32.3%	-8.8%

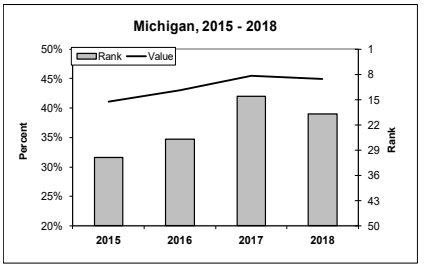
Percent of female labor force in "top jobs," 2018

Increasingly, there is a preference for diverse business environments, especially among the young and highly educated workers. Race and gender equity is not only desirable because it is fair and just; workplaces that demonstrate a commitment to and opportunities for career advancement of women and minorities are essential to economic competitiveness. The above table shows the percentage of the women in managerial, business, and financial, as well as professional and related occupations.

Source: U.S. Bureau of Labor Statistics

Midwest Performance, 2018

State	Percent	Rank
Ohio	46.4%	12
Michigan	**44.9%**	**19**
Illinois	44.6%	20
Wisconsin	43.0%	31
Indiana	42.0%	37



RACIAL/ETHNIC EQUITY

Rank	State	Score	Percent	Change, 2015-2018 (%)
	50-StateAverage		*35.0%*	*0.7%*
1	Vermont	125.4	47.6%	21.5%
2	California	123.1	46.4%	3.5%
3	New Jersey	122.8	46.3%	2.3%
4	Massachusetts	122.7	46.2%	1.5%
5	Colorado	119.9	44.8%	45.7%
6	Washington	118.9	44.3%	-2.2%
7	Maryland	116.7	43.2%	-1.4%
8	Illinois	114.9	42.2%	6.8%
9	Virginia	114.8	42.2%	13.5%
10	Oregon	113.9	41.7%	5.0%
11	Texas	110.0	39.7%	-0.3%
12	Idaho	109.5	39.5%	41.7%
13	Arizona	109.0	39.2%	3.1%
14	Nebraska	109.0	39.2%	18.2%
15	Rhode Island	108.5	39.0%	3.0%
16	Utah	108.1	38.8%	-1.4%
17	Connecticut	107.7	38.5%	-2.2%
18	New Hampshire	106.9	38.2%	-21.8%
19	Pennsylvania	106.1	37.7%	10.3%
20	**Michigan**	**106.1**	**37.7%**	**21.4%**
21	New York	103.2	36.2%	3.3%
22	Missouri	102.7	36.0%	3.8%
23	Maine	102.3	35.8%	79.9%
24	Iowa	102.3	35.8%	2.9%
25	Ohio	102.1	35.7%	11.0%
26	Wyoming	97.9	33.6%	38.2%
27	Kansas	97.6	33.4%	-6.5%
28	Georgia	96.5	32.9%	-0.2%
29	Tennessee	95.7	32.4%	7.1%
30	Florida	95.7	32.4%	17.9%
31	Delaware	95.5	32.3%	10.8%
32	Arkansas	95.5	32.3%	8.1%
33	North Carolina	94.4	31.8%	2.5%
34	Hawaii	94.1	31.6%	5.4%
35	New Mexico	93.5	31.3%	24.9%
36	Minnesota	93.5	31.3%	-13.2%
37	Indiana	93.1	31.1%	15.6%
38	Oklahoma	90.9	30.0%	1.0%
39	West Virginia	90.4	29.7%	12.5%
40	South Dakota	88.4	28.7%	12.5%
41	Wisconsin	87.6	28.3%	3.7%
42	Alabama	87.0	28.0%	14.5%
43	South Carolina	85.4	27.2%	23.3%
44	Louisiana	85.4	27.1%	-0.3%
45	Alaska	85.1	27.0%	-3.0%
46	Montana	84.3	26.6%	-5.1%
47	Kentucky	84.3	26.6%	-4.6%
48	Nevada	81.4	25.1%	-2.1%
49	Mississippi	78.5	23.7%	14.2%
50	North Dakota	76.9	22.8%	-28.4%

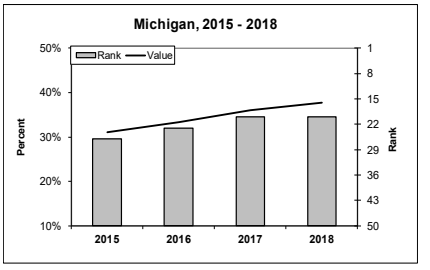
Percent of non-white labor force in "top jobs," 2018

This metric captures the same information as women in top jobs on the preceding page, except it measures the foothold of racial minorities at the top of the career ladder. The above table shows the percentage of non-white employees who are in managerial, business, and financial, as well as professional and related occupations.

Source: U.S. Bureau of Labor Statistics

Midwest Performance, 2018

State	Percent	Rank
Illinois	0.42247	8
Michigan	**37.7%**	**20**
Ohio	35.7%	25
Indiana	31.1%	37
Wisconsin	28.3%	41



HATE CRIMES

Rank	State	Score	Incidents per 100,000 residents	Change, 2015 - 2018 (%)
	50-StateAverage		*2.1*	*83.2%*
1	Iowa	114.3	0.33	-85.5%
2	Georgia	113.3	0.41	-25.2%
3	Arkansas	112.9	0.45	149.1%
4	Pennsylvania	112.1	0.53	-69.1%
5	Oklahoma	111.8	0.55	-85.8%
6	Montana	110.6	0.66	-36.8%
7	Florida	110.5	0.67	-49.9%
8	Mississippi	110.3	0.69	-57.8%
9	Maryland	109.0	0.81	-87.0%
10	Illinois	108.1	0.90	-54.1%
11	Wisconsin	108.0	0.90	154.5%
12	Alaska	107.4	0.95	-12.4%
13	New Hampshire	107.1	0.99	-73.2%
14	Utah	106.1	1.08	-15.8%
15	Missouri	106.0	1.08	-75.4%
16	Nevada	106.0	1.09	6.1%
17	Rhode Island	104.4	1.23	8.0%
18	Louisiana	103.9	1.28	-55.4%
19	North Dakota	103.5	1.31	-69.1%
20	Idaho	103.4	1.32	83.7%
21	North Carolina	103.0	1.36	-71.5%
22	New Mexico	101.9	1.46	-42.2%
23	Maine	101.5	1.49	118.9%
24	Texas	100.0	1.63	(n/a)
25	Delaware	99.7	1.66	43.0%
26	Virginia	99.5	1.68	-56.2%
27	Nebraska	97.0	1.91	-4.9%
28	Colorado	93.9	2.20	11.7%
29	South Carolina	93.4	2.24	9.4%
30	Minnesota	92.8	2.30	(n/a)
31	Arizona	92.4	2.33	-44.2%
32	South Dakota	90.8	2.48	-25.9%
33	Tennessee	90.3	2.52	261.9%
34	Connecticut	89.8	2.57	-6.0%
35	California	88.5	2.69	25.8%
36	Kansas	88.4	2.69	-36.9%
37	New York	88.3	2.70	68.6%
38	West Virginia	88.0	2.73	254.6%
39	Oregon	85.7	2.94	476.6%
40	Indiana	79.0	3.56	1743.2%
41	Ohio	78.7	3.58	277.2%
42	**Michigan**	**70.5**	**4.33**	**107.4%**
43	Massachusetts	60.7	5.23	66.5%
44	Kentucky	60.2	5.28	416.1%
45	New Jersey	49.1	6.30	178.5%
46	Washington	44.0	6.77	146.6%
47	Vermont	40.0	7.13	278.3%
(n/a)	Wyoming	(n/a)	(n/a)	(n/a)
(n/a)	Hawaii	(n/a)	(n/a)	(n/a)
(n/a)	Alabama	(n/a)	(n/a)	(n/a)

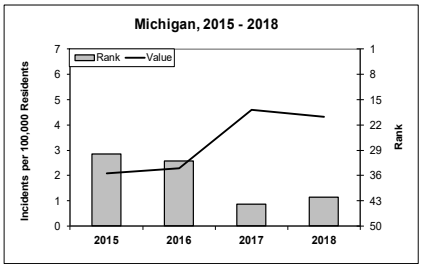
Number of reported hate-crime incidents / 100,000 covered residents, 2018

Hate crimes and similar behavior indicate that there are social tensions between groups of different origin and values. A lower level of community cohesion will diminish the attractiveness of a state, especially in today's economy with an increasing influx of immigrants and the importance of alternative lifestyles. The above table shows the number of reported incidents that were motivated in whole or in part by a bias against the victim's perceived race, religion, ethnicity, sexual orientation, or disability.

Source: Federal Bureau of Investigation

Midwest Performance, 2018

State	Incidents per 100,000 Residents	Rank
Illinois	0.9	10
Wisconsin	0.9	11
Indiana	3.6	40
Ohio	3.6	41
Michigan	**4.3**	**42**



GENERATIONAL CREATIVE CLASS

Rank	State	Score	Share of Labor Force	Change, 2015-2018 (%)
	50-StateAverage		*19.2%*	*7.7%*
1	Connecticut	141.8	29.0%	27.4%
2	Massachusetts	134.4	27.1%	-3.6%
3	New York	133.3	26.9%	11.8%
4	New Jersey	126.4	25.1%	7.4%
5	Maryland	125.5	24.9%	9.4%
6	Colorado	125.2	24.8%	12.4%
7	Virginia	123.4	24.4%	18.6%
8	New Hampshire	119.4	23.4%	8.8%
9	Rhode Island	114.7	22.2%	8.0%
10	Washington	114.6	22.2%	9.3%
11	Oregon	113.3	21.9%	21.0%
12	Illinois	112.5	21.7%	4.4%
13	Vermont	112.4	21.7%	-9.7%
14	Tennessee	111.0	21.3%	21.2%
15	Pennsylvania	108.6	20.7%	7.9%
16	Hawaii	108.2	20.6%	16.2%
17	California	107.0	20.3%	9.8%
18	Ohio	107.0	20.3%	30.0%
19	Delaware	104.8	19.8%	21.2%
20	South Carolina	104.6	19.7%	27.8%
21	**Michigan**	**103.1**	**19.3%**	**18.8%**
22	Montana	101.5	18.9%	3.1%
23	Georgia	101.4	18.9%	16.3%
24	North Carolina	101.0	18.8%	9.8%
25	Kansas	100.2	18.6%	-4.9%
26	Arizona	99.8	18.5%	8.5%
27	Missouri	99.2	18.4%	14.4%
28	Iowa	98.6	18.2%	10.4%
29	Nebraska	97.2	17.9%	-3.6%
30	Florida	97.1	17.8%	4.3%
31	Alabama	96.4	17.7%	25.8%
32	Texas	94.9	17.3%	2.7%
33	Minnesota	94.1	17.1%	-20.3%
34	New Mexico	93.6	17.0%	8.8%
35	Utah	93.2	16.9%	10.9%
36	North Dakota	92.2	16.6%	-5.0%
37	Idaho	91.7	16.5%	9.0%
38	Maine	90.5	16.2%	-6.1%
39	Oklahoma	90.5	16.2%	11.2%
40	Kentucky	90.1	16.1%	1.3%
41	Alaska	88.8	15.8%	-10.0%
42	South Dakota	88.4	15.7%	-5.3%
43	Arkansas	88.1	15.6%	21.0%
44	Wisconsin	86.5	15.2%	3.4%
45	Indiana	86.3	15.2%	1.6%
46	Mississippi	85.1	14.9%	18.0%
47	Louisiana	84.9	14.8%	-7.0%
48	Wyoming	84.2	14.6%	8.9%
49	West Virginia	81.0	13.8%	-9.5%
50	Nevada	72.6	11.7%	-11.9%

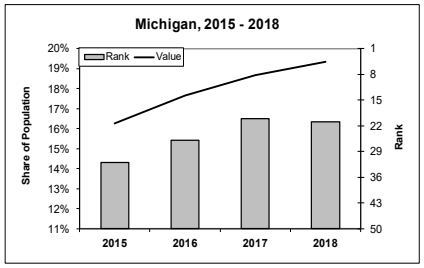
Percent of labor force age 16-34 & 55+ years old with a bachelor's degree or higher, 2018

Creativity is evident at all age levels. Most notably, a new group of highly talented experienced workers is emerging as a byproduct of today's 'longevity revolution' – the 'third age' productive years of 55-79. This metric gets at the breadth of talent of a state by combining attainment at both ends of the age spectrum: 16-34 and 55+.

Source: U.S. Bureau of Labor Statistics

Midwest Performance, 2018

State	Share of Labor Force	Rank
Illinois	21.7%	12
Ohio	20.3%	18
Michigan	**19.3%**	**21**
Wisconsin	15.2%	44
Indiana	15.2%	45



NUMBER OF NONPROFITS

Rank	State	Score	Nonprofits per 100,000 residents	Change, 2013-2016 (%)
	50-State Average		*554*	*9.6%*
1	Montana	153.2	971	6.5%
2	Vermont	149.2	938	9.7%
3	Iowa	143.6	892	4.6%
4	Wyoming	133.9	812	13.9%
5	Rhode Island	127.0	755	3.2%
6	South Dakota	126.1	748	4.5%
7	North Dakota	125.8	745	1.4%
8	Nebraska	121.3	708	10.8%
9	Alaska	120.9	705	8.2%
10	Maine	119.0	688	7.9%
11	Delaware	117.6	677	13.3%
12	Minnesota	110.1	615	5.6%
13	New Hampshire	109.7	611	7.8%
14	Wisconsin	108.1	599	12.2%
15	Connecticut	104.5	569	10.1%
16	Missouri	104.5	569	7.4%
17	West Virginia	104.5	569	13.4%
18	Oregon	104.2	566	5.4%
19	Kansas	103.9	564	5.3%
20	Ohio	103.5	561	8.3%
21	Maryland	103.2	558	11.6%
22	Indiana	102.3	551	9.7%
23	Massachusetts	102.2	550	9.1%
24	Colorado	101.8	547	13.7%
25	Pennsylvania	100.2	533	7.7%
26	Hawaii	99.8	530	8.5%
27	New York	98.3	517	10.8%
28	Illinois	97.9	515	9.5%
29	Virginia	97.2	508	10.1%
30	South Carolina	96.1	499	8.4%
31	Washington	95.9	498	8.1%
32	New Mexico	94.2	484	10.6%
33	**Michigan**	**94.0**	**482**	**11.2%**
34	New Jersey	93.5	478	9.7%
35	Oklahoma	93.5	478	8.5%
36	Tennessee	93.1	475	11.4%
37	North Carolina	92.3	468	15.7%
38	Idaho	91.9	464	6.5%
39	Arkansas	91.1	458	12.0%
40	Mississippi	88.7	438	10.6%
41	Georgia	87.2	426	13.4%
42	Alabama	86.9	423	11.2%
43	California	86.1	417	10.4%
44	Kentucky	85.9	415	8.6%
45	Louisiana	85.5	412	12.2%
46	Florida	83.7	397	11.8%
47	Texas	83.3	393	12.0%
48	Arizona	75.8	332	10.7%
49	Utah	72.1	301	11.1%
50	Nevada	71.8	299	14.4%

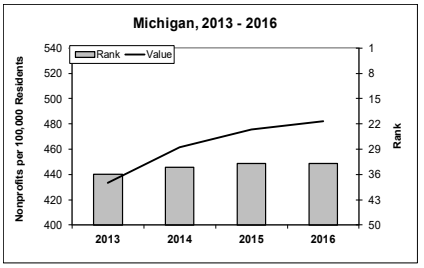
Number of nonprofit organizations per 100,000 residents, 2016

Nonprofit organizations such as charities are mobilizers of public participation in the development of the community, and reflect the strength of the social network that supports the economy. The above table gives the number of nonprofit organizations per state per 100,000 residents.

Source: National Center for Charitable Statistics

Midwest Performance, 2016

State	Nonprofits per 100,000 Residents	Rank
Wisconsin	599	14
Ohio	561	20
Indiana	551	22
Illinois	515	28
Michigan	**482**	**33**



LIFESTYLE AND PLAY

Midwest Performance

	2018	2016	2014
Ohio	***	**	**
Wisconsin	**	**	**
Michigan	**	**	**
Indiana	**	**	*
Illinois	*	*	*

Rank	State	2018	2016	2014
1	Alaska	*****	*****	*****
2	Florida	*****	*****	*****
3	Hawaii	*****	*****	*****
4	Vermont	*****	*****	*****
5	California	*****	****	****
6	Montana	*****	*****	*****
7	Massachusetts	****	****	****
8	New York	****	****	***
9	Wyoming	****	***	***
10	Pennsylvania	****	***	****
11	South Dakota	****	***	****
12	Rhode Island	***	****	****
13	Iowa	***	***	***
14	Louisiana	***	***	**
15	Maine	***	****	***
16	Maryland	***	***	***
17	North Dakota	***	**	**
18	Missouri	***	***	***
19	Minnesota	***	***	***
20	Connecticut	***	***	**
21	Nebraska	***	***	***
22	Utah	***	***	***
23	Virginia	***	***	***
24	Idaho	***	**	**
25	Ohio	***	**	**
26	Washington	***	***	***
27	Nevada	**	**	***
28	Wisconsin	**	**	**
29	New Jersey	**	***	***
30	North Carolina	**	**	***
31	New Hampshire	**	**	***
32	Arkansas	**	**	**
33	Kentucky	**	***	**
34	Oregon	**	**	**
35	Colorado	**	**	**
36	**Michigan**	**	**	**
37	Delaware	**	***	***
38	Tennessee	**	**	**
39	South Carolina	**	**	**
40	Kansas	**	**	**
41	West Virginia	**	**	**
42	Arizona	**	**	**
43	Alabama	**	**	**
44	Indiana	**	**	*
45	New Mexico	**	*	*
46	Illinois	*	*	*
47	Georgia	*	*	*
48	Mississippi	*	*	*
49	Oklahoma	*	*	*
50	Texas	*	*	*

TIME TO WORK

Rank	State	Score	Average Minutes	Change, 2015-2018 (%)
	50-StateAverage		*24.6*	*2.0%*
1	Wyoming	131.7	16.9	-8.2%
2	South Dakota	131.0	17.1	1.2%
3	North Dakota	130.5	17.2	-1.0%
4	Montana	127.0	18.1	0.6%
5	Nebraska	124.7	18.6	1.8%
6	Alaska	123.6	18.9	0.0%
7	Iowa	122.0	19.3	2.1%
8	Kansas	121.6	19.4	1.6%
9	Idaho	115.2	21.0	3.3%
10	Arkansas	113.1	21.5	-1.1%
11	Oklahoma	111.8	21.8	2.2%
12	Utah	111.6	21.9	2.3%
13	Wisconsin	110.9	22.0	0.2%
14	New Mexico	109.4	22.4	3.4%
15	Vermont	105.7	23.3	3.4%
16	Kentucky	105.5	23.4	1.9%
17	Ohio	104.8	23.5	1.1%
18	Minnesota	104.1	23.7	1.9%
18	Indiana	104.1	23.7	1.9%
20	Missouri	103.7	23.8	2.1%
21	Oregon	102.9	24.0	3.6%
21	Maine	102.9	24.0	1.6%
23	Nevada	101.3	24.4	2.1%
24	**Michigan**	**100.9**	**24.5**	**1.1%**
25	North Carolina	100.1	24.7	2.8%
26	Mississippi	99.9	24.7	2.9%
27	South Carolina	99.7	24.8	3.3%
27	Alabama	99.7	24.8	1.8%
29	Rhode Island	99.0	25.0	3.0%
30	Tennessee	98.0	25.2	2.4%
31	Louisiana	96.7	25.5	0.9%
31	Arizona	96.7	25.5	3.0%
33	Colorado	96.4	25.6	2.3%
34	West Virginia	94.9	26.0	1.2%
35	Delaware	93.4	26.3	3.9%
36	Connecticut	92.8	26.5	2.8%
37	Texas	92.5	26.6	3.0%
38	Pennsylvania	90.5	27.1	2.5%
39	New Hampshire	89.7	27.3	0.5%
40	Hawaii	89.4	27.3	-0.1%
41	Florida	87.8	27.7	4.7%
42	Washington	86.5	28.0	5.3%
43	Virginia	84.2	28.6	2.1%
44	Georgia	83.6	28.8	4.5%
45	Illinois	82.1	29.1	2.3%
46	California	79.4	29.8	5.3%
47	Massachusetts	78.7	30.0	3.2%
48	New Jersey	70.2	32.1	3.1%
49	Maryland	65.9	33.1	2.1%
50	New York	63.6	33.7	3.4%

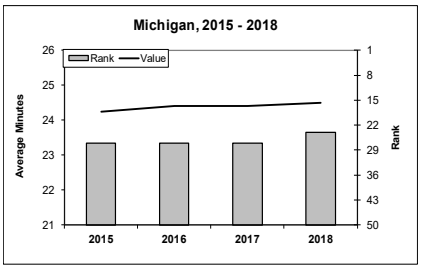
Average travel time to work of workers 16 years and over who did not work at home, 2018

Striking work–life balance has become of increased concern to workers today. Take-home work, via mobile devices, exacerbates demands from the workplace. One solution is to reduce commute time. States with less than average travel time to work are considered to have higher quality of life.

Source: U.S. Census Bureau

Midwest Performance, 2018

State	Average Minutes	Rank
Wisconsin	22.0	13
Ohio	23.5	17
Indiana	23.7	18
Michigan	**24.5**	**24**
Illinois	29.1	45



HISTORICAL PRESERVATION

Rank	State	Score	Projects per 1mill. residents	Change, 2015-2018 (%)
	50-StateAverage		*3.9*	*44.1%*
1	Louisiana	213.6	20.8	-23.5%
2	Missouri	156.2	11.4	5.1%
3	Vermont	154.6	11.2	-58.9%
4	Virginia	145.2	9.6	-7.5%
5	Ohio	139.6	8.7	98.8%
6	Arkansas	139.0	8.6	97.7%
7	Rhode Island	132.6	7.6	-27.4%
8	Massachusetts	131.5	7.4	-7.0%
9	Maryland	130.8	7.3	9.0%
10	Iowa	128.9	7.0	-16.3%
11	Kentucky	123.2	6.0	-7.8%
12	Mississippi	121.1	5.7	6.3%
13	Kansas	117.8	5.2	66.6%
14	Nebraska	114.8	4.7	120.6%
15	Maine	113.7	4.5	-57.5%
16	New York	111.0	4.0	127.1%
17	Georgia	110.7	4.0	84.8%
18	North Carolina	110.4	3.9	-19.2%
19	Wisconsin	109.4	3.8	81.7%
20	Pennsylvania	105.9	3.2	32.0%
21	Oklahoma	104.9	3.0	48.7%
22	**Michigan**	**104.0**	**2.9**	**2.9%**
23	South Carolina	103.1	2.8	3.6%
24	Indiana	100.9	2.4	21.5%
25	South Dakota	100.2	2.3	93.6%
26	West Virginia	99.8	2.2	104.0%
27	Alabama	98.8	2.0	98.6%
28	Minnesota	97.2	1.8	-18.6%
29	Wyoming	96.9	1.7	100.0%
30	Oregon	96.5	1.7	67.7%
31	Illinois	95.9	1.6	55.3%
32	Hawaii	94.9	1.4	100.0%
33	Connecticut	94.9	1.4	-28.3%
34	North Dakota	94.3	1.3	-0.8%
35	Idaho	93.3	1.1	100.0%
36	Tennessee	92.6	1.0	-14.8%
37	Delaware	92.6	1.0	-2.7%
38	Utah	92.1	0.9	-5.7%
39	Montana	92.1	0.9	-3.0%
40	Texas	91.8	0.9	730.0%
41	Colorado	90.6	0.7	27.6%
42	New Mexico	89.2	0.5	-0.2%
43	Florida	89.2	0.5	58.3%
44	Arizona	88.9	0.4	185.9%
45	Washington	88.7	0.4	-28.7%
46	New Jersey	87.7	0.2	-60.2%
47	California	86.8	0.1	-67.2%
(n/a)	New Hampshire	(n/a)	(n/a)	(n/a)
(n/a)	Nevada	(n/a)	(n/a)	(n/a)
(n/a)	Alaska	(n/a)	(n/a)	(n/a)

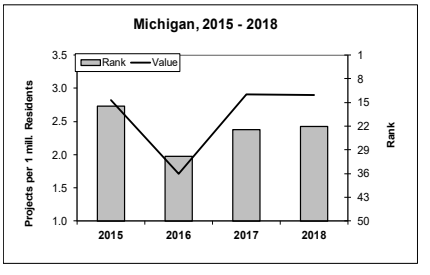
Number of certified projects per one million residents, 2018

For many, part of the richness and quality of contemporary life is sharing in history and heritage. Historic preservation becomes part of the character and 'feel' of community. It helps create a sense and continuity of place. This metric uses federal historic preservation tax credit information relative to the size of the resident population to provide a measure of ongoing historic preservation activity.

Source: National Park Service

Midwest Performance, 2018

State	Number of certified projects	Rank
Wisconsin	3.8	19
Michigan	**2.9**	**22**
Indiana	2.4	24
Illinois	1.6	31
Wisconsin	3.8	19



LEISURE INDUSTRY EMPLOYMENT

Rank	State	Score	Percent	Change, 2015-2018 (%)
	50-StateAverage		*2.64%*	*5.93%*
1	Hawaii	147.3	4.27%	5.0%
2	Montana	139.2	3.98%	2.1%
3	Florida	136.6	3.89%	-1.1%
4	Alaska	132.5	3.74%	14.0%
5	Nevada	130.0	3.65%	6.8%
6	Colorado	129.6	3.64%	6.4%
7	New York	116.2	3.16%	4.0%
8	New Hampshire	115.5	3.14%	5.1%
9	Delaware	113.4	3.06%	-9.3%
10	Maryland	112.1	3.02%	1.0%
11	California	111.6	3.00%	3.6%
12	Washington	110.4	2.96%	8.2%
13	Massachusetts	108.9	2.90%	6.2%
14	Utah	108.5	2.89%	6.8%
15	New Jersey	106.7	2.83%	4.6%
16	Rhode Island	106.4	2.81%	25.3%
17	Idaho	104.2	2.74%	8.1%
18	Connecticut	103.0	2.69%	4.7%
19	Vermont	102.9	2.69%	4.5%
20	Wyoming	102.4	2.67%	30.9%
21	Arizona	102.1	2.66%	1.1%
22	Maine	101.2	2.63%	5.7%
23	Minnesota	101.0	2.62%	4.3%
24	Oregon	100.9	2.62%	12.1%
25	North Carolina	100.9	2.62%	5.8%
26	Pennsylvania	99.1	2.56%	2.8%
27	Virginia	98.1	2.52%	-0.2%
28	South Carolina	97.7	2.51%	2.6%
29	South Dakota	97.5	2.50%	0.1%
30	Illinois	96.9	2.48%	5.4%
31	Louisiana	96.6	2.47%	-2.8%
32	New Mexico	95.6	2.43%	0.6%
33	Missouri	94.4	2.39%	-1.3%
34	Nebraska	94.3	2.39%	3.7%
35	Ohio	93.2	2.35%	2.4%
36	Wisconsin	92.6	2.32%	7.7%
37	Indiana	89.9	2.23%	0.6%
38	Tennessee	88.6	2.18%	6.7%
39	**Michigan**	**87.7**	**2.15%**	**4.2%**
40	Kansas	87.1	2.13%	5.7%
41	Iowa	87.0	2.13%	7.3%
42	North Dakota	86.5	2.11%	60.5%
43	Texas	86.3	2.10%	4.4%
44	Oklahoma	86.2	2.10%	7.9%
45	Kentucky	86.1	2.10%	3.9%
46	Georgia	84.8	2.05%	4.2%
47	West Virginia	81.4	1.93%	1.7%
48	Alabama	76.7	1.76%	1.5%
49	Arkansas	72.8	1.62%	-11.8%
50	Mississippi	76.7	1.76%	1.5%

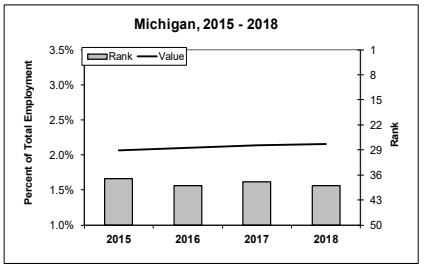
Employment in leisure-related industries as a percentage of all employment 2018

There is a growing body of literature on the lifestyle preferences of the young knowledge workers who drive economic growth in places like Silicon Valley, or the Research Triangle in North Carolina. The research concludes that these workers are attracted to arts, cultural, leisure, and sports offerings to a greater extent than the generations that preceded them. The table above shows the employment in industries related to arts, culture, leisure and sports activities as a percentage of all employment.

Source: U.S. Bureau of Labor Statistics

Midwest Performance, 2018

State	Percent of Total Employment	Rank
Illinois	2.48%	30
Ohio	2.35%	35
Wisconsin	2.32%	36
Indiana	2.23%	37
Michigan	**2.15%**	**39**



PARKLAND

Rank	State	Score	Acres per 10sq. miles	Change, 2015-2018 (%)
	50-StateAverage		*13.8*	*0.0*
1	Alaska	250.0	101.1	0.0%
2	Hawaii	209.7	62.1	2.8%
3	California	205.4	59.9	0.3%
4	Florida	193.0	53.8	-0.1%
5	New Jersey	148.3	31.6	2.2%
6	Washington	146.8	30.9	0.0%
7	Utah	140.2	27.6	0.1%
8	Arizona	137.3	26.1	0.0%
9	Wyoming	136.8	25.9	0.0%
10	Maryland	128.8	21.9	2.6%
11	**Michigan**	**117.0**	**16.1**	**0.8%**
12	Massachusetts	116.7	15.9	0.3%
13	Tennessee	112.2	13.7	4.9%
14	North Carolina	108.3	11.8	1.5%
15	Virginia	107.0	11.1	2.1%
16	Delaware	106.7	10.9	0.1%
17	Idaho	105.1	10.1	52.3%
18	New Hampshire	103.7	9.5	0.7%
19	New York	103.4	9.3	7.8%
20	Colorado	103.1	9.2	0.0%
21	Montana	102.9	9.1	0.0%
22	Pennsylvania	102.8	9.0	-5.0%
23	Rhode Island	102.7	9.0	0.0%
24	Vermont	101.7	8.5	5.0%
25	Nevada	100.9	8.1	0.3%
26	West Virginia	99.1	7.2	0.0%
27	Minnesota	98.8	7.0	0.0%
28	Texas	98.3	6.8	0.7%
29	Maine	98.3	6.8	75.2%
30	Connecticut	97.6	6.4	0.6%
31	New Mexico	95.7	5.5	0.1%
32	Ohio	94.9	5.1	0.4%
33	South Dakota	94.5	4.9	0.0%
34	Wisconsin	92.4	3.9	0.1%
35	South Carolina	91.7	3.5	-10.6%
36	Missouri	91.6	3.5	4.9%
37	Kentucky	91.1	3.2	1.5%
38	Mississippi	90.7	3.0	0.5%
39	Oregon	90.3	2.8	1.9%
40	Georgia	89.6	2.5	-0.2%
41	Arkansas	89.6	2.5	0.0%
42	Indiana	89.0	2.2	0.1%
43	Alabama	87.4	1.4	0.3%
44	Illinois	87.4	1.4	0.0%
45	Nebraska	87.2	1.3	0.7%
46	Louisiana	87.2	1.3	-4.0%
47	North Dakota	87.1	1.3	0.0%
48	Oklahoma	86.7	1.0	-8.4%
49	Iowa	86.2	0.8	0.1%
50	Kansas	85.7	0.5	-2.5%

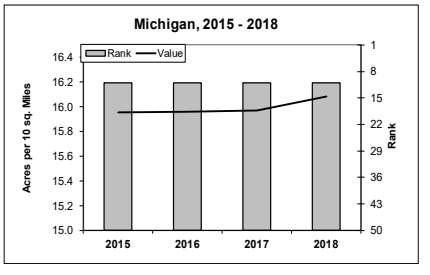
Acres of state and national parkland per 10 square miles of land, 2018

Access to the natural environment is a key component of quality of life. Young knowledge workers also report a strong attraction to natural amenities. The metric measures the acreage of national and state parkland in each state per 10 square miles of land. Please note that this data includes only land under the management of the National Park Service and thus excludes national forests.

Source: National Association of State Park Directors, National Park Service

Midwest Performance, 2018

State	Acres per 10 sq. miles	Rank
Michigan	**16.1**	**11**
Ohio	5.1	32
Wisconsin	3.9	34
Indiana	2.2	42
Illinois	1.4	44



GOLF COURSES

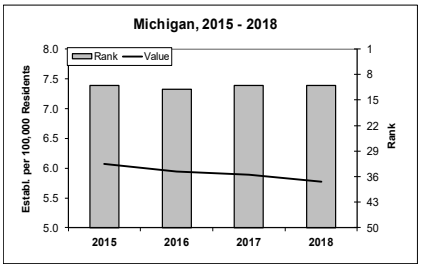
Rank	State	Score	Courses per 100,000 residents	Change, 2015-2018 (%)
	50-StateAverage		*4.2*	*0.0*
1	Iowa	144.0	9.4	-4.6%
2	North Dakota	140.0	8.9	-0.8%
3	South Dakota	138.3	8.7	-3.2%
4	Maine	137.2	8.6	-1.6%
5	Montana	126.6	7.2	-1.7%
6	Nebraska	126.2	7.2	-2.7%
7	Vermont	124.8	7.0	4.6%
8	Wisconsin	120.9	6.5	0.4%
9	New Hampshire	118.2	6.2	-2.6%
10	Minnesota	117.0	6.0	-3.4%
11	**Michigan**	**114.9**	**5.8**	**-4.9%**
12	Wyoming	114.4	5.7	1.4%
13	Arkansas	110.4	5.2	-3.0%
14	South Carolina	109.3	5.1	-5.6%
15	Rhode Island	107.3	4.8	-3.9%
16	Ohio	104.7	4.5	-8.3%
17	Idaho	104.3	4.4	-4.6%
18	Massachusetts	104.1	4.4	-4.4%
19	Indiana	103.2	4.3	-2.6%
20	Pennsylvania	102.9	4.3	-3.5%
21	Kansas	102.0	4.2	-8.4%
22	Florida	102.0	4.2	-9.3%
23	Hawaii	101.5	4.1	7.6%
24	West Virginia	100.7	4.0	8.0%
25	Connecticut	100.4	3.9	4.1%
26	North Carolina	99.6	3.9	-3.6%
27	Missouri	99.4	3.8	3.1%
28	Mississippi	97.2	3.5	-1.8%
29	Kentucky	96.9	3.5	-11.1%
30	New York	95.0	3.3	-3.0%
31	Oregon	94.4	3.2	-5.6%
32	Illinois	94.1	3.2	-7.5%
33	Delaware	93.7	3.1	4.3%
34	Alabama	93.1	3.0	-4.6%
35	Washington	91.4	2.8	-6.3%
36	Georgia	90.3	2.7	-14.2%
37	Nevada	90.2	2.7	-5.5%
38	Tennessee	89.7	2.6	-3.7%
39	New Jersey	89.6	2.6	0.4%
40	Oklahoma	89.0	2.5	-5.6%
41	Virginia	88.9	2.5	-4.9%
42	Colorado	88.1	2.4	-5.7%
43	Arizona	88.1	2.4	-13.7%
44	Alaska	85.2	2.0	-11.8%
45	Louisiana	84.6	2.0	-3.1%
46	Texas	83.9	1.9	-8.8%
47	New Mexico	82.7	1.7	-7.9%
48	Maryland	82.6	1.7	-10.5%
49	Utah	82.1	1.6	2.2%
50	California	81.7	1.6	-5.6%

Number of golf courses and country clubs per 100,000 residents, 2018

Recreational resources are increasingly important to workers in the innovation economy. Golf courses and country clubs are an attractive asset to all age groups. The above table shows the proportion of golf courses and country club establishments relative to the number of residents.
Source: U.S. Bureau of Labor Statistics

Midwest Performance, 2018

State	Establ, per 100,000 Residents	Rank
Wisconsin	6.5	8
Michigan	**5.8**	**11**
Ohio	4.5	16
Indiana	4.3	19
Illinois	3.2	32



TRAILS

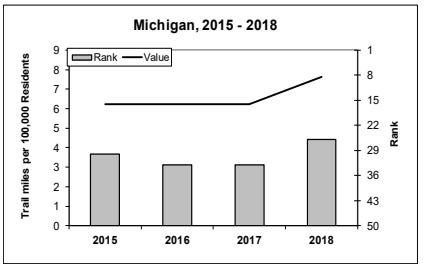
Rank	State	Score	Trail miles per 100,000 residents	Change, 2015-2018 (%)
	50-StateAverage		*10.8*	*12.4%*
1	Pennsylvania	183.2	44.8	0.2%
2	Massachusetts	155.5	32.6	0.4%
3	Alabama	148.2	29.4	0.0%
4	New York	144.2	27.6	0.3%
5	Florida	141.4	26.4	23.4%
6	West Virginia	137.9	24.9	0.0%
7	Connecticut	137.3	24.6	22.6%
8	Maryland	128.8	20.9	0.0%
9	New Jersey	124.5	19.0	0.0%
10	Oregon	119.6	16.8	0.0%
11	Vermont	117.4	15.8	8.0%
12	Kentucky	115.6	15.0	0.0%
13	Virginia	112.7	13.8	2.9%
14	Washington	111.2	13.1	1.1%
15	Rhode Island	108.7	12.0	0.0%
16	Delaware	106.6	11.0	0.0%
17	South Carolina	106.3	10.9	0.0%
18	North Carolina	105.5	10.6	0.0%
19	Ohio	104.3	10.0	243.2%
20	Georgia	103.8	9.8	0.0%
21	Wisconsin	103.7	9.8	0.0%
22	Indiana	103.3	9.6	62.9%
23	Tennessee	102.6	9.3	11.5%
24	Illinois	101.4	8.8	0.0%
25	Minnesota	101.2	8.7	3.0%
26	**Michigan**	**98.8**	**7.6**	**22.3%**
27	California	98.1	7.3	6.6%
28	New Hampshire	97.4	7.0	0.0%
29	Arkansas	97.1	6.9	0.0%
30	Missouri	96.9	6.8	1.1%
31	Iowa	96.5	6.6	0.0%
32	Idaho	96.3	6.5	0.0%
33	Kansas	96.3	6.5	56.9%
34	Hawaii	94.2	5.6	0.1%
35	North Dakota	94.2	5.6	59.5%
36	Mississippi	92.5	4.8	0.0%
37	Montana	92.0	4.6	8.5%
38	Arizona	91.3	4.3	-0.1%
39	South Dakota	90.4	3.9	0.2%
40	New Mexico	88.8	3.2	36.2%
41	Colorado	88.5	3.1	0.2%
42	Oklahoma	88.2	2.9	3.3%
43	Nebraska	86.9	2.4	-0.2%
44	Utah	85.9	1.9	1.2%
45	Texas	85.7	1.8	31.0%
46	Nevada	85.0	1.5	-0.2%
47	Louisiana	84.9	1.5	0.1%
48	Wyoming	84.8	1.4	0.3%
49	Maine	84.0	1.1	11.4%
50	Alaska	83.2	0.7	-0.5%

Number of national trails per 100,000 residents, 2018

A state's natural resources are important for recreation and enjoyment and provide additional financial resources from tourism. The above table shows the number of trails designated as national trails per 100,000 residents in the state.
Source: National Recrational Trails Program

Midwest Performance, 2018

State	Trail miles per 100,000 Residents	Rank
Ohio	10.0	19
Wisconsin	9.8	21
Indiana	9.6	22
Illinois	8.8	24
Michigan	**7.6**	**26**



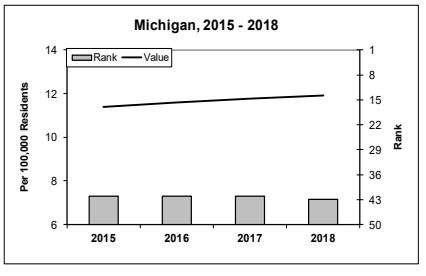
CULTURAL INSTITUTIONS

Rank	State	Score	PerCapita	Change, 2015-2018 (%)
	50-StateAverage		*18.4*	*3.3%*
1	California	166.5	44.3	20.0%
2	New York	152.8	38.4	0.2%
3	Montana	145.5	35.3	11.9%
4	Vermont	138.8	32.4	13.2%
5	Nevada	129.2	28.3	-8.5%
6	South Dakota	127.7	27.7	8.3%
7	Colorado	120.1	24.4	6.1%
8	Minnesota	118.3	23.6	8.6%
9	Wyoming	118.1	23.5	5.2%
10	Tennessee	117.7	23.4	2.6%
11	Maine	115.8	22.6	-4.2%
12	Florida	115.3	22.4	1.3%
13	New Mexico	115.0	22.2	9.6%
14	Rhode Island	114.8	22.1	-1.0%
15	Alaska	113.4	21.6	-1.8%
16	Utah	112.8	21.3	7.1%
17	Oregon	112.6	21.2	0.6%
18	Idaho	111.3	20.6	8.5%
19	Hawaii	110.9	20.5	2.2%
20	North Dakota	109.8	20.0	0.5%
21	New Hampshire	109.4	19.8	5.2%
22	Connecticut	109.2	19.7	1.4%
23	Massachusetts	107.8	19.1	3.7%
24	Illinois	101.3	16.4	-11.1%
25	Nebraska	100.5	16.0	1.7%
26	Iowa	99.5	15.6	-5.0%
27	Kentucky	99.1	15.4	-3.7%
28	Maryland	97.8	14.9	-8.4%
29	Louisiana	97.3	14.6	17.1%
30	Pennsylvania	97.1	14.6	7.7%
31	Virginia	96.9	14.5	5.2%
32	North Carolina	96.7	14.4	0.7%
33	Missouri	96.4	14.3	3.4%
34	Delaware	96.2	14.2	-5.4%
35	New Jersey	94.7	13.5	-1.0%
36	Georgia	94.2	13.3	-4.9%
37	Washington	93.9	13.2	-3.8%
38	Indiana	92.9	12.7	11.1%
39	Arkansas	92.8	12.7	2.6%
40	Wisconsin	92.7	12.7	10.5%
41	South Carolina	92.6	12.6	11.1%
42	Arizona	92.3	12.5	9.2%
43	**Michigan**	**90.9**	**11.9**	**4.8%**
44	Kansas	88.6	10.9	1.9%
45	Ohio	87.5	10.5	1.6%
46	Texas	87.5	10.4	6.9%
47	Oklahoma	85.8	9.7	0.5%
48	West Virginia	84.8	9.3	9.1%
49	Mississippi	79.6	7.1	0.1%
50	Alabama	79.4	7.0	1.4%

Number of cultural establishments per 100,000 residents, 2018
In today's economy, increasing numbers of residents can choo7e where to live first, and then do their work via telecommuting. Choice of residence, both state and locality, is being influenced by such factors as proximity to cultural amenities and outdoor recreation, especially for the young college educated generation. This metric captures the percentage of all establishments in the state classified as performing arts, spectator sports, & related industries as well as museums, historical sites, and similar institutions. *Source: U.S. Bureau of Labor Statistics*

Midwest Performance, 2018

State	Per 100,000 Residents	Rank
Illinois	16.4	24
Indiana	12.7	38
Wisconsin	12.7	40
Michigan	**11.9**	**43**
Ohio	10.5	45



POCKET BOOK INDICATORS

Midwest Performance

	2018	2016	2014
Indiana	*****	*****	*****
Michigan	*****	*****	****
Wisconsin	*****	****	****
Ohio	****	****	****
Illinois	***	***	***

Rank	State	2018	2016	2014
1	Oklahoma	*****	*****	*****
2	South Dakota	*****	*****	*****
3	Iowa	*****	*****	*****
4	Missouri	*****	*****	*****
5	Idaho	*****	*****	*****
6	Nebraska	*****	*****	*****
7	Alabama	*****	*****	*****
8	Indiana	*****	*****	*****
9	Wyoming	*****	*****	*****
10	Tennessee	*****	*****	*****
11	South Carolina	*****	*****	*****
12	New Hampshire	*****	*****	****
13	Utah	*****	*****	*****
14	Kansas	*****	*****	*****
15	**Michigan**	*****	*****	****
16	Wisconsin	*****	****	****
17	Mississippi	*****	*****	*****
18	Arkansas	*****	*****	****
19	Kentucky	*****	*****	*****
20	Montana	*****	*****	*****
21	West Virginia	*****	****	*****
22	Virginia	*****	****	****
23	Louisiana	*****	****	*****
24	North Dakota	*****	*****	*****
25	North Carolina	****	****	****
26	Minnesota	****	****	****
27	Ohio	****	****	****
28	Delaware	****	****	****
29	New Mexico	****	****	****
30	Georgia	****	****	****
31	Vermont	****	****	****
32	Texas	****	****	****
33	Pennsylvania	****	****	****
34	Maine	****	*****	****
35	Arizona	****	****	****
36	Colorado	****	****	****
37	Florida	****	****	****
38	Maryland	****	***	***
39	Connecticut	****	***	***
40	Nevada	***	***	***
41	Illinois	***	***	***
42	Rhode Island	***	***	***
43	Alaska	***	***	***
44	Oregon	***	***	***
45	New Jersey	***	***	**
46	Washington	***	***	***
47	Massachusetts	**	***	***
48	California	**	**	*
49	Hawaii	*	*	*
50	New York	*	*	*

URBAN COST OF LIVING

Rank	State	Score	Index	Change, 2015-2018 (%)
	50-StateAverage		*110.7*	*0.5%*
1	Oklahoma	119.4	84.6	-4.0%
2	Missouri	115.3	87.8	-5.1%
3	Mississippi	113.7	89.0	7.0%
4	Alabama	112.4	90.0	-1.9%
5	Wyoming	111.8	90.5	-2.5%
5	Kansas	111.8	90.5	-2.8%
5	Iowa	111.8	90.5	0.8%
8	Indiana	108.8	92.8	1.9%
9	Kentucky	108.1	93.3	(n/a)
10	Louisiana	106.7	94.4	-1.9%
11	West Virginia	106.4	94.6	-8.8%
12	Nebraska	105.9	95.0	4.1%
13	**Michigan**	**105.8**	**95.1**	**-0.2%**
14	Texas	104.4	96.2	-2.0%
15	Virginia	104.0	96.5	-2.0%
16	Wisconsin	103.4	96.9	-3.4%
16	New Mexico	103.4	96.9	(n/a)
18	North Carolina	103.3	97.0	0.6%
19	South Carolina	103.1	97.2	2.2%
19	Idaho	103.1	97.2	7.0%
21	Arkansas	102.9	97.3	2.2%
22	Arizona	102.8	97.4	1.6%
23	Ohio	102.0	98.0	-3.2%
24	Tennessee	100.5	99.2	4.2%
24	North Dakota	100.5	99.2	0.1%
26	South Dakota	99.5	99.9	-2.5%
27	Georgia	97.1	101.8	1.9%
28	Utah	95.8	102.8	6.6%
29	Montana	94.3	103.9	1.2%
30	Nevada	93.4	104.6	-3.3%
31	Minnesota	91.2	106.3	-1.8%
32	New Hampshire	87.5	109.2	-7.6%
33	Delaware	83.8	112.0	5.8%
34	Colorado	82.3	113.2	3.3%
35	Pennsylvania	82.0	113.4	-5.1%
36	Florida	78.4	116.2	3.5%
37	Maryland	77.4	116.9	3.6%
38	Maine	77.2	117.1	2.1%
39	Vermont	75.2	118.6	-4.2%
40	Connecticut	74.2	119.4	-4.0%
41	Rhode Island	70.4	122.3	-0.8%
42	Illinois	69.3	123.2	6.0%
43	New Jersey	68.9	123.5	-2.4%
44	Alaska	61.8	128.9	-2.6%
45	Oregon	59.1	131.0	1.2%
46	California	36.8	148.2	5.6%
47	Massachusetts	34.4	150.0	4.0%
48	Washington	28.2	154.8	10.3%
49	Hawaii	-17.2	189.7	0.8%
50	New York	*-50.0*	248.5	9.3%

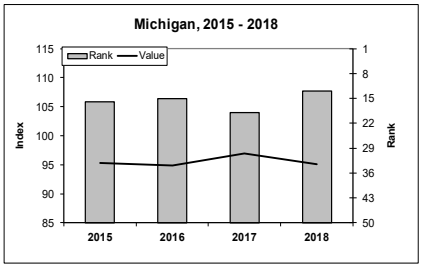
C2ER Cost of Living Index, 2018

As with housing, a low cost of living contributes strongly to quality of life. C2ER, a national economic-development research organization, maintains an extensive set of quarterly cost-of-living data. The above table is an index of the cost of living in each state. A lower index score corresponds to a lower cost of living; a value of 100 is equal to the United States cost of living.

Source: C2ER

Midwest Performance, 2018

State	Index	Rank
Indiana	92.8	8
Michigan	**95.1**	**13**
Wisconsin	96.9	16
Ohio	98.0	23
Illinois	123.2	42



URBAN HOUSING AFFORDABILITY

Rank	State	Score	Hourly Wage needed	Change, 2015-2018 (%)
	50-StateAverage		*20.2*	*$0.1*
1	Arkansas	114.7	$14.3	7.5%
2	West Virginia	114.6	$14.3	8.4%
3	Mississippi	114.1	$14.4	2.6%
4	Kentucky	112.6	$14.8	5.2%
5	Alabama	112.3	$14.9	7.1%
6	South Dakota	111.0	$15.3	11.1%
7	Iowa	110.5	$15.4	10.1%
8	Idaho	110.3	$15.5	8.8%
9	Oklahoma	110.1	$15.5	8.4%
10	Ohio	109.4	$15.7	8.9%
11	Kansas	108.7	$15.9	6.1%
12	Montana	108.6	$16.0	9.4%
13	Missouri	108.5	$16.0	6.8%
14	Indiana	108.3	$16.0	8.0%
15	Nebraska	108.2	$16.1	11.3%
16	New Mexico	107.2	$16.3	1.7%
17	Wyoming	106.8	$16.5	5.4%
18	Tennessee	106.4	$16.6	10.6%
19	North Dakota	106.1	$16.7	6.3%
20	Wisconsin	105.7	$16.8	5.3%
21	Louisiana	105.4	$16.9	6.6%
22	North Carolina	105.0	$17.0	10.6%
23	**Michigan**	**104.0**	**$17.3**	**10.4%**
24	South Carolina	103.9	$17.3	16.4%
25	Utah	100.2	$18.3	12.1%
26	Georgia	99.8	$18.4	13.0%
27	Nevada	98.2	$18.9	3.2%
28	Pennsylvania	96.5	$19.4	5.9%
29	Arizona	95.8	$19.5	13.6%
30	Minnesota	95.1	$19.7	11.1%
31	Maine	94.4	$19.9	16.8%
32	Texas	93.1	$20.3	15.3%
33	Illinois	91.1	$20.9	4.4%
34	Rhode Island	91.0	$20.9	9.4%
35	Delaware	87.1	$22.0	1.2%
36	Vermont	84.2	$22.8	7.8%
37	Florida	83.9	$22.9	14.5%
38	Oregon	83.5	$23.0	18.5%
39	Virginia	82.9	$23.1	3.1%
40	New Hampshire	82.6	$23.2	10.1%
41	Alaska	76.8	$24.8	6.8%
42	Colorado	75.0	$25.3	19.9%
43	Connecticut	74.8	$25.4	2.8%
44	Maryland	67.2	$27.5	3.7%
45	Washington	66.3	$27.8	20.1%
46	New Jersey	62.4	$28.9	8.8%
47	New York	55.6	$30.8	15.2%
48	Massachusetts	44.7	$33.8	30.5%
49	California	41.5	34.69	0.21336
50	Hawaii	33.9	36.82	0.075979

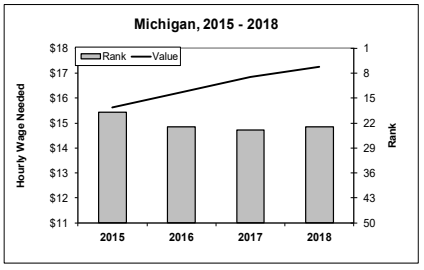
Hourly wage needed to afford two-bedroom housing at fair-market rent, 2018

This affordability metric has been included since last year as a replacement for the CFED Urban Housing Index. It not only captures the cost of housing but its relationship to income. This table shows the hourly wage needed to afford two-bedroom housing at fair market rent.

Source: National Low Income Housing Coalition

Midwest Performance, 2018

State	Hourly Wage Needed	Rank
Ohio	$15.7	10
Indiana	$16.0	14
Wisconsin	$16.8	20
Michigan	**$17.3**	**23**
Illinois	$20.9	33



HOMEOWNERSHIP RATE

Rank	State	Score	Rates	Change, 2015-2018 (%)
	50-StateAverage		*66.7%*	*1.2%*
1	West Virginia	125.3	74.7%	-0.3%
2	New Hampshire	120.9	73.4%	2.5%
3	**Michigan**	**119.5**	**73.0%**	**-2.1%**
4	Mississippi	117.8	72.5%	2.5%
5	Utah	116.8	72.2%	3.3%
6	South Carolina	116.1	72.0%	7.3%
7	Vermont	114.0	71.4%	-0.6%
8	Maine	113.3	71.2%	1.9%
9	Wyoming	113.0	71.1%	1.7%
10	Delaware	112.0	70.8%	-3.4%
11	Alabama	110.3	70.3%	0.4%
12	Pennsylvania	108.9	69.9%	0.4%
13	Indiana	108.6	69.8%	0.6%
13	Kentucky	108.6	69.8%	2.8%
13	Minnesota	108.6	69.8%	-0.4%
16	Missouri	108.2	69.7%	1.8%
17	Oklahoma	107.5	69.5%	3.1%
18	Idaho	106.5	69.2%	-1.1%
19	South Dakota	106.2	69.1%	-1.4%
20	Iowa	105.5	68.9%	0.1%
21	New Mexico	102.4	68.0%	2.3%
21	Tennessee	102.4	68.0%	2.3%
23	Wisconsin	102.1	67.9%	2.0%
24	Montana	100.3	67.4%	1.5%
25	Kansas	100.0	67.3%	3.7%
25	Ohio	100.0	67.3%	1.4%
27	Maryland	97.6	66.6%	-0.7%
28	Nebraska	96.9	66.4%	-2.5%
29	Illinois	95.6	66.0%	0.9%
29	Virginia	95.6	66.0%	-1.6%
31	Arizona	94.5	65.7%	6.5%
31	Louisiana	94.5	65.7%	3.8%
33	Florida	93.8	65.5%	1.1%
34	Connecticut	93.2	65.3%	-1.8%
35	North Carolina	92.8	65.2%	0.0%
36	New Jersey	92.1	65.0%	1.6%
37	Washington	91.8	64.9%	3.7%
38	Arkansas	91.1	64.7%	-3.6%
39	Colorado	90.1	64.4%	1.3%
40	Georgia	88.0	63.8%	1.4%
41	Alaska	87.7	63.7%	2.2%
42	Texas	84.3	62.7%	1.3%
43	Oregon	81.9	62.0%	1.5%
44	North Dakota	81.5	61.9%	0.2%
45	Massachusetts	80.1	61.5%	1.7%
46	Rhode Island	77.4	60.7%	3.1%
47	Hawaii	73.3	59.5%	0.3%
48	Nevada	67.5	57.8%	5.5%
49	California	58.2	55.1%	1.5%
50	New York	44.2	51.0%	-1.0%

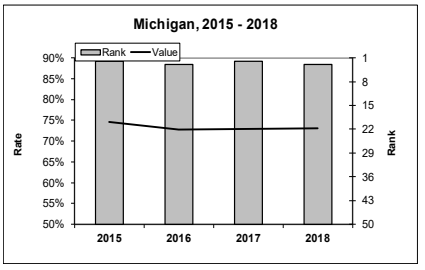
Homeownership rate, 2018

A variety of studies point to the benefits of homeownership: increased economic stability, community vitality, even child learning. Homeownership is also important for many startup businesses, allowing entrepreneurs to use home equity as a source of early-stage funding. The above table shows the percentage of households in each state that own their homes.

Source: U.S. Census Bureau.

Midwest Performance, 2018

State	Rate	Rank
Michigan	**73.0%**	**3**
Indiana	69.8%	13
Wisconsin	67.9%	23
Ohio	67.3%	25
Illinois	66.0%	29



UNEMPLOYMENT RATE

Rank	State	Score	Rate	Change, 2015-2018 (%)
	50-StateAverage		*0.0*	*-23.9%*
1	Hawaii	126.1	2.4%	-33.3%
2	Iowa	124.3	2.5%	-34.2%
2	New Hampshire	124.3	2.5%	-26.5%
4	North Dakota	122.5	2.6%	-7.1%
5	Vermont	120.7	2.7%	-25.0%
6	Idaho	118.9	2.8%	-33.3%
6	Nebraska	118.9	2.8%	-6.7%
8	Minnesota	117.1	2.9%	-21.6%
9	South Dakota	115.3	3.0%	-3.2%
9	Virginia	115.3	3.0%	-33.3%
9	Wisconsin	115.3	3.0%	-34.8%
12	Utah	113.5	3.1%	-13.9%
13	Missouri	111.7	3.2%	-36.0%
14	Colorado	109.9	3.3%	-15.4%
14	Massachusetts	109.9	3.3%	-31.3%
16	Indiana	108.1	3.4%	-29.2%
16	Kansas	108.1	3.4%	-19.0%
16	Maine	108.1	3.4%	-22.7%
16	Oklahoma	108.1	3.4%	-22.7%
16	South Carolina	108.1	3.4%	-43.3%
21	Tennessee	106.3	3.5%	-37.5%
22	Florida	104.5	3.6%	-34.5%
23	Arkansas	102.7	3.7%	-26.0%
23	Montana	102.7	3.7%	-11.9%
25	Delaware	100.9	3.8%	-22.4%
26	Alabama	99.1	3.9%	-36.1%
26	Georgia	99.1	3.9%	-35.0%
26	Maryland	99.1	3.9%	-23.5%
26	North Carolina	99.1	3.9%	-31.6%
26	Texas	99.1	3.9%	-11.4%
31	Connecticut	95.5	4.1%	-28.1%
31	**Michigan**	**95.5**	**4.1%**	**-24.1%**
31	New Jersey	95.5	4.1%	-29.3%
31	New York	95.5	4.1%	-22.6%
31	Rhode Island	95.5	4.1%	-31.7%
31	Wyoming	95.5	4.1%	-4.7%
37	California	93.7	4.2%	-32.3%
37	Oregon	93.7	4.2%	-25.0%
39	Illinois	91.9	4.3%	-28.3%
39	Kentucky	91.9	4.3%	-18.9%
39	Pennsylvania	91.9	4.3%	-18.9%
42	Washington	88.3	4.5%	-19.6%
43	Nevada	86.5	4.6%	-32.4%
43	Ohio	86.5	4.6%	-6.1%
45	Arizona	82.9	4.8%	-21.3%
45	Mississippi	82.9	4.8%	-25.0%
47	Louisiana	81.1	4.9%	-22.2%
47	New Mexico	81.1	4.9%	-24.6%
49	West Virginia	73.9	5.3%	-20.9%
50	Alaska	50.6	6.6%	1.5%

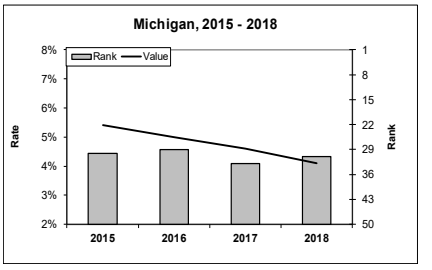
Unemployment rate, 2018

Although a dynamic economy will experience job churn, over the long run, high unemployment rates reflect a structural mismatch between employer needs and worker skills that can permanently damage the dynamism of the economy. A high rate of unemployment furthermore signals low job security to potential new residents and will therefore scare away many new skilled workers. The above table shows the official unemployment rate.

Source: U.S. Bureau of Labor Statistics

Midwest Performance, 2018

State	Rate	Rank
Wisconsin	3.0%	9
Indiana	3.4%	16
Michigan	**4.1%**	**31**
Illinois	4.3%	39
Ohio	4.6%	43



PER CAPITA DISPOSABLE PERSONAL INCOME

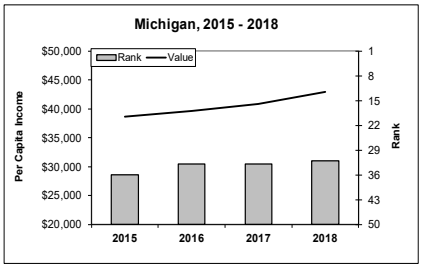
Rank	State	Score	Per Capita Income	Change, 2015-2018 (%)
	50-StateAverage		*$46,665*	*10.6%*
1	Connecticut	141.7	$65,063	13.6%
2	Massachusetts	133.3	$61,147	14.0%
3	New Jersey	129.1	$59,180	12.5%
4	New York	126.6	$58,005	18.2%
5	Washington	121.2	$55,452	15.5%
6	Maryland	120.5	$55,128	11.5%
7	New Hampshire	120.2	$54,991	12.3%
8	California	119.8	$54,800	14.6%
9	Wyoming	119.6	$54,713	7.1%
10	Alaska	119.0	$54,430	3.9%
11	Colorado	112.6	$51,405	12.9%
12	Virginia	110.9	$50,627	9.7%
13	North Dakota	109.7	$50,037	4.2%
14	Minnesota	109.4	$49,902	10.7%
15	Illinois	109.3	$49,890	11.3%
16	Pennsylvania	109.3	$49,869	12.4%
17	Hawaii	108.5	$49,487	12.1%
18	Rhode Island	106.9	$48,742	10.0%
19	Vermont	106.6	$48,620	9.4%
20	Nebraska	105.2	$47,931	5.6%
21	South Dakota	104.8	$47,755	7.9%
22	Delaware	101.9	$46,406	9.2%
23	Kansas	101.2	$46,057	8.4%
24	Texas	100.9	$45,904	9.8%
25	Wisconsin	100.5	$45,733	10.9%
26	Florida	99.5	$45,273	12.6%
27	Iowa	98.9	$44,965	8.9%
28	Oregon	97.6	$44,397	13.0%
29	Nevada	96.9	$44,046	11.4%
30	Maine	96.6	$43,909	(n/a)
31	Ohio	95.9	$43,579	10.6%
32	**Michigan**	**94.6**	**$42,979**	**11.3%**
33	Tennessee	94.5	$42,922	10.3%
34	Missouri	93.9	$42,647	11.4%
35	Montana	93.9	$42,627	10.1%
36	Indiana	93.4	$42,383	11.0%
37	Louisiana	92.7	$42,055	7.5%
38	Oklahoma	92.6	$42,008	5.0%
39	Georgia	91.6	$41,578	12.4%
40	Utah	91.0	$41,278	13.6%
41	North Carolina	90.5	$41,049	10.7%
42	Arizona	88.2	$39,955	12.3%
43	Idaho	87.4	$39,587	10.2%
44	South Carolina	87.0	$39,401	10.9%
45	Arkansas	86.5	$39,171	10.3%
46	Alabama	84.5	$38,215	9.4%
47	Kentucky	84.2	$38,075	9.0%
48	New Mexico	84.2	$38,068	9.4%
49	West Virginia	82.0	$37,061	11.3%
50	Mississippi	77.1	$34,752	8.3%

Per capita disposable personal income, 2018

The average disposable income of a resident in a state reflects economic opportunities as well as the successful participation of individuals in the economy. It is also a factor of attractiveness of a region that takes not just wages but the states' tax structure into account. The above table shows per capita personal income minus personal current taxes.
Source: U.S. Bureau of Economic Analysis

Midwest Performance, 2018

State	Per Capita Income	Rank
Illinois	$49,890	15
Wisconsin	$45,733	25
Ohio	$43,579	31
Michigan	**$42,979**	**32**
Indiana	$42,383	36



STATE AND LOCAL TAX BURDEN

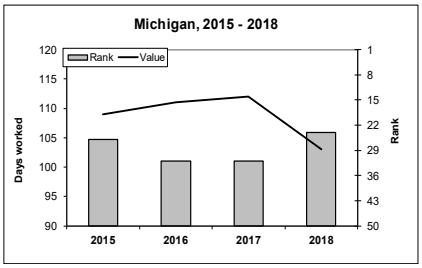
Rank	State	Score	Number of Worked Days	Change, 2015-2018 (%)
	50-StateAverage		*104.9*	*-3.8%*
1	Alaska	122.0	93	-10.6%
1	Louisiana	122.0	93	2.2%
3	Alabama	119.9	94	-4.1%
3	Oklahoma	119.9	94	-8.7%
3	Tennessee	119.9	94	-4.1%
6	Arkansas	115.7	96	-6.8%
6	Idaho	115.7	96	-6.8%
8	Arizona	111.5	98	-5.8%
8	Georgia	111.5	98	-5.8%
8	Mississippi	111.5	98	5.4%
8	South Carolina	111.5	98	-3.0%
12	Indiana	109.4	99	-7.5%
12	New Mexico	109.4	99	-1.0%
12	South Dakota	109.4	99	2.1%
15	Montana	107.3	100	-5.7%
15	Utah	107.3	100	-8.3%
17	Delaware	105.2	101	-7.3%
17	Missouri	105.2	101	-1.9%
17	Nebraska	105.2	101	-4.7%
17	North Carolina	105.2	101	-3.8%
21	Florida	103.1	102	-6.4%
21	Kentucky	103.1	102	2.0%
21	West Virginia	103.1	102	-13.6%
24	**Michigan**	**101.0**	**103**	**-5.5%**
24	Texas	101.0	103	-2.8%
26	Ohio	99.0	104	-1.9%
27	Colorado	96.9	105	-7.9%
27	Nevada	96.9	105	-3.7%
27	Virginia	96.9	105	-5.4%
30	Kansas	94.8	106	-3.6%
30	Oregon	94.8	106	-4.5%
32	Iowa	92.7	107	1.9%
32	New Hampshire	92.7	107	-4.5%
34	Maryland	90.6	108	-10.7%
34	Pennsylvania	90.6	108	-5.3%
34	Washington	90.6	108	5.9%
34	Wisconsin	90.6	108	-5.3%
38	Hawaii	88.5	109	0.9%
38	Maine	88.5	109	5.8%
40	Wyoming	86.4	110	-0.9%
41	California	82.2	112	-8.2%
41	Vermont	82.2	112	-3.4%
43	North Dakota	80.1	113	-4.2%
43	Rhode Island	80.1	113	-1.7%
45	Massachusetts	75.9	115	-7.3%
46	Minnesota	73.8	116	-2.5%
47	Illinois	69.6	118	-0.8%
48	Connecticut	61.2	122	-7.6%
48	New Jersey	61.2	122	-7.6%
50	New York	38.2	133	4.7%

Number of days worked to pay tax bill, 2018

The ultimate measure of a state or local government's influence on economic competitiveness is the amount of residents' private income that is consumed by government in the form of taxes. The table above shows the number of days that a state resident has to work in order to pay a typical tax bill, including federal, state and local taxes.
Source: Tax Foundation

Midwest Performance, 2018

State	Number of Days Worked	Rank
Indiana	99	12
Michigan	**103**	**24**
Ohio	104	26
Wisconsin	108	34
Illinois	118	47



HEALTH AND SAFETY

Midwest Performance

	2018	2016	2014
Wisconsin	****	*****	*****
Indiana	**	***	****
Michigan	**	****	****
Illinois	**	**	****
Ohio	**	***	****

Rank	State	2018	2016	2014
1	Massachusetts	*****	*****	****
2	Vermont	*****	*****	*****
3	Rhode Island	*****	*****	***
4	West Virginia	*****	*****	*****
5	Minnesota	*****	*****	*****
6	North Dakota	*****	*****	*****
7	South Dakota	*****	*****	*****
8	Nebraska	*****	*****	*****
9	Maine	*****	*****	*****
10	Iowa	*****	*****	*****
11	Tennessee	****	****	****
12	Wyoming	****	****	*****
13	Wisconsin	****	*****	*****
14	Louisiana	****	****	****
15	Arkansas	****	****	****
16	Kansas	****	****	*****
17	North Carolina	****	****	****
18	Alabama	****	****	****
19	Hawaii	****	****	****
20	Idaho	****	****	****
21	New Hampshire	****	****	****
22	Florida	****	****	****
23	South Carolina	****	****	****
24	Oregon	****	****	****
25	Washington	****	****	***
26	Oklahoma	****	****	****
27	Mississippi	***	****	****
28	Montana	***	****	****
29	New Mexico	***	****	***
30	New Jersey	***	***	***
31	New York	***	***	****
32	Delaware	**	***	****
33	Maryland	**	**	***
34	Indiana	**	***	****
35	Pennsylvania	**	**	****
36	Alaska	**	***	***
37	Connecticut	**	**	***
38	**Michigan**	**	****	****
39	Illinois	**	**	****
40	Virginia	**	***	****
41	Missouri	**	***	****
42	Kentucky	**	***	****
43	Ohio	**	***	****
44	Colorado	**	*	***
45	California	*	*	***
46	Georgia	*	**	***
47	Arizona	*	*	***
48	Utah	*	*	*
49	Nevada	*	****	***
50	Texas	*	*	***

LACK OF HEALTH INSURANCE

Rank	State	Score	Percent	Change, 2015-2018 (%)
	50-StateAverage		*8.2%*	*-6.8%*
1	Massachusetts	125.2	2.8%	0.0%
2	Vermont	119.4	4.0%	5.3%
3	Rhode Island	118.9	4.1%	-28.1%
3	Hawaii	118.9	4.1%	2.5%
5	Minnesota	117.4	4.4%	-2.2%
6	Iowa	116.0	4.7%	-6.0%
7	Connecticut	113.1	5.3%	-11.7%
8	New York	112.6	5.4%	-23.9%
8	**Michigan**	**112.6**	**5.4%**	**-11.5%**
10	Wisconsin	112.1	5.5%	-3.5%
10	Pennsylvania	112.1	5.5%	-14.1%
12	Kentucky	111.6	5.6%	-6.7%
13	New Hampshire	111.1	5.7%	-9.5%
13	Delaware	111.1	5.7%	-3.4%
15	Maryland	109.7	6.0%	-9.1%
16	West Virginia	107.7	6.4%	6.7%
16	Washington	107.7	6.4%	-3.0%
18	Ohio	107.3	6.5%	0.0%
19	Illinois	104.8	7.0%	-1.4%
20	Oregon	104.4	7.1%	1.4%
21	California	103.9	7.2%	-16.3%
22	North Dakota	103.4	7.3%	-6.4%
23	New Jersey	102.9	7.4%	-14.9%
24	Colorado	102.4	7.5%	-7.4%
25	Maine	100.0	8.0%	-4.8%
25	Louisiana	100.0	8.0%	-32.8%
27	Montana	99.0	8.2%	-29.3%
27	Arkansas	99.0	8.2%	-13.7%
29	Nebraska	98.5	8.3%	1.2%
29	Indiana	98.5	8.3%	-13.5%
31	Virginia	96.1	8.8%	-3.3%
31	Kansas	96.1	8.8%	-3.3%
33	Utah	93.2	9.4%	-10.5%
33	Missouri	93.2	9.4%	-4.1%
35	New Mexico	92.7	9.5%	-12.8%
36	South Dakota	91.3	9.8%	-3.9%
37	Alabama	90.3	10.0%	-1.0%
38	Tennessee	89.8	10.1%	-1.9%
39	Wyoming	87.9	10.5%	-8.7%
39	South Carolina	87.9	10.5%	-3.7%
41	Arizona	87.4	10.6%	-1.9%
42	North Carolina	86.9	10.7%	-4.5%
43	Idaho	85.0	11.1%	0.9%
44	Nevada	84.5	11.2%	-8.9%
45	Mississippi	80.2	12.1%	-4.7%
46	Alaska	77.7	12.6%	-15.4%
47	Florida	75.8	13.0%	-2.3%
48	Georgia	72.4	13.7%	-1.4%
49	Oklahoma	70.0	14.2%	2.2%
50	Texas	53.1	17.7%	3.5%

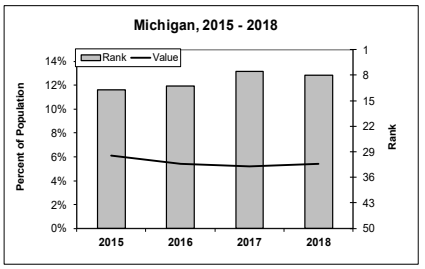
Percent of residents without health insurance coverage, 2018

The lack of health insurance has important health as well as financial consequences for individuals and their resident state. The inability to access care and partake in preventive-care measures has long-term impacts on the financial well-being of the health-care system. The above table measures the percentage of the population not covered by private or public health insurance.

Source: U.S. Census Bureau

Midwest Performance, 2018

State	Percent of Population	Rank
Michigan	**5.4%**	**8**
Wisconsin	5.5%	10
Ohio	6.5%	18
Illinois	7.0%	19
Indiana	8.3%	29



CRIME INDEX

Rank	State	Score	Crimes per 100,00 Residents	Change, 2015-2018 (%)
	50-StateAverage		*2,569*	*-10.7%*
1	New Hampshire	121.6	1,422	-27.7%
2	Vermont	121.0	1,455	-7.1%
3	Maine	120.7	1,470	-25.1%
4	Massachusetts	118.3	1,601	-22.9%
5	New Jersey	118.0	1,613	-14.5%
6	Idaho	116.6	1,688	-14.1%
7	West Virginia	115.0	1,776	-27.5%
8	New York	114.7	1,791	-9.9%
9	Pennsylvania	114.7	1,796	-15.6%
10	Wisconsin	113.6	1,855	-18.8%
11	Virginia	113.4	1,866	-10.5%
12	Rhode Island	113.1	1,880	-12.2%
13	Connecticut	112.9	1,888	-8.0%
14	Iowa	112.0	1,942	-17.3%
15	Wyoming	110.9	1,997	-5.9%
16	**Michigan**	**109.0**	**2,103**	**-10.5%**
17	South Dakota	108.4	2,133	-8.7%
18	Kentucky	107.6	2,174	-10.4%
19	Minnesota	106.9	2,214	-10.3%
20	North Dakota	104.9	2,321	-10.7%
21	Illinois	104.6	2,337	-2.2%
22	Nebraska	104.1	2,365	-6.2%
23	Ohio	102.4	2,457	-15.7%
24	Maryland	101.6	2,502	-12.1%
25	Indiana	100.5	2,562	-14.1%
26	Utah	99.5	2,611	-19.5%
27	Mississippi	99.0	2,637	-16.1%
28	Florida	98.5	2,667	-18.7%
29	Delaware	97.0	2,748	-14.4%
30	Texas	96.4	2,778	-14.6%
31	California	95.5	2,828	-7.5%
32	Montana	94.7	2,870	-4.2%
33	North Carolina	94.7	2,872	-7.2%
34	Georgia	94.2	2,900	-16.7%
35	Nevada	92.7	2,979	-11.7%
36	Colorado	91.0	3,069	3.6%
37	Kansas	91.0	3,073	-2.4%
38	Hawaii	90.1	3,119	-23.7%
39	Missouri	89.6	3,149	-6.2%
40	Arizona	89.5	3,152	-8.6%
41	Oregon	89.0	3,180	-1.9%
42	Washington	87.5	3,258	-13.6%
43	Alabama	86.1	3,337	-3.4%
44	Oklahoma	86.0	3,341	-0.2%
45	Tennessee	84.0	3,449	-4.0%
46	Arkansas	83.9	3,457	-9.0%
47	South Carolina	82.9	3,506	-8.4%
48	Louisiana	77.2	3,814	-2.7%
49	Alaska	70.3	4,185	17.9%
50	New Mexico	68.7	4,276	-2.1%

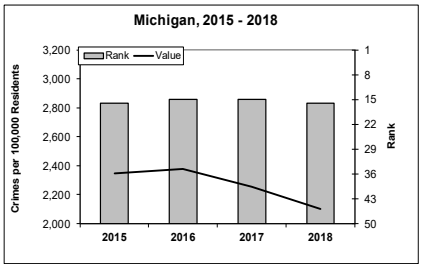
Reported Crimes per 100,000 residents, 2018

Relative freedom from the threat of violent crime is a minimum requirement of a good quality of life. High levels of crime are also often damaging to the business environment, particularly the commercial sector. The above table reports crime rates in the standard manner reported by the FBI: crimes committed per 100,000 residents in the state reporting area.

Source: Federal Bureau of Investigation

Midwest Performance, 2018

State	Crimes per 100,000 Residents	Rank
Wisconsin	1,855	10
Michigan	**2,103**	**16**
Illinois	2,337	21
Ohio	2,457	23
Indiana	2,562	25



LAW ENFORCEMENT EMPLOYEES

Rank	State	Score	Personnel per 100,000 residents	Change, 2015-2018 (%)
	50-StateAverage		*291*	*-8.5%*
1	New Jersey	137.4	455	-6.1%
2	Tennessee	126.3	408	-5.9%
3	Louisiana	124.2	400	-19.5%
4	Wyoming	123.0	395	0.9%
5	New York	122.4	392	0.5%
6	Arkansas	112.7	351	2.2%
7	Maryland	111.5	346	-8.8%
8	Florida	111.0	344	-8.6%
9	Georgia	110.3	340	-33.6%
10	West Virginia	109.8	338	34.9%
11	Delaware	109.3	336	-22.4%
12	North Carolina	108.0	331	-9.5%
13	South Carolina	107.7	330	-9.8%
14	Oklahoma	107.3	328	1.4%
15	South Dakota	107.1	327	-1.3%
16	Missouri	106.8	326	-13.1%
17	Alabama	106.2	323	-9.4%
18	Colorado	105.8	322	-6.3%
19	North Dakota	104.0	314	3.3%
20	Arizona	103.5	312	-7.4%
21	Idaho	102.1	306	9.5%
22	Wisconsin	101.8	305	-3.8%
23	Kansas	101.5	303	-20.5%
24	California	101.2	302	-1.0%
25	Nevada	100.6	300	-5.5%
26	Massachusetts	99.4	294	-4.1%
27	Rhode Island	99.0	293	1.1%
28	Illinois	97.6	287	-25.3%
29	Vermont	97.5	286	19.8%
30	Virginia	97.1	285	-4.2%
31	Nebraska	94.0	271	-1.2%
32	Montana	93.2	268	-12.8%
33	Alaska	93.0	267	-1.0%
34	New Hampshire	92.9	267	-0.1%
35	Minnesota	90.6	257	-1.0%
36	Connecticut	90.3	256	-3.1%
37	Hawaii	90.1	255	-0.8%
38	Oregon	88.7	249	-5.5%
39	Texas	87.2	243	-26.6%
40	Iowa	85.4	235	-8.7%
41	**Michigan**	**84.4**	**231**	**-10.2%**
42	Pennsylvania	80.6	215	-9.6%
43	Kentucky	80.5	214	-28.0%
44	Utah	80.5	214	(n/a)
45	Maine	79.6	210	-1.7%
46	Washington	79.2	209	5.9%
47	Indiana	76.0	195	-24.5%
48.0	New Mexico	73.5	185	-41.1%
49	Ohio	69.7	169	-40.4%
50	Mississippi	65.0	149	-54.3%

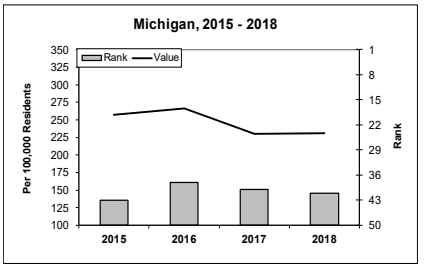
Number of law enforcement personnel per 100,000 residents, 2018

The size of the police force in a state is a two-edged measure. On the one hand, a high number of officers can indicate public safety. On the other hand, it can reflect a high demand for officers due to substantial crime rates. This measure is therefore to be taken in combination with the crime-rate measures to determine whether the state has an effective number of law-enforcement personnel. The above table shows the number of law enforcement personnel per 100,000 residents.

Source: Federal Bureau of Investigation

Midwest Performance, 2018

State	Personnel per 100,000 Residents	Rank
Wisconsin	305	22
Illinois	287	28
Michigan	**231**	**41**
Indiana	195	47
Ohio	169	49



HEALTH CARE ACCESS

Rank	State	Score	Per 1,000 Residents	Change, 2015-2018 (%)
	50-StateAverage		*27.6*	*5.3%*
1	South Dakota	128.5	35.4	5.4%
2	Massachusetts	127.5	35.2	2.2%
3	Minnesota	123.1	34.0	11.1%
4	North Dakota	123.0	34.0	4.2%
5	Delaware	118.5	32.8	9.3%
6	West Virginia	118.2	32.7	5.7%
7	Nebraska	117.7	32.5	7.7%
8	Pennsylvania	115.2	31.9	8.0%
9	Rhode Island	113.1	31.3	6.7%
10	Missouri	112.9	31.3	4.5%
11	Ohio	112.0	31.0	2.0%
12	Maine	111.4	30.8	-0.4%
13	Vermont	110.5	30.6	2.3%
14	Wisconsin	106.3	29.5	7.2%
15	Indiana	105.0	29.2	8.3%
16	New Hampshire	104.6	29.0	4.3%
17	Tennessee	103.9	28.9	3.4%
18	Connecticut	103.5	28.7	0.9%
19	Maryland	103.2	28.7	4.5%
20	Montana	102.9	28.6	1.6%
21	**Michigan**	**102.0**	**28.4**	**7.5%**
22	Louisiana	101.8	28.3	4.3%
23	Kansas	100.9	28.1	3.9%
24	New York	100.4	27.9	7.5%
25	Kentucky	100.0	27.8	-0.5%
26	Illinois	100.0	27.8	7.6%
27	Iowa	99.8	27.7	3.9%
28	North Carolina	96.4	26.9	5.0%
29	Arkansas	96.4	26.8	7.7%
30	Alabama	96.2	26.8	5.9%
31	Mississippi	95.9	26.7	6.0%
32	New Jersey	95.2	26.5	6.0%
33	Colorado	92.0	25.7	7.2%
34	Wyoming	91.1	25.4	5.3%
35	Florida	89.5	25.0	2.6%
36	Virginia	88.6	24.8	4.2%
37	South Carolina	88.5	24.7	3.1%
38	Oklahoma	88.0	24.6	1.6%
39	Oregon	87.7	24.5	6.4%
40	Alaska	86.0	24.1	5.9%
41	Texas	84.5	23.7	5.7%
42	Georgia	84.1	23.6	6.0%
43	Idaho	81.5	22.8	7.4%
44	Arizona	80.2	22.5	8.0%
45	New Mexico	79.8	22.4	3.9%
46	Hawaii	79.4	22.3	4.9%
47	Utah	78.6	22.1	4.9%
48	Washington	78.0	21.9	3.0%
49	California	75.3	21.2	10.1%
50	Nevada	73.4	20.7	13.0%

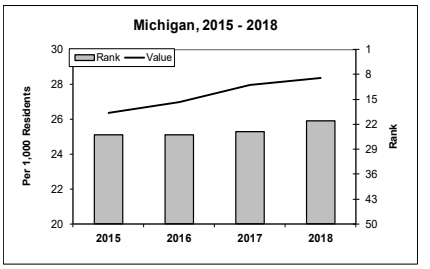
Employed in health care practitioner and technician occupations per 1,000 Residents, 2018

While the national debate rages about health care affordability and coverage, of related importance is access. Are health care facilities and services available when needed? A good proxy for this is the number employed in health care occupations relative to a state's population.

Source: U.S. Bureau of Labor Statistics

Midwest Performance, 2018

State	Per 1,000 Residents	Rank
Ohio	31.0	11
Wisconsin	29.5	14
Indiana	29.2	15
Michigan	**28.4**	**21**
Illinois	27.8	26



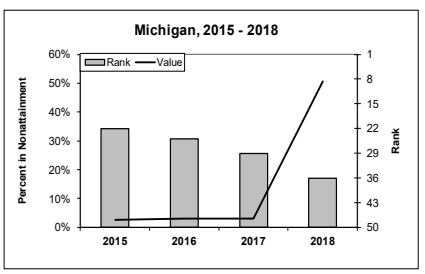
CLEAN AIR

Rank	State	Score	Percent in Nonattainment	Change, 2015 - 2018 (%)
	50-StateAverage		*24.7%*	*34.9%*
1	Alabama	112.3	0.0%	-100.0%
1	Arkansas	112.3	0.0%	-100.0%
1	Hawaii	112.3	0.0%	0.0%
1	Maine	112.3	0.0%	0.0%
1	Mississippi	112.3	0.0%	-100.0%
1	Nebraska	112.3	0.0%	0.0%
1	North Carolina	112.3	0.0%	0.0%
1	North Dakota	112.3	0.0%	0.0%
1	Oklahoma	112.3	0.0%	0.0%
1	Rhode Island	112.3	0.0%	0.0%
1	South Carolina	112.3	0.0%	-100.0%
1	South Dakota	112.3	0.0%	0.0%
1	Vermont	112.3	0.0%	0.0%
1	Washington	112.3	0.0%	0.0%
15	Kansas	112.3	0.0%	-0.3%
16	Florida	111.6	0.1%	-4.3%
17	Minnesota	111.3	0.2%	-2.3%
18	Tennessee	110.9	0.2%	-99.1%
19	Massachusetts	110.9	0.2%	-1.6%
20	New Mexico	108.7	0.6%	306.8%
21	Louisiana	107.7	0.8%	-95.3%
22	Iowa	106.6	1.0%	-30.6%
23	Idaho	105.4	1.2%	-15.0%
24	Oregon	105.1	1.2%	-4.2%
25	Wyoming	100.6	2.0%	-59.5%
26	West Virginia	99.4	2.2%	1.9%
27	Wisconsin	79.2	5.6%	23.5%
28	New Hampshire	58.6	9.2%	-1.9%
29	Alaska	42.9	11.9%	0.1%
30	Montana	36.9	12.9%	-3.2%
31	Indiana	-4.6	20.0%	-2.1%
32	Virginia	-41.0	26.2%	-1.8%
33	Kentucky	-48.0	27.4%	3.7%
34	Missouri	-50.0	29.7%	-12.5%
35	Georgia	-50.0	34.9%	-32.4%
36	**Michigan**	**-50.0**	**50.6%**	**1,859.5%**
37	Texas	-50.0	50.7%	8.5%
38	Ohio	-50.0	51.8%	-4.7%
39	Colorado	-50.0	58.5%	-4.5%
40	Arizona	-50.0	59.6%	-5.2%
41	Nevada	-50.0	62.4%	326.6%
42	New York	-50.0	63.5%	1.4%
43	Pennsylvania	-50.0	64.4%	-0.1%
44	Illinois	-50.0	70.7%	0.9%
45	Utah	-50.0	74.2%	-3.6%
46	Delaware	-50.0	76.1%	-2.4%
47	Maryland	-50.0	83.9%	-0.7%
48	California	-50.0	84.0%	-1.0%
49	New Jersey	-50.0	98.7%	0.6%
50	Connecticut	-50.0	100.0%	0.6%

Percent of population in air non-attainment areas, 2018
States with poor environmental records or conditions face an extra challenge in attracting the best, most-skilled workers. Workers and businesses also face the threat of punitive action from the federal government for failing to meet environmental requirements such as air-quality standards. The above table shows the percentage of the population in reported areas, whole or partial, where air pollution levels persistently exceed the national ambient air quality standards.
Source: U.S. Environmental Protection Agency

Midwest Performance, 2018

State	Percent in Nonattainment	Rank
Wisconsin	5.6%	27
Indiana	20.0%	31
Michigan	**50.6%**	**36**
Ohio	51.8%	38
Illinois	70.7%	44



APPENDIX A: Entrepreneurship Score Card Methodology and Sources

Introduction

The statistical methodology of the *Entrepreneurship Score Card* was developed and is prepared by the GrowthEconomics, Inc. team comprised of Dr. Graham Toft (Founder/President) and Dr. Nadine Jeserich (ROI – Research on Investment).

Methodology design for this Score Card has been motivated by pursuit of the following objectives:

1) Develop a methodology that is well reasoned, taking advantage of state of the art in benchmark scoring, both in the U.S. and abroad.
2) Use the most recent data checked for credibility and reliability.
3) Explain the methods and post the data in such a way as to make the calculation process transparent and replicable.
4) Encourage further examination of the topic of state entrepreneurship using complementary methodologies and compare results.
5) Where comparisons are possible, check the findings of this Score Card with other state competitiveness benchmarking reports, learning from similarities and differences.

General Description of Methodology

The foundation of good state benchmarking is the selection and qualification of sound metrics, indicators that provide comparable measures for all states on an annual or biennial basis. This approach requires valid, reliable data sources that are either public or proprietary, including the creative exploration of data not previously used for this kind of application.

The Score Card makes use of these multiple sources to obtain specific measures for 125 metrics. Where possible the data is obtained for the past 10 years. Where data is not yet available for 2018, data from 2017 or 2016 is used. There were 94 metrics with 2018 data, 22 with 2017 data, and just 7 with 2016 data.

All data is the most current available as of February 5th, 2020. As new data becomes available, the measures for previous years are revised. In this way, the annual Score Card provides the most up-to-date data set for both current and previous years. If a new metric is added, measures are obtained for all back years available to 2008. The sections that follow explain in greater detail how metrics are obtained and aggregated, and how the five-star performance rating is derived.

Metric Calculation Methods

In order to compare metrics with different units of measurement such as dollars or number of residents, the data for the Score Card has to be normalized, i.e. the raw data must be converted into a score that allows an apple-to-apple comparison. Many popular benchmarking reports use a z-score or standardized score, which is the raw value of the metric minus the mean of all the raw values, divided by the standard deviation of the values (a measure of how dispersed the values are around the mean). The resulting z-

scores have a mean of zero and a standard deviation of one, or what is called a standard normal distribution, and allow an easy comparison across metrics. **This is today's "state of the practice."**

A major drawback of this method, however, is that it imposes a normal distribution on all metrics where 50 percent of the values lie to the right of the mean and 50 percent lie to the left. However, often socio-economic data is skewed to the left or the right, e.g. a few states might score very well, followed by a cluster near the mid-point, with the rest gradually declining in a long tail. Forcing scores into a normal distribution can introduce substantial biases when combining metrics into indices. The z-score method also gives significant weight to unusually high or low scores. An unusual score could merely represent an exceptional year for a state rather than the general trend, which the *Score Card* is trying to uncover. Even with these shortcomings, the z-score method is the most widely used today, partly because nothing better has come along, until recently.

The Score Card uses a sophisticated method that is robust to outlier scores so that one extreme value is not going to change the normalized scores of the other states for a particular metric, and it does not impose an artificial structure on the distribution of state values. **The modified median method used herein is "state of the art."** It does not bias data that is not normally distributed.

The method takes the differences between the raw value and the median rather than the mean. This allows for less comparison to the top performance, but rather to the performance of the majority of states and therefore being robust to outliers. It is then normalized with the following method: for each state, get the difference between its raw score and the raw score of every other state; from these 49 numbers, get the median and repeat for the next state, resulting in 50 medians; then take the median of these medians as the measure of central tendency (instead of the standard deviation). The "modified median" method of normalizing scores is a frontier methodology which likely will become common practice in the future.

A normalized score enables multiple metrics to be added together to give sub-index and index composite scores. The normalized score also serves as a means to convey a state's performance relative to the "middle state(s)." **For easier readability, the normalized score is scaled so that the median is 100 for each metric, denoted by a dotted line across the table**. Consequently, the reader can get a quick sense of how far a particular state is from the mid-point by observing how far it is above or below 100 (See Metrics tables in Section 3).

Since metrics are averaged into sub-indexes and indexes, one state's exceptional performance in one year can still affect the sub-index and index results. An additional adjustment is used to avoid situations where such values completely bias aggregate results. A cap is put on the maximum value a median score can take. If a state's median score reaches that limit, its actual value is replaced with the limit value. A limit value of 150 either side of the mid-point of 100 has been found to work satisfactorily, based on over 10 years of experience with these data: the top score cannot exceed 250 and the bottom score cannot fall below -50.

Another issue that might confound performance trends the Score Card is trying to uncover is the fact that metrics measured in growth rates can have very high year-to-year variability. In order to provide a bigger picture of where the growth rates are headed, all metrics expressed as growth measures are converted to three-year moving

averages, i.e. each new annual growth rate is averaged with the two previous annual growth rates.

In the metric tables, each metric is reported by raw score, normalized score, rank and recent change. If a state's raw value changed from or to a value of zero, a growth rate of +100 percent or -100 percent was reported. For metrics with many zero values across the years or those expressed in terms of growth rates, the absolute rather than relative change over the recent years is reported.

Further, the reader will find it helpful to know how a particular state clusters with other states of like scores. This is shown by three shadings, or ranges, on the metrics table. The full range of scores from top state to bottom state is divided into three equal parts and each shading represents one part. While a state might change somewhat in ranking, if it stays in the same performance/shading group, one can conclude little change relative to competitors and comparators. Alternatively, if a state ranking stays fairly stable over several years but it moves up a shading category, one can conclude improvement.

To put this in another way: ranking tells you where you are placed, while shadings (and star ratings for sub-indexes and indexes, see below) tell you how well you are performing. A male athlete might do better than the four-minute mile, putting him in 'best of class,' but he may not place in the top three in a race. For most economic and social issues, state leaders and decision makers want their state to be among the top performers but worry less about being number one. **For this reason, the reader is encouraged not to rely singularly on rankings to judge a state's competitive position. Although widely used, rankings alone can lead to erroneous judgments.**

Sub-index and Index Calculation

Once the metric scores have been calculated for those metrics making up a sub-index, the modified median scores are averaged to produce a sub-index score. The sub-index page displays the state scores in the form of star performances associated with those average scores. For example, five stars means the state performed in the top 20 percent of the range of averaged scores, similar to the shadings on the metric pages. Index star performance is calculated from the original metric scores in the same way as for sub-indexes.

This Score Card also uses an innovative method of updating data. Typically, benchmarking studies use the most recent data available when a report is released. In most instances, these data are one to three years behind the actual release date. Report issuing organizations/authors seldom go back to adjust the scores/grades of previous years when revised data becomes available for a previous release year. Past results might then erroneously show facts/trends that have already long changed. **This *Score Card* method actually recalculates previous years' results based on new data available for earlier years.**

However, if there is no new data available in the most current year, last year's data will be reused when the metrics are aggregated (though the metric pages will still show the most current actual data year). Hence, in a few cases where sub-indexes have not much new data in recent years, there could be hardly any change between the 2017 and 2018 Score Card raw scores. Each edition of the Score Card results can therefore be viewed

as an "update," reflecting only new scores where the underlying data actually changed. Every effort was made to include the most recent data updates published to the end of 2019.

Another related procedure is the response to missing data points. Whenever a single state has a missing value for a year, the linear trend from the previous and next year is substituted for the missing value. When a following year is not available, only the previous year's raw value is used as a best estimate of that year, making an effort to always compare all states over the same number of metrics (except when a particular state's metric information is missing for all years).

For each sub-index score, the component metrics are weighted equally, with one exception. The Business Costs sub-index is weighted in approximation of the effect that each cost metric has on a typical business' total cost. The actual weighting is:

57 percent unit labor costs
6 percent business taxes
6 percent state business tax structure
12 percent industrial rents
7 percent energy costs
2.5 percent worker's compensation premiums
2.5 percent worker's compensation costs
5 percent small business health-care premiums
1 percent unemployment insurance costs
1 percent unemployment insurance tax structure

When a metric has to be excluded due to changes in methodology, the percentage for that metric used for the weighting in a sub-driver is set to zero, and the remaining metrics' percentages are adjusted equally to sum to one again.

TECHNICAL DOCUMENTATION AND WORKS CITED

METRIC PAGES

Entrepreneurial Change Index

Growth in Number of Small Businesses

Source: U.S. Census Bureau. "Statistics of U.S. Businesses." Business Information Tracking Series. Retrieved from: https://www.census.gov/programs-surveys/susb.html

Small Business Payroll Growth

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Increase in High-Performance Firms

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Net Establishment Entrants Increase

Source: U.S. Bureau of Labor Statistics. "Business Employment Dynamics." Retrieved from: http://www.bls.gov/bdm/

Proprietor Income per Proprietor Growth

Source: U.S. Bureau of Economic Analysis. "Regional Economic Accounts." Retrieved from: http://www.bea.gov/regional/index.htm

Entrepreneurial Vitality Index

Net Establishment Entrants

Source: U.S. Bureau of Labor Statistics. "Business Employment Dynamics." Retrieved from: http://www.bls.gov/bdm/

Establishment Turnover

Source: U.S. Bureau of Labor Statistics. "Business Employment Dynamics." Retrieved from: http://www.bls.gov/bdm/

Self-Employment

Source: U.S. Bureau of Economic Analysis. "Regional Economic Accounts." Retrieved from: http://www.bea.gov/regional/index.htm

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University Spinout Businesses

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Methodology: Three-year moving average.

High-Performance Firms

Source: see ‘High Performance Firms Increase’ entry above

IPO Awards

Sources: Crunchbase. Retrieved from: https://www.crunchbase.com

U.S. Census Bureau. “Statistics of U.S. Businesses.” Business Information Tracking Series. Retrieved from: https://www.census.gov/programs-surveys/susb.html

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Sources: U.S. Small Business Administration. Retrieved from: https://www.sbir.gov/sbirsearch/award/all

U.S. Census Bureau. “Statistics of U.S. Businesses.” Business Information Tracking Series. Retrieved from: https://www.census.gov/programs-surveys/susb.html

STTR Awards

Sources: U.S. Small Business Administration. Retrieved from: https://www.sbir.gov/sbirsearch/award/all

U.S. Census Bureau. “Statistics of U.S. Businesses.” Business Information Tracking Series. Retrieved from: https://www.census.gov/programs-surveys/susb.html

SBIC Awards

Sources: U.S. Small Business Administration. “Financing Statistics, Program Statistical Package. SBIC Program Financing to Small Businesses.” Obtained by request from SBA Investment Division.

U.S. Census Bureau. “Statistics of U.S. Businesses.” Business Information Tracking Series. Retrieved from: https://www.census.gov/programs-surveys/susb.html

5-year Establishment Survival Rate

Source: U.S. Bureau of Labor Statistics. “Business Employment Dynamics.” Retrieved from: http://www.bls.gov/bdm/

Entrepreneurial Climate Index

Research and Innovations Sub-index

University Research and Development

Sources: National Science Foundation. Higher Education Research and Development Survey. Retrieved from: http://www.nsf.gov/statistics/surveys.cfm

U.S. Bureau of Economic Analysis. “Regional Economic Accounts.” Retrieved from: http://www.bea.gov/regional/index.htm

Patents per Innovation Worker

Sources: U.S. Patent and Trademark Office, Office. “Fiscal Year Performance and Accountability Report.” Retrieved from: https://www.uspto.gov/about-us/performance-and-planning/uspto-annual-reports

Methodology: Innovation workers are the sum of covered employment based on the definitions from the following metrics: Physical Science & Engineering Workers, Technology and Technician Workers, Other Innovation Workers. (see Workforce Preparedness Driver).

Patents per R&D Dollar

Sources: see ‘Patents per Worker’ entry above.

National Science Foundation. Science and Engineering Indicators. Retrieved from: http://www.nsf.gov/statistics/

University Licenses to Small Businesses

Sources: Association of University Technology Managers. “AUTM Licensing Survey.” Licenses and options executed to small businesses (<500). Retrieved from: www.autm.net

U.S. Census Bureau. “Statistics of U.S. Businesses.” Business Information Tracking Series. Retrieved from: https://www.census.gov/programs-surveys/susb.html

Methodology: Three-year moving average.

NSF Proposal Funding Rate

Source: National Science Foundation. “Funding Rate by State and Organization.” Retrieved from: http://dellweb.bfa.nsf.gov/awdfr3/default.asp

University Royalty/License Income

Sources: Association of University Technology Managers. “AUTM Licensing Survey.” Retrieved from: www.autm.net

U.S. Bureau of Economic Analysis. “Regional Economic Accounts.” Retrieved from: http://www.bea.gov/regional/index.htm

Methodology: Three-year moving average.

Industry Research and Development

Sources: National Science Foundation. Business Research and Development and Innovation Survey. Retrieved from: http://www.nsf.gov/statistics/surveys.cfm

U.S. Bureau of Economic Analysis. “Regional Economic Accounts.” Retrieved from: http://www.nsf.gov/statistics/surveys.cfm

Federal Funded Research and Development

Sources: National Science Foundation. Survey of Federal Funds for Research and Development. Retrieved from: http://www.nsf.gov/statistics/surveys.cfm

U.S. Bureau of Economic Analysis. “Regional Economic Accounts.” Retrieved from: http://www.bea.gov/regional/index.htm

Entrepreneurial Programs

Source: Entrepreneur Magazine. Top 50 Entrepreneurial Colleges. Retrieved from: http://www.entrepreneur.com/topcolleges/index.html

Financial and Institutional Capital Sub-index

Seed/Early Stage Venture Capital Financing

Sources: PriceWaterhouseCoopers. “MoneyTree Survey: Historical Trend Data.” Retrieved from: http://www.pwcmoneytree.com/HistoricTrends/CustomQueryHistoricTrend

U.S. Bureau of Economic Analysis. “Regional Economic Accounts.” Retrieved from: http://www.bea.gov/regional/index.htm

Methodology: Venture capital funding with funding rounds Series A and Seed/Angel.

Expansion/Later Stage Capital Financing

Sources: PriceWaterhouseCoopers. “MoneyTree Survey: Historical Trend Data.” Retrieved from: http://www.pwcmoneytree.com/HistoricTrends/CustomQueryHistoricTrend

U.S. Bureau of Economic Analysis. “Regional Economic Accounts.” Retrieved from: http://www.bea.gov/regional/index.htm

Methodology: Venture capital funding with funding rounds Series C+D+E+growth equity.

IPO Financing

Sources: Crunchbase. Retrieved from: https://www.crunchbase.com

U.S. Bureau of Economic Analysis. “Regional Economic Accounts.” Retrieved from: http://www.bea.gov/regional/index.htm

SBIC Financing

Sources: U.S. Small Business Administration. “Financing Statistics, Program Statistical Package. SBIC Program Financing to Small Businesses.” Obtained by request from SBA Investment Division.

U.S. Census Bureau. “Statistics of U.S. Businesses.” Business Information Tracking Series. Retrieved from: https://www.census.gov/programs-surveys/susb.html

SBIR Financing

Sources: U.S. Small Business Administration. Retrieved from: https://www.sbir.gov/reports/state-summary

U.S. Census Bureau. “Statistics of U.S. Businesses.” Business Information Tracking Series. Retrieved from: https://www.census.gov/programs-surveys/susb.html

STTR Financing

Sources: U.S. Small Business Administration. Retrieved from: https://www.sbir.gov/sbirsearch/award/all

U.S. Census Bureau. "Statistics of U.S. Businesses." Business Information Tracking Series. Retrieved from: https://www.census.gov/programs-surveys/susb.html

Bank Commercial and Industrial Lending

Sources: Federal Deposit Insurance Corporation. "Statistics on Depository Institutions." Retrieved from: https://www5.fdic.gov/sdi/download_large_list_outside.asp

U.S. Bureau of Economic Analysis. "Regional Economic Accounts." Retrieved from: http://www.bea.gov/regional/index.htm

Private Lending to Small Businesses

Sources: U.S. Small Business Administration. "Banking Studies: Small Business Lending in the U.S." Retrieved from: http://www.sba.gov/advo/research

U.S. Census Bureau. "Statistics of U.S. Businesses." Business Information Tracking Series. Retrieved from: https://www.census.gov/programs-surveys/susb.html

Business Incubators

Source: National Business Incubation Association. Membership Directory. By request.

General Growth Sub-index

Gross Domestic Product Growth

Source: U.S. Bureau of Economic Analysis. "Regional Economic Accounts." Retrieved from: http://www.bea.gov/regional/index.htm

Manufacturing Capital Investment Growth

Source: U.S. Census Bureau. "Annual Survey of Manufacturers, Geographic Area Statistics." Retrieved from: https://www.census.gov/programs-surveys/asm.html

Foreign Business Employment Growth

Source: U.S. Bureau of Economic Analysis. Survey of Current Business. "U.S. Affiliates of Foreign Companies, Operations." Retrieved from: http://www.bea.gov/iTable/index_MNC.cfm

Export Intensity Growth

Sources: The Brookings Institution "Export Monitor." Retrieved from: https://www.brookings.edu/research/export-monitor-2018/

U.S. Bureau of Economic Analysis. "Regional Economic Accounts." Retrieved from: http://www.bea.gov/regional/index.htm

Export-Related Jobs

Source: The Brookings Institution "Export Monitor." Retrieved from: https://www.brookings.edu/research/export-monitor-2018/

Large Business Payroll Growth

Source: U.S. Census Bureau. “Statistics of U.S. Businesses.” Business Information Tracking Series. Retrieved from: https://www.census.gov/programs-surveys/susb.html

Building Permits Growth

Sources: U.S. Census Bureau. “SOCDS Building Permits Database. Retrieved from: http://socds.huduser.org/permits/index.html?

U.S. Census Bureau. Population Estimates. "State population datasets.” Retrieved from: http://www.census.gov/popest/

Fortune 500 Headquarters

Source: Fortune Magazine.

Private Business Profit Growth

Source: U.S. Bureau of Economic Analysis. “Regional Economic Accounts.” Retrieved from: http://www.bea.gov/regional/index.htm

Renewable Energy

Source: U.S. Energy Information Administration. “Electric Power Annual." Retrieved from: http://www.eia.doe.gov/cneaf/electricity/epa/epa_sum.html

Green Industries

Source: U.S. Bureau of Labor Statistics. Quarterly Census of Employment and Wages. Retrieved from: http://www.bls.gov/cew/

Methodology: The following NAICS industry codes were included in the category, based on a simplified version of the definition in the Michigan Green Jobs Report 2009, http://www.michigan.gov/documents/nwlb/GJC_GreenReport_Print_277833_7.pdf. The definition does not include industries that use/resell energy technologies such as construction, wholesale, or utilities. NAICS: 1111 – Oilseed and grain farming; 1114 – Greenhouse and nursery production; 1119 – Other crop farming; 1131 – Timber tract operations; 1132 – Forest nursery and gathering forest products; 1133 – Logging; 1151 – Support activities for crop production; 1153 – Support activities for forestry; 3112 – Grain and Oilseed Milling; 3211 – Sawmills and wood preservation; 3219 – Other wood product manufacturing; 3221 – Pulp paper and paperboard mills; 3251 – Basic chemical manufacturing; 3252 – Resin, rubber and artificial fibers mfg; 3253 – Agricultural chemical manufacturing; 3259 – Other chemical product and preparation mfg; 3261 – Plastics product mfg; 3272 – Glass and glass product mfg; 3279 - Other nonmetallic mineral products; 3323 – Architectural and structural metals mfg; 3329 – Other fabricated metal product mfg; 3332 – Industrial Machinery mfg; 3334 – HVAC and commercial refrigeration equip; 3336 – Turbine and power transmission equip. mfg; 3344 – Semiconductor and electronic component mfg; 3345 – Electronic instrument mfg; 3351 – Electric lighting-equip. mfg; 3352 – Household appliance mfg; 3353 – Electrical equip. mfg; 3359 – Other electrical equip. and component mfg; 3361 – Motor vehicle mfg; 3363 – Motor vehicle parts mfg; 3364 – Aerospace product and parts mfg; 3369 – Other transportation equip. mfg; 4851 – Urban transit systems; 4852 – Interurban and rural bus transportation; 4859 – Other ground passenger transportation; 5413 – Architectural and engineering services; 5414 – Specialized design services; 5416 – Management and technical consulting services; 5417 – Scientific research and development services; 5621 – Waste collection; 5622 – Waste treatment and disposal; 5629 – Remediation and other waste services;

Education Driver

K-12 Education Sub-driver

Advanced Placement Score

Source: The College Board. "AP Exam Grades: Summary Report." Retrieved from: https://research.collegeboard.org/programs/ap/data/archived

Public High School Graduation Rate

Source: U.S. Department of Education. ED Data Express. Retrieved from: http://eddataexpress.ed.gov/

Methodology: The four-year adjusted cohort graduation rate is the number of students who graduate in four years with a regular high school diploma divided by the number of students who form the adjusted cohort for the graduating class. From the beginning of 9th grade (or the earliest high school grade), students who are entering that grade for the first time form a cohort that is "adjusted" by adding any students who subsequently transfer into the cohort and subtracting any students who subsequently transfer out, emigrate to another country, or die.

SAT Performance

Source: The College Board. State and National Reports. Retrieved from: https://research.collegeboard.org/programs/sat/data

Methodology: Participation rates are plotted on a graph against average scores for all 50 states. A best-fit power regression is found for the data points, and the equation for the regression function is applied to each state's participation rate to "predict" a score based on participation. These predicted scores are subtracted from the actual average scores received by each state to produce the metric value.

ACT Score

Source: ACT, Inc. "ACT National and State Scores." Retrieved from: http://www.act.org/content/act/en/research.html

Methodology: Identical to SAT metric methodology.

NAEP Mathematics

Source: National Center for Education Statistics. "The Nation's Report Card: Mathematics." State Results for the NAEP 2006 Mathematics Assessment. Retrieved from: http://www.nationsreportcard.gov/#/

NAEP Reading

Source: National Center for Education Statistics. "The Nation's Report Card: Reading." State Results for the NAEP 2006 Reading Assessment. Retrieved from: http://www.nationsreportcard.gov/#/

Postsecondary Education Sub-driver

4+ Tech Credentials

Sources: National Center for Education Statistics. Integrated Postsecondary Education Data System. “Completions Survey, Fall.” Retrieved from: https://nces.ed.gov/ipeds/

Methodology: The following certified instructional programs (CIP) were included for each institution that was judged to award bachelor's level or higher or four-year certificates: Architecture; Architecture & related programs, other; Behavioral sciences; Biological and biomedical sciences; Biological and physical sciences; Biopsychology; Cognitive science; Computer and information sciences, general; Computer programming; Computer science; Engineering; Environmental design/architecture; Environmental science; Food science and technology; Information science/studies; Mathematics and computer science; Mathematics and statistics; Natural sciences; Neuroscience; Nutrition sciences; Physical sciences; Plant sciences; Science, technology and society; Soil sciences; Systems science and theory; Medical Scientists, Agricultural business technology; Forest technology/technician; Architectural technology/technician; Communications technologies/technicians and support services; Data processing; Computer systems analysis; Data entry/microcomputer applications; Computer software and media applications; Computer systems networking and telecommunications; Computer/information technology administration and management; Computer and information sciences and support services, other; Engineering technologies/technicians; Military technologies; Science technologies/technicians; Mechanic and repair technologies/technicians; Precision production; Accounting and computer science; Allied health diagnostic, intervention, and treatment profession; Clinical/medical laboratory science and allied professions; Clinical/medical laboratory technician/assistant.

Pre-BA Tech Credentials

Sources: National Center for Education Statistics. Integrated Postsecondary Education Data System. “Completions Survey, Fall.” Retrieved from: https://nces.ed.gov/ipeds/

Methodology: The same instructional programs (CIP) were included for each institution as for the previous metric but only those degrees and certificates with Associate degrees or 2 years or less of college were included.

4Y ‘Knowledge’ degrees excluding Tech fields

Sources: National Center for Education Statistics. Integrated Postsecondary Education Data System. “Completions Survey, Fall.” Retrieved from: https://nces.ed.gov/ipeds/

Methodology: The following certified instructional programs (CIP) were included for each institution that was judged to award degrees in fields relevant to the innovation economy not covered by the purely scientific and technical areas: Public relations, advertising, and applied communication; Teacher education and professional development, specific subject areas; Technical and business writing; Economics; Business, management, marketing, and related support services.

College Migration

Source: National Center for Education Statistics. Integrated Postsecondary Education Data System. “Enrollment Survey, Fall.” Retrieved from: https://nces.ed.gov/ipeds/

U.S. News Top-Ranked Undergraduate Programs

Source: U.S. News and World Report Magazine. “America’s Best Colleges.” Premium Online Edition. Retrieved from: http://www.usnews.com/rankings

U.S. News Top-Ranked Graduate Programs

Source: U.S. News and World Report Magazine. “America’s Best Graduate Schools.” Premium Online Edition. Retrieved from: http://www.usnews.com/rankings

Two-Year College Tuition Growth

Source: National Center for Education Statistics. Digest of Education Statistics. Retrieved from: http://nces.ed.gov/programs/digest/

U.S. Census Bureau, Current Population Survey, Annual Social and Economic Supplements. Retrieved from Dataferret software.

Methodology: Differential between growth in two-year college tuition costs and growth in state real median household income.

Four-Year College Costs Growth

Source: National Center for Education Statistics. Digest of Education Statistics. Retrieved from: http://nces.ed.gov/programs/digest/

U.S. Census Bureau, Current Population Survey, Annual Social and Economic Supplements. Retrieved from Dataferret software.

Methodology: Differential between growth in four-year college costs and growth in state real median household income.

Workforce Preparedness Driver

High School Only Diploma Attainment

Source: U.S. Census Bureau. “Current Population Survey, Annual March Supplement.” Retrieved from Dataferret software.

Post-Secondary Pre-BA Attainment

Source: U.S. Census Bureau. “Current Population Survey, Annual March Supplement.” Retrieved from Dataferret software.

Bachelor's Degree Attainment

Source: U.S. Census Bureau. “Current Population Survey, Annual March Supplement.” Retrieved from Dataferret software.

Physical Sciences and Engineering Workers

Source: U.S. Bureau of Labor Statistics. “Occupational Employment Survey.” Retrieved from: http://www.bls.gov/oes/

Methodology: The following Standard Occupational Classifications were identified as physical science and engineering jobs: Actuaries; Aerospace engineers; Agricultural and food scientists; Agricultural engineers; All other architects, surveyors, and cartographers; All other engineers; All other life scientists; All other physical scientists; Architects, except landscape and naval; Astronomers; Atmospheric and space scientists; Biochemists and biophysicists; Biological scientists, all other; Biomedical engineers; Chemical engineers; Chemists; Civil engineers; Computer and information scientists, research; Computer hardware engineers; Computer programmers; Electrical engineers; Electronics engineers, except computer; Environmental engineers; Health and safety engineers,

except mining safety engineers and inspectors; Industrial engineers; Marine engineers and naval architects; Materials engineers; Materials scientists; Mathematicians; Mechanical engineers; Medical scientists, except epidemiologists; Microbiologists; Mining and geological engineers, including mining safety engineers; Miscellaneous mathematical science occupations; Nuclear engineers; Operations research analysts; Petroleum engineers; Physicists; Statisticians.

Technology and Technician Workers

Source: U.S. Bureau of Labor Statistics. "Occupational Employment Survey." Retrieved from: http://www.bls.gov/oes/

Methodology: The following Standard Occupational Classifications were identified as technology and technician jobs: Aerospace engineering and operations technicians; All other computer specialists; All other drafters, engineering, and mapping technicians; All other life, physical, and social science technicians; Architectural and civil drafters; Biological technicians; Cardiovascular technologists and technicians; Cartographers and photogrammetrists; Chemical technicians; Civil engineering technicians; Computer software engineers, applications; Computer software engineers, systems software; Computer support specialists; Computer systems analysts; Database administrators; Diagnostic medical sonographers; Electrical and electronic engineering technicians; Electrical and electronics drafters; Electro-mechanical technicians; Emergency medical technicians and paramedics; Environmental engineering technicians; Environmental science and protection technicians, including health; Forensic science technicians; Geological and petroleum technicians; Industrial engineering technicians; Mechanical drafters; Mechanical engineering technicians; Medical and clinical laboratory technicians; Medical and clinical laboratory technologists; Network and computer systems administrators; Network systems and data communications analysts; Nuclear medicine technologists; Nuclear technicians; Occupational health and safety specialists and technicians; Radiologic technologists and technicians; Respiratory therapy technicians; Semiconductor processors; Surgical technologists; Surveyors.

Innovation Workers Outside High Tech Employment

Source: U.S. Bureau of Labor Statistics. "Occupational Employment Survey." Retrieved from: http://www.bls.gov/oes/

Methodology: The following Standard Occupational Classifications were identified as other key innovation jobs: Architecture Teachers, Postsecondary; Atmospheric, Earth, Marine, and Space Sciences Teachers, Postsecondary; Biological Science Teachers, Postsecondary; Business and Financial Operations ; Business Teachers, Postsecondary; Chemistry Teachers, Postsecondary; Communications Teachers, Postsecondary; Computer Science Teachers, Postsecondary; Economics Teachers, Postsecondary; Economists; Engineering Teachers, Postsecondary; Health Specialties Teachers, Postsecondary; Management ; Market Research Analysts; Mathematical Science Teachers, Postsecondary; Physics Teachers, Postsecondary; Public Relations Specialists; Survey Researchers; Technical Writers; Vocational Education Teachers, Postsecondary.

High-tech Manufacturing Employment

Sources: U.S. Bureau of Labor Statistics. Quarterly Census of Employment and Wages. Retrieved from: http://www.bls.gov/cew/

Mark Muro and others, "America's Advanced Industries: What They Are, Where They Are, and Why They Matter." https://www.brookings.edu/research/americas-advanced-industries-what-they-are-where-they-are-and-why-they-matter/#/M10420

Methodology: Advanced industries are considered those industries that conduct significant R&D and employ a disproportionate number of STEM workers.

NAICS
3241 Petroleum and Coal Products
3251 Basic Chemicals
3252 Resins and Synthetic Rubbers, Fibers, and Filaments
3253 Pesticides, Fertilizers, and Other Agr. Chemicals
3254 Pharmaceuticals and Medicine
3259 Other Chemical Products
3271 Clay Products
3279 Other Nonmetallic Mineral Products
3311 Iron, Steel, and Ferroalloys
3313 Aluminum Production and Processing
3315 Foundries
3331 Agr., Construction, and Mining Machinery
3332 Industrial Machinery
3333 Commercial and Service Industry Machinery
3336 Engines, Turbines, and Power Trans. Equipment
3339 Other General Purpose Machinery
3341 Computers and Peripheral Equipment
3342 Communications Equipment
3343 Audio and Video Equipment
3344 Semiconductors and Other Electronic Components
3345 Navigation, Measurement, and Control Instruments
3346 Magnetic and Optical Media
3351 Electric Lighting Equipment
3352 Household Appliances
3353 Electrical Equipment
3359 Other Electrical Equipment and Components
3361 Motor Vehicles
3362 Motor Vehicle Bodies and Trailers
3363 Motor Vehicle Parts
3364 Aerospace Products and Parts
3365 Railroad Rolling Stock
3366 Ship and Boat Building
3369 Other Transportation Equipment
3391 Medical Equipment and Supplies
3399 Other Miscellaneous

High-tech Services Employment

Source: See “High-tech Manufacturing Employment” immediately above

Methodology:

NAICS
5112 Software Publishers
5152 Cable and Other Subscription Programming
5172 Wireless Telecommunications Carriers
5174 Satellite Telecommunications
5179 Other Telecommunications
5182 Data Processing and Hosting
5191 Other Information
5413 Architecture and Engineering
5415 Computer Systems Design
5416 Mgmt., Scientific, and Technical Consulting
5417 Scientific Research and Development
6215 Medical and Diagnostic Laboratories

Adult Education

Source: National Center for Education Statistics. Integrated Postsecondary Education Data System. “Enrollment Survey, Fall.” Retrieved from: WebCASPAR https://ncsesdata.nsf.gov/webcaspar/index.jsp?subHeader=WebCASPARHome

U.S. Census Bureau. “American Community Survey.” Summary Tables. Retrieved from: https://www.census.gov/programs-surveys/acs/

Skilled Immigrants

Source: U.S. Census Bureau. “Current Population Survey.” Retrieved from: DataFerrett software.

Methodology: Number non-citizens or naturalized citizens with a bachelor’s degree or above per 1,000 residents. The current and previous two years were averaged to balance out any small sample fluctuations associated with this survey data, i.e. 2014 data reflects the average of 2012 to 2014 survey results.

Business Costs Driver

Unit Labor Costs

Source: U.S. Bureau of Labor Statistics. Quarterly Census of Employment and Wages. Retrieved from: http://www.bls.gov/cew/

Methodology: Wages per employment relative to output per employment adjusted for the industry employment concentration at the 3-digit NAICS level and relative to the US average set at 100.

Energy Costs

Source: Energy Information Administration. Electric Power Annual. Retrieved from: http://www.eia.gov/electricity/data.cfm

Workers’ Compensation Costs

Source: National Academy of Social Insurance. "Workers' Compensation: Benefits, Coverage, and Costs." Retrieved from: https://www.nasi.org/research/workers-compensation

Workers’ Compensation Premiums

Source: Oregon Department of Consumer and Business Services. “Oregon Workers’ Compensation Premium Rate Ranking, Calendar Year.” Retrieved from: http://www.oregon.gov/dcbs/cost/Pages/ranking-by-state.aspx

Unemployment Insurance Costs

Source: U.S. Department of Labor. Employment and Training Administration, Unemployment Insurance Data Summary. “U.S. Summary Tables, Wage and Tax Rate Data.” Retrieved from: http://workforcesecurity.doleta.gov/unemploy/avg_employ.asp

Unemployment Insurance Tax Structure

Source: Tax Foundation. “Effective State and Local Tax Burdens by State and Ranking.” Retrieved from: http://workforcesecurity.doleta.gov/unemploy/finance.asp

Business Tax Burden

Sources: Ernst & Young. “Total State and Local Business Taxes: 50-State Estimates for Fiscal Year.” Prepared in conjunction with The Council on State Taxation. Retrieved from: http://www.ey.com/IE/EN/home/library

U.S. Bureau of Economic Analysis. “Regional Economic Accounts.” Retrieved from: http://www.bea.gov/regional/index.htm

State Business Tax Structure

Source: Tax Foundation. “State Business Tax Climate Index, Corporate Tax Index.” Retrieved from: http://www.taxfoundation.org

Metro Industrial Rents

Source: Colliers International, Industrial Highlights, Quarterly Reports. By request.

Small Business Health Care Premiums

Source: U.S. Department of Health and Human Services, Agency for Healthcare Research and Quality. “Medical Expenditure Panel Survey: Insurance Component.” Retrieved from: http://www.meps.ahrq.gov/mepsweb/data_stats/quick_tables.jsp

Productivity and Labor Supply Driver

Net Domestic Migration Rate

Source: U.S. Census Bureau. Population Estimates. "State population datasets.” Retrieved from: http://www.census.gov/popest/

Prime Working Age Residents

Sources: U.S. Census Bureau. “American Community Survey.” Summary Tables. Retrieved from: https://www.census.gov/programs-surveys/acs/

U.S. Census Bureau. Population Estimates. "State population datasets.” Retrieved from: http://www.census.gov/popest/

Gross domestic Product per Job

Source: U.S. Bureau of Economic Analysis. “Regional Economic Accounts.” Retrieved from: http://www.bea.gov/regional/index.htm

Service Sector Productivity

Source: U.S. Bureau of Economic Analysis. “Regional Economic Accounts.” Retrieved from: http://www.bea.gov/regional/index.htm

Methodology: Includes the following industries: 10 – Utilities; 34 – Wholesale trade; 35 – Retail trade; 36 – Transportation and warehousing, excluding Postal Service; 45 – Information; 50 – Finance and insurance; 55 – Real estate, rental and leasing; 58 –

Professional and technical services; 62 – Management of companies and enterprises; 63 – Administrative and waste services; 66 – Educational services; 67 – Health care and social assistance; 71 – Arts, entertainment and recreation; 74 – Accommodation and food services; 77 – Other services, except government.

Manufacturing Value Added per Hour

Source: U.S. Census Bureau. "Annual Survey of Manufacturers, Geographic Area Statistics." Retrieved from: https://www.census.gov/programs-surveys/asm.html

Labor Force Participation Rate

Source: U.S. Bureau of Labor Statistics. "Local Area Unemployment Statistics." Retrieved from: http://www.bls.gov/lau/rdscnp16.htm

Legal Environment Driver

Malpractice Costs

Source: Medical Liability Monitor. "Rate Survey of Three Medical Specialties." Trends in Rates for Physicians' Medical Professional Liability Insurance.

Methodology: Malpractice rates depend highly on the medical specialty that the insured practices. To accurately compare rates within three different specialties, internal medicine, general surgery and OB/GYN, the average rates for each specialty are normalized across all the states. The normalized scores for each profession in a state are then totaled to produce the index score.

Business Liability Costs

Sources: Insurance Information Institute. "The Insurance Information Institute Fact Book." Direct Premiums Written, Property/Casualty Insurance, By State By Line.

U.S. Bureau of Economic Analysis. "Regional Economic Accounts." Retrieved from: http://www.bea.gov/regional/index.htm

Methodology: Premiums totals for products liability and other liability insurance are averaged and divided by the gross domestic product.

Liability System Reputation

Source: Harris Interactive. "State Liability Systems Ranking Study." Conducted for U.S. Chamber of Commerce, Institute for Legal Reform. Retrieved from: http://www.instituteforlegalreform.com/states

Physical Infrastructure Driver

Highway Quality

Source: Federal Highway Administration. "Highway Statistics." Retrieved from: https://www.fhwa.dot.gov/policyinformation/statistics.cfm

Bridge Quality

Source: Federal Highway Administration. “Bridge Technology: Deficient Bridges by State and Highway System.” Retrieved from: www.fhwa.dot.gov/bridge/deficient.htm

Transit Use

Source: U.S. Census Bureau. “American Community Survey.” Summary Tables. Retrieved from: https://www.census.gov/programs-surveys/acs/

Major Market Air Access

Sources: U.S. Bureau of Transportation Statistics. “T-100 Domestic Segment.” Retrieved from: http://www.transtats.bts.gov

U.S. Census Bureau. Population Estimates. “State Population Datasets.” Retrieved from: http://www.census.gov/popest/

Methodology: To develop this metric, 20 cities were chosen as “major markets” in terms of commercial or new technology centers based on their 2012 venture capital funding:

1. San Francisco-Oakland: $6.896 billion (25.6% of the top 100 cities)
3. Boston: $3.101 billion (11.5%)
4. New York City: $2.269 billion (8.4%)
5. Los Angeles: $1.677 billion (6.2%)
6. San Diego: $1.134 billion (4.2%)
7. Seattle: $886 million (3.3%)
8. Austin: $626 million (2.3%)
9. Chicago: $547 million (2.0%)
10. Washington, D.C.: $484 million (1.8%)
11. Philadelphia: $347 million (1.3%)
12. Denver: $264 million (1.0%)
13. Atlanta: $262 million (1.0%)
15. Minneapolis-St. Paul: $256 million (0.9%)
17. Phoenix: $214 million (0.8%)
18. Raleigh-Cary, N.C.: $184 million (0.7%)
19. Pittsburgh: $167 million (0.6%)
20. Provo-Orem, Utah: $162 million (0.6%)

Total nonstop departures from each state to the destination cities were summed by state. Then the state total enplanement figures were divided by state populations. The BWI Baltimore airport was allocated to MD, and IAD Dulles Airport outside Washington, DC and DC Reagan National Airport were allocated to Virginia.

Airport Performance

Source: Bureau of Transportation Statistics. Airline On-Time Statistics and Delay Causes. Retrieved from: http://www.transtats.bts.gov/Fields.asp?table_id=236

Water Quality

Source: U.S. Environmental Protection Agency. Office of Ground Water and Drinking Water. Retrieved from: https://www.epa.gov/ground-water-and-drinking-water/drinking-water-data-and-reports

Energy Reliability

Source: Energy Administration Information. Electric Disturbance Events - Monthly and Annual Summaries. Retrieved from: https://www.eia.gov/electricity/data/eia861/

Digital Connectivity Driver

Broadband Connections

Sources: Federal Communications Commission. “High-Speed Services for Internet Access. Status as of December.” Table 7: High-Speed Lines by Technology. Retrieved from: http://www.fcc.gov/wcb/iatd/comp.html

U.S. Census Bureau. “American Community Survey.” Summary Tables. Retrieved from: https://factfinder.census.gov/faces/nav/jsf/pages/searchresults.xhtml?refresh=t

Broadband Coverage

Source: Federal Communications Commission. “High-Speed Services for Internet Access”. Retrieved from http://www.fcc.gov/wcb/iatd/comp.html

Internet Speed

Source: Akamai. "State of the Internet Report." By request. http://www.akamai.com/stateoftheinternet/?WT.mc_id=soti_banner

Next Generation Internet

Sources: Abilene Network. Retrieved from: http://www.internet2.edu/communities-groups/members/

Rural Internet Access

Source: U.S. Department of Agriculture. “Farm Computer Usage and Ownership Report.” Retrieved from: https://usda.library.cornell.edu/concern/publications/h128nd689?locale=en

Quality of Life Driver

Civic Energy and Harmony Sub-driver

Charitable Giving

Sources: Internal Revenue Service. Individual Tax Statistics. “SOI Tax Stats. Historical Data Tables. Individual Income and Tax Data by State and Size of Adjusted Gross Income.” Retrieved from: https://www.irs.gov/uac/soi-tax-stats-historical-data-tables

U.S. Bureau of Economic Analysis. “Regional Economic Accounts.” Retrieved from: http://www.bea.gov/regional/index.htm

Voter Turnout

Source: The United States Elections Project. George Mason University. Retrieved from http://www.electproject.org/home/voter-turnout/voter-turnout-data

Methodology: Percent of eligible voters' turnout for highest office votes at general elections.

Gender Equity

Source: U.S. Bureau of Labor Statistics. "Current Population Survey." Retrieved from: DataFerrett software

Methodology: The current and previous two years were averaged to balance out any small sample fluctuations associated with this survey data, i.e. 2014 data reflects the average of 2012 to 2014 survey results.

Racial/Ethnic Equity

Source: U.S. Bureau of Labor Statistics. "Current Population Survey." Retrieved from: DataFerrett software

Methodology: see 'Gender Equity' entry above.

Hate Crimes

Source: Federal Bureau of Investigation. "Uniform Crime Reports." Retrieved from: https://ucr.fbi.gov/

Generational Creative Class

Source: U.S. Bureau of Labor Statistics. "Current Population Survey." Retrieved from: DataFerrett software.

Methodology: Ratio of 20-34 year old and 55-79 year old with a college degree relative to total population 20 years and above.

Number of Nonprofits

Sources: National Center for Charitable Statistics. All Registered Nonprofits Table Wizard. Retrieved from: http://nccs.urban.org/sites/all/nccs-archive/html//tablewiz/tw.php

U.S. Census Bureau. Population Estimates. "State Population Datasets." Retrieved from: http://www.census.gov/popest/

Lifestyle and Play Sub-driver

Time to Work

Source: U.S. Census Bureau. "American Community Survey." Summary Tables. Retrieved from: https://www.census.gov/programs-surveys/acs/

Historical Preservation

Source: National Park Service. Federal Preservation Tax Credit data. Retrieved from: http://www.nps.gov/tps/tax-incentives.htm

Leisure Industry Employment

Source: U.S. Bureau of Labor Statistics. "Covered Employment and Wages Program." Retrieved from: http://www.bls.gov/cew/

Methodology: Refers to NAICS codes 487, 711, 712, 713, 6116, 5322, and 4539.

Parkland

Sources: National Association of State Park Directors. “The Annual Information Exchange.” Retrieved by request.

National Park Service. “Listing of Acreages by Park.” Retrieved from: https://irma.nps.gov/Stats/Reports/National

Golf Courses

Source: U.S. Bureau of Labor Statistics. “Covered Employment and Wages Program.” Retrieved from: http://www.bls.gov/cew/

Methodology: Number of establishments under NAICS 71391.

Trails

Source: National Recreational Trails Program. Retrieved from: http://www.americantrails.org

U.S. Census Bureau. Population Estimates. “State Population Datasets.” Retrieved from: http://www.census.gov/popest/

Cultural Institutions

Source: U.S. Bureau of Labor Statistics. “Covered Employment and Wages Program.” Retrieved from: http://www.bls.gov/cew/

Methodology: Number of establishments under NAICS 711 and 712.

Pocketbook Indicators Sub-driver

Urban Cost of Living

Source: C2ER. “Annual Cost of Living Index”

Methodology: The C2ER survey is metropolitan area-based and does not include data for some cities. For this metric, the largest city in each state for which cost of living data is available was chosen as the metric value.

Urban Housing Affordability

Source: National Low Income Housing Coalition. "Out of Reach." Retrieved from: http://nlihc.org/oor

Homeownership Rates

Source: U.S. Census Bureau. “Housing Vacancies and Homeownership Annual Statistics.” Retrieved from: http://www.census.gov/housing/hvs/

Unemployment Rate

Source: U.S. Bureau of Labor Statistics. “Local Area Unemployment Statistics.” Retrieved from: http://www.bls.gov/lau/home.htm

Per Capital Disposable Personal Income

Source: U.S. Bureau of Economic Analysis. “Regional Economic Accounts.” Retrieved from: http://www.bea.gov/regional/index.htm

State and Local Tax Burden

Sources: Tax Foundation. “Tax Freedom Day by State.” Retrieved from: https://taxfoundation.org/publications/facts-and-figures/#previous-publications

U.S. Bureau of Economic Analysis. “Regional Economic Accounts.” Retrieved from: http://www.bea.gov/regional/index.htm

Health and Safety Sub-driver

Lack of Health Insurance

Source: U.S. Census Bureau. “American Community Survey.” Retrieved from: https://www.census.gov/data/tables/time-series/demo/health-insurance/acs-hi.html

Crime Index

Source: Federal Bureau of Investigation. “Uniform Crime Reports.” Retrieved from: https://ucr.fbi.gov/

Law Enforcement Personnel

Source: Federal Bureau of Investigation. “Uniform Crime Reports.” Retrieved from: https://ucr.fbi.gov/

Healthcare Access

Source: U.S. Bureau of Labor Statistics. “Occupational Employment Survey.” Retrieved from: http://www.bls.gov/oes/

Methodology: Percent of people employed in healthcare practitioners and technician occupations.

Clean Air

Source: U.S. Environmental Protection Agency. “AirData by Geography.” Retrieved from: https://www.epa.gov/green-book/green-book-data-download

APPENDIX B:
Michigan Entrepreneurship Score Card Indices/Drivers and Metrics Rankings (2008-2018)

NOTES

* Rankings in this table are updated as of February 5, 2020.
* Greener/lighter shading indicates ranking as a "Top 10" state.
* Redder/darker shading indicates ranking as a "Bottom 10" state.
* Data years that are blank reflect lack of data as of February 5, 2020. Where 2018 year data was not available, data from the last available prior data year was carried forward to calculate ranks for indices and drivers.
* Data sources and methods are provided in Appendix A.

Metrics	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
ENTREPRENEURIAL CHANGE	**47**	**42**	**33**	**10**	**6**	**13**	**29**	**34**	**31**	**23**	**26**
Net Establishment Entrants Increase	41	3	15	5	5	9	44	49	28	7	20
Increase in High Performance Firms	43	42	28	8	11	11	21	3	38	41	44
Proprioter's Income Growth per Propriet	33	35	34	33	13	11	15	21	24	12	16
Small Business Payroll Growth	49	46	38	27	10	22	28	22	25	(n/a)	(n/a)
Small Business Growth	49	46	41	34	41	30	32	34	32	(n/a)	(n/a)
ENTREPRENEURIAL VITALITY	**43**	**33**	**38**	**34**	**13**	**27**	**31**	**29**	**33**	**35**	**36**
Net Establishment Entrants	48	13	46	14	2	22	41	41	19	26	30
Establishment Turnover	20	13	22	24	18	18	23	33	38	38	37
5-Year Establishment Survival	41	45	25	25	9	10	11	11	12	18	20
High Performance Firms	35	30	35	30	26	31	30	19	33	35	24
IPO Awards	32	34	32	36	29	27	22	18	30	31	37
SBIC Awards	35	38	38	37	39	36	37	30	26	23	27
SBIR Awards	21	21	17	17	17	21	20	19	20	22	23
Nonfarm Self-Employment	34	35	30	28	30	31	32	33	37	40	39
STTR Awards	20	18	15	17	16	17	20	19	22	19	19
University/Research Institutions Spinoffs	15	27	24	39	33	39	38	41	39	41	(n/a)
ENTREPRENEURIAL CLIMATE	**41**	**33**	**34**	**28**	**18**	**29**	**23**	**22**	**19**	**17**	**22**
Research & Innovation	**21**	**19**	**19**	**18**	**17**	**20**	**17**	**13**	**12**	**12**	**13**
Federal R&D	21	18	17	20	20	21	20	23	25	28	(n/a)
Industry R&D Performance	6	7	6	5	5	4	3	5	4	4	(n/a)
NSF Funding Rate	15	26	26	21	22	26	9	13	24	20	26
Patent per Worker	8	9	9	9	9	9	9	8	6	5	4
Patents Per R&D Dollar	30	26	30	31	34	34	36	31	32	32	27
Research Institutions Licenses to Small B	18	18	18	18	17	22	17	17	15	15	(n/a)
University R&D Performance	14	9	7	7	7	5	6	5	6	7	7
Research Institutions Royalty/License Inc	13	14	12	15	17	30	28	12	11	12	(n/a)
Entrepreneurial Programs	13	13	14	14	14	9	9	8	9	8	6
Financial & Institutional Capital	***35***	***38***	***34***	***37***	***35***	***40***	***34***	***31***	***28***	***38***	***39***
Bank Commercial and Industrial Lending	19	29	38	37	39	42	42	41	42	41	38
Business Incubators	*36*	*29*	*26*	*21*	*13*	*12*	*11*	*(n/a)*	*(n/a)*	*14*	*(n/a)*
2nd/3rd Stage VentureCapital	29	28	20	32	24	31	29	25	25	27	25
IPO Financing	36	33	29	26	24	32	9	11	7	33	31
Private Small Business Lending	20	22	21	18	18	25	29	28	17	23	30
SBIC Financing	33	34	31	29	28	23	26	20	25	18	33
SBIR Financing	21	22	21	21	20	22	22	22	22	22	25
Seed/Early Stage Venture Capital	15	16	16	28	29	35	29	35	32	27	27
STTR Financing	26	25	18	18	17	19	26	24	27	23	22
General Business Growth	**48**	**39**	**44**	**20**	**9**	**26**	**16**	**19**	**18**	**8**	**13**
Manufacturing Capital Investment Grow	13	14	8	26	18	22	30	45	46	(n/a)	(n/a)
Export Growth	14	15	27	37	35	42	34	23	9	7	(n/a)
Foreign Business Employment Growth	36	1	49	11	3	49	6	30	22	3	(n/a)
Fortune 500	7	9	7	9	9	9	9	10	11	11	12
Green Industries	36	35	36	36	29	28	29	31	33	35	38
Private Business Profit Growth	48	49	40	10	4	14	8	8	12	12	(n/a)
Gross Domestic Product Growth	50	50	47	32	10	17	18	14	14	16	22
Building Permits Growth	49	44	8	3	5	14	20	11	18	4	29
Large Business Payroll Growth	49	49	47	32	8	15	17	14	17	(n/a)	(n/a)
Export-related Jobs	17	17	17	18	21	19	20	17	13	12	(n/a)
Renewable Energy Use	35	37	37	39	34	32	28	29	31	31	32

APPENDIX B:
Michigan Entrepreneurship Score Card Indices/Drivers and Metrics Rankings (2008-2018)

Metrics	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
EDUCATION	**34**	**37**	**29**	**28**	**24**	**28**	**27**	**28**	**27**	**33**	**25**
K-12 Education	***38***	***39***	***39***	***39***	***40***	***40***	***38***	***36***	***35***	***36***	***37***
ACT Score	47	46	43	44	41	40	40	31	6	5	6
Advanced Placement Score	25	26	28	28	28	28	28	28	28	28	27
Public High School Graduation Rate	(n/a)	(n/a)	(n/a)	37	35	36	36	36	40	42	(n/a)
NAEP Mathematics	34	35	36	36	40	40	36	32	32	36	(n/a)
NAEP Reading	34	34	34	33	34	36	34	34	35	35	(n/a)
SAT Performance	(n/a)	(n/a)	(n/a)	(n/a)	(n/a)	(n/a)	(n/a)	(n/a)	43	41	39
Postsecondary Education	***21***	***28***	***14***	***15***	***10***	***14***	***16***	***21***	***22***	***18***	***14***
College Migration	44	43	42	39	35	38	38	36	35	36	37
Four-Year College Costs vs Household In	39	47	29	36	6	17	15	21	20	28	(n/a)
Top Ranked Graduate Program	(n/a)	(n/a)	7	6	11	11	10	7	7	6	7
Other Innovation Degrees	7	9	10	13	13	15	16	18	14	14	10
4Y+ Tech Credentials	8	7	7	7	6	5	6	6	5	7	6
Pre-BA Tech Credentials	18	24	24	28	21	26	28	30	35	29	35
Two-Year College Costs vs Household Inc	20	28	38	31	27	36	30	30	42	21	(n/a)
Top Ranked Undergraduate Program	(n/a)	(n/a)	(n/a)	16	28	22	29	30	32	35	19
WORKFORCE PREPAREDNESS	**12**	**15**	**13**	**9**	**9**	**9**	**11**	**9**	**9**	**9**	**9**
Highschool Diploma Attainment	*28*	*28*	*28*	*25*	*23*	*21*	*24*	*28*	*25*	*22*	*23*
Adult Education	*18*	*19*	*21*	*20*	*24*	*29*	*32*	*37*	*(n/a)*	*(n/a)*	*(n/a)*
Post-secondary pre-BA Attainment	11	10	11	7	4	3	4	8	11	15	16
Bachelor's Degree Attainment	26	28	28	27	28	29	32	30	24	17	20
Hightech Manufacturing Employment	7	9	10	10	6	6	4	5	4	4	4
Hightech Services Employment	12	14	12	12	12	11	11	10	10	10	11
Other Innovation Workers	22	25	27	25	23	26	25	30	32	31	32
Physical Science and Engineering Worke	5	4	6	2	4	4	1	1	1	1	1
Skilled Immigrants	21	21	21	16	17	18	20	21	23	24	20
Technologist and Technician Workers	22	22	22	17	14	16	16	19	20	19	21
BUSINESS COSTS	**44**	**46**	**37**	**40**	**24**	**29**	**26**	**25**	**28**	**32**	**29**
Business Taxes	27	30	19	13	9	8	5	4	1	2	2
State Business Tax Structure	48	48	48	49	8	9	9	10	10	10	13
Energy Costs	29	30	34	34	39	38	37	34	35	37	37
Small Business Health Care Premiums	20	38	29	22	16	16	22	25	34	26	17
Metro Industrial Rents	(n/a)	(n/a)	7	5	2	13	13	14	14	17	16
Unemployment Insurance Costs	50	49	49	49	48	49	47	47	45	46	47
Unemployment Insurance Structure	46	45	45	45	44	44	47	48	47	48	49
UnitLaborCost	44	45	35	37	30	30	34	32	34	37	36
Workers Compensation Premiums	13	24	9	11	8	9	8	8	4	2	(n/a)
Workers' Compensation Costs	23	28	23	19	16	17	17	17	15	14	(n/a)
PRODUCTIVITY & LABOR SUPPLY	**47**	**46**	**46**	**47**	**45**	**45**	**43**	**43**	**42**	**38**	**42**
Prime Working Age Population	34	41	41	43	45	46	45	46	44	45	45
Gross State Product per Job	29	30	28	30	30	30	31	29	24	27	28
Laborforce Participation	41	39	40	43	43	40	39	40	37	14	36
Net Domestic Migration Rate	50	50	50	47	43	42	38	39	31	28	32
Service Sector Productivity	26	25	29	31	32	34	33	34	33	31	31
Manufacturing Value Added per Hour	34	33	30	39	41	39	41	40	39	(n/a)	(n/a)

APPENDIX B:
Michigan Entrepreneurship Score Card Indices/Drivers and Metrics Rankings (2008-2018)

Metrics	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
LEGAL ENVIRONMENT	**35**	**37**	**33**	**30**	**27**	**24**	**26**	**24**	**27**	**26**	**28**
Business Liability Costs	27	31	21	21	19	16	16	9	6	6	(n/a)
Liability System Reputation	30	30	28	27	26	26	24	21	21	27	32
Malpractice Costs	46	46	46	42	40	40	42	42	40	41	40
PHYSICAL INFRASTRUCTURE	**44**	**44**	**48**	**38**	**34**	**30**	**30**	**37**	**28**	**35**	**33**
Airport Performance	27	16	43	31	23	13	14	19	23	22	16
Bridge Quality	(n/a)	43	43	42	39	37	38	40	40	40	41
Energy Reliability	(n/a)	(n/a)	(n/a)	(n/a)	(n/a)	(n/a)	24	20	17	23	20
Highway Quality	40	40	41	40	36	35	38	37	37	38	38
Major Market Air Access	36	35	35	35	34	34	33	31	30	30	31
Transit Use	28	31	32	29	29	28	28	28	29	29	30
Water Systems	(n/a)	(n/a)	(n/a)	3	5	4	6	7	4	8	11
DIGITAL CONNECTIVITY	**36**	**43**	**45**	**44**	**42**	**41**	**44**	**46**	**46**	**44**	**42**
Broadband Connection	41	41	36	34	30	28	39	42	42	28	(n/a)
Broadband Coverage	(n/a)	34	36	37	34	35	36	37	38	33	(n/a)
Internet Speed	18	16	21	19	13	14	12	14	16	(n/a)	(n/a)
Next Generation Internet	47	46	46	46	46	46	47	47	47	48	43
Rural Internet Access	27	26	28	26	22	22	24	25	26	25	(n/a)
QUALITY OF LIFE	**35**	**31**	**35**	**30**	**33**	**27**	**28**	**15**	**16**	**19**	**36**
Civic Energy & Harmony	***35***	***29***	***29***	***36***	***41***	***35***	***40***	***30***	***30***	***30***	***34***
Charitable Giving	22	21	21	22	30	30	32	29	32	34	(n/a)
Generational Creative Class	(n/a)	35	37	38	39	40	36	32	26	20	21
Gender Equity	39	37	38	41	41	37	36	31	26	14	19
Hate Crimes	46	33	35	39	48	42	40	30	32	44	42
Nonprofits	34	33	32	33	33	36	34	33	33	(n/a)	(n/a)
Racial Equity	18	11	9	12	20	14	34	26	23	20	20
Voter Turnout	7	16	21	17	10	12	15	12	13	10	9
Lifestyle & Play	**36**	**28**	**34**	**33**	**34**	**36**	**35**	**31**	**37**	**36**	**36**
Cultural Institutions	43	42	42	42	42	41	40	42	42	42	43
Golf Courses	10	10	10	11	10	11	11	11	12	11	11
Historical Buildings	24	19	24	22	21	28	28	16	31	23	22
Leisure Sector Employment	27	28	34	38	40	38	38	37	39	38	39
Parkland	(n/a)	11	11	11	11	11	11	11	11	11	11
Time to Work	26	30	28	28	28	27	27	27	27	27	24
Trails	33	33	33	29	29	31	30	30	33	33	26
Pocket Bock Indicators	***36***	***37***	***33***	***21***	***19***	***26***	***20***	***9***	***18***	***23***	***15***
Homeownership Rates	3	4	6	6	2	5	3	2	3	2	3
Per Capita Disposable Income	38	38	39	37	39	38	38	36	33	33	32
State and Local Tax Burden	(n/a)	(n/a)	(n/a)	(n/a)	24	26	28	26	32	32	24
Unemployment Rate	50	50	49	46	43	46	46	30	29	33	31
Urban Cost of Living	24	26	21	13	22	18	16	16	14	18	13
Urban Housing Affordability	24	22	22	24	22	23	22	19	23	24	23
Health & Safety	***33***	***36***	***35***	***34***	***28***	***13***	***13***	***13***	***13***	***18***	***38***
Clean Air	32	32	32	32	32	17	18	22	25	29	36
Crime Index	26	27	25	22	21	21	19	16	15	15	16
Healthcare Access	25	26	26	24	24	22	25	25	25	24	21
Lack of Health Insurance	17	13	19	16	14	14	13	12	11	7	8
Law Enforcement Personnel	34	37	37	42	43	44	41	43	38	40	41

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