11-5-2024

Economic Vitality Index: Mapping Michigan's 83 Counties

Sevrin Williams
W.E. Upjohn Institute for Employment Research, SWilliams@upjohn.org

Iryna V. Lendel
W.E. Upjohn Institute for Employment Research, lendel@upjohn.org

Economic Vitality Index: Mapping Michigan's 83 Counties

Authors

Sevrin Williams, *W.E. Upjohn Institute for Employment Research*
Iryna V. Lendel, *W.E. Upjohn Institute for Employment Research*

Upjohn Author(s) ORCID Identifier

[iD] https://orcid.org/0009-0008-4840-887X

[iD] https://orcid.org/0009-0001-0436-1618

Economic Vitality Index

Mapping Michigan's 83 Counties

Prepared by
Sevrin Williams
Iryna V. Lendel

W.E. Upjohn Institute for
Employment Research
300 South Westnedge Ave.
Kalamazoo, MI 49007
269-343-5541

October 2024

W.E. UPJOHN
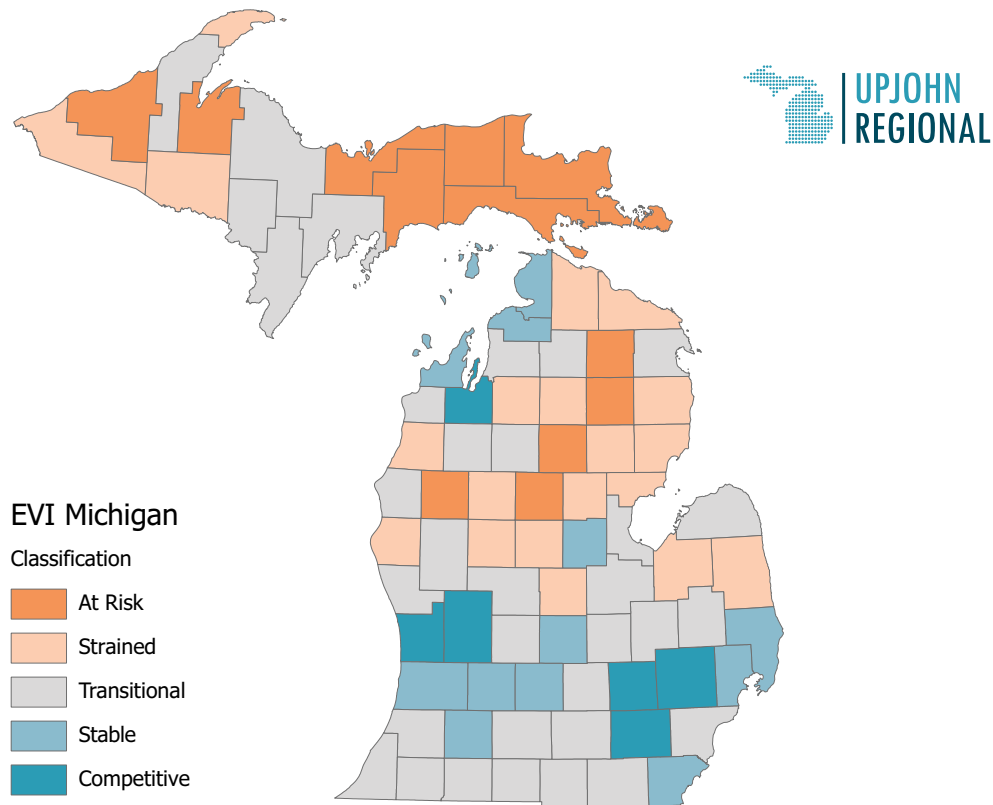INSTITUTE
FOR EMPLOYMENT RESEARCH

Introduction

Since 2020, several major shocks have impacted Michigan's 83 counties. Among them are the COVID-19 pandemic, inflation, workforce shortage, and a rapidly emerging green economy, including the development of electric vehicles and energy storage. All of these shocks have affected businesses and individuals in their daily lives. Each county has unique resources and culture, and their economies are at different stages of development when the shocks hit. The uniqueness of each place impacts how a local community can weather economic hardships and thrive in booms. Moreover, there is no silver bullet to shape economic development policy in a county to respond to economic changes. This study aims to illustrate the level of prosperity in the regional economy for each of Michigan's 83 counties with the Economic Vitality Index (EVI).[1] This index is computed as a composite score and considers a range of variables that, according to prior research, are related to economic vitality. The EVI score indicates how well a county is faring, and one can compare county scores to each other and, with future updates of this index, across time.

Although this index does not include all desired measures due to data availability and quality, the EVI score is useful for illustrating general economic well-being. By identifying areas in need of improvement, the index establishes a baseline for tracking counties' future economic performance over time. It also establishes the baseline for tracking the changes in its underlying variables. To improve economic performance, each county needs to craft a policy tailored to its unique culture, workforce, businesses, physical and infrastructural assets, and the community's long-term vision. The baseline EVI uses 2022 measures—the latest real data available on most of the variables in 2024. The score and its underlying variables are expected to be updated annually.

Methodology and Variables

Based on prior research, we considered over 25 variables for calculating the EVI. We selected seven measures to construct the EVI after reviewing the consensus in the literature, examining the actionable potential of variables, conducting exploratory factor analysis, and investigating the performance of the variables in confirmatory factor analysis. The loadings calculated in the confirmatory factor analysis determined each variable's importance (weights) in the composite EVI. The EVI score is calculated by multiplying each variable (after being standardized) by its assigned weight and then adding

EVI Michigan

Classification

- At Risk
- Strained
- Transitional
- Stable
- Competitive

---

[1] This study is inspired by Ellerbrock et al. (2020) and the Vitality Index developed by the Brookings Institution's Hamilton Project.

those results together.[2] For this version of Michigan's EVI, the seven selected variables account for about 96 percent of the variation in the data. Each variable and its weight in the EVI are described below.

Variables Composing the EVI Index

- **Prime-age employment-to-population ratio** (16.1 percent) (Bartik 2020, 2023). This variable, calculated with the U.S. Census's American Community Survey (ACS) data,[3] is the percent of people aged 25–54 who are employed, relative to the total population in that age group. This ratio is often used as an indicator of labor market health, focusing on individuals in their prime working years.

- **Median household income** (18.1 percent) (Case 2001; Chiripanhura 2011). This variable, with data sourced from the ACS,[4] is the middle point of household incomes in a county, meaning half of the households earn more than that amount and half earn less. Median household income includes earnings from all members of a household, whether from wages, salaries, or other sources like investments, Social Security, and welfare programs.

- **Percent of the employed working in a priority Michigan sector** (10.9 percent) (Kalemli-Ozcan, Sørensen, and Yosha 1999; Murshed and Serino 2011; Kemeny and Storper 2015). This variable is calculated using Moody's Economy.com data and indicates the percent of the employed working in a sector that the state of Michigan has a relatively high regional gross product (RGP) contribution compared to the United States. Michigan's priority sectors are determined by evaluating the location quotient[5] (LQ) of RGP for aggregated industry sectors (identified by the Bureau of Labor Statistics as major sectors).

- **Three-year average annual population growth rate** (13.6 percent) (Wilmoth, Menozzi, and Bassarsky; 2022; Gascon and Walstrum 2023). This variable, calculated from the ACS,[6] measures the average annual percent increase or decrease in a population over a three-year period. It is calculated by averaging the annual growth rates for the current and previous two years. This rate provides a smoother view of population trends, minimizing the impact of short-term fluctuations and illustrating longer-term growth or decline in a county.

- **Property tax revenue** (7.4 percent) (Bartik 1992; Coombs, Sarafoglou, and Crosby 2012). This variable, with state-sourced data,[7] indicates the amount of revenue each county government collects from taxes levied on real estate properties, such as land, homes, and buildings. Property owners are required to pay these taxes based on the assessed value of their property. The revenue generated from property taxes is often used to fund local public services like schools, infrastructure, law enforcement, and emergency services.

- **Percent of adults 25 and older with an associate degree or higher** (16.8 percent) (Teichler and Kehm 1995; Bratti et al. 2004). This variable, calculated using ACS data,[8] is the proportion of people aged 25 and older in a county population who have completed at least an associate degree. This statistic includes those with associate, bachelor's, master's, doctoral, or professional degrees, and is often used as a measure of the educational attainment level of a community or region.

- **Unemployment rate** (17.2 percent) (Nichols, Mitchell, and Lindner 2013; Gedikli et al. 2023). This variable, using data from the Bureau of Labor Statistics,[9] indicates the percentage of the labor force that is actively seeking work but is currently unemployed. It is calculated by dividing the number of unemployed individuals by the total labor force (which includes both employed and unemployed people actively seeking jobs) and then multiplying by 100. The unemployment rate is an important indicator of labor market health and economic performance.

---

[2] It should be noted that the factor analysis was also conducted on standardized variables with mean 0 and standard deviation of 1. To prevent outliers from influencing analysis, both the factor analysis used to determine weights and the calculation of the EVI score was done using observations that were limited to 2 standard deviations above or below 0.
[3] Tables B23001 and S0101 with five-year estimates.
[4] Table DP03 with five-year estimates.
[5] A location quotient (LQ) measures a region's industrial specialization relative to a larger geographic unit (usually the nation). An LQ is computed as an industry's share of a regional total divided by the industry's share of the national total for the same statistic. It is usually calculated based on employment (sometimes also using gross domestic product or earnings). An LQ greater than 1 indicates that the industry is more concentrated locally than it is nationally, suggesting a local specialization, while an LQ less than 1 suggests a lower concentration than the national average.
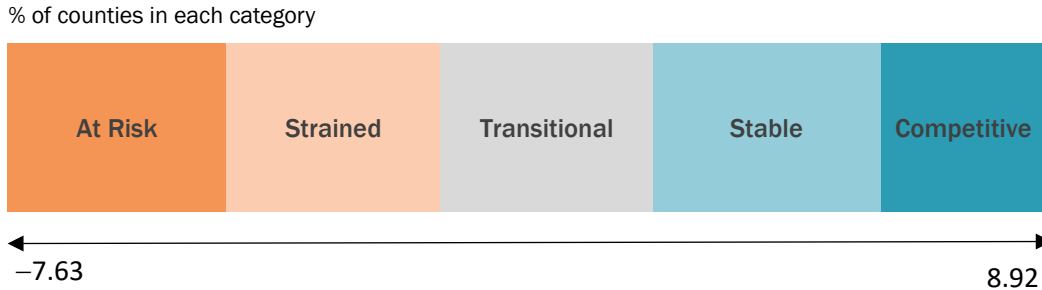[6] Table S0101 with five-year estimates.
[7] "Dashboard_Revenue_MI" from data.michigan.gov under the local government section.
[8] Table S1501.
[9] Local Area Unemployment Statistics, Not seasonally Adjusted; Series Id: LAUCN26***0000000006.

Categories of the EVI

EVI Range of Cutoffs

% of counties in each category

At Risk	Strained	Transitional	Stable	Competitive

−7.63   8.92

The EVI index score ranges from −7.63 to 8.92, where a higher score suggests relatively better performance and economic prosperity, and a lower score suggests that a county may be facing hardships. The range of EVI scores has been divided into five intervals using natural breaks in the distribution; these five intervals identify economic vitality from highest to lowest, as shown in the chart above.

Competitive counties are top performers with the highest EVI scores (> 6.28). This group includes 6 counties (Table 1). These counties are characterized by their high ratings in all measures, and they are also exceptionally high in the prime-age employment-to-population ratio, median household income, proportion of adults 25 and older holding at least an associate degree. Additionally, these counties have very low unemployment rates.

Stable counties have an above-average EVI score and perform relatively well (> 2.65 and < 6.28). This category includes 12 counties, which are characterized by their high ratings in almost all measures: prime-age employment-to-population ratio, median household income, and the proportion of the adult population 25 and older holding at least an associate degree. These counties, however, did not perform as well in property tax revenues, illustrating an average value for this indicator.

Transitional counties have neither a high nor low EVI score and might be at a crossroads for their economic performance (> −0.73 and < 2.65). This is the largest group, containing 33 counties. These counties can improve their economic well-being and join higher-performing counties, or they can regress and become classified as economically strained or even at risk. Although most of these counties' measures are just about average, many counties in this group have a slightly higher than average prime-age employment-to-population ratio and employment in priority Michigan sectors. These counties also have slightly lower-than-average property tax revenues and unemployment rates. Transitional counties

closer to the Stable cutoff tend to have slightly above-average population growth and the share of adults 25 and older holding at least an associate degree. Transitional counties closer the Strained cutoff tend to have slightly below-average population growth and a lower share of adults 25 and older holding at least an associate degree.

Strained counties have EVI scores lower than the average but higher than the scores of At-Risk counties (> −4.14 and < −0.73). This category has 20 counties, and they are just below the average in almost every measure, but especially so in median household income.

At Risk counties are those with the lowest EVI scores (< −4.14). These 12 counties illustrate below-average economic performance. Counties in this category typically have much lower values in almost every measure, especially in prime-age employment-to-population ratios and lower median household incomes. These counties additionally have very high unemployment rates.

Count of Counties by Classification

Classification	Count
At Risk	12
Strained	20
Transitional	33
Stable	12
Competitive	6
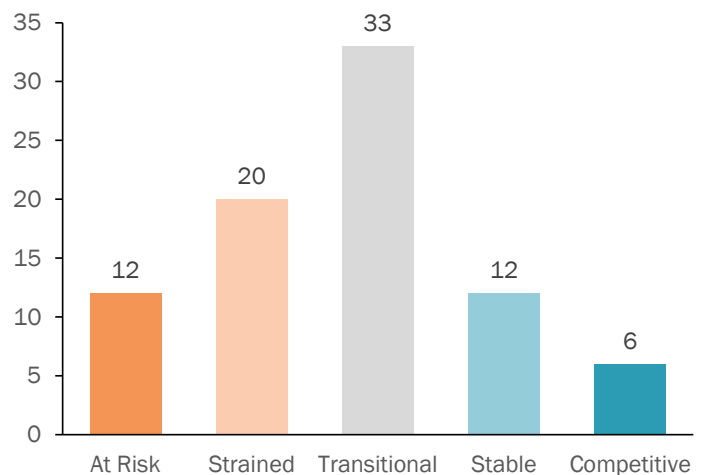
Table 1 Variables and Michigan Economic Vitality Index Score

County	Classification	Prime-age emp. to pop. ratio	Median household income ($)	Emp. in strong MI sector (%)	Annual pop. growth 3yr avg. (%)	Property tax revenue ($)	Associates or higher (%)	Unemployed rate (%)
Alcona	Strained	0.72	50,295	55.7	−0.4	9,675,580.00	29.4	7.0
Alger	At Risk	0.60	55,528	36.4	−1.0	7,831,860.84	29.1	7.4
Allegan	Stable	0.80	75,543	57.7	1.1	74,222,646.50	32.7	3.7
Alpena	Transitional	0.77	49,133	52.1	0.5	16,581,294.02	31.2	5.0
Antrim	Transitional	0.83	68,850	36.3	0.7	25,924,313.47	42.2	5.8
Arenac	Strained	0.74	53,487	52.6	−0.1	11,090,061.50	26.7	7.4
Baraga	At Risk	0.61	51,911	31.3	−0.7	6,411,545.97	26.3	7.3
Barry	Stable	0.80	75,182	50.7	1.1	33,316,540.00	32.8	3.9
Bay	Transitional	0.79	57,887	54.9	−0.1	58,435,502.23	32.3	5.2
Benzie	Transitional	0.78	71,327	34.4	0.8	18,803,451.00	41.9	5.3
Berrien	Transitional	0.77	60,379	55.4	0.0	117,791,826.12	40.3	4.6
Branch	Transitional	0.73	60,600	47.9	1.0	23,561,936.58	25.6	4.1
Calhoun	Transitional	0.77	58,191	54.5	0.0	68,111,656.96	31.9	4.8
Cass	Transitional	0.77	65,183	49.2	0.1	25,867,145.00	32.3	4.5
Charlevoix	Stable	0.86	69,764	47.8	0.0	33,366,165.15	43.8	4.7
Cheboygan	Strained	0.73	59,557	36.0	0.4	22,080,671.50	32.9	8.3
Chippewa	At Risk	0.67	58,408	29.3	−0.9	23,391,890.74	31.9	6.4
Clare	At Risk	0.65	47,816	48.3	0.4	17,425,723.00	22.5	7.0
Clinton	Stable	0.84	82,594	45.6	0.4	45,055,753.00	44.8	3.9
Crawford	Strained	0.74	57,998	58.1	−1.7	10,788,527.00	31.8	6.6
Delta	Transitional	0.74	53,852	56.3	0.8	20,848,686.59	34.5	5.6
Dickinson	Transitional	0.81	59,651	47.7	0.7	23,793,538.01	37.7	4.3
Eaton	Stable	0.84	77,158	46.7	−0.1	64,345,060.96	41.4	4.4
Emmet	Stable	0.84	69,690	45.1	1.0	38,633,143.00	48.1	5.6
Genesee	Transitional	0.74	58,594	52.7	−0.2	208,881,836.50	33.7	5.6
Gladwin	Strained	0.71	53,717	41.3	0.2	15,133,021.07	24.6	6.1
Gogebic	Strained	0.75	47,913	44.4	−1.0	11,152,607.72	39.0	5.2
Grand Traverse	Competitive	0.84	75,553	53.7	1.1	78,596,953.00	49.6	3.8
Gratiot	Strained	0.64	57,934	53.9	0.5	24,851,380.55	26.9	4.6
Hillsdale	Transitional	0.76	59,425	53.7	0.0	20,862,840.96	27.9	4.6
Houghton	Transitional	0.78	52,736	40.3	1.3	20,277,326.00	44.2	4.8
Huron	Transitional	0.79	54,475	45.5	0.1	38,191,854.37	28.2	4.7
Ingham	Transitional	0.80	62,548	39.5	−0.9	233,529,819.18	49.9	4.4
Ionia	Transitional	0.73	71,720	39.4	1.2	22,067,806.34	27.0	3.9
Iosco	Strained	0.72	46,224	50.1	0.2	17,792,216.12	26.6	6.4
Iron	Strained	0.73	52,241	43.1	1.3	10,885,191.28	29.9	6.0
Isabella	Strained	0.77	52,638	37.1	−2.7	35,256,820.79	39.6	4.9
Jackson	Transitional	0.69	62,581	57.1	0.4	71,158,489.00	33.0	4.5
Kalamazoo	Stable	0.81	67,905	56.1	−0.2	171,363,133.00	49.7	3.9
Kalkaska	Strained	0.75	56,380	32.8	0.7	12,917,095.00	25.5	6.0
Kent	Competitive	0.83	76,247	57.1	0.5	369,281,175.07	47.8	3.5
Keweenaw	Strained	0.73	55,560	19.6	−0.4	2,742,561.00	50.1	6.1
Lake	At Risk	0.56	45,946	42.3	1.2	12,649,264.00	18.5	7.1

Table 1 (continued)

County	Classification	Prime-age emp. to pop. ratio	Median household income ($)	Emp. in strong MI sector (%)	Annual pop. growth 3yr avg. (%)	Property tax revenue ($)	Associates or higher (%)	Unemployed rate (%)
Lapeer	Transitional	0.77	75,402	47.8	0.2	33,819,132.00	29.9	4.3
Leelanau	Stable	0.80	82,345	32.6	1.2	27,975,923.00	58.2	4.3
Lenawee	Transitional	0.74	65,484	54.2	0.3	50,948,528.02	32.5	4.7
Livingston	Competitive	0.83	96,135	53.5	0.8	78,199,985.45	48.0	2.8
Luce	At Risk	0.44	51,015	31.9	−4.8	3,288,722.00	29.0	6.2
Mackinac	At Risk	0.72	60,620	29.0	0.2	16,851,649.00	33.5	9.1
Macomb	Stable	0.80	73,876	54.5	0.3	607,028,331.12	37.5	3.7
Manistee	Strained	0.69	59,467	40.0	0.8	19,362,427.13	32.3	5.9
Marquette	Transitional	0.79	63,115	44.9	−0.2	69,383,765.63	45.1	5.0
Mason	Transitional	0.79	60,744	52.0	0.3	27,320,678.63	37.1	5.3
Mecosta	Strained	0.73	54,132	46.6	−2.4	18,350,888.00	32.7	5.5
Menominee	Transitional	0.81	54,074	52.7	0.5	15,761,690.88	28.9	4.3
Midland	Stable	0.80	73,643	52.1	0.1	46,715,318.30	47.3	4.3
Missaukee	Transitional	0.76	57,667	51.0	0.1	8,637,350.60	27.9	5.1
Monroe	Stable	0.77	72,573	51.9	1.1	90,401,740.00	34.4	4.8
Montcalm	Transitional	0.71	61,250	50.4	1.8	27,828,586.28	24.3	4.5
Montmorency	At Risk	0.71	46,345	54.2	0.0	7,630,498.45	25.5	8.2
Muskegon	Transitional	0.73	61,347	62.7	0.5	80,746,693.00	32.8	5.1
Newaygo	Transitional	0.75	59,065	52.7	1.2	23,662,578.00	27.8	4.7
Oakland	Competitive	0.83	92,620	44.7	0.5	884,314,043.61	57.8	3.0
Oceana	Strained	0.76	60,691	44.2	0.4	22,240,202.00	29.9	6.6
Ogemaw	Strained	0.68	50,377	58.1	−0.1	12,053,580.86	26.1	7.0
Ontonagon	At Risk	0.75	48,316	42.1	−0.1	6,340,571.09	26.9	7.5
Osceola	Strained	0.71	54,875	47.4	−0.4	12,669,532.00	26.3	4.7
Oscoda	At Risk	0.72	48,692	35.0	0.1	6,550,755.00	21.6	7.9
Otsego	Transitional	0.80	62,865	55.4	1.0	19,057,215.62	37.4	5.4
Ottawa	Competitive	0.86	83,932	60.7	1.1	160,017,904.75	46.6	3.3
Presque Isle	Strained	0.73	55,986	35.7	1.0	8,254,118.29	32.0	7.7
Roscommon	At Risk	0.71	49,898	47.5	−0.4	20,494,388.00	30.3	8.5
Saginaw	Transitional	0.75	56,579	54.3	−0.3	103,566,843.17	34.4	5.6
Saint Clair	Stable	0.78	66,887	57.5	0.2	106,028,847.00	32.3	3.9
Saint Joseph	Transitional	0.76	62,281	64.0	0.0	29,386,436.67	27.5	4.3
Sanilac	Strained	0.76	55,740	54.6	−0.4	26,671,211.75	25.3	5.3
Schoolcraft	At Risk	0.72	55,071	31.8	0.1	5,329,875.46	30.5	7.8
Shiawassee	Transitional	0.80	62,498	51.5	−0.1	33,231,609.00	30.9	4.8
Tuscola	Strained	0.76	59,815	44.0	0.2	35,452,718.06	25.4	5.4
Van Buren	Transitional	0.78	65,531	38.8	0.1	53,722,398.42	32.3	5.1
Washtenaw	Competitive	0.80	84,245	33.5	0.3	373,830,928.00	64.3	3.6
Wayne	Transitional	0.72	57,223	52.3	0.5	1,457,650,465.70	35.0	4.6
Wexford	Transitional	0.76	58,652	55.8	0.5	19,764,590.00	30.1	4.9

SOURCE: U.S. Census American Community Survey 5-Year Estimates,2022; Moody's Economy.com, 2022; Data.Michigan.Gov, 2022; U.S. Bureau of Labor Statistics LAUS, 2022; Upjohn Regional calculations.