



Job openings and labor turnover trends for Midwestern states in 2018

By Kim Riley, Eric Nezamis, and Montgomery McCarthy

The Midwest is known for its vast farmlands and manufacturing—both sprawling fields and major cities—but what are some of the labor market trends that set this geographical region apart? The Bureau of Labor Statistics [Job Openings and Labor Turnover Survey](#) (JOLTS) program publishes estimates on job openings, hires, and separations. JOLTS estimates can provide insights into labor market dynamics, such as labor demand and labor turnover that other employment measures cannot. In 2019, the JOLTS program published [JOLTS experimental state estimates](#) for the first time.¹ The JOLTS experimental state estimates offer valuable information that can help us better understand state-level economies and allow for comparisons between states, regions, and the nation. This **Beyond the Numbers** article features experimental JOLTS estimates on states in the Midwest region.² In this

article, we explore trends in a number of measures—job openings, hires, separations (including quits, layoffs, and discharges), labor churn, fill rates, and unemployment—that can give us a deeper understanding of business cycles and labor demand in the Midwest and help businesses and workers make better informed decisions. This article reveals ways that data users can use these estimates to evaluate labor demand and labor turnover at regional and state levels.

Unique labor patterns in the Midwest region

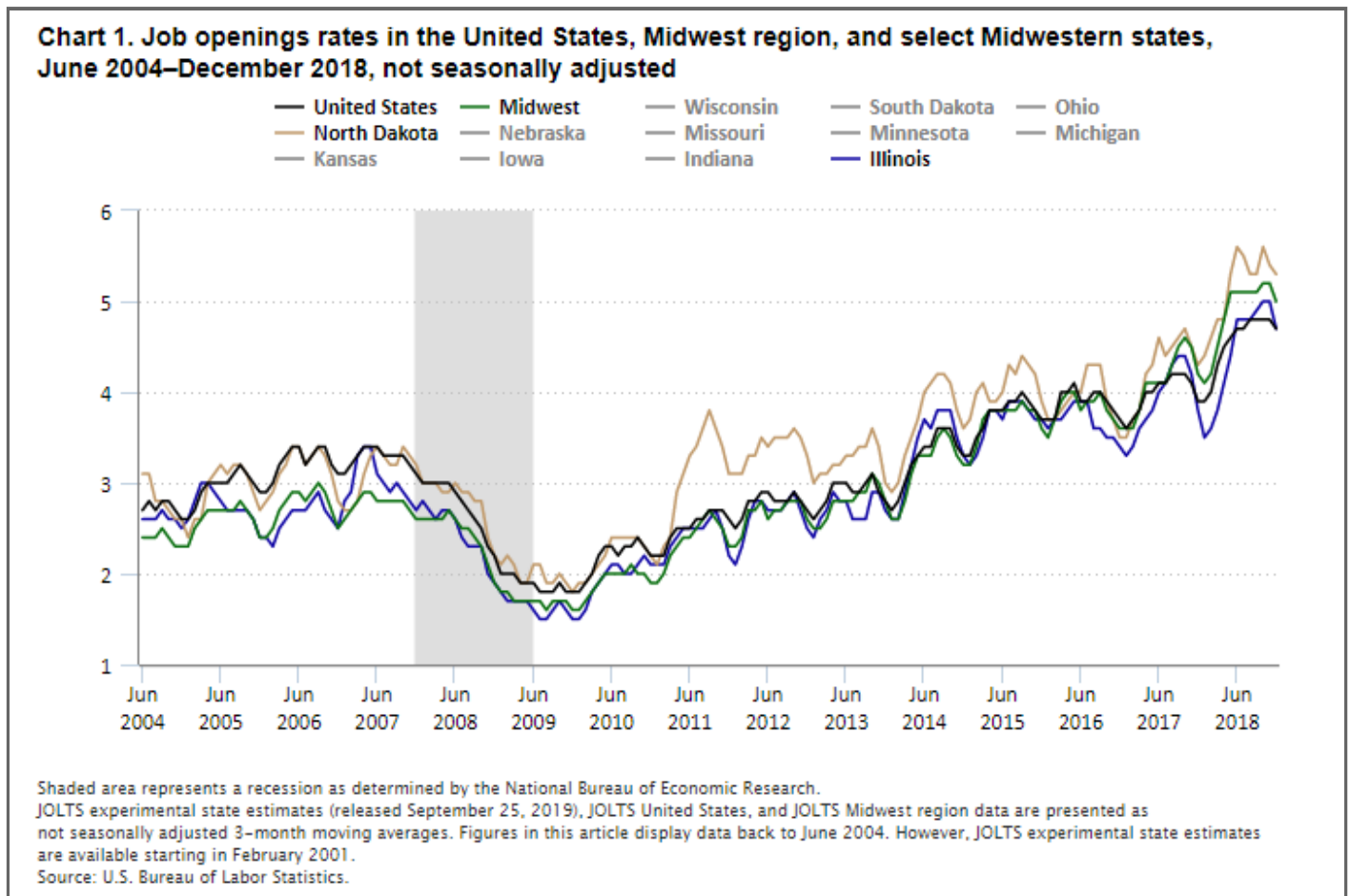
Labor force dynamics in each state can vary widely. Each state in the United States exhibits its own unique labor patterns because of variations in geography; climate; major industries; demographics such as education and age; and other factors. Although neighboring states may have different labor patterns, there are often traits shared by states in the same geographic region. For this discussion, we will focus on states in the Midwest region as classified by the U.S. Census Bureau: Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota, and Wisconsin.³

Of the four census regions, the Midwest has a low population density—the second lowest number of people living per square mile.⁴ In fact, the Midwest is only 24 percent of the most densely populated Northeast region when you compare the number of people per total square mile.

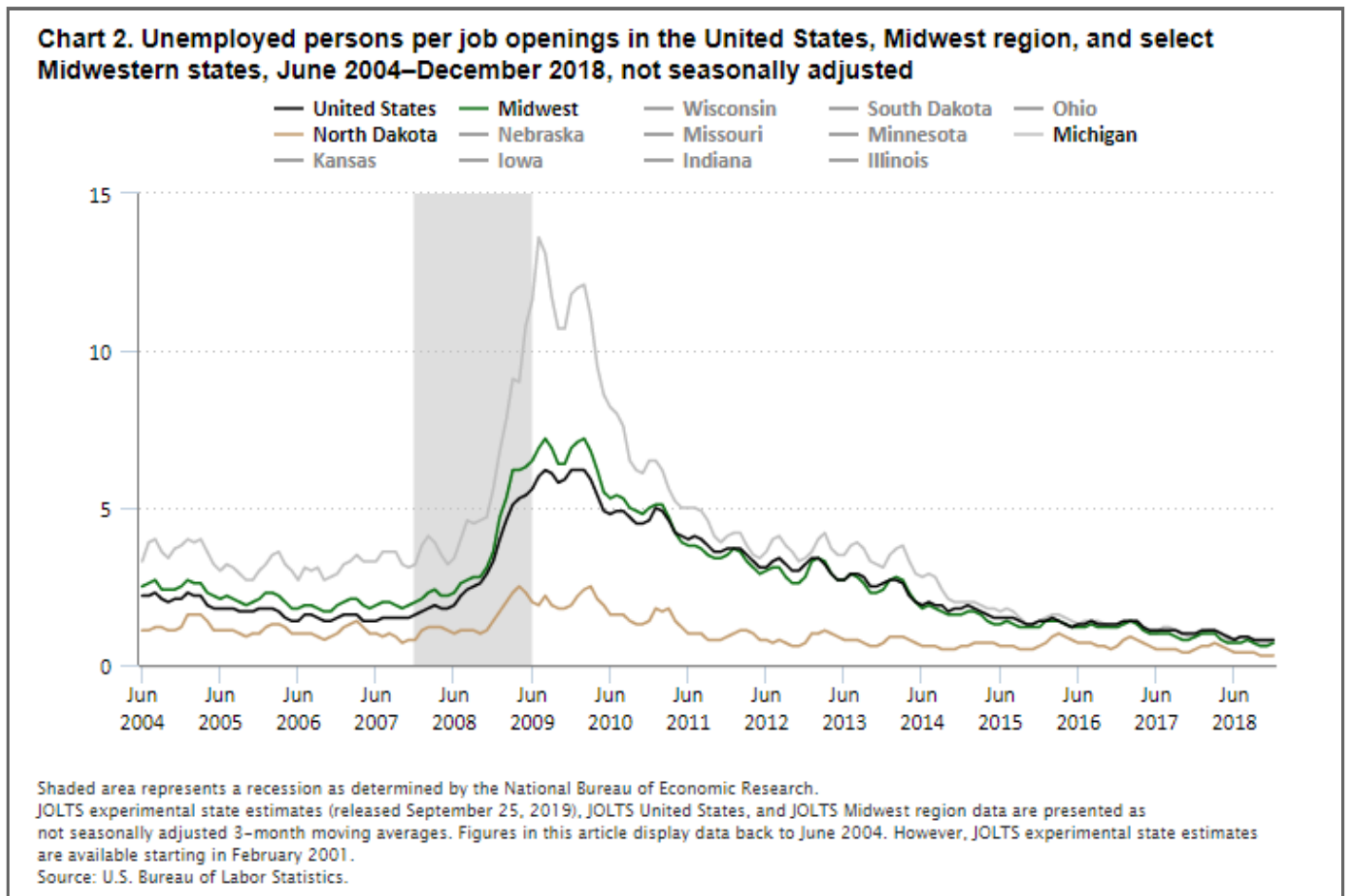
For 11 of the 12 Midwestern states, trade, transportation, and utilities was the major industry with the largest number of employees as of December 2018.⁵ This is notable as no other region had such an overwhelming majority of one industry making up the top-employing industrial sector as of December 2018. Although the Midwest has a distinct industrial composition, states within the region have large variations in population and employment, resulting in differing labor market patterns between states. For instance, in 2018, Illinois's annual average employment level was almost 14 times that of North Dakota and South Dakota.⁶ The 12 states in the Midwest also vary in climate and geography, so some states exhibit more seasonal employment patterns than others. These differences are reflected in the JOLTS experimental state estimates.

Trends in job openings

JOLTS defines job openings as all positions that are open on the last business day of the month. Job openings measure unmet labor demand in the labor market. Chart 1 shows job openings rates in the United States, Midwest region, and Midwestern states. All states in the Midwest region experienced series-high job openings rates in 2018, but a difference in trends can be seen between Illinois, Kansas, and Missouri.⁷ At the end of December 2018, Illinois had the lowest job openings rate in the Midwest, while Kansas and Missouri both had the highest. For the period April 2011 through December 2018, job openings rates in North Dakota have generally trended higher than both the Midwest region and the United States.



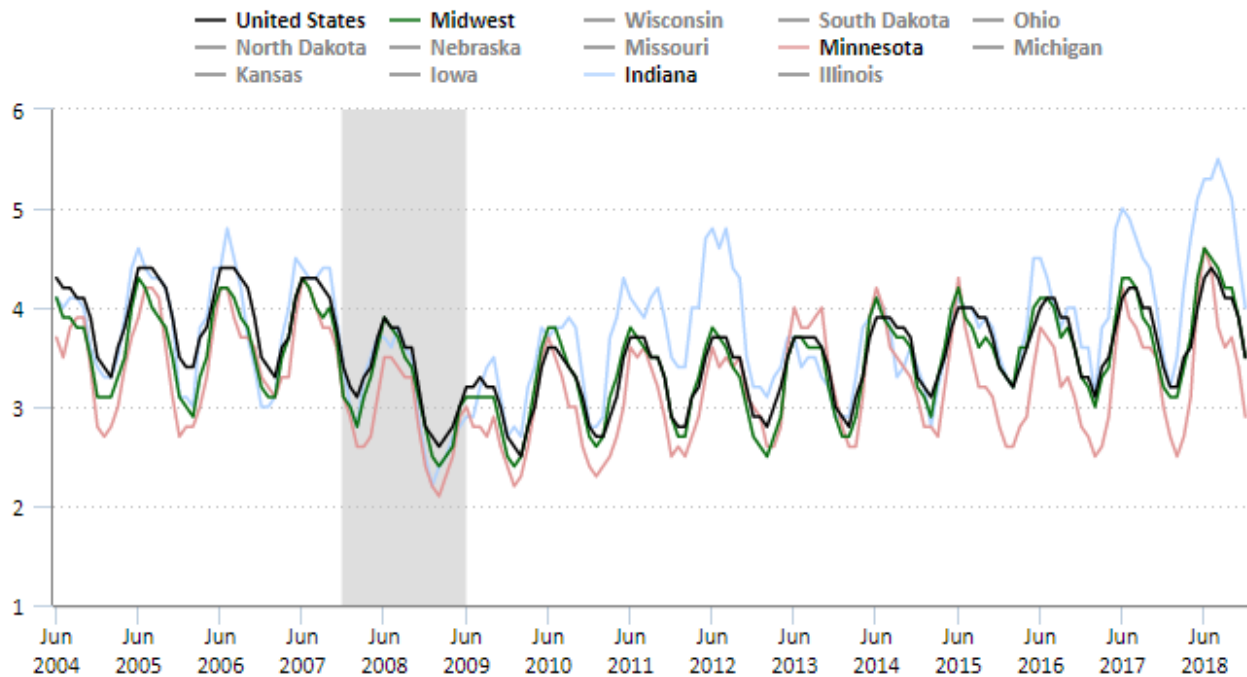
JOLTS experimental state estimates allow for the comparison of unemployment (labor supply) to job openings (labor demand) at the state level. The number of unemployed persons per job opening factors in both the supply of unemployed persons and the demand of employers.⁸ The number of unemployed persons per job opening is a ratio of the level of unemployed persons, as published by the Current Population Survey (CPS), and the level of job openings. A ratio of 1.0 means there is a job for every unemployed person. Lower ratios signal tighter labor markets, with firms having more job openings than there are people available to work. Higher ratios indicate there are more unemployed people competing for each job opening. Although states in the Midwest had similar ratios throughout 2018, differences emerged during and after the Great Recession.⁹ Among the Midwestern states, Michigan had the highest ratio of unemployed persons per job opening, at 13.6 in July 2009. North Dakota had the lowest average unemployed persons per job opening ratio in the region for November 2018, at 0.3 unemployed persons per job opening. (See chart 2.) All states in the Midwest were below 1.0 unemployed persons per job opening in December 2018, indicating there were more available jobs than unemployed people.



Trends in hiring

JOLTS defines hires as all additions to the payroll during the month. As chart 3 shows, hires rates in the Midwest region were generally in line with the U.S. average for most of the JOLTS series. However, not all states in the Midwest trend equally with the U.S. average. Since 2016, Indiana has had above average hires rates in the summer months, increasing more each year. In contrast, Minnesota had fallen below the U.S. average, particularly from 2015 through 2018. The difference is more clearly seen during the winter months for Minnesota. Chart 3 illustrates how aggregate regional JOLTS estimates do not always reveal the large seasonal patterns and differences that some states experience, nor do they always show the divergences from one state having greater highs and another state experiencing greater lows.

Chart 3. Hires rates in the United States, Midwest region, and select Midwestern states, June 2004–December 2018, not seasonally adjusted



Shaded area represents a recession as determined by the National Bureau of Economic Research. JOLTS experimental state estimates (released September 25, 2019), JOLTS United States, and JOLTS Midwest region data are presented as not seasonally adjusted 3-month moving averages. Figures in this article display data back to June 2004. However, JOLTS experimental state estimates are available starting in February 2001. Source: U.S. Bureau of Labor Statistics.

Trends in separations

Trends in separations often mirror the trends in hires. States with higher seasonal hiring patterns, like South Dakota, also tend to exhibit higher seasonal separations patterns. JOLTS defines separations as the number of employees separated from the payroll during the month. Total separations are composed of quits, layoffs and discharges, and other separations. Other separations are not published with the release of experimental state estimates as they are a minor portion of total separations.

Quits, a component of total separations, are voluntary separations initiated by the employee. Quits can show employee confidence in the labor market. Employees tend to quit their jobs more frequently when they are confident they can find another one. At the U.S. level, quits increased by 6 percent from 2017 to 2018, with the Midwest region increasing by 11 percent. Table 1 shows that quits in all Midwestern states increased over the year. The majority of Midwestern states increased quits by double digits over the year. Indiana and Michigan had the largest increases in quit levels between 2017 and 2018 at 22 percent and 19 percent, respectively.

Table 1. Quits levels in the United States, Midwest region, and Midwestern States in 2017 and 2018, not seasonally adjusted, levels in thousands

Area	Level by year		Over-the-year change
	2017	2018	Percent

See footnotes at end of table.

Table 1. Quits levels in the United States, Midwest region, and Midwestern States in 2017 and 2018, not seasonally adjusted, levels in thousands

Area	Level by year		Over-the-year change
	2017	2018	Percent
United States	37,529	39,876	6.3
Midwest	8,067	8,957	11.0
Illinois	1,572	1,578	0.4
Indiana	829	1,010	21.8
Iowa	357	398	11.5
Kansas	376	418	11.2
Michigan	1,032	1,227	18.9
Minnesota	628	671	6.8
Missouri	732	790	7.9
Nebraska	260	297	14.2
North Dakota	116	128	10.3
Ohio	1,406	1,594	13.4
South Dakota	111	127	14.4
Wisconsin	650	728	12.0

Note: JOLTS experimental state estimates (released September 25, 2019), JOLTS United States, and JOLTS Midwest region data are presented as not seasonally adjusted 3-month moving averages. States within the region do not add to total due to rounding.

Source: U.S. Bureau of Labor Statistics.

Layoffs and discharges are involuntary separations initiated by the employer. At the U.S. level, layoffs and discharges increased by 1 percent from 2017 to 2018. However, during this time the Midwest region experienced a 3-percent decrease in layoffs and discharges. Within the Midwest region, Missouri, Kansas, and Michigan experienced the largest percent decreases in layoffs and discharges from 2017 to 2018. Indiana, Ohio, and South Dakota saw the largest percent increases in layoffs and discharges from 2017 to 2018. (See table 2.)

Table 2. Layoffs and discharges levels in the United States, Midwest region, and Midwestern states in 2017 and 2018, not seasonally adjusted, levels in thousands

Area	Level by year		Over-the-year change
	2017	2018	Percent
United States	21,597	21,846	1
Midwest	4,941	4,769	-3
Illinois	978	906	-7
Indiana	485	549	13
Iowa	232	216	-7
Kansas	223	197	-12
Michigan	699	617	-12
Minnesota	397	386	-3
Missouri	464	386	-17
Nebraska	157	147	-6
North Dakota	78	73	-6
Ohio	735	786	7
South Dakota	69	73	6
Wisconsin	418	428	2

See footnotes at end of table.

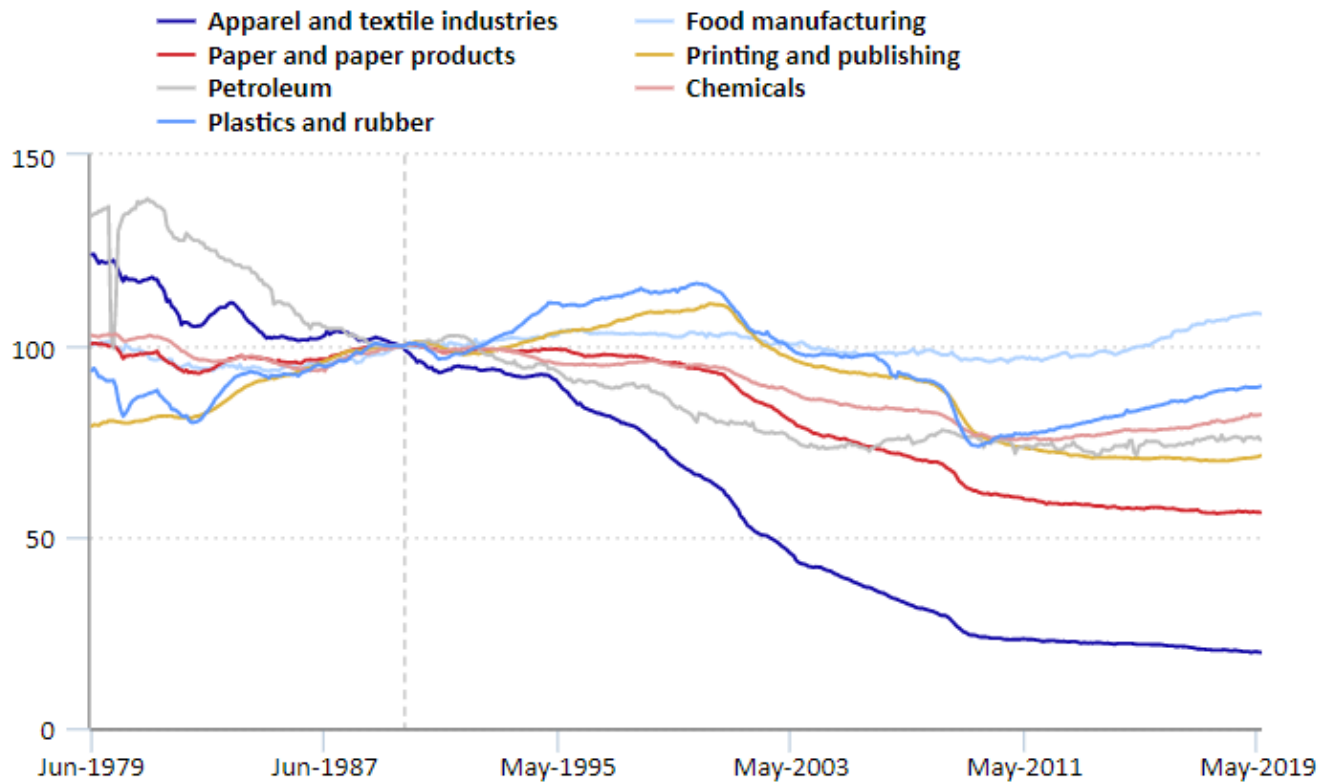
Note: JOLTS experimental state estimates (released September 25, 2019), JOLTS United States, and JOLTS Midwest region data are presented as not seasonally adjusted 3-month moving averages. States within the region do not add to the total due to rounding.

Source: U.S. Bureau of Labor Statistics.

Trends in churn rates

The churn rate is defined in this article as the sum of the hires rate and the separations rate. A high churn rate indicates a labor market with a high hires rate, a high separations rate, or both. The high churn rate can signify more frequent job-to-job movement of workers in the labor market. Conversely, a low churn rate indicates a labor market with a low hires rate, a low separations rate, or both. Almost all the states in the Midwest region met or exceeded the U.S. average churn rate for 2018. Indiana, South Dakota, and Nebraska had the highest churn rates, while Wisconsin, Iowa, and Minnesota had the lowest rates and were the only states below the U.S. average. (See chart 4.)

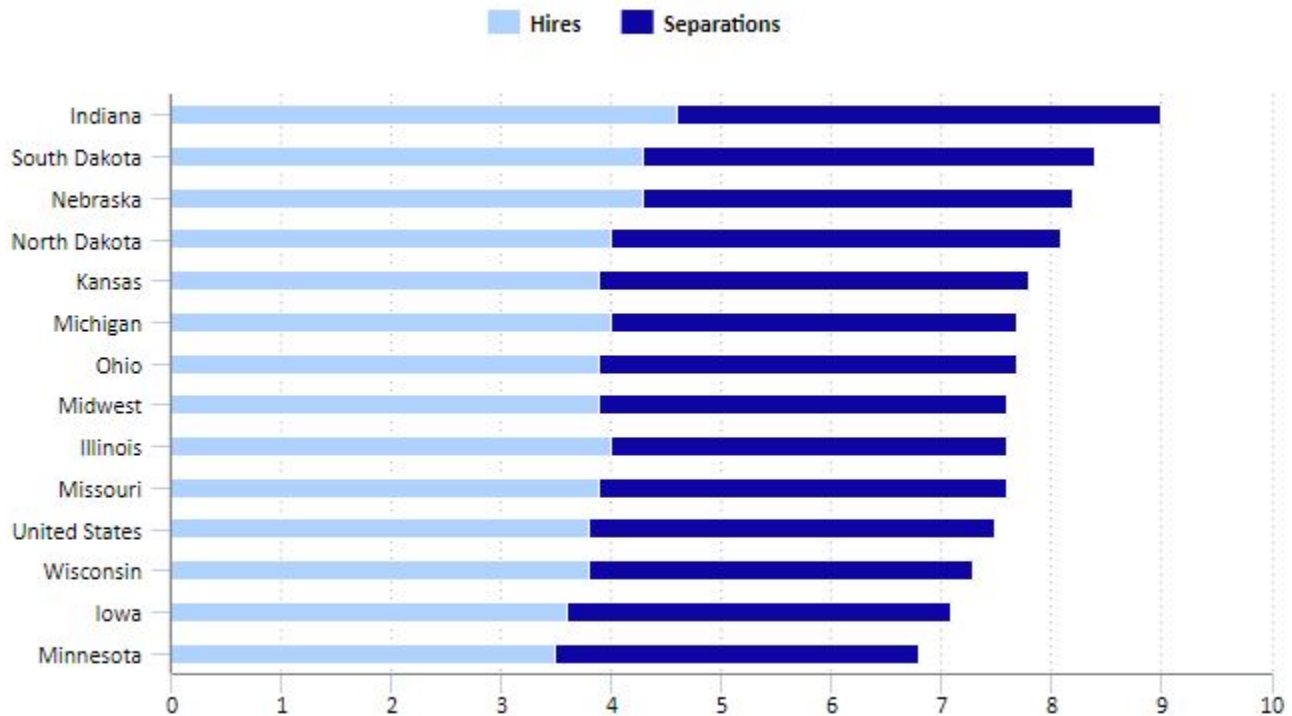
Chart 4. Employment in nondurable goods manufacturing, June 1979–June 2019, indexed to January 1990, seasonally adjusted, in thousands



Click legend items to change data display. Hover over chart to view data.
Source: U.S. Bureau of Labor Statistics.



Chart 4. Average monthly churn, hires, and separations rates in United States, Midwest region, and Midwestern states in 2018, not seasonally adjusted



Click legend items to change data display. Hover over chart to view data.
Source: U.S. Bureau of Labor Statistics.

Trends in fill rates

The fill rate is used to evaluate how employers differ in the rate that open jobs are filled. The annual fill rate is the ratio of hires to job openings over the year. An annual fill rate near or above 1.0 can indicate that employers are more efficient at filling job openings over the year. On the other hand, an annual fill rate less than 1.0 can indicate a tighter labor market, with employers having difficulties filling job openings. Table 3 shows that from 2017 to 2018, fill rates declined for the nation, Midwest region, and all Midwestern states. In both years, Indiana had the highest annual fill rate of all Midwestern states, while Minnesota had the lowest fill rate.

Table 3. Annual average fill rates in the United States, Midwest region, and Midwestern states in 2017 and 2018, not seasonally adjusted

Area	Fill rate by year		Over-the-year change
	2017	2018	Percent
United States	0.90	0.81	-0.09
Midwest	0.85	0.76	-0.09
Illinois	0.94	0.85	-0.10
Indiana	1.01	0.86	-0.15
Iowa	0.87	0.72	-0.15
Kansas	0.87	0.68	-0.19

See footnotes at end of table.

Table 3. Annual average fill rates in the United States, Midwest region, and Midwestern states in 2017 and 2018, not seasonally adjusted

Area	Fill rate by year		Over-the-year change
	2017	2018	Percent
Michigan	0.76	0.76	-0.01
Minnesota	0.71	0.62	-0.09
Missouri	0.90	0.71	-0.20
Nebraska	0.83	0.76	-0.07
North Dakota	0.93	0.79	-0.14
Ohio	0.80	0.76	-0.04
South Dakota	0.84	0.79	-0.05
Wisconsin	0.83	0.74	-0.08

Note: JOLTS experimental state estimates (released September 25, 2019), JOLTS United States, and JOLTS Midwest region data are presented as not seasonally adjusted 3-month moving averages.
Source: U.S. Bureau of Labor Statistics.

Conclusion

JOLTS experimental state estimates allow for labor market comparisons among states, regionally and nationally. The analyses in this article show differing labor trends between states within the Midwest region. Through job openings, hires, separations, and other measures (such as churn rate and fill rate), JOLTS experimental state estimates provide valuable information about labor demand, labor turnover, and business cycles. JOLTS state-level estimates allow researchers and policymakers to better understand state-level economies, and help businesses and workers make better informed decisions at a more granular level than national and regional estimates. State estimates also can be useful to jobseekers as this information can help them evaluate labor market opportunities across states.

This **Beyond the Numbers** article was prepared by Kim Riley, Eric Nezamis, and Montgomery McCarthy, economists in the Job Openings and Labor Turnover Survey Program, Office of Employment and Unemployment Statistics, U.S. Bureau of Labor Statistics. The JOLTS program invites your comments on the experimental state estimates. Please visit our website at https://www.bls.gov/jlt/jlt_statedata.htm, call us at (202) 691-5870, or email us at JoltsInfo@bls.gov.

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NOTES

- ¹ The JOLTS program publishes monthly estimates for major industries at the national level and total nonfarm estimates at the regional level. Users expressed a desire for state-level estimates, therefore the JOLTS program developed and published the state experimental series for the first time in 2019. The experimental models enable the production of estimates at the state total nonfarm level, using a combination of the current JOLTS sample, data from the [Quarterly Census of Employment and Wages](#) (QCEW), and data from the [Current Employment Statistics](#) (CES) program. Information on the [methodology](#) can be found on the [JOLTS experimental state estimates](#) website.
- ² The four census regions are the Northeast, Midwest, South, and West. For more information, see https://www2.census.gov/geo/pdfs/maps-data/maps/reference/us_regdiv.pdf.
- ³ For more information on census regions and divisions of the United States, see at https://www2.census.gov/geo/pdfs/maps-data/maps/reference/us_regdiv.pdf.
- ⁴ State population totals can be found at <https://www.census.gov/data/tables/time-series/demo/popest/2010s-state-total.html>. Total area of each state and area in the United States can be found at <https://www.census.gov/geographies/reference-files/2010/geo/state-area.html>.
- ⁵ Geographic employment information by state and region can be found at <https://www.bls.gov/regions/home.htm>.
- ⁶ Employment by state data can be found at <https://www.bls.gov/sae/data/home.htm>. Please note that not seasonally adjusted annual averages are used in this analysis.
- ⁷ JOLTS experimental state estimate series are available starting from February 2001.
- ⁸ To calculate this ratio, divide the number of people who are unemployed by the number of job openings. Unemployment levels for the nation are published by the Current Population Survey (CPS) and unemployment levels for regions and states are published by the Local Area Unemployment Statistics (LAUS). Persons are classified as unemployed if they do not have a job, have actively looked for work in the prior 4 weeks, and are currently available for work. For more information, see <https://www.bls.gov/cps/lfcharacteristics.htm#unemp>.
- ⁹ For more information on recessions as determined by the National Bureau of Economic Research (NBER), see <https://www.nber.org/cycles.html>.

SUGGESTED CITATION

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