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Job openings and labor turnover trends for States in 2020

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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 greater insights into labor market dynamics, such as labor demand and labor turnover, than other employment measures. In 2019, the JOLTS program published JOLTS experimental state estimates for the first time.[1] This **Beyond the Numbers** article provides

updated JOLTS state estimates through 2020 for all 50 states and the District of Columbia. We explore trends in several measures—job openings, hires, separations (including quits, layoffs, and discharges), labor churn, fill rates, and unemployed persons per job opening—that can give us a deeper understanding of business cycles and labor demand across the United States and help businesses and workers make better informed decisions. This article also shows data users how they can use these estimates to evaluate labor demand and labor turnover at regional and state levels.

Labor patterns across the United States in 2020

Nationally, the 2020 JOLTS estimates reflected the economic impact of the COVID-19 pandemic and the 2020 recession. The 2020 estimates described an economic environment in which job openings, hires, and separations experienced substantially large movements early in the year. After the initial economic stress, many of the JOLTS data elements started to return to pre-pandemic levels.[2]

The COVID-19 pandemic and 2020 recession affected all states; however, each state exhibited its own unique labor patterns because of variations in geography; climate; composition of industry employment; labor force 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 that directly affect labor markets.[3]

Of the four census regions, the Northeast has the highest population density, which means the most people per square mile.[4] Consequently, this region has the largest labor force per square mile. States within the Northeast region have large variations in population and employment, resulting in differing labor market patterns between states.

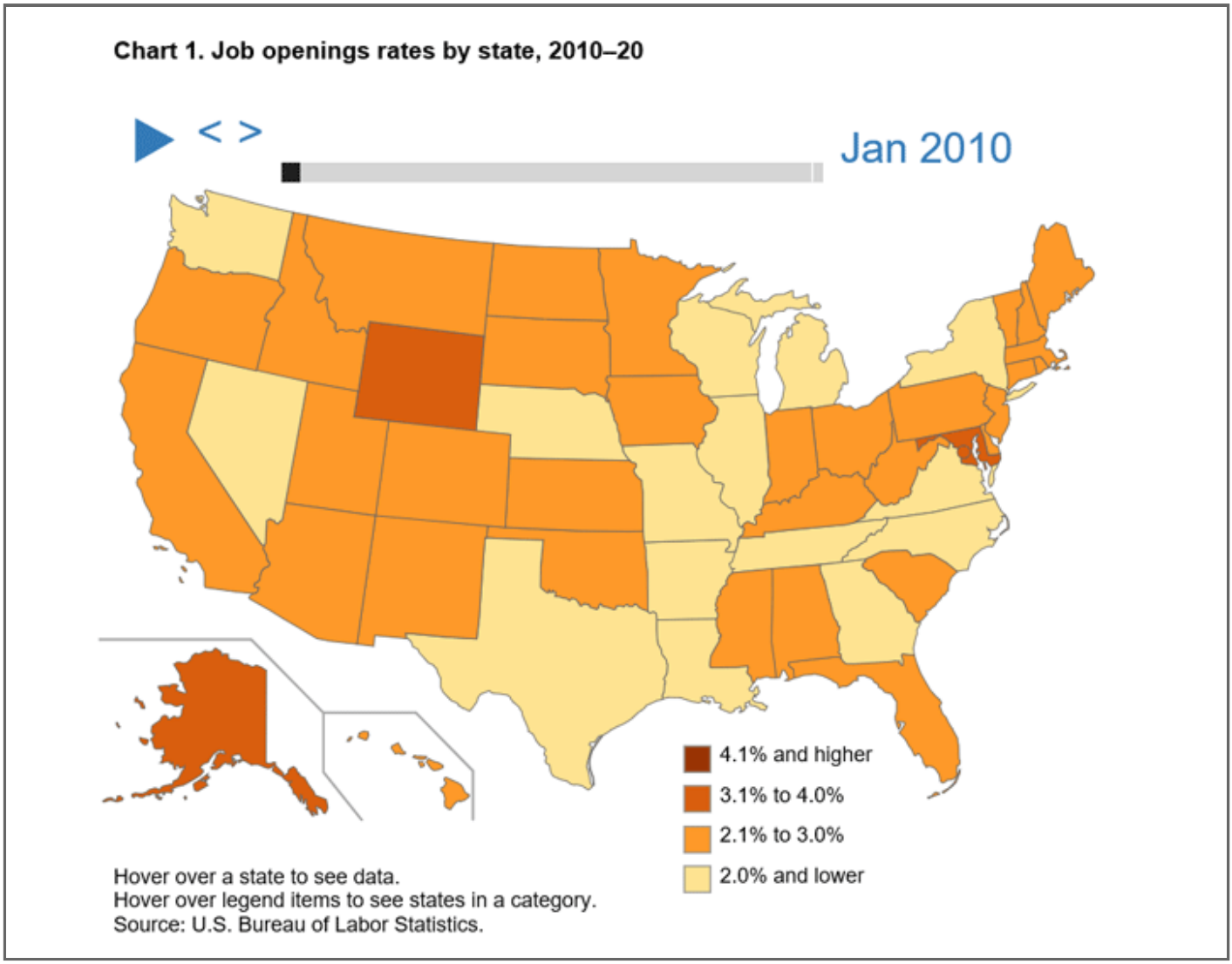
The South has the largest labor force, which is dispersed along a diverse landscape. In addition, government was the largest employer in 6 states in the South.[5] Government has historically been a top employer in Southern states. Because the 17 Southern states also vary in climate and geography, some states exhibit more seasonal employment patterns than others.[6] 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 a majority of Midwestern states, *trade, transportation, and utilities* was the major industry with the largest number of employees. This is notable because no other region had one industry that had historically employed the majority of industrial-sector workers. The West has the lowest population density—the least number of people per square mile. As a result, this region has the smallest labor force per square mile. States within the region have large variations in population and employment, resulting in differing labor market patterns between states. For instance, California's annual average employment level is approximately 60 times that of Wyoming.[7]

Trends in job openings

JOLTS defines job openings as all positions that are open on the last business day of the month. Job openings are a procyclical measure of labor demand; that is, the number of job openings tends to increase during economic expansions and decrease during economic contractions. An increase in job openings generally indicates that employers need additional workers, which is a sign of an increased demand for labor and confidence in the economy.

Chart 1 shows job openings rates in the United States for all states and the District of Columbia. All states experienced a decrease in job openings rates early in 2020. Although all states experienced a decrease in job

openings early in the year as a result of the COVID-19 pandemic, the rate of decline varied from state to state. Alaska experienced the largest decline in job openings, decreasing from 6.5 percent in February to 1.7 percent in May.



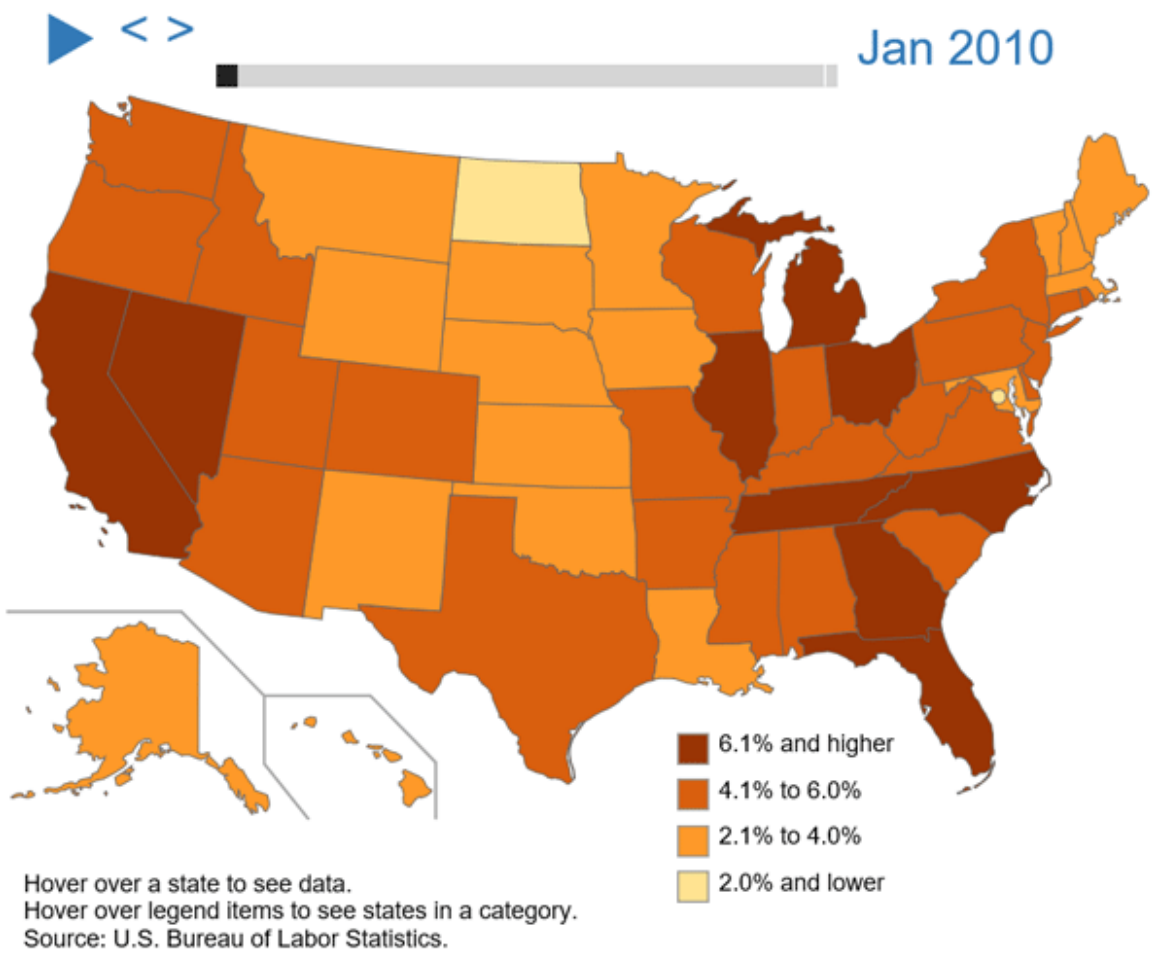
As the COVID-19 pandemic lockdowns were lifted throughout the states, state job openings rates began to return to pre-pandemic rates by the end of 2020. When comparing December 2019 to December 2020, 8 states fell below their December 2019 job openings rates while 42 states and the District of Columbia returned to or surpassed December 2019 rates. Nationally, the job openings rate increased by 0.3 percentage point from December 2019 to December 2020. At the regional level, the Midwest, Northeast, and South increased by 0.4, 0.2, and 0.5 percentage point, respectively, during the same time frame. The Western region saw a 0.1-percentage-point decrease between 2019 and 2020.

Job openings and unemployment

One way to look at labor supply and labor demand is to look at the number of job openings and the number of people looking for work. JOLTS 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, and the level of job openings. A ratio of 1.0 means there is a job available for every unemployed person. Lower ratios signal tighter labor markets where firms have more job openings than there are people available to work. Higher ratios indicate there are more unemployed persons competing for each job opening. (See chart 2.)

Chart 2. Unemployed persons per job opening by state, 2010–20

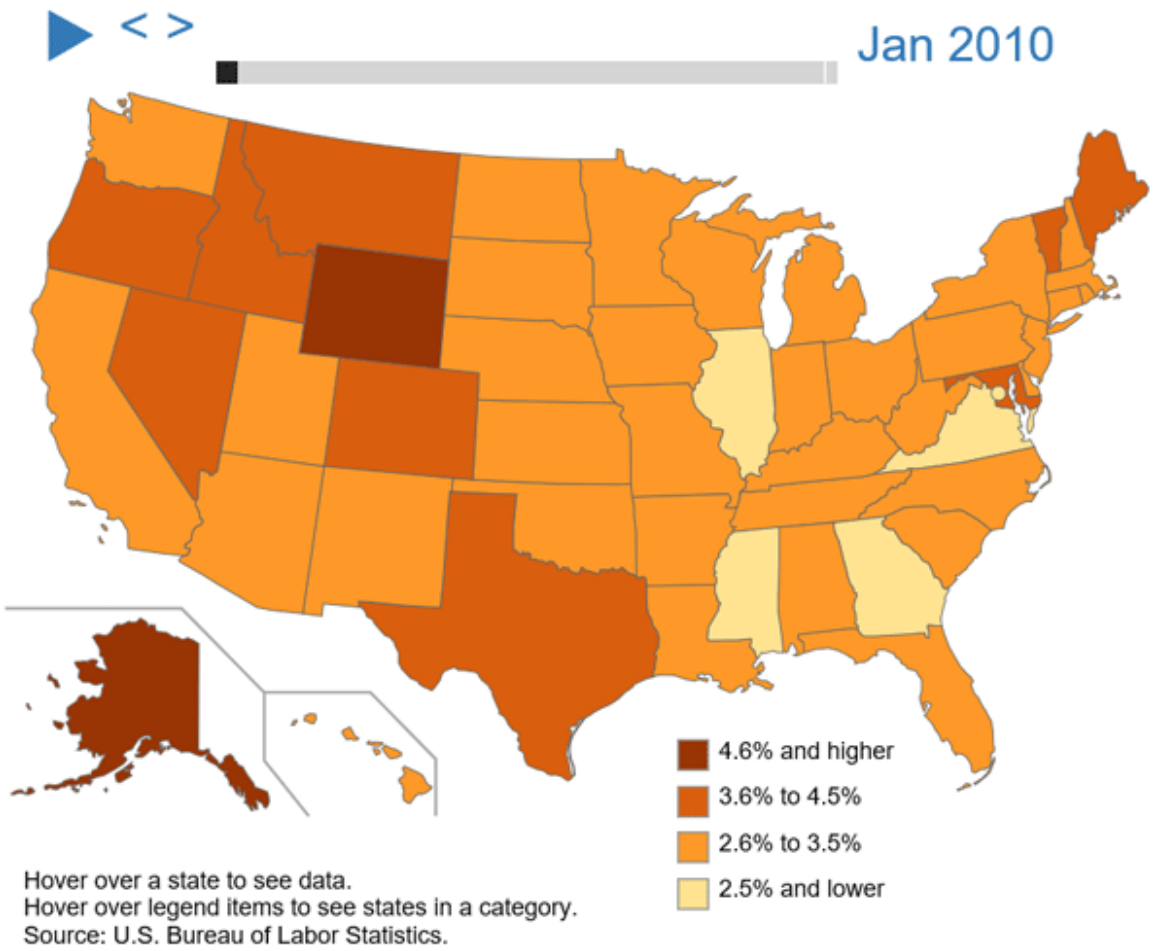


At the start of 2020, the U.S. unemployed persons per job opening was 0.8. The U.S. ratio reached 5.0 in April 2020 partly because of the recession and lockdowns throughout the country that were caused by the COVID-19 pandemic. Among the states, Nevada had the highest ratio of unemployed persons per job opening in April 2020 at 12.6, followed by Michigan and Hawaii at 11.1 and 8.7, respectively. The District of Columbia, Nebraska, and Wyoming had the lowest ratios in April 2020 at 1.6, 1.9, and 1.2, respectively. By December 2020, the national ratio had declined from its 2020 high of 5.0 down to 1.6, indicating that many previously unemployed workers were finding jobs. Among the regions, the West had the highest unemployed persons per job opening in December 2020 at 2.0. The Midwest and the South had the lowest ratio of 1.3, while the Northeast had a ratio of 1.9. In December 2020, 9 states had an unemployed persons per job openings ratio below 1.0, signaling a tighter labor market.

Trends in hiring

JOLTS defines hires as all additions to the payroll during the month. Like job openings, hires are considered a procyclical measurement, going up during economic expansions and down during economic contractions. Hires rates saw a similar trend to job openings in 2020, with declines in March and April as states reacted to the COVID-19 pandemic. As chart 3 shows, states began to see a rebound in hires rates beginning in May 2020, with 36 states reaching series highs by June 2020, as before the pandemic.[9] Michigan was the only state between January 2020 and December 2020 that did not see hires fall below its January 2020 rate.

Chart 3. Hires rate by state, 2010–20



By December 2020, 23 states and the District of Columbia dropped below their December 2019 rates while 27 states surpassed or returned to their 2019 rates. Nationally, the hires rate decreased by 0.1 percentage point from December 2019 to December 2020. At the regional level, the West and South saw decreases of 0.3 and 0.2 percentage point, respectively. The Midwest had an increase of 0.2 percentage point. The Northeast saw no change from December 2019 to December 2020.

Trends in separations

Trends in separations often mirror the trends in hires. States with higher seasonal hiring patterns 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 state estimates as they represent a small portion of total separations, with quits and layoffs and discharges representing over 93 percent of all separations.

Nationally, total separations increased by 20 percent from December 2019 to December 2020. All regions saw an increase in total separations between 2019 and 2020. The Northeast saw the largest regional increase at 34.2 percent, while the South had the lowest increase at 11.5 percent. With the exception of Alaska, North Carolina, Utah, and Wyoming, all states saw an increase in total separations between 2019 and 2020. Alaska had the largest decrease from 2019 to 2020 at 7.3 percent, followed by Utah, Wyoming, and North Carolina. Nevada saw the largest increase in total separations at 72.3 percent. (See table 1A in the appendix.)

Quits, a component of total separations, are voluntary separations initiated by the employee. Like job openings, quits are procyclical, which means the number of quits typically rises when the economy expands and declines when the economy contracts. 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. During the COVID-19 pandemic, employees were less willing to leave their current job for a new one.

At the national level, quits decreased by 14 percent from 2019 to 2020. At the regional level, the West saw the largest decrease in quits, at 20 percent, while the Northeast, Midwest, and South all saw a 12-percent decrease from 2019 to 2020. As shown in table 2A (see the appendix), except for Missouri, all states saw a decrease in quits over the year. Missouri saw a small increase of 1 percent between 2019 and 2020. The state with the largest percent decrease was Alaska, a western state, decreasing by 31 percent.

Layoffs and discharges are involuntary separations initiated by the employer. Layoffs and discharges are countercyclical, which means that layoffs typically increase during economic contractions and decrease during economic expansions. Nationally, layoffs and discharges increased by 88 percent from 2019 to 2020. All regions saw an increase of layoffs and discharges, and three of the four regions had larger percentage increases in layoffs and discharges than at the national level. As a result of the COVID-19 pandemic, all states saw increases in layoffs and discharges; however, the amount of the increase varied widely by state. Nevada saw the largest increase in layoffs while South Carolina saw the smallest increase. (See table 3A in the appendix.)

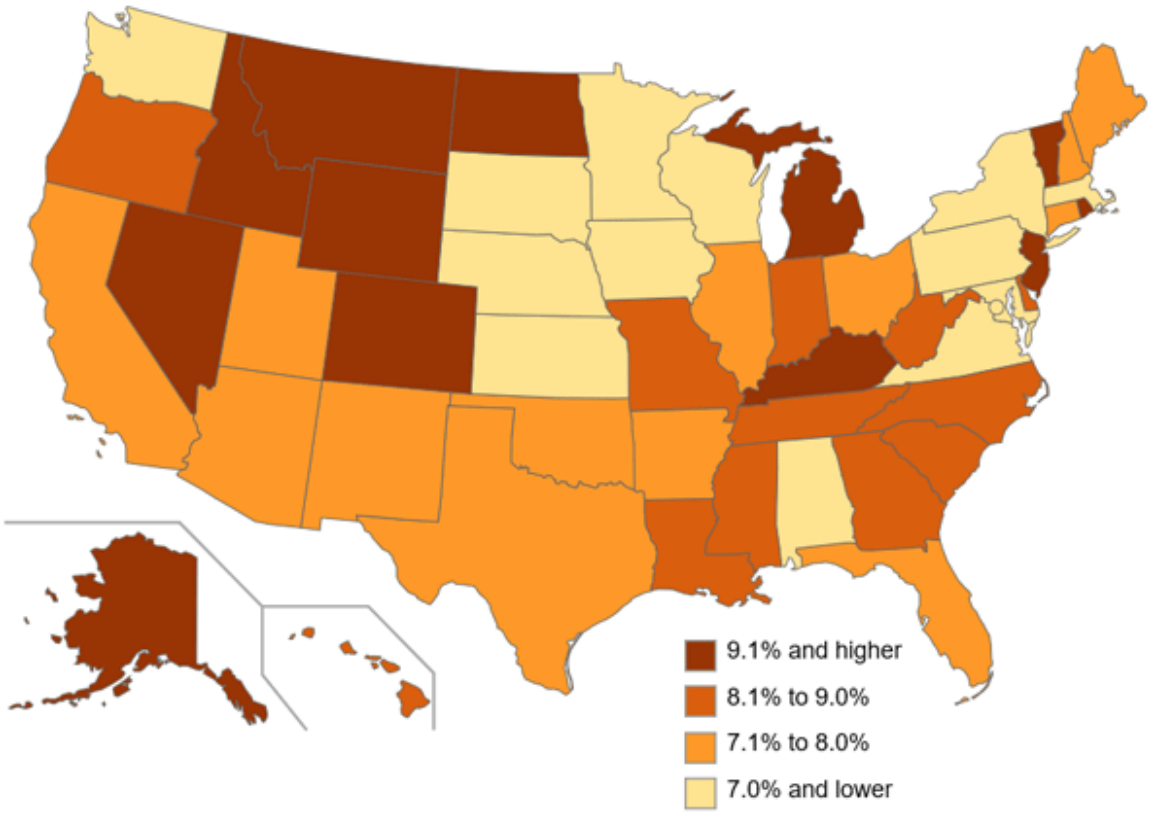
Trends in churn rates

The churn rate is defined as the sum of the state hires rate and the state separations rate. A high churn rate indicates a labor market with a high hires rate, a high separations rate, or both. It can signify that workers are moving more frequently into and out of jobs in the labor market. Conversely, a low churn rate indicates a labor market with a low hires rate, a low separations rate, or both.

JOLTS state estimates allowed for measurement of churn experienced by states during the spread of the COVID-19 pandemic around the country in 2020. The top 3 states in 2020 with higher churn rates than the U.S. churn rate of 9.1 were: Nevada at 14.3, Alaska at 12.2, and Montana at 11.3. (See chart 4.) The top states tend to have more seasonal employment patterns, which can lead to more frequent job-to-job movement. The average

monthly churn rates were higher than the national average in 33 of the 50 states. The geographic areas with the lowest average monthly churn rates were the District of Columbia at 6.1, Minnesota at 7.8, and New York at 7.8.

Chart 4. Average monthly churn, hires, and separations rates for states, 2020



Hover over a state to see data.
Hover over legend items to see states in a category.
Source: U.S. Bureau of Labor Statistics.

By examining monthly churn rates, we can more readily identify the impact of the COVID-19 pandemic on state labor markets. By far, the majority of states (43 and the District of Columbia) had their highest churn rates in March 2020, and the remaining 7 experienced it in April 2020. These estimates show the concentration of the highest churn rates across a 2-month period (March to April, 2020) following the pandemic shock. In contrast, the lowest churn rates of the year were distributed across distinct times of the year. A total of 13 states reached their lowest churn rate pre-pandemic in January 2020, while 12 states had their lowest churn rate in December 2020. Six states and the District of Columbia experienced their lowest churn rate in September 2020. (See table 4A in the appendix.)

Trends in fill rates

The fill rate is a measure used to evaluate how employers differ in the pace that job openings 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 of less than 1.0 can indicate a tighter labor market, with employers having difficulties filling job openings.

In 2020, after the nationwide shutdown due to the COVID-19 pandemic, employers across the country sought to quickly fill vacated positions. There were many factors that hindered the filling of vacant positions by employers, such as health concerns, employee skills, childcare needs, and industry characteristics. In 2020, fill rates increased nationwide. (See table 5A in the appendix.) Fill rates in Louisiana, Maryland, West Virginia, and the District of Columbia decreased over the year. Oklahoma's fill rate had no change over the year. Nevada had the highest annual fill rate nationally at 1.2, while the median annual fill rate was 1.0.

Conclusion

JOLTS experimental state estimates allow for economic comparisons among states, regions, and the whole nation. The analyses in this article show differing labor trends between states within their various regions and the greater United States. Through job openings, hires, and 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 can also be useful to those seeking employment opportunities as this information can help jobseekers evaluate labor market opportunities across states.

Appendix

Table 1A. Total separations levels in the United States, regions, and states, 2019–20, seasonally adjusted

Area	Level by year		Over-the-year percent change
	2019	2020	
United States	67,994	81,598	20.0
Northeast	10,393	13,945	34.2
Midwest	14,393	18,108	25.8
South	27,020	30,125	11.5
West	16,187	19,422	20.0
Alabama	947	1,007	6.3
Alaska	248	230	-7.3
Arizona	1,430	1,575	10.1
Arkansas	645	686	6.4
California	7,389	8,985	21.6
Colorado	1,380	1,789	29.6
Connecticut	624	881	41.2
Delaware	247	264	6.9
District of Columbia	266	305	14.7
Florida	4,051	4,874	20.3
Georgia	2,204	2,660	20.7
Hawaii	298	377	26.5
Idaho	414	473	14.3
Illinois	2,354	3,369	43.1

See footnotes at end of table.

Table 1A. Total separations levels in the United States, regions, and states, 2019–20, seasonally adjusted

Area	Level by year		Over-the-year percent change
	2019	2020	
Indiana	1,707	1,858	8.8
Iowa	671	782	16.5
Kansas	630	697	10.6
Kentucky	932	1,155	23.9
Louisiana	1,080	1,134	5.0
Maine	281	341	21.4
Maryland	1,251	1,280	2.3
Massachusetts	1,302	1,811	39.1
Michigan	1,988	2,700	35.8
Minnesota	1,102	1,415	28.4
Mississippi	591	672	13.7
Missouri	1,298	1,664	28.2
Montana	296	315	6.4
Nebraska	451	526	16.6
Nevada	700	1,206	72.3
New Hampshire	290	366	26.2
New Jersey	1,744	2,505	43.6
New Mexico	434	481	10.8
New York	3,397	4,439	30.7
North Carolina	2,650	2,613	-1.4
North Dakota	232	284	22.4
Ohio	2,514	3,075	22.3
Oklahoma	897	938	4.6
Oregon	1,039	1,197	15.2
Pennsylvania	2,383	3,113	30.6
Rhode Island	228	299	31.1
South Carolina	1,214	1,244	2.5
South Dakota	200	233	16.5
Tennessee	1,463	1,784	21.9
Texas	6,390	7,166	12.1
Utah	874	834	-4.6
Vermont	146	190	30.1
Virginia	1,798	1,922	6.9
Washington	1,498	1,775	18.5
West Virginia	390	422	8.2
Wisconsin	1,249	1,500	20.1
Wyoming	188	185	-1.6

See footnotes at end of table.

Note: JOLTS states estimates (released June, 30th 2021). JOLTS National, regional and state data are presented as seasonally adjusted series. Figures in this article date back to January 2010; however, JOLTS state estimates are available starting in December 2000 in LABSTAT.
Source: U.S. Bureau of Labor Statistics.

Table 2A. Quits levels in the United States, regions, and states, 2019–20, seasonally adjusted

Area	Level by year		Over-the-year percent change
	2019	2020	
Total United States	42,146	36,390	-13.7
Northeast	5,701	5,017	-12.0
Midwest	9,187	8,119	-11.6
South	17,258	15,248	-11.6
West	9,999	8,005	-19.9
Alabama	607	566	-6.8
Alaska	154	106	-31.2
Arizona	971	804	-17.2
Arkansas	421	373	-11.4
California	4,374	3,495	-20.1
Colorado	888	737	-17.0
Connecticut	335	317	-5.4
Delaware	157	135	-14.0
District of Columbia	164	149	-9.1
Florida	2,626	2,477	-5.7
Georgia	1,444	1,401	-3.0
Hawaii	195	159	-18.5
Idaho	274	224	-18.2
Illinois	1,522	1,490	-2.1
Indiana	1,035	860	-16.9
Iowa	415	366	-11.8
Kansas	412	332	-19.4
Kentucky	590	583	-1.2
Louisiana	702	568	-19.1
Maine	152	138	-9.2
Maryland	769	591	-23.1
Massachusetts	741	625	-15.7
Michigan	1,285	1,147	-10.7
Minnesota	709	558	-21.3
Mississippi	375	352	-6.1
Missouri	816	825	1.1
Montana	180	142	-21.1
Nebraska	293	268	-8.5
Nevada	456	422	-7.5
New Hampshire	161	136	-15.5
New Jersey	983	944	-4.0
New Mexico	291	213	-26.8
New York	1,786	1,566	-12.3
North Carolina	1,636	1,246	-23.8
North Dakota	146	123	-15.8
Ohio	1,618	1,381	-14.6

See footnotes at end of table.

Table 2A. Quits levels in the United States, regions, and states, 2019–20, seasonally adjusted

Area	Level by year		Over-the-year percent change
	2019	2020	
Oklahoma	599	469	-21.7
Oregon	655	481	-26.6
Pennsylvania	1,339	1,133	-15.4
Rhode Island	121	103	-14.9
South Carolina	755	678	-10.2
South Dakota	128	107	-16.4
Tennessee	959	919	-4.2
Texas	4,091	3,606	-11.9
Utah	563	406	-27.9
Vermont	82	65	-20.7
Virginia	1,120	934	-16.6
Washington	882	733	-16.9
West Virginia	249	212	-14.9
Wisconsin	807	664	-17.7
Wyoming	118	84	-28.8

Note: JOLTS states estimates (released June, 30th 2021). JOLTS National, regional and state data are presented as seasonally adjusted series. Figures in this article date back to January 2010; however, JOLTS state estimates are available starting in December 2000 in LABSTAT.
Source: U.S. Bureau of Labor Statistics.

Table 3A. Layoffs and discharges levels in the United States, regions, and states, 2019–20, seasonally adjusted, levels in thousands

Area	Level by year		Over-the-year percent change
	2019	2020	
Total United States	21,846	41,041	87.9
Northeast	3,971	8,259	108.0
Midwest	4,413	9,128	106.8
South	8,251	13,328	61.5
West	5,210	10,326	98.2
Alabama	270	381	41.1
Alaska	80	112	40.0
Arizona	382	686	79.6
Arkansas	188	267	42.0
California	2,527	4,963	96.4
Colorado	414	923	122.9
Connecticut	247	523	111.7
Delaware	76	116	52.6
District of Columbia	85	137	61.2
Florida	1,211	2,207	82.2
Georgia	626	1,111	77.5
Hawaii	86	197	129.1
Idaho	116	227	95.7
Illinois	711	1,728	143.0
Indiana	594	914	53.9

See footnotes at end of table.

Table 3A. Layoffs and discharges levels in the United States, regions, and states, 2019–20, seasonally adjusted, levels in thousands

Area	Level by year		Over-the-year percent change
	2019	2020	
Iowa	220	373	69.5
Kansas	181	329	81.8
Kentucky	282	513	81.9
Louisiana	323	502	55.4
Maine	110	188	70.9
Maryland	392	624	59.2
Massachusetts	473	1,107	134.0
Michigan	582	1,431	145.9
Minnesota	319	784	145.8
Mississippi	183	282	54.1
Missouri	413	776	87.9
Montana	101	157	55.4
Nebraska	130	233	79.2
Nevada	211	732	246.9
New Hampshire	109	212	94.5
New Jersey	618	1,458	135.9
New Mexico	118	240	103.4
New York	1,380	2,625	90.2
North Carolina	869	1,211	39.4
North Dakota	71	149	109.9
Ohio	761	1,556	104.5
Oklahoma	242	412	70.2
Oregon	329	652	98.2
Pennsylvania	891	1,844	107.0
Rhode Island	89	184	106.7
South Carolina	389	491	26.2
South Dakota	60	115	91.7
Tennessee	426	779	82.9
Texas	2,000	3,220	61.0
Utah	268	390	45.5
Vermont	56	117	108.9
Virginia	569	892	56.8
Washington	514	951	85.0
West Virginia	117	183	56.4
Wisconsin	367	743	102.5
Wyoming	60	94	56.7

Note: JOLTS states estimates (released June, 30th 2021). JOLTS National, regional and state data are presented as seasonally adjusted series. Figures in this article date back to January 2010; however, JOLTS state estimates are available starting in December 2000 in LABSTAT.
Source: U.S. Bureau of Labor Statistics.

Table 4A. State distribution of monthly churn rates, 2020

Month, year	Lowest churn rate	Highest churn rate
Jan-20	13	0

See footnotes at end of table.

Table 4A. State distribution of monthly churn rates, 2020

Month, year	Lowest churn rate	Highest churn rate
Feb-20	4	0
Mar-20	0	44
Apr-20	0	7
May-20	2	0
Jun-20	2	0
Jul-20	2	0
Aug-20	5	0
Sep-20	7	0
Oct-20	4	0
Nov-20	0	0
Dec-20	12	0

Note: JOLTS states estimates (released June, 30th 2021). JOLTS National, regional and state data are presented as seasonally adjusted series. Figures in this article date back to January 2010; however, JOLTS state estimates are available starting in December 2000 in LABSTAT.
Churn = Hires + Separations
Source: U.S. Bureau of Labor Statistics.

Table 5A. Annual fill rates in the United States, regions, and states, 2019–20, seasonally adjusted

Area	Fill rate by year		Over-the-year percent change
	2019	2020	
Total United States	0.81	0.96	0.14
Midwest	0.77	0.96	0.19
Northeast	0.76	0.91	0.15
West	0.88	0.95	0.07
South	0.80	1.00	0.20
Alabama	0.83	0.88	0.05
Alaska	0.87	0.97	0.10
Arizona	0.78	0.88	0.09
Arkansas	0.90	0.99	0.09
California	0.76	0.99	0.23
Colorado	0.79	1.13	0.34
Connecticut	0.88	1.12	0.24
Delaware	0.95	0.98	0.03
District of Columbia	0.76	0.70	-0.06
Florida	0.84	0.95	0.10
Georgia	0.80	0.86	0.05
Hawaii	0.76	1.01	0.25
Idaho	0.89	1.11	0.22
Illinois	0.77	1.01	0.23
Indiana	0.91	1.02	0.10
Iowa	0.75	0.90	0.15
Kansas	0.75	0.79	0.04
Kentucky	0.91	1.00	0.09
Louisiana	0.97	0.92	-0.05
Maine	0.81	0.96	0.15
Maryland	0.75	0.71	-0.04

See footnotes at end of table.

Table 5A. Annual fill rates in the United States, regions, and states, 2019–20, seasonally adjusted

Area	Fill rate by year		Over-the-year percent change
	2019	2020	
Massachusetts	0.73	0.86	0.13
Michigan	0.77	1.05	0.28
Minnesota	0.71	0.87	0.17
Mississippi	0.92	0.97	0.05
Missouri	0.75	1.04	0.28
Montana	0.86	1.07	0.21
Nebraska	0.79	0.88	0.09
Nevada	0.88	1.23	0.35
New Hampshire	0.83	0.88	0.06
New Jersey	0.76	1.00	0.25
New Mexico	0.80	0.87	0.07
New York	0.76	0.90	0.14
North Carolina	0.83	1.05	0.22
North Dakota	0.77	1.00	0.23
Ohio	0.77	0.98	0.22
Oklahoma	0.90	0.90	0.00
Oregon	0.82	0.89	0.07
Pennsylvania	0.74	0.83	0.08
Rhode Island	0.83	1.05	0.22
South Carolina	0.89	0.94	0.05
South Dakota	0.77	0.89	0.12
Tennessee	0.98	1.01	0.03
Texas	0.99	1.10	0.11
Utah	0.89	1.01	0.12
Vermont	0.82	0.98	0.16
Virginia	0.73	0.81	0.08
Washington	0.83	1.00	0.17
West Virginia	0.80	0.74	-0.06
Wisconsin	0.72	0.83	0.11
Wyoming	0.88	1.02	0.13

Note: JOLTS states estimates (released June, 30th 2021). JOLTS National, regional and state data are presented as seasonally adjusted series. Figures in this article date back to January 2010; however, JOLTS state estimates are available starting in December 2000 in LABSTAT.
Source: U.S. Bureau of Labor Statistics.

This **Beyond the Numbers** article was prepared by Skyla Skopovi, an economist, Larry Akinyooye, an economist, and Paul Calhoun, a supervisory economist in the Office of Employment and Unemployment Statistics: Job Openings and Labor Turnover, U.S. Bureau of Labor Statistics. E-mail: Skopovi.skyla@bls.gov, Akinyooye.larry@bls.gov, and calhoun.paul@bls.gov, telephone: 202-691-5870.

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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] Please see the following link for definitions of JOLTS terms.

[3] The four census regions are the Northeast, Midwest, South, and West. Census regions and divisions of the United States are available 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] Labor force by state can be found at https://www.bls.gov/lau/.

[6] Geographic employment information by state and region can be found at https://www.bls.gov/regions/home.htm.

[7] Employment by state can be found at https://www.bls.gov/sae/data/home.htm. Not seasonally adjusted annual averages are used in this analysis.

[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 and unemployment levels for regions and states are published by the Local Area Unemployment Statistics. 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. https://www.bls.gov/cps/lfcharacteristics.htm#unemp.

[9] The series dates back to December 2000.

SUGGESTED CITATION

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