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Job Openings and Labor Market Tightness During the COVID-19 Pandemic

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Abstract

This data brief reports the current status and the evolution of job openings and labor market tightness in the U.S. and Wisconsin. The latest data suggest that the number of job openings per capita is 4% in the U.S. and 4.5% in Wisconsin, significantly higher than their pre-pandemic levels of around 2.7% and 3.4%, respectively. The same is true for the number of new online job postings, which increased by about 26% between January 2020 and January 2022 in the U.S., and by about 20% in Wisconsin. In comparison, the number of unemployed workers in the U.S. dropped by about 8% between January 2020 and December 2021, and it dropped by about 43% in Wisconsin. Together, the numbers suggest the labor markets in both the U.S. and Wisconsin are much tighter now than it was before the pandemic. However, there are some heterogeneities both across states and across sectors within a state. For example, the number of job openings per unemployed worker has not recovered to its pre-pandemic level in 8 states, including Colorado and Hawaii, and the increase in the number of new online job postings in Wisconsin between January 2020 and January 2022 is much larger for the manufacturing sector than it is for leisure and hospitality.

1 Overview

This data brief reports the current status and the evolution of job openings and labor market tightness in the U.S. and Wisconsin. We use two measures of job openings, one official measure of the stock of job openings available at the end of each month, and one weekly measure of new online job postings. We compare both measures with the level of unemployment, and study their evolutions around the COVID-19 pandemic.

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2 Job Openings and Labor Market Tightness

This section uses data from the Job Openings and Labor Turnover Survey (JOLTS). Developed by the Bureau of Labor Statistics, the JOLTS is a monthly survey of approximately 16,000 business establishments in the U.S. It covers all nonagricultural industries in the public and private sectors for the 50 States and the District of Columbia, and collects data on total employment, job openings, hires, quits, layoffs and discharges, and other separations.

JOLTS defines job openings as all positions that are open (not filled) on the last business day of the month. A job is "open" only if it meets all three of the following conditions: (1) A specific position exists and there is work available for that position. The position can be full-time or part-time, and it can be permanent, short-term, or seasonal; (2) The job could start within 30 days, whether or not the establishment finds a suitable candidate during that time; and (3) there is active recruiting for workers from outside the establishment location that has the opening.

Starting from December 2000, monthly measures of job openings are available both nationally and by state, with the national data also available by sectors. At the time of this writing, the national data is available until December 2021, while the state data is available until November 2021.

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Figure 1 reports the number of job openings per capita for the U.S. and Wisconsin. In the year before the pandemic, the number of job openings per capita was about 2.7% in the U.S. and 3.4% in Wisconsin. Job openings in both labor markets declined slightly in the few months before the pandemic, and then substantially in March and April of 2020. In April 2020, the number of job openings per capita was about 1.7% in the U.S. and 2.2% in Wisconsin, about 1 percentage point below their pre-pandemic levels. After that, job openings in both economies recovered quickly in the next three months, especially in July for Wisconsin, and then stayed flat at around 2.6% from August to the end of 2020. Since the start of 2021, job openings have been rising sharply in both the U.S. and Wisconsin. The latest data show that the number of job openings per capita has reached 4% in the U.S. and 4.5% in Wisconsin, both of which are significantly higher than their pre-pandemic levels.

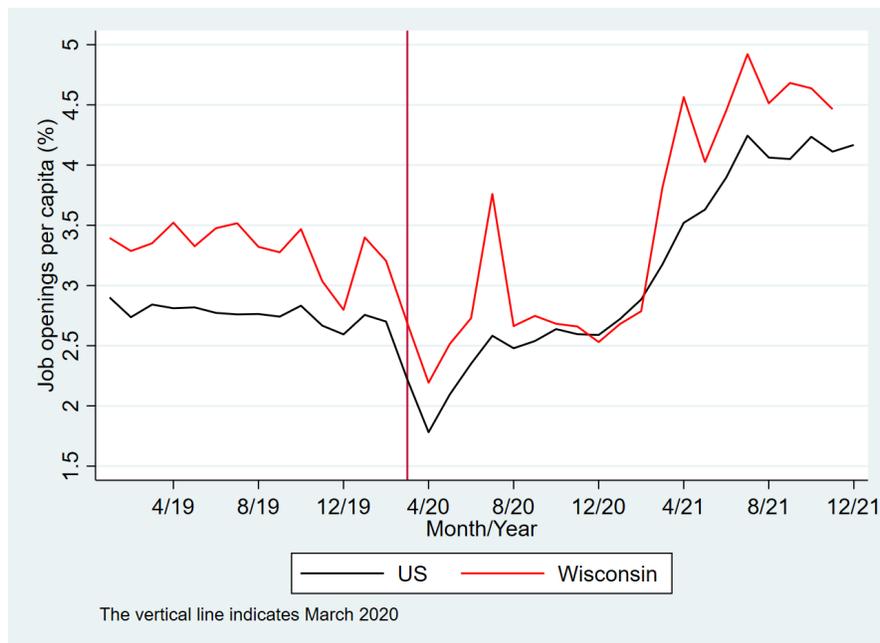


Figure 1. Job Openings in the U.S. and Wisconsin

For the U.S. and each of its 51 states (DC is treated as a state), figure 2 plots the job openings per capita in November 2021 against their values in November 2019. All dots in the graph lie above the 45 degree line, indicating that the number of job openings per capita has exceeded its pre-pandemic level in all states.

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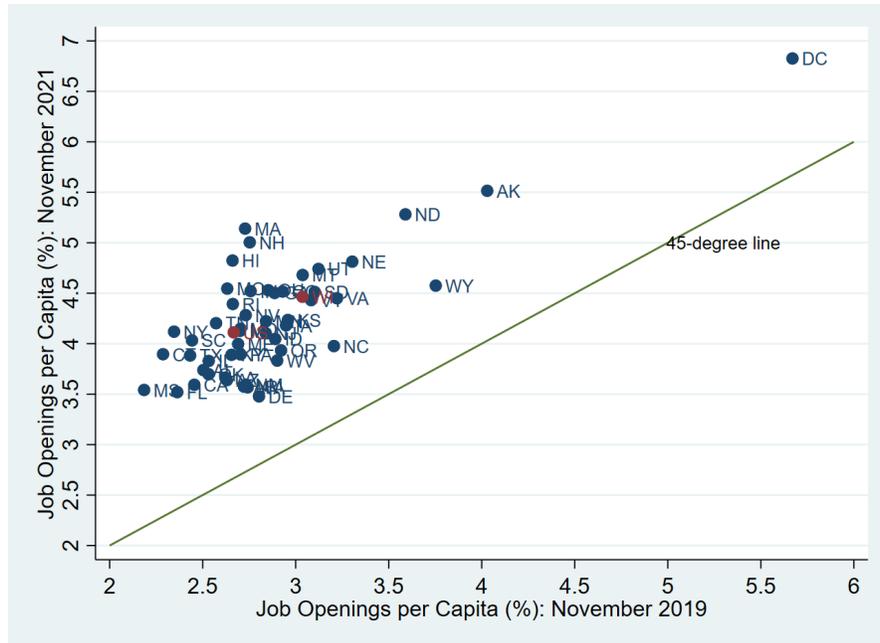


Figure 2. Job Openings per Capita by State: November 2021 vs November 2019

Figure 3 reports the number of job openings per unemployed worker, a standard measure of labor market tightness, for both the U.S. and Wisconsin. In the year before the pandemic, the number of job openings per unemployed worker was about 1.2 in the U.S. and 1.5 in Wisconsin. As with job openings per capita, job openings per unemployed worker declined slightly in the few months before the pandemic, and then dramatically in March and April of 2020. In April 2020, the number of job openings per unemployed worker was about 0.3 in both economies, more than 70% below their pre-pandemic levels. After that, labor market tightness in both economies have been rising almost linearly. The latest data suggest that, by the end of 2021, the number of job openings per unemployed worker was 1.5 in the U.S. and 2.2 in Wisconsin, both are higher than their pre-pandemic values.

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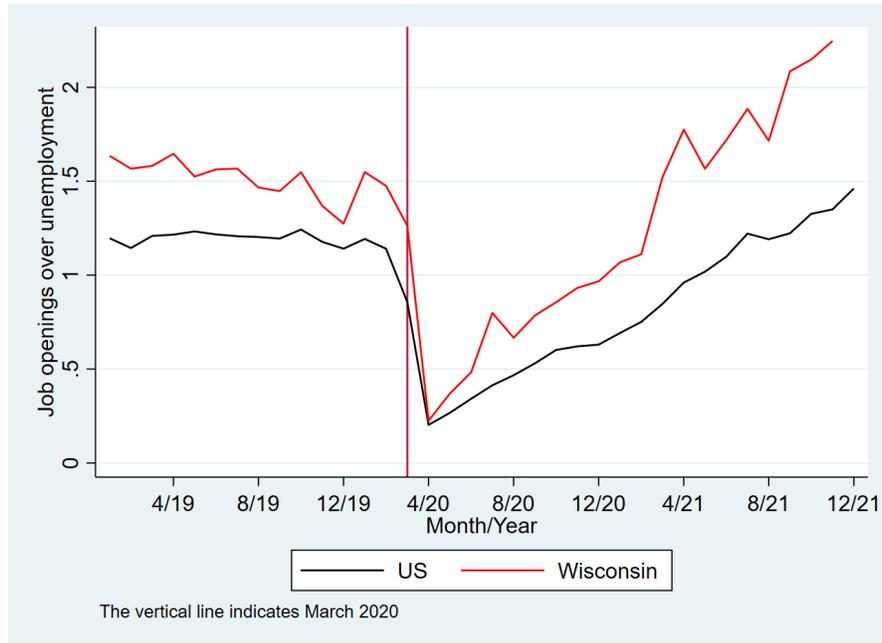


Figure 3. Labor Market Tightness in the U.S. and Wisconsin

Figure 4 plots the labor market tightness in November 2021 against its value in November 2019 for the U.S. and each of its 51 states. The dot for the U.S. is above the 45-degree line, suggesting again that the national labor market is tighter than it was before the pandemic. The same is true for Wisconsin and 42 other states. In contrast, 8 states, including Colorado and Hawaii, lie below the 45-degree line, suggesting that the labor market tightness in these states have not recovered to their pre-pandemic levels.

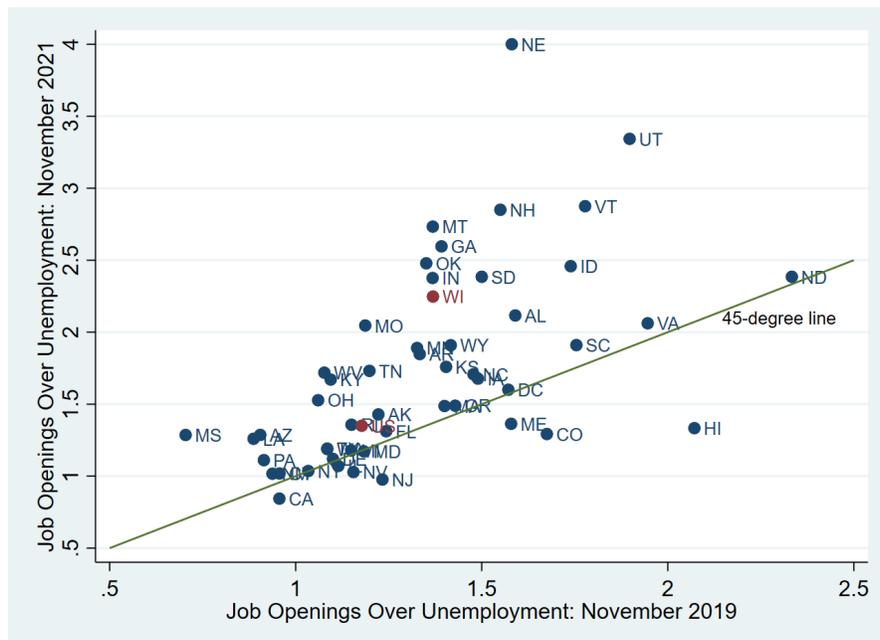


Figure 4. Labor Market Tightness by State: November 2021 vs November 2019

For the measured labor market tightness to be informative of the job finding probability for the unemployed, the level of unemployment used in the denominator should only include those looking for a job. In particular, it should not include those on furlough or temporary layoff who are waiting to be recalled to their previous jobs instead of searching actively. Since temporary layoffs are a significant fraction of the unemployment caused by the COVID-19 pandemic, especially in the first few months, the measure reported in figure 3 may be less informative in the first few months of the pandemic. However, as time went by and those on temporary layoffs either returned to or permanently separated from their previous jobs, the measure should become more and more relevant.

3 New Online Job Postings

As a complement to the official monthly measure of job openings from the BLS reported above, this section reports a more timely measure of new online job postings obtained from the Economic Tracker.¹ The measure is constructed from weekly count of new online job postings from Burning Glass Technologies (BGT), which aggregates nearly all jobs posted online from approximately 40,000 online job board in the U.S., removes duplicate postings across sites and assigns attributes including geographic locations and industry. New job postings are defined as those that have not had a duplicate posting for at least 60 days prior. A week is defined as the seven days from a Saturday to the next Friday. For each week from the first full week in January 2020 to the week ending February 4, 2022, the measure reports the percentage change of that week's new job postings from the average of the four full weeks in January 2020. While the measure is available since January 2020 for the U.S., it is only available for the last 12 months at the state level, and for the last 6 months at the state-by-industry level. To reduce the temporary fluctuations, we apply a 4-week moving average to the original data.

Figure 5 compares this weekly measure of new online job postings with the monthly measure of job openings discussed in the previous section for the U.S. and Wisconsin. To be comparable, the monthly measure is reported as percentage changes from January 2020.

¹ <https://tracktherecovery.org>. For more detailed description of the measure used in this section as well as other related measures, see the paper "The Economic Impacts of COVID-19: Evidence from a New Public Database Built Using Private Sector Data", by Raj Chetty, John Friedman, Nathaniel Hendren, Michael Stepner, and the Opportunity Insights Team. November 2020. Available at: https://opportunityinsights.org/wp-content/uploads/2020/05/tracker_paper.pdf

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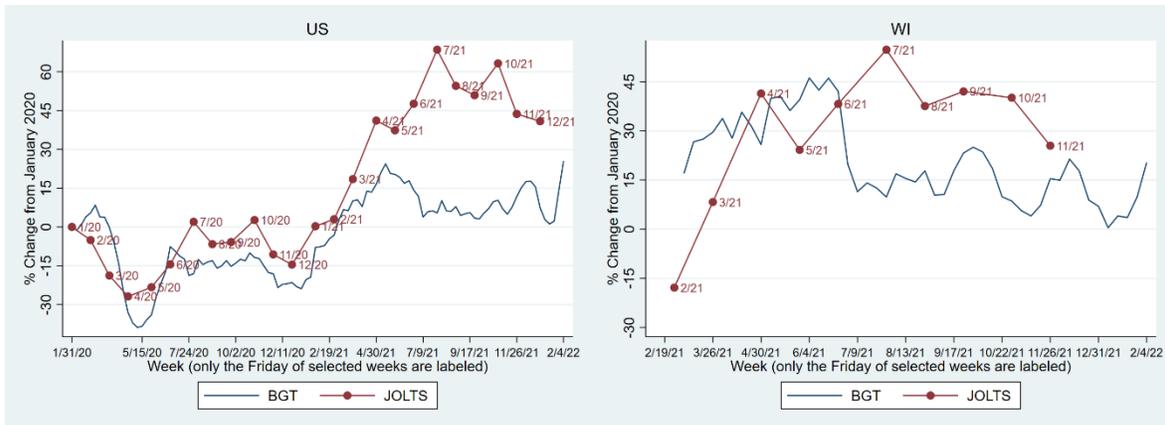


Figure 5. Monthly Job Openings vs Weekly New Online Job Postings in the U.S. and Wisconsin: BGT is the 4-week moving average of weekly data on new online job postings from Burning Glass Technologies. JOLTS is monthly data on job openings from the U.S. Bureau of Labor Statistics

The two measures exhibit similar patterns and some differences. In 2020, both measures for the U.S. declined significantly in March and April, rebounded in May to July, remained roughly flat in August to October, and then declined in November and December. Entering 2021, both measures started to rise again. For Wisconsin, both measures increased in the first few months of 2021 and declined in the last few months. There are two obvious differences between the two measures. First, for the U.S., the official monthly measure of job openings has been above the weekly measure of new online job postings since July 2020, and the same is true for Wisconsin since July 2021. Second, while the official measure of job openings for the U.S. increased significantly in June and July of 2021 before declining in August, the weekly measure suggests that, for both the U.S. and Wisconsin, the number of new online job postings dropped significantly in July and has been roughly flat at a lower level since then. Part of the differences between the two data series is likely due to the fact that, while the official data in JOLTS measure the *stock* of job openings, the data from BGT measure the *new, or the inflow of*, online job postings. This difference should be kept in mind when interpreting the results reported below.

Figure 6 plots the weekly measure of new online job postings for three sectors in Wisconsin: education and health services, manufacturing and leisure and hospitality. In the last six months covered by the data, the number of new online job postings in all three sectors have been above their pre-pandemic levels in January 2020. The measure for all three sectors dropped significantly in December 2021, but has been increasing since January 2022. The latest data suggest that the number of new online job postings for manufacturing is 50% above its value in January 2020, and it is about 30% for the leisure and hospitality sector.

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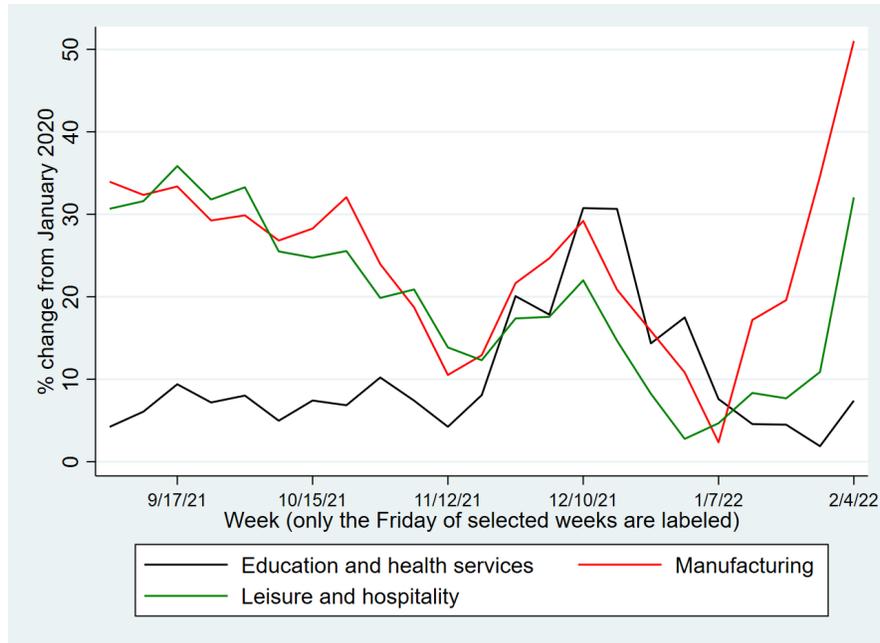


Figure 6. New Online Job Postings by Sector in Wisconsin

Figure 7 plots, for the U.S. and each state excluding Hawaii which is an outlier, the change in new online job postings between January 2020 and the four weeks ending 2/4/2022 against the change in unemployment between January 2020 and December 2021. Since new online job postings reflect labor demand, while unemployment is a measure of labor supply, the difference in their changes could be viewed as a measure of how labor market fares lately relative to January 2020. If the increase in new online job postings lacks the increase in unemployment, it would suggest there is still some slack in the labor market resulting from the pandemic. Otherwise, if the increase in new online job postings exceeds the increase in unemployment, it would be an indication that the labor market is now tighter than it was in January 2020.

The number of new online job postings in the U.S. is now about 26% above its level in January 2020. In comparison, unemployment in December 2021 is about 8% below its level in January 2020. This suggests that, consistent with the data presented in the previous section, the U.S. labor market is now tighter than it was before the pandemic.

There is, however, some heterogeneities across states. While the increase in new online job postings exceeds the increase in unemployment in 43 out of the 51 states (with DC treated as a state), the opposite is true for the remaining 8 states, including Colorado and Hawaii mentioned above, suggesting that there is still some slack in the labor market of these states.

For Wisconsin, unemployment in December 2021 was about 43% below its level in January 2020. In comparison, new online job postings increased by 20% between January 2020 and the four weeks ending 2/4/2022. This comparison suggests that,

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consistent with the data presented in the previous section, the state's labor market is much tighter now than it was before the pandemic.

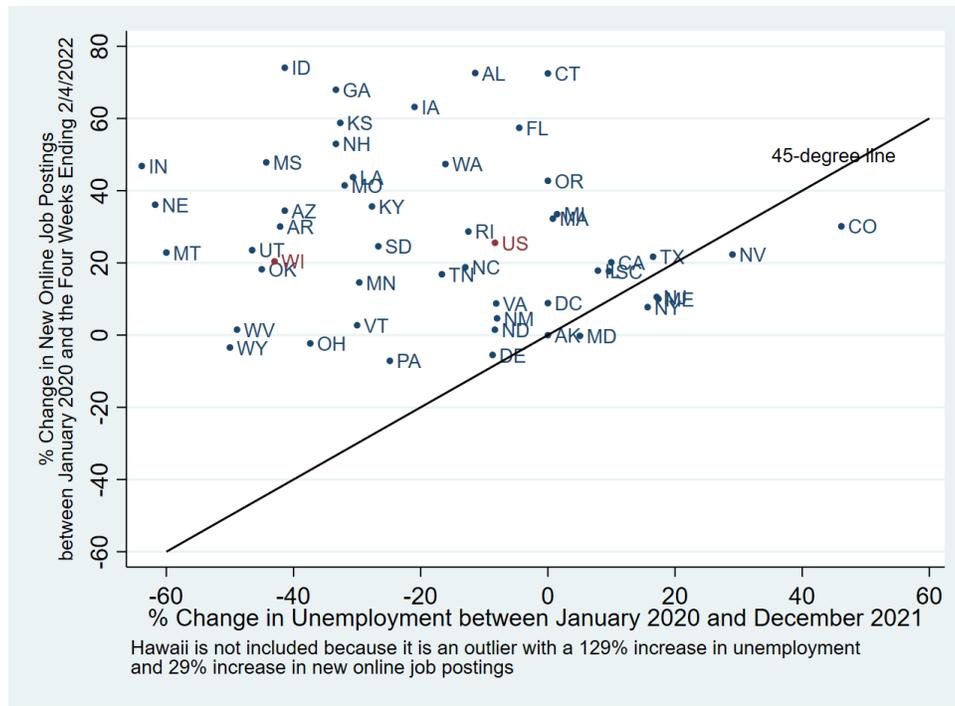


Figure 7. Changes in New Online Job Postings vs Unemployment across States

3 Summary

The latest data suggest that, for both the U.S. and Wisconsin, there are more job openings and fewer unemployed workers now than they were before the pandemic. This suggests that both labor markets are much tighter now than they were before the pandemic. However, there are some heterogeneities both across states and across sectors within a state. For example, the number of job openings per unemployed worker has not recovered to its pre-pandemic level in 8 states, including Colorado and Hawaii, and the increase in the number of new online job postings in Wisconsin between January 2020 and January 2022 is much larger for the manufacturing sector than it is for leisure and hospitality.