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

Junjie Guo
Center for Research on the Wisconsin Economy, UW-Madison
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Abstract
In March and April of 2020 and for both the U.S. and Wisconsin, the number of job openings per capita dropped by more than 20%, the weekly number of new online job postings dropped by over 30%, and the number of job openings per unemployed worker, a standard measure of labor market tightness, dropped by over 70%. Although there were some fluctuations, all three measures have been recovering since then, especially in the summer of 2020 and in the first few months of 2021. However, the latest data suggest the number of new online job postings have been dropping in the last few weeks.

Overall, the data suggest that job openings in both the U.S. and Wisconsin have exceeded their pre-pandemic levels. For the U.S., the number of job openings per capita is now about 3.5%, which is about 30% above its level of 2.7% observed in January 2020. In comparison, unemployment is now about 36% above its pre-pandemic level in January 2020. Together, these numbers suggest the national labor market is not as tight as it was before the pandemic yet. However, there are some significant heterogeneities across states, with New Hampshire being an example where the labor market is much tighter now than it was before the pandemic. Wisconsin is roughly in the middle, with unemployment and job openings both about 10-15% above their pre-pandemic levels, and the labor market about as tight as it was before the pandemic.
1 Overview
Over 20 million Americans lost their jobs in April 2020, the first full month of the COVID-19 pandemic. After more than a year, the total number of unemployed workers has dropped below 9.5 million, and the weekly number of individuals filing for initial unemployment insurance claims has dropped significantly from its peak of over 6 million to about 373 thousand. Although both measures are still above their pre-pandemic levels, about 5.8 million for unemployment and 210 thousand for weekly initial unemployment insurance claims, recent discussions have been shifted to labor shortage, with some businesses struggling to hire workers.¹

Whether and how quickly a worker can find a job depends not only on the worker’s search effort but also on the number of job openings available. While it is easy to find a job in a tight labor market with a large number of job openings per unemployed worker, when there is a lot of slack in the labor market with a limited number of job openings, it could be hard to find a job even with a lot of effort. Similarly, whether and how quickly a firm can fill a vacancy depends on both the number of unemployed workers looking for a job and the number of job openings competing for those workers. While it is easy to fill a vacancy when there are lots of unemployed workers per vacancy, it will be hard to do so in a tight labor market with a large number of job openings per unemployed worker.

This data brief reports the evolution of job openings and labor market tightness during the COVID-19 pandemic. We find that, in March and April of 2020 and for both the U.S. and Wisconsin, the number of job openings per capita dropped by more than 20%, the weekly number of new online job postings dropped by over 30%, and the number of job openings per unemployed worker, a standard measure of labor market tightness, dropped by over 70%. Although there were some fluctuations, all three measures have been recovering since then, especially in the summer of 2020 and in the first few months of 2021. However, the latest data suggest that the number of new online job postings have been dropping in the last few weeks.

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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 for the four Census regions, with the national data also available by sectors. The latest observation is for May 2021.

Recently, the JOLTS program started to produce experimental estimates of job openings, hires, and separations for all 50 States and the District of Columbia at the total nonfarm level. These estimates are now available until March 2021.

Figure 1 reports the number of job openings per capita for the U.S. and Wisconsin. In the two years before the pandemic, the number of job openings per capita was about 2.5-3% in the U.S. and 3-3.5% 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 in both economies have reached above 3.5% and exceeded their pre-pandemic levels.
Job Openings and Labor Market Tightness During the COVID-19 Pandemic

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

For the U.S. and each of its 50 states plus DC, Figure 2 plots the number of job openings per capita in March 2021 against the corresponding value in January 2020. All but six states lie above the 45-degree line, suggesting that majority of the states have more job openings now than before the pandemic.

Figure 2. Job Openings across States: January 2020 vs March 2021
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 two years 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 substantially 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 there was about 1 job opening for each unemployed worker in the U.S. in May 2021, and about 1.5 job openings for each unemployed worker in Wisconsin in March 2021.

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

Similar to Figure 2, for the U.S. and each of its 50 states plus DC, Figure 4 plots the number of job openings per unemployed worker in March 2021 against the corresponding value in January 2020. Different from Figure 2 where most states lie above the 45-degree line, most of them are below the 45-degree line in Figure 4, suggesting that labor market tightness has not reached its pre-pandemic level in most states. The difference arises because unemployment is still at an elevated level in most states.
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 figures 3 and 4 may be less informative. 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. 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

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Friday. For each week from the first full week in January 2020 to the week ending July 2, 2021, the measure reports the percentage change of that week’s new job postings from the average of the four full weeks in January 2020. 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.

The two measures exhibit similar patterns and also some differences. In 2020, both measures declined significantly in March and April, rebounded in May and June and then remained roughly flat from July to December. Entering 2021, both measures started to rise again. The most obvious difference is that, 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, while the opposite is true for Wisconsin since August 2020. The latest data on the weekly measure suggests that, after increasing for most of 2021, the number of new online job postings has been dropping in the last few weeks, although it is still about 12% and 13% above the level in January 2020 for the U.S. and Wisconsin, respectively.

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

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. The three measures exhibit similar patterns and also some differences. In 2020, all of them dropped significantly from mid-March to mid-May (by about 60% for leisure and hospitality, 45% for manufacturing, and 30% for education and health services), rebounded from mid-May to late June and then remained roughly flat from July to December. Entering 2021, all three measures started to rise again. Similar to the state and national averages reported in Figure 5, the latest data suggest that the number of
new online job postings has been dropping in the last few weeks in all three sectors, although still about 15-45% above their levels in January 2020.

![Figure 6. New Online Job Postings by Sector in Wisconsin](image)

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 7/2/2021 against the change in unemployment between January 2020 and May 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 now 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.

As mentioned above, the number of new online job postings in the U.S. is now about 12% above its level in January 2020. In comparison, unemployment in May 2021 is still about 36% above its level in January 2020. This suggests there is still some slack in the U.S. labor market, consistent with the finding above that labor market tightness in the U.S. has not reached its pre-pandemic level yet.
There is, however, a lot of heterogeneity across states. In particular, the increase in new online job postings exceeds the increase in unemployment in 23 out of the 51 states (with DC treated as a state). The labor markets in these states are likely tighter now than it was before the pandemic in January 2020.

For Wisconsin, unemployment in May 2021 is still about 13% above its level in January 2020. This increase in unemployment, however, is about 7 percentage points smaller than the 20% increase in new online job postings between January 2020 and the four weeks ending 7/2/2021 mentioned above. This comparison suggests labor market tightness in the state is close to the pre-pandemic level in January 2020, consistent with the finding above in figures 3 and 4.

3 Summary
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