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UNEMPLOYED WITH JOBS AND WITHOUT JOBS

Robert E. Hall  
Marianna Kudlyak

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### **ABSTRACT**

Potential workers are classified as unemployed if they desire to work but are not working. The unemployed population contains two groups—those with jobs and those without jobs. Those with jobs are on furlough or temporary layoff. They wait out periods of non-work with the understanding that their jobs still exist and they will be recalled. We show that the resulting recall-unemployment dissipates quickly following a shock. Those whose jobs no longer exist constitute what we call jobless-unemployment. Shocks that elevate jobless-unemployment have much more persistent effects. The unemployed without jobs often circle through short-term jobs, spells of unemployment, and spells out of the labor force, before finding stable employment. Historical major adverse shocks, such as the financial crisis in 2008, created mostly jobless-unemployment and consequently caused extended periods of elevated unemployment. The pandemic starting in March 2020 created a large volume of recall-unemployment, most of which dissipated by August. It also created a bulge in jobless-unemployment, which is lingering.

Robert E. Hall  
Hoover Institution  
Stanford University  
Stanford, CA 94305-6010  
and NBER  
rehall@stanford.edu

Marianna Kudlyak  
101 Market St  
Federal Reserve Bank of San Francisco  
San Francisco, CA 94105  
marianna.kudlyak@sf.frb.org

In the labor-force statistics of the United States, an individual is unemployed if not working, but is available for work, and is either actively looking for work or waiting to return to an existing job. Until the pandemic hit the labor market in March 2020, the great majority of the unemployed fell into the first category—those actively looking for work—only a fraction of one percent of the labor force was waiting for recall. Unemployment was effectively synonymous with joblessness. The pandemic prevented many millions of individuals from working, but they retained their jobs. The jobless population rose moderately, while the unemployed population, waiting for recall, exploded.

We study the distinction between *jobless-unemployment* and *recall-unemployment*. We explore whether in the regime created by the pandemic, total unemployment retains its social significance in a similar way as suggested by the traditional term of joblessness. Higher recall-unemployment unemployment implies a burden on the economy from the decline in the utilization of available labor and a corresponding decline in the earnings of the labor force. However, there is some offsetting social benefit from the preservation of job-specific human capital among workers who do return to their earlier jobs. A major difference is that recall-unemployment returns to normal much faster than does jobless-unemployment.

A decline in recall-unemployment typically takes place as soon as economic conditions improve and firms recall workers. No search or matching takes place—firm-worker match capital is preserved. A decline in recall-unemployment does not mean that the workers are all back at work because they were recalled. Employers may cancel recall plans, because the plans turned out to be over-optimistic. These workers become jobless-unemployed, find new jobs, or leave the labor force. Workers remaining on recall may take interim jobs, in which case they show up in the data as employed, not as recall-unemployed.

In contrast, a decline in jobless-unemployment takes time. Creation of new, stable, firm-worker relationships is a long and costly process. Terminated workers often circle through a number of short-term jobs before finding a stable job. For reasons we explore in another paper, jobless-unemployment declined quite slowly but reliably during the type of economic recovery that typified the US economy from 1948 through 2019. As we show in this paper, recall-unemployment has declined at a much faster rate so far, in the months since total unemployment began to decline in May 2020.

An increase in jobless-unemployment comes in part from a direct inflow of individuals who suffered permanent job loss, or who were out of the labor force and then start searching actively for work. It can also come from individuals on recall-unemployment losing their recall option.

The 2020 pandemic led to employment losses in the U.S. of catastrophic proportions, but only moderate job losses—so far, much smaller than in the recession that began in late 2007.

Key factors that will determine the shape and speed of the future recovery are whether the pandemic

- eventually destroys the firm-worker relationships that are currently in limbo,
- slows down the job finding opportunities for the unemployed without jobs,
- triggers a new wave of job loss, but this time involving losses of permanent jobs.

If these developments occur with sufficient combined magnitude, jobless-unemployment will rise well beyond its current level of 5.7 percent of the labor force to levels typical of serious recessions, such as the 10 percent of the labor force that occurred at the worst of the recessions of 1981 and 2007.

We compare unemployment in the 2020 pandemic to unemployment in the most recent recessions, focusing on the distinction between recall-unemployment and jobless-unemployment. Recall-unemployment accounted for almost the entire increase in the unemployment rate to its historic high of 14.7 percent in April 2020. Since then, the recall-unemployment rate has declined by 5.7 percentage points. In later months, through August 2020, the total unemployment rate has continued to decline at an unprecedented rate, but jobless-unemployment has been rising, so recall-unemployment has fallen by more than the fall in total unemployment.

So far in the current recovery, workers among the recall-unemployed have not been moving into jobless-unemployment at an unusually high rate. But jobless-unemployment has been rising. One reason is that there has been an increase in churn, specifically the flow of individuals out of the labor force and the flow re-entering the labor force. Some of these individuals find stable jobs quickly but others tend to circle through unemployment, out of the labor force, and short-term jobs. Job-finding rates for the jobless-unemployed have fallen, though they are still reasonably high by historical standards.

The term *layoff* has a major role in discussions of the issues considered in this paper. In labor-market parlance, a layoff means a cessation of work not resulting from a choice of a worker to leave a job—not a quit—and not a discharge resulting from a worker’s misconduct. Layoffs may be temporary, meaning with an expectation of recall. Our category of recall-unemployment corresponds to non-working individuals who are classified as on temporary layoff. Layoffs may also be terminations, that is, the loss of a job without expectation of recall. We avoid the use of the layoff term because we want to emphasize the important distinction between recall-unemployment and jobless-unemployment, both of which originate from layoffs. Some authors refer to jobless-unemployment as “permanent layoff unemployment”. This terminology arises from a category of the unemployed in the

Current Population Survey whose unemployment resulted from the loss of a permanent job, as distinguished from another category, the ending of an explicitly temporary job. It is the lost job that was permanent, not the layoff.

## 1 Related Research

Feldstein (1976) launched an extensive literature on the role of recalls in labor dynamics. He found that an imperfect experience rating system in which firms did not pay the full cost of benefits accounted for a large portion of temporary layoffs and the resulting bulge in unemployment in a recession. More recent commentary on this issue includes Topel (1983), Card and Levine (1994), Brown and Ferrall (2003), and Ratner (2014).

Fujita and Moscarini (2017) demonstrated the importance of recall-unemployment in pre-pandemic data. They found that post-unemployment outcomes for recalled workers were substantially better than for those not recalled, a finding consistent with ours, using pandemic data. Their paper contains many references to other recent pre-pandemic work on recalls.

Gregory, Menzio and Wiczer (2020) is a mainly theoretical paper that is highly complementary to this paper. It emphasizes heterogeneity in the job-search process, including especially the difference between searchers with a prospect for recall and those without that prospect. The current version of the paper calibrates the model to the differing experiences of those groups and from other dimensions of heterogeneity in pre-pandemic data. The paper characterizes the central issue as the difference between a favorable V-shaped recovery, where the high re-employment rate of recalled workers dominates the recovery, and an unfavorable L-shaped recovery, where job losers undergo a time-consuming process finding new, stable jobs. With the pandemic-period data we assemble in this paper, the model can be calibrated more directly to the pandemic, and, based on results to date, would probably portray a more favorable recovery than Gregory et al. (2020) develop in the current version.

Gallant, Kroft, Lange and Notowidigdo (2020) build a detailed model of labor-market transitions that distinguishes individuals by layoff status. The model's calibration is confirmed by studying pandemic-period data through July. The model's estimated transition rates show that recall rates considerably exceed job-finding rates for job-seekers who lack potential recalls. The paper uses data on vacancies to measure the demand for labor and makes the case that demand was far stronger than would normally accompany unemployment rates at the high level experienced during the pandemic so far. Based on assumptions about labor demand, the paper uses the model of labor-market transitions to forecast unemployment

several years ahead. A main thrust of the paper is the finding that the demand assumptions fed into the model forecast much less unemployment than do professional forecasters.

## 2 How the Current Population Survey Measures Unemployment

In the US, the Current Population Survey (CPS), designed and published by the Bureau of Labor Statistics (BLS), is the basis for the official estimates of the unemployment rate and related measures of labor-market status. We use the CPS to examine the distinction between recall and jobless-unemployment, and related issues. In describing the logic of the CPS, we will treat the process as if it gathered information directly from an individual about that individual's labor-market status, but, while that is often the case, the CPS also gathers information about a household from one person, the respondent, on behalf of other members of the household.

The CPS has a variety of questions that determine if individuals are recall-unemployed, jobless-unemployed, or not unemployed. We refer to these questions by the name that the BLS has assigned, in capital letters. First, an individual is asked whether they did any work for pay during the reference week (WORK). Then they are asked whether they are on layoff from a job (LAY). If they are on layoff, the questions follow of whether the employer has given a date to return to work (LAYDT) or any indication that they will be recalled to work within the next 6 months (LAY6M). Finally, they are asked whether they could return to work if recalled (LAYAVL). All individuals on layoff are also asked whether they did anything to find work during the last 4 weeks (LK) and what the things they have done to find work during the last 4 weeks (LKM).

To be classified as recall-unemployed in the CPS, an individual answers negatively to question WORK (no work in the survey week), positively to question LAY (currently on layoff), positively to question LAYAVL (available to return to work), and positively to either question LAYDT (employer has given a return date) or to question LAY6M (recall indicated within 6 months).

To be classified as jobless-unemployed, an individual answers negatively to question question WORK (no work in the survey week), not positively to question LAY (not currently on layoff), positively to question LK (looked for work), and answers question LKM to indicate active job search (answers 1 through 9).

There is a category of "employed, absent without pay" in the CPS, whose members are not counted as unemployed. The BLS has indicated that they should be counted, but has

not acted on that conclusion, to preserve continuity. Only in the pandemic has this category had a meaningful number of members.

Based on the information discussed here and other questions in the CPS, unemployed individuals are classified by six reasons for entering unemployment: (1) lost a permanent job, (2) completed a temporary job, (3) was laid off with expectation of recall (temporary layoff), (4) re-entered the labor force, (5) entered the labor force for the first time, and (6) quit a previous job. Reason 3 corresponds to recall-unemployment and the other reasons comprise jobless-unemployment.

### **3 Recall- and Jobless-Unemployment Historically and during the Pandemic**

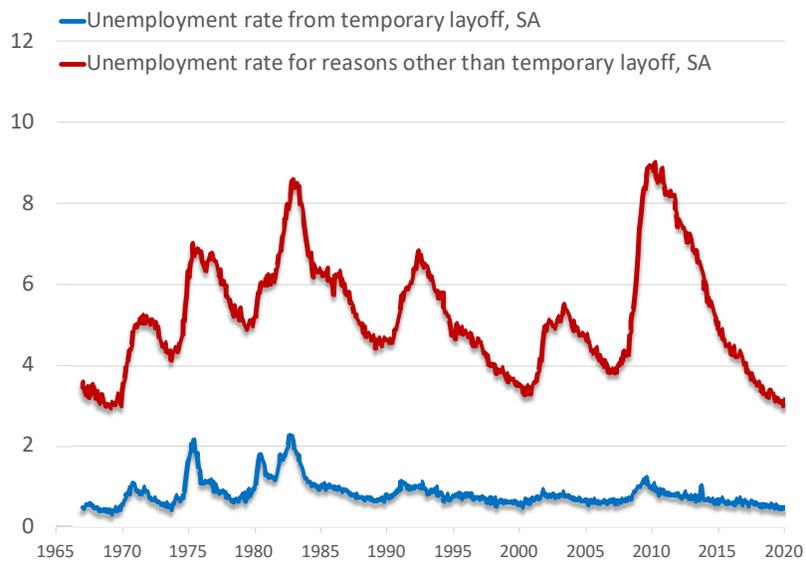
#### **3.1 Evidence from the CPS**

Figure 1, panel (a) shows the recall and jobless-unemployment rates, from January 1965 through February 2020, the last month before the pandemic influenced the labor market materially. At all times, recall-unemployment was small in relation to jobless-unemployment. When the labor market was strong and unemployment low, the recall portion was under one percent of the labor force, while jobless-unemployment only dropped below four percent in the very strongest years. In recessions, jobless-unemployment rose to close to 9 percent of the labor force. In the recessions starting in 1974 and 1981, recall-unemployment touched 2 percent, but hardly rose at all in the later recessions of 1990 and 2001. Even the severe recession starting in 2007 saw an increase in the recall-unemployment rate of less than one percentage point.

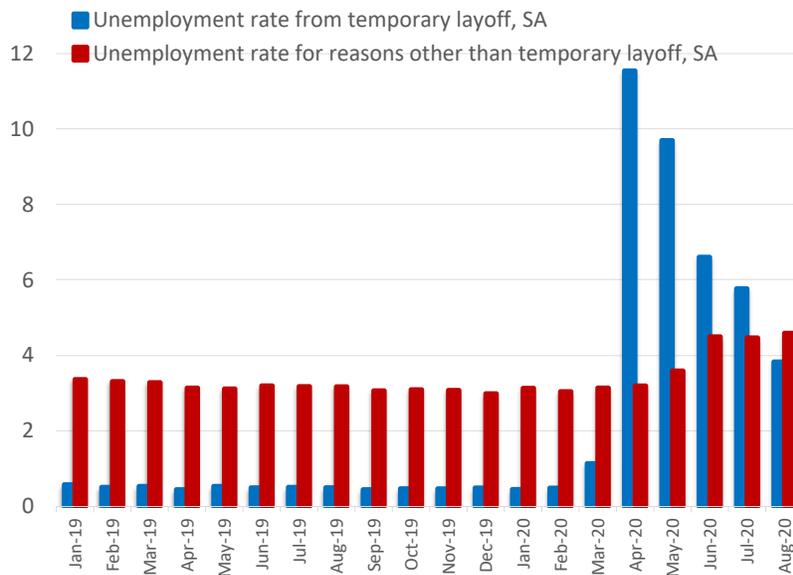
The recall-unemployment rate in the recessions prior to 1990 was somewhat higher than in the most recent three recessions. A structural change in the UI system at the end of the 1980s is one of the reasons. Prior to the late 1980s, employer insurance premiums in the UI system were not linked to the number of workers they displaced. Temporary layoffs served as a way for firms to manage their workforces during economic downturns, effectively subsidized by the UI system.

Figure 1, panel (b), displays the totally different behavior of the two kinds of unemployment during the pandemic, starting in March 2020. At the peak in April, the recall-unemployment rate had skyrocketed to 11.5 percent. The jobless-unemployment rate rose only slightly, to 3.2 percent from its February value of 3.0 percent.

Recall unemployment accounted for more than the entire increase in unemployment at the beginning of the 2020 pandemic. This can be seen in Figure 2, which shows the month-



(a) January 1965 to February 2020



(b) 2019-2020

Figure 1: Recall-Unemployment Rate and Jobless-Unemployment Rate

Note: Unemployment as a percent of the labor force, monthly seasonally adjusted.

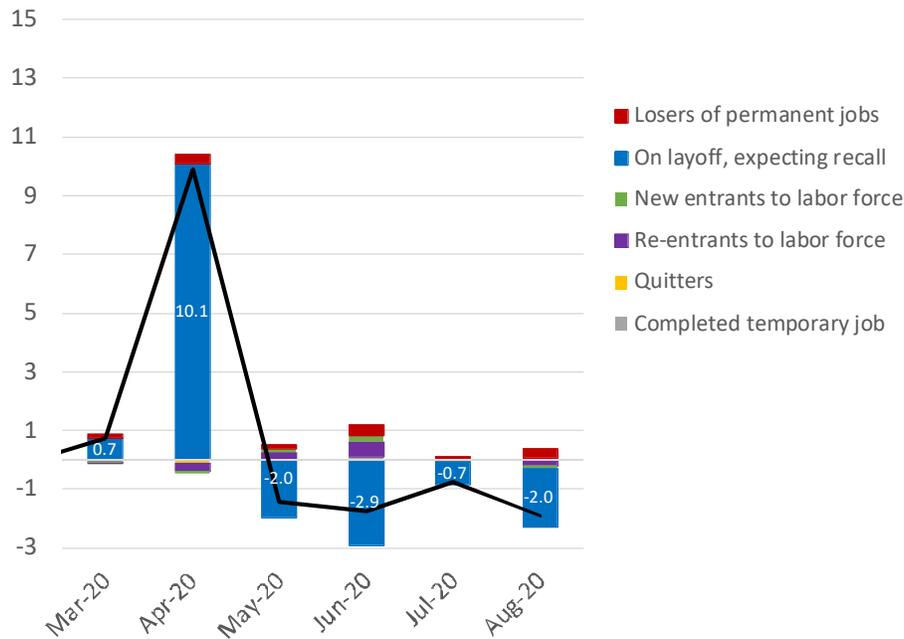


Figure 2: Contribution of Layoffs with Expected Recall and Other Reasons to the Monthly Change in Unemployment during the Pandemic, Percent of Labor Force

Note: Not seasonally adjusted

to-month change in unemployment during the 2020 pandemic (solid red line) and the contributions of each of the six reasons to the change (color bars, non-seasonally adjusted). Between March and April 2020, the aggregate unemployment rate increased by 9.9 percentage points. The recall unemployment rate increased by 10.1 percentage points. The jobless unemployment rate actually declined.

### 3.2 Additional evidence from employers

It is useful to supplement the CPS data on the nature of pandemic unemployment with data from employers to see whether they paint a similar picture. First, employers might possess more accurate information about the nature of layoffs than the workers in the survey. Second, the BLS slightly changed the interviewing process during the pandemic, which might have led to a larger fraction of layoffs to be counted as temporary as compared to the previous periods BLS (2020). A number of investigators have studied data from employers relating to the recent behavior of unemployment. The data from firms confirms the conclusions from

the CPS that the majority of layoffs at the beginning of the pandemic were classified as temporary.

Using the Survey of Business Uncertainty, Barrero, Bloom and Davis (2020) document that the pandemic caused gross staffing reductions of 15 percent of March 1 employment between that date and mid-May and that 77 percent of these gross staffing reductions were attributed to temporary layoffs and furloughs. Though the BLS does not use the term furlough, it is generally understood to be paid or unpaid leave from a job with an understanding that the worker will be recalled. Using data from the payroll processing company ADP, Cajner, Crane, Decker, Hamins-Puertolas and Kurz (2020) find that temporary layoffs constituted about two-thirds of the decline in paid employment in the ADP firms. Kudlyak and Wolcott (2020) find similar results using data on mass layoffs from the Federal Worker Adjustment and Retraining Notification Act notices.

## 4 Is Recall-Unemployment Turning into Jobless-Unemployment?

Since April 2020, total unemployment and recall-unemployment have been declining. But total unemployment declined by less than recall-unemployment fell. That is, jobless-unemployment has increased. One obvious potential reason for this phenomenon is that employers are becoming less optimistic and are canceling advice they give to their idle workers about the prospects for recall. A related possibility is that individuals previously expecting recall have abandoned that hope and are actively looking for new jobs.

The CPS does not verify whether workers who were classified as on temporary layoff, and thus recall-unemployed, subsequently do actually return to their jobs. Thus a direct attack is not possible with data from the CPS on the question of leakage from recall-unemployment to jobless-unemployment based on the incidence of actual recalls. Instead, we examine transitions of individuals who stated in one month that they were expecting recall, and then shifted to stating in the next month that they were jobless and seeking work. If leakage is worsening, the transition rate would be rising from one month to the next.

We match the CPS microdata month-to-month by respondent and construct the frequency of transitions from temporary layoff as the stated reason for unemployment to loss of permanent job as the reason, at the individual level. We include the 6 rotation-groups pairs that cover one-month transitions. Figure 3 shows the monthly frequency of such a leakage transition. In normal times, the frequency is under 5 percent; but during the 2007-09 recession it went up to 15 percent. As of June 2020, the most recent month covered by the CPS microdata, there has been no visible increase in the transition rate. While this is encourag-

ing news, there are reasons to be cautious. The frequency of leakage from recall- to jobless-unemployment increases during economic downturns with high jobless-unemployment. Consequently, leakage will increase if the pandemic recession resumes and unemployment rises.

## 5 Distribution of Jobless-Unemployment by Prior Labor-Market Status

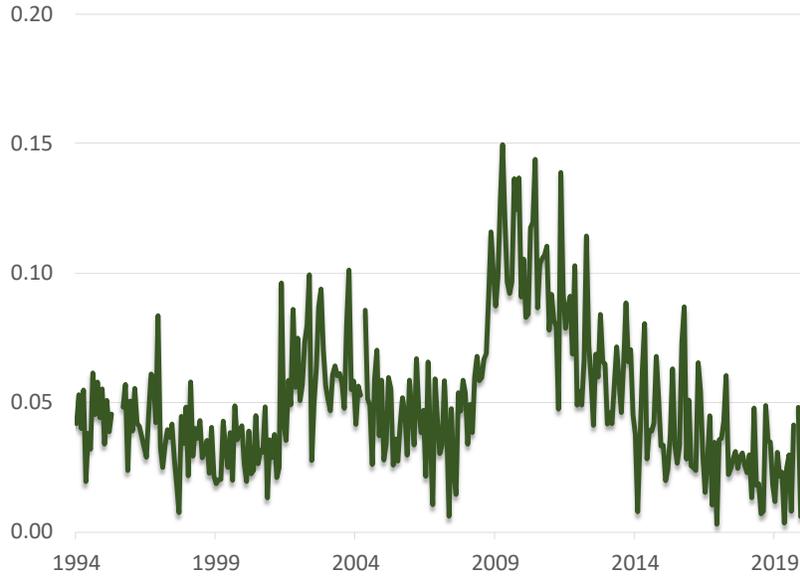
Our results demonstrate the importance of jobless-unemployment in understanding the dynamics of the labor market in the pandemic recession and nascent recovery. Though unemployment reached alarming levels in April 2020, most of the increase came in the form of recall-unemployment, which dissipates much more quickly than the jobless-unemployment that proved highly persistent in past recessions. This section explores the path into jobless-unemployment from other labor-market statuses.

The pattern of transitions among labor-market statuses has changed substantially as the pandemic has evolved. Again, we study month-to-month matched records in the CPS. We classify the jobless-unemployed into five categories based on the individuals status in the previous month. The categories based on the previous month's status are: (1) employed, (2) recall-unemployed, (3) jobless-unemployed, (4) out of the labor force, and (5) missing from the CPS data. We include the fifth category because the BLS reports that an unusually large fraction of individuals were missing from the April and subsequent surveys (BLS, 2020). We express the distribution across the five categories as percent shares of the labor force. Figure 4 displays the results. The figure shows where the current jobless-unemployed come from. Panel (a) shows the time series from January 1994 to February 2020, and Panel (b) shows the most recent period.

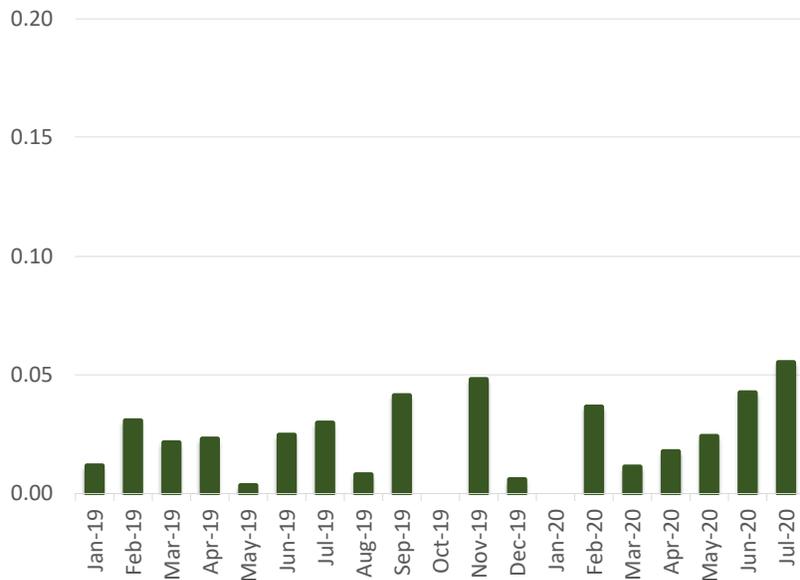
We find the following:

- In April 2020, at the height of the pandemic, an unusually large fraction of jobless-unemployment came from previously employed individuals. These people had lost jobs in unusual numbers from the pandemic.
- In May and June the fraction coming from employment declined and the fraction coming back into the labor force went up substantially.
- In May and June the fraction coming from recall-unemployment went up. The fraction of those who were missing (failed to respond) in the previous month went up as well, which was also the case in the 2007 recession.

Some implications of these developments for the evolution of the labor market during the pandemic are:



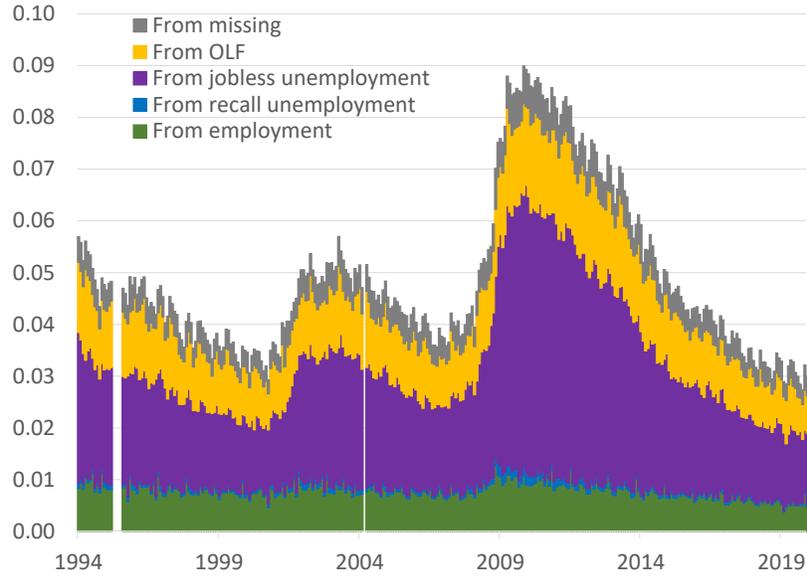
(a) January 2000 to February 2020



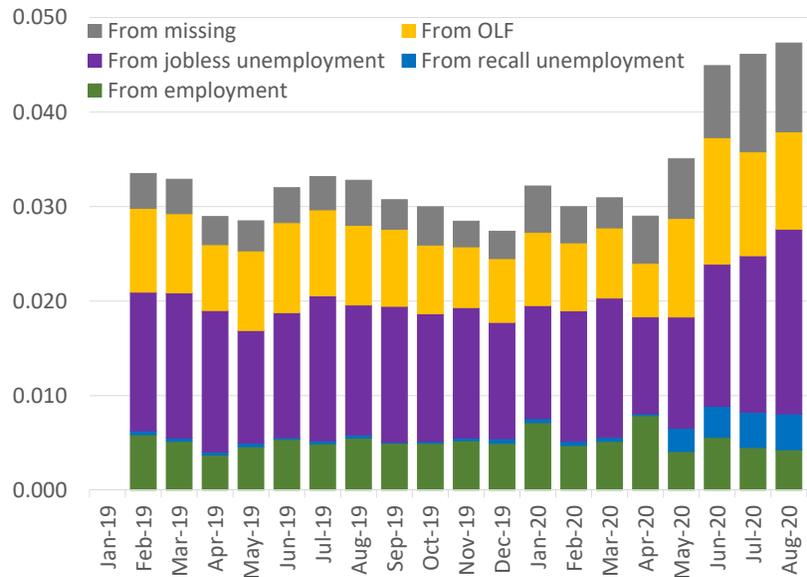
(b) 2019-2020

Figure 3: Probability of Recall-Unemployment Turning into Jobless-Unemployment

Note: Monthly series calculated from the month-to-month matched CPS microdata, not seasonally adjusted



(a) January 1994 to February 2020



(b) 2019-2020

Figure 4: Composition of the Jobless-Unemployment Rate, by Labor-Force Status in the Previous Month

Note: Not seasonally adjusted

- The observation that the fraction of unemployment for reasons other than temporary layoffs coming from employment is not going up is a positive development—permanent job loss is not elevated.
- While the fraction coming from temporary layoffs is elevated, this is not yet a significant concern. As we have shown above, temporary layoffs are not turning into permanent job loss at an elevated rate. Their fraction is high because there are many of them.
- Finally, the observation that a large fraction is coming from OLF is troublesome because these individuals tend to circle through multiple spells of unemployment, out of the labor force status and short-term jobs before finding a stable job (Hall and Kudlyak (2019)). Consequently, they may contribute to the persistence of the aggregate unemployment rate.

Zooming in on the 2007-09 period in Figure 4, we observe that the level and persistence of the aggregate unemployment rate during that time was largely due to the individuals who were unemployed in the previous months. At present, the contribution of this category is low, that is, the fraction of long-term unemployed is low. However, one should watch out for unemployment turning into long-term unemployment. And the elevated fraction of those coming from out of the labor force is typically at a high risk of becoming long-term unemployed (Hall and Kudlyak (2019)).

## 6 Labor-Market Tightness

One of the important contributions of the models of the labor market associated with Diamond, Mortensen, and Pissarides (DMP) is the formalization of the concept of tightness. The market is tight when job-seekers locate new jobs easily and quickly, and employers locate new workers with difficulty and slowly. The job-finding rate is one of the key metrics of tightness. It is the probability that a jobseeker will accept a new job over a month of looking. The job-finding rate can be measured directly from the CPS microdata. The average time to fill a job vacancy is the other key metric labor-market tightness. The average vacancy duration is high in a tight market and low in a slack market. It can be calculated from the Job Openings and Labor Turnover Survey (JOLTS), which reports data on hiring from a survey of businesses.

Job-finding rates from the CPS and vacancy durations from JOLTS are remarkably highly correlated. The high correlation is good evidence of the validity of the DMP modeling approach. See Hall and Schulhofer-Wohl (2018) for discussion of these concepts and measures

of rates for a variety of originating activities, ranging from, on the one hand, active search without a job to, on the other, out of the labor market and unavailable to work.

## 6.1 The job-finding rate

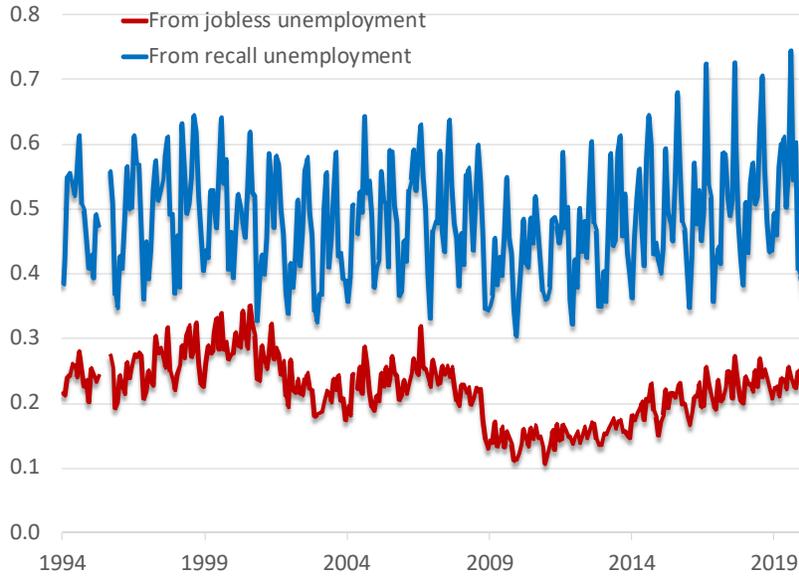
The job-finding rate is the probability that a person observed in a given labor-market status at one time, is holding a job when observed again some time later. In tight labor markets with overall unemployment rates below 4 percent, the typical job-finding rate is roughly double its value in the worst slumps. Put another way, it took twice as long to find a job than it had when the labor market was strong.

One important question about the pandemic labor market is how tight or slack the market is for the jobless-unemployed. Prior to the pandemic, the overall unemployment rate was a reasonable guide to job-finding rates throughout the labor market. By that standard, the labor market in August 2020, with overall unemployment at 8.4 percent, was very slack. In historical times when unemployment was that high, which were fortunately rare, jobs were hard to find.

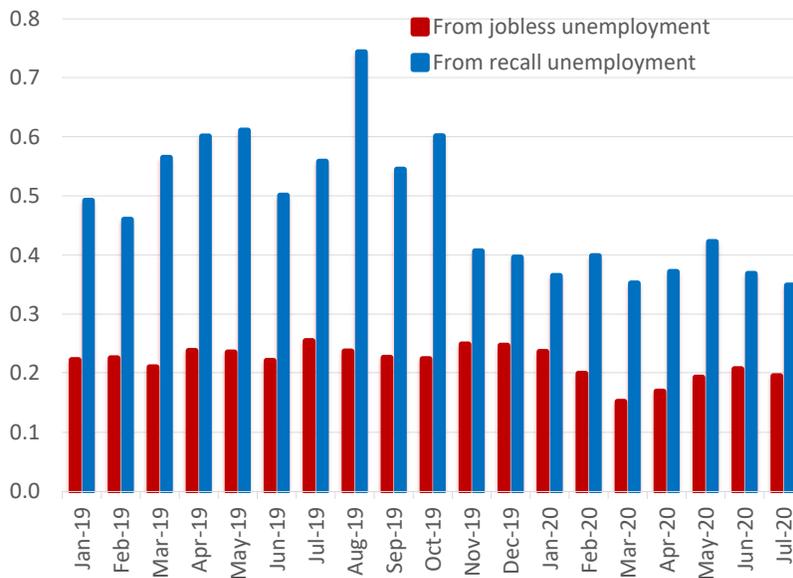
Figure 5 shows job-finding rates for people in the two categories of unemployment featured in this paper. Panel (a) shows pre-pandemic rates from January 1995 through January 2020. The upper line is the frequency that a person in recall-unemployment in one month is employed in the following month. In most cases we believe that such a person was probably recalled rather than finding a new job, but, as we noted earlier, some people take a new job even though they were on recall for an existing job. The lower line shows the frequency with which a person in jobless-unemployment in one month is employed in the following month. The job-finding rate out of recall-unemployment is about double the rate for those in jobless-unemployment. Both rates track the business cycle and reached high levels by the beginning of 2020.

Panel (b) of the figure shows what has happened so far in the pandemic. The job-finding rate for recall-unemployed individuals has fallen slightly in the months measured so far, relative to the average of the same months averaged over 2017, 2018, and 2019. The decline is larger compared to 2019 alone. The rate for jobless-unemployed people fell noticeably in April but bounced back in May, though it is still below its levels in 2019.

So far in the pandemic, both measures of labor-market tightness show a definite slackening of the market, but nothing like what would be inferred from the high overall unemployment rate.



(a) January 2000 to February 2020



(b) 2019-2020

Figure 5: Job Finding Rates for Recall- and Jobless-Unemployed

Note: Monthly series calculated from the month-to-month matched CPS microdata, not seasonally adjusted.

## 6.2 Duration of vacancies

The average duration of vacancies, in months, can be measured from JOLTS as the ratio of the number of vacancies to the monthly flow of newly hired workers. In a tight market, it takes more vacancy-months to hire one new employee. One month is a typical time to fill a vacancy. Panel (a) of Figure 6 shows the results of the calculation since the inception of the survey at the end of 2000. This variable tracks the business cycle in much the same way as the job-finding rate, except that it suggests some softening of the market in 2018 and 2019 that is not plainly visible in Figure 5, panel (a).

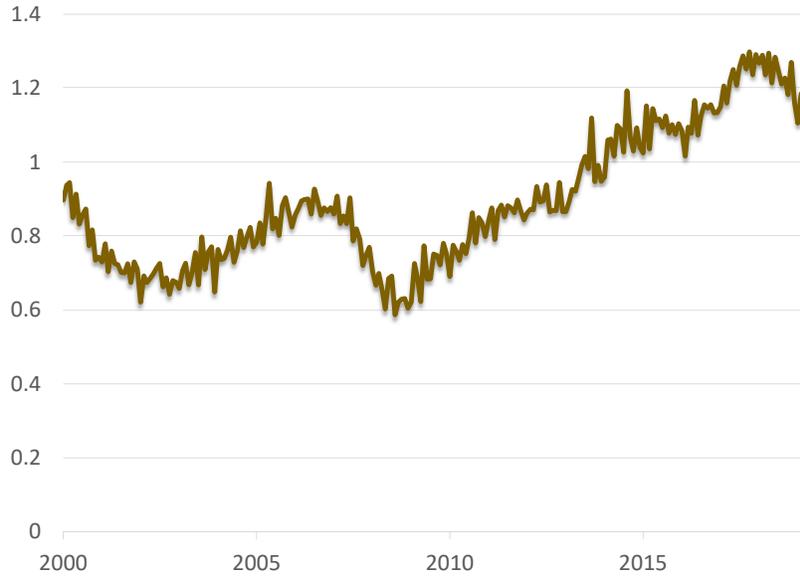
Panel (b) of the figure shows what has happened to vacancy duration during the pandemic through July 2020. It maintained a high value over 1.2 months in April, collapsed to below 0.8 months in May, then recovered in June and July to a value similar to the experience in months before the pandemic began.

## 6.3 The Beveridge curve

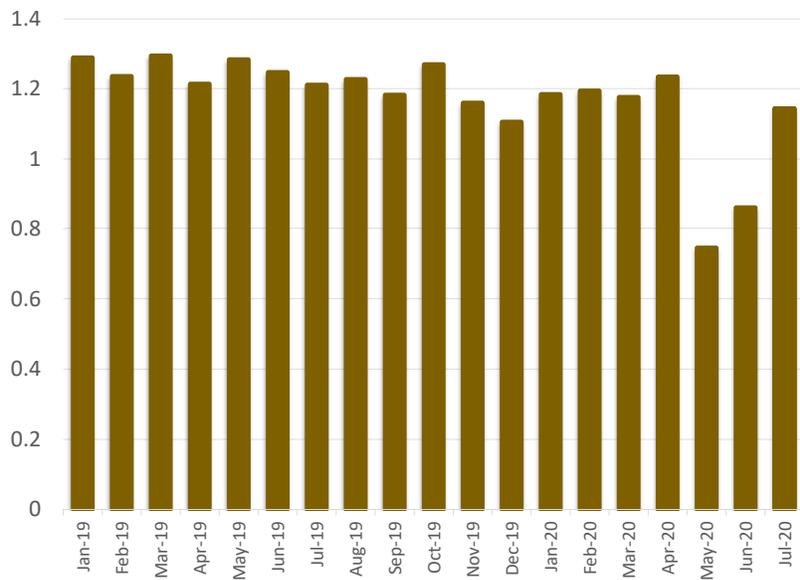
The Beveridge curve is a graph depicting the movements of unemployment on the horizontal axis and vacancies on the vertical axis. When the labor market is tight, vacancies are numerous and unemployment is low; the labor market is at a point up and to the left in the Beveridge curve. When the market is slack, vacancies are scarce and unemployment is high, down and to the right on the curve.

Some authors, including Gallant et al. (2020), have used the Beveridge curve as a tool to investigate recent events in the labor market. Overall unemployment rose much more than would be consistent with the pre-pandemic Beveridge curve, given the behavior of vacancies. Jobless-unemployment, when placed on the horizontal axis instead of overall unemployment, results in a reasonably stable new version of the Beveridge curve.

Because the Beveridge curve uses the same data on jobseeking and recruitment as we do in this paper, it would be redundant to present the data here in the Beveridge-curve format—it would not add to the already strong case that jobless-unemployment plays a similar role in the pandemic labor market to the role that overall unemployment did in earlier recessions. We also note that the Beveridge curve is inherently unstable, because, as, predicted by the DMP model, the vacancy rate is a jump variable, whereas unemployment is a state variable that lags behind jumps in vacancies.



(a) January 2000 to February 2020



(b) 2019-2020

Figure 6: Duration of Vacancies from JOLTS, in Months

Note: Ratio of seasonally adjusted data

## 7 Concluding Remarks

Recent experience has shown that a pandemic can trigger a severe recession, with a higher percentage of workers inactive than in the worst past recessions and a corresponding huge drop in output. Experience has also shown that the recovery in terms of a declining unemployment rate has occurred much faster, to date, than in past recessions.

The evidence is reasonably clear that there are two basic kinds of unemployment behind these developments. The shutdown of major sectors of employment has led many employers to idle their workers, but to indicate to them that they should plan to be recalled to their jobs. Recall-unemployment, previously a sideshow in labor dynamics, became the bigger component of total unemployment almost overnight. Very soon, recall-unemployment began to decline, replaced in small part by a rise in jobless-unemployment. Total unemployment receded much faster than in earlier recessions.

Tightness in the labor market, revealed by the job-finding rate for active, jobless individuals, declined, but not to normal recession levels. And tightness, revealed by the time required to fill a vacancy by recruiting efforts on the part of employers, dipped initially but returned to pre-pandemic levels a month later. Judged by tightness measures, the market for job-seekers is reasonably favorable.

The labor market could switch rapidly to normal recession conditions, with much lower job-finding rates and lower vacancy duration.

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