

# Accounting for the Jobless Recoveries

by Paul Gomme

A curious phenomenon of the last two business cycles is their weak employment growth early in the expansion phase, a trend widely referred to as the “jobless recovery.” In a typical business cycle, employment falls in the months immediately following the peak when the economy is in recession (see figure 1).<sup>1</sup> Employment eventually begins to grow again and, by 18 months after the business cycle peak, has regained the employment lost during the recession. Following the 1990–91 recession, however, it was nearly 30 months before employment recovered to its peak during the previous cycle. A similar pattern was observed during the 2001 recession—in fact, the only business cycle to have worse net employment creation was the 1980 recession, which was quickly followed quickly by another recession in 1981–82. This leads us to ask, what factors caused the atypical behavior of net job creation over the last two recoveries?

This *Economic Commentary* takes a preliminary step toward understanding employment dynamics over the business cycle, emphasizing the factors that made the last two recessions and recoveries different. Employment from one month to the next will differ because of flows into and out of employment. Flows into employment are called *job finding*; flows out of employment are referred to as *job separations*. The aggregate probability of job finding and job separation can be calculated from monthly data on the level of employment and unemployment. Here, we will look at the cyclical behavior of these probabilities in the postwar U.S. economy.

Knowing whether the two recent jobless recoveries were driven by differences in

job-finding or job-separation probabilities will help us to understand the overall employment dynamics over these episodes. In particular, knowing which of these factors is most important in accounting for the jobless recoveries can tell us where future research should be focused.

The 1990–91 recession was marked by a job-finding probability that remained low well after the recession had officially ended. The job-separation probability, on the other hand, was similar to previous recessions. Therefore, in accounting for the first jobless recovery, we should focus on the underlying causes of job finding, such as recruiting activity by firms, the job-search efforts of the unemployed, and the matching of firms seeking workers with individuals seeking employment.

During the 2001 recession and subsequent recovery, the job-finding probability mirrored the 1990–91 recession. But movements in the job-separation probability were much different during this period. Most recessions are characterized by a sharp increase in the job-separation probability at the onset (the 1990–91 recession followed this pattern); during 2001, however, the increase in this probability was quite modest. In this case, it would be interesting to know why the job-separation probability remained flat throughout the recession. To understand the behavior of the job-separation probability, we must understand why firms fire workers and why workers quit jobs.

## ■ The Job-Finding Probability

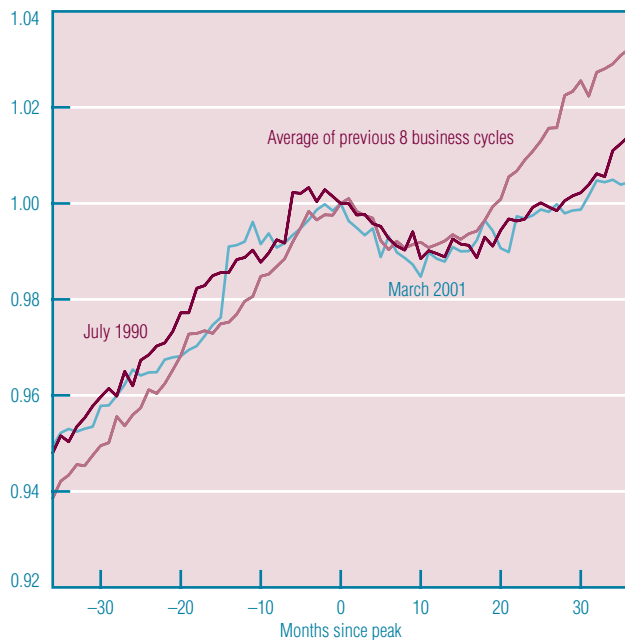
If we knew how many people found jobs in a given month, then computing the aggregate job-finding probability would be easy: Divide the number of job finders

**Much has been made of the so-called jobless recovery of the past two business cycles—that is, their atypically weak employment growth early in the expansion phase. This *Commentary* examines the factors that account for this behavior, focusing on two key measures: the probabilities of job finding and job separation.**

by the number of people unemployed. Although the Bureau of Labor Statistics (BLS) reports the number of people employed and unemployed, it does not report the number of job finders.

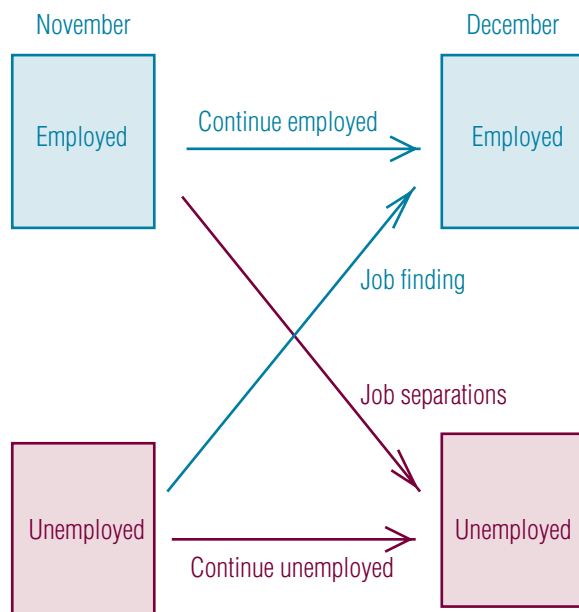
There is a roundabout way to infer the aggregate job-finding probability that involves looking at changes over time in the number of people who are unemployed. The number of people unemployed in December, for example, is equal to the number of people unemployed in November, less those who found jobs, plus those who were newly unemployed (see figure 2). This relationship is useful because the BLS reports not only the total number of people unemployed in a given month, but also the number of individuals who have been unemployed for roughly one month or less.<sup>2</sup> In other words, the BLS reports a figure that is approximately the number of people who became unemployed in a given month. Although the BLS figure does not exactly match the one needed for the calculation above—it omits some individuals who have short unemployment spells (for example, a worker who is employed at two consecutive survey dates but who was unemployed at some time between these

**FIGURE 1 EMPLOYMENT RELATIVE TO THE BUSINESS CYCLE PEAK**



SOURCES: U.S. Department of Labor, Bureau of Labor Statistics; and National Bureau of Economic Research (business cycle dating only).

**FIGURE 2 MONTHLY JOB FLOWS**



dates)—the data reported are pretty close to what we need. A further complication is that we ignore flows into and out of the labor force—flows that affect the number of people employed and unemployed.

To obtain the aggregate job-finding probability, divide the (inferred) number of job finders by the number of people unemployed. Notice that this probability will not necessarily correspond to the probability faced by a randomly chosen unemployed individual. For example, it is known that the long-term unemployed

face a lower job-finding probability. The goal in computing the aggregate job-finding probability is to gauge how difficult it is for the average unemployed individual to find a job.

Figure 3 illustrates the aggregate job-finding probability for the eight postwar U.S. business cycles compared to 1990–91 and 2001. Over the average business cycle, the job-finding probability begins to fall several months after the peak, from just over 50 percent, and it continues to fall until around 10 months after the peak, reaching a low of 40 percent. The job-finding probability then starts to rise and, 36 months after the peak, has risen, on average, to just over 45 percent.

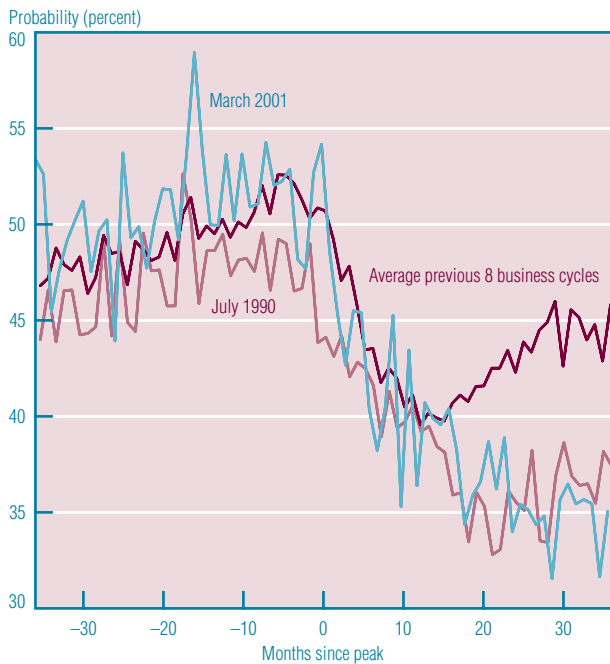
During the 1990–91 and 2001 recessions, the job-finding probability followed this pattern until 10–12 months after the peak of the cycle. At this point, the typical cycle would experience a rise in the job-finding probability, but over the last two business cycles, this probability remained low 36 months after the business cycle peak.

### ■ The Job-Separation Probability

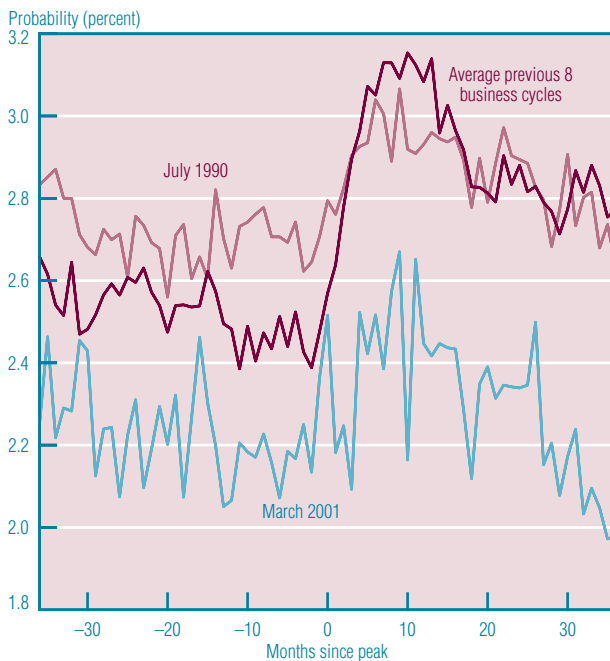
A job separation refers to either a quit or a fire. As a matter of principle, it is often difficult to distinguish between the two, and economic theory is largely silent on the difference. For our purposes, it is appropriate to treat all job separations alike because we are interested in the probability that an individual will lose his or her job, no matter what the reason.

To compute the job-separation probability, consider how the number of employed individuals evolves over time (again, see figure 2). The number of people employed in December, for example, is equal to the number of people employed in November, less those who lost jobs between November and December, plus those who found jobs between November and December. The BLS data provide the employment numbers, and the previous section gave the number of individuals who found employment between November and December. To compute the aggregate job-separation probability, then, divide total job separations (inferred from employment changes over time) by the total number of people employed. Notice that this calculation includes only job separations that result in unemployment; job-to-job quits are omitted.

**FIGURE 3 AGGREGATE JOB-FINDING PROBABILITY**



**FIGURE 4 AGGREGATE JOB-SEPARATION PROBABILITY**



SOURCES: U.S. Department of Labor, Bureau of Labor Statistics; and National Bureau of Economic Research (business cycle dating only).

Again, the aggregate job-separation probability does not correspond to the probability that any given employed individual will lose his or her job in any particular month. For example, young workers typically have higher job-separation probabilities than older

workers. The idea is that changes in the aggregate job-separation probability reflect changes in the individual-specific job-separation probabilities. In other words, during times of high aggregate job separations, all workers face a higher likelihood of a job separation regardless of their individual characteristics.

Figure 4 depicts the job-separation probability. During the typical business cycle, this probability rises from around 2.4 percent to 3.1 percent. After roughly 12 months, the job-separation probability falls to 2.8 percent and maintains that level 36 months after the business cycle peak.

At first blush, it may seem perplexing that a seemingly small change in the job-separation probability—particularly compared to the large changes seen in the job-finding probability—could have such a large impact on unemployment. The explanation is that this small change in the job-separation probability is applied to a relatively large stock of employed workers. At an unemployment rate of 5 percent, the number of people employed is 19 times larger than the number of unemployed.

The behavior of the job-separation probability during the 1990–91 recession differed from the typical pattern, with a probability around 2.7 percent before the business cycle peak—higher than the average, but within the range previously experienced. Thereafter, the job-separation probability followed the average business cycle fairly closely, rising as the recession took hold and then gradually declining.

During the 2001 recession, however, the job-separation probability behaved much differently. Leading up to the peak, the job-separation probability, at 2.2 percent, was much lower than average. Following the business cycle peak, the job-separation probability rose to about 2.4 percent, and, 36 months after the peak, this probability was below 2 percent. This fairly flat pattern is unusual in postwar U.S. business cycles.

#### ■ What It All Means

The cyclical dynamics of employment illustrated in figure 1 can now be analyzed through the lens of the job-finding and job-separation probabilities.

Over the typical postwar U.S. business cycle, the job-finding probability starts to fall several months before the business cycle peak, whereas the job-separation rate stays pretty much unchanged. The declining job-finding probability is reflected in a slowdown in employment growth before the peak. As the economy moves into recession, the job-finding probability continues to fall while the job-separation probability rises. Both factors contribute to the drop in employment. After roughly 12 months, the job-finding probability starts to rise and the job-separation probability starts to fall. Now, both factors serve to raise employment.

During the 1990–91 recession, both probabilities followed the typical experience, except that the job-finding probability remained low for at least 36 months after the business cycle peak. Because this is the only apparent difference, it would seem the job-finding probability is at the core of the first so-called jobless recovery.

The 2001 recession was different yet again. The probability of finding a job followed the experience of the 1990–91 recession fairly closely. However, the job-separation probability behaved quite differently. The rise in this probability immediately following the peak was quite modest and remained fairly flat throughout the recession. In this case, the job-finding probability is the primary driver of the employment declines during the 2001 recession (that is, in the months immediately after the business cycle peak). Like the 1990–91 recession, the force driving the second jobless recovery was the job-finding probability.

The accounting conducted here is useful not only because it suggests where to look for deeper explanations of the jobless recoveries, but also because it indicates avenues that are unlikely to bear fruit. Focusing on changes in the job-separation probability—either the firing decisions of firms or the decisions of workers to quit their jobs—is unlikely to provide a satisfactory explanation. During 1990–91, this probability followed the pattern of previous business cycles; during 2001, the job-separation probability was unusually low, a fact that, by itself, would tend to maintain the level of employment.

Explanations of the jobless recoveries based on the job-finding probability are more likely to be on target because this probability seems to have behaved differently from the previous postwar business cycle experience. Bear in mind that the behavior of both firms and the unemployed influence the job-finding probability: An unemployed person will be unable to find a job if firms are not recruiting.

#### ■ Footnotes

1. The data used in this *Commentary* are available online at [www.clevelandfed.org/research](http://www.clevelandfed.org/research).

2. In 1994, the BLS changed the way it uses the survey data that measure short-term unemployment. After 1994, short-term unemployment is computed using a method suggested by Robert Shimer (see Recommended Reading).

#### ■ Recommended Reading

R. Jason Faberman. 2004. "Gross Job Flows over the Past Two Business Cycles: Not All 'Recoveries' Are Created Equal," U.S. Bureau of Labor Statistics, Working Paper No. 372 (June).

Robert E. Hall. 2005. "Employment Efficiency and Sticky Wages: Evidence From Flows in the Labor Market," National Bureau of Economic Research, Working Paper no. 11183.

Robert Shimer. 2005. "Reassessing the Ins and Outs of Unemployment," unpublished manuscript, University of Chicago. <http://home.uchicago.edu/~shimer/wp/resassess.pdf>.

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