The underlying causes of unemployment can be ambiguous, which makes it difficult for policymakers to determine the effects of monetary stimulus. Given this uncertainty, policymakers are more likely to maximize employment over the long run by maintaining price stability.

**KEY POINTS**

- Because of frictions in the labor market — factors that prevent workers and firms from making suitable matches — there will always be some unemployment that cannot be eliminated through monetary policy actions.
- Identifying this level of unemployment — known as the “natural rate” — is a challenge for monetary policymakers.
- Given the many possible causes of unemployment and the difficulty of identifying a specific cause, targeting a specific level of unemployment may not be the best course for monetary policymakers.
- The Fed’s history has demonstrated that the pursuit of low unemployment rates when the underlying causes of unemployment are ambiguous can have serious consequences.
- Research by the Richmond Fed and others suggests that current levels of unemployment do not understate the amount of “slack” in the labor market.

**DISCUSSION**

The Federal Reserve is charged with promoting price stability and maximum employment. Because maximum employment is generally interpreted as minimal unemployment, understanding the dynamics of unemployment is essential for monetary policymakers trying to determine the likely effects of policy options. This will be a key consideration as policymakers determine the pace of interest rate increases in the coming years.

For many observers, the unemployment rate is the most salient indicator of labor market conditions. But the unemployment rate is not necessarily a straightforward gauge of the labor market’s health. Unemployment is heterogeneous: People become unemployed for different reasons at different times, and different kinds of unemployment respond to monetary policy in different ways. Cyclical unemployment, broadly defined as unemployment due to a temporary downturn in the economy, might respond to monetary policy that affects aggregate demand. Monetary policy is less likely to affect structural unemployment, which is unemployment caused by long-term changes in the economy, such as the decline of certain industries or technological change (Lacker 2016). Unfortunately for policymakers, the distinction between cyclical and structural unemployment is not always clear.

The unemployment rate also is affected by changes in the labor force participation (LFP) rate, which is the portion of the population age 16 and over that is either employed or unemployed.
and looking for work. Workers are only counted as unemployed if they are actively seeking a job, so the unemployment rate could decline not only if people find jobs, but also if a large number of people decide to quit looking and exit the labor force. Conversely, an improvement in the labor market might encourage many people to resume their job search and actually cause the unemployment rate to increase. As with unemployment, it can be difficult to determine if changes in the LFP rate are due to cyclical factors, such as workers being discouraged about the likelihood of finding a job, or to structural factors, such as a large portion of the population reaching retirement age (Romero 2012).

The pursuit of low unemployment rates in the presence of such ambiguity can have serious consequences, as the experience of the 1960s and 1970s illustrates. After the recession of 1960–61, inflation was low and the unemployment rate was more than 7 percent, well above the 4 percent that many economists believed should be the benchmark for full employment. Although the unemployment rate declined to about 4 percent by the mid-1960s, Fed policymakers continued to maintain expansionary monetary policy, despite increasing inflation rates, in an effort to keep the unemployment rate low. Eventually, this policy set off an inflationary spiral that was not brought under control until the early 1980s (Lacker 2010). Part of the reason may have been that members of the Federal Open Market Committee underestimated the level of structural unemployment in the economy and thus tried to bring unemployment to an artificially low level (Orphanides and Williams 2002).

During that period of high unemployment and high inflation, most economists and policymakers thought unemployment resulted from the labor market “failing to clear,” meaning that the supply of labor exceeded the demand at the going wage rate. But this view of the labor market left many important questions unanswered, such as what prevents firms and workers from creating new employment relationships at slightly lower wages, or which workers in the labor force would become unemployed? Nobel laureate Robert Lucas proposed thinking about unemployment in a different way, as a “search” problem: What features of the economic environment keep workers who are looking for jobs from finding employers with open positions? According to Lucas, the right question for economists and policymakers to ask was how, in that environment, do workers and firms make decisions in response to changes in economic conditions (Lucas 1978)?

Thinking about unemployment in this way allows economists to study how labor market institutions and policies influence the actions of workers and firms, which in turn affect the economy. For monetary policymakers, these questions provide insights into how best to implement policy that will create a stable environment for those workers and firms to make decisions.

### Labor Market Frictions

"Search-and-matching" models of the labor market have developed since the 1970s in an effort to help answer these questions. (See Mortensen 2011 for an overview.) These models are based on the idea that there are “frictions” in the market, which stem from the fact that it’s impossible for workers to know about every open position or about the wages being offered by different firms. Instead, they must invest time and effort to seek out and compare vacancies (Stigler 1962). Search theory also helps explain the dynamics of the “natural rate” of unemployment, a concept developed during the 1960s by Nobel laureates Milton Friedman (Friedman 1968) and Edmund Phelps (Phelps 1968). The natural rate is the hypothetical rate of unemployment attainable in the absence of any distortions, such as impediments to the free adjustment of nominal prices and wages. But because it takes time for workers and firms to find each other, the natural rate is not zero, and it could vary depending on factors influencing frictions in the economy.

Broadly defined, those factors are the incentives that workers have to look for jobs and the incentives that firms have to create job openings. Search-and-matching models provide a useful framework for thinking about what affects those incentives, such as the institutions and policies that govern how the labor market operates, one-time shocks that influence the business cycle, and longer-term changes in the structure of the economy.

For example, search-and-matching models can help analyze the effects of unemployment insurance. In these models, a worker’s decision to accept a job is based on whether the wage offered is higher than the worker’s “reservation wage,” the minimum wage at which she would be willing to work. Unemployment insurance benefits tend to increase the reservation
wage, making the worker less likely to accept a given offer. Research shows that unemployment benefits can increase the duration of unemployment and thus the unemployment rate (Mazumder 2011). On the other hand, unemployment benefits might be beneficial if they enable workers to hold out for better, more productive matches.

Search-and-matching models also provide a framework for studying how different institutions and policies contribute to cross-country differences in unemployment. For example, prior to the 2007-09 recession, the United States generally had a much lower unemployment rate than many European countries, which many economists attribute to the United States’ more flexible labor market. Because it is more costly for European employers to lay off workers when demand for their product is low, they have less incentive to create new job openings when demand is high. The net effect tends to be a labor market with less turnover and higher unemployment. (See, for example, Hornstein, Krussell, and Violante 2007.)

**Beyond the Unemployment Rate**

An important feature of the labor market is that it is in a constant state of flux as workers flow in and out of employment, unemployment, and the labor force. The total number of unemployed workers is determined by two factors: the inflow of workers to unemployment (the entry rate) and the outflow of workers from unemployment (the exit rate). Workers flow into unemployment by leaving a job either involuntarily (a layoff) or voluntarily (quitting), or by re-entering the labor force to start looking for work. They exit unemployment by finding a job or by discontinuing their job searches and leaving the labor force. The unemployment rate can increase if the entry rate increases, the exit rate decreases, or a combination of the two.

Richmond Fed economist Andreas Hornstein has studied entry and exit rates in an effort to understand the unusual increase in long-term unemployment that characterized the 2007-09 recession and subsequent recovery (Hornstein 2012). Many explanations have been proposed for this dramatic rise in long-term unemployment, such as the extension of unemployment benefits to 99 weeks or the possibility that the housing market has made it more difficult for workers to move to areas with better job prospects. Hornstein concludes that the rise in long-term unemployment was driven by a sharp increase in the inflow to unemployment of workers with inherently low exit rates and a marked decline in the exit rates from unemployment for these unemployed workers with already low exit rates. This group might represent workers who lost a job in a declining industry or occupation and can’t easily transfer their skills to other types of work. One can view this as indirect evidence that the natural rate of unemployment increased. Direct evidence for a substantial increase of structural unemployment in the recent recession is harder to find. One of the few studies that does so (Şahin et al. 2014) finds that the direct effect of a mismatch between the skills of unemployed workers and the requirements of employers accounts for about one-third of the overall increase in unemployment.

During and after the 2007-09 recession, it also appears that flows in and out of the labor force have played a much larger role than in previous recessions in determining the aggregate unemployment rate (Kudlyak and Price 2012). Many observers are concerned that the relatively low LFP rate is due to workers who are discouraged about the likelihood of finding a job, which could portend a large increase in the unemployment rate when those workers decide to resume looking for work. If this were the case, then the current unemployment rate would not be an accurate indicator of the amount of “slack” in the labor market. For example, a measure of unemployment that includes “marginally attached” workers — those who say they want a job but have not looked for work within the past four weeks — is more than a full percentage point higher than the standard unemployment rate. Research by Richmond Fed economists, however, suggests that this is unlikely. The LFP rate has been declining for more than a decade, as the baby boom generation reaches retirement age and an increasing number of young people opt for school over employment. The LFP rate at present appears to be consistent with this long-run trend (Kudlyak 2013). In addition, while there is a negative correlation between the LFP rate and the unemployment rate, studies of worker
flows refute the common interpretation that nonparticipants are more likely to enter the labor force and unemployed workers less likely to leave the labor force when the labor market improves. In fact, data from 1990 to early 2013 show that the opposite is true. The observed negative correlation results instead from two facts. First, workers are more likely to go directly from nonparticipation to employment in strong labor markets. Second, as employment increases, the average exit rate from the labor force declines since employed participants are less likely to exit the labor force than unemployed participants. The upshot is that while a lower unemployment rate likely induces a higher LFP rate, a low LFP rate will not necessarily induce a higher unemployment rate in the future (Hornstein 2013; Hornstein and Rhodes 2013). In fact, beginning in the fall of 2015, labor force participation began to increase noticeably even as the unemployment rate decreased (as of April 2016).

Recent observations on wage growth also could suggest that the current unemployment rate is not an accurate reflection of the amount of slack in the labor market. In theory, the cyclical movements of the unemployment rate and real wage growth should go in opposite directions. But this has not been the case during and after the 2007–09 recession; real aggregate wage growth has been flat while the unemployment rate has declined. In a recent article, San Francisco Fed economist Marianna Kudlyak (formerly of the Richmond Fed) reviews the literature on changes in aggregate wage growth and finds that these changes are driven not only by cyclical factors, but also by structural factors (Kudlyak 2015). Currently, slow wage growth may reflect a relative lack of higher-wage jobs, a structural development rather than a response to the business cycle per se.

Taking a broader view of the labor market, Hornstein, with Kudlyak and Fabian Lange of McGill University, has constructed an alternative measure of labor market slack, the Hornstein-Kudlyak-Lange Non-Employment Index (NEI). This measure considers all people age 16 and over who are currently not working as potentially employable, but it also recognizes that they are not all equally likely to find a job. By construction, the NEI has a higher natural non-employment rate than the standard unemployment rate, but the changes parallel those of the standard unemployment rate. Currently, both rates have declined close to their pre-2007 troughs, which suggests that the standard unemployment rate does not underestimate the amount of slack in the labor market.

**Unemployment and Monetary Policy**

A simple view of the relationship between unemployment and inflation suggests that the choices for monetary policymakers are clear: If unemployment is high and inflation is low, monetary policy should be expansionary. But incorporating the search-and-matching approach to the labor market into macroeconomic analysis has provided new insights into the relationship between unemployment and inflation.

Because of frictions in the labor market, there always will be a certain amount of unemployment that is not caused by a lack of demand and thus cannot be eliminated through monetary policy actions. Identifying this level is a challenge for monetary policymakers. The difference between the actual and natural rates of unemployment is the “unemployment gap.” If there is a large pool of unemployed workers to choose from — if the unemployment gap is large and positive — wages are unlikely to increase, which limits pricing pressures stemming from rising input costs.

If the unemployment gap is smaller than it appears — if the natural rate of unemployment has increased — then inflationary pressures might be less constrained than the unemployment numbers alone would imply. Because the natural rate of unemployment will fluctuate in response to a variety of structural shocks, it could vary by as much as the actual unemployment rate, and the unemployment gap thus could be quite small. Even if unemployment is relatively high, if the economy has been hit by structural shocks, then the natural rate of unemployment also could be relatively high. In that case, the level of unemployment might not respond to monetary stimulus, and providing additional monetary stimulus could instead be more likely to cause a surge in inflation that could be quite costly to reverse.

Given the uncertainty surrounding the natural rate of unemployment — and the serious consequences of under or overestimating it — targeting a specific level of unemployment might not be the best course for monetary policymakers (Hornstein, Lubik, and Romero 2011; Lubik and Romero 2011; Orphanides and Williams 2002). In the long run, maintaining price stability is likely to be the best contribution monetary policy can make to maximizing employment.
REFERENCES

Richmond Fed Research

Federal Reserve Bank of Richmond. Hornstein-Kudlyak-Lange Non-Employment Index.


Other References


Research Publications

Federal Reserve Bank of Richmond
701 East Byrd Street, 22nd Floor
Richmond, VA 23219
(804) 322-0565