
The Natural Rate and Inflationary Pressures

By Stuart E. Weiner

The natural rate of unemployment has become an important topic recently as the Federal Reserve has raised short-term interest rates in an attempt to keep the economy from overheating. The inflation outlook for the latter part of this year and next depends critically on how close the economy is to reaching capacity constraints. The natural rate of unemployment measures capacity constraints in labor markets.

BACKGROUND

The natural rate of unemployment is a key concept in monetary economics. It represents the lowest possible unemployment rate that is consistent with stable inflation. When the demand for workers is so strong that the actual unemployment rate falls below the natural rate, wage and price pressures intensify and inflation starts to rise.

The natural rate of unemployment cannot be

observed but must be estimated. Chart 1 presents estimates of the natural rate for the years 1961 through 1994. To produce this series, a statistical technique was used that links inflation movements to unemployment movements. Also shown in the chart is the actual unemployment rate.

In looking at the chart, three features stand out. First, the actual unemployment rate has rarely equaled the natural unemployment rate. Second, the natural rate has remained at a relatively high level throughout the period. And third, after rising in the 1970s, the natural rate has drifted down a bit in the 1980s and 1990s.

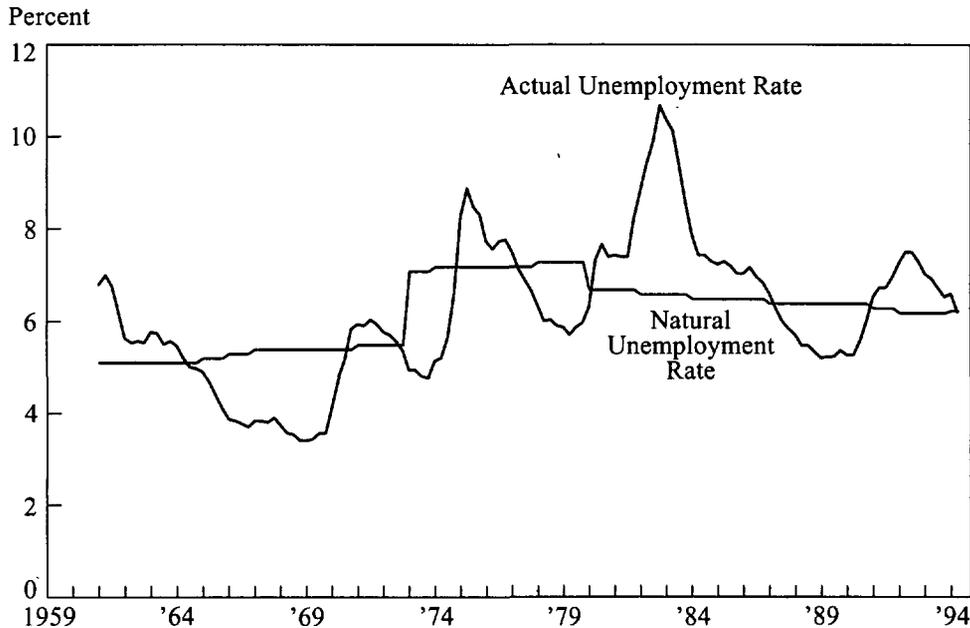
The divergence of the actual and natural rates of unemployment is a reflection of the business cycle. In the chart, periods when the actual unemployment rate exceeds the natural unemployment rate are periods of recession or the early stages of recovery. Periods when the actual rate is below the natural rate are periods of a booming economy.

The relatively high level of the natural rate reflects imperfections in labor markets, imperfections that exist regardless of the overall state of the economy. Individuals unemployed at the natural rate may be unemployed for a variety of reasons. They may have the wrong skills, live in the wrong areas, or have little incentive to accept the jobs they are offered. Or, in an environment of expanding employer mandates, they may simply be too expensive for employers to hire. Whatever its many sources,

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Chart 1

Unemployment

Sources: Actual unemployment rate: U.S. Department of Labor. Natural unemployment rate: Stuart E. Weiner, "New Estimates of the Natural Rate of Unemployment," Federal Reserve Bank of Kansas City *Economic Review*, 1993: Q4.

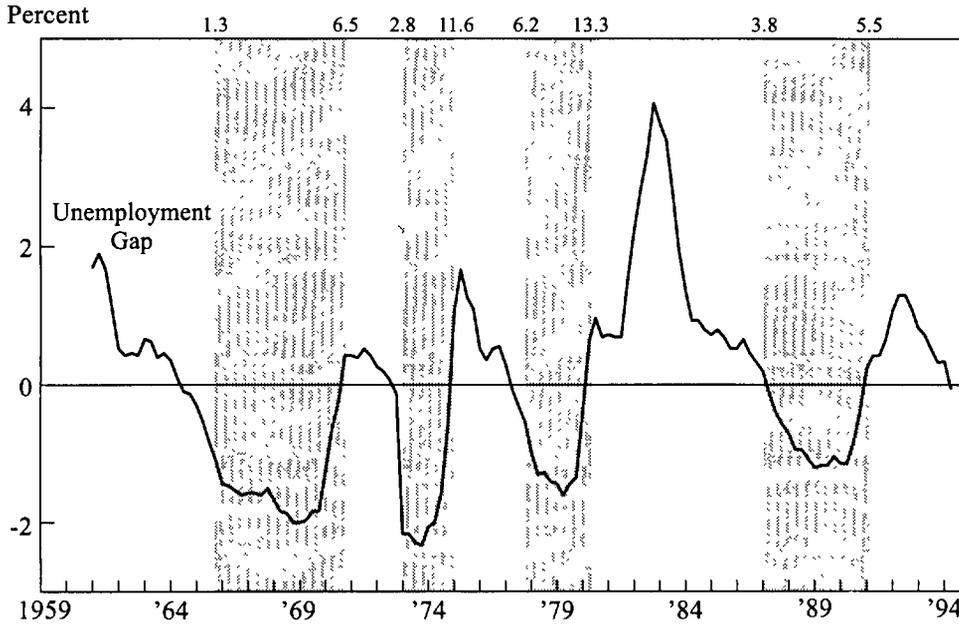
unemployment at the natural rate is independent of cyclical factors and hence falls outside the domain of monetary policy.

The third feature that stands out in the chart, the change in the natural rate over time, reflects both demographic and structural forces. The natural rate rose in the 1970s in part because of the growing share of women and youths in the labor force. Because women and youths typically have higher unemployment rates than men, the overall unemployment rate consistent with stable inflation rose. Also contributing to the rise in the natural rate in the 1970s were the two oil shocks and the productivity decline, all of which increased the cost of labor to employers.

Since 1980, the natural rate has drifted down a bit on favorable demographic trends, the principal one being the sharp decline in the share of youths in the labor force. At the same time, however, structural forces have kept the natural rate high. These include the shift from manufacturing jobs to service jobs, the growing gap between high-tech job requirements and low-tech worker skills, and the downsizing and restructuring of firms throughout the economy. Thus, according to the estimates reported in the chart, the natural rate of unemployment is currently 6 1/4 percent. With the actual unemployment rate averaging 6.2 percent in the second quarter, this means that labor markets currently are operating at full capacity.

Chart 2

Unemployment and Inflation



Notes: Shaded areas represent periods of rising inflation as measured by the consumer price index less food and energy; beginning and ending inflation rates are noted along the top edge. The unemployment gap is calculated by subtracting the natural rate of unemployment from the actual unemployment rate.

Sources: Actual unemployment rate and inflation: U.S. Department of Labor. Natural unemployment rate: Stuart E. Weiner, "New Estimates of the Natural Rate of Unemployment," Federal Reserve Bank of Kansas City *Economic Review*, 1993: Q4.

IMPLICATIONS

Historically, the gap between the actual unemployment rate and the natural unemployment rate has been a reliable indicator of future increases in inflation. This can be seen in Chart 2. The shaded areas represent periods of sustained rises in inflation, with beginning and ending inflation rates noted along the top edge. The "unemployment gap" is calculated from Chart 1 and equals the actual unemployment rate minus the natural unemployment rate. Thus, when the gap moves below the zero line, the

actual unemployment rate is below the natural rate, and when the gap moves above the zero line, the actual unemployment rate is above the natural rate.

As shown by the shaded areas, the U.S. economy has experienced four periods of sustained increases in inflation over the past 35 years. In all four cases, the increases were accompanied by the actual unemployment rate going below the natural unemployment rate. And at no time has there been a false signal; that is, at no time has the actual unemployment rate gone below the natural rate without the economy ultimately experiencing a rise in inflation.

The most recent inflationary episode began in 1987. In early 1987, the unemployment rate moved below the natural rate and stayed below the natural rate for four years. As a result, inflation began to edge upwards, from 3.8 percent to 5.5 percent, and it was not until early 1991 that it leveled off. A concern this year has been that the economy is facing a similar situation today. Or, to put it in terms of the chart, a concern has been that it might be necessary to draw in a fifth shaded area before too long.

In thinking about the policy implications of unemployment rate movements this year, several points need to be made.

The first involves the lead time between a move below the natural rate and the eventual increase in inflation. As can be seen in the chart, in three of the four inflationary episodes, the actual unemployment rate went below the natural rate in advance of the increase in inflation. Only in the most recent episode were the movements concurrent. Thus, there certainly is a precedent for the situation today, where the unemployment rate is at the natural rate but a general increase in inflationary pressures is not yet showing through. That is why relying on current inflation as an indicator of future inflation is dangerous, and why the Federal Reserve has taken timely policy action. Because of the inertia in the inflation process and the lags in the effect of policy, the Federal Reserve has needed to stay ahead of the curve if a rise in inflation is to be avoided.

A second point concerns the prospects for the natural rate itself. One could be less concerned about the inflation outlook if one believed the natural rate would be declining from its currently estimated 6 1/4 percent level. But there is little reason to think it is going to fall. On the demographics side, the share of young workers is expected to stabilize and the share of minority workers is expected to rise. Both will keep the natural rate at a high level.

Nor will structural forces be beneficial. Such factors as continued firm downsizing and continued skill mismatch will prevent the natural rate from declining. And in some instances structural forces will interact with demographic forces to exacerbate labor market problems. The U.S. Department of Labor, for example, has noted that while the fastest growing occupations in coming years will be those occupations that historically have required relatively higher levels of education, the composition of the labor force will be shifting toward groups that typically have attained lower levels of education.

Given the inherent difficulty of estimating the natural rate, it is possible that the natural rate is somewhat lower than 6 1/4 percent, and it is safer to think in terms of a range of estimates. However, a third point to make is that, even if the natural rate is as low as 6 percent, prior to the firming of policy earlier this year some private forecasters were looking for the actual unemployment rate to slip below this level by yearend. So a concern over potential inflationary pressures is not inextricably tied to any one specific estimate of the natural rate.

Finally, it should be emphasized that one need not be satisfied with an unemployment rate as high as 6 1/4 percent. On the contrary, unemployment this high represents a waste of resources, with substantial economic, social, and human costs. Rather, what the natural rate framework implies is that it is at this point that monetary policy can do no more. To further reduce unemployment, policymakers should be looking at potential labor market policies, such as improvements in education and job training programs and reductions in the cost of employer mandates.

The Federal Reserve has done about all it can to guide the economy to full employment. The challenge now is to ensure that inflation remains under control.

ENDNOTES

¹ A complicating factor this year has been the revisions to the Current Population Survey. With the January employment report, the U.S. Department of Labor started basing its unemployment rate calculations on a new questionnaire and new collection techniques. It was estimated that the new methodology would raise the measured unemployment rate by about one-half percentage point, and most analysts raised their estimates of the natural rate by an equal amount.

To date, however, the differences between the new and old surveys have been less pronounced, and it now appears that a 0.5 adjustment factor may be too high. In this article, no adjustment factor is applied. Hence, the natural rate estimates used in this article are identical to those reported by the author in "New Estimates of the Natural Rate of Unemployment," Federal Reserve Bank of Kansas City, *Economic Review*, 1993:Q4.