



# Economic Letter

## Are We There Yet? Assessing Progress Toward Full Employment and Price Stability

by Richard W. Fisher and Evan F. Koenig

**ABSTRACT:** With help from accommodative monetary policy, there are good reasons to believe that the economy will achieve full employment and price stability fairly soon. That prospect raises challenging issues for Federal Reserve policymakers.

In pursuit of its dual mandate—maximum sustainable employment and price stability—the Federal Reserve has followed a highly accommodative monetary policy. Accommodation is evident both in the level of short-term interest rates (essentially zero) and in the size of the Fed’s balance sheet (\$4.4 trillion as of September 2014, up from \$1 trillion just before the collapse of Lehman Brothers in September 2008).

As Fed officials contemplate the future course of policy, they must consider how near they are to achieving their objectives. That judgment depends on an assessment of the progress made to date and of the economy’s likely trajectory over the period required for past policy actions to have full effect. Past actions have imparted forward momentum to the economy that must be taken into account when deciding how much current monetary stimulus is appropriate.

### Assessing Progress Toward Price Stability

At the Dallas Fed, the preferred measure of inflation is the trimmed mean PCE (personal consumption expenditures) inflation rate—a “core” inflation

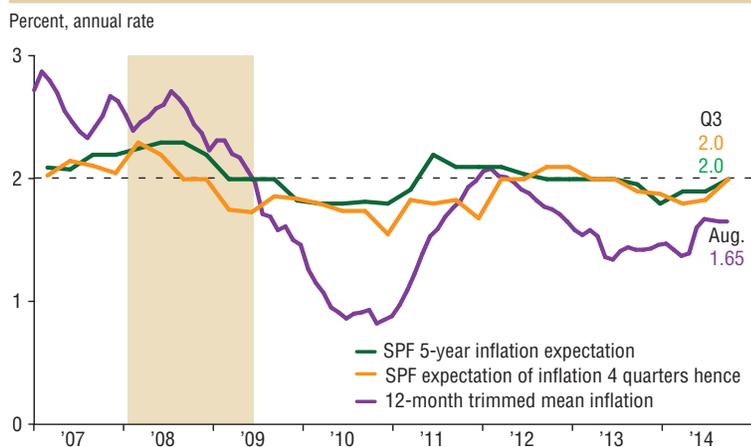
rate obtained by stripping from headline PCE inflation, month by month, those items that exhibit the largest upward and largest downward price movements.<sup>1</sup> As judged by this or any of several other inflation measures, progress on the price-stability front has been uneven, at best.

Year-over-year trimmed mean PCE inflation reached its nadir of 0.8 percent four years ago (October 2010). It then rose steadily to 2.1 percent in January 2012, only to slip back to between 1.3 percent and 1.5 percent during the 12-month period from April 2013 through March 2014. Since then, inflation has run at 1.6 percent to 1.7 percent (*Chart 1*).

Realized inflation—even realized trimmed mean inflation—is subject to short-term nonmonetary influences that policy cannot always offset. Therefore, it can reasonably be argued that the Federal Reserve’s success in promoting price stability is best measured not by the history of inflation, but by how rapidly people believe that inflation will reach the Fed’s longer-run 2 percent objective, absent new shocks.

By this standard, policymakers have done fairly well over the course of the economic recovery. The Survey

**Chart 1** Near-Term and Medium-Term Inflation Expectations on Target



NOTES: Shaded bar indicates U.S. recession. SPF = Survey of Professional Forecasters.  
 SOURCES: Federal Reserve Bank of Dallas; Survey of Professional Forecasters; National Bureau of Economic Research.

of Professional Forecasters' median expectation of headline PCE inflation four quarters into the future has stayed in a relatively narrow, 1.7 percent to 2.1 percent range except for fourth quarter 2010, when it dipped to 1.55 percent. The current median expected inflation rate one year from now, in third quarter 2015, is 2 percent.

The Survey of Professional Forecasters' median five-year-average PCE expected inflation rate, similarly, has stayed within a 1.8 percent to 2.1 percent range since the business-cycle trough in second quarter 2009, except for second quarter 2011, when it rose to 2.2

percent. Like the expectation of inflation four quarters ahead, the five-year expected inflation rate currently stands right at 2 percent. In the considered judgment of professional forecasters, then, monetary policy has been conducted in a manner consistent with a fairly prompt return of inflation to target.<sup>2</sup> We're not yet at our desired destination, but it's expected that we'll arrive there around this time next year.

### Assessing Progress Toward Full Employment

Judging by the path of the unemployment rate, we've made good progress

toward our full-employment objective as well. The jobless rate declined from a peak of 9.9 percent in fourth quarter 2009 to 9.6 percent in fourth quarter 2010, before moving more sharply lower, to 8.6 percent in fourth quarter 2011, 7.8 percent in fourth quarter 2012, and 7.0 percent in fourth quarter 2013 (*Chart 2*).

So far this year, we've seen a further drop of 0.9 percentage point, to 6.1 percent in third quarter 2014 (5.9 percent as of September)—that's a rate only a little above the Congressional Budget Office's 5.5 percent estimate of the longer-run sustainable, or "natural," rate of unemployment and close also to the 5.2 percent to 5.5 percent central tendency of policymaker natural-rate estimates.<sup>3</sup> Regarding the full employment half of the dual mandate, we're not "there" yet, but we're getting close.

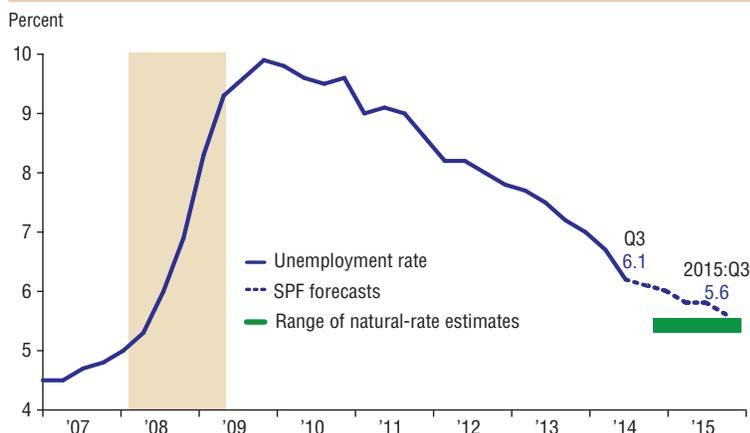
Some analysts and policymakers have argued that the unemployment rate overstates the progress we've made toward full employment. It is certainly the case that one can find alternative measures of labor-market slack that seem to tell a different, less-optimistic story.

The employment/population ratio has risen hardly at all during this recovery, for example, and the "quits" rate (which measures the pace at which people choose to leave their current employer) remains well below its prerecession level. The former series, though, has trended lower since 2000, showing the influence of a large, demographically driven "structural" component that substantially complicates accurate interpretation of the series' movements (*Chart 3*).<sup>4</sup>

The quits rate has only a short history, but also appears to be trending downward. Here again, the presence of a trend makes it difficult to assess the significance of the series' failure to return to 2007 levels.

A related argument is that our progress toward full employment must be smaller than is suggested by the decline in the unemployment rate because we've seen little acceleration in wages so far during the recovery. Moreover, the current slow pace of wage growth appears to indicate that labor-market slack remains substantial. The validity of these arguments is, however, belied by evidence

**Chart 2** Economy Closing In on Full Employment



NOTES: Shaded bar indicates U.S. recession. SPF = Survey of Professional Forecasters.  
 SOURCES: Bureau of Labor Statistics; Federal Reserve Bank of Philadelphia; National Bureau of Economic Research.

that the relationship between unemployment and wage inflation is nonlinear, and by evidence that the behavior of wage inflation over the past 3½ years has been completely consistent with patterns observed during the pre-financial-crisis period.

## Wage Inflation and the Unemployment Rate

Adjusting for long-term price-inflation expectations, wage inflation is fairly insensitive to the unemployment rate

when the jobless rate is high, but increases at an increasing rate as the jobless rate falls (*Chart 4*).

The pre-financial-crisis relationship between wage inflation and the unemployment rate is captured by the curve plotted in *Chart 4*, which is fitted to data that end just before Lehman Brothers' failure in third quarter 2008.<sup>5</sup> There are a few quarters during the mid-1980s that lie far above the fitted curve, and a few quarters hard on the heels of the Lehman Brothers' collapse that lie far below it,

but the behavior of wage inflation during the period since the unemployment rate peaked (shown in red) closely matches what one would have expected based on the pre-financial-crisis historical record.

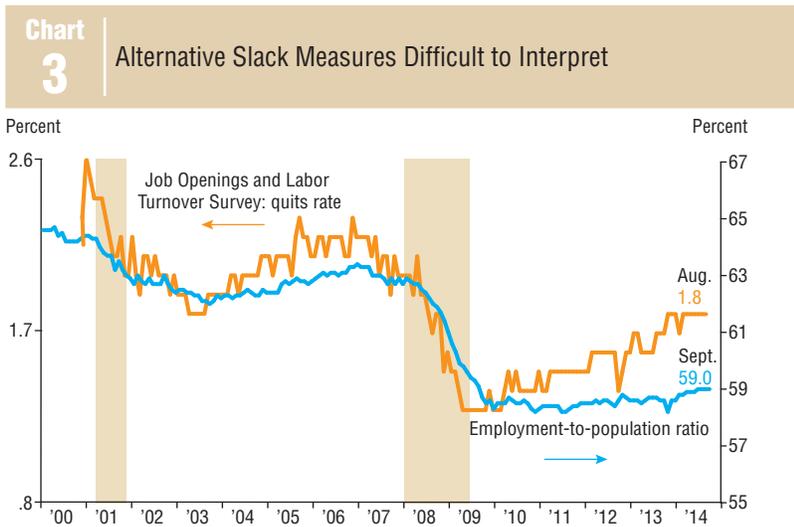
If the historical pattern continues, wage growth will pick up in the coming year and rise further and faster as the unemployment rate falls toward the range of natural-rate estimates. We already have survey evidence that employers are planning more-rapid wage increases (*Chart 5*).

The point is *not* that wage growth has been worryingly high (it hasn't been) or that we're in imminent danger of a wage-price spiral (we likely aren't). Rather, there's nothing in the behavior of wage inflation over the course of the recovery to suggest that the unemployment rate has been sending misleading signals about our progress toward full employment. A secondary point—a caution, really—is that when trying to draw inferences about labor-market slack from the behavior of wages, it's important to recognize that wage inflation's response to slack is both nonlinear and delayed.

## The Policy Challenge

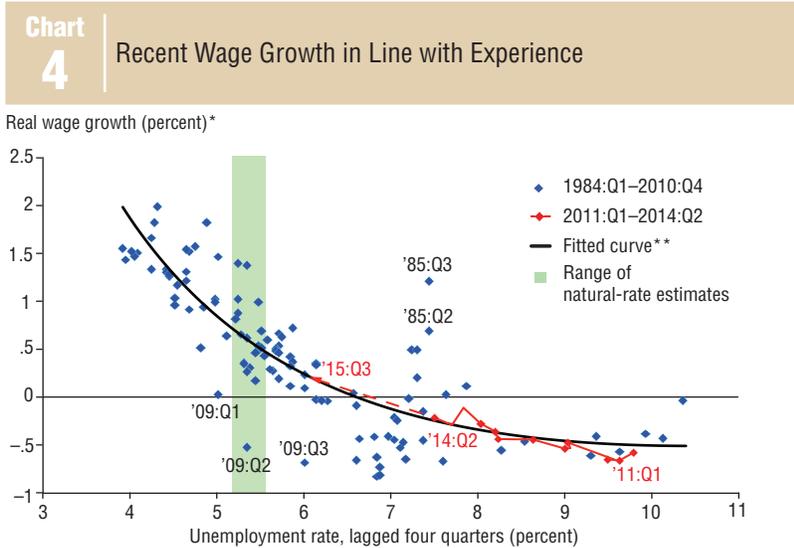
No, we are not “there” yet. However, there are good reasons to believe that we'll achieve our full-employment and price-stability objectives fairly soon—perhaps as early as next year. That prospect gives increased urgency to the question: When should we start removing monetary policy accommodation?

Do we keep the accelerator pedal to the floor right up to the point where we reach our destination? Or do we ease up as we near our goal? The answer depends on an assessment of the costs of possibly delaying achievement of our objectives versus the costs of overshooting those objectives. Proponents of a patient approach to removing accommodation emphasize the risk of having to backtrack on policy, should either real growth or inflation expectations falter. On the other hand, Fed policymakers successfully “tapped the brakes” in the middle of three of our longest economic expansions (in the 1960s, 1980s and 1990s), slowing—but not ending—the unemployment rate's decline. By comparison, there are *no* instances where the



NOTE: Shaded bars indicate U.S. recessions.

SOURCES: Bureau of Labor Statistics; National Bureau of Economic Research.



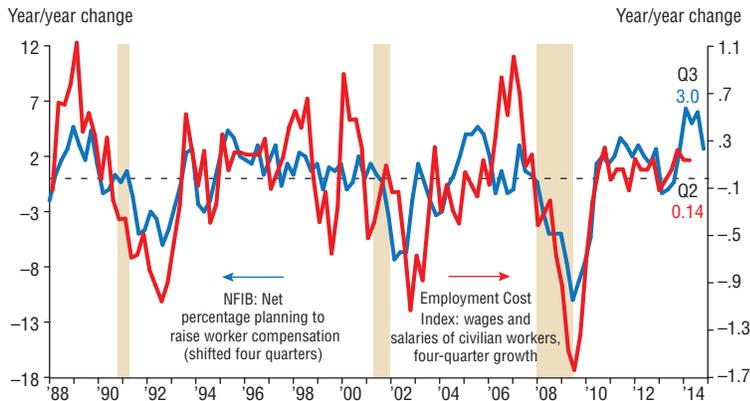
\*Year/year growth in Employment Cost Index wages and salaries, less Survey of Professional Forecasters 10-year inflation expectations.

\*\*Estimated 1984:Q1 through 2008:Q2

SOURCES: Bureau of Labor Statistics; Federal Reserve Bank of Philadelphia; authors' calculations.

## Chart 5

### Percentage of Firms Planning Wage Increases Rises



NOTES: Shaded bars indicate U.S. recessions. NFIB = National Federation of Independent Business.

SOURCES: Bureau of Labor Statistics; National Federation of Independent Business; National Bureau of Economic Research.

Fed has successfully eased the unemployment rate upward after having first overshot full employment: When the economy goes into reverse, it has a pronounced tendency to lurch backward all the way into recession.<sup>6</sup>

*Fisher is president and chief executive officer and Koenig is senior vice president and principal policy advisor at the Federal Reserve Bank of Dallas.*

#### NOTES

<sup>1</sup> See "A Fitter, Trimmer Core Inflation Measure," by Jim Dolmas, Federal Reserve Bank of Dallas *Southwest Economy*, May/June 2005.

<sup>2</sup> Similarly, the latest Federal Reserve Summary of Economic Projections shows the median policymaker inflation expectation rising from 1.5–1.6 percent in 2014 to 1.7–1.8 percent in 2015 and 1.9–2.0 percent in 2016.

<sup>3</sup> The aggregate data mask considerable geographic variation. As of August 2014, for example, state three-month-moving-average unemployment rates ranged from a low of 2.8 percent in North Dakota to a high of 7.9 percent in Mississippi. Texas' unemployment rate was 5.2 percent.

<sup>4</sup> A recent joint Federal Reserve Board and Federal Reserve Bank of Cleveland study attributes roughly three-fourths of the post-2007 decline in the labor-force participation rate to such factors. See "Labor Force Participation: Recent Developments and Future Prospects," by Stephanie Aaronson et al., Finance and Economics Discussion Series (FEDS) Working Paper no. 2014-64, September 2014.

<sup>5</sup> Specifically, the curve shows results from a regression of four-quarter wage growth, detrended using 10-year inflation expectations, on the four-quarter lagged unemployment rate, the inverse of the four-quarter-lagged unemployment rate and a constant. In this regression, the coefficient on the inverse unemployment rate is large,

positive and highly statistically significant, indicating that the relationship between the unemployment rate and wage inflation is strongly nonlinear.

Recent, related analysis by Anil Kumar and Pia Orrenius brings to bear information gleaned from the experiences of the various individual states ("A Closer Look at the Phillips Curve Using State-Level Data," Federal Reserve Bank of Dallas, Working Paper no. 1409). Kumar and Orrenius confirm that wage growth is more responsive to the unemployment rate at low rates of unemployment than at high rates of unemployment. As with unemployment rates, wage-inflation data vary widely from state to state. As of August 2014, wage inflation as measured by 12-month growth in average hourly earnings ranged from –2.1 percent (Delaware) to 4.7 percent (North Dakota). It stood at 3.9 percent in Texas.

<sup>6</sup> A rule of thumb among economic analysts is that if a three-month moving average of the unemployment rate rises by more than 0.3 percentage point, the economy is either already in or soon to enter a recession.

# DALLAS FED



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Federal Reserve Bank of Dallas  
2200 N. Pearl St., Dallas, TX 75201

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