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Global macro matters

U.S. labor market: Tight (enough) for liftoff

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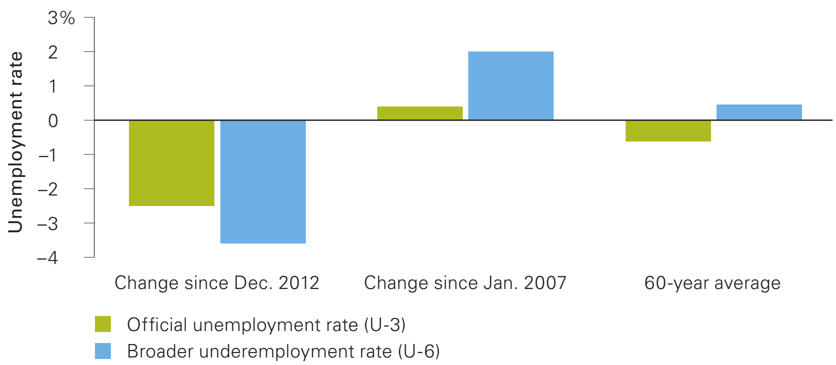
Although not fully healed, the U.S. labor market is approaching the Federal Reserve's goal

The "tightness" of the U.S. labor market is a primary determinant of when—and at what pace—the Federal Reserve will raise short-term interest rates for the first time in almost a decade. To be sure, the headline unemployment rate has improved dramatically over the past three years. At 5.5%, it is near its pre-2008 level and below its 60-year average of 6.0%.

Broader measures of unemployment (such as those that capture underemployment, which includes those who are working part-time for economic reasons) have improved as well, although gaps remain. This raises several issues related to monetary policy, including the quality of the nearly 4 million jobs created since the end of 2013 and whether sufficient slack has been taken up to warrant interest rate liftoff.

Unemployment rates have declined sharply toward long-run U.S. averages

Percentage-point change in both "narrow" and "broad" unemployment rates



Notes: The chart shows the difference in unemployment rates between the specified times and the current period as of April 2015. "Broader underemployment rate" refers to the Bureau of Labor Statistics' U-6 series. This calculation adjusts (upward) the more closely followed "official" U-3 rate to include marginally attached workers and those employed part-time.

Sources: Vanguard calculations, based on data from the Bureau of Labor Statistics household survey.

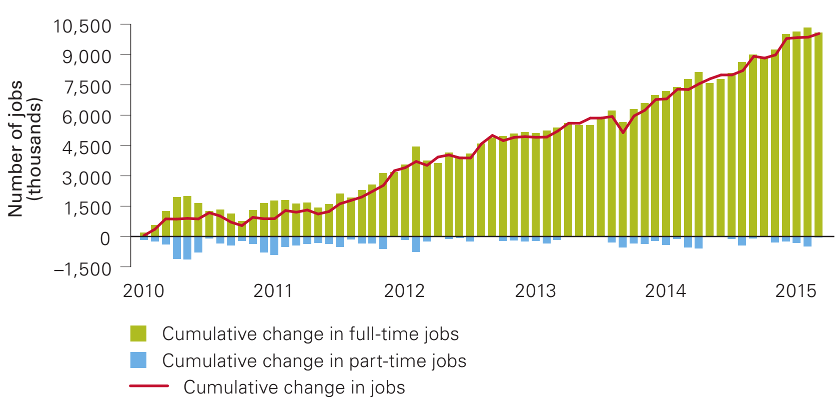
Part-time labor concerns are only partly correct

Between 2008 and early 2010, 11 million full-time jobs were lost in the U.S. economy. Nearly six years after the end of the global financial crisis, part-time workers still make up 18.5% of the labor market, above the prerecession level of 17%.

Nevertheless, claims that job growth since the recession has been fueled by part-time work are off-base. Official labor statistics indicate that nearly all net jobs created since early 2010 can be classified as full-time positions.

Full-time job creation deserves full credit

Cumulative change in part-time and full-time jobs since February 2010



Sources: Vanguard calculations, based on data from the Bureau of Labor Statistics household survey.

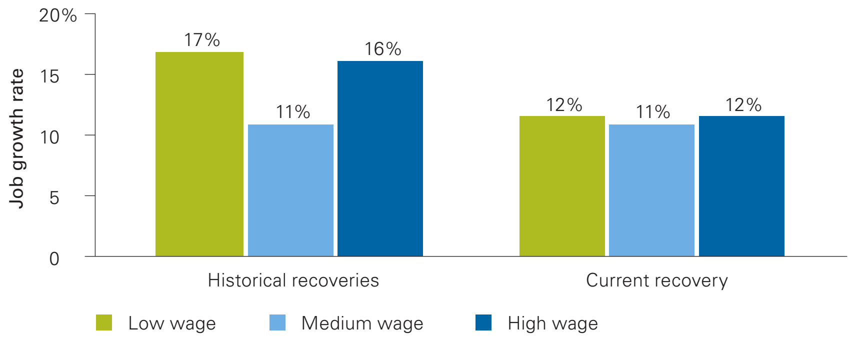
The employment recovery has not skewed toward lower-wage industries

Some economists attribute the slow pace of wage growth to the mix of jobs created and argue that the Fed should delay tightening policy well into 2016.

We have noted for some time that the pace of job creation during this recovery would follow a muted U-shaped pattern. However, our analysis of detailed labor-market data indicates that job gains across broad wage levels (high, medium, and low) have been roughly evenly distributed and similar to historical averages. Although growth in certain medium-wage jobs is lagging, we believe that this is part of a long-running trend that began in the 1970s. Reasons for the lag include increased globalization, the wider adoption of labor-saving technological innovations, and the increased premium placed by employers on select high-wage skills.

Job gains are similar across wage levels

Cumulative job growth rates by wage level five years after the labor market's bottom



Notes: "Recovery" is defined as the 62-month period after each recession's total employment trough. Recession periods are as defined by the National Bureau of Economic Research. Low, medium, and high wage segments are based on a ranking of the weighted average wage for each employment sector. Cohorts are then determined based on the percentage of jobs up to one-third of total employment. After 62 months, we calculate the cumulative percentage change in each cohort based on the number of jobs created over the period compared to the number at the beginning. We present the arithmetic average of four historical recoveries: March 31, 1975–May 31, 1980; November 30, 1982–January 31, 1988; June 30, 1997–August 31, 1997; and July 31, 2003–September 30, 2008; and the current recovery: February 28, 2010–April 30, 2015.

Sources: Vanguard calculations, based on data from the Bureau of Labor Statistics household survey.

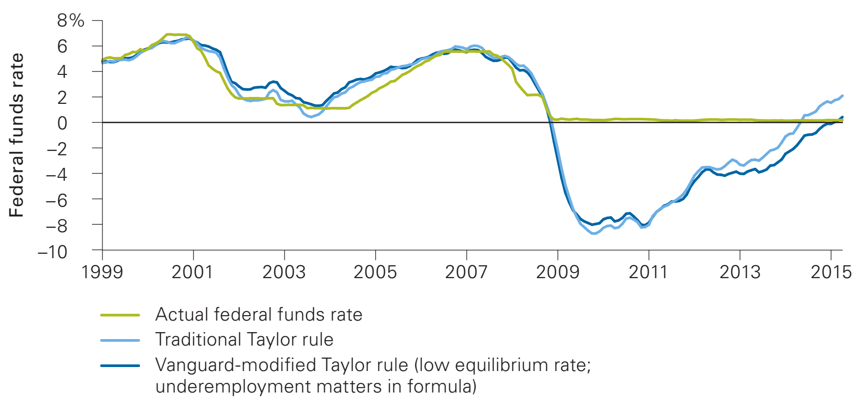
The data indicate that a 2015 rate liftoff is warranted

While debate over the tightness of the labor market continues, our framework points to a rate hike by the Federal Reserve at some point in 2015.

Vanguard's modified Taylor rule assumes that the equilibrium inflation-adjusted short-term rate is closer to 0%. It also acknowledges the amount of slack in the labor market as measured by the Bureau of Labor Statistics' U-6 unemployment rate. Both our model and the traditional Taylor rule now indicate that the policy rate should be above 0%. It is noteworthy that our model is suggesting this rate for the first time since 2008 and the onset of quantitative easing.

Our formula suggests a policy rate above 0% for the first time since 2008

Actual federal funds rate versus those indicated by traditional and modified Taylor rules



Notes: We take a "dovish" stance and assume that NAIRU (non-accelerating inflation rate of unemployment) is 5.0% according to the U-3 and 10.0% for the broader U-6. Both of those figures are below their long-run historical averages. For the traditional Taylor rule, we follow Yellen and Bernanke and specify the formula rate as r^*(equilibrium real fed funds rate) + core PCE inflation + 0.5•(core inflation minus 2% inflation goal) + 1.0•2.3•(NAIRU – unemployment rate). In the standard framework, $r^* = 2\%$. In our Vanguard framework, we specify r^* at a low 0.5% rate and use a beta multiplier of 1.3 on the NAIRU gap as defined by the U-6 given the historical U6/U3 ratio, such that NAIRU gap multiplier = 1.0•2.3•(6.04/10.75) = 1.29 or approximately 1.3.

Sources: Vanguard calculations, based on data from the Bureau of Labor Statistics, the Congressional Budget Office, and the Federal Reserve Board. See also Yellen, Janet, 2012, *Perspectives on Monetary Policy*, Board of Governors of the Federal Reserve System; and Bernanke, Ben, 2015, *The Taylor Rule: A Benchmark for Monetary Policy?* The Brookings Institute.

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