The Case of the Missing Deflation

BY TIM SABLIK

In the late 1950s and early 1960s, economists observed that inflation and unemployment tended to move in opposite directions, a relationship known as the Phillips curve. Today, economists use a revised version of the Phillips curve, called the New Keynesian Phillips curve, to forecast inflation. Although there are different versions of the New Keynesian Phillips curve, a common one relies on recent inflation and the gap between current unemployment and the natural rate of unemployment (or NAIRU) to predict the likely path of future inflation. Simply put, low recent inflation plus high unemployment equals low inflation or even deflation in the near future.

Deflation is a particularly troubling prospect for central bankers, since expectations of future deflation can cause consumers to delay spending, compounding the problem and creating a deflationary spiral. In early 2009, the threat of such deflation looked very real to many, but it never materialized. Where did the deflation go?

In a recent working paper, Robert Gordon of Northwestern University argues that "the puzzle of missing deflation is in fact no puzzle." Gordon presents a modified Phillips curve to show that the deflationary pressures of the 2007-2009 recession were not as great as the standard model predicted. This "triangle" model relies on three main variables to forecast inflation: inertia, demand, and supply. Inertia refers to expectations of future inflation; people generally expect tomorrow's inflation to be similar to today's. Demand refers to the gap between current employment and the NAIRU, similar to the standard Phillips curve.

Supply shocks, the final component, include sudden changes in energy prices or in productivity growth. The New Keynesian Phillips curve does not explicitly include such shocks. Gordon argues that this limits the ability of the model to explain the movements of inflation and unemployment. Depending on the combination of supply and demand shocks, the relationship between unemployment and inflation can be either negative (as it was in the 1960s, when unemployment was falling and inflation was rising) or positive (as it was in the 1970s, when they rose together).

Gordon compares the forecasting performance of the New Keynesian Phillips Curve and his triangle model in two simulations. In the first test, he uses data from 1962 through 1996 to simulate forecasts for the first quarter of 1997 through the first quarter of 2013. The standard model predicts much higher inflation than actually occurred, while the triangle model predicts an inflation pattern very close to reality. Gordon then repeats the simulation using data from 1962 through 2006, forecasting inflation for 2007 through 2013. This time, the standard model predicts ever-increasing deflation after 2007, while the triangle model again forecasts inflation very close to actual observed values.

What explains the different predictions of the two models? Gordon points to the role of supply shocks and the longer lags in the triangle model. "While the high unemployment rate pushed the inflation rate down in 2009-2013, the inflation rate was pushed up by higher energy prices and declining productivity growth," he writes. Because the New Keynesian Phillips Curve did not include such explicit supply shocks, it incorrectly predicted deflation.

Still, Gordon's initial model is not a perfect match: It forecasts inflation that is too low for 2012-2013. He hypothesizes that this may be due to the different inflationary pressures exerted by short-term versus long-term unemployment. Some research has suggested that workers who have been unemployed for six months or more may put less downward pressure on prices and wages because they have less impact on the labor market. Employers may view them as "unemployable," either because their long absence from the workforce signifies some hidden negative quality or because their marketable skills have eroded during that period. The 2007-2009 recession was notable for the dramatic increase in long-term unemployment, which could have influenced the lack of deflation. Gordon tests this hypothesis by rerunning his simulations with the triangle model using only short-term unemployment in his employment gap measure. He finds that this specification more closely predicts actual inflation through 2013. It supports the view that deflation was less severe because a significant portion of the unemployment during the recession was long-term.

"The Phillips Curve is Alive and Well: Inflation and the NAIRU during the Slow Recovery." Robert J. Gordon. National Bureau of Economic Research Working Paper No. 19390, August 2013.

In Gordon's model, the elevated long-term unemployment also has implications for NAIRU. He finds that NAIRU may have shifted from 4.8 percent in 2006 to 6.5 percent in 2013. "There may be less slack in the U.S. labor market than is generally assumed, and it may be unrealistic to maintain the widespread assumption that the unemployment rate can be pushed down to 5.0 percent without igniting an acceleration of inflation," he writes. Gordon concludes that Phillips curve models should include both demand and supply shocks in order to appropriately forecast and explain inflation behavior. **EF**