



PATRICK HIGGINS is an economist in the research department of the Atlanta Fed.

GDP Growth, the Unemployment Rate, and Okun's Law

Since June 2009, when the most recent recession ended, the unemployment rate has declined only 0.4 percentage point, from 9.5 percent to 9.1 percent. Over the same two-year period, real gross domestic product (GDP) has grown at an annual rate of 2.4 percent. This estimate is in line with many analysts' and policymakers' reckonings of the "potential" growth rate of the economy.

Looking down the road

The Council of Economic Advisers, the people who advise the White House on economic matters, defines potential GDP growth as "the rate of growth of real GDP that could be sustained with the economy at full employment and steady inflation." The council projects average potential growth of 2.5 percent through the end of 2021. The Congressional Budget Office (CBO) projects a slightly lower potential growth rate:

2.3 percent over the same time period.

And the Federal Reserve Board of Governors' and Reserve Bank presidents' projections of longer-run real GDP growth range from 2.4 percent to 3 percent. (Longer-run real GDP growth is defined as the rate growth "would be expected to converge under appropriate monetary policy and in the absence

of further shocks to the economy.") As Atlanta Fed President Dennis Lockhart discussed in a recent speech at Jackson Hole, Wyo., the Atlanta Fed's own estimate is that the current long-run trend growth rate is 2.5 percent.

The long arm of Okun's law

Okun's law describes one of the most famous empirical relationships in macroeconomics. Proposed by economist Arthur Okun in 1962, it basically states that if GDP grows rapidly the unemployment rate declines, if growth is very low or negative the unemployment rate rises, and if growth equals potential the unemployment rate remains unchanged. Considerable debate and disagreement take place about how close and stable a relationship these factors have under Okun's law. However, over the past two years, Okun's law has held up reasonably well—growth has been close to many estimates of potential and the unemployment rate, on balance, has not declined much since the end of the last recession.

The August issue of *Blue Chip Economic Indicators*, which surveys leading business economists, had a consensus projection for average GDP growth of 2.6 percent in the second half of 2011 and 2012. The panel did not forecast beyond 2012 in the most recent issue, but in

March it did, projecting just under 3 percent average growth in 2013–7. Are the *Blue Chip* growth forecasts high enough to bring the unemployment rate down to, say, 7 percent by the end of 2014?

Perhaps. Notwithstanding Okun's law, fairly large declines in the unemployment rate have occurred when the economy was growing fairly modestly.

Is GDP growth of 2.5 percent to 3 percent fast enough to substantially reduce the unemployment rate by 2014? Maybe or, alas, maybe not.

For example, in 1993–5, real GDP growth was 3 percent on average, and the unemployment rate fell almost 2 percentage points. Furthermore, current demographic factors may favor a growth rate of 2.5 percent to 3 percent being more capable of generating a decline in the unemployment rate than these factors were in the mid-1990s. The CBO's *Labor Force Projections through 2021* report estimates how large numbers of baby boomers reaching retirement age will affect labor force participation, concluding that the aging population "has already reduced the overall rate of participation by about 0.5 percentage points since 2007 and ... it will do so by an additional 1.2 points by 2016." So hypothetically, if growth is only sufficient to keep the employment-to-population ratio constant, the unemployment rate could still decline if the aging population causes the labor force participation rate to fall.

Modeling the potential future

I have developed a simple model, based on the analysis of economist Robert Gordon and others, relating GDP growth to its constituent labor market-side components (such as productivity growth, average hours worked, labor force participation, and the unemployment

rate). It builds in the consequences of population aging on labor force participation in much the same way the CBO does. Conditional on the *Blue Chip* growth projections for 2011–2 and 3 percent growth in 2013 and 2014, the model forecasts an unemployment rate of 8.6 percent in the fourth quarter of 2012—almost identical to the actual consensus *Blue Chip* unemployment projection—and an unemployment rate of 7.6 percent in the fourth quarter of 2014. The model's estimate of the uncertainty around the latter forecast is fairly large. There is a 30 percent chance that the unemployment rate at the end of 2014 would be 6.2 percent or lower, or 9 percent or higher, even if the growth assumption turns out to be exactly right.

So is GDP growth of 2.5 percent to 3 percent fast enough to substantially reduce the unemployment rate by 2014? Maybe or, alas, maybe not. A lot depends on productivity and labor force participation trends, which are very difficult to forecast. Real GDP grew only 0.7 percent (on an annualized basis) in the first half of 2011. Growth will probably have to exceed this rate to bring the unemployment rate down. ■

Staying informed on the economy just got easier.

frbatlanta.org

A range of resources from the Atlanta Fed is just a click away.

Publications:

EconSouth, *Financial Update*, and working papers

Economic research & data:

Regional Economic Information Network (REIN), Americas Center, and proceedings of economic conferences

All this and much more—speeches, financial education, podcasts, and free museum tours—are available online at frbatlanta.org.

You can also sign up online for e-mail notification or RSS feeds on select content.

