

Economic Outlook, January 2017
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It is a pleasure to be with you again for the second year in a row. This is once again an interesting time to be looking forward and discussing what might be in store for the U.S. economy in the years ahead. Forecasters often are tempted by the sin of claiming that uncertainty is greater than usual at the present time. But I think we can all picture reasons why such a claim might not be unreasonable right now.

Before looking ahead and assessing various risks, however, I'd like to start by reviewing the recent performance of the economy. As always, the views I express are my own, and are not necessarily shared by my colleagues on the Federal Open Market Committee.¹

The first fact worth noting is that we are in the eighth year of an economic expansion. For comparison, since World War II the average expansion has lasted $4\frac{3}{4}$ years, measured from the bottom of the recession to the beginning of the next recessionary contraction. Most forecasters foresee continued growth in 2017. One might think this expansion is getting long in the tooth, and that as a result we are “due,” so to speak, for a correction. The statistical evidence is pretty clear, however, that business cycle expansions do not die of “old age.” What I mean by that is that the probability of a recession in any given time period does not vary with the age of the expansion.²

This expansion, however, has been weaker than past expansions. Real GDP — our broadest measure of production and incomes — grew at a 2.2 percent average annual rate from the end of the recession through the fourth quarter of 2015. Before the Great Recession, real GDP during the postwar era had increased at about a $3\frac{1}{2}$ percent average annual rate, and there were periods in which growth was even higher. During the 1960s, for example, real GDP grew at a $4\frac{1}{2}$ percent average annual rate.³

There are good reasons why matching those golden age growth rates on a sustained basis might be a stretch. For one thing, the labor force is expanding much more slowly. During the '60s, the labor force grew at a 1.7 percent annual rate, driven by a growing population and rising participation of women in the workforce. But the labor force participation rate of women peaked in 1999 and has been declining since then. Moreover, the aging of the baby-boom generation is tilting the mix of the working-age population toward age cohorts with lower participation rates. At present, some economists estimate it could only take annual employment growth of around six-tenths of 1 percent (or 60,000 jobs per month) to keep up with the growth in the working-age population.⁴

Another reason GDP growth has been lower of late is that productivity has been rising less rapidly. Over the last five years, GDP per worker has grown at an annual rate of only $\frac{1}{2}$ of 1 percent. Before the Great Recession, that measure of productivity increased at a $1\frac{3}{4}$ percent rate; during the macroeconomic golden age of the 1960s, that measure gained about $2\frac{1}{2}$ percent per year. Because real (inflation-adjusted) incomes per worker closely track productivity growth over time, the current productivity slowdown is likely to be having a significant effect on American households' attitudes toward the economy and related public policy issues.⁵

Productivity and employment trends are key to the outlook for overall economic growth. Last year at this gathering, I said I expected recent trends to continue. I anticipated productivity growth to continue at a disappointing pace, around $\frac{3}{4}$ of a percent. Employment had been growing more rapidly than the labor force, implying a decline in the unemployment rate. So I expected employment growth to remain above trend but to slow gradually as the difficulty in finding qualified workers in a tight labor market increasingly restrained new hiring. As a result, I projected real GDP to grow 2.2 percent at an annual rate but to slow gradually to around a $1\frac{3}{4}$ percent pace, consistent with sustainable trends.

Looking back at 2016, real GDP slowed sooner than I thought and is on track to come in a touch below 2 percent. Employment growth slowed as well, from over 220,000 per month in 2015 to around 180,000 a month. But that rate of growth is still unsustainably high — we need less than half that rate to keep pace with population trends. The unemployment rate fell to 4.6 percent as of November, a relatively low rate by historical standards. Because the unemployment rate cannot continue to fall forever, employment growth is likely to continue to slow and converge to population growth.

Strong (albeit slowing) employment growth has been supporting solid consumer spending. Inflation-adjusted household expenditures grew at a 2.7 percent annual rate through November. Similarly, real disposable income grew at a 2.5 percent annual rate over that period. I expect continued strength in consumer spending this year, despite slowing job growth, because wage rates have been rising at an increasing pace. Average hourly earnings rose at a 2.7 percent annual rate last year, well above the overall rate of inflation. And tightening labor markets are likely to add to wage pressures this coming year. So even if consumer spending growth slows, it's likely to remain above 2 percent.

While consumer spending boosted overall growth in 2016, surprisingly weak investment was a drag on growth. After a strong start, residential investment hit an unanticipated soft spot in mid-year, actually falling in the second and third quarters. The largest portion of this investment category is single-family home construction, and here the outlook is positive. New single-family housing starts are up more than 8 percent for the first 11 months of 2016, household formation is rising and household finances are strong. I expect residential investment to make a solid contribution to real GDP growth in 2017.

Business investment also has been unexpectedly sluggish, falling in the last quarter of 2015 and the first quarter of 2016, and then growing slowly in the next 2 quarters. A portion of the weakness was due to sharply lower oil and natural gas drilling, a natural response to low oil and gas prices. But other business equipment spending has disappointed as well, in part due to the

strengthening of the dollar on foreign exchange markets last year, which intensified competition for many domestic producers and resulted in lower output and lower investment plans. The fundamentals for business investment have remained reasonably sound, however, so I was forecasting an imminent upturn as last year progressed.

Taking on board the data we've seen on spending and labor markets, it looks as if economic activity has evolved largely as I anticipated at the beginning of 2016. Both real GDP and employment appear to be converging to paths governed by productivity and demographic trends, and these trends are currently low by historical standards.

A year ago, inflation was expected to rise gradually toward 2 percent, and it has done so, perhaps even a bit more rapidly than some had anticipated. Recent data have given us no reason to expect that this trend will not continue. If anything, the pickup of inflation could quicken temporarily, given recent increases in oil prices. So I expect inflation to be close to 2 percent this year.

The outlook I've just described is conditioned on only the flow of hard economic data we've seen, which basically runs through last October, together with some preliminary figures for November and December. Of course, we have also had an election here in the United States. The results of that election took many observers by surprise and appear to have left a sizable imprint on financial asset prices. While there is considerable uncertainty about how a new administration's policies might affect the near- and longer-term economic outlook, the nature of financial markets' response suggests that investors may be anticipating some combination of tax reductions and increased military and infrastructure spending. Some commentators have also suggested that regulatory changes could contribute to an increase in underlying growth trends. On the other side of the ledger, some have expressed concerns about the potential effects of policies that are less friendly to international trade and which thus might impede growth.

To the extent that the equity market movements since the election are either the cause of or the effect of a more optimistic outlook on the part of business enterprises, or both, a more positive outlook for business investment would be warranted. If so, the unanticipated softness in capital spending last year may have been attributable to a desire to delay irreversible investment commitments until after the election, and a release of pent-up spending plans may be in the offing. Still, the investment outlook could well fluctuate as uncertainty about the anticipated contours of the policy environment is resolved.

A prudent course for a forecaster to take right now, I believe, is to build in at least some modest fiscal stimulus and at least some measure of stronger business investment. Such an approach would split the difference between complete faith in market ebullience and an assumption of no change in the fiscal and investment outlook. For me, this suggests a forecast for real GDP growth of 2.0 percent for 2017, falling to a long-run trend of around 1 $\frac{3}{4}$ percent in 2018 and beyond.

The rise in longer-term U.S. interest rates in the month following the election was roughly evenly split between real rates and compensation for inflation. Even more striking is the movement in the implied probabilities of very high and very low inflation derived from options markets. These have flipped from a tilt toward lower inflation being much more likely than high inflation to the opposite; inflation above 3 percent is now seen as about twice as likely as

inflation below 1 percent. In addition, the estimated term premium on 10-year Treasury securities has moved from negative territory to closer to zero, suggesting that investors see less value in Treasuries as a hedge against deflation and are becoming more concerned about the exposure of the nominal Treasuries to the risk of inflation. These developments could reflect the dissipation of downside inflation risks and a return to a more symmetric inflation outlook.

Do post-election economic developments have implications for monetary policy? Any significant shift in the fundamental factors underlying the economic outlook is likely to have monetary policy consequences. While there is currently tremendous uncertainty around the shape and size of any federal policy initiatives, the direction of the effect on monetary policy seems pretty clear. Pursuing our congressionally mandated objectives for price stability and employment means that, all other things equal, greater fiscal stimulus implies higher interest rates than would otherwise be warranted. Otherwise, inflation pressures are likely to become elevated, as we saw in response to expanded fiscal deficits in the late 1960s.

Some would argue that changes in regulatory policy could improve economic efficiency and expand the potential supply of goods and services over time, thereby easing resource pressures and reducing the need for higher policy rates. It's worth pointing out, however, that such effects are likely to unfold gradually over time. Moreover, to the extent they raise our economy's underlying real growth rate, they will also increase the trend real interest rate to which rates must converge over time (in the absence of shocks).⁶ More rapid productivity growth generally implies higher real interest rates, all else held constant.

The economic projections that FOMC participants submitted prior to the December meeting show a slight uptick in the median projected path for the target range for the federal funds rate, relative to submissions prior to the September meeting. (Participants are called upon to submit projections for every other meeting, under the assumption of "appropriate monetary policy.") While a more stimulative fiscal policy outlook may have contributed to the uptick, the first since target rate projections began being released in 2012, several other factors could well have been relevant. For one, improvement in measures of inflation compensation were underway well before the election, and realized inflation has come in a bit firmer than many analysts had projected earlier in the year. In addition, while real GDP growth was depressed early in 2016 by temporary factors that were expected to fade, confirmation did not emerge until the arrival of third-quarter data. And finally, employment growth has not decelerated in 2016 as much as some forecasters had projected.

More broadly, I have been arguing for some time that the Fed's interest rate target is exceptionally low and that upward adjustment is needed.⁷ I have based that in part on the behavior of benchmarks that capture the historical behavior of interest rates — that is, how policy rates respond to inflation and employment — during times when monetary policy has been relatively effective. These benchmarks, often referred to as "policy rules," come in slightly different formulations and are useful for assessing the stance of monetary policy. At this point, with unemployment at or below levels corresponding to maximum sustainable employment and with inflation very close to our announced target of 2 percent, almost all benchmarks recommend higher interest rates, in most cases substantially higher rates.

Historical experience strongly suggests that significant deviation from these benchmarks can increase the risk of adverse outcomes. In particular, delaying interest rate increases when unemployment falls below levels corresponding to full or maximum employment can result in an unanticipated rise in inflation pressures that necessitates relatively sharp upward adjustments in rates. Such rapid adjustments can be hard to calibrate, and they heighten the risk of overdoing it and sending the economy into an unnecessary recession. In contrast, sustaining unemployment at or below full employment is associated with pre-emptive rate increases, before inflation pressures are clearly visible.

To sum things up before I close, my outlook for 2017 is for GDP to grow by about 2.0 percent, reflecting some probability of a boost from fiscal policy, and then to fall back to a long-run trend of about 1 $\frac{3}{4}$ percent in 2018 and beyond. That said, the real outlook is somewhat more uncertain than is typically the case, due to the possibility of substantial changes in fiscal, regulatory and other economic policies. Inflation should continue to converge on 2 percent over the next year. Monetary policy rates are likely to increase, and my view is that they may need to increase more briskly than markets appear to expect, depending on developments as the year unfolds.

Thank you for your kind attention.

¹ I would like to thank John Weinberg, Roy Webb and Jessie Romero for assistance in preparing these remarks.

² Glenn D. Rudebusch, "[Will the Economic Recovery Die of Old Age?](#)" Federal Reserve Bank of San Francisco *Economic Letter* no. 2016-03, February 4, 2016.

³ Growth from fourth quarter 1959 to fourth quarter 1969. The peak 10-year average real growth rate, 5.0 percent, was reached in the second quarter of 1968.

⁴ Rhys Bidder, Tim Mahedy, and Rob Valletta, "[Trend Job Growth: Where's Normal?](#)" Federal Reserve Bank of San Francisco *Economic Letter* no. 2016-32, October 24, 2016.

⁵ For a discussion of various theories of why productivity growth may have slowed in recent years, see Aaron Steelman and John Weinberg, "[A 'New Normal'? The Prospects for Long-Term Growth in the United States](#)," Federal Reserve Bank of Richmond 2015 *Annual Report*.

⁶ In other words, increased growth in potential output should raise r^* , the so-called natural rate of interest. See Thomas Lubik and Christian Matthes, "[Calculating the Natural Rate of Interest: A Comparison of Two Approaches](#)," Federal Reserve Bank of Richmond *Economic Brief* no. 15-10, October 2015; Thomas Laubach and John C. Williams, "[Measuring the Natural Rate of Interest](#)," *Review of Economics and Statistics*, November 2003, vol. 85, no. 4, pp. 1063-1070; and Kevin J. Lansing, "[Projecting the Long-Run Natural Rate of Interest](#)," Federal Reserve Bank of San Francisco *Economic Letter* no. 2016-25, August 29, 2016.

⁷ Jeffrey M. Lacker, "[Interest Rate Benchmarks](#)," Speech to the Virginia Association of Economists and the Richmond Association for Business Economics, Richmond, Va., September 2, 2016; and "[Economic Outlook, October 2016](#)," Speech at the West Virginia Economic Outlook Conference, Charleston, W.Va., October 4, 2016.