Lael Brainard: Understanding the disconnect between employment and inflation with a low neutral rate

Speech by Ms Lael Brainard, Member of the Board of Governors of the Federal Reserve System, at The Economic Club of New York New York City, 5 September 2017.

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Overall, the U.S. economy remains on solid footing, against the backdrop of the first synchronized global economic growth we have seen in many years and accommodative financial conditions. This benign outlook is clouded somewhat by uncertainty about government funding and the fiscal outlook, and geostrategic risk has risen. While the heartbreaking human toll exacted by Hurricane Harvey is already all too clear, it will take some time to assess the macroeconomic impact.

The labor market continues to bring more Americans off the sidelines and into productive employment, which is a very welcome development. Nonetheless, there is a notable disconnect between signs that the economy is in the neighborhood of full employment and a string of lower-than-projected inflation readings, especially since inflation has come in stubbornly below target for five years. With normalization of the federal funds rate under way and the start of gradual balance sheet normalization widely anticipated, I will want to take some time to assess the path of the federal funds rate that will best support a sustainable move in inflation to our 2 percent goal.[1] Sustainably achieving our inflation objective is especially important, given the apparent persistently low level of the neutral rate and the resulting limited room for maneuver above the effective lower bound.

Let me start by reviewing the economic outlook. There has been a noteworthy pickup in business investment this year compared with last year. Investment in the equipment and intellectual property category has risen at an annual rate of 6 percent so far this year after remaining roughly flat last year. The latest data on orders and shipments of capital equipment suggest that solid growth will likely continue in the second half of the year. In addition, oil drilling had rebounded this year after dropping sharply last year, although Hurricane Harvey creates uncertainty about drilling in coming months. While lackluster consumer spending was one of the key reasons for the weak increase in first-quarter gross domestic product (GDP), growth in personal consumption expenditures (PCE) bounced back strongly in the second quarter, and recent readings on retail sales suggest another solid increase in consumer spending this quarter.

Of course, the likely economic effects of Hurricane Harvey raise uncertainties about the economic outlook for the remainder of the year. Based on past experience, it appears likely that the hurricane will have a notable effect on GDP in the current quarter, although output is likely to rebound by the end of the year. According to the U.S. Department of Energy, between 20 and 30 percent of the nation's oil refining capacity was shut down at the peak last week, and it is estimated that about 50 percent of petrochemical production was similarly shut down. Some oil production has also been disrupted. These developments have put upward pressure on gasoline prices. Based on previous hurricane events, the increase in gasoline prices should be short lived, but this outcome is uncertain and will depend on the extent of damage to refining capacity.

Improvements in the labor market have continued. According to last Friday's labor market report, nonfarm payrolls have increased around 185,000 per month over the three months through August, about the same as the average monthly gains last year. The unemployment rate has been roughly flat for the past several months at 4.4 percent, which is 1/2 percentage point lower than at the same time last year. The employment-to-population ratio for prime-age workers has also improved over the past year, although it is still 2 percentage points lower than its pre-crisis peak in 2007.

Earlier this year, many observers saw the prospect of fiscal stimulus as presenting the possibility of a substantial boost to domestic demand. Since then, however, many commentators have downgraded their assessments of the extent and timing of fiscal stimulus, and I have revised my outlook as well.

That said, we are seeing synchronized global economic growth for the first time in many years. Foreign economies—including Canada, the euro area, and China—have posted robust GDP growth so far this year. This improvement has been reflected here at home in dollar depreciation; higher earnings and stock prices; tighter risk spreads; and an increase in net exports, which made a small positive contribution in the first half of this year after holding down GDP growth over the past several years. In addition, there are indications that, before too long, central banks in several major economies could begin normalizing monetary policy, in many cases through adjustments to their balance sheets as well as their policy rates. Those changes in foreign monetary policies could have important implications for term premiums and, in turn, longer-term Treasury rates, depending on the timing and approach.[2]

Despite this benign picture for the U.S. economy and continued increases in resource utilization, core inflation, as measured by changes in the PCE price index for items other than food and energy, slowed by almost 1/2 percentage point relative to the pace a year ago. Indeed, both overall and core inflation were only 1.4 percent for the year through July, well short of the Federal Open Market Committee's (FOMC) objective.

To what extent does it make sense to look through the recent low inflation readings on the grounds they are transitory? It appears that temporary factors, such as discounted cell phone plans, are pushing down inflation to some extent this year. By the same token, it is likely that other temporary factors—for example, prescription drug prices—boosted inflation last year. Going forward, we should see a temporary boost to headline inflation due to Hurricane Harvey's effect on gasoline prices that I mentioned earlier. Temporary factors, by their nature, have little implication for the underlying trend in inflation.

In contrast, what is troubling is five straight years in which inflation fell short of our target despite a sharp improvement in resource utilization. It is instructive to put the shortfall in inflation in recent years in perspective by comparing inflation in the past few years with the last time the economy was in the neighborhood of full employment—namely, just before the financial crisis. In particular, over the past three years, unemployment has averaged roughly 5 percent. Similarly, over the three years ending in early 2007—before the unemployment rate started rising—the unemployment rate also averaged 5 percent. Despite a similar degree of resource utilization, core inflation averaged 2.2 percent from 2004 to 2007, notably higher than the comparable three-year average inflation rate today of 1.5 percent. Why is inflation so much lower now than it was previously? The fact that the period from 2004 to 2007 had inflation around target with similar unemployment rates casts some doubt on the likelihood that resource utilization is the primary explanation.[3] Similarly, a 12-quarter average is typically long enough that temporary factors should not be the dominant concern.

One key factor that may have played a role in the past three years is the decline in import prices, reflecting the dollar's surge, especially in 2015. By contrast, in the 2004I07 period, non-oil import prices increased at roughly a 2 percent annual rate and had a more neutral effect on inflation. Nonetheless, while the decline in non-oil import prices likely accounts for some of the weakness in inflation over the past few years, these prices have begun rising again in the past year at a time when inflation remains relatively low.

So if import prices, resource utilization, and transitory factors together do not provide a complete account, why has inflation been so much lower in the past few years than it was previously? In many of the models economists use to analyze inflation, a key feature is "underlying," or trend, inflation, which is believed to anchor the rate of inflation over a fairly long horizon. Underlying inflation can be thought of as the slow-moving trend that exerts a strong pull on wage and price setting and is often viewed as related to some notion of longer-run inflation expectations.

There is no single highly reliable measure of that underlying trend or the closely associated notion of longer-run inflation expectations. Nonetheless, a variety of measures suggest underlying trend inflation may currently be lower than it was before the crisis, contributing to the ongoing shortfall of inflation from our objective. That conclusion is suggested by estimates based on time-series models, longer-run expectations from the University of Michigan Surveys of Consumers and Survey of Professional Forecasters, and market-based measures of inflation compensation.

Starting with time-series models, one model that has been used by a variety of researchers suggests that underlying trend inflation may have moved down by perhaps as much as 1/2 percentage point over the past decade.[4] Market-based measures of inflation compensation provide another read on inflation expectations. Comparing the three-year period ending in the second quarter of this year with the three-year period ended just before the financial crisis, 10-year-ahead inflation compensation based on TIPS (Treasury Inflation-Protected Securities) yields is 3/4 percentage point lower.[5] Survey-based measures of inflation expectations are also lower. The Michigan survey measure of median household expectations of inflation over the next five to 10 years suggests a 1/4 percentage point downward shift over the most recent three-year period compared with the pre-crisis years, similar to the five-year, five-year forward forecast for the consumer price index from the Survey of Professional Forecasters.

Why might underlying inflation expectations have moved down since the financial crisis? One simple explanation may be the experience of persistently low inflation: Households and firms have experienced a prolonged period of inflation below our objective, and that may be affecting their perception of underlying inflation. A related explanation may be the greater proximity of the federal funds rate to its effective lower bound due to a lower neutral rate of interest.[6] By constraining the amount of policy space available to offset adverse developments using our more effective conventional tools, the low neutral rate could increase the likely frequency of periods of below-trend inflation. In short, frequent or extended periods of low inflation run the risk of pulling down private-sector inflation expectations.[7]

Given today’s circumstances, with the economy near full employment and inflation below target, how should the FOMC achieve its dual-mandate goals? Some might determine that preemptive tightening is appropriate on the grounds that monetary policy operates with long lags, and inflation will inevitably accelerate as the labor market continues to tighten because of the Phillips curve. However, in today’s economy, there are reasons to worry that the Phillips curve will not prove very reliable in boosting inflation as resource utilization tightens. Since 2012, inflation has tended to change relatively little as the unemployment rate has fallen considerably, from 8.2 percent to 4.4 percent.[8] In short, the Phillips curve appears to be flatter today than it was previously.[9] This is also apparent in a number of advanced foreign economies, where declines in their unemployment rates to relatively low levels have failed to generate significant upward pressures on inflation.[10] Given the flatness of the Phillips curve, it could take a considerable undershooting of the natural rate of unemployment to achieve our inflation objective if we were to rely on resource utilization alone.

For all these reasons, achieving our inflation target on a sustainable basis is likely to require a firming in longer-run inflation expectations—that is, the underlying trend. The key question in my mind is how to achieve an improvement in longer-run inflation expectations to a level that will allow us to achieve our inflation objective. The persistent failure to meet our inflation objective should push us to think broadly about diagnoses and solutions.

The academic literature on monetary policy suggests a variety of prescriptions for preventing a lower neutral rate of interest from eroding longer-run inflation expectations.[11] One feature that is common to many proposals is that the persistence of the shortfall in inflation from our objective should be one of the considerations in setting monetary policy. Most immediately, we should assess inflation developments closely before making a determination on further adjustments to the federal funds rate.

Monetary policy

This brings me to the implications for monetary policy. A key upcoming decision for the Committee is when to commence balance sheet normalization. I consider normalization of the federal funds rate to be well under way, the criterion for commencing balance sheet normalization. The approaching change to our reinvestment policy has been clearly communicated and is well anticipated.

In principle, the FOMC could use both the balance sheet and the federal funds rate as active tools for setting monetary policy. However, I view the federal funds rate as the preferred active tool, because its effect on financial conditions and the economy has been more extensively tested and therefore is better understood than changes to the balance sheet. As a result, once we set in motion the change in balance sheet policy, as long as the economy evolves broadly as expected, we should allow the balance sheet to run off in the background at the gradual pace that was announced. We would primarily look to ongoing adjustments in the federal funds rate to calibrate the stance of monetary policy as economic conditions evolve.

Once balance sheet normalization is under way, I will be looking closely at the evolution of inflation before making a determination about further adjustments to the federal funds rate. We have been falling short of our inflation objective not just in the past year, but over a longer period as well. My own view is that we should be cautious about tightening policy further until we are confident inflation is on track to achieve our target.

Unless we expect inflation to move quickly back toward target—or there are indications that the short-run neutral rate has moved up further—a variety of empirical estimates suggest we could approach neutral without too many additional rate increases. Many forecasters assume that the neutral rate of interest is very low currently, and that it is likely to be low relative to historical norms in the longer run.[12] For example, the well-known Laubach-Williams model currently suggests an estimate of the longer-run neutral federal funds rate that is actually slightly below zero.[13] And in the most recent Summary of Economic Projections (SEP), the median longer-run nominal federal funds rate was 3 percent, which implies the long-run real federal funds rate would only be 1 percent, lower than its average in the decades before then of around 2-1/2 percent.[14]

These estimates suggest that the neutral rate of interest is likely to rise only modestly in the medium term. It is worth remembering, in addition, that the Federal Reserve’s balance sheet policy may be reinforcing this tendency over the next several years. A recent study suggests balance sheet runoff could boost the level of the term premium on the 10-year Treasury yield by about 40 basis points over the first few years.[15] Typical rules of thumb suggest that such an increase in term premiums would imply a decrease in the short-run neutral rate of interest.

Although the FOMC expects to begin normalizing its balance sheet relatively soon, several foreign central banks are continuing their purchases of longer-term assets in their own currencies.[16] Because longer-term government securities in the major economies are close substitutes, the ongoing balance sheet programs of some foreign central banks will likely continue to hold down U.S. longer-term interest rates. But with economies abroad strengthening, it may not be too long before some foreign central banks will end their net purchases and, eventually, begin reducing their balance sheets. As that happens, the current downward pressure on longer-term interest rates from foreign spillovers will abate.

For these reasons, my current expectation is that the short-run neutral rate of interest may not rise much over the medium term. But this is an open question and bears close monitoring. Of course, it is entirely possible that other factors will be working to offset this downward pressure on the equilibrium funds rate—as could be the case, for instance, if fiscal stimulus is greater than many observers currently expect.

To the extent that the neutral rate remains low relative to its historical value, there is a high premium on guiding inflation back up to target so as to retain space to buffer adverse shocks with conventional policy. In this regard, I believe it is important to be clear that we would be comfortable with inflation moving modestly above our target for a time. In my view, this is the clear implication of the symmetric language in the Committee's Statement on Longer-Run Goals and Monetary Policy Strategy.

Before concluding, it is worth considering the possible implications of a sustained period of low neutral rates and low unemployment for financial imbalances. Historically, extended periods with very low unemployment rates tend to be associated with below-average spreads of expected returns on risky assets over safe interest rates—low bond risk premiums, for example, or low equity premiums. Although, to some extent, low risk premiums and rising asset valuations may be consistent with strong economic fundamentals, such as low default rates and strong corporate earnings, there have also been episodes when a very strong economy and low unemployment rate have led to overvaluation of asset prices, underpricing of risk, and growing financial imbalances.

Thus, in today's environment, it is important to be vigilant to the signs that asset valuations appear to be elevated, especially in areas such as commercial real estate and corporate bonds, as well as the exceptionally low levels of expected volatility. Nonetheless, there are few signs of a dangerous buildup of leverage or of maturity transformation, which have traditionally been important contributors to financial instability. This is due, in no small measure, to the improvements in capital, liquidity, and risk management made by the financial institutions at the core of the system, which are associated with post-crisis financial reforms, as well as money market reform and the greater transparency in the derivatives markets.

To conclude, much depends on the evolution of inflation. If, as many forecasters assume, the current shortfall of inflation from our 2 percent objective indeed proves transitory, further gradual increases in the federal funds rate would be warranted, perhaps along the lines of the median projection from the most recent SEP. But, as I noted earlier, I am concerned that the recent low readings for inflation may be driven by depressed underlying inflation, which would imply a more persistent shortfall in inflation from our objective. In that case, it would be prudent to raise the federal funds rate more gradually. We should have substantially more data in hand in the coming months that will help us make that assessment.

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1 I am grateful to John Roberts for his assistance in preparing this text. The remarks represent my own views, which do not necessarily represent those of the Federal Reserve Board or the Federal Open Market Committee.

2 See Brainard (2017) for a fuller discussion of this topic.

3 According to Congressional Budget Office estimates, the natural rate of unemployment was about the same in the two periods: It was 4.8 percent in the 2014–17 period and 5.0 percent a decade earlier.

4 Stock and Watson (2007) introduced an estimate of trend inflation that assumed time-varying volatility. Cecchetti and others (2017) provided a recent update of that model; their estimate of trend inflation for core PCE prices has been about 1-1/2 percent in the past few years, compared with readings above 2 percent in the 2006–08 period (see figure 4.1, p. 23).

5 Of course, inflation compensation isn't a straight read on inflation expectations, as liquidity and term premiums can affect it. Still, inflation suggests a notable downward shift in expectations.

6 See Brainard (2016) for a fuller discussion of this topic.

7 See, for example, Kiley and Roberts (2017) and Nakata and Schmidt (2016).

8 The inflation information refers to core PCE inflation measured on a 12-month average basis.

9 Similarly, inflation did not fall very much as the unemployment rate climbed to 10 percent during the Great Recession. See Blanchard (2016), Kiley (2015), and Brainard (2015).

10 See IMF (2013).

11 See, for example, Kiley and Roberts (2017).

[12] See, for example, the July 2017 Survey of Market Participants (PDF) from the Federal Reserve Bank of New York.

[13] Latest estimates from the Laubach-Williams model are available at www.frbsf.org/economic-research/files/Laubach_Williams_updated_estimates.xlsx.

[14] Over the 1960–2007 period, the real federal funds rate—measured as the nominal federal funds rate less trailing four-quarter core PCE inflation—averaged 2-1/2 percent.

[15] Bonis, Ihrig, and Wei (2017).

[16] For more information, see Board of Governors of the Federal Reserve System (2017), "Federal Reserve Issues FOMC statement," press release, July 26.