EMBARGOED UNTIL
11:30 A.M. on Wednesday, March 29, 2017, U.S. Eastern Time,
OR UPON DELIVERY

"The Case for Gradual but Regular Monetary Policy Normalization"

Eric S. Rosengren
President & Chief Executive Officer
Federal Reserve Bank of Boston

The Boston Economic Club

Boston, Massachusetts
March 29, 2017

FEDERAL RESERVE BANK OF BOSTON™

"The Case for Gradual but Regular Monetary Policy Normalization"

Eric S. Rosengren
President & Chief Executive Officer
Federal Reserve Bank of Boston

The Boston Economic Club

Boston, Massachusetts
March 29, 2017

Good morning. I would like to thank the Boston Economic Club for inviting me to share my views on the economy today. At the outset, let me note as I always do that the views I express today are my own, not necessarily those of my colleagues at the Federal Reserve's Board of Governors or on the Federal Open Market Committee (the FOMC).

As everyone is likely aware, the FOMC raised the federal funds rate target range by 25 basis points at its March meeting. The committee had previously increased the interest rate target range just twice in this tightening cycle – in December 2015 and in December 2016. While the FOMC has used the term "gradual" in its official policy actions,[1] I think it is important

to be reminded that the term gradual is not synonymous with once a year just before Christmas. Kidding aside, I view four increases this year as fully consistent with comments from FOMC participants stating that the path of normalizing rates will be gradual. Clearly, such a pace would be slower than the previous tightening cycle, beginning in June of 2004, when the FOMC increased interest rates at each meeting for 17 meetings.[2]

Before I walk you through the data and analysis, allow me to preview my bottom line. My own view is that an increase at *every other* FOMC meeting[3] over the course of this year could and should be the committee's default, unless economic data come in inconsistent with forecasts.

At present, the perception seems to be that the outcome of each FOMC meeting depends on nuances of incoming data, with the base case being no change in rates. I would like to suggest a somewhat different stance for policy over this year: an expectation to tighten at every other meeting unless incoming data are materially inconsistent with the forecast. Importantly, this would still be a fully data-dependent approach, not a preset path, as it would hinge on the incoming data – but the base case would be four tightenings, reflecting the strength of the economy that I believe justifies more regular normalization of interest rates.

Such a gradual, but more regular, tightening of rates is consistent with both the improved "starting" conditions and the continued good news about the economy. As I will describe today, it seems likely that the economy will have achieved both elements of the Federal Reserve's dual mandate by the end of this year – full employment and stable prices (which the Federal Reserve defines as 2 percent inflation). Even as the economy approaches the Fed's dual mandate goals, we still have a federal funds rate that is less than 1 percent, while inflation is approaching 2

percent, which implies a negative real interest rate (simply because the inflation rate exceeds the nominal interest rate). While it is not unusual to have negative real interest rates when the economy is quite weak, as I will show today, it *is* unusual to still have negative real interest rates late in a recovery when the economy is close to full employment and nearing the inflation target.

With this as overview, I will walk you through my analysis and describe why I believe a gradual but more regular move to normalization is now appropriate.

The Real Federal Funds Rate

Figure 1 shows the nearly 50 years of the real federal funds effective rate – which is simply the effective nominal federal funds rate minus the core PCE inflation rate. As the figure shows, it is by no means unprecedented to see a negative real rate. In such cases, the real federal funds rate becomes negative because the Federal Reserve lowers interest rates to help the economy recover from a recession.

However, the figure shows that the current period *is* unusual, both in just how negative short-term real rates became and in how long real rates have remained negative. In truth, the chart understates how negative equilibrium short-term real interest rates would have become, because the federal funds rate fell to nearly its zero lower bound in late 2008. At that point, movements in the real rate were determined exclusively by fluctuations in the inflation rate alone. This is one reason why the Federal Reserve needed to expand its balance sheet – with short-term nominal rates at the zero boundary, additional monetary stimulus could be generated only by lowering longer-term interest rates using asset purchases.

Figure 2 shows the same chart, but adds an indication of the unemployment rate at the time the real federal funds rates turned positive, and the current unemployment rate. What is clear in this figure is that prior to the last recession, the real federal funds rate was negative only while the unemployment rate was well above 5 percent. Thus, the current period is quite unusual, in that the unemployment rate is now 4.7 percent (which is my estimate of full employment), but the nominal federal funds effective rate is roughly 0.88 percent while the total and core PCE measures of inflation are 1.9 and 1.7 percent, respectively, yielding essentially about negative 1 percent as the real rate.

There are several reasons why the federal funds rate has remained so low.

First, **Figure 3** shows real GDP growth smoothed over the previous four quarters. The average growth rate for each of the seven recoveries within the timeframe of the chart is also indicated. The figure emphasizes that during this recovery, real growth has remained very close to 2 percent. This is much slower than in the past, and the steady downward trend in the recoveries' growth rates is clear. Also, typically we see very strong growth in the initial stages of a recovery, before the real GDP growth rate slows down as the economy approaches full employment. In part because of the severity of the financial crisis of 2008, the economy never experienced strong growth during this recovery – but rather a slow, albeit steady, recovery.

Second, we normally see inflationary pressures build up in the latter stage of a recovery. **Figure 4** shows total PCE inflation smoothed over the previous four quarters. Again, the current period has been unusual in how low the inflation rate has been throughout this recovery. Despite the economy being at full employment, inflation remains just below the Federal Reserve's 2 percent target. Normally, we might have expected to see more inflationary pressures.

Thus, with inflation approaching target, and a slow but steady recovery, the monetary policy tightening cycle has been quite gradual. However, *how* gradual the normalization process should be depends importantly on where one thinks the economy is going.

Forecasts of the Economy

Figure 5 shows the PCE inflation outlook for the Survey of Professional Forecasters, which surveys roughly 50 private forecasters on their expectations for the economy. The median forecast for total PCE inflation is 2 percent in the first three quarters of 2017, before rising above the Federal Reserve's 2 percent inflation target in the fourth quarter of 2017.

What is perhaps even more striking is that the shaded region shows the 25 percent of the forecasts above and below the median. Focusing on the shaded region above the median in the second half of the forecast, one sees that many forecasters now expect the inflation rate will rise above 2.2 percent toward the end of this year and the beginning of next year (recall that another 25 percent of forecasts lie at or above, and at or below, the shaded area – which represents the interquartile range or middle 50 percent). This highlights that a fair number of forecasters believe the focus of the Federal Reserve will shift from striving to move up to the 2 percent target, to worrying about overshooting it. Moreover, this pattern is consistent with Federal Reserve statements that 2 percent is a target, not a ceiling, for the inflation rate.

Figure 6 shows that the Survey of Professional Forecasters anticipates relatively healthy growth. While the previous four quarters have been relatively choppy, and the revised real GDP growth for the most recent quarter was just 1.9 percent, survey participants are expecting real GDP growth to exceed 2 percent for each quarter of this year. The fact that the unemployment

rate has fallen while the economy has been growing by roughly 2 percent for most of this recovery implies that the potential GDP growth rate is somewhat below 2 percent; my own estimate is about 1.75 percent. (Unemployment falls when growth is above the so-called potential rate). So the private forecasters in the Survey of Professional Forecasters are expecting growth that is on average nearly 60 basis points faster than the estimate of the potential growth rate.

Figure 7 shows the unemployment rate forecast. Growth above the potential rate continues to exert downward pressure on unemployment. The median unemployment rate forecast falls to 4.5 percent by the end of 2017 in the Survey forecast. The shaded region again shows the 25 percent of the forecasts above and below the median. As the forecast stretches into 2018, there are more survey participants expecting the unemployment rate to be below 4.4 percent, with one-quarter at or below 4.3 percent.

It is important to place this all in the context of the unemployment rate that is likely to be sustainable in the long term. The Federal Reserve's Summary of Economic Projections (SEP) provides estimates of what the participants at this month's FOMC meeting thought the unemployment rate would be in 2017, 2018, 2019, and in the longer run – as shown in the table in **Figure 8.** The policymakers' estimates for the longer-run unemployment rate are shaded. The median estimate for the longer run is 4.7 percent. The range of estimates is 4.5 to 5.0 percent, and if you drop the three highest and lowest estimates, the central tendency is 4.7 to 5.0 percent. It is important to note that no FOMC participant currently expects an unemployment rate below 4.5 percent to be sustainable.

Unsustainably Low Unemployment Rates

I now turn to a discussion of the potential costs of an unemployment rate below the sustainable rate. **Figure 9** highlights the states that have unemployment rates below 4 percent – a level well below the national rate that the FOMC participants expect will be sustainable in the long run. There are currently 16 states with an unemployment rate below 4 percent, and four of them are in New England – Massachusetts, Maine, New Hampshire, and Vermont. Three additional states have rates at 4.0 percent.

Of course there are some states with low natural rates of unemployment. For these states, a rate near 4 percent would not be unusual. At the same time, comparing where states are now relative to their 20-year averages, as shown in **Figure 10**, we see that 28 states are at least one percentage point below their 20-year average. In addition, 15 states are within 0.5 percentage points of their 20-year minimum unemployment rate.[4]

One of the issues I often hear raised by businesspeople is the shortage of workers. A common complaint I hear is that they would expand their business, which is doing well, but they do not feel they can find enough staff with the requisite skills to allow them to expand. I also hear about firms considering moving to cities such as Boston, because the colleges and universities in the area provide a ready workforce for firms seeking highly skilled workers.

The natural response of firms facing tight labor markets is to start raising wages. **Figure 11** shows the average hourly earnings for the country overall, and for two industry groups – construction, and professional and business services. These industries show that as labor markets have become tighter, earnings have been rising.

Rising wages are likely a factor behind some private forecasters' expectations of inflation exceeding 2 percent next year. However, there are concerns beyond wage and price inflation, since an overheating economy can lead to other instabilities.

Figure 12 shows the price to earnings (P/E) ratios for the S&P 500 since 1990. The high P/E ratio may reflect that after-tax earnings are likely to be much stronger in the future; however, it might also be an indication of growing investor confidence, which of course may or may not be ratified over time.

Figure 13 shows the spread between high-yield corporate bonds and the 10-year Treasury rate since 1995. Recent academic studies have found that very tight spreads for higher-risk bonds can be an indication of potential problems in the future.[5] The current high-yield spread is now below the twenty-plus year average and trending lower, somewhat unusual for an environment when monetary policy has entered a tightening phase.

Figure 14 shows the capitalization rate for multifamily housing. The capitalization rate – net operating income relative to the price paid for the property – is unusually low. While there are secular changes in housing preferences, reflecting both demographic trends and a persistent hangover from the housing crisis, such low cap rates can call into question commercial real estate valuations should the economy experience a shock or slow-down.

All in all, a potentially overheating economy may be reflected in movements in the overall price level, in asset prices, or both. If the economy runs too hot, it could ultimately require a less gradual monetary policy adjustment – which could potentially place at risk the significant progress the economy and labor market have made since the Great Recession.

Concluding Observations

Recent economic reports have been consistent with continued steady improvement in the economy. The most recent U.S. employment report featured payroll employment growing by 235,000, the unemployment rate declining by 0.1 percentage points to 4.7 percent, and an increase in average hourly earnings of 2.8 percent. With the economy at my estimate of full employment, and with wages and prices rising, in my view it was entirely appropriate to raise the federal funds rate target range by 25 basis points in March.

Looking ahead over the course of this year, I believe it is likely to be appropriate for the FOMC to raise rates at a *more regular* – though *still gradual* – pace. With the nominal rate still low and inflation approaching 2 percent, the result is a real rate below zero. With the real effective federal funds rate still quite negative, I consider it appropriate to move the nominal rate – gradually but more regularly – so the real rate becomes less negative.

As some of my colleagues on the FOMC have emphasized, conditions do not require the FOMC to rush policy actions. With real GDP growth expected to be only modestly above 2 percent and total inflation in the short run expected to just reach the Federal Reserve's 2 percent target, I certainly believe the FOMC can be gradual in removing accommodation. Nonetheless, it is important to avoid creating an over-hot economy that could require a more rapid tightening of monetary policy – which would place at risk the economic improvements seen to date.

Thank you.

---

[1] See https://www.federalreserve.gov/newsevents/pressreleases/monetary20170315a.htm.

[2] See https://www.federalreserve.gov/monetarypolicy/openmarket.htm.

[3] FOMC meetings with a press conference give an opportunity to better explain the data and the rationale of the decision; however, the Committee may decide on an interest rate change at any FOMC meeting if the data determine so.

[4] The most recent 240 months were used to calculate the 20-year average – from March 1997 through February 2017. If instead the 20-year average is calculated using the period 1987 through 2006 in order to omit the Great Recession and the surrounding period with its high unemployment rates, 22 states are at least one percentage point below their 20-year average. In addition, 15 states are within 0.5 percentage points of their 20-year minimum unemployment rate and 1 state is below. While most of New England and the West Coast appear using both calculations, switching to the earlier period for the average shades less of the Midwest and more of the commodity-dependent Southwest.

[5] See Lopez-Salido, David, Jeremy C. Stein, and Egon Zakrajšek (forthcoming). "Credit-Market Sentiment and the Business Cycle," *Quarterly Journal of Economics*.