

Monetary Policy Frameworks



**Loretta J. Mester
President and Chief Executive Officer
Federal Reserve Bank of Cleveland**

**Panel Remarks for the National Association for Business Economics and
American Economic Association Session,
“Coordinating Conventional and Unconventional Monetary Policies for Macroeconomic Stability”**

**Allied Social Science Associations Annual Meeting
Philadelphia, PA**

January 5, 2018

Introduction

I thank George Kahn for inviting me to speak in this session. I will use my time to discuss the framework the FOMC uses for setting monetary policy and some alternative frameworks. Let me emphasize that this is a longer-run issue and not one that is of immediate concern. It lies in the realm of what economists and policymakers should have on their agendas for study given the economic developments we've seen over the past decade and what is expected over the coming decade. The views I'll present are my own and not necessarily those of the Federal Reserve System or my colleagues on the Federal Open Market Committee.

The FOMC currently uses a flexible inflation-targeting framework to set monetary policy. It is briefly described in the FOMC's statement on longer-run goals and monetary policy strategy.¹ The U.S. adopted an explicit numerical inflation goal in January 2012. This is a symmetric goal of 2 percent, as measured by the year-over-year change in the price index for personal consumption expenditures, or PCE inflation. In establishing this numerical goal, the U.S. joined many other countries, including Australia, Canada, New Zealand, Sweden, and the U.K., as well as the European Central Bank, that conduct monetary policy with a goal of achieving an explicit inflation target. An explicit target provides transparency to the public and helps anchor expectations about inflation. Congress has given the Fed a dual mandate of price stability and maximum employment. The flexible inflation-targeting framework recognizes that, over the longer run, monetary policy can influence only inflation and not the underlying real structural aspects of the economy such as the natural rate of unemployment or maximum employment, but that monetary policy can be used to help offset shorter-run fluctuations in employment from maximum employment.

The financial crisis and Great Recession imposed large economic costs on people and businesses. To fight disinflationary pressures and economic contraction, Fed policymakers brought the policy rate to

¹ See FOMC (2017).

effectively zero, where it remained for seven years, and augmented their usual policy tools with unconventional tools, including forward guidance and large-scale asset purchases. This was not business as usual. But now the economic expansion is firmly in place, labor markets are strong, and I expect that inflation, which has been running under our goal for quite some time, will return to our 2 percent goal on a sustained basis over the next couple of years. Nonetheless, the post-crisis economic environment is expected to differ in some important ways from the pre-crisis world.

As I've discussed elsewhere, the expected slowdown in population growth and labor force participation rates due to changes in demographics will weigh on long-run economic growth, the natural rate of unemployment, and the longer-term equilibrium interest rate.² In fact, FOMC participants have been lowering their estimates of the fed funds rate that will be consistent with maximum employment and price stability over the longer run. The median estimate has decreased from 4 percent in March 2014 to 2.8 percent today. Empirical estimates of the equilibrium real fed funds rate, so-called *r*-star, while highly uncertain, are lower than in the past.³ So real interest rates may potentially remain lower than in past decades. If so, then there will be less room for monetary policymakers to cushion against a negative economic shock than in the past. Said differently, the policy rate will have a higher chance of hitting the zero lower bound, necessitating the use of nontraditional monetary policy tools more often. To the extent that these tools are less effective than the traditional interest rate tool or are constrained, the potential is for longer recessions and longer bouts of low inflation. This raises the legitimate question of whether any changes in our monetary policy framework would be helpful in maintaining macroeconomic stability in this environment. I'm not going to answer that question today. Nor am I going to discuss other government policies that could be brought to bear to increase the long-term growth rate and equilibrium interest rate, which would give monetary policy more room to act. Instead, I'm going to outline four

² See Mester (2017).

³ For FOMC projections, see FOMC (2014) and FOMC (2018). For a review of the literature on the equilibrium interest rate, see Hamilton, et al. (2015).

alternative monetary policy frameworks that have received some attention and discuss some of their pros and cons.

Higher Inflation Target

One alternative would be to set a higher inflation target, say, 4 percent instead of 2 percent.⁴ Since the equilibrium nominal fed funds rate is the sum of the inflation target and the equilibrium real rate, a higher inflation target would offset a lower equilibrium real rate and so the nominal rate would be less likely to hit the zero lower bound for any given negative shock. One advantage of this framework is that it is very familiar because it is similar to the current framework. But there are also several challenges. First, the transition could be difficult. The benefits of the higher target come only if the public views the increase as permanent so that inflation expectations rise to the new higher target. But inflation expectations are reasonably well anchored at 2 percent, so raising expectations would not necessarily be easy to do. Second, a higher level of inflation may be associated with higher inflation volatility and with higher inflation risk premia, neither of which is desirable. Third, it isn't clear whether an inflation rate at 4 percent should be viewed as consistent with the Fed's mandate of price stability. If, for this reason, one then opted to raise the target to 3 percent instead, this would add only modest room for keeping the policy rate from the zero lower bound. And finally, one would need to evaluate whether the gain from avoiding the zero lower bound when a negative shock hits the economy outweighs the costs of running a higher level of inflation at all times, remembering that much of the economy is not indexed to inflation.

Price-Level Targeting

A second alternative framework involves targeting a path for the nominal *level* of prices rather than inflation, which is the *growth rate* of prices. Inflation targeting lets bygones-be-bygones: it does not make up for past deviations of inflation from target. Instead, the inflation-targeting policymaker just tries

⁴ See Blanchard, Dell'Ariceia, and Mauro (2010) for discussion.

to bring inflation back to target. For example, if inflation has run low for a time (so that the price level falls below its targeted price path), the inflation-targeting policymaker would aim to move the inflation rate back up to its target rate and allow the price level to remain at a level permanently below its targeted path. In contrast, price-level targeting makes up for past deviations of the price level from its path.⁵ If inflation has run low so that the price level has fallen below its targeted path, the price-level targeter would try to move the price level back up to path, and this would entail inflation running high for a while. Similarly, if inflation had been running high, the inflation targeter would aim to bring it down to target, while a price-level targeter would aim to bring the price level back down to its targeted path, which would mean inflation would be low for a while.

Thus, the price-level-targeting framework builds in a form of forward commitment, thereby affecting current economic conditions. When inflation has been running low, the framework builds in a “low for longer” interest-rate strategy, as the policymaker would keep rates low for longer until the price level moved back to its targeted path. The anticipation of higher inflation in the future should move inflation expectations up, and this would tend to buoy the current level of inflation and shorten the amount of time the economy spends at the zero lower bound, therefore yielding better outcomes than inflation targeting. In fact, the academic literature suggests that a price-level-targeting framework may approximate optimal monetary policy when policymakers want to minimize fluctuations in the output gap and in inflation around a target, and it can be particularly useful at the zero lower bound by putting upward pressure on inflation expectations and, thereby, downward pressure on the real rate.⁶ Before I talk about some challenges, let me discuss a third related framework: nominal GDP targeting.

⁵ See Kahn (2009) for a discussion of price-level targeting.

⁶ See Eggertsson and Woodford (2003).

Nominal GDP Targeting

This framework is similar to price-level targeting in that it targets the level of nominal GDP rather than the growth rate. Of course, nominal GDP comprises real GDP and inflation, so this framework explicitly incorporates both parts of the Fed's mandate. For example, targeting the level of nominal GDP to be on a path rising by 4 percent per year would be consistent with 2 percent inflation and 2 percent potential growth. This strategy, like price-level targeting, makes up for past deviations. But it may perform better than price-level targeting when there are supply shocks to which the policymaker would not want to respond because such supply shocks tend to push prices and real output in opposite directions, leaving nominal income stable.

While both price-level and nominal GDP targeting have the benefit of building in some forward commitment, which is useful at the zero lower bound, there would be some challenges in implementing either framework. First, there is little international experience with such frameworks to assess how they would work in practice.⁷ Second, for frameworks targeting levels instead of growth rates, the starting point matters, and these frameworks are complicated by other measurement issues as well. For example, **Figure 1** shows the price-level path using four different starting points: the first quarters of 1990, 1995, 2001, and 2007. As you can see on the left-hand side of the chart, if the starting point is 1990Q1, the price level is essentially on its path, and if the starting point is 2001Q1, it is near its path. The other two starting points, on the right-hand side of the chart, show a larger gap.

Moreover, because the level-targeting frameworks do not let bygones-be-bygones, data revisions pose a more serious issue than they do with inflation targeting (see **Figure 2**), and are perhaps greater for nominal GDP targeting than price-level targeting because revisions to nominal GDP tend to be larger than

⁷ Sweden did price-level targeting for less than two years when it went off the gold standard in 1931. See Kahn (2009).

revisions to prices. Also, the path of the nominal GDP target depends on estimates of potential real output growth. If the nominal income target incorporates an unrealistically high estimate of potential growth, then inflation will need to be higher in order to hit the target.

A third complication, and perhaps the largest, for frameworks targeting nominal levels is that the benefits depend on the public's not only understanding the framework but believing that future Committees will follow through. Explaining this unfamiliar framework to the public could be difficult. One also has to ask whether it is a credible commitment on the part of policymakers to keep interest rates low to make up for past shortfalls even when demand is growing strongly or to act to bring inflation down in the face of a supply shock by tightening policy even in the face of weak demand. If it is not credible that policymakers will do so, then the benefits of nominal level targeting will not be realized.

The final framework I'll discuss was suggested by former Fed Chair Ben Bernanke and is a hybrid between inflation targeting and price-level targeting, which tries to capture the advantages of each while minimizing the challenges.⁸

Temporary Price-Level Targeting

Under the temporary price-level-targeting framework, monetary policymakers would target inflation in normal times, but when the policy rate fell to the zero lower bound, they would begin targeting the price level from that starting point. Under this framework, consistent with optimal monetary policy, policymakers would have a more powerful commitment at the zero lower bound than would be the case under inflation targeting. Switching to price-level targeting at the zero lower bound means that policy would be kept at zero at least until the cumulative inflation rate from the time the zero lower bound had

⁸ Bernanke (2017).

been reached had risen back to target. Once policymakers were satisfied that this goal had been met, the policy rate could begin to rise and policymakers would revert to targeting inflation.

This framework has benefits similar to those of price-level targeting in that when monetary policy is not able to provide more stimulus because it is constrained by the zero lower bound, the framework builds in a forward commitment of easier monetary policy in the future. But this hybrid framework could be easier to communicate because it could be discussed solely in terms of the inflation goal (see **Figure 3**). It would also mean that some of the commitment problems of nominal level targeting, including having to make up for supply shocks that would temporarily raise inflation even if aggregate demand were low, could be avoided when away from the zero lower bound because policymakers would be targeting inflation and not the price level there. However, a drawback of the hybrid approach is that determining and communicating the timing of when to switch back to the inflation-targeting regime could be complex. Policymakers would not want to switch back prematurely, so they would need to be sure that inflation had sustainably made up for the cumulative shortfall. This would seem to involve a considerable amount of discretion, which would undermine some of the benefits of the framework.

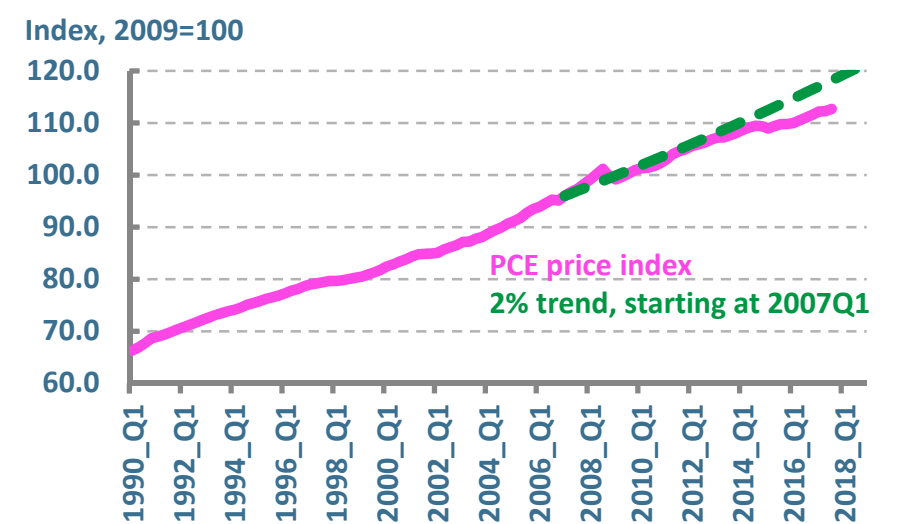
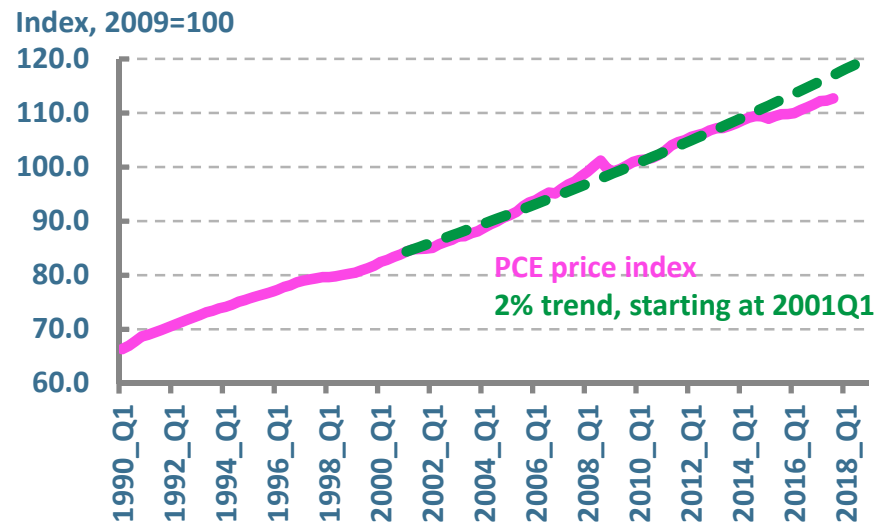
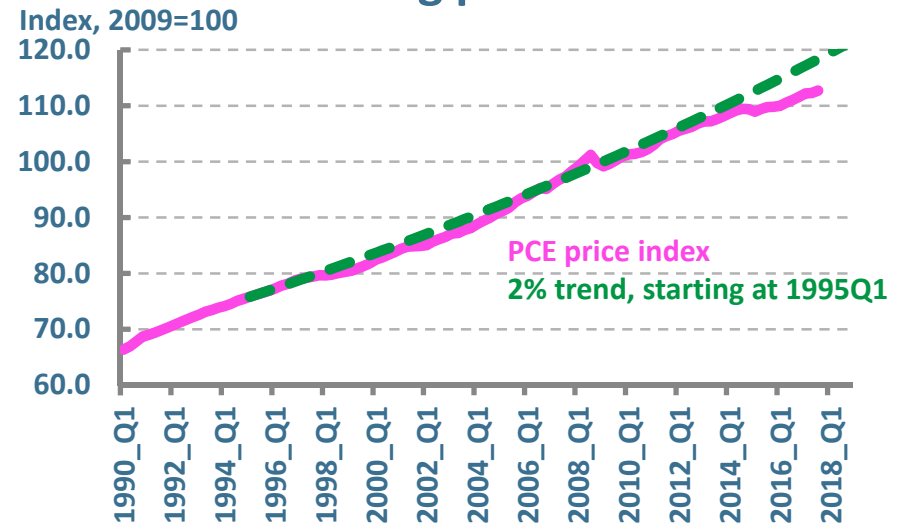
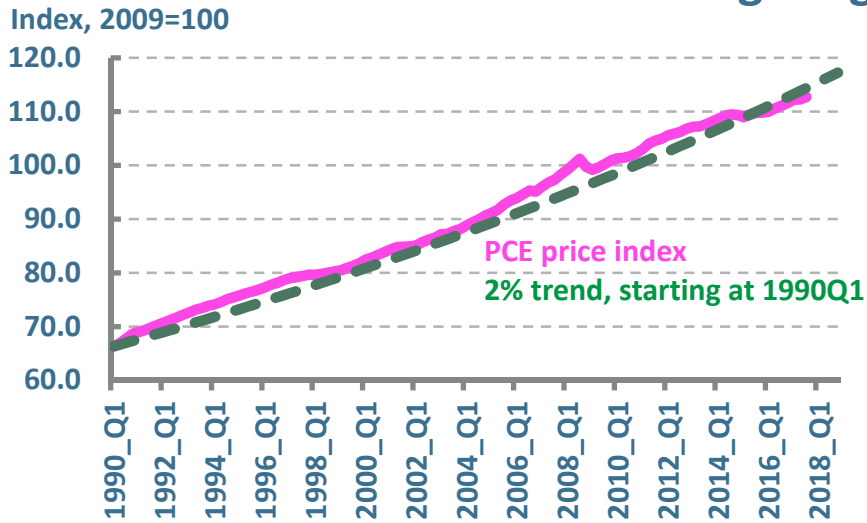
Summary

In summary, there are several alternative monetary policy frameworks that potentially offer some benefits in a low interest rate environment. None of these alternative frameworks are without challenges and we will need to evaluate whether the net benefits of any of the alternatives would outweigh those of the flexible inflation-targeting framework currently in use in the U.S. and in many other countries. Each framework is worthy of further study, and now may be an appropriate time to undertake such study because the economy is growing, labor markets are strong, and inflation is projected to move back to our goal.

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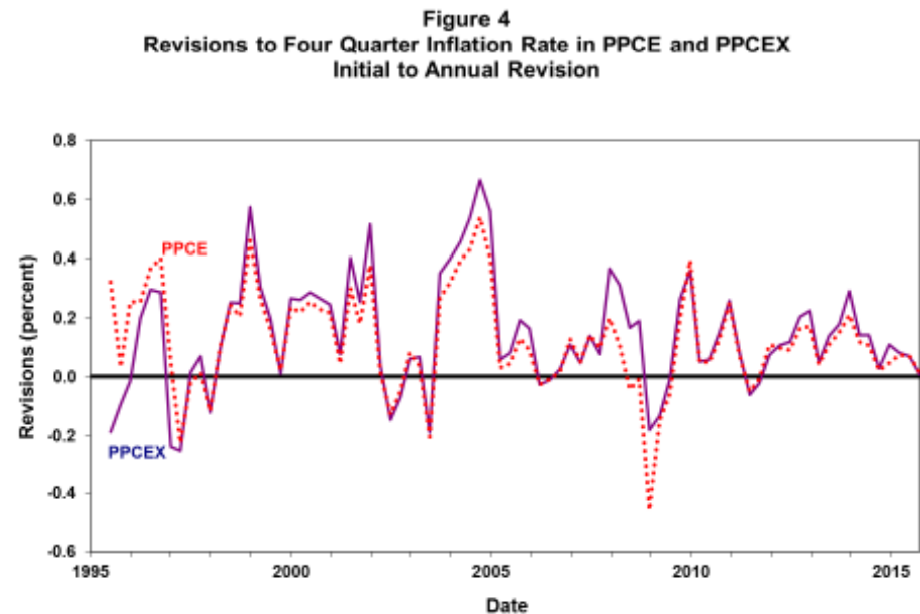
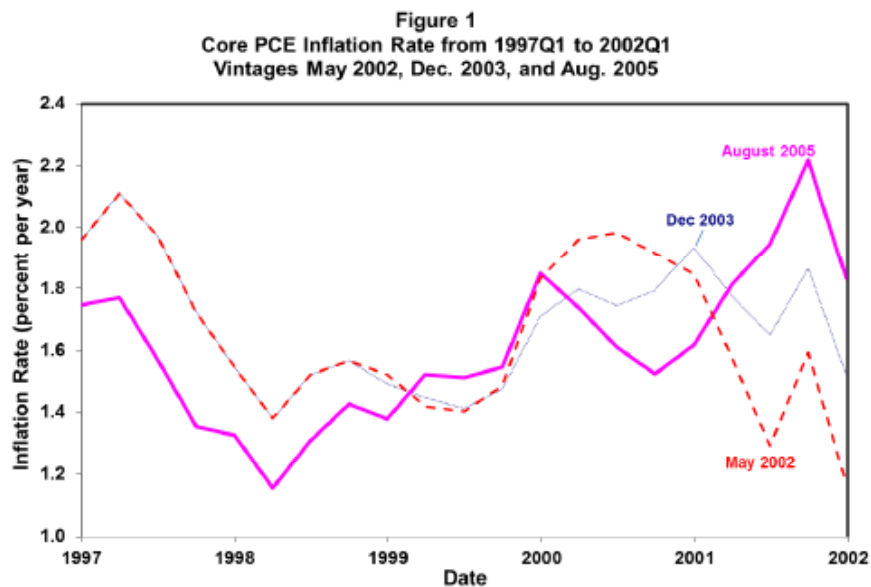
Figure 1: In a nominal level-targeting framework, the starting point matters
Price-level targeting with different starting points



Source: U.S. Bureau of Economic Analysis, via Haver Analytics
 Quarterly data: Last obs. for price level 2017Q3

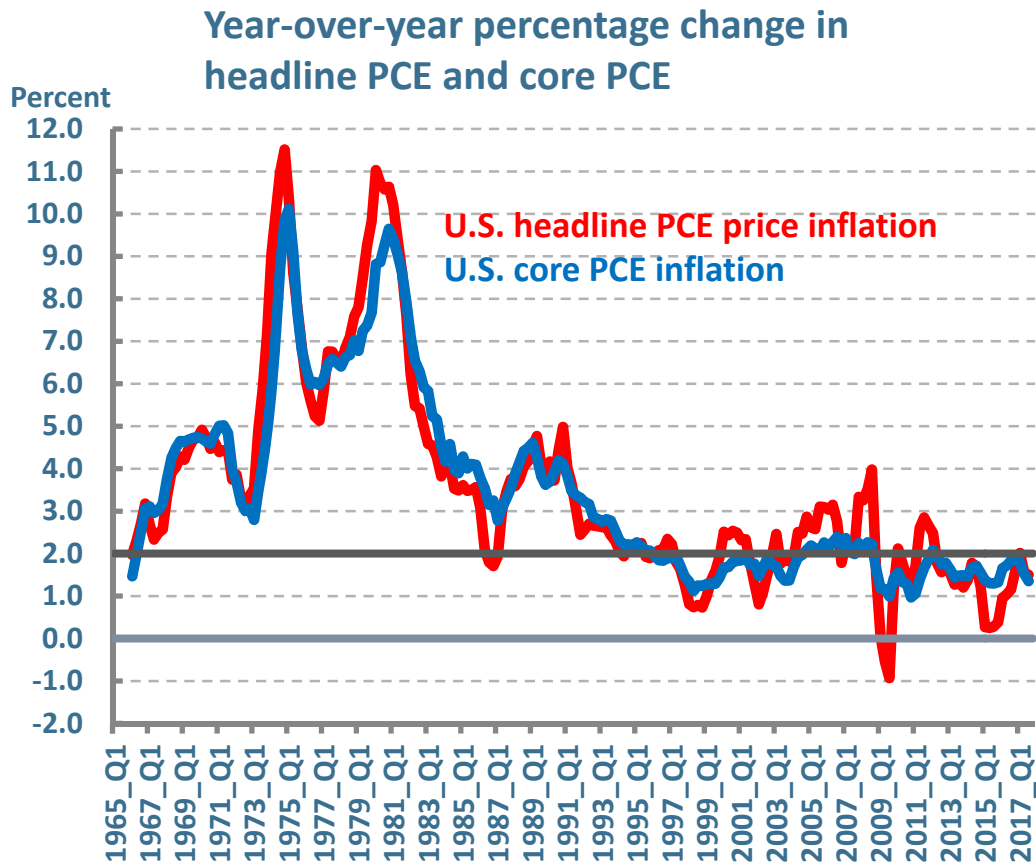
Figure 2: Data revisions could be more serious with nominal level targeting because there is no letting bygones-be-bygones

May 2002 data showed core PCE inflation falling sharply; FOMC statement in May 2003 noted “the probability of an unwelcome substantial fall in inflation, though minor, exceeds that of a pickup in inflation.” Subsequently, the fall was revised away.

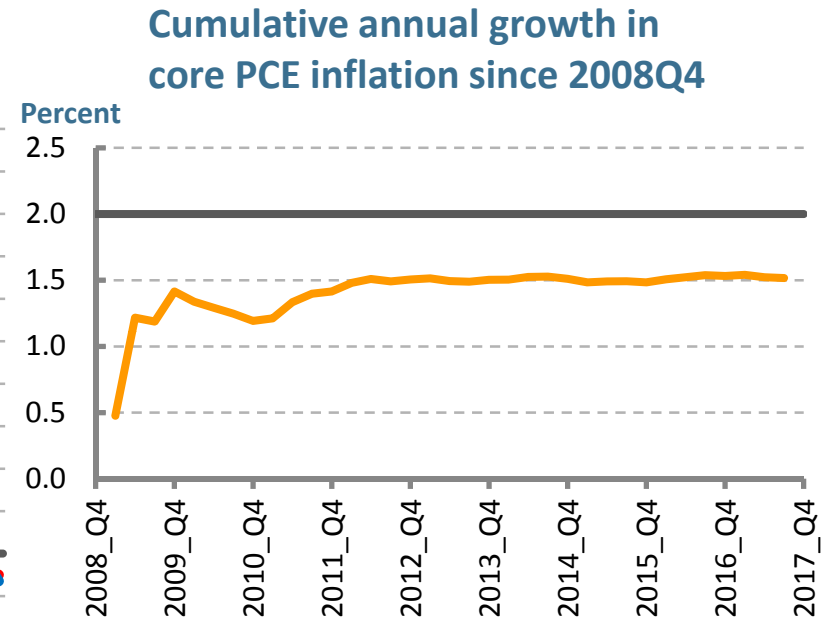


Source: Croushore, 2017, using data from U.S. Bureau of Economic Analysis

Figure 3. Temporary price-level targeting could be communicated in terms of the cumulative shortfall of inflation from target



Source: U.S. Bureau of Economic Analysis, via Haver Analytics
 Quarterly data: Last obs. 2017Q3



Source: U.S. Bureau of Economic Analysis, via Haver Analytics
 Quarterly data: Last obs. 2017Q3
 As reported in Bernanke, 2017