

Price Level Targeting: Reconsidered

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Abstract: The Fed adopted flexible inflation targeting as its monetary policy strategy to achieve the goals of maximum employment, stable prices, and moderate long-term interest rates. Nominal interest rates were close to the zero bound between 2008 and 2015 in the USA. Even if the Fed raised the fed funds rate to a 2.25 percent to 2.5 percent range, they will have less space to reduce borrowing costs to stimulate growth and stabilize inflation during the next recession. Under flexible inflation targeting, dealing with the next recession in which interest rates are stuck at the zero-lower bound has become a topical issue. The numbers of strategies are voiced to avoid recession with the zero bound on nominal interest rates. Such strategies include a higher inflation target, average inflation targeting, negative rates, yield curve control, quantitative easing, and price level targeting. This study overviews the monetary policy strategies where nominal interest rates are close to the zero bound.

Key Words: Inflation Targeting, Price Level Targeting, Monetary Policy

I. INTRODUCTION

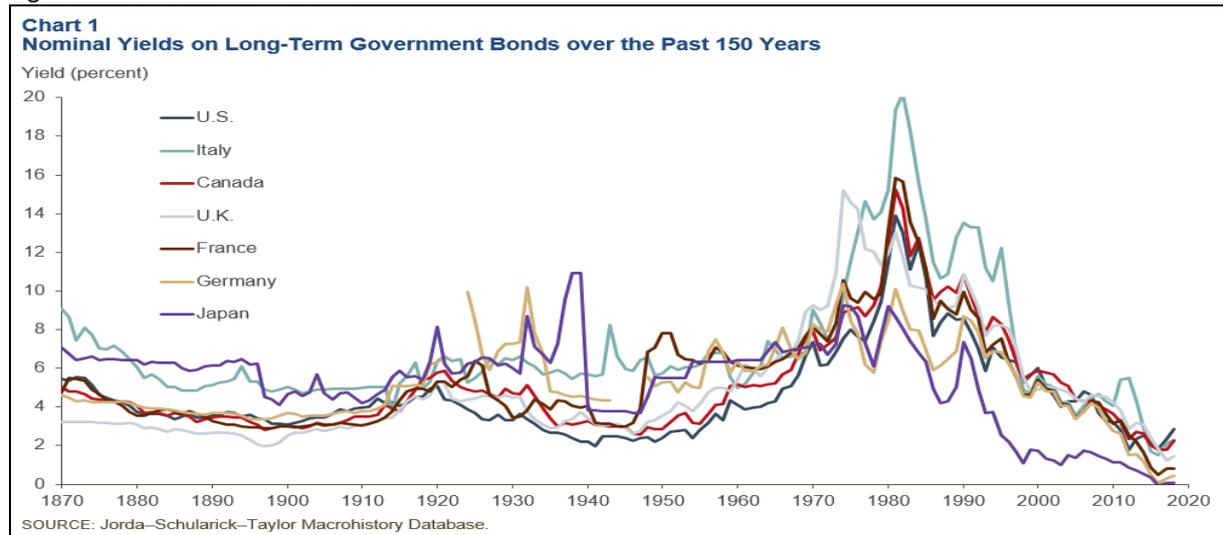
The Federal Reserve (The Fed) in the USA is mandated to conduct monetary policy in such a way to promote effectively the goals of maximum employment, stable prices, and moderate long-term interest rates. The Fed follows strategies, tools, and communication practices to achieve and maintain these goals as consistently and robustly as possible. The Fed adopted “flexible inflation targeting” as its monetary policy strategy to achieve these goals. The Fed's mandate is much more explicit about the role of employment than that of most flexible inflation-targeting central banks. The Fed follows a balanced approach for dual-mandate goals of maximum employment and price stability as such when the two sides of the mandate are in conflict, neither one takes precedent over the other (Clarida, 2019).

Currently, the Fed targets a 2% inflation rate. The US economy operates at or close to our maximum-employment and price-stability goals whereby the unemployment rate is near a multidecade low and

inflation is running close to 2 percent objective (Clarida, 2019).

The neutral rate of interest (also called the long-run equilibrium interest rate, the natural rate and, to insiders, r -star or r^*) is the short-term interest rate that would prevail when the economy is at full employment and stable inflation: the rate at which monetary policy is neither contractionary nor expansionary (Ng and Wessel, 2018). Neutral interest rates appear to have fallen in the United States and abroad (see Figure 1). Moreover, this global decline in r^* is widely expected to persist for years. The decline in neutral policy rates likely reflects several factors, including aging populations, changes in risk-taking behavior, and a slowdown in technology growth. The policy implications of the decline in neutral rates are important. All else being equal, a fall in neutral rates increases the likelihood that a central bank's policy rate will reach its effective lower bound (ELB) in future economic downturns. That development, in turn, could make it more difficult during downturns for monetary policy to support spending and employment, and keep inflation from falling too low (Clarida, 2019).

Figure 1: Neutral Interest Rates

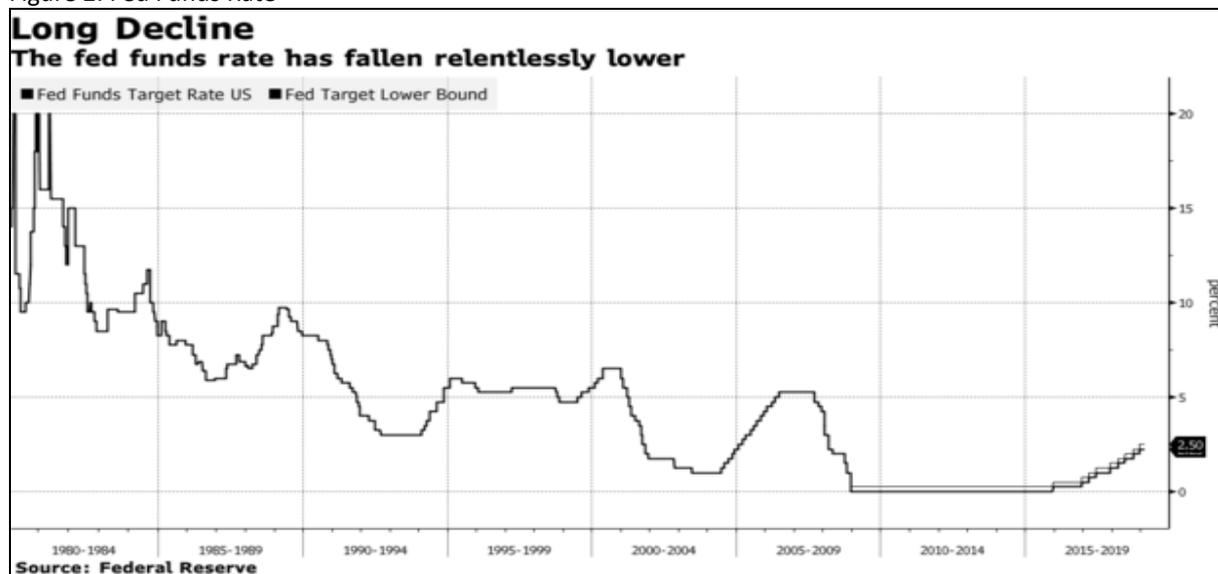


Source: <https://www.dallasfed.org/news/speeches/kaplan/2018/rsk181024.aspx>

Recently, dealing with the next recession in which interest rates are stuck at the zero-lower bound has become a topical issue. Nominal interest rates were close to the zero bound between 2008 and 2015 in the USA. Even if the Fed raised the fed funds rate to a 2.25 percent to 2.5 percent range (see Figure 2), they'll have less room to cut borrowing costs to stimulate growth and stabilize inflation during the next recession (Smialek, 2019). Central banks generally have effective tools for preventing

persistent inflation overshoots, but the effective lower bound on interest rates makes persistent undershoots more likely. Persistent inflation shortfalls carry the risk that longer-term inflation expectations become poorly anchored or become anchored below the stated inflation goal (Clarida, 2019). Thus, the Fed reviews its monetary policy framework in the light of nominal interest rates close to the zero bound in many countries (Hatcher and Minford, 2014; Robb, 2018).

Figure 2: Fed Funds Rate



Source: <https://www.bloomberg.com/news/articles/2019-02-21/fed-superstars-lay-out-a-map-for-the-central-bank-s-big-rethink>

The number of alternatives/strategies is assessed to avoid recession with the 'zero bound' on nominal interest rates. Such strategies include A Higher Inflation Target, Average Inflation Targeting, Negative Rates, Yield Curve Control, Quantitative

Easing, and Price Level Targeting. These strategies could be implemented either permanently or as a temporary response to extraordinary circumstances (Clarida, 2019).

II. PRICE LEVEL TARGETING

Under price-level targeting, policymakers seek to stabilize the price level around a constant growth path. A price-level-targeting central bank tries to keep the level of prices on a steady growth path, rising by (say) 2 percent per year; in other words, a price-level-targeter tries to keep the very-long-run average inflation rate at 2 percent (Bernanke, 2017).

The main difference between inflation targeting and price-level targeting is the consequence of missing the target (Hatcher and Minford, 2014).

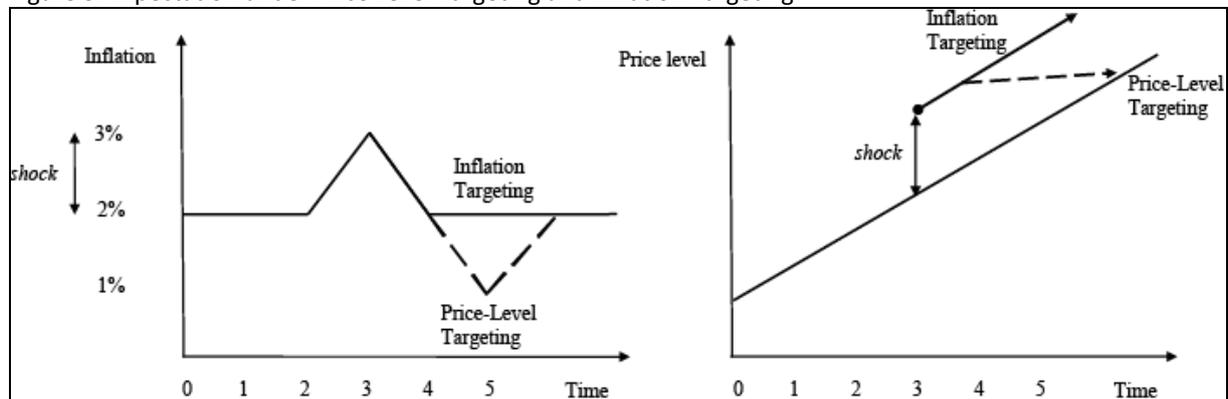
Under flexible inflation-targeting approach, the persistent shortfalls of inflation from 2 percent that many advanced economies have experienced over most of the past decade are treated as "bygones." This means that policy today is not adjusted to offset past inflation shortfalls with future overshoots of the inflation target (nor do persistent overshoots of inflation trigger policies that aim to undershoot the inflation target) (Clarida, 2019). In other words, the Fed officials don't care how much they've previously missed or overshot their goal. They just want to hit 2 percent now (Smialek, 2019).

Under the price level targeting approach, similar to inflation targeting, price level targeting establishes targets for a price index like the consumer price index; however, any temporary deviations from the

target rate of inflation are reversed by a corrective action at the next period. Under the price level targeting approach, the central bank is obliged to offset past inflationary shocks whereby a period of too-low prices would require an offsetting period of too-high prices and a period of too-high prices require an offsetting period of too-low prices. For example, if inflation fell below 2% for a time, the central bank would compensate by aiming for inflation above 2% until average inflation over the whole period had returned to 2%. If inflation is unexpectedly high one-year, aggregate prices would have to be lowered the next year. In effect, that would call for leaving the policy rate lower for longer than a more traditional monetary policy rule might dictate (Hatcher and Minford, 2014; Kenton, 2018; Smialek, 2019).

Expectations depend crucially on the regime in place. For example, suppose the central bank announces an inflation target of 2%. As seen in Figure 3, when inflation unexpectedly rises to 3% in period 3, rational households and firms will anticipate future inflation of 2% in periods 4 and 5. By contrast, expected inflation in period 5 would be only 1% with a price-level target, because price targeting calls for below-average inflation in this period (Hatcher and Minford, 2014).

Figure 3: Expectation under Price Level Targeting and Inflation Targeting



Source: <https://voxeu.org/article/inflation-targeting-vs-price-level-targeting>

Price-level target could be painful in the case of supply shocks that temporarily boost inflation. For example, if a spike in oil prices caused a temporary increase in inflation, a price-level-targeting central bank would have to tighten monetary policy even in an economic downturn. Thus, price-level targeting increases inflation volatility and amplify the economic cycle. That is why no central bank has tried implementing price-level targeting since Sweden experimented with it in the 1930s (Kenton, 2018).

However, there is a potential role for price-level targeting in the case of nominal interest rates close

to the zero bound. Inflation targeting will be ineffective, when there is a large negative shock to aggregate demand in the case of nominal interest rates close to zero bound.

Suppose that the economy has been hit by a large negative shock to aggregate demand and nominal interest rates have been cut to zero in an attempt to stimulate the economy back to full capacity. Under inflation targeting, at the zero bound, a negative demand shock leads to a rise in real interest rates— assuming inflation expectations remain anchored. Because inflation expectations remain anchored at 2% under inflation targeting,

the only route by which monetary policy could stimulate the economy is further cuts in nominal interest rates. However, this option has been exhausted at this point (Hatcher and Minford, 2014).

If households and firms understand the impotence of monetary policy in this situation, they might even expect lower future inflation. This would raise real interest rates, thus pushing down demand even further. With real interest rates either constant or rising, a lengthy recession is likely to ensue (Hatcher and Minford, 2014). Worse, if households and firms think monetary policy has become impotent, and their inflation expectations fall, real interest rates will rise even further, increasing the risk of a recession (Kenton, 2018).

Under price-level targeting, there is automatic compensation by policymakers for periods in which the ZLB prevents monetary policy from providing adequate stimulus. Specifically, periods in which inflation is below target (as is likely to happen when interest rates are stuck at the ZLB) must be followed by periods in which the central bank shoots for inflation above target, with the overshoot depending (as it optimally should) on the severity of the episode and the cumulative shortfall in monetary easing. If the public understands and expects the central bank to follow the "lower-for-longer" rate-setting strategy, then the expectation of easier policy and more-rapid growth in the future should mitigate declines in output and inflation during the period in which the ZLB is binding, and indeed reduce the frequency with which the ZLB binds at all (Bernanke, 2017).

Price-targeting creates a different dynamic for inflation expectations when an economy is hit by a negative demand shock. After the demand shock has hit and inflation falls below 2%, a credible price-level target would create the expectation of future inflation of more than 2%. In turn, this expectation will lower real interest rates today and provide necessary stimulus to aggregate demand and upward pressure on prices (Hatcher and Minford, 2014; Kenton, 2018).

Price-level targeting is, theoretically, more effective than inflation targeting because the target is more precise (Kenton, 2018). Monetary policy is successful if the price level returns to the trend line it was growing along before the undershooting occurred. This makes the future course of the price level easier to predict. Inflation growth rate targeting cannot match this degree of predictability because its policy errors permanently change the long run price level, making the future path of the price level more like a random walk. Improved price

level predictability is one of the reasons that several Fed officials have discussed the benefits of adopting a price level target. A price level target would offer an increased level of predictability over inflation rate targeting by better indicating where prices will be 5, 10, even 30 years into the future. This predictability would make future Fed policy more transparent to the public (Lacey, 2018).

IV. DRAWBACKS OF PRICE LEVEL TARGETING

Although price-level targeting is, theoretically, more effective than inflation targeting, this strategy has its own drawbacks.

1) Whether price-level targeting leads to higher GDP growth in a deflationary environment than inflation targeting very much depends on whether or not the world conforms to the New Keynesian view that prices and wages are sticky, meaning they adjust slowly to short-term economic fluctuations, and that people form their inflation expectations rationally (Kenton, 2018). Under this expectation mechanism in New Keynesian models, an increase in expected inflation raises current inflation, and higher output expectations raise aggregate demand. Welfare losses conditional on reaching the lower bound are much larger under inflation targeting than price targeting in New Keynesian models. It is important to note that this mechanism rests crucially on the assumption that the price-level target is credible (Hatcher and Minford, 2014).

2) The benefits of the makeup strategies rest heavily on households and firms believing in advance that the makeup will, in fact, be delivered when the time comes--for example, that a persistent inflation shortfall will be met by future inflation above 2 percent. Makeup strategies, in general, are not time consistent because when the time comes to push inflation above 2 percent, conditions at that time will not warrant doing so. Because of this time inconsistency, any makeup strategy, to be successful, would have to be understood by the public to represent a credible commitment. That important real-world consideration is often neglected in the academic literature, in which central bank "commitment devices" are simply assumed to exist and be instantly credible on decree. Thus, one of the most challenging questions is whether the Fed could, in practice, attain the benefits of makeup strategies that are possible in models (Clarida, 2019).

Price level targeting requires a significant change in the Fed's policy framework and reaction function, and it is hard to judge how difficult it would be to

get the public and markets to understand the new approach. In particular, switching from the inflation concept to the price-level concept might require considerable education and explanation by policymakers (Bernanke, 2017).

3) Another drawback is that the “bygones are not bygones” aspect of this approach is a two-edged sword. Under price-level targeting, the central bank cannot “look through” supply shocks that temporarily drive up inflation, but must commit to tightening to reverse the effects of the shock on the price level. Given that such a process could be painful and have adverse effects on employment and output, the Fed’s commitment to this policy might not be fully credible (Bernanke, 2017).

While Fed officials are right to believe that price level targeting can improve upon inflation rate targeting, they fail to consider the shortcomings of either alternative in the presence of supply shocks. A price level target (to refer only to the better of these two options) may be optimal in the absence of such shocks, but in their presence it makes monetary policy procyclical (Lacey, 2018).

Consider the case of a negative supply shock. A sudden fall in the global production of oil would likely push up domestic gas prices, which would in turn raise the price level. Such a rise would be a signal to the Fed to tighten monetary policy. Yet, tighter monetary policy would provide no relief to the economy in such a circumstance. Tighter policy would put further downward pressure on an economy whose consumers already feel constrained by higher prices because of the oil shock. Only if the rise in gas prices was the result of excess aggregate demand, something likely caused by over-easing by the Fed, would tighter monetary policy be appropriate (Lacey, 2018).

Positive supply shocks can likewise have procyclical consequences. Were the United States to see a (welcome) improvement in productivity the inflation rate would tend to fall. After a short period with the lower inflation rate the price level would still be rising but be below its target path. Under a price level target, the Fed would respond with easier monetary policy in an effort to raise the inflation rate and bring the price level back up to its path. But prices falling because products are made more efficiently is a gain for consumers, who ought to enjoy lower prices on those products. Trying to raise the overall price level in an effort to “combat” these productivity gains should hardly be part of a central bank’s policy and could risk overheating the economy (Lacey, 2018).

V. TEMPORARY/FLEXIBLE PRICE-LEVEL TARGETING

Against drawbacks of price level targeting, it is suggested using the system only when rates were at zero -- hence the “temporary.” That way, the Fed wouldn’t be forced to tighten policy in good times to reverse elevated inflation caused by transitory factors, like a bump in gas prices (Smialek, 2019).

Is there a compromise approach? One possibility is to apply a price-level target and the associated “lower-for-longer” principle only to periods around ZLB episodes, retaining the inflation-targeting framework and the current 2 percent target at other times. As with the ordinary price-level target, this approach would implement the lower-for-longer or “make-up” strategy at the ZLB, which—if understood and anticipated by the public—should serve to make encounters with the ZLB shorter, less severe, and less frequent. In this respect, a temporary price-level target would be similar to an ordinary price-level target, which applies at all times. However, a temporary price-level target has two potential advantages (Bernanke, 2017).

First, a temporary price-level target would not require a major shift away from the existing policy framework: When interest rates are away from the ZLB, the current inflation-targeting framework would remain in place. And at the ZLB, what I am calling here temporary price-level targeting could be explained and communicated as part of an overall inflation-targeting strategy, as it amounts to targeting the average inflation rate over the period in which the ZLB is binding. Thus, communication could remain entirely in terms of inflation goals, a concept with which the public and market participants are already familiar (Bernanke, 2017).

Second, a temporary price-level target, unlike an ordinary price-level target, would not require the Fed to tighten policy to reverse shocks that temporarily drive up inflation when rates are away from the ZLB. Instead, following the inflation-targeter’s approach, the Fed would simply guide inflation back to target over time. Moreover, because the Fed would be targeting 2 percent inflation in both ZLB and non-ZLB periods, inflation over long periods should average around 2 percent (Bernanke, 2017).

To be more concrete on how the temporary price-level target would be communicated, suppose that, at some moment when the economy is away from the ZLB, the Fed were to make an announcement something like the following: The Federal Open Market Committee (FOMC) has determined that it will retain its symmetric inflation target of 2

percent. The FOMC will also continue to pursue its balanced approach to price stability and maximum employment. In particular, the speed at which the FOMC aims to return inflation to target will depend on the state of the labor market and the outlook for the economy (Bernanke, 2017).

VI. NOMINAL GDP TARGETING

Price level targeting is superior to inflation rate targeting because it corrects the bygone problem, improving the Fed's performance by making the price level more predictable. However, a price level target is the ideal only in a world without supply shocks. With supply shocks, a central bank with a price level target would too often act in a procyclical manner. A "flexible" price level target is certainly a better option than a strict price level target. But it would only be the best available option if it were so "flexible" that it amounted to nothing other than a nominal GDP level target (Lacey, 2018).

Flexible price level targeting is really just a more ad-hoc, and therefore less robust, version of a nominal GDP level target. Nominal GDP is the overall size of the economy uncorrected for inflation. Nominal GDP growth is essentially the sum of the real growth rate and the inflation rate. Under a nominal GDP level target the central bank would be stabilizing overall spending, thereby automatically and systematically doing what flexible price level targeting is supposed to accomplish with less risk of implementing procyclical monetary policy (Lacey, 2018).

Reconsider the previous example when the inflation rate tends to fall during periods of improved productivity, except now the central bank has a nominal GDP level target. With the inflation rate falling the price level would fall below its previous trend, but that decline would not elicit any procyclical response from the central bank. Under a nominal GDP level target the central bank only responds velocity shocks. The central bank would adjust the money supply to offset velocity shocks, in an effort to stabilize overall spending and keep nominal GDP growing on its trend (Lacey, 2018).

Because it focuses the central bank's response function on one variable, changes in velocity, a nominal GDP level target is the best target for monetary policy. On the other hand, a price level target, and its advocates fail to fully account for this, obligates the central bank to react to changes in velocity and changes in aggregate supply. A nominal GDP level target offers the same degree of predictability as a price level target, but has the additional advantage of being robust to supply

shocks, precisely because it allows the price level to change. Under a nominal GDP level target, the chances of the Fed being procyclical during a downturn and amplifying the contraction would be greatly reduced (Lacey, 2018).

VII. CONCLUSION

The Fed adopted flexible inflation targeting as its monetary policy strategy to achieve the goals of maximum employment, stable prices, and moderate long-term interest rates. Nominal interest rates were close to the zero bound between 2008 and 2015 in the USA. Even if the Fed raised the fed funds rate to a 2.25 percent to 2.5 percent range, they will have less space to reduce borrowing costs to stimulate growth and stabilize inflation during the next recession. Under flexible inflation targeting, dealing with the next recession in which interest rates are stuck at the zero-lower bound has become a topical issue. The numbers of strategies are voiced to avoid recession with the zero bound on nominal interest rates. Such strategies include a higher inflation target, average inflation targeting, negative rates, yield curve control, quantitative easing, and price level targeting. Among these strategies, temporary price level targeting seems to be favorable under the zero-lower bound interest rates.

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