

## **Post-Crisis Monetary Policy Strategies: Panel Discussion**

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### **Introduction**

In the pre-crisis consensus on monetary policy, flexible inflation targeting was widely viewed as best practice for central banks. A consensus also existed that a target within the range of 1-3 percent represented an appropriate goal for inflation. This range is consistent with formal targets established by many inflation targeting central banks and with the implicit targets of many other major central banks such as the ECB and the Federal Reserve.

My comments will focus on two suggested modifications to this policy framework. These are raising the average target for inflation and, more radically, switching to price level targeting.

### **Raising the inflation target**

If the ZLB on interest rates poses a serious constraint on the ability of monetary policy to respond to economic contractions, then one change to inflation targeting would be to increase the average target. Blanchard and co-authors (Blanchard, delil'Aricca and Mauro 2010) have argued that a 4% average rate would constitute a safer target by providing more room for interest rate cuts when the economy faces an adverse shock.

The benefits of avoiding the ZLB have to be balanced against the costs of a higher average inflation rate. These costs take several forms.

First, Bailey (1956) and Friedman (1969) long ago noted that higher inflation causes private agents to economize inefficiently on their money holdings. However, the size of the welfare cost due to this distortion if average inflation rises from 2 percent to 4 percent, is likely to be small.<sup>1</sup>

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<sup>1</sup> Ireland (2009) has recently estimated the welfare cost due to reduced money holdings in the United States. He finds that, using a measure of the money stock that accounts for some of the changes due to financial market deregulation, the welfare cost of 2 percent inflation is less than 0.04 percent of income. If money pays an own return that also rises with inflation, higher inflation need not raise the opportunity cost of holding money. While there may be technical difficulties in paying interest on cash,

Second, most tax systems are not fully indexed to inflation, leading to increasing distortions as average inflation rises.

Third, relative price dispersion created by sluggish price adjustment generates welfare costs. Higher inflation volatility generates an increase in relative wage and price dispersion not associated with any fundamental shifts in the demand or supply of individual products or labor types. Essentially with sticky wages and prices, inflation makes the price system work less efficiently. This price dispersion inefficiency is related to inflation variability and not necessarily to the average level of inflation, and these costs might be reduced if indexation were more common. However, more widespread wage indexation might hinder the ability of the economy to adjust to shocks that require a movement in real wages.

Fourth, we do not know whether inflation expectations would be more difficult to anchor if average inflation rates were to rise.

On the benefit side, a higher inflation target would leave more room for interest rate cuts in a crisis before encountering the zero lower bound. John Williams, in a recent BPEA paper, concludes that "...if recent events are a harbinger of a significantly more adverse macroeconomic climate than we have enjoyed over the preceding two decades, then a 2 percent steady-state inflation rate may be insufficiently high to stop the ZLB from having significant deleterious effects on the macroeconomy ... ." (p. 3)

What matters for determining the frequency with which the ZLB is encountered are the level of the target inflation rate and the distribution of the shocks affecting the real interest rate. Given the real rate, a higher inflation target reduces the chances the ZLB will become a constraint on policy. However, using the FRB/US model and a Taylor rule to represent monetary policy, Williams concludes that "...an inflation target of between 2 and 4 percent will, on average, be

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many countries, including now the United States, pay interest on bank reserves. If it becomes feasible to pay explicit interest on money, then the Friedman welfare costs of moving from an average inflation rate of 2 percent to one of 4 percent are likely to be small or even zero. Of course, paying interest on money has fiscal implications. The interest on money cannot be financed by printing additional money -- other sources of fiscal revenue must be used to finance interest on money, and this will require increases in other potentially distorting taxes.

sufficient to avoid the ZLB causing sizable costs in terms of macroeconomic stabilization even in a much more adverse macroeconomic climate." (p. 26)<sup>2</sup>

Besides reducing the chances of hitting the ZLB, other arguments have been made in favor of higher average inflation. One traditional argument is that inflation increases the flexibility of real wages if nominal wages display downward rigidity. Fifteen years ago, Akerlof, Dickens, and Perry (1996) suggested the long-run (unemployment) Phillips curve is not vertical but has a negative slope at low rates of inflation. Thus, higher average inflation would lower the average rate of unemployment.<sup>3</sup>

If downward real wage stickiness is the problem, note that with trend productivity at 2-2.5 percent, and average inflation of 1-3 percent, nominal wage growth should be around 3-5.5 percent per year. This seems sufficient to avoid the distortions associated with any failure of wages to be flexible in the downward direction. Furthermore, downward nominal wage rigidity can actually lower the optimal average inflation rate by reducing the dangers of deflation (Coibion, et al 2010).

A more effective strategy for avoiding the ZLB would be to reduce the risks of another major negative shock to aggregate demand. Better financial market regulation, as well as a more active policy response to emerging financial imbalances could lower the chances of returning to the ZLB.

Finally, in considering whether average inflation targets should be raised, it is important to recall that central banks have spent the past twenty-five years striving first to reduce inflation and then to gain the credibility necessary to maintain inflation at low and stable rates. The stability of inflation expectations has been a characteristic of the recent crisis, a stability that might have been less likely during earlier periods in which the commitment of central banks to

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<sup>2</sup> The permanent distortionary costs of higher average inflation would need to be balanced against the low probability of another negative shock of the magnitude the global economy experienced in 2008. Clouse, et. al. (2003) note that low inflation at the beginning of the 1953, 1956, and 1960 recessions in the U.S. did not pose a constraint on monetary policy. Interest rates were reduced, but the ZLB was not reached.

<sup>3</sup> This issue has recently been revisited by Benigno and Ricci (2010) who show how the Phillips curve flattens at low rates of inflation and shifts with changes in macro volatility. They argue that how low inflation should be kept can vary across countries depending on structural characteristics of the economy.

low and stable inflation was not as clear. This credibility may be put at risk if inflation targets are increased.

### **Price level targeting**

A more radical response to the crisis would be to drop inflation targeting in favor of price-level targeting.

The knowledge that prices will return to a target level influences expected inflation in ways that help to stabilize current inflation. Thus, price level targeting may have advantages over inflation targeting to the extent that it can lead expectations to act like an automatic stabilizer.

#### *Expectations as automatic stabilizers*

This role for expectations can be particularly important in a deflationary situation at the zero lower bound. As the actual price level falls, the gap widens between the actual price level and the path for prices implied by the target path. The more severe the deflation, the greater must be the subsequent inflation to return prices to their intended path. Thus, a credible commitment to PLT would cause expected inflation to rise, helping to boost nominal interest rates above the ZLB. This role is strengthened if the target price path incorporates a trend inflation rate.

However, the effects on inflation expectations will depend on when PLT is adopted, which price index is targeted, and how quickly the public expects deviations from target to be eliminated.

Suppose the U.S. had adopted price level targeting in January 2007 with a 2.0 percent drift. During 2007, the PCE index rose above this hypothetical target path and this development would have called for tighter policy throughout 2007 and 2008. It would also have generated expectations of deflation. Thus, adopting PLT would not have contributed a stabilizing influence. Expectations would have moved in the wrong direction, exacerbating the ZLB problem.<sup>4</sup>

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<sup>4</sup> The story is somewhat more supportive of PLT if it had been adopted in January 2008. The PCE index has fallen persistently below even a 1.5 percent price path in this case, suggesting that credible price level targeting might have raised expected inflation.

Which price index is chosen can also matter. While a target based on the PCE index would have generated a destabilizing movement of expectations, credible price level targeting based on the PCE less food and energy would have stabilized inflation expectations but they would have been little different than under a credible inflation targeting regime.<sup>5</sup>

### *Should central banks adopt PLT at the ZLB?*

Given that there are potential advantages of PLT over IT, should central banks adopt PLT? Let me highlight three points that caution against adopting PLT.

First, the stabilizing adjustment of expectations arises only if the public understands the implications of price-level targeting and believes the central bank is committed to this new policy. The experience with inflation targeting was that credibility followed experience, and the gain in anchoring expectations was not something that was achieved immediately. Gaining credibility for PLT in the midst of a liquidity trap may be particularly challenging if the time-varying price path is difficult to communicate to the public.

Second, committing to a price level target while at the ZLB would, to the extent to which it was successful in generating expectations of future inflation, lead to a rise in long-term nominal interest rates. This rise in long-term rates may easily lead some to question the central bank's commitment to economic expansion.

Third, the impact on expectations depends on the speed with which the public expects the central bank to regain the target path. This may be hard to forecast since there would be no past experience to draw upon. If expectations are for an extended recession, the public may doubt whether the target path will be achieved very quickly. This would reduce the effect PLT would have in raising inflation expectations.

Finally, commitment to a price path that involves future inflation is time inconsistent. Once the economy recovers from the ZLB, the optimal policy is not to create the inflation required to restore the price level to the promised target path.

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<sup>5</sup> Analyses of PLT typically ignore an important financial friction -- nominal debt contracts. While nominal interest rates can adjust to compensate for average inflation expected over the duration of a contract, PLT, by increasing the predictability of the future price level, can reduce risk premiums associated with nominal contracts. This would reduce the volatility of the real interest rate and help reduce distortions associated with nominal contracts.

Optimal commitment means doing what you had previously promised to do, even if it is not the optimal thing to do at the moment. Many central banks have committed to inflation targeting. They have developed credibility by delivering low and stable inflation. The optimal strategy at the ZLB may be to change the policy regime to one of price level targeting, and of course to promise never to change the policy framework again. But changing the policy regime in a crisis is exactly what discretion would call for.

## **Conclusions**

Let me conclude.

Flexible inflation target does not seem to have hindered policy responses during the crisis, since the financial crisis has primarily been a demand shock. When macro volatility is at the levels seen during the Great Moderation, occurrences of the ZLB may be sufficiently rare that raising average inflation is unnecessary. But if macroeconomic shocks are likely to be larger in the future, the benefits of higher average inflation increase, though these must be balanced against the costs of higher inflation.

Price level targeting is a viable alternative to inflation targeting and may lead inflation expectations to move in a stabilizing fashion, particularly in helping to avoid the ZLB. However, the date PLT is adopted, the choice of price index, the underlying average trend inflation rate, the credibility of the policy, and the speed with which price level deviations from the target path are expected to be reversed are all important for determining whether PLT would be a desirable policy regime.