

REVIEW

JULY/AUGUST 1999

This speech is reprinted with the permission of the Cato Institute. It was previously published in the *Cato Journal*, Vol. 18, No. 3 (Winter 1999). Copyright © Cato Institute. All rights reserved. William Poole is President and Chief Executive Officer of the Federal Reserve Bank of St. Louis. The author thanks the St. Louis Fed Research Department, especially David Wheelock, Jim Bullard, and Joe Ritter, for assistance in preparing this paper.

Is Inflation Too Low?

William Poole

What is today's big monetary policy issue? It is, surely, the extraordinary volatility of the financial markets and the wide quality spreads that opened up between riskier bonds and Treasury bonds following the Russian default in mid-August 1998. No one forecast these problems; the financial-market upset certainly was not a real, live policy issue back in the spring and early summer.

We should not underestimate the magnitude of the current disturbance in the U.S. financial system. Monetary policy today is, I believe, appropriately focused on dealing with the possible effects of the financial-market disturbance on the U.S. economy. The size of that disturbance and the circumstances surrounding it are so unusual in the context of U.S. history that policymakers must concentrate on dealing with this situation for the time being.

The financial upset, however, will disappear from the radar screen of pressing policy issues as the markets settle down in due time. All of us will then return—or should return—to analyzing longer-run issues. With regard to the current outlook, I will say only that I am optimistic that we will work through current problems, painful as they have been for many, with no significant damage to the U.S. economy. My optimism stems from the economy's strong initial conditions of low inflation, low and stable inflation expectations, and a well-capitalized banking system. These are about as favorable a set of initial conditions as one can imagine for getting through financial turmoil with minimal effect on the real side of the economy.

The issue I wish to explore is this: Is zero inflation, abstracting from measure-

ment error in the broad price indexes, too low? I think zero is a very nice number, especially when it comes to inflation. But there is a serious argument that the economy is likely to work better with a moderate inflation of, say, 2 or 3 percent per year. I disagree with that argument.

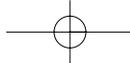
I will concentrate on two arguments for moderate inflation. The first argument holds that inflation facilitates the smooth operation of labor markets and thereby promotes maximum employment in the face of nominal wage rigidity. The second argument contends that inflation, via the Fisher relationship, keeps nominal interest rates from falling too close to the zero bound, and thereby gives the Fed sufficient room to ease—that is, to cut rates—should a recession appear imminent.

In my view, both arguments are wrong. I will begin by outlining some reasons why I believe that zero inflation should be the paramount objective of monetary policy.

THE CASE FOR ZERO INFLATION

As Chairman Alan Greenspan has pointed out on numerous occasions, our economy's fine performance since the early 1990s was accompanied initially by declining inflation and, more recently, by low and stable inflation. Clearly, the U.S. experience of the last five years casts doubt on the old claim that falling inflation will inevitably bring slower real growth or a higher rate of unemployment. This experience also suggests that reducing the variability of inflation need not increase the variability of output, as some people argue.

Although the performance of other countries with low inflation is somewhat mixed, my point is simply that there is little evidence to suggest that zero inflation necessarily implies slow real growth. Indeed, Robert Barro (1996) and others have reported systematic evidence to the contrary. Certainly, there are good reasons to expect that



REVIEW

JULY/AUGUST 1999

a zero-inflation monetary regime, sustained over the long run, would enhance an economy's performance.

If the monetary authority is committed credibly to zero inflation, then one source of interference with the efficient working of markets—uncertainty about expected inflation—would be reduced. Inflation uncertainty makes it difficult for individuals and firms to distinguish changes in relative prices among goods and services from movement in the aggregate price level. Mistakes in the allocation of resources are more likely to occur because of this uncertainty, with real growth consequently less than it could be.

By confusing the meaning of individual price changes, inflation uncertainty also raises uncertainty about the prospects of investment returns. A rising rate of inflation can lead both borrowers and lenders to be overly optimistic about likely returns, resulting in inefficient resource commitment. If the price expectations that are assumed when funds are committed are not realized, borrowers may encounter difficulty repaying their debts, which in turn puts stress on lenders. Thus, it is reasonable to expect that eliminating uncertainty about the rate of inflation will enhance, although obviously not guarantee, financial stability.

Presumably, to eliminate uncertainty, the rate of inflation need not be zero, but simply predictable. For at least two reasons, however, I believe zero should be the target. First, maintaining a steady but positive inflation rate probably would be harder politically than maintaining a steady zero inflation. The reason is that we live in a world where both politicians and economists often argue that just a little more inflation would generate positive real economic gains. If we accept the argument that 2 percent inflation is okay, why not 2.5 percent? Let me emphasize that when I advocate zero inflation, I am ignoring measurement questions, such as whether or not bias exists in the relevant price index. As a practical matter, policy is probably best specified in terms of a measured inflation range that accounts for our best estimate of measurement errors.

A second reason I advocate zero inflation concerns the distortions caused by the interaction of inflation with the tax code. Inflation indexing is incomplete, especially for investment income, because nominal interest income and nominal capital gains are subject to tax. Martin Feldstein (1997) has estimated that reducing inflation from its current level of about 2 percent to zero would yield substantial, permanent real income gains. Theoretical analysis by James Bullard and Steven Russell (1998), and others, also suggests that tax distortions cost the economy substantial real performance at higher rates of inflation.

In short, I think the case is strong that monetary policy should aim for zero inflation as its paramount objective. Moreover, I reject the approach that zero inflation must be shown to be superior to a poorly specified alternative of some positive inflation. The burden of proof really should fall on those who contend that positive inflation is better. So, let me now consider the arguments advanced for a positive rate of inflation.

LABOR MARKET ARGUMENTS

One perennial argument in favor of positive inflation is that certain wages must fall relative to other prices or other wages, and inflation allows this adjustment of real wages to occur in the face of nominal wage rigidity. The centerpiece of this argument is the claim that downward nominal wage adjustments occur too infrequently to be consistent with flexible real wages in a world where microeconomic shocks continuously alter the relative positions of particular firms, industries, or occupations. With zero inflation, the argument goes, rigid nominal wages prevent optimal adjustment to relative price disturbances with the result that employment varies inefficiently. Therefore, a little inflation is a good thing because it allows wages to fall relative to other prices; inflation “greases the wheels” of labor-market adjustment.

Zero Inflation in a Different Regime

There are, in my opinion, serious flaws at three levels of this argument. First, the



REVIEW

JULY/AUGUST 1999

argument claims that nominal rigidity creates a large inefficiency that inflation ameliorates. But, if the claim of a large inefficiency is true (and I will question it later), a simple theoretical argument creates the presumption that nominal wages would not continue to be sticky in a zero-inflation regime.

There is some dispute about the extent to which nominal wages are downwardly rigid. But, no doubt some employers have found it difficult to reduce nominal wages during the periods covered by the most popular data sources. One data source, the Panel Study of Income Dynamics, started during the late 1960s. I mention the sample period because making an empirical regularity the foundation, rather than an implication, of economic theory always is dangerous. Robert Lucas (1976) elegantly demonstrated this point more than 20 years ago. To the extent that downward nominal wage rigidity exists, it presumably serves some economic function. After all, putting minimum wage laws aside, fixed nominal wages are not required by law. We cannot assume that the present degree of wage rigidity—whatever it is—would continue into a different inflation regime. Indeed, a compelling case can be made that the extent of wage rigidity we observe would not survive in a zero-inflation regime.

Consider an environment where, broadly speaking, the annual changes in broad price indexes usually are close to zero and have been for some time. Suppose, also, that the Fed's commitment to maintaining this regime is clear. In such an environment, nominal wage rigidity, according to the grease-the-wheels argument, would generate a large inefficiency that inflation—now zero—would no longer ameliorate. This inefficiency, however, is exactly what should make us doubt that nominal wage rigidity would continue to exist. The main function of the price system is to allocate resources by setting relative prices. Competitive forces likely would eliminate anything that interferes with relative price adjustment, particularly if failure to adjust is very costly, unless there is some compelling reason for it to exist. Could we imagine that nominal

wage rigidity would continue during a sustained 10 percent deflation? Of course not. Why? The private costs of interfering with relative price adjustment would be too high. It may take longer for competitive forces to erode nominal rigidity under zero inflation, but the principle is the same.

Keep in mind that the magnitude of ongoing resource reallocation in U.S. labor markets dwarfs the employment growth that makes headlines on the first Friday of every month. Jobs appear, jobs disappear, and people move into and out of them at rates far higher than net employment growth. This is *prima facie* evidence that U.S. labor markets do not suffer from any massive inefficiency.

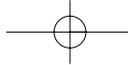
If nominal wage rigidity creates significant economic inefficiency, it seems entirely plausible that it is perpetuated by inflation. I admit I do not know for sure. Based on the current state of economic theory, however, I think we must favor the presumption that inefficient wage rigidity would disappear in a zero-inflation economy. This position makes sense if we take economic theory seriously.

Other Mechanisms for Relative Wage Adjustment

A second flaw in the grease-the-wheels argument is that it imagines only two mechanisms for achieving adjustments to a worker's relative wage: Either cut the nominal wage, or let all other prices around it rise. In fact, the workings of labor markets suggest at least two other mechanisms, and so the presence of nominal wage rigidity—were it to exist—might not be a hindrance in a zero-inflation world.

First, average compensation tends to rise over time, as overall productivity improves. Thus, in a zero-inflation environment, nominal wages may not need to fall, even in some declining occupations. Proponents of the grease-the-wheels view sometimes ignore this mechanism.

Internal labor markets provide yet another adjustment mechanism. Compensation tends to increase with seniority, partly because of an individual's accumula-



REVIEW

JULY/AUGUST 1999

tion of human capital. Edward Lazear (1981) has argued that an upward-sloping path for earnings also acts as a mechanism to overcome agency problems within the firm. James Malcomson (1984) and others have argued that promotions may play a similar role; rather than simply filling positions necessary for the technological operation of the firm, promotions provide necessary incentives for those at lower levels of the hierarchy.

The common theme in these observations about internal labor markets is that an individual worker typically will expect an increasing real wage. Therefore, the kind of base adjustment achieved by inflation can also be accomplished by delaying wage change relative to an individual's upward-sloping real wage path.

Of course, there is a segment of the labor market where little human capital accumulation exists and long-term implicit contracts are rare. But, for obvious reasons, this is exactly the segment where turnover costs are low on both the supply and demand sides of the market. Hence, any nominal wage rigidity that is present is not especially costly.

INFLATION AND RELATIVE PRICE VARIABILITY ARE LINKED

The third flaw in the labor-market case for positive inflation is perhaps the most transparent. Inflation tends to increase the sort of microeconomic shocks—because cross-sectional variation in price changes tends to rise with higher aggregate inflation—that underlay the case for pursuing a positive rate of inflation. Thus, the claim that inflation helps the economy cope efficiently with relative price changes is suspect immediately, since there is more relative price variation to cope with if there is more inflation.

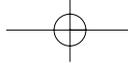
Labor Market Costs as Well as Benefits

Overall, I believe that the benefits of inflation as labor-market grease are exaggerated.

Furthermore, inflation itself seems to worsen the problem it ostensibly alleviates. In addition to these theoretical arguments, we now have some direct evidence, supplied by Erica Groshen and Mark Schweitzer (1996, 1999). They recognize that compensation typically is set for at least a year, and that there are, in essence, two pieces to a firm's wage-setting process. First, management decides on the overall change in the wage pool, based in part on the rate of inflation expected to prevail during the following year. This wage pool, in effect, sets the firm-wide budget constraint. Second, individual wages and salaries are adjusted in a way that satisfies the budget constraint. This two-step process is explicit in many organizations.

Mistakes occur during the first stage when managers misforecast inflation. "Sand-in-the-wheels" effects occur if higher average levels of inflation result in more inflation variability, causing larger inflation forecasting errors. A consequence is that inflation will cause more interfirm variation in wage adjustment. Grease effects operate, as I outlined earlier, and imply more dispersion of interoccupational wage adjustment. The grease effects should taper off as inflation rises because some level of inflation enables employers to make all of the relative wage adjustments they would make in a frictionless labor market. Because they view wage setting as a two-stage process, Groshen and Schweitzer estimate the grease and sand effects separately. They find evidence of both effects, with sand effects rising rapidly with the inflation rate. Comparing the grease and sand effects directly, Groshen and Schweitzer find that even for low inflation rates the net benefit of inflation is statistically indistinguishable from zero, although point estimates of the gross benefit do slightly exceed estimates of gross cost.

One might quibble with the specifics of their empirical strategy, but Groshen and Schweitzer's emphasis on evaluating costs as well as benefits is absolutely correct. From the standpoint of labor markets, I think it is fair to say that the



REVIEW

JULY/AUGUST 1999

evidence of net benefits from an inflationary monetary policy is slim to none.

THE ZERO NOMINAL INTEREST RATE BOUNDARY

Now let us consider whether concerns about conducting countercyclical monetary policy in a low-inflation environment can justify a positive rate of inflation. Specifically, does price level stability cause special problems for monetary policy because nominal interest rates cannot be less than zero?

The zero-bound view is an old and much debated one in macroeconomics. With rising inflation during the 1970s and early 1980s, the issue largely became moot, as policymakers scrambled to get inflation back under control and to regain lost credibility. Recently, however, the topic has resurfaced as inflation rates in the industrialized countries have fallen and stayed low during the 1990s, and as central banks around the world have adopted inflation targeting as a method of achieving and committing to price stability.

The zero-bound view holds that moderate inflation aids in the implementation of stabilization policy by keeping nominal interest rates from falling too low. The bottom line, according to this argument, is that an inflation target of zero interferes with the attempts of monetary policymakers to stimulate an economy in recession because the nominal interest rate obviously cannot fall below zero. Put another way, with moderate ongoing inflation the policymakers have room to push the real rate of interest below zero, which they cannot do when the steady inflation rate is zero.

The zero-bound story begins with the commonplace idea that monetary policy is concerned with setting a short-term nominal interest rate—in the United States, the nominal federal funds rate. A higher nominal federal funds rate is often described as a tighter policy, while a lower nominal federal funds rate is described as an easier policy. When the economy is weak, the monetary authorities lower the nominal federal funds target in an effort to stimulate interest-rate-sensitive sectors of the

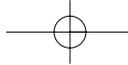
economy. So according to this view, when a recession hits, the current level of the federal funds rate determines the number of basis points the Fed has available to combat the recession: the lower the initial funds rate, the less scope for subsequent easing. As you might guess, I dislike this characterization of monetary policy, but let me finish the story.

Of course, financial market participants are interested mainly in the real interest rate, not the nominal interest rate. A simple Fisherian decomposition divides any nominal interest rate (with zero default risk) into two major components—a real component determined by equilibrium conditions in the economy and a nominal component determined by the expected inflation rate.

The zero-bound view holds that the expected inflation component of nominal interest rates moves little over periods as long as a year, so that adjustments in the nominal federal funds rate mainly change real returns at the very short end of the term structure. Movements in short-term rates then lead to adjustments in longer-term real interest rates.

What hampers stabilization policy in a low-inflation environment, according to the zero-bound view? If inflation is zero and expected to remain that way, then the expected inflation component of nominal interest rates is zero, and the nominal rate is lower on average than it would be in a world of persistent inflation. Thus, in a recession, the Fed would have less room to cut interest rates because of the zero nominal bound. The end result, according to this view, is a longer and deeper recession than would otherwise be the case. The message is clear: If the Fed is to help the economy in times of distress, nominal interest rates must be kept high enough in normal times, which requires maintaining a modest rate of inflation.

The zero-bound view has raised many counterarguments over the years. Perhaps most obviously, this view places heavy emphasis on the idea that monetary policy can be used to fine tune the macroeconomy, downplaying well-known concerns that attempts to fine tune can contribute to



REVIEW

JULY/AUGUST 1999

economic instability. Leaving that issue aside, however, there are still several reasons to doubt the validity of the zero-bound argument for pursuing a policy of positive inflation.

Monetary Policy Is Fundamentally Not About Nominal Interest Rates

First, we must remember that nominal interest rates do not indicate the true stance of monetary policy even though, as a practical matter, the Fed implements short-term policy by targeting the nominal federal funds rate. This method of implementation has been effective in recent years. Controlling the funds rate is not, however, an end in itself. Fundamentally, monetary policy is reflected in the growth of the money stock and, ultimately, the rate of inflation. So the idea that central bankers are somehow trapped if the nominal short-term interest rate nears zero seems quite a stretch to me. We are in the business of providing liquidity to the macroeconomy, and if the situation calls for it, liquidity can always be injected, regardless of the level of nominal interest rates.

The first years of the Great Depression offer perhaps the clearest illustration that monetary policy is fundamentally about providing liquidity and not about controlling nominal interest rates. During that time, nominal interest rates were low, which seemed to indicate an “easy” monetary policy. But as Milton Friedman and Anna Schwartz (1963) have noted, from 1930 to 1933 the money stock was falling rapidly, indicating a far tighter policy than was intended. Of course, that policy was an unmitigated disaster, as both output and prices fell by a third and the unemployment rate hit 25 percent. That experience, as well as other, less dramatic historical episodes, should make it obvious that blind adherence to nominal interest rates as indicators of the stance of monetary policy can be tragically misleading.

We might also do well to remember that during the late 1950s and early 1960s, the nominal annualized yield on three-month Treasury bills fluctuated around

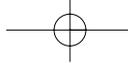
3 percent, while the yield on 10-year Treasury bonds was around 4 percent. These yields are below, but in the general ballpark, of those we observe today. Consumer price index inflation during that period averaged about 2 percent on a year-over-year basis—not too different from today’s inflation rate. So, while we have not seen a sustained zero-inflation environment in the United States during the postwar era, we have seen an environment not too different from today’s in terms of relatively low inflation. And during the late 1950s and early 1960s, there was no obvious impediment to the operation of monetary policy just because inflation was low.

Inflation and Output Variability

The relative stability of our economy in recent years suggests that low inflation probably contributes both to less inflation variability and to less output variability. Throughout the 1970s and early 1980s, by contrast, when inflation rose sharply and then fell abruptly, the United States suffered through three recessions, including two of the most severe recessions of the postwar era. To be sure, during that period, the U.S. economy was hit with shocks from external sources, but at the same time monetary policy was decidedly uneven—resulting in a substantial inflation that caused both unnecessary distortions and proved difficult to tame. Thus, the postwar experience strongly suggests that lower inflation is associated with less volatile inflation, and lower inflation volatility is reflected in lower volatility in real output. Even in a zero-inflation environment the lower bound on nominal interest rates probably would not be a problem for stabilization policy because economic volatility itself would likely be lower.

Nonlinear Effects Near Zero

A final reason to doubt that monetary policy would run aground in a zero-inflation world stems from the nonlinearity of investment demand. This nonlinearity implies that a given interest rate change,



REVIEW

JULY/AUGUST 1999

measured in basis points, may well have a larger impact when interest rates are low than when they are high.

Much of the thinking behind the zero-bound view is centered on the extrapolation of linear effects to very low interest rate environments. In much of the work on this issue, the average effects of short-run monetary policy changes are estimated using postwar data, which include many years of high inflation. There is little reason to think that coefficients estimated from an environment of relatively high inflation would be good proxies for the coefficients in the new circumstance.

We might expect that a given basis points change in the nominal federal funds rate target would have a larger impact when interest rates are lower. Certainly, there is no reason to expect that the response of investment to changes in the nominal interest rate is linear. At any point in time countless investment projects are available, and as the nominal cost of funds moves lower, the net present value of many more of these projects becomes positive. Accordingly, investment would be unbounded at very low real interest rates, implying that the Fed could conduct a countercyclical policy just as actively and effectively when interest rates were low, even if the nominal federal funds rate target was near zero.

ZERO INFLATION IS NOT TOO LOW

To summarize, it seems to me that neither the arguments about wage stickiness nor those concerning the zero bound for nominal interest rates make a convincing case that monetary policy should aim for a positive rate of inflation. Instead, I believe the logic and the evidence both suggest that the appropriate goal for monetary policy should be price stability, that is, a long-run inflation rate of approximately zero.

Today we are enjoying the benefits of a low and comparatively stable rate of inflation. In our present state, we should not forget the high costs of inflation. Inflation makes planning difficult for individuals

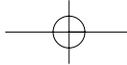
and firms, it interferes with the operation of markets, and it interacts insidiously with the tax code to discourage saving and investment. Moreover, inflation's effects are felt most acutely by members of society who are economically the most vulnerable. In arguing for a positive rate of inflation, therefore, the burden of proof should rest with those who contend that our economy would perform better with inflation than without it. Inflation proponents also should explain how a moderate rate of inflation could be maintained without inching ever higher. In my view, the case for positive inflation has not been proven.

A central bank's single most important job is preserving the value of the nation's money. Monetary policy has succeeded if the public can reasonably trust that a dollar will buy tomorrow what it will buy today. At this point, inflation will have ceased to be a hindrance to the smooth functioning of our market economy. I cannot promise that price stability will mean an end to the business cycle, to unemployment, or to occasional financial distress. Indeed, I am willing to bet that a few years from now we will look back on 1998 and conclude that the stability of the inflation environment was important to containing the financial-market upset that started in August.

We should not be seduced by arguments that a little inflation is a good thing. Look at the record: Over the past 50 years, our economy has performed better when inflation was low than when it was high. There simply is no compelling evidence that we could foster sustained economic growth by pursuing an inflationary monetary policy. The evidence points in the other direction. Thus, I am confident that our economy's long-run performance would be enhanced by a monetary policy that aims at, achieves, and maintains a zero rate of inflation.

REFERENCES

- Barro, Robert J. "Inflation and Growth," *this Review* (May/June 1996), pp. 153-69.
- Bullard, James B., and Steven H. Russell. "How Costly Is Sustained Low Inflation for the U.S. Economy?" Federal Reserve Bank of St. Louis Working Paper 97-012B, March 1998.



REVIEW

JULY/AUGUST 1999

Feldstein, Martin. "Capital Income Taxes and the Benefits of Price Stability," NBER Working Paper 6200, September 1997.

Friedman, Milton, and Anna Jacobson Schwartz. *A Monetary History of the United States, 1867-1960*, Princeton University Press, 1963.

Groshen, Erica L., and Mark E. Schweitzer. "The Effects of Inflation on Wage Adjustments in Firm-Level Data: Grease or Sand?" Federal Reserve Bank of New York Staff Report No. 9, January 1996.

_____ and _____. "Identifying Inflation's Grease and Sand Effects in the Labor Market," in *The Costs and Benefits of Price Stability*, Martin Feldstein, ed., University of Chicago Press, 1999, pp. 273-308.

Lazear, Edward P. "Agency, Earnings Profiles, Productivity, and Hours Restrictions," *American Economic Review* (September 1981), pp. 606-20.

Lucas, Robert E., Jr. "Econometric Policy Evaluation: A Critique," in *The Phillips Curve and Labor Markets*, Karl Brunner and Allan H. Meltzer, eds., Carnegie-Rochester Conference Series on Public Policy, North Holland, 1976, pp. 19-46.

Malcomson, James M. "Work Incentives, Hierarchy, and Internal Labor Markets," *Journal of Political Economy* (June 1984), pp. 486-507.