

ECONOMIC COMMENTARY

Federal Reserve Bank of Cleveland

■ Conclusion

For all of these reasons, a political consensus that produces a goal of zero inflation — particularly if it is associated with a price-level target and the associated reversals of unexpected price-level changes — is more likely to be stable and to produce more certainty about future inflation than is a consensus that chooses a positive inflation rate at any particular level.

Evidence supports the conclusion that "the welfare costs of high inflation, *even if the inflation is expected*, are large in the current United States economy" (emphasis added).⁶

The elimination of inflation is likely to have greater short-term costs, such as more short-term uncertainty, than does the maintenance of a relatively stable inflation at current levels. These costs must be weighed against the gains from the elimination of long-term inflation. There are good reasons to believe that the benefit-to-cost ratio for achieving this social objective is high enough to warrant its pursuit.

■ Footnotes

1. For a discussion of these costs, see Milton Friedman, "The Resource Cost of Irredeemable Paper Money," *Journal of Political Economy*, vol. 94, no. 3 (June 1986), pp. 642-647.

2. See Stanley Fischer, "Towards an Understanding of the Costs of Inflation: II," in Karl Brunner and Allan H. Meltzer, eds., *The Costs and Consequences of Inflation*, Carnegie-Rochester Conference Series on Public Policy, Amsterdam: North-Holland Publishing Company, vol. 15 (1981), pp. 5-41.

3. See Alan J. Auerbach, "Inflation and the Choice of Asset Life," *Journal of Political Economy*, vol. 87, no. 3 (June 1979), pp. 621-638.

4. See the empirical study of long-run growth rates in 47 countries by Roger Kormendi and Philip G. Meguire, "Macroeconomic Determinants of Growth: Cross-Country Evidence," *Journal of Monetary Economics*, vol. 16, no. 2 (September 1985), pp. 141-63.

Theoretical models that reach these conclusions include Robert J. Barro, "A Capital Market in an Equilibrium Business Cycle Model," *Econometrica*, vol. 48, no. 6 (September 1980), pp. 1393-1417; Angelo Mascaro and Allan H. Meltzer, "Long and Short-term Interest Rates in a Risky World," *Journal of Monetary Economics*, vol. 12, no. 4 (November 1983), pp. 485-518; and Alan C. Stockman, "Anticipated Inflation and the Capital Stock in a Cash-in-Advance Economy," *Journal of Monetary Economics*, vol. 8, no. 3 (November 1981), pp. 387-393.

In addition to the empirical evidence cited above, recent simulations by Marianne Baxter suggest that these effects may be quite large. See "Approximating Suboptimal Dynamic Equilibria: An Euler Equation Approach," *Working Paper* No. 139, Rochester Center for Economic Research, University of Rochester, April 1988.

5. While economists generally consider liquidity costs of inflation to be minor, a recent study by Thomas F. Cooley and Gary D. Hansen estimates that the welfare cost of reduced liquidity resulting from a sustained 10 percent inflation is between 0.1 and 0.4 percent of GNP. See "The Inflation Tax and the Business Cycle," manuscript, University of Rochester, July 1988.

6. See Fischer (1981), p. 36.

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The Case for Zero Inflation

by William T. Gavin and Alan C. Stockman

Few people claim to like inflation. Yet few people can intelligently explain why they dislike it. Even economists frequently find it hard to explain why inflation is bad, especially if the inflation is fully anticipated.

Indeed, some economists argue that a low level of inflation is desirable. Others argue that inflation would be eliminated in an ideal world but that the short-run costs of eliminating inflation are so high that the Federal Reserve's monetary policy should aim instead at maintaining the current level of inflation or at achieving some other goal.

This *Economic Commentary* contends that monetary policy should aim at completely eliminating long-run inflation. We specifically explain how society could benefit if monetary policy were directed toward producing a stable price level, making temporary any unforeseen deviations from this long-run target.

■ **Inflation Distorts Nominal Prices**
Inflation adds "noise," or distortion, to nominal prices. People must tax their memories and powers of calculation to compare prices of goods at different periods of time. Difficulties with accurate price comparisons lead to economic inefficiencies. Inflation thereby limits the economic opportunities for our society.

This problem is particularly severe when inflation is highly variable or highly unpredictable. Unpredictable inflation causes inefficiencies because people find it difficult to tell whether a price is high because of inflation or for some other reason, such as high demand or scarce supply. Variable inflation, even if predictable, complicates the calculations that people must make to compare prices at different times.

This cost of inflation is important even for low rates of inflation, because the costs of accurately performing these calculations do not depend very much on the level of inflation. When long-term inflation is

The authors argue that a monetary policy of zero inflation would benefit society by eliminating price distortion, increasing economic growth, adding liquidity to the economy, and reducing uncertainty associated with price-level drift.

eliminated and the price level is stabilized, however, people no longer need to perform these calculations. Inefficiencies are reduced, and economic opportunities are maximized.

■ **Inflation Leads to Socially Inefficient Institutions**
Inflation creates potential financial losses for holders of money and other assets denominated in dollars. To avoid these private losses, markets adjust by creating financial institutions and instruments that would be unprofitable in the absence of inflation. An obvious example is the

financial "advice" industry that is concerned with protecting investments from inflation risk.

Specific markets have been created to trade futures contracts in foreign exchange and interest rates. There was also a brief period in which the financial market traded futures in the government's reported level of the Consumer Price Index. This market folded as the inflation rate declined in the 1980s.¹

The creation and maintenance of these institutions is socially inefficient. The resources used in them could be better devoted to creating products and services that people desire in an environment of zero inflation. The costs incurred in minimizing private losses from inflation are greatest when inflation is very high or very unpredictable. But important costs may still be present even at low and stable inflation rates.

■ Inflation Is Costly When It Interacts with the Tax System

Inflation raises economic distortions associated with the existing tax system because taxes on the return to capital are not adjusted for inflation. A recent study estimated that the cost of 10 percent inflation from this source alone is (as a rough order of magnitude) about 0.7 percent of gross national product (GNP) each year, and possibly as high as 2 to 3 percent of GNP each year.²

In addition, inflation raises other economic distortions by interacting with the current tax system to alter the allocation of capital across sectors of the economy, the debt/equity mix chosen by firms, and the choice of asset life. For example, nominal interest payments are tax-deductible; thus inflation raises the value of the deduction relative to the real cost of housing, giving people an incentive to overinvest in housing.

A similar effect leads firms to acquire more debt rather than to issue new stock when faced with a need for new funds. Also, depreciation allowances are not indexed for inflation, leading firms to prefer longer-lived assets during periods of inflation.³ These costs of inflation could be reduced by appropriate changes in the tax system. But, in the absence of tax changes, the distortions represent important costs even to low, stable, and fully anticipated inflation.

■ Inflation Reduces Economic Growth

Positive inflation may have adverse effects on economic growth. The long-term growth rate of an economy is mainly determined by factors having little to do with monetary policy, such as the rate of technological innovation. But government policies can also affect the rate of economic growth.

Evidence from a large set of countries, with very different institutions and economic conditions, supports the conclusions some theoretical economic models have reached: that long-term economic growth is reduced by inflation and by greater variation in the growth rates of the money supply.⁴

This negative effect of inflation on long-term growth may reflect a variety of channels, including adverse effects of inflation on capital formation (either directly or through interactions with the tax system), effects on the use of scarce resources to form socially inefficient institutions, and effects from the distortion introduced into the price system by inflation; or it may reflect various other channels. Whichever of these channels is most important, the evidence indicates that the reduction in the economic growth rate associated with higher inflation is large and pervasive.

Sometimes it is argued that eliminating inflation is undesirable because policymakers can use inflation to try to reduce unemployment in the short run. The theoretical basis for such a policy, and the evidence on whether it can work, is weak. But even granting that more inflation could lead to a temporary increase in employment, the reduction in long-term economic growth associated with inflation probably outweighs any short-run gains by so much that these short-run considerations should play little role in policy formation.

■ Zero Inflation Adds Liquidity to the Economy

The elimination of inflation would give people the incentive to hold what Milton Friedman has called the optimal quantity of money. People derive benefits from holding various forms of money, facilitating trade and serving as a temporary store of value. Inflation, by acting as a "tax" on holdings of currency and other non-interest-bearing forms of money, reduces the real quantity of these assets. Valuable resources are wasted as people attempt to conserve their money balances, and the resulting lower level of liquidity reduces the benefits that people receive from holding money.

This liquidity cost of inflation is the cost traditionally emphasized in discussions of inflation. It is only one of many costs of inflation, however, and probably one of the less important.⁵

■ Inflation Creates Uncertainty

For reasons that are not well understood, higher levels of inflation have typically been associated with greater variability of inflation, and so greater uncertainty about inflation.

To this point, our arguments have not relied on whether inflation was expected or unexpected. There are, however, many adverse effects associated mainly with unanticipated inflation. Perhaps the most important of these is the misallocation of

resources associated with forecasting real interest rates. Just as with expected inflation, unexpected inflation may be directly responsible for lower investment, for the creation of socially wasteful institutions, and for lower rates of economic growth.

Even though it may be possible to have a low and stable positive rate of inflation over some period of time, the existence of inflation continues to create uncertainty. Little or nothing in historical experience suggests that a low inflation rate can be maintained for long at a stable level. As a consequence, there is little reason for people to expect it.

Any nonzero rate of inflation is in some sense arbitrary; people will have greater uncertainty because they will not understand why inflation is 4 percent, for example, rather than 2 percent or 16 percent. Zero inflation is not arbitrary; it corresponds to the complete elimination of inflation. A policy aimed at the elimination of inflation is qualitatively different from a policy designed to produce inflation at some particular level.

The elimination of long-term inflation would change the entire tone of discourse about monetary policy. When policy is aimed at producing inflation, the relevant political controversies involve how much inflation should occur. When policy is aimed at the elimination of inflation, the controversies will involve *whether* long-term inflation should occur. The question "Is there any long-term inflation?" logically precedes the question "How much long-term inflation is there?". If the answer to the first question is no, then the second question need not even be asked.

Many people believe that there is a trade-off between inflation and some

other goal, such as reduced unemployment, smooth interest rates, or other sources of government revenue. By adopting a policy of eliminating long-term inflation, the Federal Reserve would make a statement that it will not attempt to exploit such trade-offs.

Inflation creates uncertainty because people believe that the particular inflation rate permitted by policymakers, say 5 percent, represents an attempt to achieve other goals at the cost of a stable price level. But there is little reason to expect that policymakers' chosen inflation rate will remain constant in the face of changing economic or political conditions. Therefore, people have little reason to expect any positive level of inflation to remain stable. The result is greater uncertainty about the future.

■ Price-Level Drift

The elimination of long-term inflation and the elimination of short-term inflation can be thought of as separate goals that may not be simultaneously achieved. Because policymakers can control the overall price level only indirectly through control over the monetary base, the price level will sometimes rise or fall even if policymakers attempt to hold it fixed. A policy directed only at elimination of short-term inflation could allow the price level to drift over time in response to these unexpected changes: it could make short-term expected inflation zero even if the price level had previously risen or fallen. As a consequence, over longer periods of time the price level would drift up or down.

A policy directed toward elimination of long-term inflation, on the other hand, would eliminate this price-level drift by adopting a price-level target.

Policymakers would, following an unexpected increase in the price level, engineer a decrease in the price level to keep it at the target level. Consequently, while long-term inflation would be zero, short-term expected inflation would need not always be zero.

Other reasons support the argument that policymakers should eliminate long-term inflation by stabilizing the price level. People cannot be sure whether any increase in the price level is intended or whether it is the result of a change in economic conditions that policymakers did not foresee. If the price level rises because of an unforeseen change in economic conditions, people may be tempted to believe that there has been a change in policymakers' goals, and that the zero-inflation goal has been abandoned. By choosing to target the price level and by quickly moving to reverse any unforeseen changes in that level, policymakers would gain credibility and reduce uncertainty.

Long-term price-level drift would entail greater uncertainty than would price-level stability. This uncertainty would result in higher average long-term interest rates. Price-level targeting would, of course, entail variations in short-term interest rates, as unforeseen price-level changes are expected to be reversed. But short-run interest-rate variation is not likely to be very important compared to the achievement of lower and more stable long-term rates. Moreover, these variations in short-term interest rates are not necessarily bad: they provide signals that help firms and consumers make correct decisions, and they demonstrate the policymakers' continuing commitment to the goal of a stable price level.