FRBSF Weekly Letter

March 2, 1990

Price Level Stability

On September 25, 1989, Congressman Stephen L. Neal introduced legislation requiring the Federal Reserve to eliminate inflation within five years. House Joint Resolution 409 states, in part:

"(1) the Federal Open Market Committee of the Federal Reserve System shall adopt and pursue monetary policies to reduce inflation gradually in order to eliminate inflation by no later than 5 years from the date of the enactment of this legislation and shall then adopt and pursue monetary policies to maintain price stability;

(2) inflation will be deemed to be eliminated when the expected rate of change of the general level of prices ceases to be a factor in individual and business decision making. . ."

This Letter *is based upon testimony on the Neal Resolution delivered by President Robert T. Parry on February 6, 1990, before the House Subcommittee on Domestic Monetary Policy.*

The central bank and inflation

Inflation is a monetary phenomenon, in the sense that excessive growth of money is the root cause of sustained increases in the level of prices. Thus, the central bank is uniquely suited to control inflation in the long run. Monetary policy also affects the production of goods and services in the short run, until the price level adjusts to changes in the supply of money and credit. As a result, the central bank frequently must consider the transitory effects of its actions on the business cycle, even though its policies mainly should focus on the single variable it can control in the long run: the rate of inflation.

Federal Reserve officials consistently have made it clear that achieving price stability is indeed the long-term goal of the System. If enacted, House Joint Resolution 409 would provide clear legislative support for the attainment of this goal within a specified period and would minimize pressures to focus only on short-run concerns.

By reducing uncertainty about the future level of prices, the elimination of inflation would make a significant contribution to higher standards of living in the U.S. and around the world. These benefits are difficult to quantify, but they most likely are substantial.

Price stability would lead to better long-term planning and contracting by business and labor. It also would reduce the risk premia in long-term interest rates associated with uncertainty about the future price level, thereby increasing capital formation and productivity in this country. Moreover, it would avoid the many arbitrary transfers of wealth and income that occur when the general price level changes unexpectedly, and thus would reduce wasteful hedging activity designed to protect against these transfers. Finally, price stability would eliminate confusion between absolute price changes and movements in relative prices, leading to improved decisions.

The costs of eliminating inflation

Few would disagree that eliminating inflation is a desirable goal for the Federal Reserve. The debate centers on the costs of achieving that goal and how large these costs are relative to the benefits. Unfortunately, it is difficult to produce precise estimates of the costs.

The so-called Phillips curve relationship provides an *upper bound* estimate of the costs of eliminating inflation. The Phillips curve relates the rate of wage inflation to the actual unemployment rate, an estimate of the unemployment rate consistent with the economy operating at full capacity, and an estimate of expected inflation.

The Phillips curve suggests that the short-run costs of reducing inflation are relatively high, largely because this relationship incorporates the assumption that the public's expectations concerning future inflation adjust only gradually. Thus, a disinflationary policy regime may have to be in place for a relatively long period before it has a measurable impact on inflation expectations and, therefore, on inflation.

Nonetheless, work at this Bank using computer simulations of a Phillips curve-based model suggests that a recession is not necessary in order to reduce inflation from four to 4½ percent now to around zero percent by 1994. The unemployment rate would need to rise by a maximum of about 1¾ percentage points above an estimated five to six percent "full-employment" rate. At the same time, real GNP growth during the transition period would need to be about one to two percentage points per year lower than the rate of growth in productive capacity, which is currently estimated at around 2½ to three percent a year.

Two points about these estimates should be emphasized. First, these costs are one-time, transitory costs only. In the long-run, there is no trade off between inflation and unemployment. Once inflation is eliminated, real GNP will go back to its long-run potential path, and the unemployment rate to its "full-employment" level. The benefits of price stability, however, continue indefinitely.

Second, the figures represent average historical relationships over the past 25 years, and should be taken only as rough indications of the costs of implementing the Resolution *if* inflation expectations were to adjust only very gradually. However, the costs of achieving zero inflation within five years probably would be smaller than these estimates suggest. Presumably, the public's expectations of future inflation would decline more rapidly than the historical Phillips curve relationship indicates if it were to become apparent that the Federal Reserve was pursuing a steady disinflationary policy. There is general agreement within the economics profession that the costs of reducing inflation are closely tied to the degree to which the public believes the central bank's anti-inflation policy to be credible. In this regard, the legislative support provided by the Neal Resolution undoubtedly would hasten the decline in inflation expectations, and would reduce the costs of eliminating inflation.

Unfortunately, it is difficult to determine how quickly expectations might respond in such an environment. There is evidence that expectations did *not* decline quickly in the period following the Federal Reserve's implementation of a strong disinflationary policy in October 1979. In the current situation, however, the Federal Reserve has much more credibility as an inflation fighter than it did in the period of double-digit inflation at the beginning of the 1980s. Thus, announcing a policy to reduce inflation to zero within five years may have more impact on expectations today than it would have had earlier, particularly if such a policy were mandated by the legislature. Moreover, inflation expectations would decline even faster, and price stability could be achieved even sooner if monetary policy were supported by other policy actions, such as credible reductions in the federal budget deficit.

However, we cannot estimate the extent to which inflation expectations will respond to such a change in policy. Therefore, the possibility exists that achieving zero inflation in five years might involve the relatively high transitional costs outlined above. Only implementation of the Resolution will tell. Despite this uncertainty, a transition period longer than the five years envisioned in the Resolution does not seem advisable, as it might reduce the credibility of the anti-inflation policy.

Level or rate?

There is some ambiguity in the Resolution concerning what the Federal Reserve would be required to do once zero inflation is achieved: should it aim at a constant price *level* over time (price level stability) or at a zero inflation *rate* over time (inflation rate stability)? Following an unanticipated shock to prices, such as an oil price shock, the objective of a stable price level would require that a period of deflation (inflation) follow a positive (negative) shock to bring prices back to their pre-shock level. As a consequence, this approach might imply a high level of volatility in the short- to intermediate-run inflation rate.

Alternatively, a stable inflation rate objective would keep prices at their post-shock level, and monetary policy would be geared toward permitting no further change in prices. By accommodating past price level movements, this approach would involve less short-term volatility in inflation, but would permit more long-run inflation or deflation if the shocks tended to be one-sided.

Price level stability has a number of advantages over inflation stability. First, the distortions caused by inflation relate more closely to uncertainty about the long-run price *level* than to short-run volatility in the inflation rate. Moreover, a price level goal probably would be more credible than a zero inflation rate goal. Permitting the price level to drift (as could happen under a zero inflation rate goal) inevitably would raise questions whether the Federal Reserve were serious about controlling inflation, particularly if the source of the price level shocks were uncertain.

Finally, there is nothing to be gained, and a lot to be lost, from permitting the price level to drift over the long run. Even in the case of a shock like the oil embargo of the mid-1970s, the appropriate response is to maintain price stability in the long run. Following such a shock, real GNP inevitably must fall to reflect the decline in long-run potential output. This decline in output will occur no matter where the price level eventually ends up, and thus there is nothing to gain by allowing prices to rise in the long run.

However, there are short-run problems to consider. For example, a recession could result from attempts by the Federal Reserve to return prices to their original level too quickly following a large oil shock. Thus, it is important that the Federal Reserve have some flexibility in implementing the requirements of the Resolution. Monetary policies designed to produce a gradual deflation (or inflation, depending on the nature of the shock) following a price shock would minimize short-run dislocations, and yet still remove the long-run uncertainty about the price level that damages the performance of the economy.

What is price stability?

A flexible definition of price stability like the one used in the Resolution is preferable to a specific numerical target. Although a numerical target would make it easier for the public to measure the Federal Reserve's performance and, therefore, might make the policy more credible, such a standard might be counterproductive.

For a number of reasons, it is difficult to define *in advance* a specific numerical target that reasonably could be adhered to over a long period. First, it is not clear which particular price index should be targeted, and all indexes most likely will not exhibit zero rates of change when "price stability" is achieved. Second, there may be upward biases in the price indexes because they may not adequately adjust for improvements in the quality of goods and services. This bias could be addressed by allowing some upward drift in the price index, but it is difficult to estimate the appropriate magnitude of this adjustment. Third, a numerical target would reduce the Fed's flexibility in responding to relative-price shocks, leading to increased risk of undesirable effects on economic activity.

Relying on a flexible definition of price stability inevitably will lead to debate over how the Federal Reserve's performance stacks up against its objective. This judgment will require evaluation of a large number of different price indexes. Other considerations also could play a role. Does a recent supply shock justify the inflation observed in a given year? Have there been significant biases in price indexes because of mismeasurement of quality change? These issues can be discussed and evaluated in the context of the Federal Reserve's semiannual policy report to the Congress, as specified in the Resolution. In any case, these issues likely will become less worrisome over time, as it becomes clear that the Federal Reserve's policies are indeed moving the economy towards price stability.

An important step

Eliminating inflation would be the most significant contribution that the Federal Reserve could make to the attainment of the highest possible standards of living in the United States and around the world. House Joint Resolution 409 would provide a legislative mandate for this goal and a deadline for attaining it. Once this goal is achieved, monetary policy should be geared toward maintaining a stable price *level* over the long run so that businesses and individuals do not need to be concerned about long-run inflation in making their economic decisions.

Robert T. Parry
President and
Chief Executive Officer

Editorial comments may be addressed to the editor (Barbara Bennett) or to the author. . . . Free copies of Federal Reserve publications can be obtained from the Public Information Department, Federal Reserve Bank of San Francisco, P.O. Box 7702, San Francisco 94120. Phone (415) 974-2246.

Research Department

Federal Reserve
Bank of
San Francisco

P.O. Box 7702
San Francisco, CA 94120