

# ECONOMIC COMMENTARY

Federal Reserve Bank of Cleveland

## A Price Objective for Monetary Policy

by William T. Gavin and Alan C. Stockman

**T**he idea of monetary policy aimed at producing a stable price level has gained increasing support in the United States in recent years. In 1991, the Neal Resolution proposed to make such a policy objective law. Elsewhere, the notion of price stability has also become more popular. For example, the central banks of Canada and New Zealand recently adopted explicit multiyear targets for inflation, and a commitment to price stability is widely thought to be a necessary condition for successful monetary union in the European Community.

During the past decade, inflation has been reduced significantly, and many observers believe that further moderation may be in store in the next several years. Nevertheless, price stability remains an elusive goal both here and abroad.<sup>1</sup> This *Economic Commentary* discusses some of the reasons why price stability is so difficult to achieve. One explanation lies in the nature of monetary targeting. Another is simply the absence of an explicit commitment to a long-term objective for the price level.

### ■ The M2 Target

The Federal Reserve System was created in 1913 under the umbrella of a gold standard. Our currency was fully convertible into gold until 1933, and indeed, some vestiges of convertibility lingered on until 1971. But since 1971, the monetary standard has had no anchor other than the annual monetary targets.

The wide ranges assigned to the targeted aggregates and uncertainty about the income velocity of money have made the monetary targeting exercise

problematic as a vehicle for achieving price stability. The uncertainty induced by the broad ranges is compounded by the practice of building the annual monetary targets on the previous year's *actual* fourth-quarter average of the money stock (assumed here to be M2) rather than on the midpoint of that year's target.<sup>2</sup> This procedure means that target misses are forgiven; consequently, the level of M2 will be highly unpredictable over long horizons.

To illustrate how the current practice causes uncertainty about the future money stock, consider that the M2 target range for 1992 is four percentage points wide (2.5 percent to 6.5 percent). Without knowing precisely where in this range we will end the year, and assuming that future M2 targets are also four percentage points wide, the potential target range has an eight percentage point spread at the end of 1993 — from roughly 5 percent to 13 percent (see figure 1). In only five years hence, the range of uncertainty about the M2 level would be 20 percentage points wide (from 12.5 percent to 32.5 percent).

One way to narrow the range of possible outcomes for both M2 and prices would be to specify a multiyear path for M2. Such a path would not remove all of the questions about the aggregate's future growth, but it would limit the range of uncertainty to the 4 percent bands around the annual targets, regardless of the forecast horizon.

It may be risky to rely exclusively on an M2 path to achieve price stability, however, because of the potential for un-

**Price stability as a long-run objective of monetary policy has gained increasing support in recent years, both in the United States and abroad. One way to achieve this goal without inhibiting the Federal Reserve's short-term objectives may be to target a long-run path for the price level. Such a multiyear target would provide a consistent benchmark for setting annual monetary growth ranges in the presence of uncertainty about the income velocity of money.**

expected changes in its velocity trend. Among all of the monetary aggregates — currency, the monetary base, M1, M2, and M3 — only M2 has exhibited a constant trend in velocity over the last 30 years.<sup>3</sup> However, there is no guarantee that this will continue. From 1869 until 1945, for example, M2 velocity declined at an average annual rate of 2 percent; it then rose at the same pace in the 10 years following the war.

Although M2 velocity has been constant on average for the last 30 years, quarterly values fluctuate, sometimes widely: The standard deviation of quarterly growth has been an annualized 4 percent since 1960. The potential exists for both permanent and temporary shifts in velocity. In the past, temporary shifts have been associated with the rise and fall of interest rates or, more precisely, with the opportunity cost of holding M2 balances. (Opportunity cost is the difference between market interest rates and interest rates paid on deposits included in M2.)

Throughout the most recent recession, the opportunity cost of M2 fell, but, atypically, M2 velocity did not. This unusual behavior has raised the question of whether there has been a permanent shift in M2's velocity trend.<sup>4</sup>

Unfortunately, we cannot clearly recognize such a shift until well after a change has occurred. The length of time needed to distinguish a change in the trend depends on the relative size of the permanent and temporary shifts. In the case of M2 and the other monetary aggregates, the variance of temporary shifts is quite large relative to the variance of permanent shifts. For example, if the M2 velocity trend began to grow at 2 percent per year, it would take several years for analysts to be sure that this was not just a temporary fluctuation. By that time, the economy would have suffered the costs of a persistent unexpected shift in the price level (by an additional 2 percent per year). One way to hedge against the risks of an unexpected shift in velocity would be to specify the annual M2 targets in the framework of a multiyear path for the price level.

#### ■ A Price-Level Objective

In December 1983, then Federal Reserve Chairman Paul Volcker defined price stability as a condition that exists when people make decisions "... on the basis that 'real' and 'nominal' values are substantially the same over [a suitably long] planning horizon...."<sup>5</sup> This sentiment was echoed more recently by current Chairman Alan Greenspan: "For all practical purposes, price stability means that expected changes in the average price level are small enough and gradual enough that they do not materially enter business and household financial decisions."<sup>6</sup>

We can make this definition of price stability operational by specifying a time path for the trend in a specific price index that extends indefinitely into the future. For example, suppose that policymakers decide to stabilize the Consumer Price Index (CPI). The Federal Reserve could specify a target path for prices that would gradually decelerate until the price-level trend be-

came horizontal. Price stability would be achieved if the actual CPI moved along this path.

Price-level targets should also include bounds around the target path to let the public know how far the index will be allowed to stray before action is taken to bring it back in line. An example of such an operational definition of price stability is shown in figure 2. The target path is based on the actual CPI in December 1989 growing 5.5 percent that year, 5 percent in 1990, and then declining half a percent each year until the path becomes horizontal in the year 2000. We have set bounds of plus and minus 3 percent around this trajectory.<sup>7</sup>

To our knowledge, there is only one case in which a central bank based its policy actions on a price-index target. This was a six-year episode in the 1930s when the Swedish central bank, the Riksbank, targeted that nation's CPI at around 100. Figure 3 shows that the actual price level stayed well within 3 percent of this figure throughout all six years, crossing the price target twice. Although this was a rather brief period in history, it illustrates that a measurable objective for price stability can be achieved.<sup>8</sup>

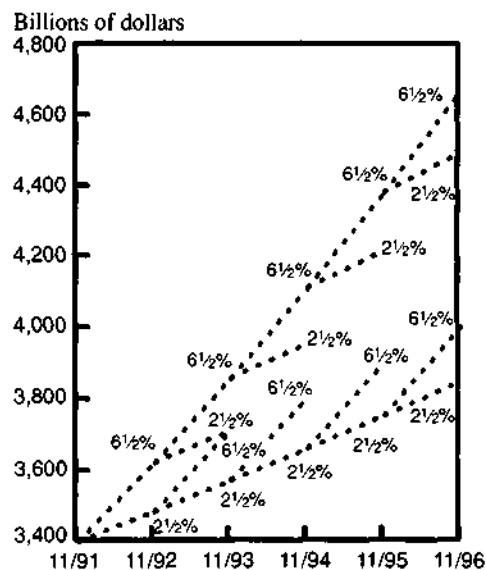
#### ■ Why Not an Inflation Target?

Part of the opposition to a price-level target may stem from confusion about the way price information is used to guide policy actions. The price level can be thought of as the sum of two components: a trend determined by the monetary authorities and a transitory component associated with real shocks to the economy. Many economists oppose price-level targeting because real shocks, such as oil shortages, droughts, and changes in the tax system, dominate short-run fluctuations in the price level.

In 1968, for example, Milton Friedman advocated monetary targets rather than price-level targets as short-run guides for policy because

Of the three guides listed [exchange rates, price index, and money stock], the price level is clearly the most important in its own right. Other things the same, it would be much the best of the alterna-

FIGURE 1 GROWTH RANGES FOR M2



SOURCES: Board of Governors of the Federal Reserve System; and authors' calculations.

tives.... But other things are not the same.... We cannot predict at all accurately just what effect a particular monetary action will have on the price level and, equally important, just when it will have that effect. Attempting to control directly the price level is therefore likely to make monetary policy itself a source of economic disturbance because of false stops and starts.<sup>9</sup>

A long-term price-level objective would not require the Federal Open Market Committee (FOMC) to react to the highly variable monthly inflation reports on a short-term basis. Since any one month's report contains information mainly about transitory effects, it may tell us very little about the monetary trend. Yet, when the monthly price-level changes are added up over extended periods, the transitory effects offset each other and the monetary trend is revealed.

Analysts often look back to multiperiod averages of inflation in order to discern the underlying trend. The longer the period of averaging, the less important are the transitory effects of real shocks. Thus, in discussing long-term trends, analysts may look at inflation averages going back as far as two to five years. In a sense, the price level is the longest average of all, inasmuch as it is the

FIGURE 2 A PRICE-LEVEL OBJECTIVE

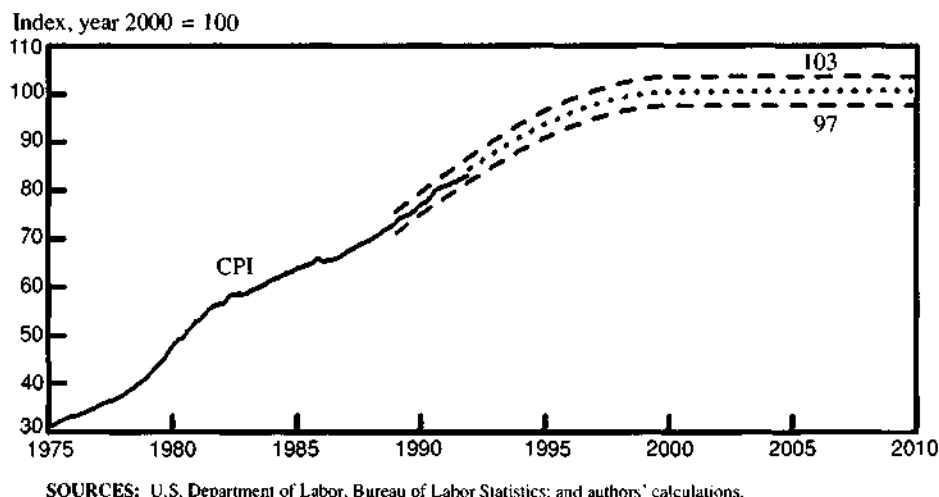
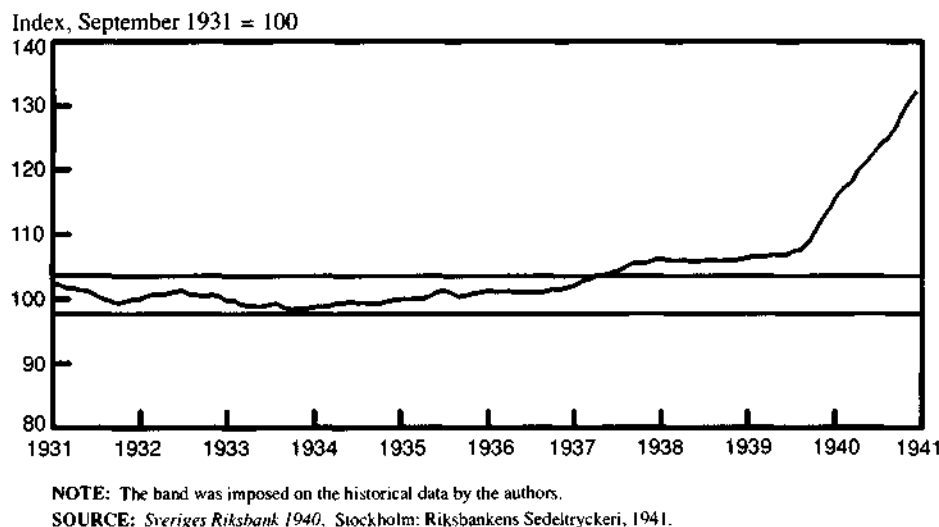


FIGURE 3 SWEDEN'S CONSUMER PRICE INDEX, 1931-41



accumulation of all monthly price changes dating back to the beginning of the index. Unlike the inflation rate, which is highly variable around its trend, the price level maintains a steady relationship vis-a-vis its trend. Thus, the behavior of the price level, when observed against the backdrop of a target path, should provide a steady signal about the thrust of future policy.

Admittedly, the relationship of the current price level to its long-term target path would not tell us what policymakers should do today. Intermediate targets for money or other short-term indicators of policy are still needed to make these

near-term decisions. The value of the price-level target is that it would provide a benchmark for long-run decisionmaking. For example, consider the decision that the Federal Reserve must make at the beginning of a new year when the monetary targets are set. If in the previous year the price level was below the long-term path and M2 came in below the midpoint of its target range, the price-level objective would provide clear guidance for raising the M2 path. In the absence of an explicit long-term objective, the FOMC cannot make such a decision without increasing long-run inflation expectations.

### ■ The (Non)Problem of Multiple Objectives

There is little doubt that a path for the price level would provide an anchor for the dollar. Some analysts fear, however, that such a path would limit the Federal Reserve's flexibility in meeting its additional responsibilities (such as conducting countercyclical policy and acting as the lender of last resort during financial crises). We believe such fears are unwarranted. Currently, the public cannot clearly distinguish a countercyclical policy action from one that leads to a higher inflation trend. This confusion limits the Fed's ability to conduct countercyclical policy because it induces, at least temporarily, a trade-off between the short-run growth objective and expectations of higher inflation rates in the future. The presence of an explicit path for the price level would enhance the System's ability to communicate policy intentions accurately and, more important, would provide a benchmark against which to judge this communication.

Under the present system, the Federal Reserve is often constrained by financial market expectations. These constraints show up when the market confuses a short-term policy action with a permanent change in long-term goals. For example, in 1982, 1986, and 1991, the System implemented a series of discount-rate cuts in response to weakness in the economy. In each case, the final cut was associated with a subsequent increase in the long-term bond rate. In no instance did the Fed consciously adopt a higher inflation objective with its last discount-rate cut, yet the market responded as if it had. Such responses reduce the efficacy of policy actions and would be less likely to occur if the System committed to an explicit path for the price level.

Moreover, a price-level objective would not interfere with the Federal Reserve's flexibility in responding to financial crises. Consider the policy response to the stock market crash of October 19, 1987. To prevent a systemic crisis in the nation's financial system, the Fed immediately eased policy by providing all the liquidity the market needed. The time horizon for maintaining liquidity in the market is much shorter than that for

stabilizing the price level. Thus, there was plenty of time following the crash for the FOMC to mop up the excess liquidity that had been pumped into the market.

Perhaps an even more important consequence of achieving price stability is that it would reduce the incidence of financial crises. As economist Anna Schwartz has documented, high and uncertain inflation greatly increases the risk of bank failures and bank runs.<sup>10</sup> That is, financial crises usually occur when prices are falling relative to trend. A price-level objective would enhance financial stability and make such incidents less likely.

### ■ Conclusion

Price stability is not an end in itself. The reason for seeking price stability is to raise living standards and the quality of life for all Americans. Monetary targeting was effective in containing the runaway inflation of the 1970s, but it has not brought about the end of inflation.

Committing to a long-term trend for a particular price index would help to provide guidance for adjusting monetary targets and maintaining price stability. Such a policy would reduce relative price uncertainty as well as increase the System's flexibility in responding to short-term events. Achieving price stability would create an environment less prone to financial crises and at the same time give the

Federal Reserve more latitude in dealing with such emergencies when they arise.

### ■ Footnotes

1. For a description of the uncertainty inherent in the U.S. price level, see Jeffrey J. Hallman, "Uncertain Inflation and Price-Level Rules," Federal Reserve Bank of Cleveland, *Economic Commentary*, January 15, 1992.
2. The practice of forgiving target misses leads to a phenomenon known as "base drift." For a thorough discussion of base drift in the early years of monetary targeting, see Alfred Broaddus and Marvin Goodfriend, "Base Drift and the Longer Run Growth of M1: Experience from a Decade of Monetary Targeting," Federal Reserve Bank of Richmond, *Economic Review*, vol. 70, no. 6 (November/December 1984), pp. 3-14.
3. See Jeffrey J. Hallman, Richard D. Porter, and David H. Small, "Is the Price Level Tied to the M2 Monetary Aggregate in the Long Run?" *American Economic Review*, vol. 81, no. 4 (September 1991), pp. 841-58.
4. See John B. Carlson and Susan M. Byrne, "Recent Behavior of Velocity: Alternative Measures of Money," Federal Reserve Bank of Cleveland, *Economic Review*, vol. 28, no. 1 (1992 Quarter 1), pp. 2-10.
5. See Paul A. Volcker, "We Can Survive Prosperity," speech presented at the joint meeting of the American Economic Association-American Finance Association, San Francisco, December 28, 1983.
6. See Alan Greenspan, statement before the Committee on Banking, Housing and Urban Affairs of the U.S. Senate, February 21, 1989.

7. This particular target is described more completely in William T. Gavin and Alan C. Stockman, "A Flexible Monetary-Policy Rule for Zero Inflation," Federal Reserve Bank of Cleveland, unpublished manuscript, June 1989.

8. The price-index target was abandoned by the Riksbank in favor of exchange rate targeting in April 1937. For a more detailed description of this episode, see Susan Black and William T. Gavin, "Price Stability and the Swedish Monetary Experiment," Federal Reserve Bank of Cleveland, *Economic Commentary*, December 15, 1990.

9. See Milton Friedman, "The Role of Monetary Policy," *American Economic Review*, vol. 58, no. 1 (March 1968), p. 15.

10. See Anna J. Schwartz, "The Lender of Last Resort and the Federal Safety Net," *Journal of Financial Services Research*, vol. 1 (1987), pp. 77-111.

William T. Gavin is an assistant vice president and economist at the Federal Reserve Bank of Cleveland. Alan C. Stockman is a professor of economics at the University of Rochester.

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Federal Reserve Bank of Cleveland  
Research Department  
P.O. Box 6387  
Cleveland, OH 44101

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