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# Price Stability and the Swedish Monetary Experiment

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**During the last two decades, the consumer price index has more than tripled. This article examines the feasibility and appropriateness of establishing a direct, price-index target as the primary objective of U.S. monetary policy, and notes the results of the Swedish Riksbank's experiment with such an approach during the 1930s.**

Many economists think that monetary policy should provide a stable environment so that the price system, and the economy, can work efficiently. The Bretton Woods agreement, adopted in 1944, was an attempt to create an international monetary order with the long-term price stability of a gold standard and the short-term flexibility of a paper money standard. Because the issuers of paper money did not adhere to the constraints implied by the fixed exchange rates and the long-term commitment to the dollar price of gold, the system collapsed in a series of panics between the fall of 1969 and the spring of 1973.

Ever since the breakdown of the agreement, worldwide inflation has been high and variable. Over the last 20 years, the U.S. consumer price index (CPI) has more than tripled. If stabilizing the price level becomes the primary objective of U.S. monetary policy, could we take a direct approach to that goal and adopt a price-index target?

This *Economic Commentary* discusses some of the issues surrounding price-level targeting. It also describes the Swedish monetary experiment of the 1930s, a case in which the central bank successfully targeted a price level for several years.[1] The Swedish episode shows not only that price-level targeting is feasible, but that such a direct approach may be an appropriate method of stabilizing prices.

## The Pros and Cons of a Price-Level Target

Under a price-level targeting system, the central bank would likely adopt a multiyear path for a particular price index.[2] The main advantage of such a system is that it would focus attention on what should be any central bank's primary objective: price stability. The current emphasis in the United States on money market interest rates and M2 as intermediate targets is problematic because these variables are not important per se. They are important only as indicators of how monetary policy is expected to affect the ultimate goals of price stability and maximum sustainable economic growth.

The Federal Reserve cannot control output growth directly. Over the long run, it can raise potential output if it can make the price system work more efficiently. One way to do this is to stabilize the value of the monetary standard so that all changes in the nominal price of a product reflect real factors affecting demand or supply. By eliminating the uncertainty associated with inflation, such a policy would cause the economy to operate more efficiently. For example, a stable price level would eliminate the complicated calculations made necessary by inflation; there would be no need to index wages, taxes, or government benefits. Investors could ignore inflation risk and individuals could make long-term contracts without worrying about inflation changing the real terms of these arrangements.

The main objection to targeting a price index is that attempting to control prices directly may destabilize both the economy and the price level. This objection is based on the idea that long and variable lags exist between changes in monetary policy and changes in prices. If such lags are an inherent part of our economic structure, then it may be impossible to target a price index directly.

Studies of the frictions that may be responsible for these long and variable lags have offered several explanations. One is the presence of nominal contracts. People contract today for goods and services that are to be delivered in the future. Consumers and investors borrow money at fixed interest rates, while workers have both explicit and implicit labor contracts that often extend beyond one year.

Another explanation for the lag is that it is costly to change prices. For example,

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printing a new catalog or menu or altering the prices on previously marked goods is expensive, so why incur such costs if the anticipated price change is small or expected to be temporary?

Prices may also lag monetary policy because of incomplete information. Since people are uncertain about future policy, they wait until the effects of policy are realized before modifying their plans (and their prices). People are also uncertain about the fundamental economic factors that affect the markets in which they operate. This uncertainty causes delays in changing prices in response to monetary policy because inflationary effects are often confused with the real effects of variations in supply and demand. Uncertainty about the sources of disturbances can cause changes in the observed correlation between monetary policy and the price level.

None of these explanations implies that a price-level target would be infeasible or inappropriate. Indeed, since they all rely on costly price adjustment, what these explanations do imply are large welfare losses associated with large price-level changes. The cost of adjusting prices may be *minimized* if the price level is stabilized. The policy question is this: Can the Federal Reserve use deviations of a price index from a target level to indicate how it should adjust short-term policy? This is hard to answer because we have no experience with a price-level target. The key lies in discerning how people form expectations and how these expectations affect price adjustment.

Although most economists teach that a long lag exists between changes in monetary policy and changes in the price level, this was not conventional wisdom in the 1930s. Studies by Irving Fisher in the early part of this century indicated that the mean lag from money to prices was less than three months:

> It was in August, 1915, that the quantity of money in the United States began its rapid increase. One month later prices began to shoot upward, keeping almost exact pace with the quantity of money. In February, 1916, money suddenly stopped increasing, and two and a half months later prices stopped likewise. Similar striking correspondences have continued to occur with an average lag between the money cause and the price effect of about one and three-quarters months.[3]

Fisher's description of a short lag was apparently only one of many by contemporary observers. A recent econometric study using data from 1894 to 1909 confirms Fisher's conclusion:

> Event analysis of panic episodes, ARMA representations of gold flows, and macroeconomic simulation models of international adjustment using monthly data all indicate that adjustment to transaction-balance shocks was essentially complete within three months....Our results confirm the responsiveness of prices in the short run. In particular, prices did not lag related movements in output.[4]

The long and variable lag between monetary policy and inflation may not be fundamental to our economic structure, but may just reflect the reigning monetary policy. If so, there is no reason to think that these lags would prevent the successful operation of a price-level target. Some indirect evidence shows that the length and variability of the lag depend on the monetary standard. The lag was much shorter under the gold standard, and is much shorter in countries with hyperinflation. Indeed, inflation may even *lead* monetary policy when a change in regime is predictable, such as before major elections.

We cannot know for certain how the price level and monetary policy would be correlated under an untried system. More important, we do not know whether attempts to stabilize the price level would destabilize monetary policy and, as a consequence, the economy. We can, however, look back to an episode in which a central bank—the Swedish Riksbank—did target the CPI. At the very least, the results of Sweden's experiment show that such a policy is feasible.

## ■ The Swedish Monetary Experiment

On September 27, 1931, the Swedish Minister of Finance announced that the country was leaving the gold standard and adopting a paper standard. Sweden, he said, would preserve the domestic purchasing power of the krona using "all means available." Britain had abandoned the gold standard a week earlier, and foreign exchange traders were convinced that Sweden would have to follow suit. For one week in September 1931, the Swedish government tried to stay on the gold standard. The discount rate was raised twice, from 4 to 5 percent and again from 5 to 6 percent, in an attempt to stop the drain of gold reserves. Many people, including the managers of the Riksbank, were convinced that inflation would accelerate if Sweden abandoned gold. When the country's reserves were virtually depleted and the decision to leave the gold standard was implemented, the discount rate was raised from 6 to 8 percent in an effort to prevent inflation from rising.

The Riksbank immediately began to collect the data needed to construct a weekly CPI, which was set equal to 100 in September 1931 (see figure 1). The index was considered not only an important source of information about current monetary policy, but also a measure of the central bank's primary goal. The CPI's availability and performance lent credibility to the Riksbank's assertions of progress.

Contemporary Swedish policymakers felt that current price movements contained key information about current policy. Their goal was to stabilize the price index using all means at the Riksbank's disposal, including changes in the discount rate, market purchases and sales of gold and foreign exchange reserves, and public announcements of the central bank's intentions.

The policy was loosely based on Knut Wicksell's 1898 proposal, under which the central bank would control the price level by manipulating its instruments to influence the level of commercial bank interest rates relative to the "natural" interest rate.[5] One can think of the natural interest rate as an expected real rate of return that would just clear the credit markets in an economy operating at its most efficient level, with no inflation or

**FIGURE 1 CONSUMER PRICE INDEX**

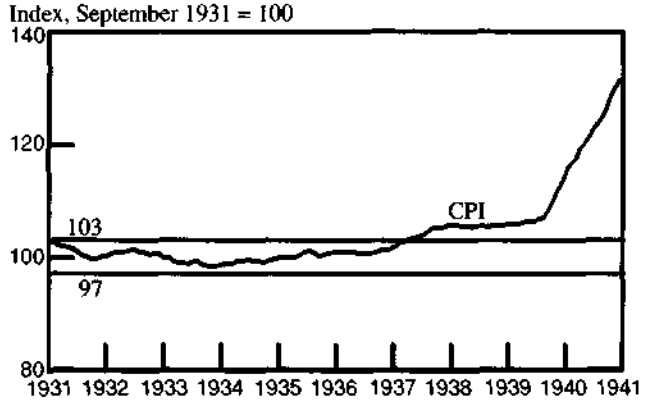



**FIGURE 2 INTEREST RATES**

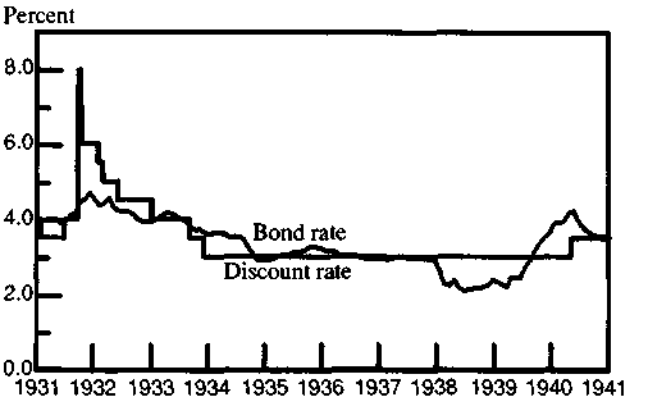



**FIGURE 3 GOLD AND FOREIGN RESERVES**

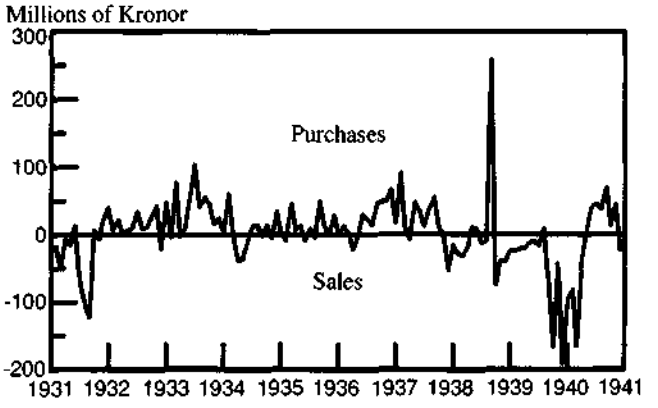
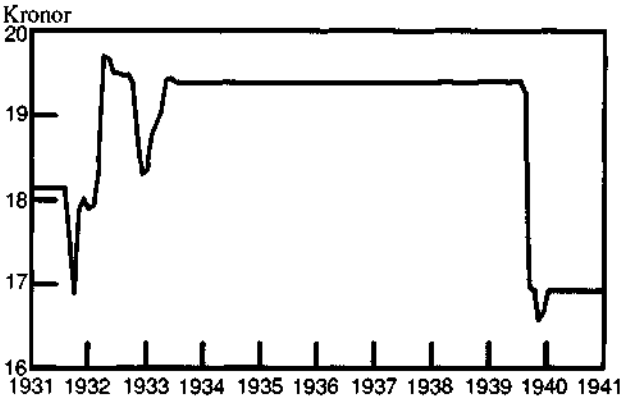



**FIGURE 4 POUND/KRONA EXCHANGE RATE**




**SOURCE**: *Sveriges Riksbank 1940*. Stockholm: Riksbankens Sedeltryckeri, 1941.

deflation. The problem with this procedure was lack of information about the natural interest rate. Wicksell noted that one could get around this by looking directly at prices. If prices were rising, then bank rates were set too low relative to the natural rate; if prices were falling, then bank rates were set too high. It is easy to see why the Riksbank valued timely information about prices.

The Riksbank used a combination of discount-rate changes and changes in gold and foreign reserves to implement the new policy. The former were relatively infrequent: After the initial increase to 8 percent, the discount rate was lowered in a series of steps to 3 percent in December 1933, where it remained until 1940 (see figure 2).[6] The regular instrument for "fine-tuning" policy was the purchase and sale of gold and foreign reserves (see figure 3).

In the first quarter of 1932, the Riksbank reduced the discount rate several times as it became increasingly clear that preventing deflation, not inflation, would be its major task. The world depression began to take its toll on Sweden in early 1931. The country's exports were extremely low that year, industrial production declined dramatically, and unemployment rose quickly. From this perspective, it is easy to see why many contemporary economists believed that the experiment had failed and that raising the price level would have been the appropriate policy. The wholesale price index had been falling at a 10 percent rate for almost two years at the time the new policy was adopted. Thus, in hindsight, it seems obvious that the large discount-rate increases in September 1931 (from 4 to 8 percent) were unnecessary. Whether they were an important source of drag on the economy is less clear. By early 1932, both wholesale and consumer prices had stabilized.

The monetary program that started in the fall of 1931 may not have restored the wholesale price level to some previous higher level, but during the depression it did cause prices to fall less in Sweden than in all of the other major industrialized countries. Furthermore, evidence shows that the downturn was less severe in Sweden, and that the sectors of the economy that suffered most were those concentrated in the country's export industries.[7] This suggests that external factors — not domestic monetary policy — were the driving force behind the depression in Sweden.

In our judgment, the Swedish experiment with price stabilization ended in April 1937, when the Riksbank's Board of Directors abandoned its goal of maintaining an unchanged CPI and decided to peg the exchange rate vis-à-vis the British pound. There was a long period, from 1933 until early 1937, when the Riksbank was able to stabilize both the

CPI and the pound/krona rate (see figure 4). The 1931-37 period was one of a stable price level, while 1933-39 was characterized by a stable exchange rate. Between mid-1933 and early 1937, both the pound rate and the CPI appeared to have been jointly stabilized.

## ■ Conclusion

We focus attention on the Swedish monetary experiment simply because some people believe that it would be infeasible for a central bank to target a price index successfully. During this episode, no evidence suggested that the Riksbank faced any technical problems in achieving a stable CPI.

Sweden adopted a goal for the CPI because the country was forced off the gold standard. It later abandoned the price index in favor of an exchange-rate target after experiencing several years of price stability.

Sweden is a small and open economy, so there were good reasons for the country to choose a fixed exchange rate as its policy goal. Indeed, this is the choice of many European countries today. Because of the presence of a trading partner (Germany) with a dominant currency (the deutschemark) and a more stable inflation record, fixing the exchange rate is an attractive option for most European nations.

The United States does not have such an option. It can, however, deliberately attempt to stabilize the purchasing power of the dollar. Congressional representative Stephen Neal recently introduced House Joint Resolution 409, which would make price stability the Federal Reserve's overriding long-term goal. The Chairman and several Governors of the Federal Reserve Board, along with a number of Reserve Bank Presidents, have testified in favor of the resolution. One way to implement this policy would be through adoption of an explicit price-level target.

## ■ Footnotes

**1.** Descriptions of this episode can be found in Karin Koch, "Paper Currency and Monetary Policy in Sweden," in *Economic Essays in Honour of Gustav Cassel*, London: George Allen & Unwin Ltd., 1933, pp. 343-56; Erik T. H. Kjellstrom, *Managed Money: The Experience of Sweden*, New York: Columbia University Press, 1934, p. 48; Thomas Brinley, *Monetary Policy and Crises*, London: George Routledge and Sons, Ltd., 1936, pp. 157-239; and Irving Fisher, *Stable Money: A History of the Movement*, New York: Adelphi Company, 1934.

**2.** We do not discuss measurement issues or the choice of index here.

**3.** See Irving Fisher, *Stabilizing the Dollar in Purchasing Power*, New York: E. P. Dutton & Company, 1918, p. 5.

**4.** See pages 430 and 431 in Charles W. Calomiris and R. Glenn Hubbard, "Price Flexibility, Credit Availability, and Economic Fluctuations: Evidence from the United States, 1894-1909," *Quarterly Journal of Economics*, vol. 104 (August 1989), pp. 429-52.

**5.** See Lars Jonung, "Knut Wicksell's Norm of Price Stabilization and Swedish Monetary Policy in the 1930's," *Journal of Monetary Economics*, vol. 5 (1979), pp. 459-96; and Robert E. Keleher, "The Swedish Monetary Experience of the Early 1930s and the Market Price Approach to Monetary Policy," unpublished manuscript, Board of Governors of the Federal Reserve System, January 1990.

**6.** The Riksbank posted two discount rates. Figure 2 is based on the rate used to discount long-term bonds.

**7.** For a description of the relative severity of Sweden's depression, see Richard A. Lester, *Sweden's Experience with Managed Money*, supplement to Svenska Handelsbanken's INDEX, January 1937, pp. 1-31; and Arthur Montgomery, *How Sweden Overcame the Depression*, Stockholm: Alb. Bonniers Boktryckeri, 1938, chapter III.

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