

FIAT MONEY AND DEFLATION

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Under a fiat money regime, such as now exists in this country and elsewhere, monetary policy makers adjust the money supply growth rate to generate a steady-state rate of inflation. At the same time, a fiat money regime is capable of limitless nominal expansion. How then is it possible in such a regime for deflation – a general decline in prices --to occur? The short answer is that, by allowing nominal expansion to fall below the growth rate of output, the Fed can create deflation. If that were to happen, producers of goods and services would be forced to cut prices in order to find buyers. The decline in aggregate spending would initiate a contraction in economic growth and employment.

In practice nowadays, central banks do not generally operate with a money growth rate target. Instead they target an interest rate. If they follow the Taylor rule with a nominal interest rate feedback rule, above target price and output growth triggers a higher nominal interest rate and below target price and output growth triggers a lower interest rate. The nominal interest rate cannot fall below zero, but there is no upper limit.

Recent speeches by Fed officials indicate their concern with the problem of a zero bound nominal interest rate, and they stress the Fed's ability to counteract it. The Fed's first priority, however, should be to conduct policy so that deflation does not emerge. In the case of Japan, it is false that the Bank of Japan has "run out of ammunition" and that that explains its failure to boost nominal expenditure by generating higher base money growth. It has simply not sought

unlimited base money growth to jumpstart the economy. In a fiat money regime a central bank should always be able to produce unlimited additions to the money stock to raise the prices of goods and services even when the overnight nominal interest rate is zero. It can do so by expanding the size of its open market purchases and by broadening the range of assets that it buys.

At a recent NBER conference, Michael Woodford expressed contradictory views on the ability of expansion of the monetary base through open market operations to increase nominal aggregate demand. He argued that the ability is relatively limited once the zero lower bound on short-term nominal interest rates is reached, citing the example of Japan. In his view substitution of money for other short-maturity, riskless nominal assets (also with interest yield near zero) in the portfolios of private agents makes very little difference to the situation of these agents and hence their behavior. In addition, he contended that open market purchases of longer-maturity debt or other assets can not substantially change relative prices of alternative financial assets, this time citing the failure of central bank attempts to manipulate the term structure of interest rates in the past.

On the other hand, Woodford rejected warnings that deflation is like a black hole, which an economy may be unable to leave. Such warnings, he suggested, assume a mechanical, backward-looking model of expectations formation. A central bank that can commit to a price-level target in which deflation will not create expectations of deflation but rather increased expectations of inflation will tend automatically to limit the extent of the deflation.

Woodford's worries are basically the old saying, "You can lead a horse to water, but you can't make him drink." The monetary expansion from 1933 to 1937 is an undeniable refutation of that saying. After four years of deflation from 1929 to 1933, the rise in prices that

accompanied monetary expansion during the following economic recovery occurred despite the low level of short-term interest rates. From its trough in April 1933, the recorded stock of money rose 53 percent to its subsequent peak in March 1937, or at an average annual rate of nearly 11 percent per year. Although this was not a fiat money regime, it was not a traditional gold standard regime that directly determined the volume of money. It was rather a discretionary fiduciary standard. The rise in the money stock was produced not by the monetary authorities but by the gold inflow associated with the increase in gold purchases by the US as well as a flight of capital from Europe to the U.S.

Short-term interest rates were at unprecedented low levels – the commercial paper rate fell to $\frac{3}{4}$ of 1 percent in 1934 and remained at that level until early 1936; the Treasury bill rate fluctuated around a level of $\frac{1}{8}$ of 1 percent to the end of 1936, and fell even lower in 1937. Wholesale prices rose 50 percent, cost of living by 13 percent.

Despite the unique features of the 1933-37 recovery, it demonstrates that monetary expansion can overcome deflation even when short-term interest rates are at the zero bound. The recovery was incomplete, but prices, income, and output rose well above depression levels.