

# Money Basics

By William F Hummel

Money plays a central role in our lives, yet no one can be totally free of misconceptions about it. This article deals with only a few basic ideas, but it should help to gain an overall understanding of what money is and how it works.

## Two Kinds of Money

Money is a token that is widely accepted as a medium of exchange. The token can be tangible like a coin or note, or intangible like a bank deposit. If the token is convertible on demand into a valuable commodity like gold, the token is known as *commodity money*. The exchange value of commodity money varies, but is normally greater than its value as a commodity. A precious metal coin is simply a token potentially convertible into the bullion that comprises it.

If the tokens are intrinsically worthless and nonconvertible, the government must endow them with a special status to make them viable as money. Such tokens are known as *fiat money*. Except for collector's items, all government-issued tokens today are fiat money. **One must therefore avoid thinking in terms of commodity money to understand modern money.**

In the era of commodity money, the issuer was constrained by the need to hold a sufficient supply of the underlying commodity. There is no such constraint in the case of fiat money. The value of fiat money therefore depends on the policies and actions of the issuer, normally the central bank of a country. The remainder of this essay applies to the monetary system of the U.S. and not necessarily to other countries.

## Fiat Money as a Tax Credit

The general acceptance of the government's fiat money derives from its status as legal tender and from the fact that it is required in payment of federal taxes. Those who have no tax liability have reason to acquire fiat money because it is of value to those who do. Thus fiat money can be viewed as a *tax credit*, which will be used as a medium of exchange as long as the government widely enforces tax collection.

## Base Money

Fiat money held by the private sector is known as the *monetary base*, which we will refer to as *base money*. The Fed issues base money when it buys securities from the public for its own portfolio, mainly Treasury debt. It pays by simply creating a deposit at the Federal Reserve Bank for the seller's own bank. This is known as *monetizing the debt*.

## Bank Money

Banks create deposits, known as *bank money*, when they issue loans by simply crediting the borrower's account with a new deposit. The total amount of bank money increases when a bank issues a loan. When a loan is paid off, that amount of bank money vanishes.

The value of bank money is based on the promise that it can be converted on demand into base money at par. Current rules require a bank to hold *reserves* of base money equal to at least 10% of its transaction deposits. Reserves can be held in any combination of vault cash and deposit at the Fed. There is no required reserve for other bank liabilities, such as savings accounts or certificates of deposit.

## Controlling the Price of Reserves

Even if there were no reserve requirement, a bank would have to hold enough reserves at the Fed to cover its depositors' checks, and enough vault cash to meet the demand for withdrawals by depositors. The need for reserves thus creates an active interbank market in which banks lend or borrow reserves among themselves. The interest rate on these short-term transactions is called the *Fed funds rate*.

The Fed steers the Fed funds rate toward its target through its *open market operations*. These involve buying or selling securities in the open market to add or drain system reserves as needed to balance the supply and demand at its target for the Fed funds rate.

Any bank in good standing and with adequate collateral can borrow on a short-term basis at the Fed's *discount window*. The interest rate the Fed charges is 100 basis points above its target rate for Fed funds. With that large a spread, the discount window is used by banks to cover temporary liquidity problems rather than as a source of reserves to back further lending.

*Note: During the sub-prime mortgage crisis of 2007-2008, the Fed reduced the discount rate to 25 basis points above the target Fed funds rate to improve liquidity in the banking system. This is expected to be a temporary measure.*

## The Fed's Reactive Role

Why does the Fed control the price of reserves rather than the quantity? The answer is that targeting the quantity risks endangering the liquidity of the banking system. For example, an increase in cash holdings by the public drains vault cash from the banking system. Unless the Fed responded by injecting reserves, one or more banks might be unable to meet either the reserve requirements or the withdrawal demands of its depositors.

Targeting the price of reserves is also more effective in controlling the volatility in the Fed funds rate, and thus the interest rate banks must charge on their loans. Firms cannot plan efficiently when the price of credit is subject to large and unpredictable variations.

As a result of the Fed's focus on price, the supply of bank money will vary with demand. It expands or contracts according to whatever factors influence private sector borrowing. Thus the Fed plays an essentially reactive role, adding or draining reserves as needed for bank liquidity and to hold the Fed funds rate on target.

### **Limiting Bank Lending**

Since the reserve ratio requirement doesn't really impede bank lending, what prevents a bank from responding to any and all loan demands? The answer is that every bank must also comply with an equity capital requirement. This is a complex formula that rates a bank's assets by risk, and requires that its capital exceed a certain fraction of its risk-weighted assets.

A bank can get into trouble by creating too many assets through lending. A bank with insufficient capital relative to its assets will be placed under supervision by its regulator who may then demand to approve any new lending.

### **Limiting Money Supply Growth**

Another important question is what limits the supply of bank money from growing excessively? Banks are in the business of selling credit. If a creditworthy borrower is willing to pay the bank's rate, the bank will normally make the loan even if it must borrow the required reserves after the fact. The only defense against the creation of an excessive supply of bank money is for the Fed to increase the price of reserves to the point that it slows net demand.

The Fed's basic monetary policy challenge is to keep the supply of bank money in reasonable balance with the needs of producers and the availability of goods and services. That calls for a great deal of knowledge about the economy as well as skill in interpreting the data. Mismanagement of the price of reserves can readily drive the economy off track towards inflation or recession. This is a difficult task, and the Fed has made its share of mistakes over the years that are usually obvious only in retrospect.