



THE PURPOSE OF MONETARY POLICY

The Federal Reserve System is the central bank of the United States. It was founded by Congress in 1913 to provide the nation with a safer, more flexible, and more stable monetary and financial system. Over the years, its role in banking and the economy has expanded. Today, the Federal Reserve's duties fall into four general areas:

- *conducting the nation's monetary policy by influencing the monetary and credit conditions in the economy in pursuit of maximum employment, stable prices, and moderate long-term interest rates*
- *supervising and regulating banking institutions to ensure the safety and soundness of the nation's banking and financial system and to protect the credit rights of consumers*
- *maintaining the stability of the financial system and containing systemic risk that may arise in financial markets*
- *providing financial services to depository institutions, the U.S. government, and foreign official institutions, including playing a major role in operating the nation's payments system¹*

— *Mission of the Federal Reserve System*

THE FEDERAL RESERVE

The Federal Reserve, as Chair Janet Yellen and her predecessors have long reminded us, operates under a mandate from Congress “to conduct monetary policy by influencing the monetary and credit conditions in the economy in pursuit of maximum employment, stable prices, and moderate long-term interest rates.” In the years since the financial crisis of 2008, the Fed has sought to fulfill its mandate through a policy of very low short-term interest rates, including a multi-year period in which they targeted a Federal Funds rate near zero. Broadly speaking, this accommodative, or easy-money, policy is meant to stimulate the economy by providing businesses and consumers somewhat easier access to credit, and to make business investment more attractive by lowering financing costs. Fed officials have also stressed their goal of preventing deflation from taking hold, arguing that

¹ Federal Reserve website at <http://www.federalreserve.gov/aboutthefed/mission.htm>

in deflation, businesses and consumers defer purchases and investments, hoping for lower prices in the future. This has the effect of reducing aggregate demand, which tends to slow economic activity.

In recent years the Fed has used unconventional tools, including direct asset purchases (quantitative easing) and a dramatic expansion of its balance sheet, to pursue its policies. These unconventional tools have elicited unusually vocal criticism. Much of this criticism is the reflex of those that assume that any large-scale action by a governmental entity must be misguided, and in particular any economic policy that operates against the way an unregulated market would function must have unintended consequences, and primarily negative ones. Philosophically, some of these critics object to the notion that any group of appointed officials, no matter how expert, should guide our money supply, which they feel should be the province of Congress, or interest rates, which they feel should emerge organically from market processes. For some, the logical conclusion of this line of thinking is a return to a gold standard. A gold standard, they argue, would return control of the coinage of money to Congress, and the setting of interest rates to the market. But reverting to a gold standard would amount to a shift to a destabilizing monetary regime. The trouble is that the money supply under a gold standard tends to shift in ways that can amplify both booms and busts.

PRICE STABILITY?

One of the chief myths surrounding the gold standard is that it preserves price stability. The idea is that tying the dollar to gold restricts the growth in the supply of money, and hence prevents the type of inflation that has characterized much of the period since World War II. Critics of this view point to historical data showing that the variability of prices in the periods in US history when the gold standard has been in force was substantially greater than it has been in recent years.

Thoughtful gold proponents don't really argue that a gold standard forestalls short-term swings in prices, though. James Grant, for example, writes in his book, *The Forgotten Depression – 1921: The Crash that Cured Itself*², about a punishing, but brief, economic downturn following the reintroduction of the gold standard (among other policy changes) after World War I. He cites evidence of large changes in prices, mostly downward, in 1920-21, which stimulated, he argues, increases in hiring, investment, and demand in 1921-22. The nub of Grant's argument on prices is that the gold standard regime not only did not stabilize prices, it *permitted* prices to adjust dramatically, leading to the economic adjustments that produced the recovery. In my view Grant gives prices rather too much credit in the story, but the point is that he makes no claim of short-term price stability for

² James Grant, *The Forgotten Depression – 1921: The Crash that Cured Itself*, Simon & Schuster, 2014

the gold standard. The price stability argument for gold is a long-term one: that a money supply tied to gold cannot grow much faster than the general economy.

Under a true gold standard, the basis of the money supply consists of gold bullion of a specific degree of fineness (that is, purity), minted into gold coins at a legally mandated ratio to the unit of currency. For much of the nineteenth century, for example, holders of gold bullion could present it to the US mint and have it minted into coins at the ratio of approximately 23.22 grains to the dollar, or \$20.67 per troy ounce³. Unlike many monetary authorities throughout history, the mint did not charge any fee, or *seigniorage*, to mint bullion into coins. This accommodation held the dollar price of gold bullion rigidly at that \$20.67 level — if gold fell, then holders of bullion would rush to have coins minted, and if it rose, holders of coins would melt them into bullion. Even an event like the California Gold Rush didn't affect the dollar price of gold, which was held steady by Congressional fiat. What it affected was the dollar price of everything else. As gold increased in supply, its value in terms of other goods fell. In other words, the gold strike was somewhat inflationary.

MONEY SUPPLY UNDER A GOLD STANDARD

Events like gold strikes were not the only, or even the main, reason for changes in the money supply under the gold standard. Then, as now, the main driver of money supply changes was the activity of commercial banks. To see why, imagine that we live in a 19th-Century gold standard world, and consider an example:

Let's imagine that I am a dealer in wholesale goods, and I have a customer, Harper and Co., a grocery business. Harper wants to buy \$100 worth of wholesale goods from me, but they have to finance the resulting inventory until customers come in to buy it. Recognizing this, I may be willing to sell Harper those goods on credit for, say, 90 days, particularly if our relationship is strong and their payment record good. In the 19th Century the most common way to memorialize such a debt was through a *bill of exchange*. At the time of the sale I create a *draft*, demanding that Harper pay to me, or to my order, the \$100 they owe me on or before a specific date (90 days from now). The draft is worthless without Harper's countersignature, but once they *accept* it, it becomes a *bill of exchange*, legally binding Harper to make the required payment. Harper accepts my draft because they want my wholesale goods and the credit terms I'm offering.

³ Unlike most ordinary items, we weigh precious metals in troy weight. A troy ounce is approximately 31.103 grams (480 grains), whereas an avoirdupois (normal) ounce is about 28.35 grams. Incidentally, since twelve troy ounces make a troy pound, but 16 avoirdupois ounces make an avoirdupois pound, a pound (avoirdupois) of feathers weighs more than a pound (troy) of gold.

I allow Harper to give me what is essentially an IOU because I want to make the sale, and I know that I'll have a better chance, or a bigger sale, if I help Harper finance it. But now I've created an account receivable, which I have to finance somehow until Harper pays me. To do that, I take advantage of the fact that the bill is *negotiable*. That is, I can endorse it over to another party in exchange for consideration (payment), and that party can then demand payment from Harper on the due date.⁴ That third party is most likely my banker, who buys the bill from me for cash. But the banker will insist on a discount, which I tolerate because I need cash now.⁵ So the bank pays me, perhaps, \$98 for that \$100 bill of exchange against Harper. The \$2 discount will become the bank's profit on the trade, compensating the bank for its use of capital, the time value of money, and the credit risk — the possibility that collecting might be difficult or costly.

When my bank discounts my bill of exchange, it's making a short-term loan against the bill as collateral. Today, my bank would make the loan by simply crediting my deposit account. For much of the 19th Century, however, many banks did not accept deposits at all, but funded themselves with capital provided by investors. When I take my bill from Harper to my 19th-Century bank, I need the bank to give me money I can take with me. But my banker isn't likely to pay me my \$98 in gold or silver coins. For much of the early history of American banking, the supply of specie — these coins — was never really adequate for a growing economy. The coins were heavy, too, so they were difficult and risky to transport. They were subject to wear or alteration, reducing their weight. Especially in the early days, a bewildering variety of foreign coins circulated. And even a small quantity of gold would be too valuable to be practical for small, everyday transactions. But what's the alternative? Before the Civil War the US Government did not create paper currency. Instead, private bank notes circulated as one of the principal forms of currency.

Private bank notes. Rather than give me specie, then, my bank pays me by issuing a note. This note is a liability of the bank, and the bill becomes its asset. Even in the pre-Civil War era, banks couldn't just issue notes without limit, however. For example, in the Free Banking Era (1838-60), eighteen states passed laws allowing essentially any group of investors to start a bank by committing sufficient capital. The state laws varied, but in general, they required a bank wishing to issue notes to deposit with the state a quantity of government bonds (US government bonds or, more commonly, state-issued bonds) at least equal to the face value of the notes they issued.⁶ Even though the bank posted those bonds as a security deposit with the state, the bank still received the interest on them. So if a bank

⁴ It's worth noting that laws governing bills of exchange generally provide that if I endorse Harper's bill over to you, and Harper is unwilling or unable to honor it, then you can look to me for payment. That prevents the "hot potato" problem of passing around worthless bills until some unfortunate is stuck with them.

⁵ 19th-Century economists cited "discounting bills" as one of the basic functions of banks in that era.

⁶ The rules generally required banks to value the bonds on deposit at the lesser of face or market value for the purpose of calculating the cap on the notes they could issue.

discounted bills and paid for them with notes, it had two sources of profit: the discount on the bills, and the interest on the bonds it posted as security deposit against the notes.

Private bank notes were bearer notes, redeemable on demand for full value in specie at the bank of issue. This meant that anyone holding them could cash them in for coins at any time. Unlike bills of exchange, they also could change hands without any type of endorsement, and without recourse. Whoever held the notes bore the risk of loss, without any claim against any previous holder. But because of the redemption option, notes on a sound bank generally circulated at or close to their full value in the neighborhood of the issuing bank. Once a bank's notes became generally acceptable for payments in and near the bank's community, those notes became, for most purposes, money. So by issuing the notes to make a loan, the bank added to the supply of money in the community.

The circulation of private bank notes was trickier in locations distant from the issuers. The normal jumble of travel and commerce created a corresponding jumble of bank notes, which naturally would shift through time. This meant that banks, ordinary merchants, and even individuals had to have some way of assessing the creditworthiness of banks even at some distance. The answer was the establishment of bank reporters, publications (typically weekly) that provided information on the soundness of banks in a region. A merchant might accept a note on a sound, but distant, bank at a discount, but the same merchant might refuse a note from a bank the reporters suggested could have problems. A bank might try to profit by buying a distant bank's notes at a discount, especially if its business sent agents to the issuing bank's neighborhood. Those agents could then, presumably, visit the issuing bank in person and redeem its notes for specie at full value.

We can now draw a simple picture of my 19th-Century bank. Its assets include items like my bill of exchange, the bonds it has posted with the state as a security deposit against its authority to issue notes, and the gold and silver coins it holds in its vault as reserves. Its liabilities include the notes it has issued, the capital of the original investors, and possibly some retained earnings. (In today's banks, our deposits are also their liabilities).

In prosperous times, Harper, the bank, and I may all try to increase our business, and we will have access to the credit we need to do so, as the banks will be happy to provide it. Liquidity is plentiful. This expansion of bank credit becomes, in essence (and today, is literally) an increase in the money supply, which can itself operate as a monetary stimulus. So in good times, prosperity breeds credit, which stimulates further activity, which stimulates further credit, which heats up activity further.

The trouble starts when someone becomes overextended, and can no longer meet their obligations. Suppose my banker presents my bill to Harper, but they can't pay. My bank may then come to me for payment, and if I can make the bill good, I might get away with just a small loss, especially if I can recover something from Harper. But I could lose the full

amount of the bill, and after enough losses of this type, I'm probably going to be in trouble myself, and so may my bank. Once the bank starts to incur losses, the bank reporters will take note, and the bank's notes will trade at a discount. Holders will then rush to redeem them for specie. Even if my bank doesn't fail, those redemptions both reduce the quantity of bank notes circulating in the general economy and deplete the bank's reserves, impairing its ability to lend more. If such failures cascade, the result could be a substantial economic downturn. If the downturn were broad enough, other banks might fail, or at least experience significant redemptions of their notes. The overall result would be a sharp contraction of the money supply, which could act as an additional, monetary drag on an already sluggish economy.

The credit cycle — the tendency for credit to expand in good times until it becomes overextended, resulting in losses and then a contraction of credit and economic activity — tends to track, and to amplify, the business cycle. It tends to make booms more dramatic, and busts more destructive. The credit cycle still persists, even though banking and monetary systems operate quite differently now compared to the 19th Century. Credit still tends to expand during periods of strong economic growth, and contract during recessions. But today's central bankers pursue policies that seek to offset some of the worst of the credit cycle to which the proponents of a gold standard would have us return.

THE ROLE OF CENTRAL BANKERS

Liquidity and solvency. It's important to recognize that the bank's capital is not cash in a vault. It's an entry on the bank's balance sheet, which records who owns its stock — claims against the bank's profitability. The bank's notes also represent claims against it — specifically, the right to demand redemption in specie. If a holder redeems a note, the bank's balance sheet shrinks: The bank disburses specie from its reserves (reducing an asset), and redeems the note (reducing a liability). If enough holders redeem their notes all at once, then the bank may exhaust its reserves and find itself facing a *liquidity* problem. Notice, though, that while redeeming notes reduces a bank's reserves, it does not affect the bank's *capital*. So a bank suffering a liquidity crunch may still be perfectly *solvent*.

If a bank is illiquid, but still solvent, it can continue to operate if it finds a source of funding. One way 19th-Century banks sought to improve their access to funding was to organize clearinghouses. Gary Gorton reports⁷ that the first clearinghouse was organized in New York City in 1853. Clearinghouses simplified the redemption (clearing) of various types of bank instruments, but they also, according to Gorton, functioned at times as a

⁷ Gary Gorton, "Clearinghouses and the Origin of Central Banking in the United States," *Journal of Economic History*, **45**, pp. 277-283 (June 1985)

means by which the clearinghouse's owner-banks could pool liquidity if necessary. Gorton argues that these clearinghouses operated as sort of proto-central banks.

In his classic study of the emergence of the central banking role of the Bank of England, Walter Bagehot⁸ argued that in a liquidity crunch, a central bank should willingly make advances to other banks a) at a high rate of interest, b) against the security of sound collateral, and c) "as largely as the public ask." Bagehot argued that by liberally offering advances, although at penalty rates, against good collateral, a central bank could stem a panic and help restore confidence in credit. That, in turn, could potentially forestall a general cascading of bankruptcies and a prolonged economic downturn — possibly a depression.

One of the functions the modern Federal Reserve performs is similar to that of Bagehot's 19th Century Bank of England. The Fed lends to member banks against good collateral. In today's world that collateral usually takes the form, not of bills of exchange that the banks have discounted for creditworthy customers, but US Treasury securities. And unlike Bagehot's Bank of England, the Fed does not lend specie, but rather credits reserves to the member bank's account at its regional Federal Reserve Bank.

Bank reserves perform the function that vault holdings of specie performed in the gold-based banking system. They provide the backing against which customers make withdrawals. Bank reserves also facilitate interbank transfers: If Wells Fargo's business requires a net payment to Bank of America at day's end, the transfer consists of a reduction in Wells Fargo's reserves, and an increase in B of A's. The fact that both banks' reserves reside on the books of the Federal Reserve System also gives the Fed an important policy tool. It can set reserve requirements, rules mandating that member banks maintain reserves at least equal to a certain percentage of the deposits they hold.

Setting reserve requirements is one part of what the Fed calls "macroprudential" regulation — rules designed to reduce the chance of bank failures that could lead to panics. This is also one respect in which the Fed's responsibilities go beyond Bagehot's vision. But bank supervision and regulation are clearly within the Fed's statutory mandate — Congress has chosen to delegate those functions to the Fed.

MONETARY POLICY

By lending (crediting reserves) against high-quality collateral, the Fed helps to protect the liquidity of the banking system. By enforcing macroprudential regulation, the Fed also

⁸ Walter Bagehot, *Lombard Street: A Description of the Money Market* (1873). This is now easy enough to find as an e-book.

helps to protect its solvency. The operations through which the Fed either supplies liquidity to the banking system, or absorbs it, also give the Fed the main tool by which it exercises the function that most often has it in the news: setting monetary policy. Monetary policy is the business of influencing or guiding interest rates and the supply of money in the economy. The Fed's Congressional mandate makes monetary policy one of its responsibilities. That mandate directs it to pursue a policy aimed at producing maximum employment, stable prices, and moderate interest rates. (Monetary policy is one half of the government's economic policy structure. The other half is fiscal policy, which concerns taxation and government spending. Fiscal policy is the province of Congress.)

The Fed regulates the supply of liquidity in the market primarily through open market operations in which it buys or sells securities, mostly short-term US Treasury securities. That's why the group that sets interest rate policy is called the Fed Open Market Committee, or FOMC. If the Fed thinks that short-term interest rates are too high, then it can provide liquidity either by entering into repurchase agreements with banks (lending them cash against Treasuries as collateral), or by buying securities outright. Either way, the supply of money in the banking system increases, and interest rates tend to fall. If the Fed thinks rates should rise, it can reverse the process. In recent years the Fed has used additional tools, such as paying interest on bank reserves in excess of the required quantity, giving it a funding base that both improves the liquidity of the banking system and allows it to influence longer-term interest rates by purchasing longer-term securities.

The requirement that banks maintain reserve balances at the Federal Reserve Bank, plus the traditional central banking function of lending to banks against good collateral, allow the Fed to manage the money supply by adjusting the terms under which it provides liquidity to banks. In general, the Fed's strategy is to pursue a monetary policy that is *counter-cyclical* — that is, the Fed will attempt to lean against the credit cycle by withdrawing liquidity in boom times (Fed Chair William McChesney Martin referred to this as “taking away the punchbowl” when the party heated up too much), and adding liquidity in leaner times. In general, the Fed's objective is to raise interest rates if economic activity becomes heated enough that inflation becomes a danger, and lower interest rates to stimulate economic activity in a slowdown, and possibly to try to prevent deflation.

Contrast the Fed's counter-cyclical policy to the evolution of the credit cycle under a gold standard. In the expansionary phase of the credit cycle, the supply of bank notes can increase rapidly, and their acceptability as payment in ordinary commerce is also high. These two factors amount to both a general easing of credit and a sharp increase in the supply of money in the economy. We would expect the easy credit conditions to lower interest rates. If, as is likely, the money supply expanded faster than the supply of goods and services in the economy, then we would also expect the general level of prices to increase. Under a gold standard, this price increase will take place whether we reckon

prices in terms of dollars or in terms of gold. The price increases further depress real interest rates, adding further monetary stimulus by making borrowing conditions easier.

On the downswing of the credit cycle, the reverse happens. As business activity falls, some borrowers, and some banks, suffer losses, generating unease among holders of bank notes. As holders redeem their notes, both the quantity of notes in circulation and the quantity of specie available as bank reserves contract. The supply of both money and credit contract sharply, and as a result prices fall and interest rates rise. So the effective “monetary policy” of the market under a strict gold standard is *pro-cyclical* — amplifying both booms and busts.

IS THE MARKET REALLY ALWAYS RIGHT?

Gold-standard purists sometimes argue for the superiority of the market over a panel of appointed policy-makers for the management of a matter so grave as the money supply. Yet if we look at how the gold standard really works, and at the economic history of most of the 19th Century and the first part of the 20th, it’s hard to imagine that these mandarins could perform much worse.

The Fed has by no means abolished the business cycle, financial crises still occur, and we still have periods — sometimes extended ones, as now — where economic performance is less robust than we might like. But for three generations we have also successfully avoided the type of economic misery that marked the Great Depression of the 1930s. That period, though, has largely faded from living memory, and we see daily the imperfections of the system under which we now operate. So perhaps the renewal of calls for a return to a gold standard are inevitable. But if the market tends to exaggerate fluctuations in economic activity, and the Federal Reserve has at least some ability to tamp them down, then I’ll put my money on — and I’ll trust my money with — the mandarins.

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Menlo Park, California
June 7, 2016

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