

The U.S. banking system is a fractional reserve system, an understanding of which is vital for identification of the recent banking crisis origins. The following is a brief explanation of our banking system.

The Evolution of Fractional Reserve Banking

The earliest forms of banking consisted primarily of Money Warehouses where a depositor received a receipt stating the amount of money, typically gold, that had been deposited. These receipts could be used as a form of currency. The bank could not touch the deposits. The money was simply stored like any other goods such as wheat or lumber. Banks, like warehouses, would charge a fee for holding the depositor's funds. However some banks attempted to use the funds deposited with them for other purposes and proposed that the funds in fact belonged to the banks and were an implied loan rather than a deposit.

The first case in England to challenge the depository assumption was in 1811 in *Can v. Can* in which Master of the Rolls Sir William Grant ruled that the term "debts" mentioned in a will included a cash balance in a bank deposit account. Sir Grant held that since the money was not earmarked in a sealed bag, but rather paid generally into the bank, it constituted a loan rather than a bailment. This position was reiterated by Sir Grant in *Devaynes v. Noble* five years later in which counsel argued that "a banker is rather a bailee of his customer's funds than his debtor, because the money in his hands is rather a deposit than a debt and may therefore be instantly demanded." Grant again held that since the funds were placed into the banker's general assets, he is merely a debtor for the amount deposited. Then in 1848 in *Foley vs. Hill and Others*, Lord Cottenham in the House of Lords held that "The money placed in the

custody of a banker is, to all intents and purposes, the money of the banker, to do with as he pleases; he is guilty of no breach of trust in employing it; he is not answerable to the principal if he puts it into jeopardy, if he engages in a hazardous speculation; he is not bound to keep it or deal with it as the property of his principal; but he is, of course answerable for the amount, because he has contracted" (Michie on Banks and Banking, rev. ed., (Charlottesville, VA.: Michie Co., 1973), Vol. 5A. These decisions provided the legal basis for our current form of banking, namely fractional reserve banking.

In Fractional Reserve Banking, the bank owns the depositor's funds. The deposit is a loan to the bank, which can then be loaned to another party, or invested, as long as the bank conforms to regulations. Rather than charging a warehousing fee, the bank earns its revenues through the difference between the fee charged to the borrower and the interest paid to the depositor or through investment returns. The term fractional refers to the practice of keeping some "fraction" of the deposits in a "reserve" in order to meet any foreseeable demand for deposits.

In this form of banking, a bank is essentially inherently bankrupt; the bank's short-term liabilities are in excess of its short-term assets. All depositors can demand immediate payment of their deposits, however no bank under the fractional reserve system can honor this demand, thus the term "bank run" whereby a bank is immediately bankrupt when a large enough portion of its depositors withdraw their funds. When a business chronically cannot honor its debts in a timely manner, it is considered insolvent in any other industry.

Fractional Reserve Banking

By: Lenore E. Hawkins

February 1st, 2010

The Central Bank, Reserve Requirements and the Recent Banking Crisis

The Central bank defines the reserve requirement, which is the minimum fraction of the deposits that must be held in reserves. If the reserve requirement is 20% and the bank has \$100 in deposits, it must place \$20 in reserves.

The simplest explanation for the recent banking crisis is that the banks placed deposits in investments that declined significantly in value. In the example above, the \$80 the bank was free to use, was invested in activities that left it worth say \$25. Talk about putting a business in jeopardy! The bank has "loans" from depositors for \$100 that can be called at a moment's notice, and only \$45 to meet those demands, (\$20 reserves + \$25 current value of investments). The FDIC attempts to limit this risk by guaranteeing that up to \$100,000 in deposits will be guaranteed by the FDIC. In a later post I will discuss why the banks chose some of these investments and greatly underestimated their associated risks.

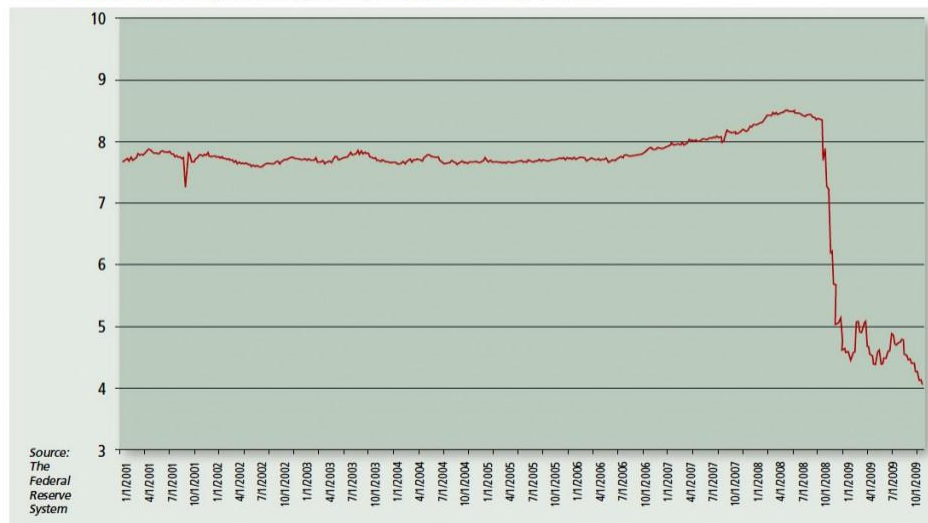
Inflation

So how does this relate to inflation? Using our first example where depositors put \$100 into the bank, the bank can then lend \$80 to a business. There is now \$180 in our simple economy. The original depositors can write checks against the \$100 they deposited and the borrower can spend the \$80 the bank loaned him. That means the supply of money increased by 80%, but we aren't done yet. The \$80 the first bank loaned out is then used to purchase a piece of

equipment. The vendor deposits this \$80 into his bank. This bank places \$16 (20% of \$80) in reserves and loans out the remaining \$64. The supply of money has now increased to \$244 (\$100 + \$80 + \$64) which is a 144% increase. This process can continue again and again and is referred to as the "multiplier effect." Under a 20% reserve requirement, the multiplier effect would cause the initial \$100 money supply to increase to \$500 ($\$100/0.20$), a 5x effect.

The Monetary Control Act (MCA) of 1980 authorizes the Fed to impose a reserve requirement of 8% to 14%. As of December 2006, the reserve requirement in the U.S. is 10% on transaction deposits over \$55.2 million, 3% for \$10.7 to 55.2 million and 0% is required for the first \$10.7 million in deposits, effective 12/31/09. The resulting multiplier has, until recently, been estimated at 7.7x-8.5x for M2. The Fed stopped publishing M3 in March of 2006, thus we are only able to estimate the multiplier effect on M3 at around 10x.

Chart: U.S. Money Multiplier (M2/Monetary Base)



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What happens when the supply of something goes up? Prices go down. For money, this means purchasing power. If the quantity of goods available for purchase remains constant, and the supply of money to purchase those goods increases, the price of the goods will rise. The supply of money available in the market then can be altered by increasing or decreasing the reserve requirements, by giving banks credit in their reserves, or by adjusting the interest rate paid to banks for the funds in their reserves. Thus fractional reserve banking inevitably leads to inflation.

When the money supply is increased in reality, its impact is not felt immediately. Thus the first to use these dollars created out of thin air get the benefit of pre-inflation prices. Over time the prices of goods adjust upward from the increased supply of money. Typically inflation most hurts those on fixed incomes, (prices go up while their income stays the same) and least affects the government whose income, namely tax receipts, is generated from personal and business income, which adjust quickly to inflationary pressures. Debt holders with fixed interest rates and incomes that adjust well to inflation fare quite well during inflationary periods as the ratio of their loan payment to their current income drops. For example, Bob borrows \$100 at a flat 6% interest rate and his annual income is \$80. His annual loan payment would be \$23.74. His annual loan payment is 30% of his income. If inflation suddenly jumps to 8% annually and his income adjusts in line with inflation, by the fourth year his income would have increased to \$109 and his loan payment would have dropped to 22% of his income. This is why we hear talk of the United States using inflation to cope with its ballooning debt, as is a tradition with all countries that use fiat currency, but that is a topic for another time.