

## **Where's the money?**

In 1971 the gold standard system was brought to a close. Under this system currencies were pegged to the price of gold and exchange rates were fixed. If a country wanted more money in the economy, they needed more gold or for the value of gold to increase. The idea was that money meant something, it represented something of real value since every dollar in circulation was backed with a dollars worth of gold. This system, however, was too rigid for a rapidly integrating world and since that time the nations of the world have used fiat money. Fiat money is money that does not have any intrinsic value but is based on trust. It has value because people trust that the central bank will honor the money it issues. The test of this is generally whether or not the government will accept the money for the payment of taxes.

That is not to say that governments have completely abandoned the maintenance of asset reserves. China, for example, holds \$680 billion in US treasury bills. Governments also hold on to sizable gold reserves. The governments of the world currently hold about \$845 billion in gold. Under the old system, this would equal the amount of money in the economy. Things are very different today.

## **What is money?**

When discussing money it is important to be precise. Economists have several definitions of what constitutes money and we will look at three of them: M0, M1 and M2. Money, in the strictest sense of the word, is called M0. M0 includes all the tangible currency (notes and coins) in circulation, in your pocket, and the reserves in commercial banks, the physical notes and coins in the bank. This is a conservative measure of the amount of money in the economy because of the banking system, as we will see. The amount of M0 that is in circulation is controlled by the central banks. When a central banker announces a change in the interest rate, what they are actually doing is changing the supply of M0. If the supply of M0 is reduced, then interest rates go up. If the supply of M0 is increased, then interest rates go down.

Many countries around the world have been increasing the amount of M0 in circulation in an effort to stimulate their economies. Late last year there was about \$4 trillion or \$4,000,000,000,000, which sounds like a lot. It isn't.

## **Making Money out of Money**

Believe it or not, we live in a very trusting world. Otherwise, the miracle that is fractional reserve banking would not be possible. Say you open a bank account. You go down to the bank with your life savings and you open an account, putting your money into the bank. You trust the bank not to misplace it, or destroy it, or give it away. In fact, you are probably putting it there, at least in part, to keep it safe. And the bank does keep it safe. At least some of it. The bank is not required to keep all of your money in a big vault somewhere. In fact, as soon as the bank

gets your money, they are eager to lend it out to others because that's how they make money.

Banks can lend many times the amounts they take in as deposits since not all depositors want their money back at the same time. Banks are required to hold a fraction of their deposits with the central bank, say one for every five dollars they take in. Say you put in \$100 in a bank account and this is the entire supply of M0. The bank can lend \$80 to someone who wants to buy a house. The house builder puts the \$80 back into the bank and the bank can then lend \$64 of that back out. If we iterate this process the bank can lend a total of \$360 even though they only have \$100 of original deposits. Banks are creative about how they get people to borrow and since interest rates have been so low people borrow a lot.

This means that there is more money in the economy than the amount of physical currency. This type of money is called M1 and includes M0 plus all the chequable accounts held in banks. From the example above, M0 is \$100 and M1 is \$364. In reality, the value of M1 in the economy reached about \$40 trillion or \$40,000,000,000,000. That seems like a lot. It isn't.

### **Making Even more Money out of Money**

Investment banks and hedge funds hire very clever people who create new ways to get around limits of how much they can borrow, reduce their risk and produce greater returns. The credit derivative is one of these tools. Credit default swaps and collateralized debt on obligations allow lenders to insure themselves against the risk of default, allowing them to lend even more.

Credit default swaps (CDS) have served just this purpose but have become the prime example of what went wrong. CDSs are like insurance. The idea is if you have bought a bond, there is some probability that the issuer of the bond will fail to re-pay it, that is they will default on the bond. The buyer of the credit default insurance pays premiums over a period of time in return for lower risk. So, if I have a bond and want to reduce the risk I am exposed to by the possibility of default, then I can pay you some amount and you promise to pay me the value of the bond should the issuer default. The system is meant to work like any other type of insurance, but it hasn't. The value of trade in CDSs grew until it dwarfed the real value of the underlying debt.

Unlike banks and insurance companies the credit swaps market is not regulated. The contracts can be traded between investors without limits or oversight that would ensure the buyer has the resources to cover the losses if the security defaults. This is like allowing insurance companies to sell you fire insurance on your house without having the funds to pay out your claim when your house burns down.

Nonetheless, such derivatives comprise part of the next type of money, M3 (M3 isn't tracked by the US government anymore. M2, which excludes less liquid assets is used as the main indicator). In 2000, the market for CDSs was worth about \$900 billion. By 2007 that had ballooned to \$45 trillion, twice the value of

the US stock market before peaking at a value of about \$60 trillion. Half of this was due to speculation. The value of all derivatives taken together reached more than \$850 trillion which is several times larger than all the economic activity on Earth!

### **Bubbles of Money!**

Cheap money (low interest rates) helped create a number of asset bubbles in the price of key assets like property. Bubbles form when assets become over-valued and they burst with severe consequences. The most recent bubbles were huge. Think of it this way: Global GDP is about \$55 trillion. That is all the stuff that gets made, all the services provided all over the world, when added up, are worth about \$55 trillion. The value of the assets was inflated to nearly \$300 trillion or \$300,000,000,000,000.

Inflated assets values mean people think they are better off than perhaps they really are. These bubbles, combined with low interest rates, meant people borrowed a lot. But now property has lost about 20% of its peak value and global stock markets have lost nearly three-quarters of their peak value.

Why is all of this so important? Who cares if credit derivatives lost value? Well, there is a very important equation in economics that is sometimes forgotten, perhaps due to its simplicity. This equation links money with GDP or the wealth of a country. The equation is

$$1) MV=PQ$$

Where M is the money in circulation, V is the velocity or speed at which it moves around the economy, in and out of banks, leading to larger levels of M1 and M3, P is the price level and Q is output. With credit derivatives and low interest rates V was really very large. So, we saw P increase (inflation) and Q increase (economic growth). Now V has come to a crashing halt, so P and/or Q need to fall and neither is an attractive possibility.

### **Come out, come out where ever you are!**

So, where did the money go? Where is it hiding? Well, it depends what you mean by money. If you mean M0, currency, notes, coins, then it hasn't gone anywhere. In fact, governments all over the world have done their best to ensure there is more M0 out there. They are pumping money into banks and increasing the money supply to lower interest rates. But now interest rates are nearly as low as they can go and the only other way to increase M0, something called quantitative easing, essentially printing money, can have some terrible consequences.

The other types of money are not as tangible as M0. To reduce M0, money has to be physically taken out of the economy. To reduce M1 or M3 all that needs to happen is for a bank's assets to fall in value and the bank to fail. Remember our little example above. The \$100 doesn't vanish. The other \$360 can vanish. As we

saw above a lot of the wealth in our economy has not been based entirely on tangible assets but on the valuation and trading of risk, the risk that banks or firms would fail and default on their bonds. This sort of value, and the wealth it produces, can disappear very quickly.