Liquidity and the crash

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[Today's guest blog is from Mr AF, of Washington, Columbia. in entry #242, I talked about how money turns into money from the perspective of the squishy concept of our human perception of value. Mr AF works for a federal agency that is deeply concerned with the not-at-all squishy problem of measuring the solvency of U.S. banks. Many of the massive simplifications I was comfortable making in my micro-focused context are of vital importance in his macro context. Notably, where I wrote of reserve requirements, I should have been talking about capital requirements; and where I wrote about velocity, Mr. AF writes of liquidity.

Also, Mr AF is careful to distinguish among the different levels of money: M0 = cash, M1 = M0+ checking-type accounts, M2 = M1 + savings-type accounts, M3 = M2 + still less liquid accounts.]

Bank reserve requirements are governed by the Fed's Reg D, specifically §204.9, which says that banks have to hold somewhere less than 10 percent of reserves on transaction deposits (basically, checking accounts) and there are no reserve requirements whatsoever on nontransaction accounts (e.g. savings accounts and CDs). You can see from FDIC data that nontransaction deposits make up about 90 percent of deposits, so for all practical purposes the impact of reserve requirements on slowing lending is nil.

What really constrains lending are capital requirements, the details of which vary by regulator. (Note: there are four main federal bank regulators, the Fed, the OCC, the FDIC, and the OTS, plus 50 state regulators, plus the SEC et al stick their nose in as well...) These are terribly complicated affairs, much more difficult to compute than your standard 1/(1-R) where R is the reserve requirement. Capital is meant to absorb losses when the bank's loans go bad. The United States is in the process of implementing Basel II regulations—these are international standards set by the Bank for International Settlements. Some banks get to use pretty standard ratios and some (the big guys) have to use complicated mathematical formulas. Either way, though, the money multiplier is more based on capital than reserve requirements. Note that the capital requirements for Treasury securities are 0 percent, and are just 2 percent for high-grade corporate loans and high-quality mortgages.

Why am I making a big deal out of the difference between capital and reserve requirements? Because it goes to the heart of modern understanding of money and liquidity. Why doesn't the Fed care about reserve requirements any more? Because as long as the bank is solvent (has positive capital), it can borrow the money it needs for unexpected deposit outflows from the fed funds market, the discount window, the Federal Home Loan Banks, issuing commercial paper, selling loans or securities, etc. That is, in a perfectly liquid market, all that matters is solvency.

This is important because the primary thing that is special about money is that it is perfectly liquid. Everyone must accept cash as payment ("legal tender" and whatnot). However, if you own a bunch of assets (remember, loans are assets of banks and

deposits are liabilities) and can sell the assets for their true/fair/market value whenever you want then you basically have cash and the money supply is the entire value of the country's assets. This includes loans, bonds, stocks, houses, microwaves, leaves of grass, etc., anything that has value. This is somewhere in the neighborhood of $90 trillion according to the Flow of Funds data. Compare this to M1 of about $1.4 trillion and M2 of about 7.5 trillion, according to the Fed's H.6 release. The Fed doesn't publish M3 any more but it is probably less than twice M2. Some of the assets are pure assets (like a house without a mortgage) and some are leveraged (i.e., the owner of the asset also has liabilities). Don't forget that money itself is a liability on the Fed's balance sheet.

Nobody wants to actually hold any more cash (either physically or metaphorically) than they have to—cash is a depreciating asset, it has no rate of return and loses value with inflation. Ideally we would have a society without cash and just trade assets back and forth—Fischer Black envisioned "a world without money." However, there are sometimes transaction costs associated with trading assets (which is why we need a medium of exchange in the first place) and so cash still has a special place in the system. Think of liquidity as how easy it is to turn an asset into cash. You can turn your house into cash but it will take a 6 percent commission and several months. You can turn a Treasury into cash a lot faster in terms of both commission and time. So Treasuries are basically the same thing as cash, while houses are like cash but say at a 20 percent discount discounted for both monetary and time costs of turning it into cash). William Barnett has done a lot of good work trying to figure out what is the liquidity-weighted amount of money in the system.

So here's the thing: in a very liquid world, the money that the Fed metaphorically prints is pretty much irrelevant—people are basically trading assets and just swap into money briefly to complete the transaction. The Fed can print a lot more money or a lot less and it doesn't really matter to the participants; their money is determined by the size of their balance sheet, which is determined by capital requirements. Google "endogenous money supply" for a lot more on this subject.

Velocity, as traditionally defined in macroeconomics 101, is equal to PY/M, or basically nominal output divided by the nominal money supply. However, this equation is foundered by how to define the money supply (putting aside problems with measurement of P and Y for the moment). I've just argued that you can't use M1 or M2 for this, you need to measure total liquidity-adjusted assets in the system. But if liquidity is based on "animal spirits," search frictions, all that sort of thing that the Fed can't control then its actions are pretty much irrelevant. Which makes the concept of velocity pretty much irrelevant—much more important is liquidity. And what M1, M2, M3, etc. measure is the amount of assets in the system relative to the base money supply of Fed notes and reserves.

So what matters is liquidity in the system, which you may have noticed has basically vanished over the last year. A lot of mortgage-backed securities are going to eventually pay off at much better rates than they are currently priced at but there is no liquidity out there whatsoever. Think of it as an increase in money demand, to come back to the basic IS/LM model that modern economists scoff at. There is a decrease in demand for less liquid assets and an increase in demand for more liquid ones. That's why you have the TED spread at record levels—there is not really that much credit risk

differential, it's a liquidity differential.

Trying to figure out what are the determinants of liquidity is one of the main research topics of modern macroeconomics, in my opinion.