Dolefin

Investment Management and Technical Research
for Institutional and Professional Investors

Economics 101

High Powered Money

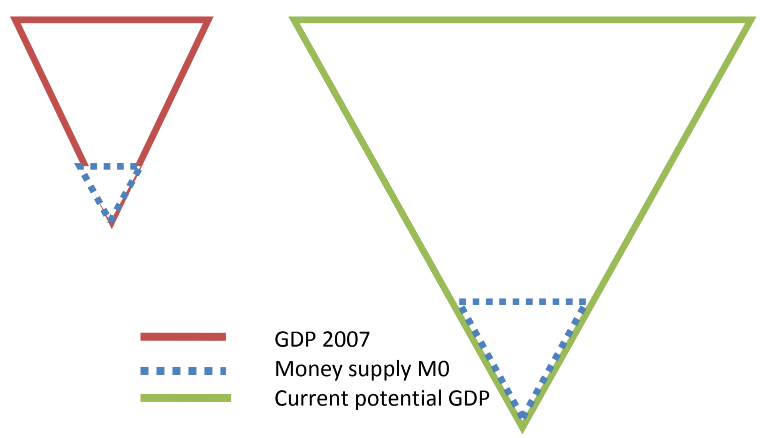
The base money allowing credit expansion

Foreword:

The term “fractional banking system” refers to how money, when deposited multiplies into credit because banks only have to retain a fraction of the initial amount deposited, and can lend out the remainder to other credit institutions – hence, the term “high powered money”.

In the US, the monetary base (MB) is the effective starting point for the fractional banking system, and its size is controlled by the central bank, the Federal Reserve (Fed). The MB consists of currency in circulation and reserve balances held with the Federal Reserve (i.e. deposits from US banks).

Since the financial crisis has started in 2007, the US monetary base skyrocket from USD 800billions up to current level of USD 3’200billions. Theoretically, this sum could support a Gross Domestic Production (GDP) of close to USD 60trillions versus the current size of USD 15.5trillions when compared to the ratio of MB/GDP pre-2007!



It goes without saying that the outcome of such a nominal GDP-increase would be in the form of fast rising prices rather than increased real output, and obviously, the Fed is fully aware of the inherent risk i.e. that this massive amount of excess liquidity could start gaining traction resulting in increasing money velocity.

Below we discuss the tools the Fed may employ to avoid excess high powered money leading to an increase in money velocity and rampant inflation. We also discuss the impact of each measure on different asset classes.

The facts:

Inflation is always and everywhere a monetary phenomenon - Milton Friedman.

When, as has occurred in the US, high powered money quadrupled over 5 years, while GDP rose by only 25% during the same period, one can only imagine the inflationary impact this could have once money velocity reverses its contracting pace and begins to accelerate.

Of course, we are fully aware of the consensus thinking saying that despite all the money printing since 2008, inflation has not yet kicked-in meaningfully, let alone hyperinflation. But just because prices have not gone up yet, doesn't mean it will never happen. Actually, with each passing week the chances of an inflation kick-off increase, and with current inflation expectation pricing models pointing more towards the deflation side, the moment of truth might be closer than most investors anticipate (contrarian view).

Actually, to all those investors who still believe deflation is a greater threat than inflation, we reiterate the Fed's main argument behind the various quantitative easing initiatives since 2008: preventing deflation. Despite all the initiatives and programs, if prices fall back below 1% as measured by the Fed's own inflation indicator (PCE[1]), then investors should be prepared for an increase in the Fed's monthly asset purchasing program, which currently sits at around USD 85 billion per month. In other words, the US central bank won't give up on its mission to lift prices to their defined level of "price stability" of 2.0 - 2.5%. Therefore, the focus of all financial market participants should be on "when" as opposed to "if" inflation kicks in …

Investors might consider preparing a framework to help detect the early acceleration of prices. Among indicators, balance sheet expansion by the banks relative to newly printed Fed money could be a helpful and leading guide. Also, a falling US dollar might pre-indicate changing price expectations. But ultimately, increasing inflation figures (CPI, PCE etc.) will deliver hard evidence of rising prices.

Now, let's list three quantitative tightening tools the US central bank could implement should its PCE accelerate beyond 2.5%, and let's also discuss the possible impacts on financial markets**.** *(Remarks by the Fed chairman, Bernanke, that his central bank could also strengthen its balance sheet by letting various bonds mature will not be discussed here as such a strategy could take years to normalize the Fed balance sheet given its sheer size, and this could hardly be labeled a decisive and determined approach).*

[1] PCE = Personal Consumption Expenditure

1. Reverse QE i.e. selling Treasury and mortgage backed securities (MBS):

The Fed can simply start selling paper off their portfolio to purchasing banks/agents in the open market. This would reduce the asset side of the balance sheet and simultaneously decrease the liability side (i.e. the reserve balances with the Federal Reserve). This would certainly be the most straightforward tool to drain excess liquidity and would have an immediate effect – we estimate that if USD 2,000 billion in Treasury securities and MBS were sold, this would bring *high powered money down* to USD 1,200 billion (however it would still be 50% higher than before the crisis and still much higher when compared with the 25% increase in GDP since the crisis).

The impact on financial markets:

Flooding the credit market with USD 2,000 billion while the US Government issues an additional USD 500 - 800 billion to finance budget deficits, would undoubtedly provoke a full-blown bond crash. Whether interest rates for 10y US Treasuries would reach 6, 8 or 10%, or even more cannot be calculated, but this becomes irrelevant anyway given the implication such rates would have on other assets and the economy.

Also, the MBS spread over Treasuries would widen dramatically leading to a disproportionate increase in home interest expenses. Resulting lower disposable household income would drag on consumer spending, which accounts for 70% of GDP.

The US Government would also suffer exploding interest rate expenses too, given their debt level of 107% to GDP. Either deficits or taxes would need to increase sharply, both bringing further headwind to economic prosperity.

Finally, the Fed's own balance sheet would suffer dramatic losses. If 10y Treasury note yields raised from 2.5% up to 6% on an initial USD 3,000 billion portfolio that would lead to losses of some several hundred billions of US Dollars! As a reminder, the Fed's own equity base is only a smallish USD 50 billion …

It's anyone's guess how such realized losses would be treated by the US central bank. In Zimbabwe, such losses were transformed into "non-interest earning assets". The accounting principal became a farce; more money was printed against those "assets" until hyperinflation kicked in.

With our best will, we simply cannot imagine the US Fed would go down that route!

2. Dramatically increase the reserve requirements for banks:

In order to prevent high powered money multiplying, the US central bank could theoretically freeze USD 2,000 billion of commercial banks' money on its balance sheet. However, increasing the reserve requirements of the banks to that extent would make it impossible for banks to lend it out. This is like cutting the transmission mechanism (the core of the fractional banking system) and private economic agents would no longer be able to access credit.

The impact on financial markets:

Such a drastic measure would oblige banks to continuously hold US Treasuries. The profit and losses on such obligations would depend on the rate that banks could refinance their static bond holdings at the Fed. While the outcome on medium- to long-term interest rates is uncertain, (as for the general stock market - possibly down), it would be a semi-nationalization of banks and their share prices would likely plummet.

This option is very, very unlikely.

3. The Fed issuing and selling its own debt:

Instead of selling Treasuries and MBS into the open market and risk exploding interest rates, the Fed could issue its own debt. By doing so, investors would buy those securities via banks and brokers, and such operations would simply alter the liability side of the Fed's balance sheet: "reserve balances with the Federal Reserve" would be reduced and replaced on the same side of the ledger by "Bills". So, no reduction in the size of balance sheet just financed differently.

The impact on financial markets:

With high powered money being reduced, the possible uncontrolled acceleration of credit could be muted. As a consequence inflation could be held in check, provided such transactions were implemented in a short period of time, which is more than challenging.

But the Fed issuing its own debt would definitely push short-term rates up strongly. While it is difficult to judge how the medium- to long-term end of the Treasury and MBS curve would react to fast-rising, short-term rates, we can say with certainty that the Fed would be powerless to stop such a development unless it implemented an interest rate ceiling on the capital market, similar to the one in the early 1940's.

An inverse interest rate curve would be one logical development, and with such complicated and manipulated tools in play, further unintended consequences would bring new problems, like the Fed buying long-term bonds and consequently increasing the money base again. With the average maturity on the US Government's outstanding debt being reduced over the last couple of years, an increase in short-term rates would have an adverse effect on financing costs. Again, with 107% debt-to-GDP a 100bp increase in rates eats about 1% of national income for higher interest servicing costs.

On the household side, higher rates and the likely higher spreads of MBS over Treasuries would also drag on disposable income, once again depressing consumption in the GDP-equation. The issuance of immense new short-term debt by a central bank almost always brings a lower currency with it, so the option outlined above would most likely provoke the US dollar to depreciate in a significant manner with gold being a possible beneficiary.

In our view, this option is likely to be envisioned by the Fed.

Looking forward:

While yields on 10y US Treasuries have risen from 1.60% up to currently 2.60 % in matter of weeks merely based on speculation that the Fed could reduce the monthly asset purchases of USD 85billions provided that certain economic conditions might improve, we wonder how high yields and spreads would raise should the central bank stop expanding its balance sheet…

Actually, a possible path-dependent Fed framework could like this:

Improving economic activity	=>	tapering
Normalized economic activity	=>	end of quantitative easing
Above-trend economic activity	=>	quantitative tightening

Given all the media talk of US industrial renaissance and energy revolution (oil-gas fracking) we cannot exclude acceleration in US economic activity. Should that occur, the Fed would need to curb some USD 2'000billions of excess reserves in a decisive manner and very fast so, as to avoid rampant credit growth, increase in money velocity and inflation.

Of the possible options the US central bank has at its disposal to hinder excess money transforming into high or hyperinflation we argued that all three do have potentially gigantic costs that affect households, businesses, the government and/or foreign holders of US assets.

That's when Ben Bernanke's famous sentence *(…the U.S. government has a technology, called a printing. ... that allows it to produce as many U.S. dollars as it wishes at essentially no cost)* will get the final judgment. Eventually, chickens come home to roost!

To summarize, it is very hard to imagine how these massive excess reserves could one day be drained without major dislocation in capital markets. Those investors convinced that the US economy will travel back to normalized levels should therefore ask themselves what is likelier – a Fed that let money and credit markets find their equilibrium while accepting all the inherent and associated risks or a central bank that will simply let inflation run its course.

Gold, Silver and related assets could offer a rewarding shelter – a strategy worthwhile considering given the very depressed prices in these classical inflation hedges.

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