The Silver Bullet

ALGEBRIS INVESTMENTS

The Central Bank Bubble: How Will It Burst?

Imagine a coin. Now there's a ninety percent chance of flipping the coin and getting heads, and a ten percent chance of getting tails: heads you win $5, tails you lose $30. Would you play the game?

The short answer is yes, because it yields a positive probability-adjusted payoff.

Now let's imagine a different coin, with 98% percent chance of getting heads and two percent for tails. If you are right, you get only $2.5. If you are wrong, you lose $47.5. Are you still playing? The game still has the same positive probability-adjusted payoff, but what has changed?

The coin is our economy. Heads is the probability of stable growth, tails is the probability of an *economic* or a *market shock*. The first coin represents an economy running at normal speed; the second represents an economy where central bank stimulus is smoothing both the business cycle and markets, allowing firms and consumers to refinance cheaply and lowering interest rates and volatility in bond markets. The central bank reduces the probability of shocks, skewing the odds in favor of growth and calm markets, but at the same time it encourages more people to take risk, thus lowering the payoff.

What happens if everyone loses? Nine long years after the crisis, this is the question every institutional investor is asking. Most investors are still playing the game, and in the same direction.

We estimate there are currently around $11tn in negative-yielding bonds and over $2tn in strategies that explicitly or implicitly depend on stable volatility and asset correlations. If low interest rates and QE have been the lever pushing up prices of dividend and coupon-paying assets, central banks are the fulcrum. This fulcrum is slowly shifting: the ECB has just announced a reduction in its bond purchase programme, the Bank of England is likely to hike this month – even in the face of economic weakness –the Fed will likely hike rates again in December, and the PBoC has recently warned of asset overvaluation.

There are four things that can prick the central bank bubble, in our view:

1. Inflation: after nine years of low-flation, the probability of a sudden rise in inflation is increasing, as job markets get tighter, globalisation leaves way to protectionist policies and liquidity reaches job-creating small and medium businesses as banks re-start lending.

2. Central bankers themselves: central banks appear to have shifted their tone to worry increasingly about financial stability. There are good reasons to do so. We are many years into a global synchronous expansion, and there will be little monetary policy ammunition to

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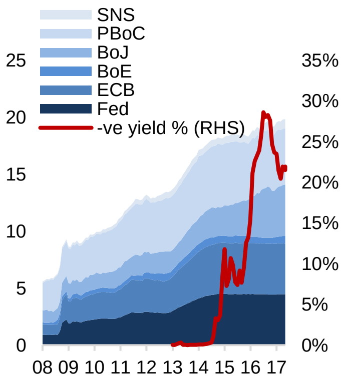
The central bank-induced bubble
Central bank balance sheet size, $ tn vs % negative yielding assets



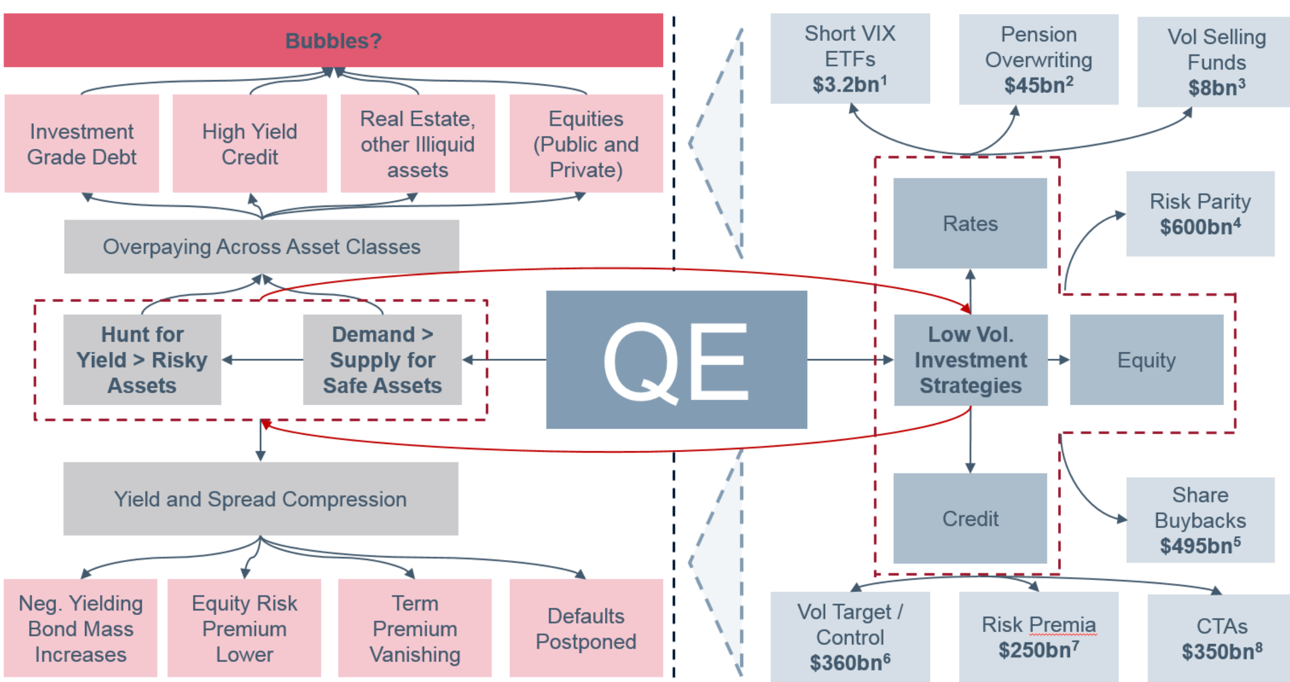
Source: Algebris (UK) Limited, Bloomberg, BAML

fight a new slowdown, with interest rates near record lows and $20tn in global central bank balance sheets. In some countries, like Japan and Switzerland, central banks have grown their balance sheets to sizes similar to their respective economies. The good news is some central banks are trying to curb stimulus before their mandate ends. The Federal Reserve is poised to raise rates again in December, the Bank of England will likely hike, the ECB has announced a reduction in purchases and the Bank of Canada has hiked too. The bad news is that markets have so far largely ignored this reduction in stimulus.

3. Politicians: central bank QE has not only lowered yields and boosted asset prices. It has also artificially suppressed volatility. Yet volatility may come back as the consequences of rising inequality in the distribution of wealth, opportunity and natural resources across the world. The last decade has been great for billionaires, not so good for Main Street. Inequality of wealth and opportunity in developed economies has fuelled anti-establishment protest votes like the ones for Brexit or President Trump. Other populist parties are on the rise in Continental Europe and Scandinavia. In turn, domestic populism and nationalism in developed countries can increase commercial conflict and protectionism - see for instance the potential withdrawal from NAFTA, or the EU-UK tariff threat - as well as exacerbate militarism and geopolitical conflict. Populism has historically fuelled government spending and fiscal stimulus, higher taxes and aggressive redistribution policies, which could all re-price overvalued assets and/or target assets used as a store of value.

4. The market: rising growth, low inflation and low interest rates have proven a boon to global markets. There are now $20tn in central bank assets globally, and around 10% of global sovereign debt is yielding negative. Investors have been buying equities for yield and bonds for capital gains, and have been selling volatility explicitly or positioned in strategies that are implicitly short volatility. These assume a stable volatility and correlation among the price of assets. For example, risk-parity strategies assume a negative correlation between risky assets, like stocks, and "risk-free assets", like U.S. treasuries. But what happens if both decline together, and short volatility investors become forced to unwind their portfolios?

The Magic Money Tree: How Investment Strategies Have Implicitly or Explicitly Benefited from QE



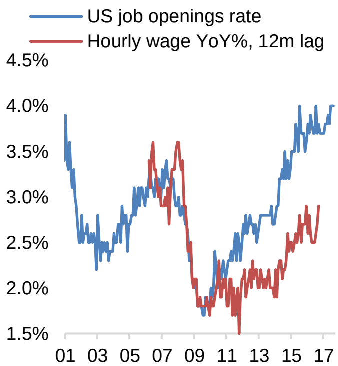
Source: Algebris (UK) Limited, *See Notes at the end for data sources on referenced strategies.

1. Inflation: A Timid Comeback

Inflation remains subdued for a number of structural factors, including demographics, technology and a polarised labor market in most developed economies (see The Silver Bullet | Rebalancing and Revolutions). However, there are reasons why inflation may be due for a timid comeback:

1. Wage growth may accelerate. Across developed market economies this year, stronger economic growth and lower unemployment have failed to accelerate wage growth. The Phillips curve, which measures the responsiveness of wages to unemployment, is flat today by historical standards, prompting many investors to question whether wage inflation has been permanently subdued by structural factors such as automation and globalisation. However, today's low headline unemployment figures may underestimate the true extent of excess labour slack in the economy. Another inflationary driver is the implementation of worker retraining programmes to shift labour supply towards sectors with higher-wage growth: according to the ILO, wages have lagged in the manufacturing and mining sectors over the last five years, and may continue to do so over the next five years. These jobs constitute 7% of US jobs and 16% of European ones, and hence could continue to weigh on the economy's overall wage growth unless labour supply is reduced in these sectors by retraining workers and redeploying them to better paying sectors of the economy. Finally, unions play a role in re-aligning salaries with corporate profits, even though they have been less aggressive recently than in the past.

Wage growth to catch up?



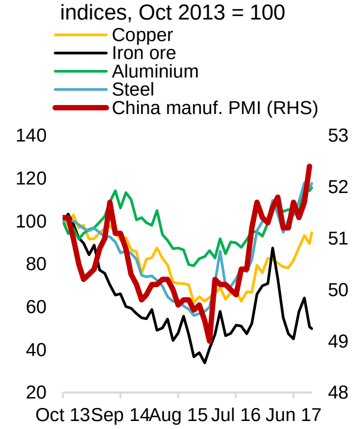
Source: Algebris (UK) Limited, Bloomberg

2. A more resilient than expected Chinese economy could continue to export inflation. China's rapid pace of credit expansion over the past decade and the size of its total debt burden at around 3x GDP have long been a major concern for global investors. China bears are worried that a sudden burst of the credit bubble coupled with a faster economic slowdown could re-ignite disinflationary pressure globally, given China's dominant role in the world supply chain.

However, stronger than expected Chinese growth and a surge in factory prices since early 2016 have actually been a key support in driving global inflation higher. The transmission is mainly through two channels. First, a rebound in manufacturing sentiment and booming property markets, thanks to government stimulus, have helped to push up commodity prices. Second, a sharp rise in producer prices has likely transmitted into tradable goods inflation in the global supply chain.

Commodity prices have rebounded

China manuf. PMI vs commodity price indices, Oct 2013 = 100

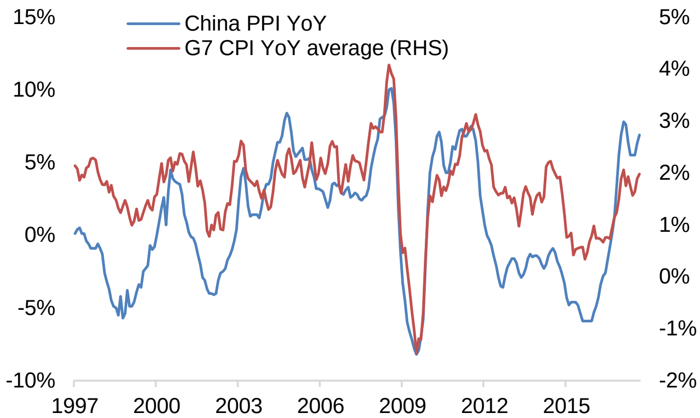


Source: Algebris (UK) Limited, Bloomberg

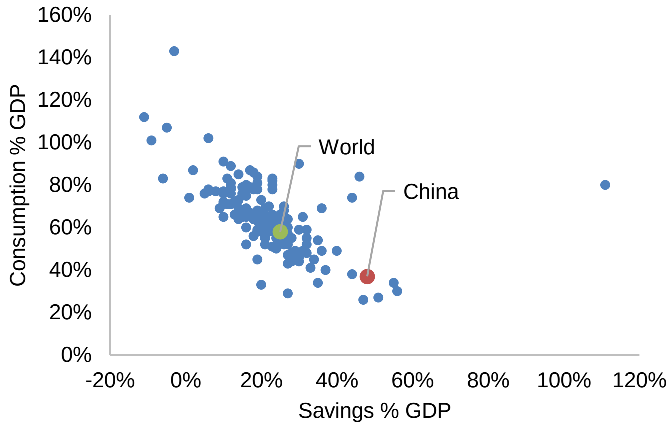
The key question therefore is whether these inflationary pressures from China will reverse. We think China is more likely to continue exporting inflation in the near term, for the following reasons. First, the recently concluded 19th National Party Congress (NPC) confirmed that the government is still aiming at high-growth targets, with a continued shift from investment to consumption. Despite some external scepticism, China's economic rebalancing has been progressing well, with consumption's contribution to GDP growth above 60% for seven consecutive quarters by Q3 2017. Given still-high domestic savings and government measures to strengthen social safety nets, the potential for continued consumption expansion remains robust. Second, the PPI reflation started in 2016 was largely driven by supply-side reforms including overcapacity cuts, industrial consolidation and tighter environmental regulations. China's overall industrial capacity utilisation rate for Q1-Q3 2017 is 76.6%, up 3.5pp vs last year (NBS). Authorities cut more capacity than planned in 2016, reducing steel and coal production capacity by 4.6% and 5% respectively vs one year ago. As President Xi highlighted in his keynote speech at the 19th NPC, supply-side reforms and overcapacity reduction will continue to be policy priorities, which should provide support to producer prices.

Third, authorities are likely to continue their cautious and gradual approach to delever the economy. This means more targeted credit controls and macro-prudential measures to curb financial risks in the shadow banking sector and property markets, rather than an aggressive policy tightening. While it is never an easy task to smoothly deflate a credit bubble, China has more policy options and buffers in case of a crunch, including still ample room for interest rate and reserve requirement rate (RRR) cuts, high foreign reserves and domestic savings.

A rebound in Chinese PPI is supporting global inflation
China PPI YoY vs G7 CPI YoY average



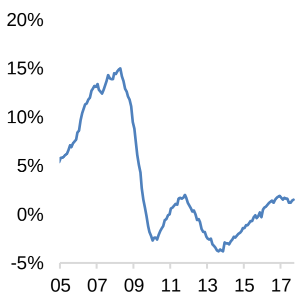
High savings, still low consumption
Consumption % GDP vs Savings % GDP



Source: Algebris (UK) Limited, Bloomberg, NBS, IMF, World Bank

2. Central Banks: Waking Up to Financial Stability Concerns

EZ banks are finally lending again
Euro area MFI loans to non-financial corporates, YoY%



Source: Algebris (UK) Limited, Bloomberg

According to the quantity theory of money, a faster growth rate in the money supply than real economic output should produce inflation, holding the money velocity constant. However, this has not been the case post-crisis despite continued central bank easing, with money velocity declining across developed economies. There could be several structural factors explaining such drop in money velocity, including impaired credit transmission channels, corporates focusing on minimising debt rather than maximising profit in a balance sheet recession and slow recovery in consumer sentiment. Hence, instead of lifting economic inflation as desired, continued monetary stimulus has fuelled a rapid appreciation across asset prices, raising financial stability concerns.

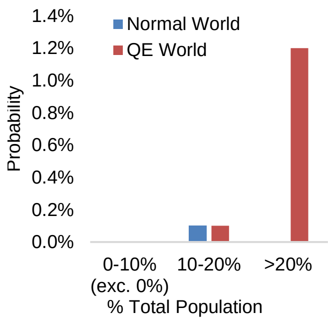
Now the policy direction is reversing, with the Fed, the ECB, the BoE and the BoC all tightening or withdrawing stimulus. The PBoC also warned about the risk of a Minsky Moment during China's 19th NPC. In the ideal scenario, a coordinated QE exit across central banks should lead to a gradual repricing and normalisation in risk premia. However, as we discussed in The Silver Bullet | Currency Wars: The Inflation Menace, it is difficult to manage a coordinated exit from years of unconventional easing. A sharp risk repricing could be another trigger to prick the bond bubble.

3. Politicians: Fiscal Stimulus and Protectionism

Politicians have two tools at their disposal to bolster inflation. They can generate "good inflation" through implementing an expansionary fiscal policy, thereby raising aggregate demand. Alternatively, the can take the easy-way-out and generate "bad inflation" by constraining aggregate supply through protectionist policies such as trade tariffs and restrictions, in effect reversing the benefits of globalisation on lowering inflation over the last two decade. Recent examples include the Trump administration's corporate tax plan, which would boost growth, but also a potential exit from NAFTA, which would generate inflation. Brexit is a similar case, with a potential negative impact on trade and a boost to bad inflation.

4. Markets: QE, Volatility and Polarisation of Risk

High tail-risk in the QE World
Probability of % total population losing all his/her wealth in ten years



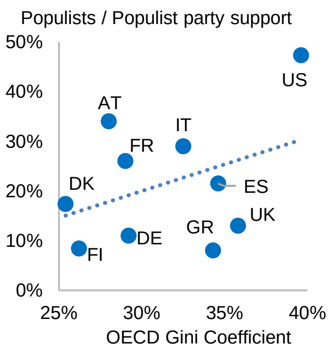
Source: Algebris (UK) Limited

Let's return to the coin-tossing game at the start. The two scenarios have the same probability-adjusted payoffs, but in the second one the odds and payoffs are more skewed towards a low-paying but more likely stable scenario vs a riskier shock.

To find out what would happen, we ran a simulation model:

1. We assume there are two economies which are exactly the same at the start. In each economy, there are 5,000 people with normally distributed wealth and the average wealth is $50 per person.
2. In the Normal World, every year there is a 90% probability of economic expansion where everyone's wealth grows by $5 (+10%) and a 10% probability of recession where everyone's wealth declines by -$30 (-60%).
3. In the QE World, every year there is a 98% probability of economic expansion where everyone's wealth grows by $2.5 (+5%) and a 2% probability of recession where everyone's wealth declines by -$47.5 (-95%). The probabilities in each year are independent, i.e. if a recession happens in year 2, it does not affect the respective probabilities of expansion/recession in other years.
4. We run 1,000 simulations for the two economies for a 10-year period, with path dependency for each person's wealth over the years, i.e. if a recession happens in year 2, people will have a smaller wealth base for the following years. If one person's wealth drops to close to zero, assuming he/she drops out from the game.

Higher inequality, stronger populism



Source: Algebris (UK) Limited. OECD, Wikipedia. Populists/populist parties: Front National (France); M5S (Italy); Freedom Party of Austria; Donald Trump; Podemos (Spain); Danish People's Party; UKIP (UK); Finns Party; AfD (Germany); Golden Dawn (Greece)

Given the probability-adjusted payoffs are the same, the growth in average wealth after ten years are similar in both scenarios. However, there is a much bigger tail risk in the QE World: there is a 1.2% probability of over 20% of the total population losing all the wealth in ten years, as shown on the left.

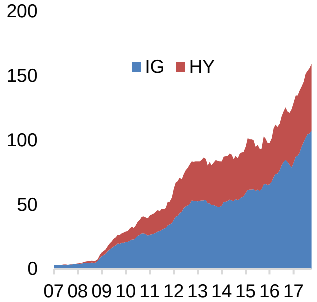
This model is just a simple illustration of what could be happening in an environment where financial cycles are getting longer and deeper, as shown by BIS research, and investor herding in carry trades continues to increase, as shown by the IMF. On the one hand, continued monetary easing has helped to absorb the shocks following the credit crunch, reducing the chances of a near-term recession. On the other hand, QE has taken out yield from bond markets and fuelled asset price appreciation, forcing investors to take increasing risk for lower expected returns.

This outcome leads us to ask ourselves two important questions:

1. What happens when investors, and voters, have nothing to lose?
2. Is prolonged loose policy spreading the seeds of more systemic crises in the future, in turn providing ground for populist politics?

Conclusions: How Will the Next Crisis Look Like?

Passive strategies are growing
Top credit ETFs' AUM, $bn



Source: Algebris (UK) Limited. Bloomberg. IG ETFs included are LQD, VCSH, VCIT, CSJ, CIU, SPSB, SPIB, VCLT and CRED; HY ETFs included are JNK, HYG, BKLN, SJNK, SHYG and SRLN.

We are all investors living in the QE World, not the Normal World. Betting on the 2% crash probability means losing most of the time, against a rising tide in markets – but the longer the tide rises, the more correlated our assets become and the deeper the risk of a crash.

What will the next crisis look like? The over $2tn in explicit and implicit short-volatility strategies could be the spark, similar to sub-prime for credit markets in 2008, which was $1.4tn. However, a future crisis would be very different from 2008. Growth in passive investing vehicles and in the mismatch between assets they buy and liabilities they issue, lack of risk-free assets and growing collateral chains, diminishing trading liquidity due to higher capital requirements for dealers point to more fragility in financial markets.

Central banks have raised red flags on asset overvaluation. However, we doubt they will prick the bubble themselves. Herding in financial markets or politics are most likely to spark the next shock, in our view. Rising inequality and persistent loose policy will leave us with little policy ammunition at the next slowdown. At that point it is easy to imagine angered voters asking politicians for answers, providing fertile ground for populist regimes: the outcome could be more public spending, higher taxes but also potential commercial or military conflicts.

Our macro investment strategy remains focused on buying assets that have been unloved by markets, or that would benefit from rising geopolitical risk. These include European periphery debt, bank bonds and debt issued by exporting high yield firms. We see better growth and stable inflation in the Eurozone, with the ECB continuing to support spreads and rating agencies finally recognising structural reform and growth improvements – including in Italy and Greece. We keep a neutral exposure to emerging markets, where we continue to see positive winds of political and reform change in Argentina and Ecuador. We remain underweight the US high yield market, where we see stretched valuations and rising corporate leverage, as well as underwhelming changes from tax reform, which could be temporary and could reduce interest rate deductibility. We also remain underweight the UK, particularly its consumer sector, as the Bank of England approaches a rate hike which could further weaken the sector. We position for a rise in fiscal spending, protectionism and increasing geopolitical risk by adjusting our duration exposure – tactically even to negative levels – and buying firms which will benefit from higher spending in defense and infrastructure.

As always, we are happy to discuss our views and performance.

Good luck investing in the QE World.

The Silver Bullet is Algebris Investments' macro letter.

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Notes for Chart 1:

[1] $3.2 billion in short-volatility strategies estimated from Bloomberg data.

[2] $45 billion in pension short volatility overwriting programs estimated as of 2017 in Deutsche Bank's 2017 Tail Risk Monitor.

[3] $8 billion exposure from option writing funds estimate from Macro Risk Advisers derivatives research by Pravit Chintawongvanich (April 7, 2017).

[4] $400-600 billion estimate as of 2016 from Financial Times article by Makan and Wiggles (October 14, 2016) "Little Known Trading Strategy Exacerbates Market Turmoil".

[5] $495 billion 2017 S&P 500 share buybacks estimate in Goldman Sachs "US Weekly Kickstart" (October 27, 2017) by David Kostin.

[6] $360 billion exposure in Volatility Control Funds/Variable Annuity Funds exposure estimate based on J.P. Morgan Cross Asset Derivatives Research Team research note (August 27, 2015) by Marko Kolanovic and Bram Kaplan.

[7] $250 billion exposure in Low Vol Risk Premia strategies estimated by Research Affiliates' Rob Arnott based on 2017 interview in Grant's Interest Rate Observer.

[8] $350 billion AUM in Trend Following strategies/CTA based on J.P. Morgan Cross Asset Derivatives Research Team research note (August 27, 2015) by Marko Kolanovic and Bram Kaplan.

Additional reading:

Labor Market Slack Persisted, but just how much?, Federal Reserve Bank of Atlanta

Singh, M., Collateral Reuse and Balance Sheet Space, IMF Working Paper WP/17/113, May 2017

Cohen-Setton, J., The decline in market liquidity, Bruegel, August 12, 2015

Which sector will create the most jobs?, International Labour Organization, January 2015

Global Financial Stability Report: Moving from Liquidity to Growth-Driven Markets, International Monetary Fund, April 2014

Debt and the financial cycle: domestic and global, Bank of International Settlements, June 29, 2014

Pain, N., Koske, I. and Sollied, M., Globalisation and OECD Consumer Price Inflation, OECD, January 2008

Sources:

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Page 6: image shows the decline in silver content for the Antonianus, a coin used in the Roman Empire, to a point where it virtually contained no precious metal, as result of the Aurealian reforms in 274. This represents one of the first forms of monetary debasement, which contributed to the fall of the Roman Empire.