



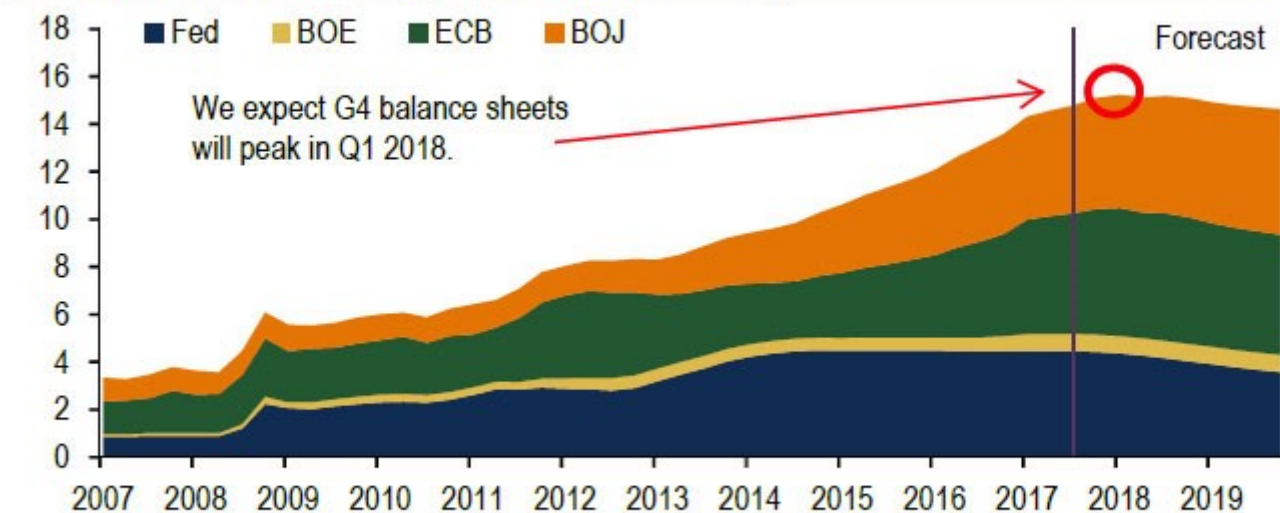
QE: Can A New Theory Change Reality

?Peter B. Cook is the author of the 'Is That True?' series of articles, which help explain the many statements and theories circulating in the mainstream financial media often presented as "truths." The motives and psychology of market participants, which drives the difference between truth and partial-truth, are explored.?

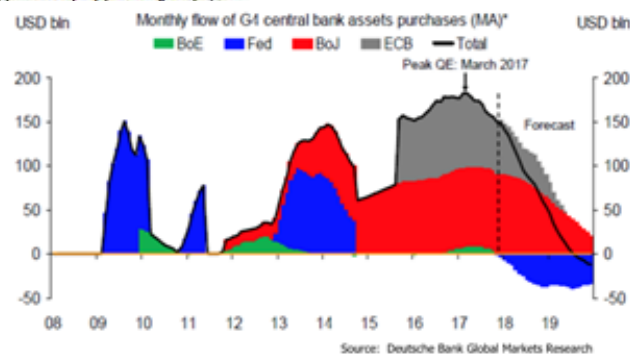
During a week of obsession with volatility products, it might seem odd to return to the well-worn topic of Quantitative Easing (QE).• But a common thread runs through the spectacular implosion of short volatility strategies and QE; they both are strictly financial-market phenomena. That is, one shouldn't assume that a move in financial markets, even an extremely large one, **is caused by** events in the real economy, where people are taking orders for widgets, producing widgets, delivering widgets, or even writing financial analyses. Similarly, one shouldn't assume that a move in financial markets **causes** events to occur in the real economy. • As data will show in the following pages, this logic applies even to the trillions of dollars spent on global QE, the largest monetary experiment in history. QE is the program concocted and used by central banks to intervene in financial markets to purchase bonds and stocks, in hopes that both will rise in value. • Officially,

central banks have publicly disclosed QE purchases of government bonds, mortgage-backed securities (MBS), investment grade bonds, junk bonds, equities, and ETFs composed of equities. The combined activities of the major central banks are detailed in the now-familiar graphs of **cumulative activity**??

Chart 8: We forecast G4 balance sheets will peak and finally begin to decline in Q1 2018, further evidence that central bank support for markets is shifting



Source: BofA Merrill Lynch Global



?..and **annual activity**.

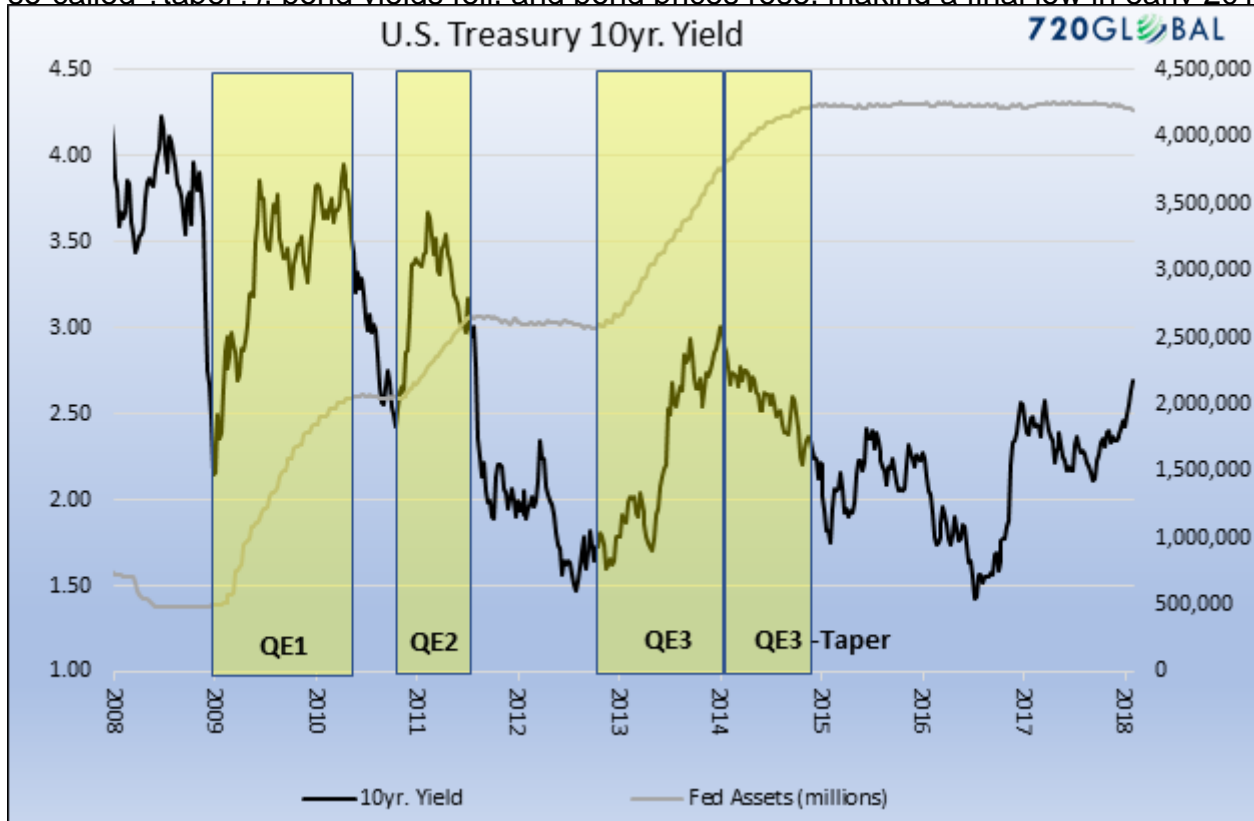
If the forecasts are correct,

the peak in the **cumulative** amount of QE purchases will occur later in 2018 (top graph), after a remarkable decade of peak central bank experimentation, featuring a 6x rise in holdings of securities. • Meanwhile, the peak in **annual** activity has already occurred during Q1 2017 (bottom graph), at a rate of almost \$200 billion per month, or \$2+ trillion per year. • The Federal Reserve (Fed) has begun to sell its portfolio of securities, but the selling is minuscule compared to current buying of the European Central Bank (ECB) and the Bank of Japan (BOJ.) • That said, the pace of all QE purchases has been in rapid decline, and are forecasted to accelerate to the downside until QE finally ends in 2019. In theory, the father of modern-day QE, Ben Bernanke, would tell us that QE purchases cause an increase in stock and bond prices all over the globe, making people feel wealthy, inducing them to spend more than they otherwise would, and leading to greater GDP growth than would otherwise have occurred. • This is Bernanke's 'Wealth Effect' theory in a nutshell. • As a side bonus, inflation would theoretically rise. • But did any of these promised theoretical effects actually happen? By looking at the data, we now know that during successive rounds of QE in the US:

1. Changes in QE purchases probably affected US bond prices, but in the opposite direction of expectations
2. Changes in QE purchases probably affected US stock prices, and in the expected direction
3. Changes in QE purchases probably had no effect on changes in US GDP growth
4. Changes in QE purchases probably had little effect on changes in US inflation

1. Changes in QE Purchases Probably Affected Bond Prices, But in the Opposite Direction of Expectations

There is no need for fancy statistics when a quick glance at the chart below tells you all you need to know. • In contrast to the QE theory of central bankers, during the periods of Fed QE programs, interest rates rose, and bond prices fell. • • During 2014, when the Fed reduced its QE purchases (the so-called ?taper?), bond yields fell, and bond prices rose, making a final low in early 2016. • One

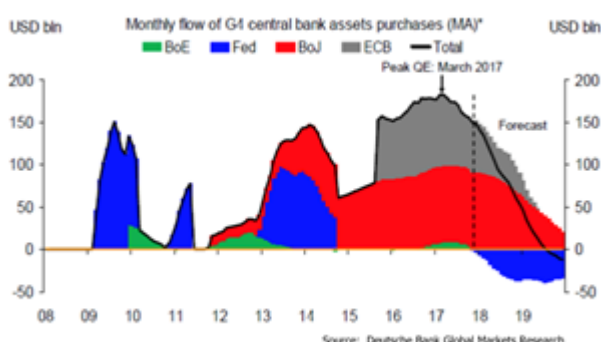


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Courtesy: St. Louis Federal Reserve (FRED) Modern markets are interconnected because investors can quickly change positions via liquid foreign exchange markets and access to global leverage via large financial institutions. • Therefore, large QE programs in one country affect asset prices in other countries. • Carefully reviewing the previous chart of global central bank QE purchases, you can see a radical jump in QE purchases by the ECB and BOJ which coincided with the spike in US interest rates during 1H 2016. • The continued \$2 trillion of annual purchases by the ECB and BOJ appear to explain the latest leg up in US interest rates to multi-year highs. In summary, bond yields rose during each of the several periods of QE acceleration, suggesting that QE activities were responsible for rising interest rates, which is the opposite of what a simple analysis of supply and demand would have predicted.

2. Changes in QE Purchases Probably Affected Stock Prices, and in the Expected Direction



onds in which QE purchases accelerated rapidly and 2013, and late 2015.

change of the S&P 500 index. • The S&P 500 index experienced 20+% gains in 2009, 2013, and 2016-17, which matches the periods in which QE purchases accelerated and persisted. • So, while it



The chart below is another

way of presenting the relationship between QE and stock prices in the US. • The line shaded black and green shows the S&P 500 index over the past ten years. • The green shading occurred during QE periods, which are also shown by the increases in the Fed's balance sheet. The one outlier in



program was
by the BOJ
losses

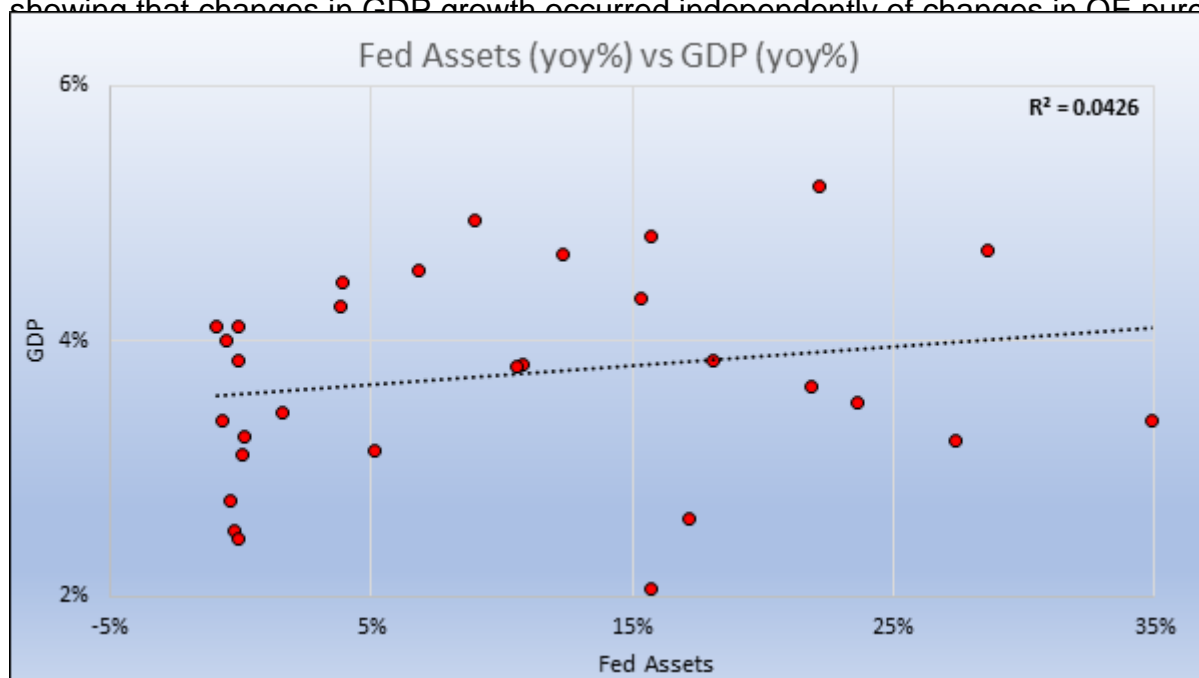
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Courtesy: St. Louis Federal Reserve (FRED) In summary, the data makes a strong case that QE programs succeeded in boosting stock prices. Considering that periods of accelerated and sustained QE purchases are associated with lower bond prices and higher stock prices, then it appears that overall, investors sold bonds to central banks and replaced their bond investments with stock market investments. • If so, then central bank QE programs sponsored an enormous rotation out of bonds and into stocks. • But that's not the intended result of the wealth effect theory, which is higher bond AND stock prices. In addition, intentionally boosting stock prices could produce unintended negative consequences that we have not yet seen. • For example, one way to look at QE is as a suppressant of volatility in financial markets, a policy that has been running for

almost a decade. • The public seems to have caught on, given the popularity of selling volatility to produce income. • As is the case in many strategies over time that claim to produce higher income than is normally available, this type of strategy is actually transforming future capital losses into current income. Looking forward, given that periods of accelerated and sustained QE purchases produced noticeable changes in stock and bond prices, it becomes clear why the Fed is moving slowly as it unwinds QE. • In fact, one member of the Fed leadership stated that watching QE unwind would be as boring as watching paint dry. • That statement might be more a hope than a forecast, given that a full cycle of QE (i.e., QE and its unwind) has never before been attempted. • So there is no data from the past that could support a forecast of drying paint, or for that matter, any particular forecast.

3. Changes in QE Purchases Probably Had No Effect on Changes in GDP Growth

In theory, if QE worked as planned, GDP growth should have shown some relationship to changes in QE purchases. • But in fact, it didn't. • The chart below is a regression of changes in QE purchases to changes in US GDP growth. • If a strong relationship between GDP growth and changes in QE purchases existed, the dotted line would have a meaningful slope and tight cluster of data around it. However, the dotted line is almost horizontal, and the data points appear randomly scattered, showing that changes in GDP growth occurred independently of changes in QE purchases. In fact,



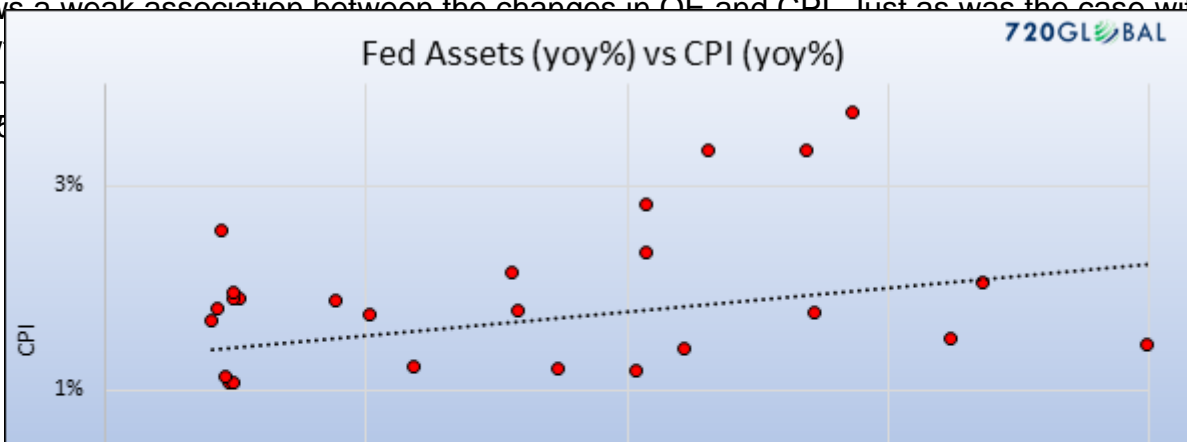
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Courtesy: St. Louis Federal Reserve (FRED)

4. Changes in QE Purchases Probably Had Little Effect on Changes in Inflation

The chart below is a regression of changes in QE purchases and changes in CPI inflation, which shows a weak association between the changes in QE and CPI. Just as was the case with GDP growth, to which the R-squared value is 0.0855.



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Courtesy: St. Louis Federal Reserve (FRED)

•?All Else Held Constant?

Over the QE Era (2009-current), a variety of large factors other than QE purchases weighed on or supported the global GDP and inflation results. • For example, during 2011 Europe went through an existential crisis due to over-indebtedness of its smaller members. • Also, US government deficits varied throughout the period. • Finally, Chinese credit growth spiked dramatically higher, beginning in early 2016. •• For these reasons, it is difficult to isolate the effect of any one variable (such as QE programs) on economic statistics such as GDP or inflation. • That is, all else is never held constant in the real world, which makes economics a study in human behavior and not a science. With that caveat in mind, the preceding data and analysis do not attempt to make a precise statement that QE purchases ?caused? anything, although there is evidence that QE coincided with rising yields and stock prices. • That?s because QE has been a direct intervention into financial markets. In contrast, QE can only indirectly intervene into the real economy, so if QE were successful, the data would show an association between QE and upward changes to GDP growth and inflation. • But the data doesn?t show any association. • That?s why statements by high-profile economists are suspect when they assert that QE programs ?caused? a rise in GDP growth or inflation. **Looking forward, as difficult as it is to envision right now, it is possible that the unwind of QE will produce results in financial markets running in the opposite direction of QE. •If so, then over coming months, we should expect lower stock prices, plus the counter-intuitive result of lower bond yields. •Also, since QE was a market event and not an economic event, the unwind of QE should produce similar results as QE did, which is very little impact on inflation or GDP growth.**

Conclusions

In contrast to the theory that QE purchases would lift bond and stock prices, GDP growth, and inflation, the QE Era shows that increases in QE purchases were associated with declines in bond prices (i.e., higher yields) and higher stock prices. •However, the data shows that QE had little or no effect on GDP growth and YOY% inflation. ••In summary, for financial markets, where QE purchases have a **direct** impact, central banks were probably 1 for 2 in their goals of lifting US bond and stock prices in pursuit of the wealth effect. For the economy, where QE purchases can only have an **indirect** impact, central banks were probably 0 for 2 in their stated goals of increasing GDP growth and inflation. Taken together, a record of 1 for 4 for hitting goals is not convincing evidence that trillions of dollars QE produced its desired result. •Put simply, the creation of a new theory doesn?t change the way things actually happen in the real world.