



INVESTMENT UPDATE

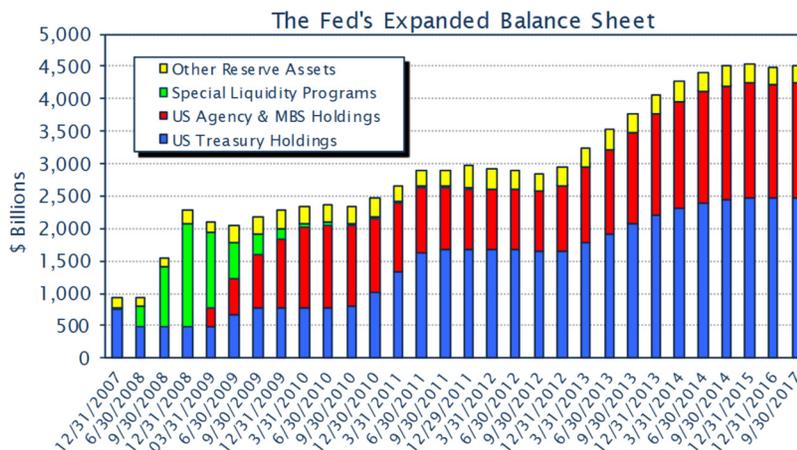
As we race towards year-end and look ahead to 2018, we are instantly reminded that we will be celebrating (if that's the right word) the ten-year anniversary of the darkest days of the financial crisis next year. While 2007 witnessed the early warning signs that something was wrong in the US housing market, it wasn't until 2008 that we saw the full impact of how the billions in over-leveraged bets on home prices would collapse. In that awful year, we watched as the "subprime crisis" spread to nearly every household in the US. As home prices tumbled, so did the value of billions in financial products which helped to keep those prices artificially inflated, and in turn, led to the near-collapse of the US financial services industry, including the bankruptcy of Lehman Brothers in September 2008.

seen on the chart on this page). But the next step in the process—boosting the US economy—is where we want to now turn our attention. As it turns out, we are only now, nearly a decade later, starting to unwind the quantitative easing (QE) programs that were initiated during the crisis. The first of these QE programs began in November 2008 when the Fed initiated outright purchases of agency-issued mortgage-backed securities (MBS), a move that was designed to shore up the prices of MBS and drive down borrowing rates for homebuyers. These "large scale asset purchases" of mortgage bonds essentially replaced the shrinking temporary liquidity programs that were running off, and when this phase of the QE program ended in mid-2010, the Fed's holdings in Treasuries and MBS totaled more than \$2 trillion.

It's fair to say that the world changed in 2008, particularly when we consider the steps that were taken by policymakers to, first, help prevent a collapse of the global banking system, and then subsequently to spur economic growth. These actions were undertaken with a good-sized dose of

faith, as many of them were untested, having only been contemplated in research papers and with the use of economic models. Primary among these early actions were the various programs initiated by the Federal Reserve to provide liquidity for institutions that were facing existential "run on the bank" crises as investors lost faith in their ability to maintain funding to keep their doors open. The collapse of Lehman and the government receivership of FNMA and FHLMC only exacerbated the problem, and by year-end 2008, the Fed was providing \$1.5 trillion in various short-term lending programs to banks, brokerages and foreign central banks. Simultaneously, the Treasury announced the TARP program, which provided an additional \$700 billion in emergency funding.

These emergency programs quickly boosted confidence and provided real help to institutions needing capital, and by the first quarter of 2009, the Fed's lending programs were already being phased out (and were all but gone by year-end '09, as



While the housing market stabilized, the broader US economy did not respond to the Fed's liking, so a second round of QE purchases began in November 2010 and lasted until mid-2011; Treasury notes and bonds and MBS were included this time, growing the balance sheet to nearly \$3 trillion. Before long, the Fed decided that more QE was necessary

and the third round of asset purchases was announced in September of 2012. QE3, as it became known, turned out to be the last and biggest program of asset purchases and was accompanied by language that implied that the Fed's purchases would continue for a protracted period, and its policy of a near-zero overnight funds rate would continue "at least through 2015."

With the benefit of hindsight, we now see that each successive round of QE was less effective than the last. Further, there is evidence that the additional liquidity, while helping to recapitalize the banking system and support the housing market, also led to inflated prices among riskier assets. When then-Fed Chair Ben Bernanke announced in May of 2013 that the Fed would begin to taper its large scale asset purchases from \$85 billion to \$65 billion per month, the reaction from investors was dramatic, with the stock market falling by 4.5% over the next three days. Any doubt that the Fed might have had

regarding the difficulty of easing out of its QE programs was dispelled very quickly.

With all that as background, what has happened in the past four and a half years since the “taper tantrum” is both satisfying and terrifying. The satisfying part is that the Fed did a reasonably good job, after botching its first efforts, at guiding the capital markets and preparing them for the winding down of its massive quantitative easing program. By focusing on messaging—early and often—the Fed gave investors ample time to mull over, debate, and prepare for the tapering of and eventual end to large scale asset purchases, the last of which took place in October 2014. More recently, the Janet Yellen-led Fed has also taken very deliberate steps to “not make any sudden moves” as it has communicated its plans for the end of reinvestments of its massive Treasury and MBS portfolios, which have stayed level at \$4.2 trillion for the last three years. Now that the run-off of its portfolios has begun (albeit at a very slow pace, at least in this early stage) it’s been a pleasant surprise that there has been so little reaction in bond prices. This is particularly true for MBS, where the Fed’s reinvesting of cash flows has meant that it has been the primary buyer of Agency MBS over recent years. So, credit where it’s due.

On the other hand we are far less sanguine when it comes to the Fed’s foreign counterparts. As demonstrated by the chart on this page (sourced via Deutsche Bank), while the Fed stopped its asset purchases in 2014, both the European Central Bank (ECB) and the Bank of Japan (BOJ) have been buying bonds (and other assets, too) at an alarming pace over recent years. As big as the QE programs in the US were, the Fed never came close to soaking up, in any given period, the entire supply of available US government bonds; the same cannot be said for the ECB or BOJ. Over the past year, the ECB has purchased assets equal to seven times the net issuance of European government bonds, while the BOJ has spent an amount equal to three times the net issuance of Japanese government bonds this year. Worse, as they have run out of government bonds to buy, both central banks have taken to buying all kinds of financial assets—corporate bonds, asset-backed securities, covered bonds, and in the case of the BOJ, “pooled collateral,” REITS and exchange-traded funds (ETFs). How expansive are these programs? The BOJ now owns 75% of the Japanese ETF market.

As one might imagine, with all of that money chasing so little available supply of bonds, the result has been severe price inflation in the government bond market (and other impacted markets, too), to the point that yields have been driven down to levels once believed impossible. Most casual observers of the bond markets know that interest rates are low, but it’s astounding just how low they are among these affected countries. In Germany, Switzerland and Sweden, more than 75% of the outstanding government bonds have yields below zero, while nearly every other major European economy (as well as Japan) has at least one-half of their government bonds carrying negative yields. The only exceptions are the countries with the weakest economies and riskiest bonds—Portugal, Greece, and Italy are the largest—and even these countries have at least some of their bonds trading with negative yields. And with the ECB also buying corporate bonds issued by European companies, there

are billions of euros in corporates which also trade with yields below zero. Shockingly, the average European *high yield* corporate bond trades roughly equal to the yield offered by the average US Treasury bond.

The multi-trillion dollar question looming over the global bond market is “How will the world’s central banks unwind

these programs?” In the US, we’ve had more than four years to consider how difficult it is to keep investors calm when simply contemplating a slowdown of the purchases, something the ECB has just announced. The ECB and the BOJ are years away from the point where they will begin to actively shrink their balance sheets (as the Fed is now doing). How much more fuel will these central banks add to the roaring fires they have going in the meantime? These questions have been asked for years now, with no clear answers forthcoming.

If there’s any good news at all for the ECB and BOJ, it’s that their economies are now showing some signs of strength. While a cynic might grumble “No kidding!?” after trillions of euros and hundreds of trillions of yen have been dumped into their economies, the reality is that the programs have been successful (at no small cost) at keeping the European Monetary Union intact and the European and Japanese economies away from a deflationary death-spiral.

As anyone at the Fed would tell them, that was the easy part. Unwinding these programs without crushing your own economy is the true test of success.

