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## POLICY STUDY

# THE FAILED FEDERAL RESERVE ATTEMPT TO GET BACK TO THE PAST

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# SUMMARY

The end result of the Federal Reserve's response to the 2008 financial and the Great Recession was an unprecedented increase in assets. The increase began in earnest in October of 2008 and ended at the close of 2014. During that 6-year period, Federal Reserve assets rose from just under \$900 billion to over \$4.5 trillion, more than 500%.

This asset increase was expected by many to result in a return to the double-digit inflation of the late 1970s. But the expected inflation never occurred because of a significant policy change, the introduction of paying interest on bank reserves. In effect, the Federal Reserve issued securities to the banking system in the form of excess reserves. The combination of increased assets offset by increased excess reserves resulted in the increase in the net monetary base, the foundation of the money supply, being modest.

In October 2017, the Federal Reserve began the process of reducing its asset holdings toward their historic level as a share of GDP. The way up the asset ladder did not result in inflation because much of the increase was offset by the issue of Federal Reserve liabilities in the form of bank excess reserves. The way down the asset ladder, if accompanied by a large enough reduction in excess reserves, could allow the net monetary base and the money supply to rise. Such a result would require Federal Reserve management of the return to holding excess reserves, the IOER, so that banks would move reserves to market investments.

Indeed, the management of the IOER and asset sales worked for well over a year until March of 2019. By that time, the Federal Reserve had allowed the return to the banks from holding reserves to exceed their market alternatives. As a result, the growth in Federal Reserve net assets slowed and ultimately stopped. Thus, by August of 2019, the Federal Reserve halted its asset reduction program. Furthermore, because the Federal Reserve failed to remove the return advantage of excess reserves, they began buying assets in November of 2019.

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### Cover Photograph

Highsmith, Carol M, photographer. *Entrance to the 1920 Federal Reserve Bank building in Dallas, Texas*, Photograph.  
<https://www.loc.gov/item/2014632598/>

# THE FAILED FEDERAL RESERVE ATTEMPT TO GET BACK TO THE PAST

## INTRODUCTION

At its September 2017 FOMC meeting, the Federal Reserve began a program designed to bring the giant increase in their assets due to the 2008 Great Recession back into line with their traditional level of asset holdings. This program continued through August of 2019 and reduced the Federal Reserve's holdings of securities from their September 2017 level of \$4.258 trillion to an August 28, 2019 level of \$3.589 trillion. Thus, the Federal Reserve managed to reduce its securities holdings by \$660 billion, roughly two-thirds of a trillion dollars.

For this asset reduction to not have a negative effect on the Federal Reserve's goal of an inflation rate of 2% or have a negative effect on the economy, it was necessary that banks reduced their holdings of excess reserves by more than the Federal Reserve's asset reductions. Indeed, the required excess reserve reductions occurred, at least for the first 18 months of the policy. But by March of 2019 the decline in excess reserves was insufficient to offset the Federal Reserve's asset reduction policy. As a result, Federal Reserve net assets, the basis for the monetary base and the money supply, began to fall. Finally, at the July 2019 FOMC meeting the Federal Reserve called a halt to asset reductions.

The fact that the Federal Reserve's asset reduction plans did not work is now history. In fact, it failed so badly that by October of 2019, just two months after the cessation of asset reductions, the Federal Reserve began adding to its securities holdings to ensure that their net assets would grow. Here, I show the reason for the failure and how it could have been avoided. Further, the failure is related to the misconception that the Federal Reserve controls interest rates. Indeed, it was this misconception that led to the asset reduction program's failure.

## FUNDAMENTALS OF THE ASSET EXCESS RESERVES RELATION

Since the inception of paying banks interest on their reserve holdings, the fundamental basis for the money supply, the net monetary base is now as much in the hands of the banking system as it is with the Federal Reserve. The relevant monetary base is the sum of currency and required bank reserves, and perhaps a small amount of bank reserves reported as excess but not viewed by banks as unnecessary.

Before interest on reserves and especially excess reserves, banks held minimal reserves over the level required by the Federal Reserve. But now these excess reserve holdings yield a positive rate of return and have become a genuine investment opportunity for banks. Banks compare their market opportunities with the interest rate paid on excess reserves, the IOER, to determine their desired level of excess reserve holdings.

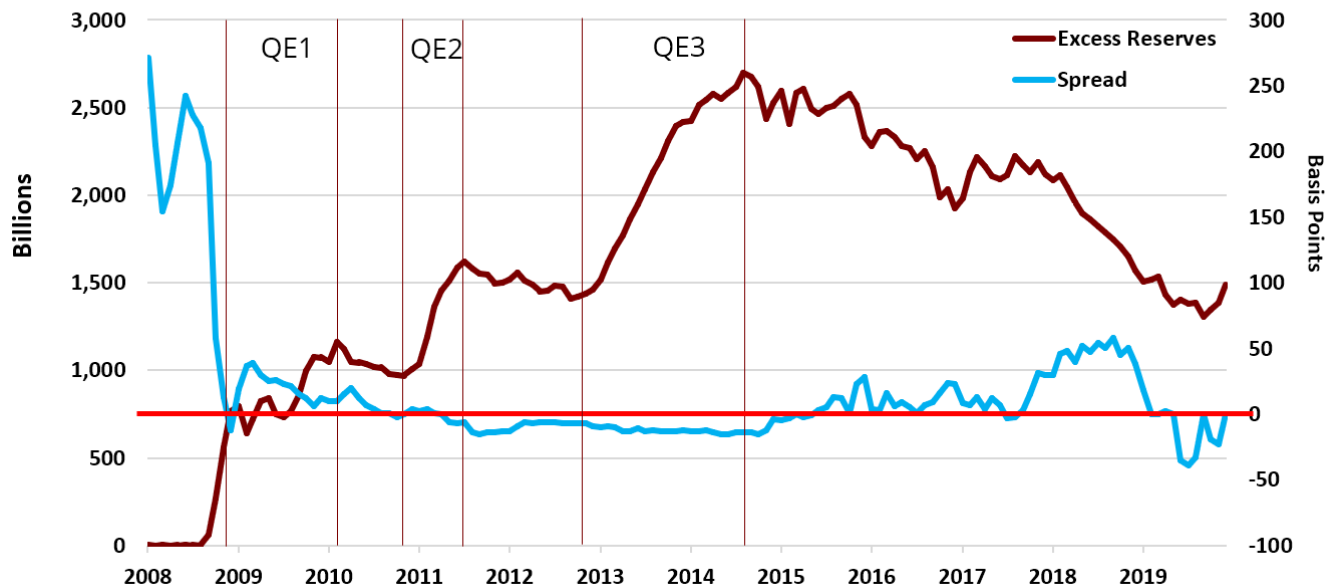
During the Federal Reserve's asset expansion period, it was engaging in open-market purchases of Treasuries and Mortgage-Backed Securities (MBS), while simultaneously engaging in what could be termed open-market sales of 'special' Federal Reserve demand securities. These demand securities could be termed special for two reasons. First, they were only available to member banks. Second, their quantity was not limited. The monetary effect of the combination of open-market purchases and sales was then determined by the net addition to Federal Reserve assets. Essentially, banks could choose to buy any quantity of these special securities at the yield determined by the Federal Reserve.



The level of excess reserve holdings of the banks is then the quantity of special securities chosen and is determined by the difference between market opportunities available to the banks and the yield on the special securities.

Figure 1 shows bank excess reserve holdings and the difference between a market return, the rate of interest on 1-year Treasuries and the IOER, expressed in basis points for the period from the inception of the IOER to January 2020. As the Federal Reserve began its massive asset expansion, bank reserves rose dramatically. Excess reserves rose from virtually zero as late as August of 2008 to their January 2009 level of almost \$800 billion. At that time, market yields were still above the IOER as the spread was small but still 19 basis points. The spread became negative in 2010 and would not return to positive values until the close of the Federal Reserve’s asset expansions at the end of 2014. By then, the Federal Reserve open-market sales of special securities, bank excess reserve holdings, exceeded \$2.5 trillion.

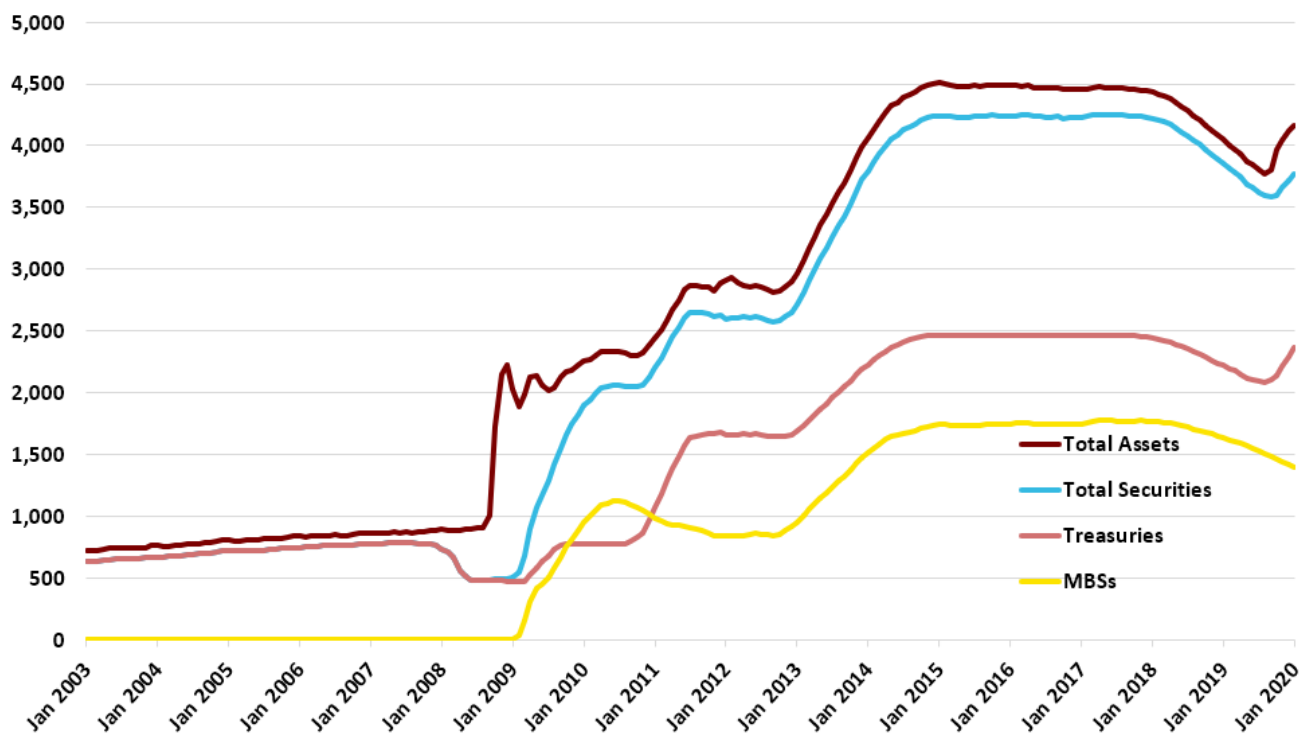
**Figure 1.** 1yr Treasury - IOER Spread and Excess Reserves  
Jan. 2008 - Jan. 2020



It is important to realize that the early asset expansion, the period labelled QE1 in the figure, was a combination of reductions in Federal Reserve treasuries and tremendous expansions in private economy assets, commercial paper for example. During the expansion, the Federal Reserve provided the economy with liquidity and the banking system with loans using an auction market, the Term Auction Facility, that peaked in mid-2009 at \$500 billion.

To put this in perspective, Figure 2 shows total Federal Reserve assets, total securities holdings, Treasuries holdings and Mortgage-Backed Securities holdings from 2006 to the beginning of 2020. Two aspects of the data in the figure are important for our discussion. First, except for periods of extreme financial market distress, total Federal Reserve assets are almost entirely securities. Second, even before the September 2008 financial crisis, the Federal Reserve was replacing its securities holdings with market assets to deal with the failure of Lehman Brothers and the precarious financial position of other shadow banking establishments. In the figure, the Federal Reserve’s response to the financial market crisis that began in September 2008 is clearly indicated by the spike in the difference between Federal Reserve’s total assets and its total securities holdings.

**Figure 2.** Total Assets, Total Securities, Treasuries and MBSs  
January 2003 to January 2020



Inspection of the two figures shows that the securities expansion that began with the onset of 2009 and the excess reserve expansion are intimately related. Many economists at the time missed the importance of this relation for the money supply and inflation. In fact, many editorials predicted a return to double digit inflation based on the unprecedented rate of asset expansion. Now we realize that what was important was the net of excess reserves asset expansion. For most of this period, what was underway was the simultaneous Federal Reserve open-market purchases of securities and sales of special Federal Reserve puttable securities in the form of excess reserves.

The period from January 2008 to the eventual restoration of securities as the principal Federal Reserve asset is an interesting one. During that time the Federal Reserve was flooding the market with liquidity by operating in many financial markets. In fact, initially it sold Treasuries and replaced them with market financial assets with little change in total assets. But then, in response to the September 2008 financial crisis, the big asset expansion began. During that period, the Federal Reserve rescued the commercial paper market and supported the liquidity strapped banking system. In early 2009, the Federal Reserve began its expansion of securities, both Treasuries and MBSs. The subsequent asset expansion was essentially an expansion of securities as the Federal Reserve wound down its other financial market investments.

At the end of the Federal Reserve expansion in January 2015, total assets were \$4.51 trillion, and total securities were \$4.24 trillion, as compared to August 2008 total assets of \$906 billion, an increase of \$3.6 trillion, a 540% increase. That 540% increase translates into an annual growth rate of 28.5% and if this expansion had been matched by money supply growth, would have resulted in disastrous inflation.<sup>1</sup> But

<sup>1</sup> For a complete discussion of the Federal Reserve asset expansion and inflation see Thomas R. Saving, "The

we now understand that while the Federal Reserve was expanding its assets, it was selling special Federal Reserve puttable securities and creating liabilities. In January 2015, these liabilities, excess reserves, totaled \$2.5 trillion, making net total assets \$2.01 trillion, a 222% increase and a growth rate of 14.2%, and net securities \$1.1 trillion, only a 151% increase and a growth rate of only 7.2%.

To help put the asset expansion into perspective, Federal Reserve total assets for the pre-financial quarters of the 21st century averaged 6.2% of GDP and stayed between 6.0% and 6.5% for the entire period. At the end of the asset expansion, the first quarter of 2015, Federal Reserve total assets were 25% of GDP. Even when the Federal Reserve-issued securities debt, excess reserves, are taken out, Federal Reserve net assets still rose from the normal 6% of GDP to over 10% of GDP. Clearly this was not your grandparents Federal Reserve!

## MONETARY POLICY DURING THE PERIOD OF STABLE ASSETS

One of the announced policy goals of the Federal Reserve during the period following the three Quantitative Easing periods was to maintain inflation at or just below 2%. In simple terms, meeting this goal would require that the money supply grow 2% faster than real GDP. The natural question is then: in the absence of Federal Reserve asset growth, what can happen to generate the required monetary growth?

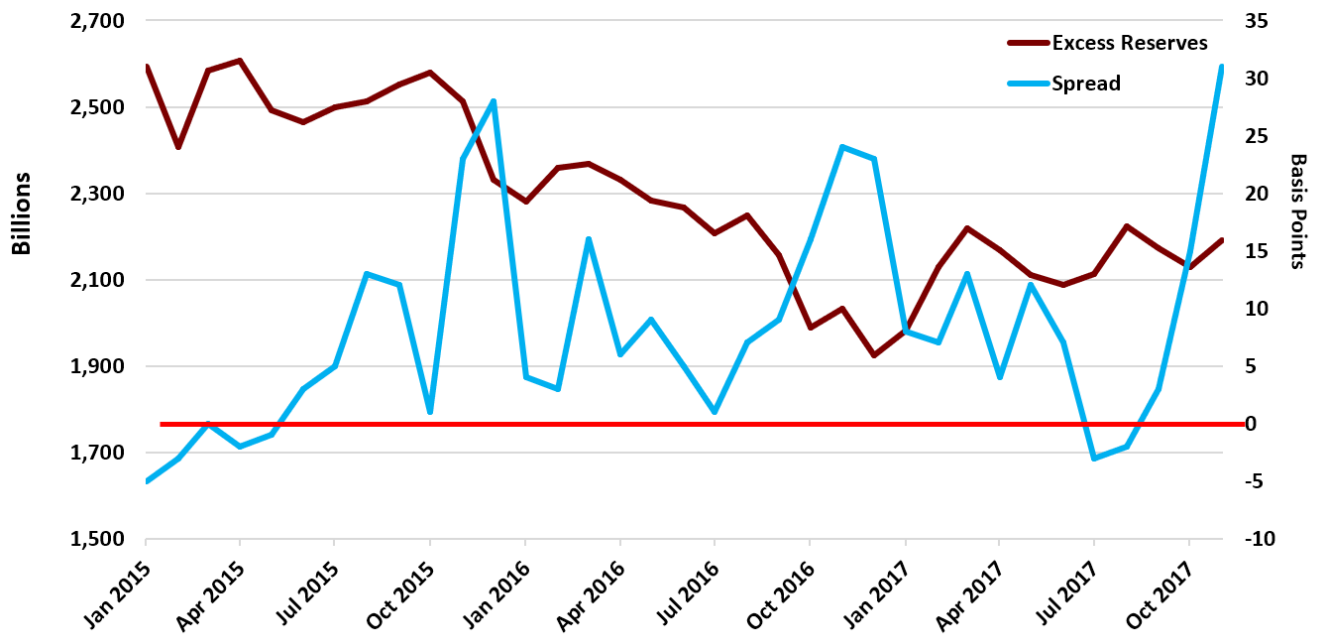
The answer to this question is in the tremendous growth of excess reserves due to the payment of interest on bank reserve holdings. The payment of interest on bank reserves allowed an unprecedented growth in Federal Reserve assets to be offset in large part by the growth in Federal Reserve liabilities so that net asset growth was in the normal range. Now, the payment of interest on bank reserves, if adjusted properly, could result in bank excess reserves falling enough to allow Federal Reserve net assets to grow to support the required monetary growth. But in order to get banks to reduce their holdings of excess reserves, the IOER must be set so that market opportunities for banks are better than holding excess reserves. Managing the IOER is now an important part of monetary policy, as we shall see in spades as we get to the period of asset reductions.

Figure 3 shows the relation between bank excess reserves and the spread between 1-year Treasuries, as a proxy for market interest rates, and the IOER for the period of stable Federal Reserve assets. With stable Federal Reserve assets, the only way for the money supply to grow is for the banks to convert excess reserves into market investments, essentially making excess reserves required reserves. Indeed, in setting the IOER, the Federal Reserve allowed market rates to rise above the IOER. During the almost three-year period depicted in the figure, the average spread was 15 basis points, in contrast to the period up to 2015 when the average spread was negative and holding reserves was superior to investing in the market.

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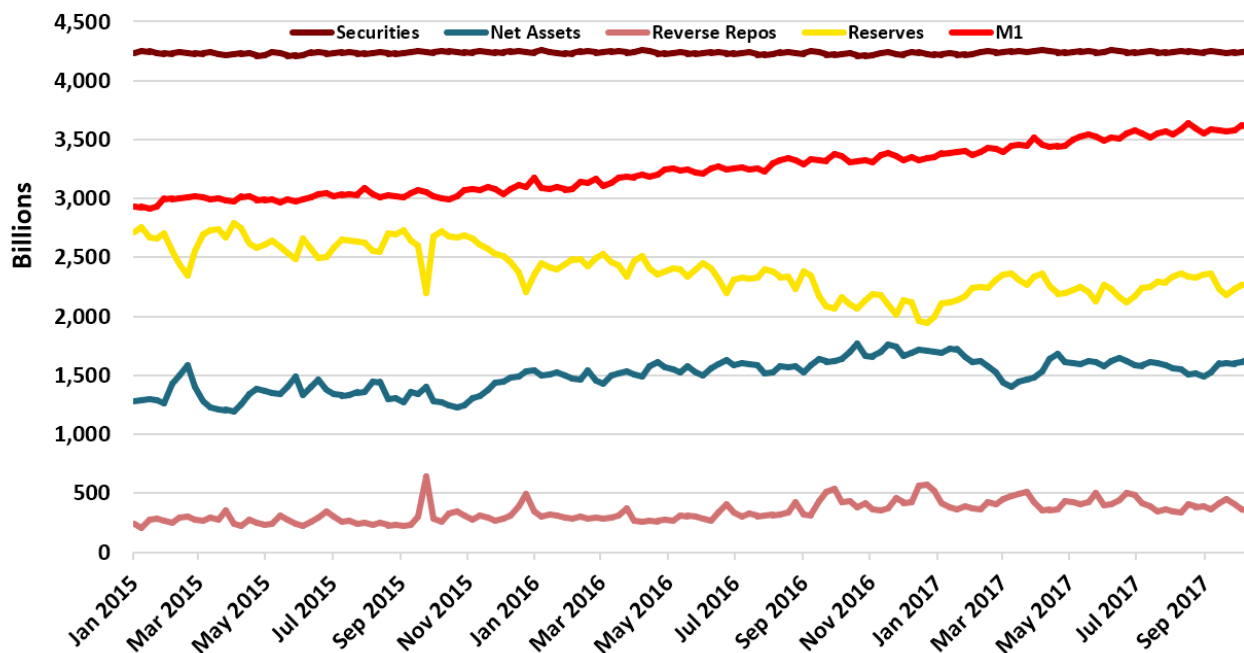
Federal Reserve, the Great Recession and the Lost Inflation,” Private Enterprise Research Center, Texas A&M University, PERC Study July 2016, No. 1604.

**Figure 3.** 1yr Treasury - IOER Spread and Excess Reserves  
January 2015 - November 2017



To see the effect of the excess reserve reduction shown above on the money supply, Figure 4 shows the levels of Federal Reserve securities holdings, reserve liabilities, reverse repo liabilities, net assets and the M1 money supply for the same period depicted in Figure 3. The steady climb in Federal Reserve net assets shown in the figure is matched by the steady climb in the M1 money supply. For Federal Reserve assets to remain the same and the M1 money supply to climb over a period of almost three years is totally unprecedented. The importance of the introduction of the payment of interest on bank reserve balances cannot be over-emphasized in understanding the monetary policy of the post-2008 period.

**Figure 4.** M1 and Federal Reserve Net Assets  
January 2015 - November 2017

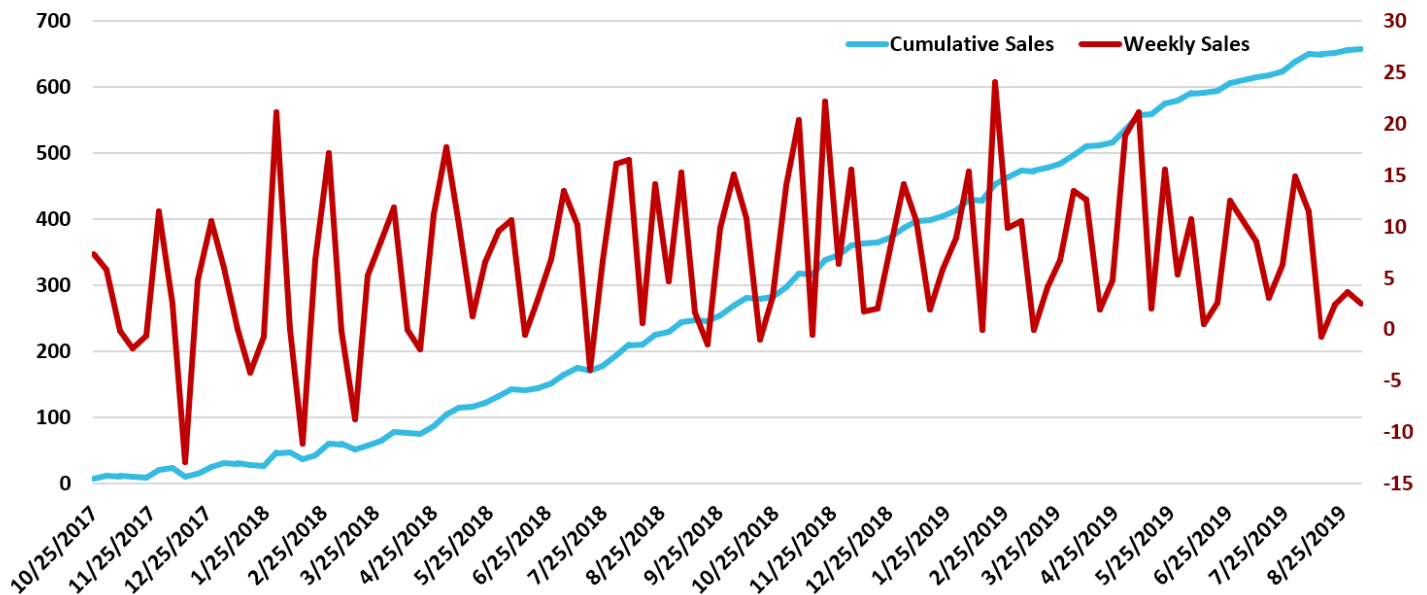


## THE DECISION TO RETURN TO THE PAST

In its June 2017 FOMC meeting, the committee indicated that they were planning a “Balance Normalization Program.”<sup>2</sup> In the September 2017 FOMC meeting it was announced that “In October, the Committee will initiate the balance sheet normalization program described in the June 2017 Addendum to the Committee’s Policy Normalization Principles and Plans.” The effort began in October 2017 as announced. Figure 5 shows the changes in securities held outright for the asset normalization program until it was terminated in August of 2019. Rather than a program of explicitly selling securities in the open market, this program was based on not reinvesting all principal payments from securities. Put in the terms of the original announcement in the implementation note from the June meeting,

*“Effective in October 2017, the Committee directs the Desk to roll over at auction the amount of principal payments from the Federal Reserve’s holdings of Treasury securities maturing during each calendar month that exceeds \$6 billion, and to reinvest in agency mortgage-backed securities the amount of principal payments from the Federal Reserve’s holdings of agency debt and agency mortgage-backed securities received during each calendar month that exceeds \$4 billion. Small deviations from these amounts for operational reasons are acceptable.”*

**Figure 5.** Weekly and Cumulative Federal Reserve Securities Held Outright Sales  
October 25, 2017 to September 4, 2019  
\$Billions



Over the almost two-year period of the asset reduction program, Federal Reserve securities held outright fell by more than \$650 billion, a 15% reduction. When the program was terminated, Federal Reserve assets were still 17.6% of GDP, and, while down from their maximum of over 25%, were still well above the normal 6% of GDP. Furthermore, the more relevant measure of assets, net assets, were still 11% of GDP.

<sup>2</sup> See FOMC issues addendum to the Policy Normalization Principles and Plans (2017). The addendum is available at <https://www.federalreserve.gov/newsevents/pressreleases/moneary20170614c.htm>.



However we look at the reduction in Federal Reserve assets during this period, if we only care about assets, the program was successful. What then led to the end of the asset reduction program? The answer is apparent when we look at Figure 6. In early 2019, reserves stopped falling and as a result, net assets stopped rising. Then the growth of M1 slowed and then stopped. Clearly, a policy designed to reduce assets without affecting the goal of money growth and that would allow a 2% inflation rate was not working. The question is, why? The answer is that the benefits of moving reserves to market investments disappeared.

**Figure 6.** M1 and Federal Reserve Net Assets  
October 2017 – September 2019

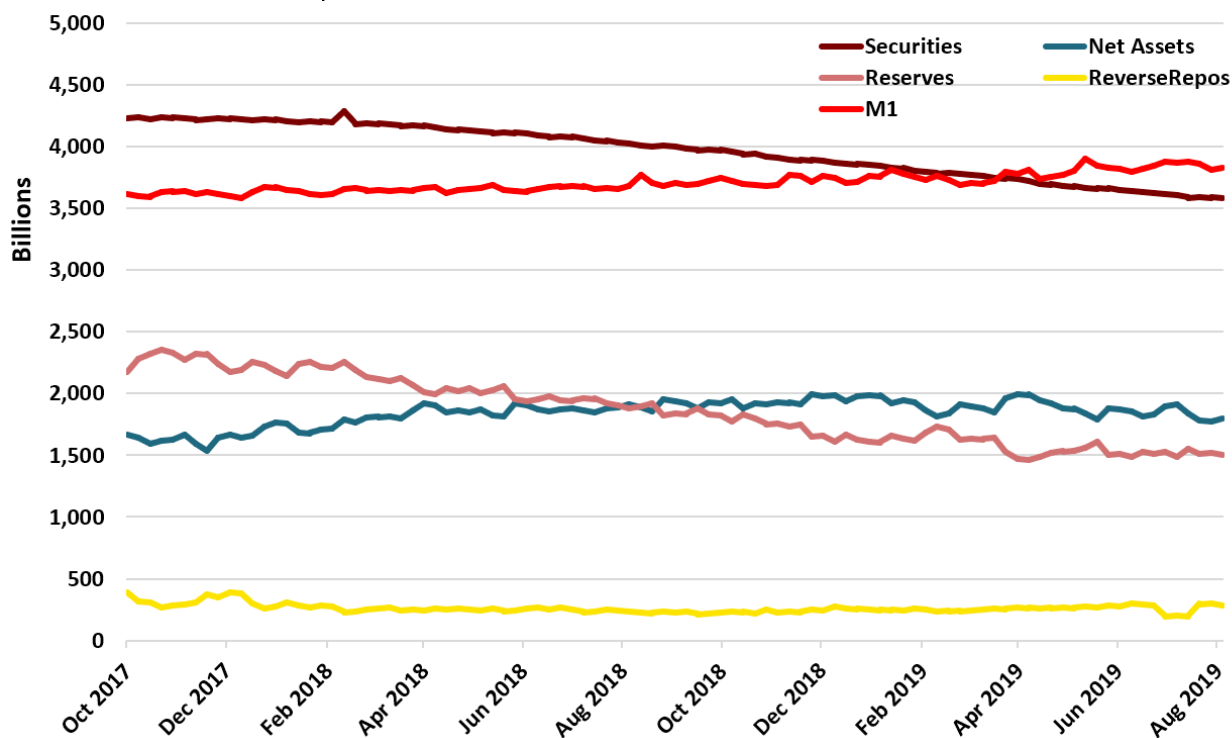
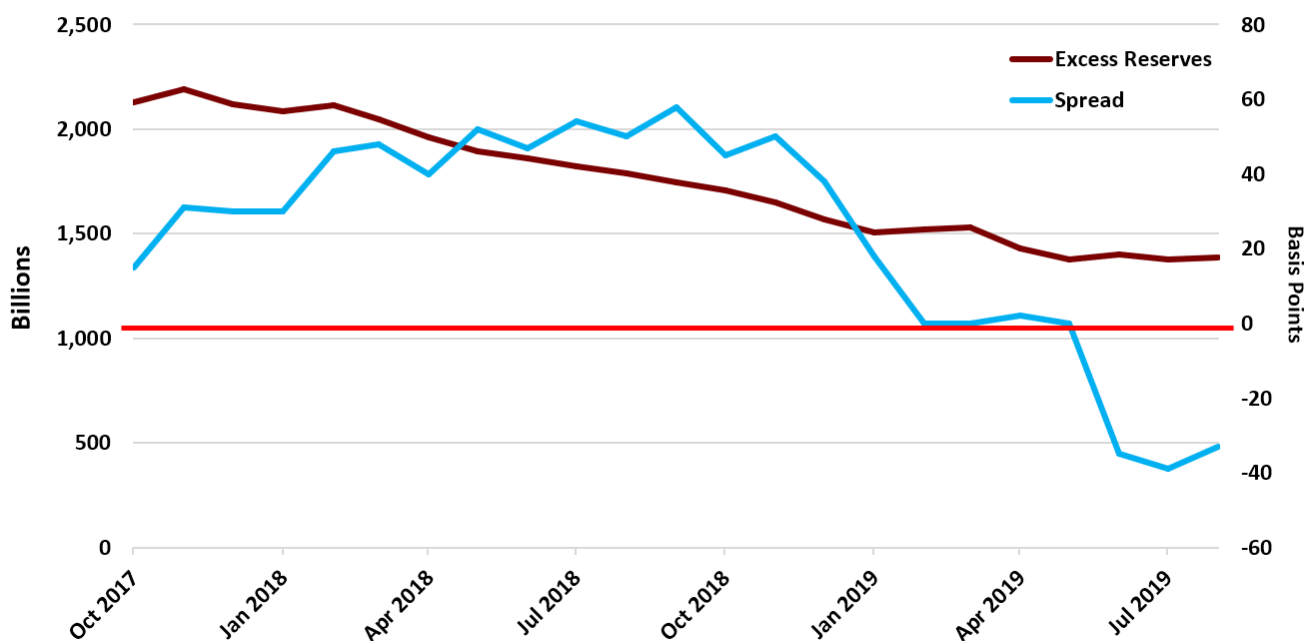


Figure 7 is similar to Figure 4 but for the interval of the asset reduction. The success of the asset reduction depended on the Federal Reserve setting the IOER to ensure that the market was superior to holding reserves. The market advantage had to be large enough so that banks would move excess reserves to market investments fast enough to offset the asset reductions. The advantage of the market over reserves was increasing for the first year of the program. Then, however, the advantage began falling so that by March of 2019, excess reserves were more profitable than market investments. At that point, the rate of decline in excess reserves fell and ultimately stopped altogether. Both Figures 6 and 7 clearly show why the asset reduction program had to fail. The real question is, was the failure of the program beyond the control of the Federal Reserve? The answer is no, as we shall see when we look at the Federal Reserve's setting of the IOER.

**Figure 7.** 1yr Treasury - IOER Spread and Excess Reserves  
October 2017 - August 2019

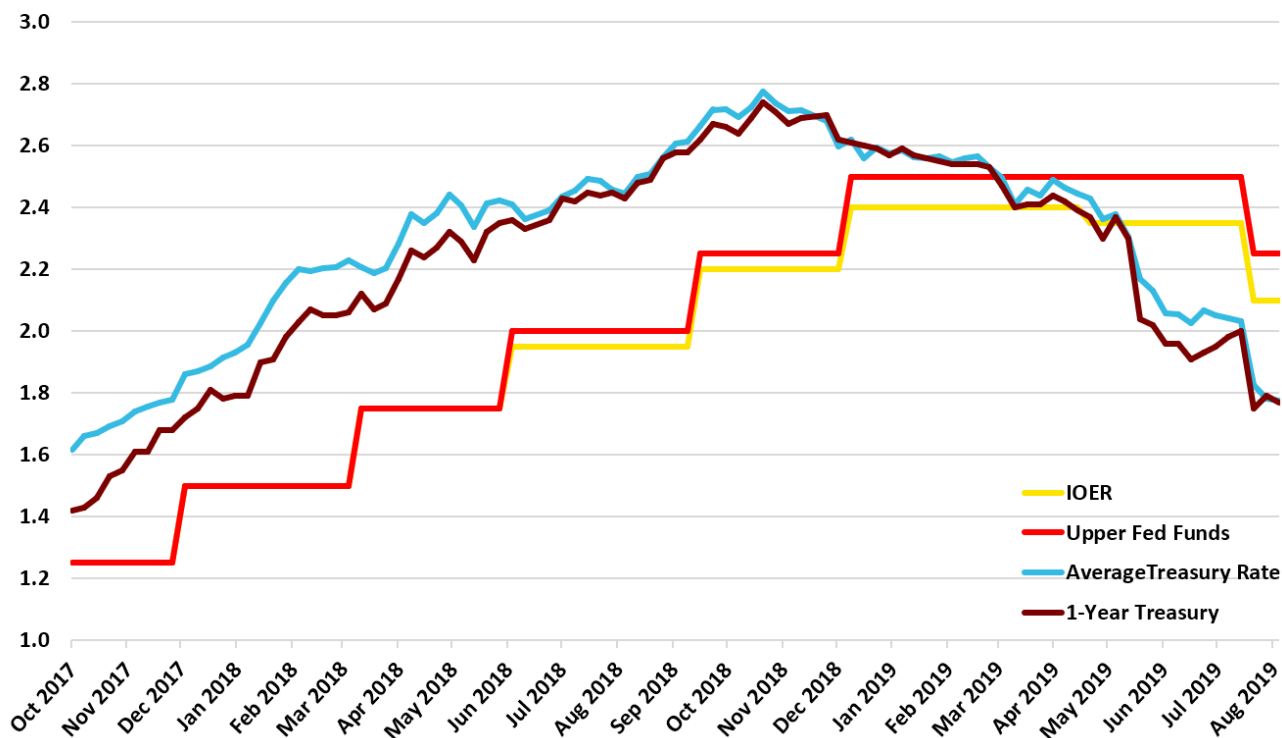


## THE FEDERAL RESERVE, INTEREST RATES AND THE FAILED ASSET REDUCTION PROGRAM

What is surprising about Figure 7 is that the market advantage over excess reserves began declining and then disappeared by early 2019. The Federal Reserve let this happen in spite of the fact that the one, and perhaps the only, interest rate that the Federal Reserve really can set is the IOER. Given the importance of the program to bring the Federal Reserve asset position into something akin to its long-run share of the nation’s GDP, how or why did the Federal Reserve allow the plan to run amok? What we see in Figure 7 should never have been allowed to happen. More importantly, it was totally in the power of the Federal Reserve to prevent the market advantage from disappearing.

Figure 8 shows the 1-year Treasury rate, an average of all Treasury rates, the Fed Funds upper bound and most importantly, the IOER. Anyone looking at the figure would conclude that rather than determining market interest with their choice of the upper fed funds rate and the IOER, the Federal Reserve was following market interest. No-one even casually looking at the figure would conclude that whoever was setting the red line was controlling market interest rates, even if they read the Federal Reserve’s press releases that suggest that they are, indeed, setting market interest rates.

**Figure 8.** 1yr Treasury Rate, Treasury Average Rate , Fed Funds Upper Bound and IOER October 1, 2017 to January 1, 2020 Weekly



From the beginning of the asset reduction program in October 2017, both the upper Fed Funds and the IOER were at 1.25% and 1-year Treasuries were 1.42%, 17 basis points above the IOER, and average Treasury rates were 1.62%. Both market rates rose and finally, in December, when 1-year Treasuries were 1.72%, 47 basis points above the IOER, and average Treasuries were 1.86, the Federal Reserve raised both the upper Fed Funds target and the IOER to 1.5%, reducing the 1-year IOER spread from 43 basis points to 22 basis points. As market rates continued to rise, the Federal Reserve was slowly playing catch-up.

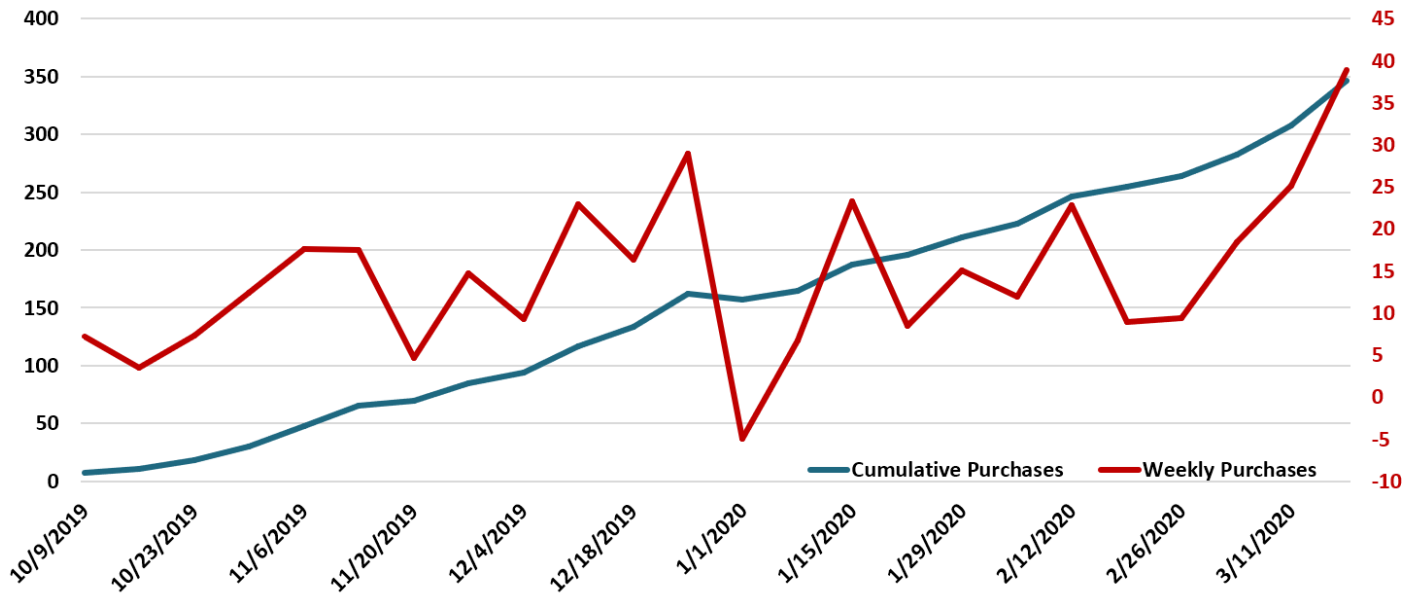
In June of 2018, the Federal Reserve separated the IOER from its upper Fed Funds target and the IOER has remained lower than the Fed Funds upper target since that time. That change reduced the prevailing 1-year Treasury IOER spread from 60 basis points to 41 basis points. The next rate change in October once again reduced the spread about 20 basis points from 63 basis points to 42 basis points as the Federal Reserve continued to follow market rates up.

Market interest rates peaked in November and began a fall that has yet to be alleviated. In spite of falling market interest rates, in December 2018 the Federal Reserve raised the IOER and reduced the spread that was already falling from 42 basis points to 21 basis points. Importantly, the spread never came close to 20 basis points for the remainder of the asset reduction period. In fact, by March of 2018, the spread disappeared and then became negative where it remained for the remainder of the asset reduction period.

Thus, unless the Federal Reserve gave up the idea that it controlled interest rates and adjusted the IOER to ensure a significant positive spread, excess reserves would never fall fast enough to offset the asset reductions. This failure of net assets to rise in the last 6-months of the asset reduction period doomed the Federal Reserve plan to restore the assets in its balance sheet to their traditional level relative to GDP.

With market interest rates continuing to fall and increasingly negative spreads, in November 2019, the Federal Reserve began a new asset expansion program. Figure 9 shows the weekly transactions in this program as well as the cumulative up to the beginning of the Pandemic Federal Reserve actions. By the beginning of the Pandemic actions the Federal Reserve had undone more than half of the asset reductions of the previous attempt to get assets back to their past levels.

**Figure 9.** Weekly and Cumulative Federal Reserve Securities Held Outright Purchases  
October 9, 2019 to March 18, 2020  
\$Billions



## CONCLUSION

The 2008 introduction of the payment of interest on bank excess reserve holdings (IOER) allowed the Federal Reserve to engage in an unprecedented expansion of assets without causing inflation. To say that this policy change caught economists by surprise would be an understatement. For at least two years, economists were making dire predictions concerning the effect of the unprecedented increase in Federal Reserve assets on inflation. Certainly, past history would indicate that a seven-year period of Federal Reserve assets exceeding 25% annually would have generated double digit inflation.

But the inflation did not happen because the Federal Reserve simultaneously began paying member banks interest on their reserve holdings. Furthermore, the level of the IOER exceeded the yield on 1-year Treasuries over that same period by more than 10 basis points, making reserves a superior investment for member banks. As a result, the growth of this new Federal Reserve liability offset much of the asset growth so that Federal Reserve net assets grew at an annual rate of only 7.2%.

From the end of the Federal Reserve's asset growth period in December 2014, there was continual pressure on the Federal Reserve to return to what might be called a normal size, relative to the economy. Theoretically, it would seem that a reversal of the way the asset increase was accomplished without inflation could be done without deflation. Specifically, the Federal Reserve could allow bank reductions in excess reserves to more than offset Federal Reserve reductions in assets by controlling the IOER so that market rates of return were superior. Then, net asset growth would generate the desired growth in



the money supply in spite of Federal Reserve open-market sales of assets.

In October of 2017, the Federal Reserve succumbed to pressure and began a program to reduce its assets. At the beginning of the program, the spread between the market return on Treasuries, a market interest rate measure, exceeded the IOER by at least 20 basis points and the market superiority to excess reserves rose until December of 2018. Since the Federal Reserve was in total control of the IOER, it could have maintained this market superiority over excess reserves indefinitely.

But something happened in the market that the Federal Reserve could have adjusted to but did not. From the inception of the asset reduction program, market interest rates rose and the Federal Reserve followed those rates upward in setting the IOER. That all changed in November of 2018 as market rates began to fall. Since the Federal Reserve was in total control of the IOER, it could have followed market rates down just as it followed them up, but it did not. That decision doomed the asset reduction program to failure.