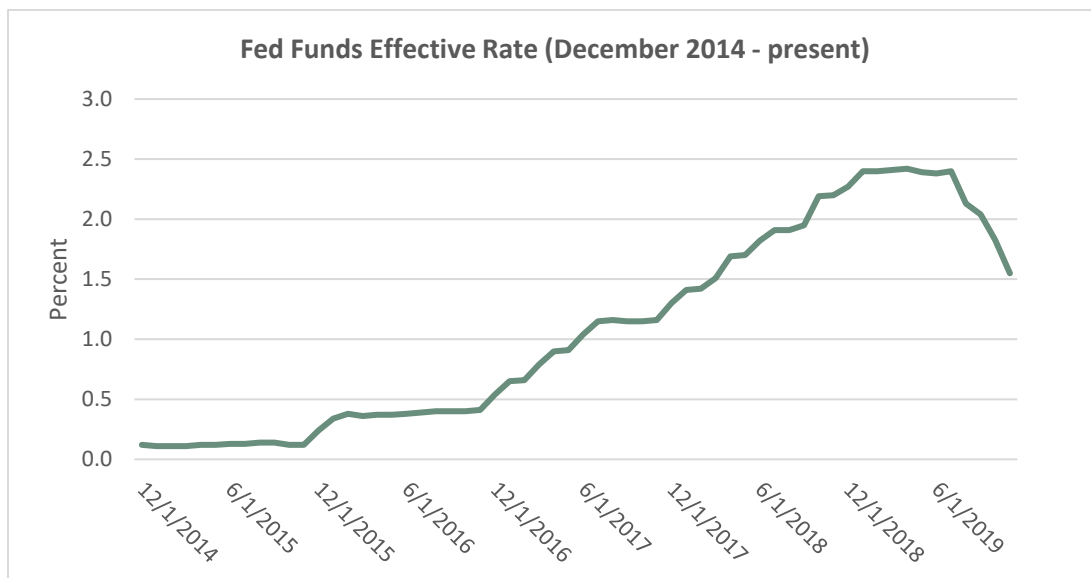


Chandler's 2020 Economic Outlook

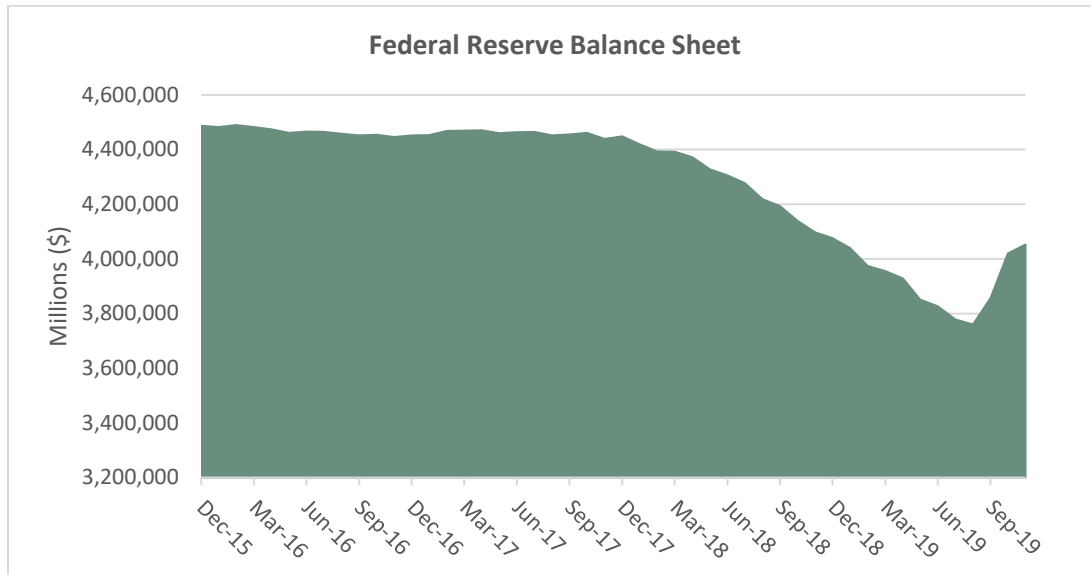
The Fed's Slow Path to "Normal" and Swift Pivot to Accommodation Sets the Stage for Trend Growth

We expect US economic growth to moderate in 2020 toward trend growth of 1.8% compared to 2.3% in 2019. Our thesis is largely underscored by the belief that the impact of monetary policy on economic growth is somewhat lagged, and the more accommodative monetary policy stance of the Federal Reserve (Fed) and other global central banks throughout 2019 should provide a tailwind for the economy in 2020. Though slow global growth continues to create a headwind for the US economy, and ongoing trade and Brexit negotiations may cause bumps in the road during 2020, we believe the Fed's shift toward more aggressive policy accommodation in 2019 sets the stage for ongoing slow economic growth in the new year.

During the second half of 2019, the Fed swiftly pivoted toward a much more accommodative monetary policy stance, cutting the fed funds target rate by 25 basis points at three consecutive Federal Open Market Committee (FOMC) meetings in July, September, and October. Simultaneously, but largely downplayed by policymakers, the Fed also began expanding its balance sheet in September to address the shortage of reserves in the banking system. Although the Fed has made a concerted effort not to refer to the recent balance sheet expansion as a form of quantitative easing (QE), it arguably represents a fairly significant about-face in the Fed's efforts to reduce the size of their balance sheet over the past few years.



Source: Bloomberg
Fed Funds Effective Rate (Dec 2014- present)



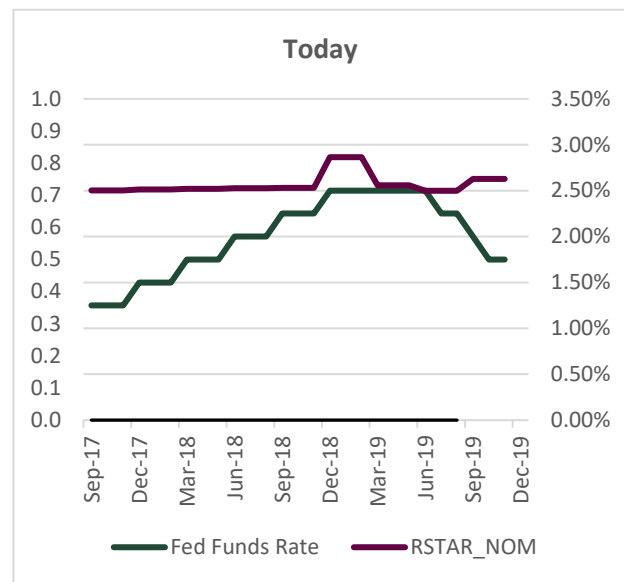
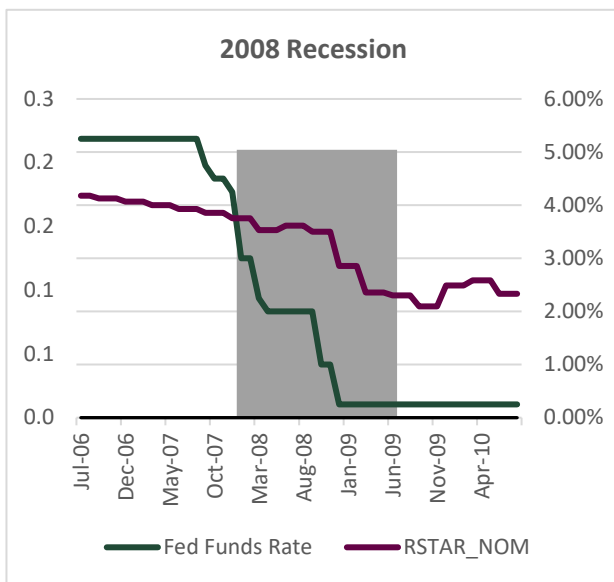
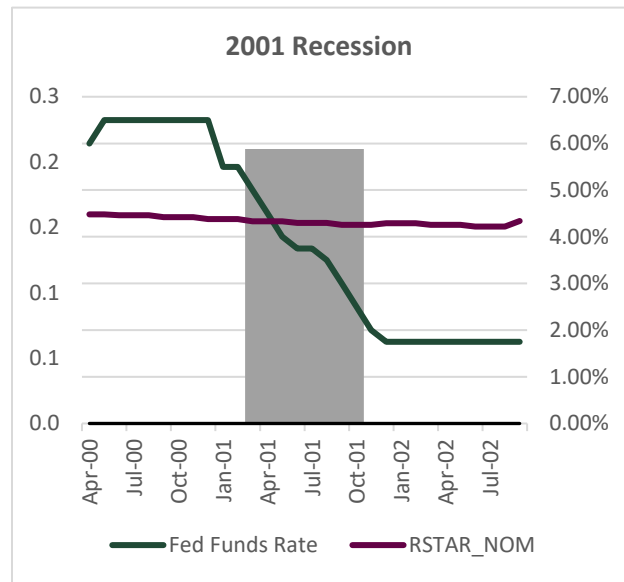
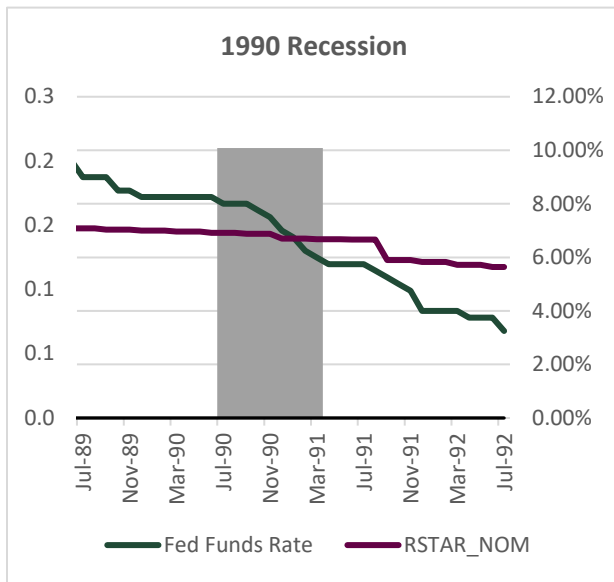
Source: Bloomberg
Federal Reserve Balance Sheet (2015-2019)

Fed Chair Powell referred to the first rate cut in July 2019 as an “insurance” cut and suggested that monetary policy accommodation would insure against the risk of a potential recession. At that time, the Treasury yield curve was inverted (the 3-month T-bill yield was higher than the 10-year Treasury bond yield; historically an ominous potential warning sign of an upcoming recession), the trade dispute between China and the US had escalated significantly, global growth was sputtering, and sovereign bond yields in Europe were negative. The JP Morgan Global Manufacturing PMI index had fallen into contractionary territory, indicating the global manufacturing sector was slipping into a recession and fears were escalating that the decline in the manufacturing sector could begin to spillover into the rest of the global economy.

Some policymakers referred to the Fed’s first rate cut of 2019 as preemptive, given that US unemployment was at a historically low level (3.7%) and US consumer confidence was at a historically high level when the Fed began cutting rates. However, looking back at previous recessions we know that both employment and consumer spending trends are typically lagging economic indicators. For example, during the Great Recession, the unemployment rate did not peak until October 2009, four months after the recession was technically over. Likewise, the Conference Board’s Consumer Confidence index did not bottom until February 2009, fourteen months after the Great Recession started. Furthermore, in previous recessions the Fed has typically started cutting rates before all of the major economic indicators have flashed red. How was 2019 really any different than the past?

We decided to look back at the data to see if we could identify how the Fed’s policy action in 2019 may have differed from the last three economic recessions and if the Fed had in fact been “preemptive” in cutting rates in 2019 to insure against a near-term recession. In our analysis, we decided to compare the Fed’s estimate of the “neutral” fed funds rate (the rate which is neither stimulative nor restrictive to the economy) to the Fed’s actual fed funds target rate over time.

The Federal Reserve Bank of New York relies on two different models to estimate the real neutral rate of interest (r-star), the Laubach-Williams model and the Holston-Laubach-Williams model. To simplify our analysis, we used the Laubach-Williams model as a proxy for the real neutral rate of interest and added the Bureau of Economic Analysis' US Personal Consumption Expenditure Core Price Index (Core PCE) YoY% as a proxy for inflation, in order to estimate the inflation-adjusted (i.e. nominal) neutral rate of interest. We then graphed the nominal neutral rate of interest (RSTAR_NOM; the purple line in the charts below) over time and compared it to the Fed's actual target fed funds rate upper bound (the green line). The shaded areas of each chart depict the recession timeframes as defined by the National Bureau of Economic Research (NBER).



Source: Bloomberg, the Bureau of Economic Analysis, and the Federal Reserve Bank of New York (the Laubach-Williams model)

As we anticipated, the graphs from the last three recessions in 1990, 2001, and 2008 all look similar. However, we observed a meaningful contrast with the graph depicting the past few years. As illustrated in the above graphs, prior to the past three recessions the target fed funds rate (the policy rate set by the Fed) was higher than the estimated nominal neutral rate of interest for an extended period of time leading up to the recessions. We believe this data suggests that Fed policy had been restrictive for several months prior to the past three recessions. We can see from the graphs that the Fed began cutting the fed funds rate before each of the past three recessions technically started (shown by the decline in the green lines before the shaded recession timeframes), suggesting that the Fed attempted to be preemptive in providing policy accommodation. However, in our view, the long period of restrictive monetary policy leading up to the last three recessions more than offset the Fed's preemptive attempts to avoid recession. In other words, even though the Fed started cutting rates before the past three recessions started, it was too little too late.

What was different about 2019? As depicted in the last chart, it appears that the Fed never raised the target fed funds rate to a restrictive level (according to the model estimate). Unlike the last three recessions, we believe the fed funds rate has been close to or below neutral for most of the last few years. Unlike the time periods leading up to the last three recessions, when Fed monetary policy appeared restrictive, the last graph suggests that Fed policy was actually stimulative for a long period of time leading up to 2019 when fears of a potential recession started to grow. The last graph also indicates that the current level of the fed funds rate is well below the estimated level of the nominal neutral rate, which suggests that current monetary policy is stimulative to economic growth.

Although we hesitate to say that this time is different, we believe our analysis indicates that in fact this time *is* different. In our view, the Fed's slow approach to "normalizing" the fed funds rate after a long period of ultra-low rates following the Great Recession, coupled with swift accommodative policy action in 2019 may have been enough to keep the US economy on a path of slow growth, despite the downside risks and ongoing economic headwinds.

Since cutting the fed funds rate for the third time in October to a range of 1.50%-1.75%, Fed officials signaled that monetary policy would likely remain on hold for the foreseeable future. According to the Fed's most recent Summary of Economic Projections in December, policymakers are anticipating no change to the fed funds rate in 2020. We believe the hurdle rate to tighten policy remains particularly high, as market-based measures of inflation are still too low. In fact, we believe the Fed may allow inflation to slightly overshoot the 2.0% target before becoming more hawkish. We also believe the Fed is reluctant to provide additional policy accommodation (at least over the near- to intermediate-term), given the current low level of unemployment and concerns about protecting against potential asset bubbles, particularly within the leveraged loan and commercial real estate markets. However, if market-based inflation metrics fail to improve, and/or the domestic or global economy experiences an exogenous shock, we believe the Fed has left the door open for additional policy accommodation.

The consensus forecast for US Gross Domestic Product growth in 2020 is 1.8%, which is generally in line with the Fed's long-run GDP target of 1.9%. The Fed is actually forecasting a slightly more optimistic growth rate of 2.0% GDP growth in 2020. Although sub-2.0% GDP growth in 2020 represents a

deceleration from growth of 2.9% in 2018 and 2.3% in 2019 (estimated), it is also not indicative of a recession.



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Questions?

Please contact Chandler at info@chandlerasset.com, or toll free at 800-317-4747 with any questions or to learn about investment management solutions for public entity investment programs.

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