2ND QUARTER ▪ 2019

INVESTMENT PUBLICATIONS HIGHLIGHTS

Second quarter's edition summarizes five articles on monetary policy:

- the first article considers whether the Federal Reserve's Zero Interest Rate Policy following the global financial crisis contributed to today's low interest rate and low growth environment;
- the second argues that the unconventional policies implemented by the Fed post-global financial crisis helped lower interest rates and stimulate economic activity;
- the third assesses two alternative policy frameworks discussed at the Fed—price level targeting and nominal GDP level targeting—and finds that both options would be effective at stabilizing inflation and output following a recession;
- the fourth provides an entryway for the average investor into Modern Monetary Theory, a trendy and controversial topic; and
- the last article focuses on the Eurozone and considers whether the European Central Bank has the tools to lift inflation and avoid a Japan-style liquidity trap in the face of deteriorating demographic trends.

MONETARY POLICY REGIMES AND THE REAL INTEREST RATE

William T. Gavin, Federal Reserve Bank of St. Louis *Review*, Vol 100, no 2 (Second Quarter 2018): 151–64

Contrary to theory, the author argues that extreme monetary policy can influence real economic variables. By studying four separate monetary policy regimes in the United States since 1965, the author finds that periods of extreme Federal Reserve policy appear to have impacted real economic variables, including real interest rates and real consumption growth. Thus, the author suggests that the Fed's Zero Interest Rate Policy (ZIRP), instituted following the global financial crisis (GFC), may have contributed to low real interest rates and low real growth during the post-GFC period.

Real interest rates fell across the globe following the GFC. Many believe low future growth expectations, driven by structural factors, such as aging demographics, explain these persistently low real rates. The author, however, contends that the Fed's ZIRP may have played a role. This hypothesis is contrary to traditional economic thought; a key assumption in monetary theory states that monetary policy influences nominal variables, but does not determine real variables. To assess if the Fed can impact real interest rates and real economic activity, the author examines outcomes for several variables—the effective federal funds rate, ten-year Treasury yields, inflation, real per capita personal consumption expenditure growth, and combinations of these variables—across four distinct monetary policy regimes since 1965: the Great Inflation (January 1965 – October 1979), the Volcker Reform (October 1979 – October 1982), the Great Moderation (October 1982 – December 2008), and ZIRP (December 2008 – December 2015).

Monetary regimes are defined by differences in how the Fed prioritized price stability versus output stabilization and the methods used to implement policy. The author finds that the level and variance of policy rates, Treasury yields, and inflation differed across regimes, consistent with the assumption that monetary policy affects nominal variables. For example, during the Volcker Reform era—a short period during which the Fed targeted M1 money supply to achieve price stabilization—inflation declined markedly, while interest rates were high and volatile and consumption growth was the lowest of any regime. Whereas, in the most recent ZIRP period, the Fed pegged policy rates between 0% and 0.25% and inundated the market with excess reserves in an effort to stabilize output. Interest rates became anchored at the zero lower bound, yet inflation ran below the Fed's 2% target and economic growth remained stubbornly below potential.

There is also evidence that extreme policy—setting the policy rate well above or below a normal level—can influence the level of real interest rates. The author argues that econometric models of the equilibrium real interest rate do not effectively control for extreme monetary policy stances. To account for this shortcoming, he estimates an equilibrium real interest rate as the growth rate of real per capital personal consumption expenditures, plus a positive rate of time preference for consumption today versus in the future.

Using this approach, the author finds that during the Volcker Reform and ZIRP regimes, real interest rates were well above and below the implied equilibrium real interest rate, respectively. Real interest rates were not only far from normal, but real economic growth during these periods was below potential. During the Great Inflation and the Great Moderation policy regimes, real interest rates tracked the implied equilibrium real interest rate more closely and the real economy grew in line with its potential. The author argues that these findings suggest it is possible that the Fed's extreme policy stance during the ZIRP regime is partly to blame for the low real rates and real economic growth that have persisted since the GFC.

OUTSIDE THE BOX: UNCONVENTIONAL MONETARY POLICY IN THE GREAT RECESSION AND BEYOND

Kenneth N. Kuttner, *Journal of Economic Perspectives,* Vol 32, no 4 (Fall 2018): 121–46

The author analyzes how unconventional monetary policy affected the US economy following the GFC. Evidence presented shows that unconventional policies, such as forward guidance and quantitative easing (QE), had a positive impact on the economy after near-zero interest rates failed to revive output, suggesting the Fed should extend such measures in the event of another recession.

In the wake of the GFC, near-zero interest rates failed to stimulate the economy and the Fed had to rely on unconventional measures, including forward guidance and QE. While the open market operations associated with conventional policy—adjustments to the federal funds rate—are typically negligible, the Fed's QE measures consisted of four asset purchase programs targeting agency debt, mortgage-backed securities, and long-term Treasuries that expanded the Fed's balance sheet from $900 billion to $4.5 trillion. And, where the Fed had provided qualitative and vague forward guidance in the past, its announcements became far more explicit about the likely path of interest rates following the GFC.

In theory, both conventional and unconventional monetary policy should primarily affect economic and financial market activity via their impact on household spending, bank lending, and corporate financing decisions. Yet differences in their primary transmission channels could have implications for their effectiveness. Adjustments to the federal funds rate directly impacts overnight borrowing and lending between banks, but largely has an indirect impact on economic activity as changes in banks' decision-making flow through to longer-term interest rates, asset prices, exchange rates, and debt markets. QE directly lowers long-term interest rates, reducing the term premium over short-term bonds. More explicit forward guidance provides a clear and credible signal to market participants about the future path of interest rates and inflation, allowing investors to align their actions with the Fed.

In reality, isolating the impact of each policy is a much more difficult task due to the complex nature of the global economy. However, several studies have demonstrated that unconventional monetary policies lowered long-term interest rates and had a positive impact on the economy. For instance, both event studies and time series analysis show that QE had a large, negative effect on long-term interest rates. However, it is not clear if this outcome was due to the policy's impact on the term premium. Other factors, such as restoration of market functioning or signaling, could have played a role, since earlier, more successful iterations of QE included forward guidance and occurred during periods of more severe market stress. The evidence that unconventional monetary policy had a meaningful impact on economic outcomes is less conclusive, but several studies suggest QE increased bank lending, supported credit growth, and reduced the potential contraction in GDP growth and the increase in the unemployment rate relative to a counterfactual with no QE.

Overall, the author concludes that the Fed's unconventional policies following the GFC reduced long-term interest rates and stimulated economic activity. At the same time, he finds that concerns about possible side effects—such as inflation, financial stability, and international spillovers—were mostly overblown. Inflation has remained contained, and while some reaching for yield and an increase in risk tolerance did occur, there is little evidence that it was excessive. There seems to have been some international spillovers associated with unconventional policies; for example, higher interest rates in emerging markets relative to developed markets caused large inflows into EM debt, putting pressure on EM central banks to maintain exchange rates.

Ultimately, the benefits of unconventional policies far outweighed the costs, especially when considering the possibility of the more severe recession that might have occurred without these policies. The author concludes that the success of unconventional polices following the GFC increases the likelihood the Fed will use them in the case of another recession where conventional monetary policy is less effective than in the past.

PRICE LEVEL AND NOMINAL GDP TARGETING: NEW FRAMEWORKS FOR THE FED?

Jan Hatzius et al., *US Economics Analyst*, Goldman, Sachs & Co., January 14, 2018

Motivated by the concern that conventional monetary policy tools will be less effective at combating future recessions, the Federal Reserve is discussing alternative policy frameworks. Thus far, price level and nominal GDP (NGDP) level targeting have gained the most traction. The authors find that both policies can be effective at stabilizing inflation and output following a recession, but NGDP level targeting is more consistent with the Fed's dual mandate and produces superior outcomes.

Although the economy has recovered from the GFC, interest rates have not yet returned to pre-GFC levels. A lower neutral rate could constrain the Fed during the next downturn, since there will not be much room to cut interest rates before reaching the effective lower bound. This could lead to a deeper and longer recession. Proposals to address this issue fall into three general categories: restoring room to cut interest rates, extending asset purchases, and extending forward guidance. Policies designed to extend forward guidance have gained the most support from policymakers, with price level and NGDP level targeting as the clear frontrunners. Both of these policies are aggressive forms of forward guidance that rely on a stronger commitment to future overheating than the current framework.

The Fed currently attempts to achieve an average inflation rate of 2% on a forward-looking basis, but both price level and NGDP level targeting are backward-looking measures that aim to compensate for past deviations from a target path. Therefore, if average inflation fell below the Fed's 2% target, over the course of a business cycle, the Fed would commit to an above target inflation rate until average inflation returned to 2%. Price level targeting should stabilize demand when the economy enters a recession by stabilizing prices and putting downward pressure on real interest rates. Price level targeting does have several drawbacks, including difficult messaging, potential excessive overheating, and unnecessary tightening in response to a supply shock. Former Fed chair Ben Bernanke proposes waiting until policy rates reach their lower bound before the price level target takes effect. While this modification would address the supply shock issue, it does nothing to resolve the issues with messaging and excessive overheating.

NGDP level targeting is like price level targeting, but under this framework, the Fed adjusts policy to correct for past deviations from a long-term target nominal growth rate for the economy, such as 5%. For example, the Fed would make up for any NGDP shortfalls following a recession by extending expansionary policies until the nominal growth rate of the economy returned to its long-term target. While this policy could also cause the Fed to overheat the economy, the authors believe NGDP level targeting is an improvement over price level targeting because it considers deviations from target due to either inflation or output, aligning it with the Fed's dual mandate. Additionally, it looks through supply shocks and is easier to communicate to the public.

To assess the potential impact of these policies on various economic variables, the authors used the Fed's FRB/US model to simulate the policy prescriptions suggested by each framework following a recession. Their analysis yielded four key conclusions:

(1) NGDP targeting extends the timeframe that policy remains expansionary; (2) NGDP level targeting reduces long-term real rates the most and is the most effective at reducing the severity of recessions; (3) both price level targeting and NGDP level targeting keep inflation anchored; and (4) both price level targeting and NGDP level targeting cause the unemployment rate to fall below its natural level, increasing the recession risk from overheating.

The authors' simulations suggest that both price level and NGDP level targeting are effective alternative policy tools, but NGDP level targeting produces better economic outcomes. These findings are based on the assumptions that Fed polices are fully credible and clearly understood. Both policies become less effective at anchoring inflation and reducing unemployment once these assumptions are dropped, resulting in more overheating during recoveries than the initial simulations suggest.

AN INVESTOR'S ROUGH GUIDE TO MODERN MONETARY THEORY

Will Denyer, *Gavekal Research*, March 7, 2019

The author discusses the tenets of Modern Monetary Theory (MMT), how it differs from traditional theory, and its potential implications on policy making. The author concludes that while MMT presents some useful reforms, it ultimately calls for increased print and spend policies and more downward manipulation of interest rates. The uncertainty surrounding the extent to which its ideas will impact policy could reduce demand for USD assets.

MMT has been a controversial topic in recent years. It is broadly defined as the idea that government spending is not limited in nominal terms by the amount of money the government can raise through taxes and borrowing. This assumption is contingent on the government being able to print its own money and not being constrained by fixed exchange rates. MMT supporters believe this means policy makers can and should spend as much money as necessary to achieve their goals. Their vision goes beyond typical Keynesian aggregate demand manipulation for full employment and target inflation to include long-term social welfare projects, such as universal healthcare and climate change. Achieving those goals may mean running even larger fiscal deficits than exist in the United States today.

Critics point out these policies could lead to undesirable side effects—most notably, runaway inflation—but MMT proponents claim the government can use fiscal policy tools to offset such effects. For example, if inflation is too low, spend more; if inflation is too high, take money out of circulation by increasing taxes or government borrowing. According to MMT, while taxing and borrowing are not required to finance government spending, they are useful tools for manipulating aggregate demand to achieve full employment and a targeted rate of inflation. In fact, MMT proponents argue that fiscal tools—spending, taxing, and borrowing—are more effective ways to stimulate aggregate demand than interest rate manipulation, especially when the Fed confronts the zero bound. If MMT were ever adopted, there would be a number of implications for the Fed's role in setting monetary policy.

Under MMT, not only would the fiscal authority assume control of determining full employment and maintaining price stability from the Fed, but it would also no longer be necessary for the Fed to issue bonds or support interest rates. Supporters of MMT argue that discontinuing the issuance of Treasury securities would reduce the government's ability to manipulate the yield curve or the demand for loanable funds. However, the author argues that the proposed alternative (i.e., term deposits at the Fed), while like Treasuries, would actually result in interest rates being set by the government, not the market. MMT would relegate the Fed to helping keep interest rates low by not soaking up any excess money created by the government, allowing them to fund their policy goals cheaply.

The author concludes that MMT may contain some useful policy reforms, but it ultimately calls for increased print and spend policies and more downward manipulation of interest rates, not less. There is still a great deal of uncertainty about how this new theory will affect central bank and government policies, but as it continues to gain attention, it could result in a reallocation away from US assets.

ECB MONETARY POLICY CONFRONTS AGING DEMOGRAPHICS AND ELUSIVE INFLATION

Andrew Bosomworth and Konstantin Veit, PIMCO *In Depth*, March 2019

Like Japan in the mid-1990s, the Eurozone is at risk of falling into a liquidity trap. To assess the likelihood of this occurring, the authors examine the evolution of Eurozone inflation and consider whether demographic trends are likely to lift or suppress inflation in the future. They conclude that the Eurozone's aging population represents a structural headwind to inflation, and the European Central Bank (ECB) will struggle to boost inflation, given its failure to normalize monetary policy this cycle.

A country finds itself in a liquidity trap when nominal interest rates are low and constrained by the effective lower bound, but insufficient inflation results in real interest rates remaining too high to stimulate aggregate demand. Japan found itself in this situation in the mid-1990s, and despite unprecedented monetary easing and fiscal spending, the government has failed to lift inflation. Today, the situation in the Eurozone resembles the situation in Japan roughly 20 years ago—historically low nominal interest rates, elevated debt levels, and low inflation.

The ECB has struggled to meet its inflation target of "below, but close to 2%" since the global financial crisis despite extraordinarily accommodative monetary policy; year-over-year CPI growth has averaged just 1.2% over the past decade and inflation expectations continue to move lower. One explanation for the Eurozone's tepid inflation is the bloc's aging population. Persons 65 and older—the cohort typically associated with retirement—is the fastest growing segment of the Eurozone's population, and they are working longer and saving more than they have historically. Theory suggests these trends could impart a secular, downward drag on inflation in the future. Using models that estimate future inflation as a function of two separate measures of population growth—growth in the working age population and the growth rate of the dependency ratio—PIMCO finds evidence in support of the view that the Eurozone's aging society will continue to exert downward pressure on inflation over the next decade.

Does the ECB have the tools to offset the deflationary effects of the Eurozone's aging population? Given the starting point for monetary policy today—negative policy rates, multiple rounds of liquidity operations, and extensive public and even private sector asset purchases—the authors think the ECB will struggle to counteract the next recession. The ECB's conventional policy tools will likely be constrained by the effective lower bound, but there are minimal impediments to the ECB extending its existing unconventional policies following the next recession. Yet these policies have failed to lift inflation this cycle and extending them could exacerbate unwanted side effects (i.e., an increase in zombie firms). More extreme options, such as helicopter money, might be more successful at lifting inflation, but they face more legal and political roadblocks. However, the ECB may have relatively more leeway regarding certain forms of this strategy relative to other large central banks.

The authors conclude that demographic shifts in the Eurozone and the ECB's limited policy toolkit increase the odds that the Eurozone will follow Japan into a liquidity trap. More extreme monetary policies and fiscal policies designed to promote longevity in the labor force might help lift inflation higher than it would have been absent these policies, but even with these measures, the authors estimate that Eurozone inflation will only creep back toward the ECB's target over the next decade. ■