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ANTECEDENT ANALYSIS

Adventures on the Planet of the Apes: *Navigating the Low-Rate Environment*

Artificially low rates are causing multiple distortions and pockets of heightened risks—and while the current environment may be unprecedented, it need not be incomprehensible. Investors who understand the dynamics driving low rates may be positioned to take advantage of promising opportunities.

April 2020

Dynamic Allocation Strategies Team

Introduction

This paper was originally drafted in January 2020 and distributed to the DAS team in February 2020 for review and comment. As we have done periodically with previous papers in the Antecedent Analysis series, and given that the current environment makes this topic especially prescient, we are now making this document more broadly available outside of the team and outside of William Blair.

Sovereign bond yields have been plunging toward zero and have even reached negative territory in parts of Europe and Japan. As a result, bonds in those markets are looking highly unattractive and seem to offer a great opportunity to go short and potentialy earn a handsome return as prices revert back down toward fundamental value. Several equity markets are similarly either unattractive or less attractive than they might be in a more normal rate environment. However, as we will explain, in this environment it might take a long time for their prices to reach fundamental values, and we are cautious about shorting bonds and equities as a result.

Valuation is the first stage in our process of analysis. In this stage, we ask *Where* discrepancies exist between price and value. When we identify price discrepancies like these, we embark on the second stage in our process and ask *Why* prices are diverging from fundamental values. As it applies to this specific phenomenon, we want to explore *Why* interest rates are low in order to better understand when rates might normalize. This understanding is key to the third stage in our process, which tells us *How* to respond to this opportunity as macro investors.

As we have previously explained, we see loose monetary policy as a main driver of pricing in the current environment. In our 2018 paper, *Antecedent Analysis: Navigating a Troop of Gorillas*, we laid out the effects of loose monetary policy on market prices, volatility, and market structure. We also analyzed how loose monetary policy conspires with market regulations and rules-based investment strategies to create a fragile market environment susceptible to illiquidity events. When writing that piece, we were facing a "troop of gorillas" in the form of central banks distorting markets with artificially low rates. We are now living on the "planet of the apes," where low rates are used as the ultimate tool for all problems, including the negative supply shock caused by the new coronavirus.

In this piece, we provide a deeper understanding of the causes and consequences of the current low interest rate environment, which helps us better anticipate moves in the market and properly navigate them.

An artificially loose monetary environment leads to misallocations of resources that can take a long time to unwind. The current slow rate of growth among developed countries is likely driven in part by the multiple distortions created by perpetually overactive monetary policies. Regardless of central bankers' beliefs about the drivers of long-term economic growth, their incentives are to induce economic stimulus in the shorter term. And while central bankers try their best to push up inflation, inflation itself is not a component of a healthy economy. Unfortunately, the active pursuit of inflation is likely to eventually give policy makers too much of what they are asking for.

In anticipating future developments, we must realize that the political impetus of governments and central banks may not be in line with normalizing economic conditions that allow prices to find their fundamental values. Policy makers will allow the system to change only when it becomes politically expedient. We therefore expect the current environment of low interest rates to prevail for quite some time. Alas, the kinds of policies that may follow this low-rate period are unlikely to be for the better. We will likely see a large shift from monetary policy to fiscal policy as the primary source of economic stimulus within the coming decades, but this is unlikely to happen until rates have been pushed down even further, in particular in the United States where there still remains room for multiple rate cuts.

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On the back of this analysis, we have lengthened the interest rate and inflation convergence times in our valuation model from 8 to 12 years. Yet, we retain our eight-year convergence period for risky asset prices as we cannot conclude that central banks have the same kind of direct control over these as they have over short-term rates. In what follows, we start by attaining an understanding of interest rates through the lens of the natural-rate concept and look at why rates and inflation are low. We then discuss why and how the current regime of loose monetary policy might end, and conclude with the implications this analysis has for our investment portfolios.

The Natural Rate

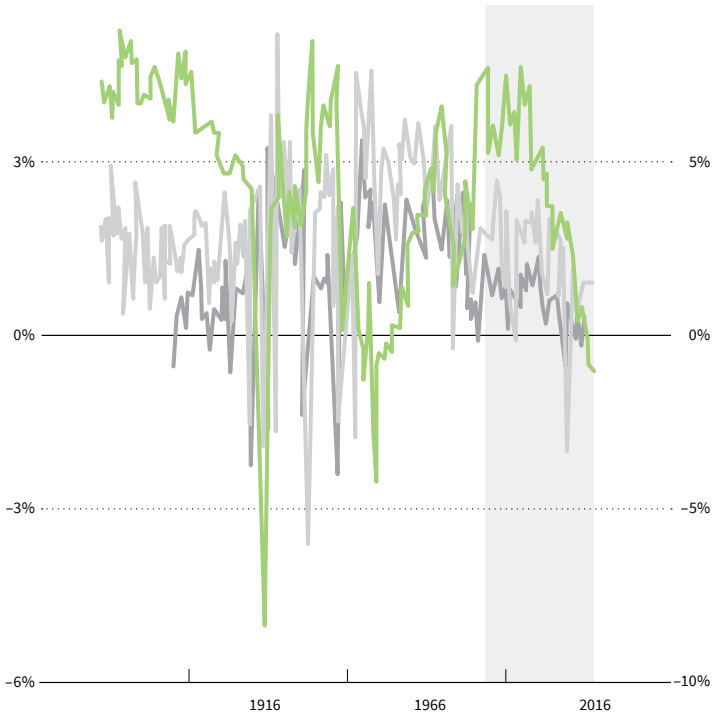
The so-called "natural rate" serves as a common goalpost for forecasters of inflation. The concept was coined by Swedish economist Knut Wicksell, and today it is often found at the center of discussions about monetary policy. In Wicksell's words, the natural rate is "the rate of interest which would be determined by supply and demand if no use were made of money and all lending were effected in the form of real capital goods."[1] While an interest rate in the absence of both central banks and money may seem hard to imagine, the natural-rate concept is commonly referred to in discussions about where central banks should set rates.

A popular way to measure the natural rate is to take account of historical statistical relationships between real interest rates on the one hand, and gross domestic product (GDP) output gap and other macroeconomic variables on the other.[2] By controlling for the cyclical output gaps, economists assess how the real interest rate would evolve in their absence. They have applied this methodology to several studies to measure the natural rate in different countries.[3] There have also been some statistically more complicated models using changes in macroeconomic variables to measure the natural rate.[4] A general conclusion is that the natural rate is declining.

The problem with these measurements of the natural rate is that while they control for business cycles, they do not control for any longer-term pressure on rates. As such, if central banks hold rates down for a couple of decades, this will be interpreted as a fall in the natural rate by these models.

EXHIBIT 1

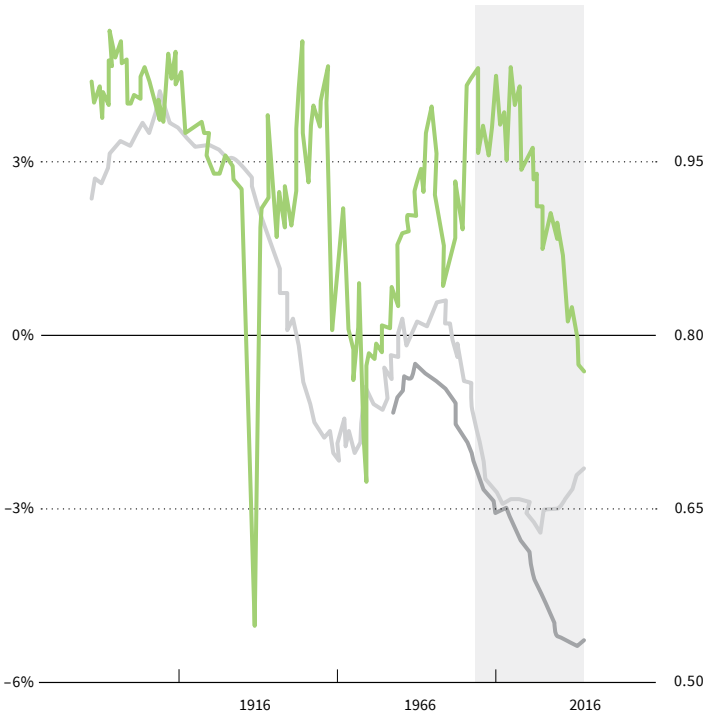
GDP and Productivity



Source: Borio, Claudio EV, Piti Disyatat, Mikael Juselius, and Phurichai Rungcharoenkitkul. "Why So Low For So Long? A Long-Term View Oof Real Interest Rates." Bank of Finland Research Discussion Paper 36 (2017). Data reflects cross-country medians across 19 advanced economies.

EXHIBIT 2

Dependency Ratios

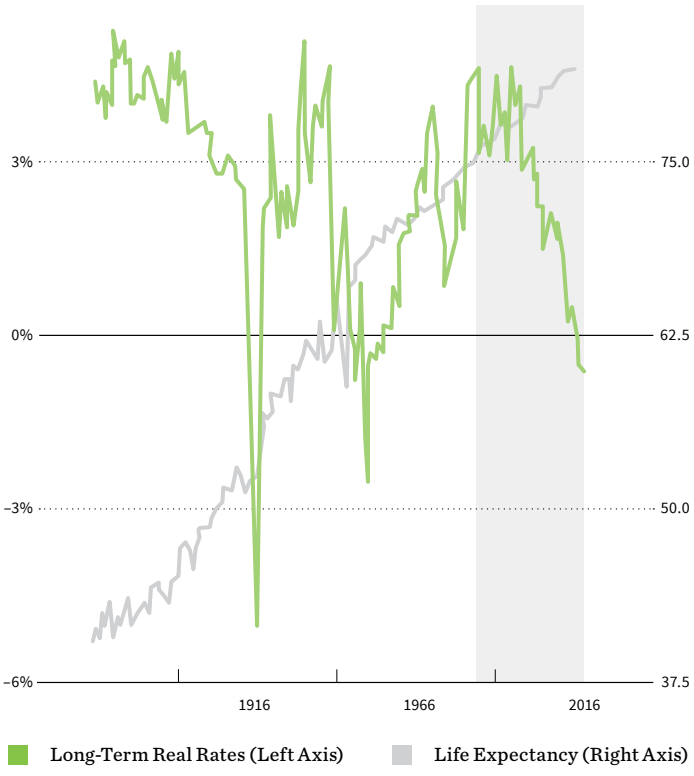


Source: Borio, Claudio EV, Piti Disyatat, Mikael Juselius, and Phurichai Rungcharoenkitkul. "Why So Low For So Long? A Long-Term View Oof Real Interest Rates." Bank of Finland Research Discussion Paper 36 (2017). Data reflects cross-country medians across 19 advanced economies.

Most studies that measure the natural rate use data going back a few decades. In a longer perspective, there is good reason to believe that the natural rate declines. The world has seen a slow and negative trend in both nominal and real rates since the 12th century,[5] which is most likely due to factors like better financial intermediation, more international integration, and longer life spans. Rates could also have come down as inflation expectations became part of price setting, which made bonds less risky in real terms.[6] The long-term decline in the natural rate, however, cannot explain the rapid fall in rates we have seen in much of the wealthy world since the 1980s.

EXHIBIT 3

Life Expectancy (In Years)



Source: Borio, Claudio EV, Piti Disyatat, Mikael Juselius, and Phurichai Rungcharoenkitkul. "Why So Low For So Long? A Long-Term View Oof Real Interest Rates." Bank of Finland Research Discussion Paper 36 (2017). Data reflects cross-country medians across 19 advanced economies.

The perception of rapidly falling natural rates is prompting economists to look for fundamental reasons for why this is happening. Common explanations include lower economic growth[7] and related lower return on capital.[8] Others look for explanations in higher demand for safe assets and liquidity.[9] Demographics is another popular rationale. A falling dependency ratio, with higher shares of the population being people in working age, means higher net savings and, thus, lower rates.[10]

Some studies observe, for instance, that the decline in rates since the 1980s coincided with falling growth, productivity, or dependency ratio. However, these explanations lack support from a long-term perspective. Borio, et al. (2017) use data covering 19 advanced economies starting in 1870 and show that only dependency ratio and life expectancy have a statistically significant correlation with real rates, but that this relationship disappears when the variables are used in a joint regression. And while life expectancy correlates with falling rates since the 1980s, this can be explained by a simple linear trend line. If all variables consistently move in the same direction, you cannot conclude any causal relationships, as exhibits 1, 2, and 3 illustrate.[11]

This same study does find that interest rates can be explained over the long-term by the type of prevailing monetary regime, which is contrary to the common view of central banks as reacting to changes in the natural rate. As real economic factors like productivity and demographics lower the natural rate, the argument goes, banks must cut rates to avoid artificially suppressing economic growth. However, it seems we should not let central banks off the hook that easily.

We conclude that while natural rates probably have fallen in the past few centuries, this does not mean that the steep falls in rates since the 1980s are in any way part of this dynamic. It certainly does not mean that it is natural for Europe and Japan to have negative rates. Instead, we need to look closer at the incentives and functioning of the central banks to understand the modern dynamic of interest rates.

Why Rates Are Low

We see good reason to believe that the explanation for the current low real-rate environment lies in the incentives that govern the prevailing monetary regime. Starting in the era of the "Greenspan put," central banks in developed countries have been increasingly keen to cut rates in the face of economic and market downturns and ever less ready to raise rates as circumstances normalize. In the case of the United States, real rates were greater than 5% prior to the Black Monday crash in 1987, but then fell as Federal Reserve (Fed) Chair Alan Greenspan stepped in to rescue the market. Rates were cut again in the face of the dot-com bust, but this occurred from a much lower beginning level. Rates were lower still at the time of the housing bust of 2008, when the Fed again cut rates. For every recovery period, rates have increased only partially back to previous levels, a dynamic which has landed the United States in a negative real-rate environment, as exhibit 4 illustrates.

This behavior is understandable considering the incentives of central bankers. They want to avoid being blamed for destroying the economy and do anything to stave off a recession under their watch. If a crisis does set in, they would be rational to do everything they can to save their own reputations by stopping it.

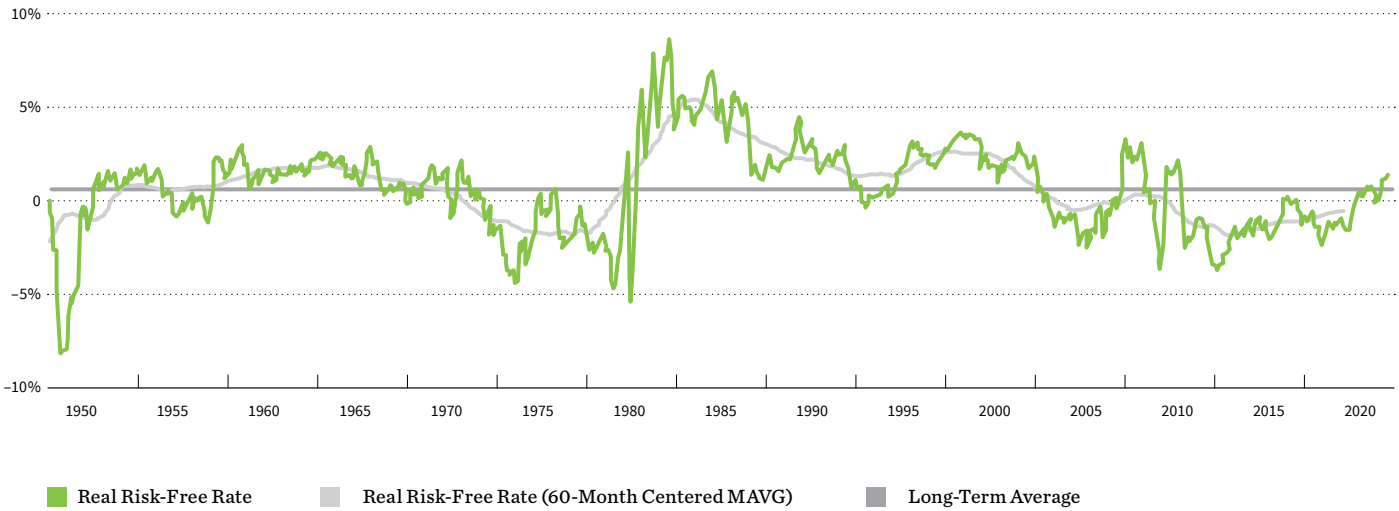
If central bankers' quest for short-term economic performance drives rates down, why hasn't this motivation kept rates low since the very birth of central banking? The answer lies in the constraints central bankers faced during previous regimes.

For most of central banking history, the goal of monetary policy has been to maintain fixed exchange rates and promote the free flow of capital. The gold standard served this function from the late 1800s until its end in 1933, as member states pledged to allow for the free international flow of goods and capital. Such a setup constrained central banks from using interest rates for purposes other than targeting the exchange rate.[12] The Bretton Woods agreement of 1944 imposed similar—albeit weaker—constraints than did the gold standard. Exchange rates were fixed to the U.S. dollar and the currency of this new superpower was pegged to the price of gold.

If the gold standard lacked the safeguard to restrain monetary policies, Bretton Woods was even more fragile as it relied on the United States to honor its pledge to exchange U.S. dollars for gold at a set exchange rate. Nevertheless, the system lasted until Nixon closed the gold window in 1971. Only then did we get a world

EXHIBIT 4

U.S. Real Risk-Free Rate: 30-Day Treasury Bill



Source: Bloomberg and William Blair, as of March 16, 2020.

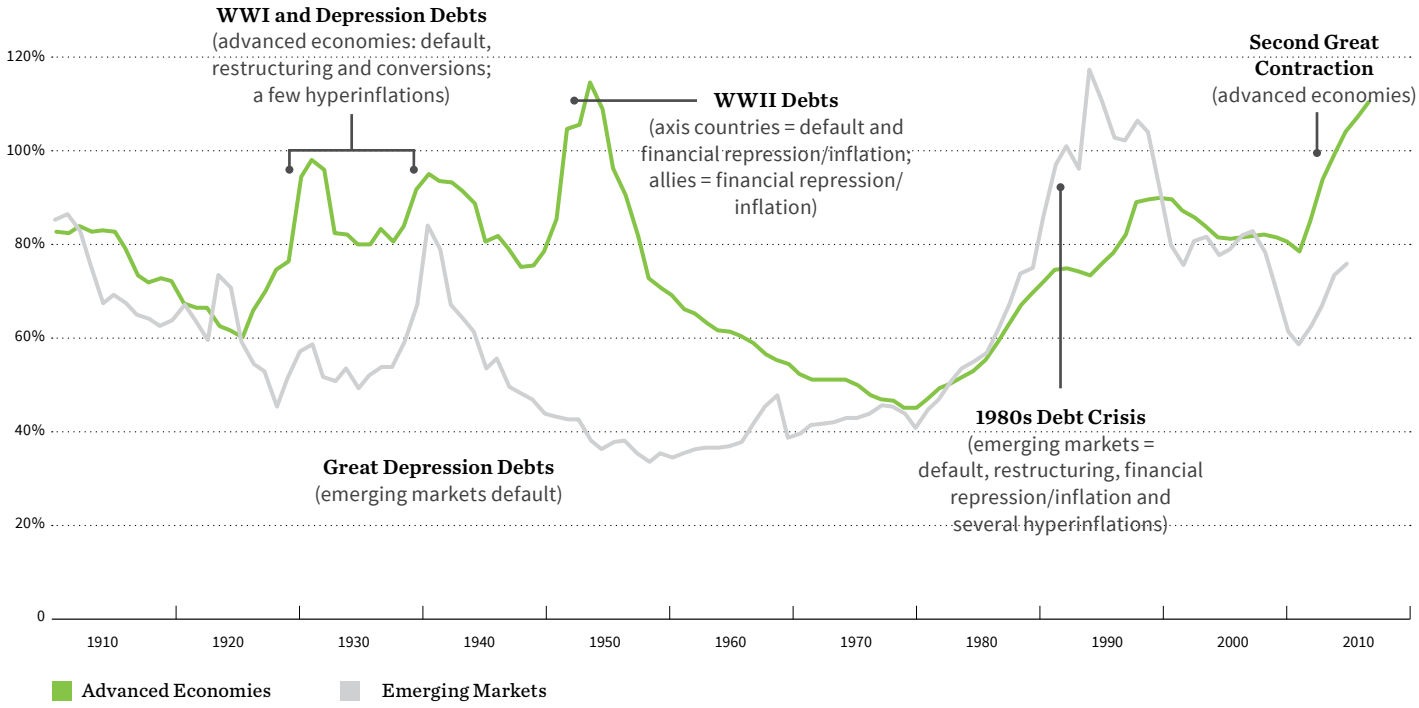
of both central banks and floating exchange rates. Many central banks preferred fixed exchange rates and sought to keep various pegs. In this vein, the European Economic Community was formed to link several currencies together, a system that was formalized in the European Monetary System in 1979.

The newly found freedom to print money ultimately led the Fed and the Bank of Japan to respond to rising oil prices in the 1973 with looser monetary policy designed to stimulate their economies, which led to miserably high inflation. The Fed, but not the Bank of Japan, monetized the second oil shock in 1979, after which only the United States experienced high inflation. With a focus on fighting inflation, Paul Volcker entered the American scene and used the interest rate tool with more force than had ever been seen.[13] The period of scarily high inflation turned it into a core focus for central banks and, in 1990, New Zealand pioneered the policy of inflation targeting. Inflation targeting allows central banks to cut rates to stimulate the economy without exchange rate constraints. The low-rate environment of today was not possible when rates were fixed before the 1970s or with inflation as high as it was during the 1970s and 1980s. But since the 1990s, central banks have acquainted themselves with the power of interest rate cuts and have been increasingly keen to use it.

There is, in fact, a period after World War II, during the early years of Bretton Woods, comparable to today's extended period of suppressed rates. As a way to reduce government debt after two costly wars and a depression, central banks engaged in so-called "financial repression" by holding interest rates below inflation. Negative real rates allowed governments to liquidate much of their wartime debt.[14] Exhibit 5 illustrates.

EXHIBIT 5

Central Government Public Debt in Advanced Economies and Emerging Markets (Debt to GDP Ratio, 1900-2011)



Source: Reinhart, Carmen M., and M. Belen Sbrancia. "The Liquidation of Government Debt." No. w16893. National Bureau of Economic Research (2011). Listed in parentheses below each debt-surge episode are the main mechanisms for debt resolution besides fiscal austerity programs, which were not implemented in any discernible synchronous pattern across countries in any given episode. Data reflects a simple arithmetic average for the advanced economy and emerging markets subgroups using the Reinhart and Rogoff (2011) database for 70 countries.

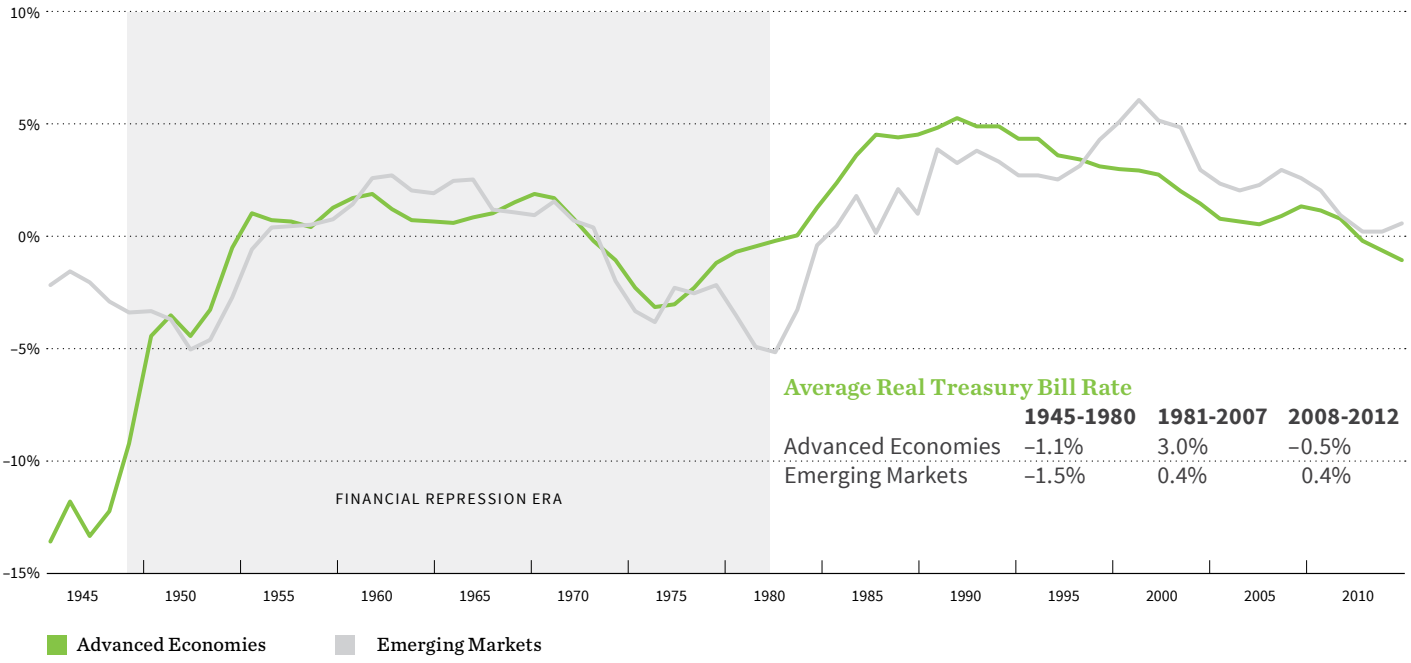
This was possible because countries until the late 1950s preserved some monetary freedom by not sticking to the Bretton Woods agreement and engaging in capital controls that allowed them to cut rates while still maintaining fixed currencies. It was only in the late 1950s that most countries made their currencies convertible with the U.S. dollar.[15] For the largest countries, real long-term interest rates were mostly negative between 1940 and 1950, as exhibit 6 illustrates.[16] On a GDP-weighted basis, the share of countries with negative real rates reached 90% at one point, compared to less than 30% today.[17]

One material lesson from this period is that, in the absence of constraints, central banks prefer low rates. While Bretton Woods forced real rates back into positive territory for advanced countries in the 1950s, they promptly fell again when the arrangement broke down in 1971.[18] After a period of high inflation that ushered in an era of higher rates in the 1980s, central banks are again on the path toward negative rates.

Since the era of the gold standard, real interest rates have followed the change in monetary regimes.[19] Global real rates were fairly steady around 3% during the gold standard, low after the wars, higher during Bretton Woods, and even higher in its aftermath. Since the 1980s, rates in advanced economies have subsequently seen a steady decline, followed by emerging economies since the 1990s. While central bankers always have a short-term incentive to promote a healthy economy, they have mostly been constrained from using rates to the extent that they now are able. The magnitude of monetary stimulus may be new, but the past suggests that we will likely see low and even negative rates until the current era of inflation targeting gives way.

EXHIBIT 6

Average Ex-Post Real Rate in Treasury Bills (Three-Year Moving Averages, 1945-2012)



Source: Reinhart, Carmen M., and M. Belen Sbrancia. "The Liquidation of Government Debt." No. w16893. National Bureau of Economic Research (2011). Advanced economies include Australia, Belgium, Canada, Finland, France, Germany, Greece, Ireland, Italy, Japan, New Zealand, Sweden, the United States, and the United Kingdom. Emerging markets include Argentina, Brazil, Chile, Colombia, Egypt, India, Korea, Malaysia, Mexico, Philippines, South Africa, Turkey and Venezuela. The average is unweighted and the country coverage is spotty prior to 1960.

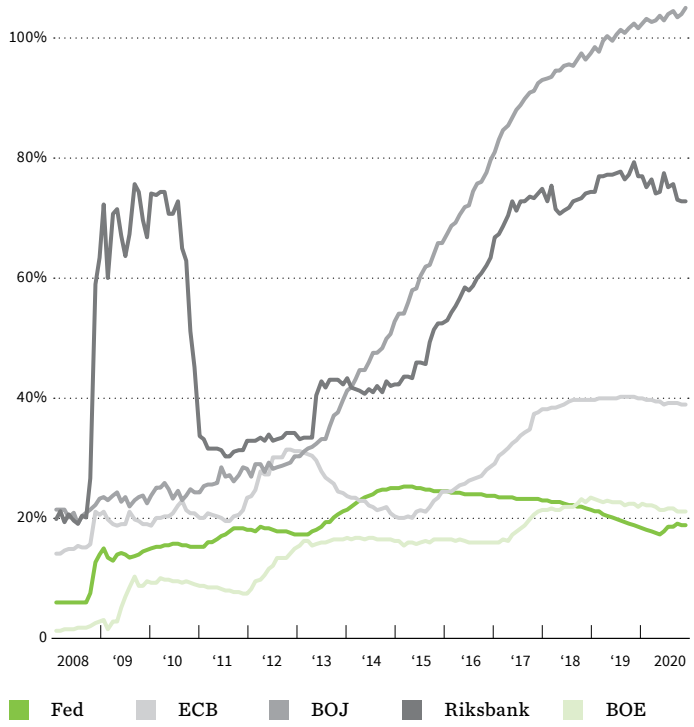
Where Is the Inflation?

When rates were a tool to liquidate government debt in the 1940s and 1950s, inflation was a central banker's friend. Today, rate cuts are used to boost growth, and with inflation targeting, low inflation allows for lower rates. While textbooks tell us that low interest rates increase inflation, we have not seen much inflation due to changes in monetary systems since the 2008 recession. Let us explore why.

It used to be that private banks had scarce reserves and that central banks lent an amount of reserves to banks that they were expected to pass on to borrowers at the target rate. That is generally how a so-called "corridor system" works. Here, a central bank sets an upper interest rate limit through a lending facility (often referred to as the discount rate) and a lower limit through an interest rate on excess reserves. The target rate will be between these two, and the private lending rate somewhat higher.

EXHIBIT 7

Central Bank Balance Sheets as a Percentage of GDP



Source: Bloomberg and William Blair, as of March 16, 2020.

During the financial crisis, banking systems in several countries were flooded with excess reserves, which manifested itself in growing central bank balance sheets, as exhibit 7 illustrates. While investors may have thought that this would lead to inflation, with higher Basel III and Dodd-Frank Act capital requirements and without any great prospects to lend the money, banks mainly deposited these reserves with central banks. The new regulations made banks hold more capital, the lack of which was seen as contributing to the previous crisis. As a result, while the banks are now flooded with reserves, they are more constrained in how they can use those reserves to increase liquidity in the banking system.

For the Fed and the European Central Bank (ECB) alike, the great reliance on central bank deposits made the central bank deposit rate the most important interest rate. This shift introduced monetary floor systems, where the deposit rate acts as a rate floor and reserves are abundant. A floor system allows a central bank to flood the banking system with reserves without the interest rate falling below the target rate.[20] The money supply is effectively detached from the interest rate policy.

Contrary to what some may believe, an expanding central bank balance sheet is not a recipe for inflation. In part, this is because capital requirements force banks to hold larger deposits with the central banks. More importantly, while central banks can encourage banks to extend more credit, ultimately the banks are the ones calling the shots.[21] In the current system, inflation does not manifest unless banks effectuate more money than the economy requires at current prices.

Where does this lead going forward? We see the environment of low rates and low inflation as persisting for quite some time. The interesting question becomes, how may the current equilibrium be disrupted?

The Death of the Inflation Regime

We can observe a history of different monetary regimes that all eventually died. Does that mean this one is coming to an end? While history suggests the current regime could have a couple decades more to go, we do not believe that it will simply die of "old age." We therefore need to understand what may cause a regime change as well as what a new regime might look like.

Monetary policy relies on faith in government currencies, inflation expectations, and people's willingness to invest and spend money. As a result, a monetary regime can remain in place as long as people have faith in the system. Like the cartoon character Wile E. Coyote running off a high cliff only to plummet once he realizes he is no longer on terra firma, a regime can sustain itself without support from economic fundamentals, as long as people do not realize it is set for a fall. Why and when might we see such a radical shift? To see this, we will look at the weaknesses of a regime with a bias towards ever-decreasing rates.

Ever-lower real rates and low inflation mean that nominal rates eventually slump below zero. This has so far been the destination for central bank rate targets in Japan, the eurozone, Scandinavia, and Switzerland. Their experiences provide lessons for the rest of the world about "life below zero."

A scourge in negative-rate countries is the difficulty for banks to maintain their profit margins. Most banks have found it hard to cut deposit rates below zero for households.[22] With decreasing rates on their deposits with the central bank (an asset) and steady rates on household deposits (a liability), banks have seen interest rate margins contract.[23] In this way, low and negative central bank deposit rates effectively become a tax on banks.

So far, banks have tended to make up for the rate squeeze by either cutting costs,[24] raising fees on various services, making riskier loans, or even raising some lending rates, as we have seen with mortgage rates in Switzerland.[25] As a result, some studies on the effects of negative rates have found that bank profits are not significantly impacted. Some have incorrectly concluded that banks do fine in a negative rate environment and that negative rates are stimulative as long as banks can be prevented from going into cash, such that negative rates on deposits force them to somehow invest the money instead of depositing it.[26] However, there is a limit to how much efficiency gain can be had and how much rates can decrease. Market values of banks in places like the eurozone and Japan have clearly underperformed the broad market following the introduction of negative rates, as exhibits 8 and 9 illustrate.

Reduced profits eat into banks' net worth, which makes it harder for banks to issue credit. Paradoxically, negative rates can thus become contractionary.[27] Observations of changes in bank lending in response to negative rates are mixed. Negative rates were followed by higher credit-to-GDP ratios in the eurozone and Switzerland. Within the eurozone, banks that were able to lower their deposit rates tended to lend more money than the others.[28] Contrasting these observations, negative rates were followed by decreasing credit-to-GDP ratios in Japan, Sweden, and Denmark.[29]

Even when negative rates manage to push banks to lend more in some places, this is not necessarily a good thing in the long run. For one, low rates erode the ability of households and firms to earn a return. Several central banks have also started raising concerns about the heightened risks that such behavior generates in the financial system. In its November 2019 financial stability review, the German central bank addressed concerns about excessive risk-taking. So too did the Swedish central bank in their review, which also worries about asset overvaluation and high debt levels in the economy. The Fed similarly mentions "the vulnerability of the financial sector to subsequent shocks" as low rates push banks and insurers to reach for yields.[30]

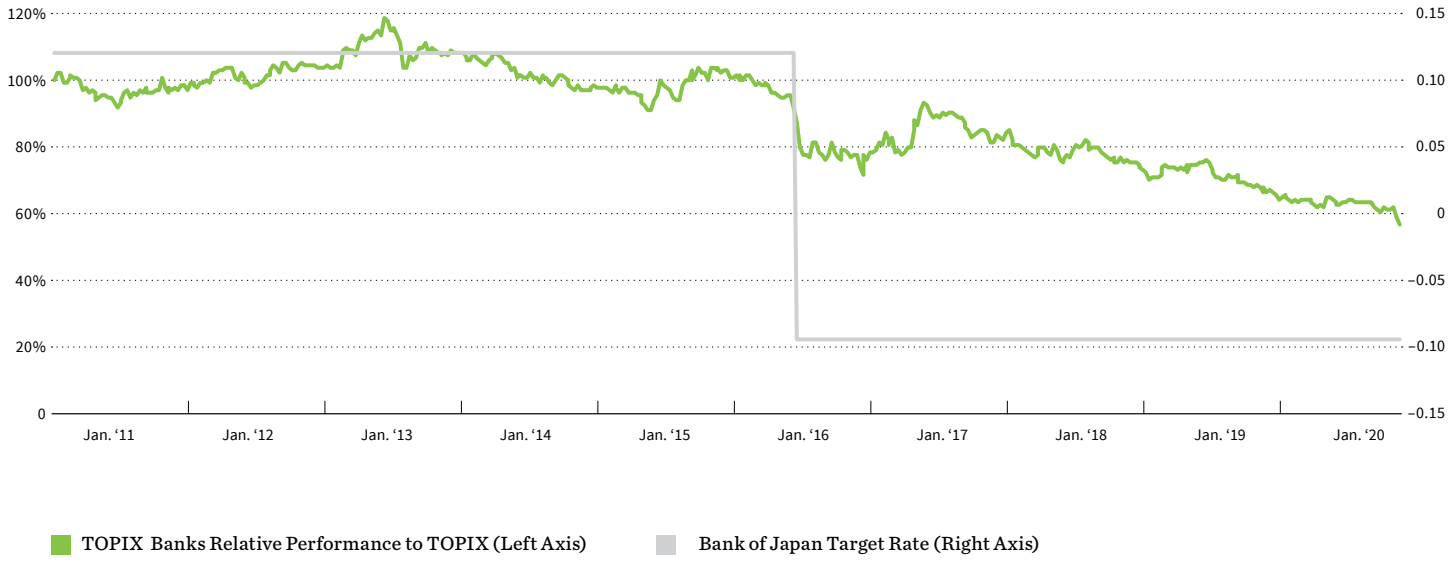
What Do You Think?

As you recall the Wile E. Coyote character from the cartoons of your youth, the study of his motion as previously described provides clues to various aspects of market behavior. Considering all you know about quantum physics, we solicit the response to the question:

Does gravity exist before you observe it? Please submit your response by June 30, 2020 to **jsimmons@williamblair.com**. We will post the best responses to the William Blair blog. William Blair employees are excluded.

EXHIBIT 8

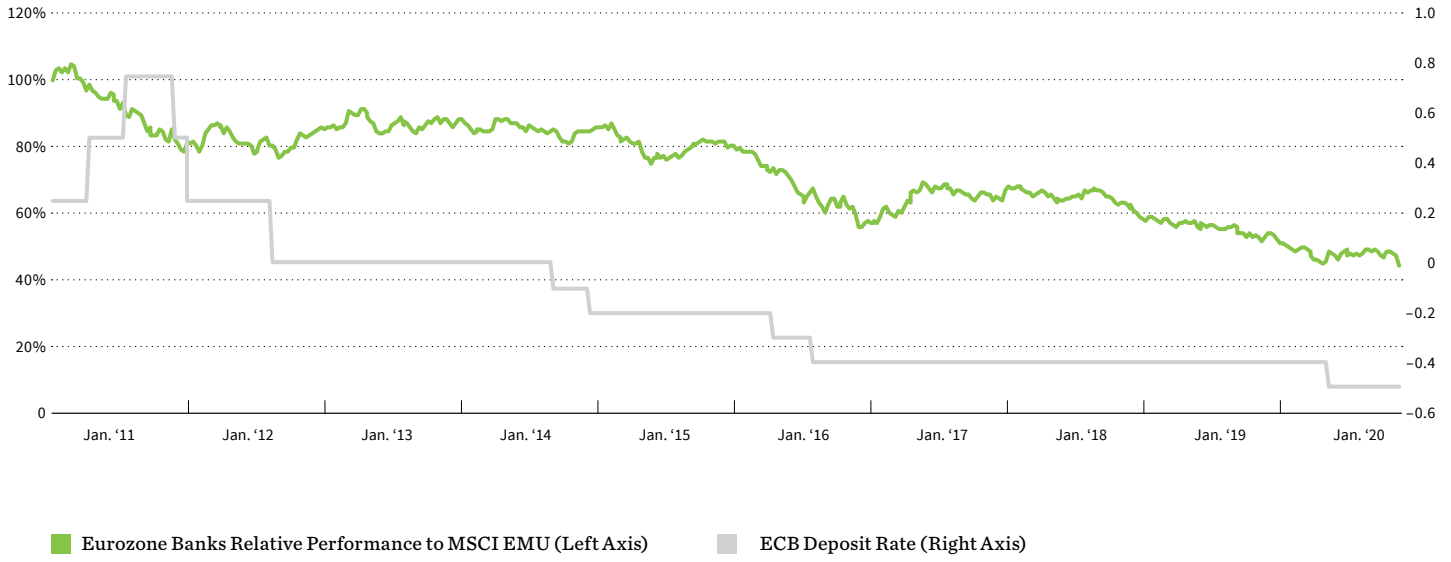
Central Bank Target Rate and Relative Bank Performance—Japan



Sources: Bloomberg and William Blair, as of March 16, 2020. Past performance is not indicative of future returns.

EXHIBIT 9

Central Bank Target Rate and Relative Bank Performance—Eurozone



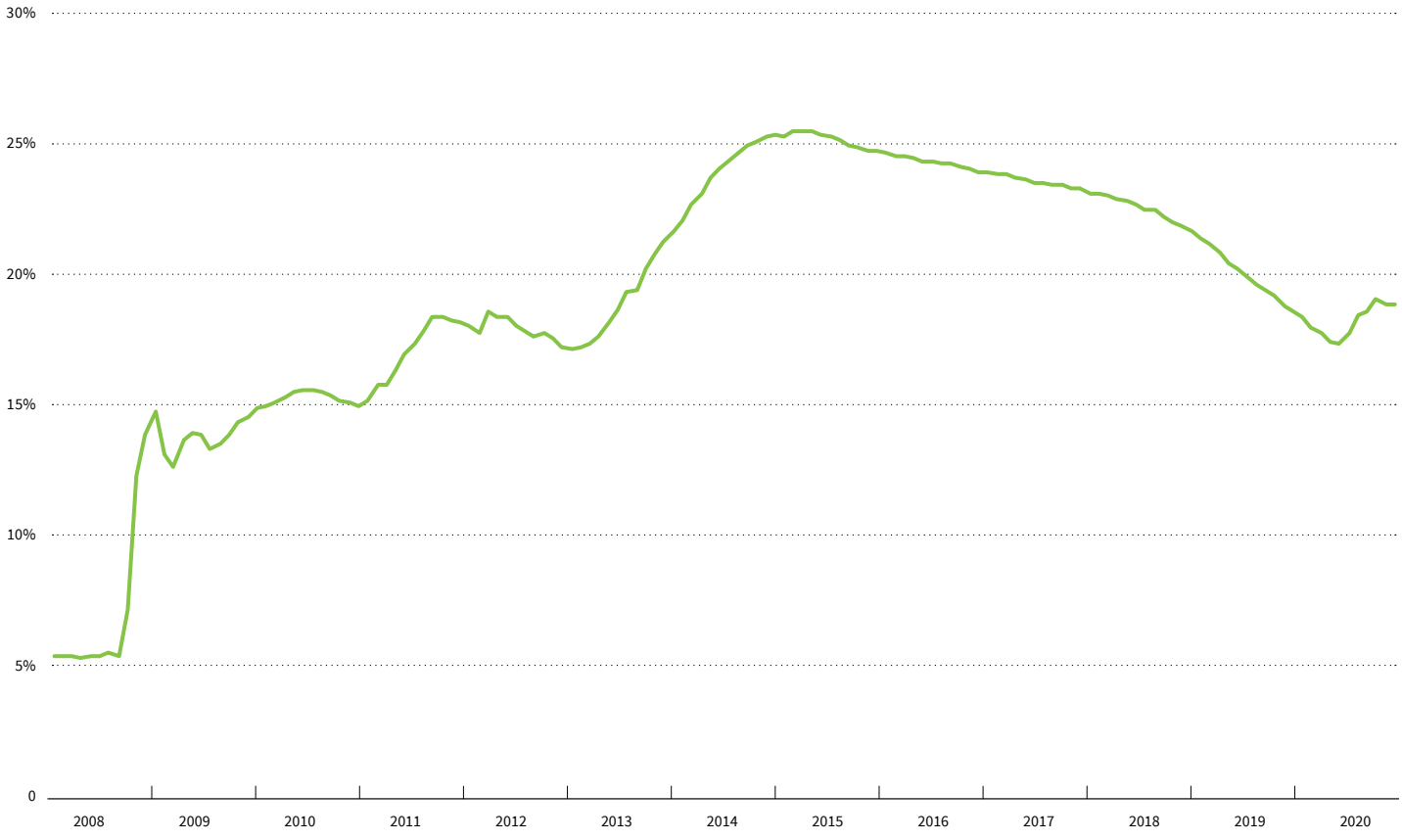
Sources: Bloomberg and William Blair, as of March 16, 2020. Past performance is not indicative of future returns.

In addition to all the visible weaknesses of the current monetary system, it seems an environment of abundant reserves is creating structural changes that policy makers have yet to understand. In September of 2019, the U.S. overnight repo rate spiked above 10%. The apparent absence of liquidity providers willing to step in at that rate and push it back to normal levels pointed to a fundamental change in the structure of markets. There is no agreement about how this could happen but the repo event certainly fits into the picture of a system flooded with reserves yet constrained by regulations and structural problems in a way that prevents monetary policy from functioning as it did in the past. This realization forced the Fed to revert to a path of an increasing balance sheet, after a period toward "balance sheet normalization," as exhibit 10 illustrates.

There exists an argument that negative rates work because banks can impose negative deposit rates on firms, which must hold deposits to do business.[31] However, even if banks can impose negative rates on some of its depositors, this merely shifts the cost of negative deposit rates from banks to firms, which are ultimately the ones that rates are supposed to support. With time, low and negative rates erode the earnings power of the real economy. None of this suggests that negative rates necessarily stimulate the economy.

EXHIBIT 10

Fed Balance Sheet as a Percentage of GDP



Source: Bloomberg and William Blair, as of March 16, 2020.

As more data accumulates about the effects of negative rates, central banks have started issuing ambivalent assessments about their benefits.[32] The main hope still seems to be that more rate cuts can stimulate the economy through more risk-taking, as banks make riskier loans and investors crowd into higher-yielding bonds and riskier equities. At the same time, the awareness is growing that the downsides of ever-lower rates are starting to catch up with the benefits. The realization of central banks' impotence to boost the economy risks eroding the trust built up during the decades of inflation targeting. The smaller the short-term benefits of interest rate cuts, the faster the downsides will catch up with people's perceptions.

Quantitative easing (QE) has contributed to the short-term benefits and long-term costs of monetary policy. When central banks buy assets from banks, the banks are initially better off. However, higher reserves serve to lower banks' asset duration and make them increasingly sensitive to lower central bank deposit rates.[33]As such, banks' profits may be hurt in the long run from QE.

In several places, central banks have stepped in to rescue banks' bottom lines from lower rates by introducing tiering, where central banks offer different interest rates through different vehicles.[34] This is a way for central banks to increase bank profits while still pushing banks toward ever-riskier sources of return. Several central banks have had tiering in place for a while, and we would not be surprised to see them spread more widely. The ECB, for instance, allows for a zero interest rate on required reserves and a negative rate on excess reserves. It stepped up a gear in 2019 when it allowed zero rates on some of banks' excess reserves as well.[35]

Tiering can mitigate some of the damage done to banks by negative rates. When central banks start to worry that their rate cuts are hurting the banking system, we might see more tiering policies come about. This may help central banks delay the point when the pressure on banks' balance sheets causes shrinkages in credit, but it will hardly prevent the deleterious effects of malinvestments through excessive risk-taking. One way or another, the system's weaknesses will be obvious enough for people to lose trust in the power of central banks.

We are already seeing some of the problems with low and negative rates play out and, the longer rates stay low, the more the negative long-term effects will outweigh any positive short-term economic benefits. It should be increasingly clear that at some point, ever-lower rates cannot stimulate the economy. The current monetary regime will likely be abandoned when this becomes the prevailing view. A monetary regime deteriorates when people and companies no longer believe it capable of fulfilling its aspirations. Yet, Japan's multi-decade story cautions that this might take some time.

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What Awaits Beyond the Regime Collapse?

Collapses of monetary regimes tend to come in tumultuous times. Two world wars ended with the fall of the gold standard. The collapse of Bretton Woods led to a world of floating-rate regimes. When this current inflation-targeting regime is eventually disrupted, we may see a similarly radical shift in thinking.

Monetary regimes have generally paved the way for higher inflation and more active fiscal policy, and this will likely be the case as the inflation-targeting regime comes to an end. The last time the United States saw a shift from monetary to fiscal policy was the end of Bretton Woods. At that time, President Richard Nixon pushed Fed Chair Arthur Burns to take a steady position of low rates in the face of higher government spending causing ever-rising inflation.[36]

Today, we hear central banks grumble that governments are not stepping up to the plate to provide stimulus.[37] With unprecedentedly low rates and enlarged balance sheets, central banks argue, they have clearly done what they can to rescue the economy. It is now time for governments to do their part. Governments seem amenable to reciprocate. There is a widespread perception that as long as central banks can be trusted to keep rates low, the resulting higher government debts will be cheap to finance.

After World War II, low rates on government debt were used to shrink the debt burden. Today, on the contrary, they serve as an excuse for more deficit spending. Some policy makers have started flirting with approaches such as modern monetary theory (MMT), which some see as allowing the government to spend at will by simply printing more money.

According to MMT, the government need not worry about deficits or imposing taxes as long as interest rates and inflation are on target. In an MMT world, the interest rate is set at zero and the government achieves this rate and steady inflation by changing how much money it spends, how much it taxes the economy, and by issuing and buying back bonds. The central bank has no independence and functions as a vehicle for the government as it prints money and buys or sells treasuries. MMT thus transfers the responsibility for inflation and rate targeting from the central bank to the government.[38]

> "Collapses of monetary regimes tend to come in tumultuous times."
>
> **Dynamic Allocation Strategies Team**

A commitment to something like MMT would spell the end of the current inflation-targeting regime, by explicitly shifting from monetary to fiscal policy dominance. Before government spending crowds out private investments, such a shift can spur a period of higher economic growth. However, the distortions of such a system will inevitably destroy wealth and asset values in the long run. In addition, a zero target rate and high government spending would likely introduce a period of higher inflation, which would eventually need to be tamed by a radical shift back to monetary policy dominance with growth-suppressing rate hikes similar to what the United States saw with Paul Volcker.

Before we start stressing out about such a nightmarish repeat of history, we can at least note that there are some other proposals for more fiscal policy activity that suggest a less scary future than MMT. Some proposals floating around go under the label of "helicopter money," which are based on the belief that governments are better than central banks at raising inflation expectations since they can make more credible commitments to print money. One version of helicopter money is a big check from the central bank to the treasury to spend at will. Another is massive new government investment projects financed by central bank money.[39] Government investments in infrastructure and the like should in theory be more productive than massive government jobs programs, which followers of MMT espouse. However, they also have a much longer lead time than people often assume and thus a less immediate effect on GDP.

Followers of MMT advocate for perpetual government programs likely to convince people of the government's commitment to spending and, hence, inflation. Instead of Keynesian countercyclical fine-tuning, it comes with a perpetual tangle of government spending and wage guarantees. Helicopter money can be perceived as more temporary and can increase inflation only if the government commits to continuing to pump new money into the system. People are forward-looking, and if there is an expectation that the government will offset the spending today with taxes or borrowing in the future, they will save instead of consume, and thus counteract the inflationary effect of the newly created money.[40]

MMT and helicopter money thus both rely on continuous flows of government spending. This contrasts with a traditional view of economic stimulus as a temporary measure in times of recession that must be compensated for by contractionary surplus-policies when the economy is booming. But it would be a continuation of the trend toward the more persistent stimulus we have seen under inflation-targeting and the seemingly perpetual stimulus many central banks have provided since the great recession.

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Investment Implications

We anticipate the next downturn will mark a further step toward loose monetary policy, piloting toward zero or negative interest rates and more asset purchases. Perhaps we have already entered that period. When central banks admit that they have pushed rates so low their lungs can no longer be squeezed to breathe life into the system, we anticipate a shift to fiscal policy stimulus. The fiscal regime will likely come about when monetary policy is perceived to be out of bullets. While some will assert that this describes the current situation in the United States, we disagree and we do not believe that it represents conventional wisdom. Eventually, governments and central banks will proclaim that they are the joint protectors of the world from prolonged malaise and portend the culmination of the current inflation-targeting regime. In the meantime, inflation-targeting regimes may dominate for another ten to fifteen years. During this time, we expect interest rates to remain low with real rates negative in most rich countries.[41]

It seems that the closer central banks are to running out of ammunition, the more eager they are to respond to any sign of economic or market weakness. Such stimulative monetary actions are unlikely to disappear as a palliative to financial market woes. When markets started shaking back in late 2018, the Fed took a sudden dovish turn that killed all expectations of rate hikes. Outside the United States, the ECB stepped in on news of economic weakness in September of 2019 with a further cut to its deposit rate to –0.5%. In response to the new coronavirus in China (COVID-19), the People's Bank of China injected a record-amount of liquidity in early February of 2020. Monetary policy is still the first line of defense to stem volatility and uncertainty. As long as stimulus persists, we will not assume that prices move toward fundamental values in anything resembling a straight line.

The U.S. repo incident signaled how hard it will be for the Fed to shrink its balance sheet. As long as the balance sheet was growing and new reserves were being supplied to financial institutions, the repo market seemed to function smoothly. When even a small step toward normalization causes an earthquake, there is something seriously wrong. While the Fed does not know exactly what this is, "balance sheet normalization" will unlikely be its first choice going forward. We expect to see more liquidity events like the September 2019 U.S. repo market debacle. During these periods, we will look for opportunities to provide liquidity and use spare cash to take advantage of rate discrepancies and suppressed prices.

The eurozone and Japan, meanwhile, are close to losing the credibility of their monetary regimes and are thus likelier than the U.S. to see policies shift toward new fiscal measures the next time central banks try to rescue the economy from a recession. This shift would give asset prices a final boost, increase the value of inflation protection, and push bond yields higher.

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Expecting most interest rates to stay low for a long time yet, we deem the fundamental values of equities to be higher than they would be in normal circumstances. Value indices may continue to struggle in this environment against their growth counterparts. Several markets in Europe, as well as several emerging markets, are attractive on a risk-adjusted, long-term fundamental basis thanks to our outlook for another decade with low rates. This is a forestalling of the rate increases that we anticipated in our previously referenced *Navigating a Troop of Gorillas* white paper.

We are wary of the distortive consequences of low rates, much of which will relate to sluggish growth caused by persistent malinvestment. At the epicenter of this lower-for-longer environment is the transfer of wealth from creditors to debtors—such as sovereign borrowers—further penalizing savers and worsening income inequality. Since many people have missed expected life improvements from policy actions, populist movements

have been able to flourish. These movements risk nourishing destructive policies of isolation and wealth redistribution. Being able to understand these movements should help us to navigate advantageously, and step in where populist movements are more benign than commonly perceived.

Persistent malinvestments resulting from low rates will likely have several negative consequences. First, the list of zombie companies—kept afloat by low interest rates despite excessive borrowing—is likely to continue growing. Some banks will avoid categorizing their loans to zombies as nonperforming by simply extending more credit. We are also wary of zombie governments in the eurozone periphery, kept afloat by the now-explicit ECB bailout guarantee. Malinvestments of this sort will create policy burdens when an inevitable slowdown occurs.

Second, as implied by continued extensions of credit to zombie companies, as long as central banks continue their stimulative policies, lower credit debt categories will benefit relative to higher credit counterparts. Private credit providers will benefit by stepping in where myriad distorted incentives and complex regulations preclude public financial institutions from intermediating.

Third, capital structures will shift away from equity and toward debt as companies secure long-term credit at rates below those implied by the natural interest rate. Share buybacks may not be a fleeting phenomenon of the post-global financial crisis period. This could accelerate if the cost of equity capital increases in a bear market.

Fourth, whereas bonds are mainly overvalued in our view, we are hesitant to short bonds as it will likely take a long time for their yields to reach fundamental values. An enormous obstacle to normalization is the burden that current debt levels would impose if rates were to increase. As long as the government pays less to borrow than the growth rate of the economy, it can keep the burden of debt in check. With higher rates, servicing this debt would be virtually impossible. Meanwhile, we are seeing an unprecedented combination of company and household private sector debt, with student and auto loans contributing to much of the growth in the latter. Rising interest rates in these categories would inevitably have an economic impact. The people at the Fed are certainly aware of this and would hardly want blame for causing an historic American debt crisis.

Fifth, lower-for-longer dampens the prospects for carry trades in the major currencies, rendering reversion of exchange rates to equilibrium values more influential than interest differentials. High-carry currencies will benefit initially from interest rate convergence and carry decay but exchange rate deviations from equilibrium will subsequently dominate the return from investing in fundamentally attractive currencies.

Sixth, protracted margin pressure at financial institutions will likely lead to consolidation. In the eurozone, elimination of regulatory differences with the Single Supervisory Mechanism and Single Resolution Mechanism will open doors to consolidation.

Artificially low rates are causing multiple distortions and pockets of heightened risks. However, for investors who understand these dynamics, they also bring about promising opportunities. The current environment may be unprecedented but it need not be incomprehensible.

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Endnotes

1 Wicksell 1936: 32.
2 Holston, Laubach, and Williams 2017.
3 See e.g. Garnier and Wilhelmsen 2005; Selgin et al. 2011; Laubach aånd Williams 2015. Also Rachel and Summers (2019) using the model to measure the effect of government debt and other policies on rates in industrialized economies.
4 See e.g. Lubik and Matthes (2015), applying a time-varying parameter vector autoregressive (TVP VAR) model and Arestis and Chortareas (2008), applying a dynamic stochastic general equilibrium (DSGE) model.
5 Schmelzing 2020.
6 Schmelzing 2020.
7 See e.g. e.g. Kaplan 2018.
8 Howe and Pigott 1991.
9 Kaplan 2018; Del Negro et al 2017: 241; Bernanke et al. 2011; Caballero and Krishnamurthy 2009; Caballero 2010; Caballero and Farhi 2017; Caballero, Farhi, and Gourinchas 2016; Gourinchas and Rey 2016.
10 See e.g. Carvalho et al 2016; Favero et al 2012; Ikeda and Saito 2012; Furceri 2014.
11 Borio et al. 2017.
12 The impossibility of combining fixed exchange rates, capital flows, and an independent monetary policy is the so-called Triffin Dilemma was introduced by Robert Triffin, Triffin, R. (1960): "Gold and the Dollar Crisis," Yale University Press, New Haven.
13 *"The Great Inflation."*
14 Reinheart and Sbranica 2011.
15 Bordo 1993.
16 Bordo 1993.
17 Schmelzing 2020
18 Reinheart and Sbranica 2011.
19 Borio et al.
20 Kahn 2010.
21 BoE 2014.
22 Demiralp et al 2019; Denmark CB Jensen Spange 2015; Eggertsson et al 2017; Eisenschmidt Smets 2018.
23 Barclays 2019.
24 Angrick Naoko Nemoto 2017, GS 2019.
25 Bech Malkhozov 2016.
26 Lilley Rogoff 2019.
27 Eisenschmidt Smets 2018; Eggertson et al 2017; 2019
28 Altavilla et al. 2019, Eggertsson et al. 2017.
29 Angrick, Naoko, and Nemoto 2017.
30 ECB Financial Stability Review, November 2019; Fed Financial Stability Report, November 15, 2019; Bundesbank Financial Stability Review, November 2019; Riksbank ECB Financial Stability Report, November 2019.
31 Altavilla et al. 2019.
32 For example, Christine Lagarde, president of the ECB, said in February 2020 that ECB's monetary policy "helped to preserve favorable lending conditions, support the resilience of the domestic economy and... shield the euro area economy from global headwinds." But she also stressed that "monetary policy cannot, and should not, be the only game in town. The longer our accommodative measures remain in place, the greater the risk that side effects will become more pronounced" (*link*).
33 Brunnermeier Koby 2016.
34 Bech Malkhozov 2016.
35 Angrick Naoko Nemoto 2017; "ECB Introduces Two-Tier System for Remunerating Excess Liquidity Holdings" (link).
36 Bianchi 2012; Meltzer.
37 Examples include: Australian Central Bank Governor Philip Lowe: "Government and business should use record low interest rates to invest more" (*link*); "European Central Bank President Mario Draghi said the institution can do more if needed to boost inflation, and repeated his call for euro-area governments to support this effort with fiscal spending" (*link*).
38 Tymoigne and Wray 2013.
39 Coppola, Frances. The Case For People's Quantitative Easing. Polity; 1 edition (September 3, 2019); *https://www.mercatus.org/bridge/podcasts/10212019/frances-coppola-macroeconomics-helicopter-drops.*
40 The thesis that government spending is not stimulative if people believe that they will somehow have to pay for it is the so-called "Ricardian Equivalence," first proposed by David Ricardo (David Ricardo, "Essay on the Funding System" in The Works of David Ricardo. With a Notice of the Life and Writings of the Author by J.R. McCulloch, London: John Murray, 1888.).
41 Changes in regimes do not come easily and central bankers will hardly be eager to give up the keys to the economy-car. The last time the United States saw fiscal take over from monetary policy was under President Nixon who, seeking to be reelected in 1972, virtually forced Fed chairman Arthur Burns to keep rates low despite rising inflation (Bianchi 2912). On the other hand, during the great depression, government wanted more monetary and the central bank more fiscal policy (Meltzer).

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