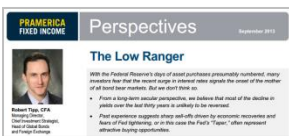




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For our prior views on interest rates, please visit [www.pgimfixedincome.com](http://www.pgimfixedincome.com) or click the icons below.

**2013 Low Ranger**



**2014 Europe: Into the Void**



**2003 Rate Forecast**



# The Totally Mad World of Low Rates

...and Why It's Here to Stay

- *Interest rates have been low and falling for some time. Yet most analysts still expect them to rise—it's just a matter of when and by how much—or so they say.*
- *For our part, we continue to think rates will remain low and, in fact, are reducing our long-run forecast for the 10-year U.S. Treasury yield from 3.0% to 2.5%.*
- *However, thanks to the particulars of the current economic environment, we believe U.S. yields are likely to fluctuate in an even lower range with a central tendency of around 2.25% or less over the next several months, if not quarters or years.*
- *The drop to ultra-low yields can be seen as a two-stage process. In stage one, the world's central banks regained control of inflation. That, combined with the aging of the baby boomers, allowed yields to fall back to the more normal low levels that existed prior to the 1970s.*
- *The drop in yields in stage one enabled a massive increase in leverage across most developed countries, which may now be depressing growth and the demand for credit, thereby decreasing the equilibrium level of yields into the ultra-low realm of stage two.*
- *Although the U.S. economy is faring reasonably well and the Federal Reserve is preparing to lift rates, we see the bond market as well braced. In fact, a higher Fed funds target rate may accelerate the rise of the U.S. dollar and depress U.S. growth. As a result, we see a hawkish Fed as more of a threat to the economy than to the bond market.*

*If our premise is correct and yields stay ultra low, why should investors stick with bonds?*

- 1) **Returns** should continue to surprise on the upside—especially the higher-yielding sectors—thanks to the generous spreads on the non-government sectors and the benefit of rolling down the yield and spread curves.
- 2) **Alpha** from active management. Market dislocations during the ongoing transition to the new ultra-low rate environment should continue to result in significant opportunities to add value through active management.
- 3) **Diversification**. Fixed income will continue to provide ballast to portfolios relative to higher-volatility sectors, such as equities and real estate.

**Stage One: Much of the Drop is Just Getting Back to Normal**

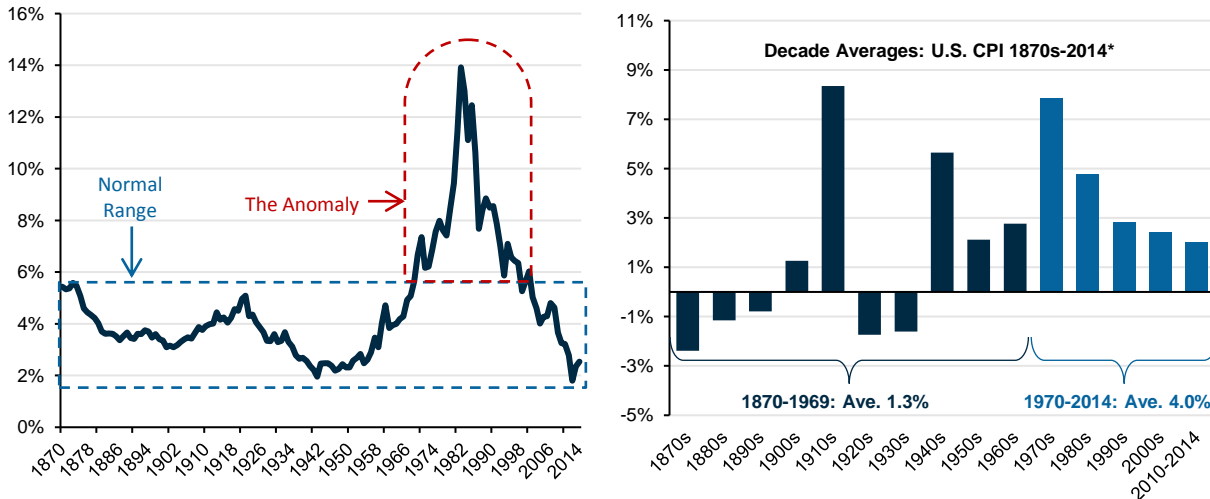
Although the last several years have been characterized as a low-rate environment, from a truly long-term perspective, much of the drop in both yields and inflation over the last 35 years represents no more than a return to the sub-4% yields and low inflation levels that persisted for nearly a century prior to the 1960s in the U.S. and for most of the last three centuries in the UK. While these levels may be surprising when viewed through the prism of the last half century, the historical precedence of low rates on government debt reflects investors' consistent need for high-quality, liquid, income-producing assets.

For professional and institutional investor use only—not for use with the public. Your capital is at risk and the value of investments can go down as well as up.



The period of high yields from roughly 1965-2005 is actually the anomaly, driven by a one-off confluence of labor market structure, demographics, oil prices, and tax policy. As those factors faded, central bank policy around the globe became increasingly aligned, focusing on stabilizing inflation at low levels. And, as observed in the following charts, with the return to low inflation, long rates fell back to the levels of the old days.

**Much of the Drop in Yields and Inflation Over the Last 35 Years Represents No More Than a Return to the Sub-4% Yields and Low Inflation Levels that Persisted for Nearly a Century Prior to the 1960s in the U.S.**

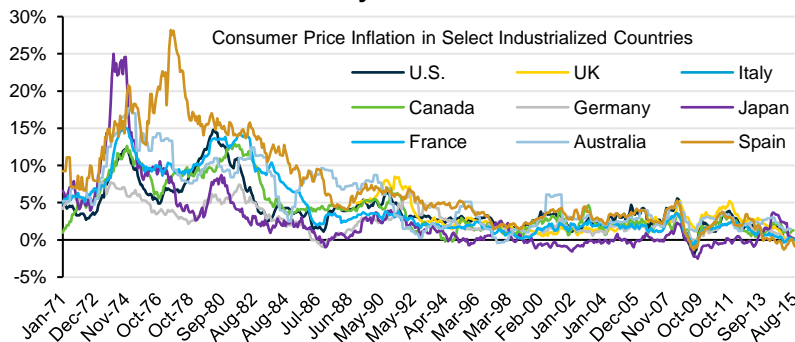


Source: Source: MeasuringWorth, U.S. Federal Reserve, and PGIM Fixed Income. \*Period from 2010-2014.

In addition to the high quality ascribed to government bonds, the low level of inflation was likely another key factor in keeping yields low during these earlier periods in the UK, U.S., and other bond markets. The preceding chart shows the average rate of U.S. inflation for each decade from the 1870s through the 2010s. **Until the 1970s, inflation was generally quite low, with five decades actually experiencing deflation and only one non-war decade registering positive inflation.** Since the peak in inflation and long-term interest rates in 1980, average levels of inflation have steadily declined. This was the case even in the decade of 2000-2010, when consumer price inflation decelerated, despite the profound, mid-decade strength in commodity prices. Lastly, recent decades have also produced a lower volatility of change in the CPI, suggesting that the Fed is perhaps better able to control the level of inflation than in decades past.

**Far from a fluke, the recent trend to low inflation has been part and parcel of a global shift to monetary policies oriented toward price stability.** The success of the world's developed central banks in wresting inflation back to the zone of price stability is unmistakable in the following chart. No doubt, this will play a role in keeping developed country interest rates in an ultra-low range.

**The Sustained Shift Towards Global Price Stability**



Source: Bloomberg.

**Stage Two: The Shift from “Low” to “Ultra Low”**

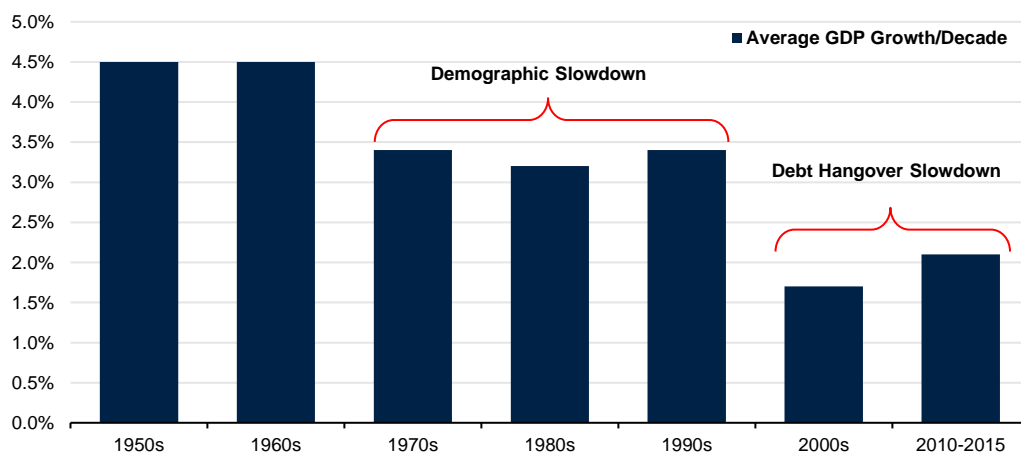
When we put forth our long-term forecast for the 10-year Treasury yield of 3.5% in 2003 and 3% or below in 2013, we made the forecasts largely on the basis of an unwind of the special factors, such as younger demographics and oil price shocks, that had temporarily pushed up rates during the 1970-2000 period (see the following box for more on how demographics affect interest rates). **But with sub-3% U.S. Treasuries and core European yields joining the incredibly low-yielding realm of Japanese government bonds, we sensed a more durable shift to ultra-low rates was at hand as we explained in our more recent papers Europe: Into the Void in 2014 and The Low Ranger in 2013.**

Now the Fed is expected to raise rates imminently, and yet the 10-year Treasury yield is below 2.3%. Yields are negative for much of the intermediate-term, higher-quality European bond universe—which is to say that not only are investors foregoing a return on their investments, *they are in fact paying for the storage of their money*—an extremely rare, if not new, phenomenon in modern day finance. **Why are rates so low and with seemingly little or no stimulative effect?**

**Ultra-low Rates—Courtesy of Slower Growth and High Debt**

Despite low rates, growth since the great financial crisis has remained below the average of the prior economic recovery in 2003-2009 and even below the average of the past two generations from 1970-2009. What’s holding it back?

**The Declining Trend in U.S. Growth**



Source: Bloomberg as of December 2015.

Some economists, such as Robert Gordon, suggest that in addition to the aging demographic, a host of factors, including fewer big technological breakthroughs and rising income inequality, have reduced the economy's natural rate of growth and thus dampened rate levels.<sup>1</sup>

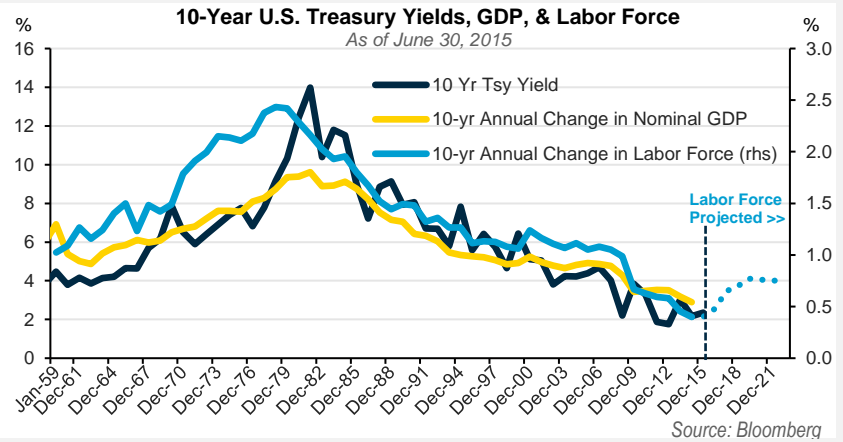
But these factors, while valid, changed very gradually over the course of decades. The pace of growth, on the other hand, slowed all at once from the pre- to the post-Great Financial Crisis (GFC) periods. **What also turned on a dime in 2008 was the rate of private sector debt creation—which hit the wall with the financial crisis and the aftermath of tighter credit conditions. When credit growth, which had been fueling investment and consumption, stalled, the economy’s rate of growth took yet another step down.**

<sup>1</sup> Gordon, Robert J., “Is U.S. Economic Growth Over? Faltering Innovation Confronts the Six Headwinds,” National Bureau of Economic Research Working Paper No. 18315, issued in August 2012.

**Demographics' Effect On Interest Rates**

The evolving demographics of the U.S. population over the last half century have been an influential factor in determining the level of interest rates. The post-World War II baby boom caused a subsequent bulge in the number of workers and household formations in the 1960s and 1970s.

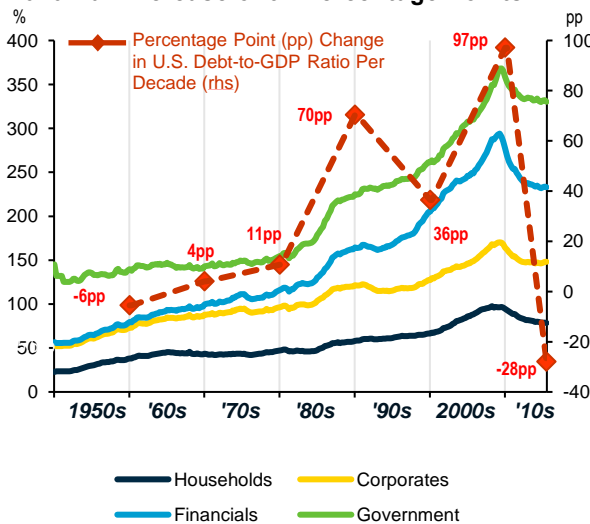
This not only contributed to an increase in economic activity, but also increased the demand for credit, thus contributing to the massive rise in rates of that generation. Just as the baby boomers entering the workforce played a role in the rise in rates in the 1960s and 1970s, the opposite was likely true during the subsequent decades as decelerating growth in the labor force resulted in both slower economic growth and less demand for credit, thus putting downward pressure on interest rates.



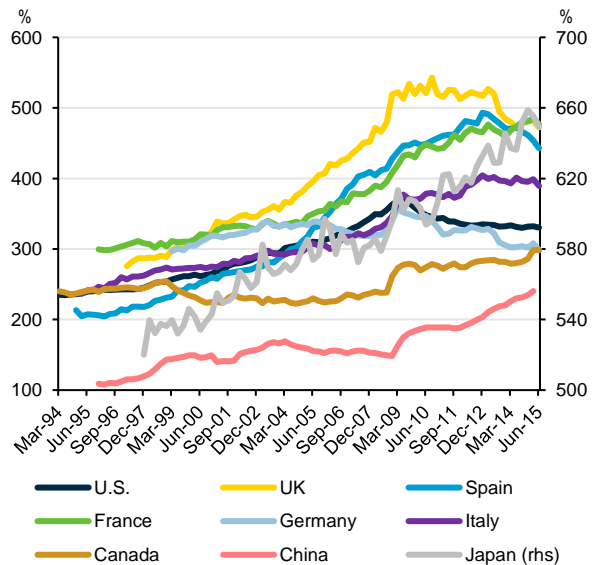
Another aspect of demographics is its potential to impact investment allocations. At present, the aging of the population should lead to higher demand for bonds as retirees and those approaching retirement seek low-volatility, income-producing investments. This is another factor which has likely contributed to the secular decline in rates.

In the decades prior to the GFC, debt levels rose at an accelerating rate, as indicated in the following chart, spurred by declining interest rates and easing credit conditions. Central banks exacerbated the trend by aggressively cutting rates whenever growth faltered, thus stimulating borrowing to fuel both consumption and investment. The end result around much of the developed world was very high levels of debt, as demonstrated in the following charts, and, perhaps not coincidentally as we'll explain, very low interest rates.

**Spurred by Declining Interest Rates and Easing Credit Conditions, the U.S. Debt-to-GDP Ratio Increased from 261% to 358% Between 2000 and 2010—an Increase of 97 Percentage Points.**



**The Rise in Debt-to-GDP Ratios was Experienced by Many of the World's Key Economies.**



Source of both charts: Bloomberg and Haver Analytics. Data are as of June 2015.

### Private Sector All Borrowed Out Since the GFC, So Brace for Slower Growth

After the private sector debt bubble hit the wall in 2008, particularly within developed economies, governments were forced to take up the cause, borrowing hand over fist to finance fiscal stimulus and stave off the crisis. **The explosion of developed world, public sector debt completed the total economy leveraging process, leaving debt ratios across the board—at the government, household, financial and non-financial corporate levels—at spectacularly high levels.**

In the post-GFC environment, the process of accelerating debt creation is over. Governments are struggling to retrench while high debt levels and tighter credit conditions—thanks to higher capital requirements for financial institutions and tighter regulation—have, at least on the margin, dampened the private sector's debt creation process, especially among households and, thereby, dampened growth. **The lower rate of growth has no doubt played a role in the drop in interest rates.**

### Not Just the Flow, but the Stock: Does More Debt Lower the Equilibrium Level of Interest Rates?

**We have a suspicion about the shift from low rates to ultra low rates: *has the elevated level of debt itself lowered the equilibrium level of interest rates?*** To explain what we mean, let's do a brief thought experiment. Let's assume that we have an economy that on **day one** has 100% debt to GDP and a 10% equilibrium government interest rate. Say we wake up on **day two** and find we have a debt to GDP ratio of 200%. All else being equal (i.e., the same growth rate, level of inflation, etc.), for the economy to maintain the same interest-service burden on day two, the equilibrium rate would have to drop from 10% to 5%.

**Day One:** 100% debt / GDP x 10% rate of interest = 10% of GDP interest service

**Day Two:** 200% debt / GDP x 5% rate of interest = 10% of GDP interest service

That is, if the debt burden doubles, the interest rate has to be cut in half for the debt service to remain constant, all else being equal.

But of course, all else is not equal.

For corporations or households, more leverage may translate into increased risk of default in a downturn, arguing for higher credit spreads. Countering that argument to varying degrees, however, is the extent to which the drop in government yields passes through to private sector borrowers, reducing the cost of debt service and increasing the amount of debt they can carry.

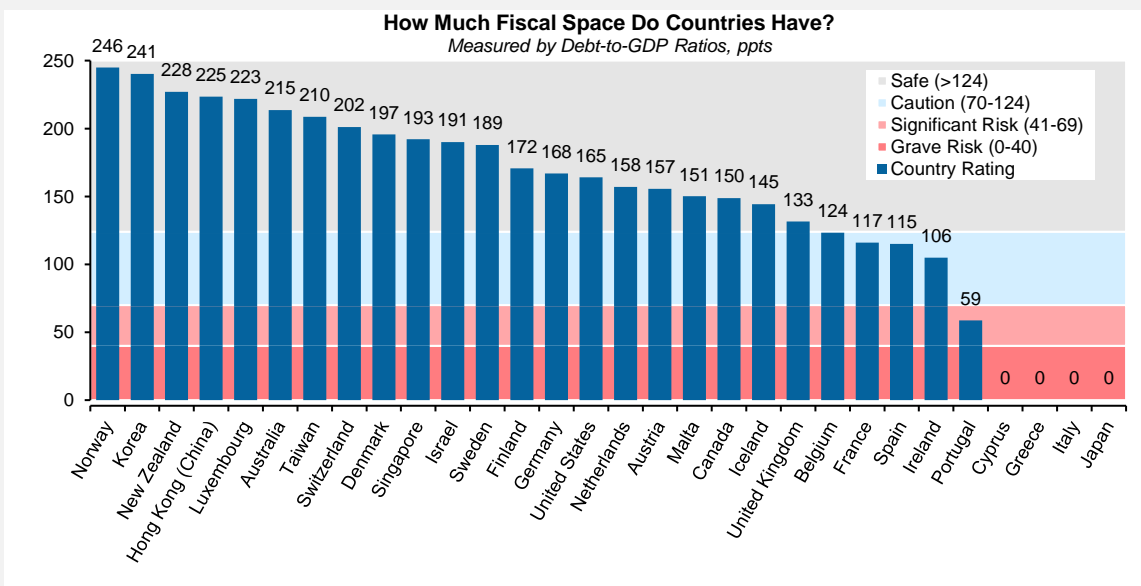
**Although high leverage in the private sector might argue for heightened credit spreads on private debt, it may argue for lower yields on government debt.** Why? Because economies with high levels of private sector debt may be more prone to recessions, if not depressions and debt deflations. Since these types of events typically push down government bond yields, there is a case to be made that government bonds should trade at a premium price (lower yield) in a highly-levered world.

At any rate, so far the market appears to be taking a fairly benign view with regard to the newfound higher government debt levels. While some may claim that ratios of government debt to GDP upwards of 80% or 90% are a sure precursor to disaster, the fact is that in recent decades some countries have had much higher debt burdens without any apparent impact on how their debt trades relative to other countries with comparatively lower debt burdens (see the following box for more on how much debt may be too much).

**Are the World's Central Banks Aiding and Abetting a Debt Crazy World?**

Some might argue that the current central bank policies of QE, zero, and sub-zero rate policies are allowing economies to borrow excessively. This question branches into two further questions: 1) do we save enough? And, 2) how much debt is too much? Given the demographic posture of the world in general, and the U.S. in particular, preparations for retirement almost certainly do not appear to be adequate. Should central banks set aside their inflation targets and raise rates in order to boost the incentive to save? This would likely be a recipe for subpar growth and even further sub-target inflation. Achieving higher savings is presumably a problem better solved through tax or other policies that encourage savings over consumption, with monetary policy left to focus on price stability.

As for the question of how much debt is too much, this is certainly open for debate, with few likely to have predicted a few decades ago just how indebted we've become. That aside, the results of the developed economies over the last decade or so suggest that high levels of debt, provided they are well underwritten, can be carried in a low-rate environment without creating inflation. Recently, too, some theoretical support has emerged regarding the idea that countries can actually carry more debt than commonly thought.<sup>2</sup> So, while no doubt we seem over-levered and under-saved, the debate remains unresolved for now.



Source: Moody's Analytics as of February 2015.

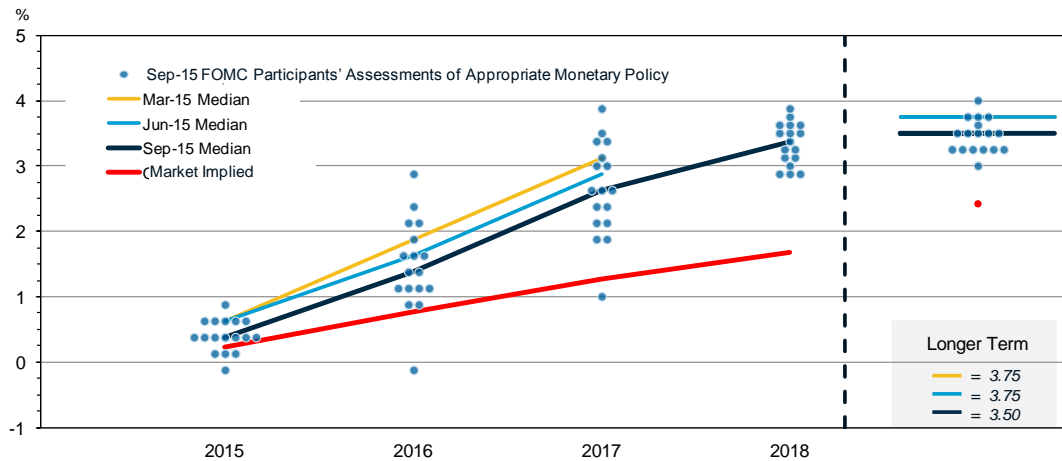
So in short, just as the 1965-1980 period saw a unique confluence of factors that pushed rates higher, the world is now experiencing another unique confluence of factors and events, including a return to low inflation and possibly a demographic and/or productivity driven slowdown in growth. Yet, probably more important in our view is the impact of the massive debt stock and the associated drop in the rate of debt creation. These conditions have delivered us into a world where developed country rates are likely to remain lower than ever for some time to come.

**Why Does the Fed Want to Hike Rates?**

Fed officials plan on hiking the Fed funds rate from the current range of 0-0.25% to more than 3% over the next few years, according to the Fed's projections displayed in the following "dot plot." With unemployment having fallen to levels that the FOMC feels may represent full employment, the members believe they should hike rates in order to make monetary conditions less accommodative. In their view, leaving monetary policy unduly accommodative could foster an overheating of the economy, runaway inflation, excessive debt creation, or financial market imbalances, such as an asset bubble in real or financial assets.

<sup>2</sup> IMF Staff Discussion Note, "When Should Public Debt Be Reduced," June 2015.

The Federal Reserve Dot Plot (%)



Source: Bloomberg as of September 2015

Are U.S. Rates Too Low, and Should the Fed Hike? The Market Says “No,” or at Least, “Not So Fast”

Arguably, there are a number of signals from the markets that the Fed funds rate, and the entire yield curve for that matter, is not unduly low. **The first signal is that the debt market is not overrun with sellers.** If rates were clearly below economic levels, investors would be leaving the market in droves for greener pastures. **Second, the growth rate of overall private sector debt issuance is moderate.** Again, if rates were clearly below economic levels, borrowing by the private sector would be elevated.<sup>3</sup> While gross corporate issuance is high, net issuance is only moderately so, and borrowing by the household sector remains subdued.

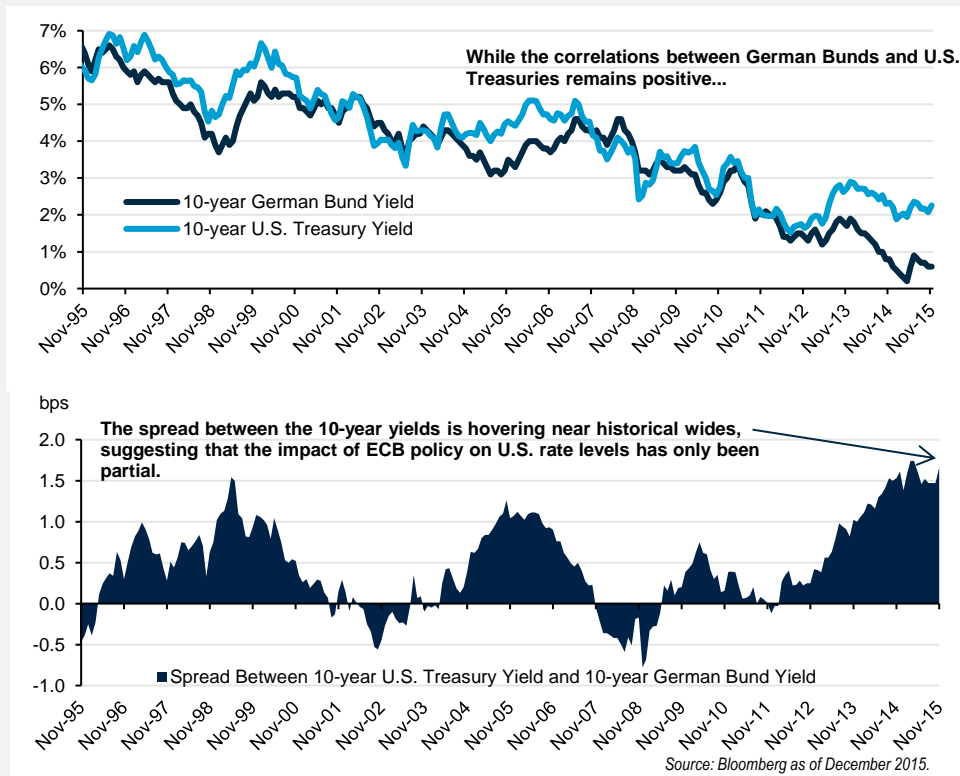
**The third signal from the markets: the preceding dot plot shows investors are pricing in less than what the Fed expects to deliver.** If it was clear that the Fed was behind the curve and a panic rate hiking cycle—above and beyond the dot projections—was on its way, the forward rate curve would presumably be higher. So, rather than the Fed holding the market back, if anything, the market is holding the Fed back.

<sup>3</sup> This was the case in the 1950s when the Fed was forced by the U.S. Treasury to keep rates at uneconomically low levels. In arguing for rate hikes at the time, the Fed observed in its minutes that insurance companies were earning windfall profits selling their bonds to take advantage of the clearly below equilibrium interest rates and inflated bond prices.

**Are the World Central Banks, With their QE and Low and Negative Rates Depressing Global Rates Below Equilibrium?**

Are the aggressive bond buying programs in Japan and Europe pushing yields down too much? **While we can't be sure, similar to the U.S., we would guess they are not, largely based on the fact that those economies do not appear to be over-heating or experiencing undue inflationary pressures.**

Are they pushing U.S. rates down to unduly low levels? While correlations among the markets have remained positive, we can see below that the spread between the U.S. and these markets is at, or near, historical wides. **So while there may be a cross-market impact, the marked divergence between the U.S. and foreign yields suggests the impact has only been partial.**

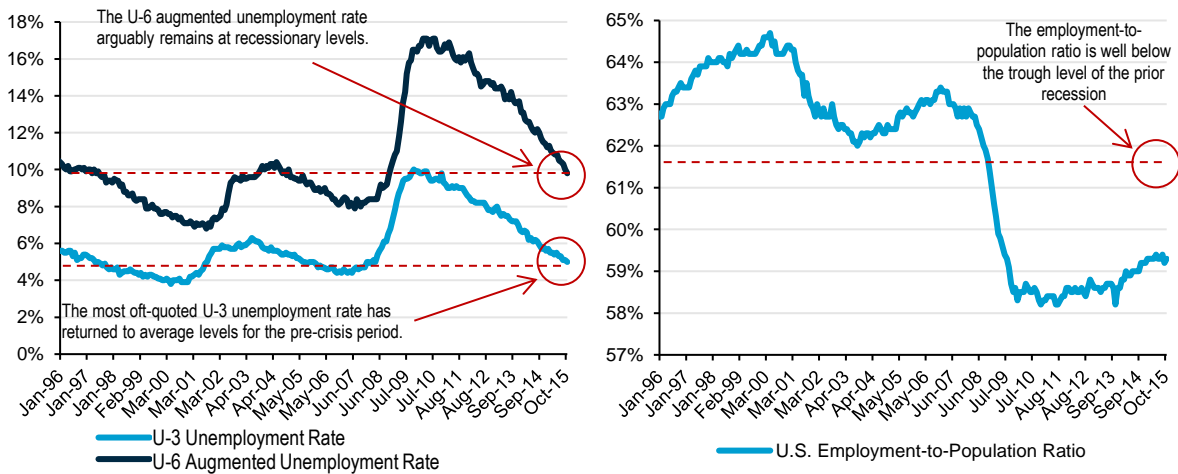


**We agree with the market's assessment that the Fed should move slowly on rates.** Why? Because if the time was right for substantial rate hikes, we'd think the answer to at least one of the following questions regarding the U.S. economy would be an unwavering "yes."

**1) Are we at full employment? We'd say probably not and maybe not even close.** While the most oft-referred to unemployment rate, the U-3 measure, has returned to average pre-GFC levels, other labor market indicators, as indicated in the following charts, suggest slack in the U.S. labor market may yet be substantial.



**Are We at Full Employment? We'd Say Probably Not and Maybe Not Even Close**

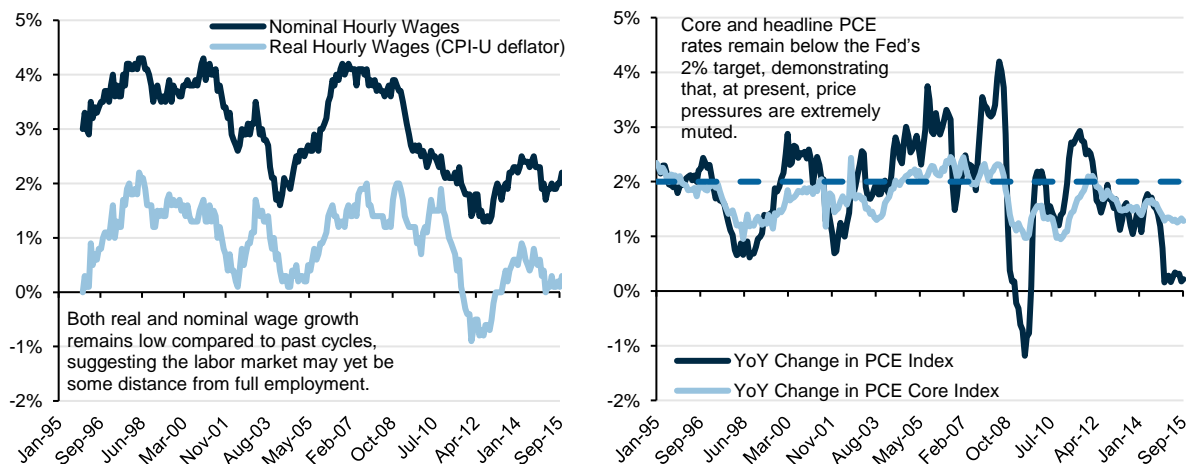


Source: Bloomberg as of September 2015.

While some of the observed decline in the employment-to-population ratio is justified based on the aging of the population, the suddenness of the onetime drop during the financial crisis suggests there is a cyclical element at work as well and that there may be substantial labor resources on the sidelines with the potential to re-engage with the economy.

**2) Are we overheating, or even close to overheating? Probably not.** Compared to decades gone by, GDP is slower (refer to the bar chart on pg. 4), wage growth is lower, (more evidence that slack remains in the labor market, as demonstrated in the preceding charts), and inflation is lower (as observed in the following charts). In fact, inflation has been running below the Fed's self imposed 2% target since 2012. Rate hikes will likely not only depress the interest-rate sensitive sectors of the economy, but will also push up the U.S. dollar. This will put further downward pressure on growth (and depress foreign earnings of U.S. corporations, motivating companies to cut costs to boost earnings) and lead to more imported deflation—import prices are already falling over 10% year-over-year in total and 4% excluding energy. So, if the Fed is serious about wanting inflation to rise towards its 2% target, hiking rates is probably not going to help.

**Are We Overheating, or Even Close to Overheating? Probably Not**



Source: Bloomberg as of September 2015. Hourly wages refer to average hourly earnings and real wages are deflated by the core CPI-U index. The PCE index refers to the Personal Consumption Expenditures Price Index.

**Looking Abroad: More Reasons the Fed Should Proceed with Caution**

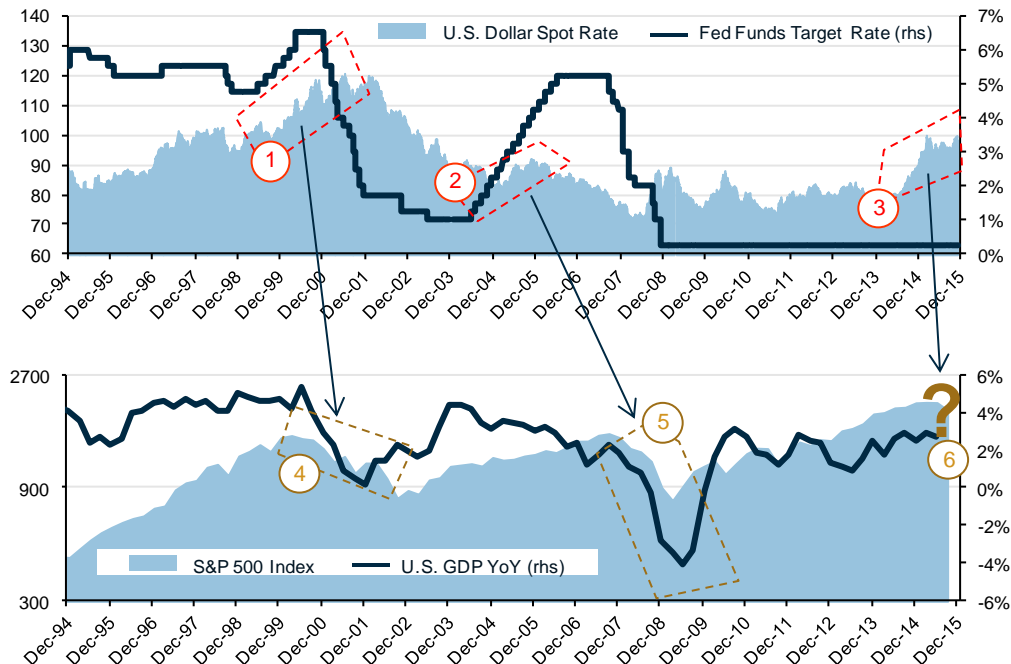
Looking at the international backdrop we see three reasons the Fed should proceed with caution in its rate hiking process.

**First, while it's not the purview of the Fed, most of the rest of the global economy is not faring particularly well.** Japan and Europe are improved from a few years ago, but are still arguably struggling. Next, China—the world's second largest economy and a key growth driver for much of the world—is slowing, despite what appears to be a massive expansion in credit. Meanwhile, other emerging market countries are suffering from slow growth and tightening credit conditions. Fed rate hike cycles have often sparked very damaging waves of capital flight from emerging market economies. In the case of this cycle, ever since the taper tantrum, most emerging market countries have seen their stock and bond markets, as well as their currencies, come under pressure. Market stress in these countries has hurt growth and thereby increased the difficulty for policy makers to make structural reforms and control government budget deficits. **In short, the view from outside the U.S. suggests that fears of U.S. rates hikes are pushing the world further out of balance.**

Second, most economies—the U.S. aside—presently have substantial excess capacity. **As a result, in this era of globalization, should the U.S. actually end up running above potential—and it is not clear that we are running above potential—excess demand might easily be filled by an increase in imports without necessarily stoking U.S. inflation.**

**Third, hiking rates against the backdrop of a rising dollar has historically been a recipe for disaster.** The gap between the relatively favorable economic backdrop in the U.S. and the relatively mediocre picture outside the U.S. has already boosted the dollar substantially in recent years. This has contributed to a tightening of financial conditions, worsened U.S. export prospects, and depreciated the value of U.S. corporations' foreign earnings. **Despite the commonly held perception that the U.S. economy is fairly closed, the following exhibits show that, historically, rate hikes and a rising dollar have prominently preceded bouts of market volatility and economic downturns, again suggesting that the Fed should tread lightly.**

**A Stronger Dollar Typically Accompanies Fed Rate Hikes (1, 2, 3), Hurting Exports, Corporate Earnings, and the Labor Market. The Ensuing Economic Weakness Results in Stock Market Volatility (4, 5, 6(?)).**



Source: Bloomberg as of December 2015.

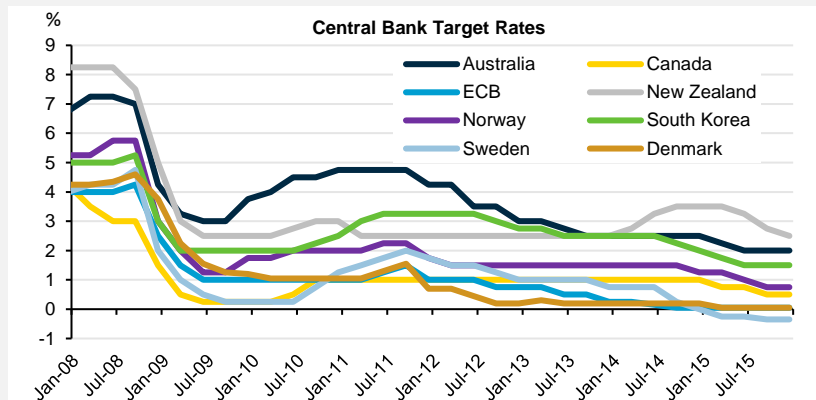
While the internationalist arguments seemed to be resonating at the Fed's September meeting, Fed officials downgraded the international concerns at their October meeting, and, barring some unforeseen negative event, have ostensibly cleared the decks for a rate hike in December.

So in short, whether just looking at the domestic environment or the international context, the case for the Fed to hike rates seems weak. **As crazy as it may seem, given the current environment of high leverage, moderate growth and below target inflation, maybe a zero Fed funds rate and a 10-year Treasury yield of just 2% or so are actually neutral, if not a bit restrictive.**

**Rate Hikes: Is There any Reason to Believe They Might Actually Boost Growth?**

Some analysts have made the case that low rates, in and of themselves, have depressed growth. The reasoning goes that investors/savers/retirees focused on achieving a certain income have to save more if interest rates are low in order to achieve their targeted level of income. As a result, the savings rate may have been boosted and consumption depressed as a result of ultra-low rates.

These analysts reason that should the Fed boost rates, the savings rate may decline and consumption rise, thus boosting growth. While this sounds reasonable, if we are correct and the rise in the Fed funds rate is less than 1% per year and any rise in market yields substantially less than that, it seems implausible that the impact on savings rates from a change in overall market rates of 1% or less would significantly impact rates of savings and consumption.



Source: Bloomberg as of December 2015.

In the highly levered post-GFC environment, several countries have raised short-term rates. But they have subsequently had to more than reverse course. For those arguing that a rate hike could boost economic growth, the experience of these countries is, at a minimum, not clearly supportive of the thesis.

**Is there Theoretical Support for our “Ultra Low for Long” Hypothesis?**

So far we've pointed to plenty of anecdotal evidence that suggests the current ultra-low rate levels are either at, or close to, neutral. But is there any theoretical support for this?

**There is actually a growing body of literature that discusses the possible optimality of very low rates.** One early paper proffering that a 0% short-term nominal rate would be optimal under certain limited conditions was authored by Milton Friedman in 1969. While Friedman's concept may have been written as a more limited theoretical exercise, others have subsequently written about a broader range of circumstances, under which such conditions could be met. A paper written by the Fed's own Narayana Kocherlakota back in 1998 even had a good humored title: "Zero Nominal Interest Rates: Why They're Good and How to Get Them."<sup>4</sup> In 2014 and 2015 the San Francisco Fed published research indicating that the neutral real short-term rate of interest was probably negative. One of these papers authored by John Williams estimated the current equilibrium real rate was around -0.4%. **Another more recent paper by Vasco Curdia shows estimates of the real neutral rate of interest, which declined during the 2008 recession and has yet to recover from deeply negative territory, and suggests the real neutral rate could be -2% or -3% —which would put the current neutral nominal rate at about -1%.<sup>5,6</sup>** Furthermore, his projections of the future path of the natural interest rate have persistently overestimated the speed at which it could rise towards long-run historical levels. "This evidence suggests that interest rates may remain low

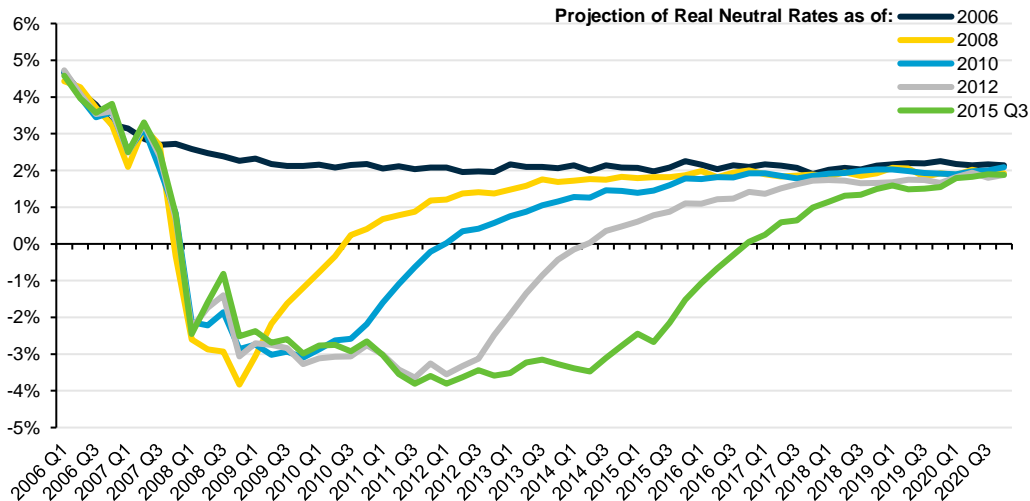
<sup>4</sup> Cole, Harold L., and Kocherlakota, Narayana, "Zero Nominal Interest Rates: Why They're Good and How to Get Them," Federal Reserve Bank of Minneapolis Quarterly Review, Spring 1998.

<sup>5</sup> Curdia, Vasco, "Why So Slow? A Gradual Return for Interest Rates," FRBSF, October 12, 2015.

<sup>6</sup> Laubach, Thomas, John C. Williams. 2015. "Measuring the Natural Rate of Interest Redux." Federal Reserve Bank of San Francisco Working Paper 2015-16.

longer than what this model currently projects," stated Curdia in yet another indication that perhaps the Fed should proceed with due caution.

**Another more recent paper by Vasco Curdia suggests the real neutral rate could be -2% or -3% —which would put the current neutral nominal rate at about -1%.**



Source: Federal Reserve Bank of San Francisco Economic Letter 2015-32

Adding to the sense that the ultra-low rate story may be getting traction at the Fed, Fed Governor Lael Brainard delivered a speech in December 2015 that essentially posited that rates may currently be neutral, citing the research above, and noting that caution is warranted in the rate hike cycle for many of the reasons we've enumerated. **Lastly, the most recently released minutes from the FOMC's October meeting suggest that the Fed is reviewing this research and, at a minimum, is considering the possibility that the neutral level of rates is in fact lower than it had previously thought.** So while Fed meeting participants have yet to buy into the zero long-term neutral real, let alone nominal, interest-rate story, at least there is some theoretical support for our ultra-low thesis, and it's getting an increasing amount of consideration at the Fed.

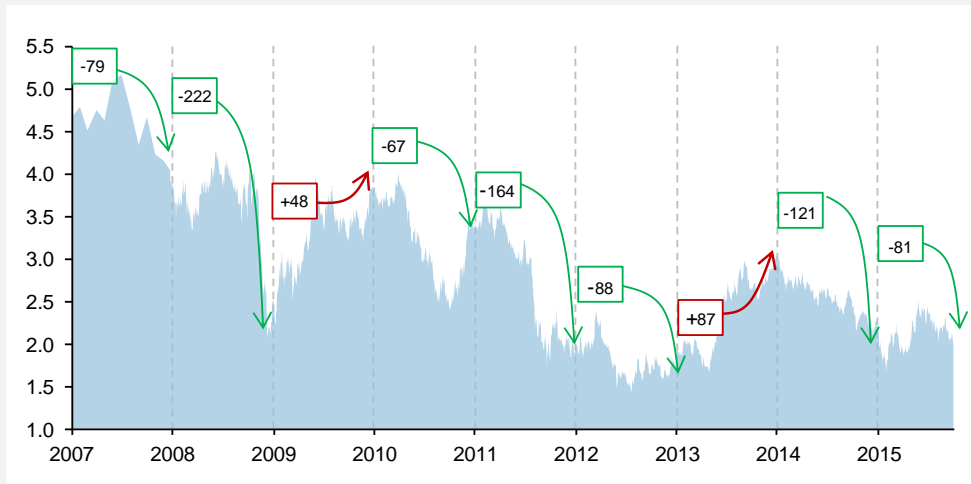
**All that Aside, Will Investors Panic When and If the Fed Hikes, Just Like the Taper Tantrum?**

In our September 2013 paper "The Low Ranger," we made the case that even after the large influx of money into bond funds in recent years, households' aggregate fixed income portfolio allocations were below historical averages. As a result, despite the panic selling of the taper tantrum, we posited that retail investors would come back. Indeed they did, and the rate rise of the taper tantrum was mostly reversed. **Now, seemingly on the eve of Fed rate hikes, we would posit that being under-invested and short duration is a prevalent state of affairs across most of the fixed income investor landscape and is not just limited to retail investors.** Based on a combination of surveys and anecdotal evidence, it appears that the full panoply of fixed income investors, including individuals, pension funds, corporations, central banks, and financial institutions are, on average, either neutral or, more likely, short of their duration targets and/or under-allocated to fixed income relative to historical averages. So could a panic surge push rates higher at various points before and during the Fed's upcoming rate hike cycle? **Sure, but we would expect those selloffs to be relatively short lived and, similar to the taper tantrum, represent excellent buying opportunities, rather than the beginning of the end for the bond market.**

### All the Bearish Forecasters: What's Gone Wrong?

Market analysts always seem to start off the year with a bearish forecast for bonds as indicated in the following chart. But by the end of the year, their forecasts ultimately converge with the low-yielding reality, as reflected in the boxes indicating the degree to which initial forecasts have generally missed their marks.

#### Beginning Year Median 10-year Yield Forecasts: Too High by an Average of 76 bps Since '07



Source: Bloomberg as of October 2015.

Where have forecasters gone wrong? Maybe they are looking in the rear view mirror instead of through the windshield, missing the fact that the economic landscape has changed, the equilibrium level of rates has fallen, and long-term interest rates have been moving toward that new equilibrium.

### What Would Change Our Minds and Make Us Bearish on Bonds?

What would it take to change our minds and expect a surge in rates towards the norms of the 1990s, or earlier? **A regime change: something that compels either governments and/or the private sector actors to pay much higher interest rates to borrow.** This could be triggered by a watershed event, such as a major war, a boom in growth driven by a technological innovation, a bubble in real estate and/or common stock prices that might boost growth and rates. Alternatively, a spontaneous and persistent resurgence in inflation would in all likelihood result in higher rates. In the past, however, such events have been preceded by a steady buildup of wage pressures and/or massive deficit financing. So, let's stay tuned, but none of those factors appear to be either in progress or on the horizon.

### Summary

While it was fashionable earlier this century to talk about how rates had returned to the levels of old thanks to an unwind of the post-WWII demographic wave and a return to low inflation, the fact is we've now entered a different world where rates are not just low, but ultra low—even negative in many cases. In our view, rates will stay ultra low not only because inflation is low, but also because of the high levels of debt across the world's developed economies, which in turn have depressed growth and the equilibrium level of rates. With debt levels likely to stay high for the foreseeable future, ultra-low rates, too, are likely to be with us for the foreseeable future.

The strongest points in favor of our thesis are perhaps: 1) the fact that growth slowed when debt creation slowed in 2008—which suggests that growth is now limited by the debt stock—and 2) the fact that the world's economies are not overheating, despite ultra-low and even negative rates—if anything, they are running on the cold side. Additionally, theoretical support for the ultra-low rate view has increasingly entered the mindset of policy makers, investors, and analysts.

While the U.S. may be able, in the abstract, to stomach a higher Fed funds rate, in reality, there is a risk that the Fed's tightening will not only further damage the international picture, but also boomerang and hit the U.S. economy through the impact of a stronger dollar. After all, U.S. Treasuries are actually already high yielders among developed countries.

*So what if rates remain ultra low? We believe investors should stick with bonds for three reasons:*

- 1) **Returns.** *Fixed income investors should experience returns significantly higher than ultra-low Treasury yields—and higher than cash—over the long term, thanks to the generous spreads on the non-government sectors and the benefit of rolling down the yield and spread curves. In particular, we expect solid performance from the higher yielding products, such as high yield bonds, emerging markets debt, select structured products, investment grade corporates as well as medium grade municipal bonds.*
- 2) **Alpha.** *Market dislocations during the ongoing transition to the new, ultra-low rate environment should continue to result in significant opportunities to add value through active management.*
- 3) **Diversification.** *And lastly, bonds should provide ballast to investors' portfolios relative to higher-volatility assets, such as equities, and real estate.*

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Source(s) of data (unless otherwise noted): PGIM Fixed Income as of December 2015.

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