PGIM FIXED INCOME

Perspectives

April 2017

Robert Tipp
Managing Director,
Chief Investment Strategist,
Head of Global Bonds
PGIM Fixed Income

The Bond Bull's Twain Moment

"The report of my death was an exaggeration," Mark Twain[1]

A range of forces have coalesced to push global rates higher over the last several months. On the policy front, last fall, we had the Bank of Japan implement its twist policy while the European Central Bank announced a reduction in its asset purchases in December. On the political front, we had the Trump/Republican sweep boost expectations for faster U.S. growth. And on the economic front, we had global growth accelerate and inflation rebound with the recovery in commodity prices.

So, is this just the opening salvo in a war on bonds, the beginning of the end of the bull market that spanned more than three and a half decades? Or will the rise in rates driven by the Trump bump, ECB taper, and the so-called reflation trade turn out to be yet another buying opportunity, similar to the taper tantrum and all the other selloffs along the way?

As the title suggests, reports of the Bond Bull's passing appear premature as the secular fundamentals that have supported its decades-long run remain alive and well.

Summary Views:

- **Japan:** BoJ twist and moderately improved growth picture notwithstanding, high likelihood of sub-1% growth and inflation to result in 10-year JGB yields remaining well below 0.5%, if not around current single digit basis point levels for the foreseeable future.

- **Europe:** Much of the likely damage to the bond market from the ECB taper and potential rate hikes is probably more than priced into intermediate and long-term yields at this point. As a result, 10-year European interest-rate swaps—currently around 75 bps—seem likely to remain sub-1% for several quarters, if not years.

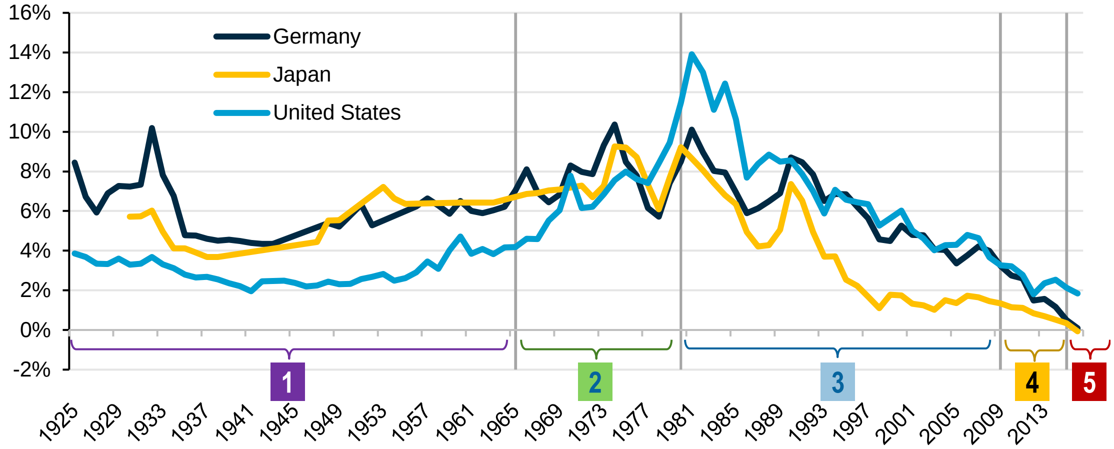
- **U.S.:** Markets may remain on edge as the new government configuration tries to implement more stimulative policies, leaving 10-year yields at 2.5%+/- for the time being. While we cannot rule out the potential for an upside policy surprise that pushes rates temporarily higher—even toward 3%—over the longer term, we see the 10-year Treasury remaining at sub-2.5% levels as the expected transitory impact of the potential stimulus wanes, and the reversion to bond-positive fundamentals caps yields.

1. White, Frank Marshall, "Mark Twain Amused," New York Journal, June 2, 1897 via the U.S. Library of Congress.

The Old Bullish Case Circa 2015: What Was it and How Did We Get There?

The past century or so of bond market history can be broken into fairly distinct regimes with arguably period specific dynamics (see following chart). The low-rate world prior to the 1960s was generally characterized by much smaller government and lower peace-time deficits (by modern standards) with intensive Fed intervention holding down interest rates during major wars. This was followed by the period of high yields from 1965 to 2005, highlighted by the ultra-high rates of the 1970s and 1980s, that was the result of a unique confluence of demographics, oil price shocks, labor-market structure—perhaps most notably, wage indexation—and tax policy that encouraged borrowing not only via the full deductibility of interest, but also the deductibility of passive losses.

A TIMELINE OF G-3 YIELD REGIMES.



1	GOOD OLD DAYS	1925 to 1965:	Low yields amid low inflation, low peace-time borrowing, and central bank intervention during major wars.
2	INFLATION MAYHEM	1966 to 1979:	Often blamed on ineffectual central banking, this period may have had more to do with the confluence of a debt-oriented tax structure, labor-market structure, oil price shocks, the advent of consistent and growing government deficit spending, and a demographic boost to growth.
3	SHOCK THERAPY	1980 to 2008:	Rates began their return toward more normal levels as demographics slowed growth, and central bank policies oriented toward price stability pushed inflation lower.
4	STILL DISINFLATIONARY	2009 to 2014:	A substantial debt burden and an aging demographic moved us toward a lower equilibrium level for real and nominal yields.
5	HIGHLY ACCOMMODATIVE	6/2014 to 6/2016:	With commodity prices and inflation at disturbingly low levels, the ECB and BoJ took rates into negative territory and carried out massive bond buying programs, bringing yields to ultra-low levels.

Source: IMF; Homer, Sidney and Sylla, Richard, A History of Interest Rates, Fourth Edition, John Wiley & Sons, 2005; Robert Shiller, Yale University; Bloomberg

Since roughly 1980, rates have fallen as these factors have abated and central bank policies oriented toward price stability have pushed inflation lower. **Following the Great Financial Crisis, the progression of an aging demographic, higher debt levels, tighter credit conditions, and unusually slow growth—factors still prevalent throughout much of the developed world—delivered a new realm of low rates.** We speculated at the end of 2015 that the central tendency or neutral level for the U.S. 10-year Treasury might be just around 2% or so.

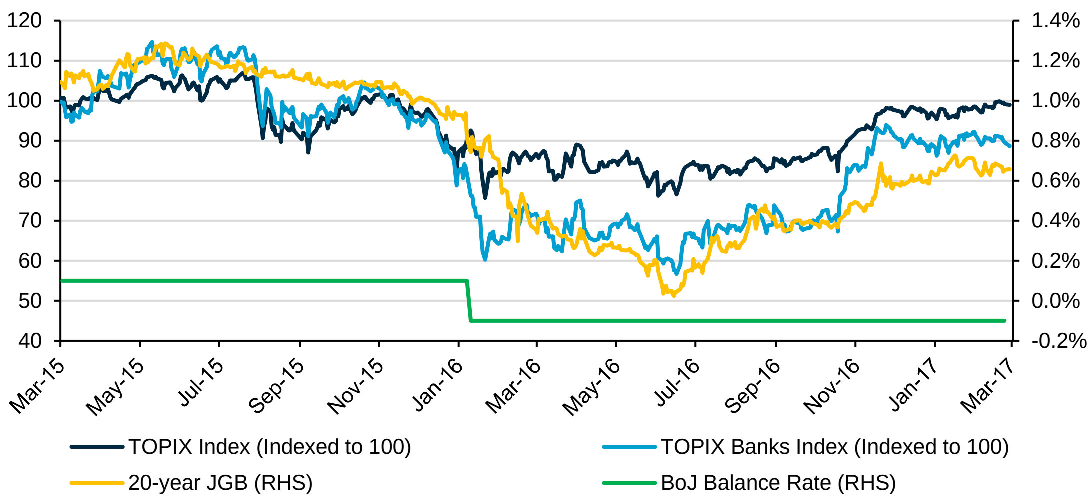
2016's Ultra-Low Rates: Why?

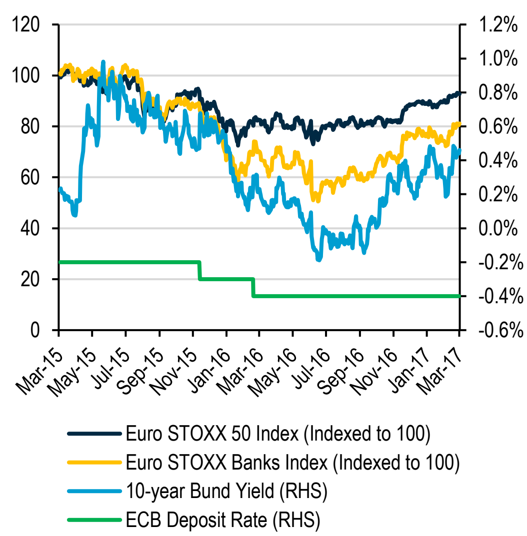
But in 2016, rates went lower still. Not only did the 10-year U.S. Treasury yield drop well below 2%, but in a mind-boggling development, large swathes of the European and Japanese yield curves went sub-zero on a sustained basis. What in the world was going on?

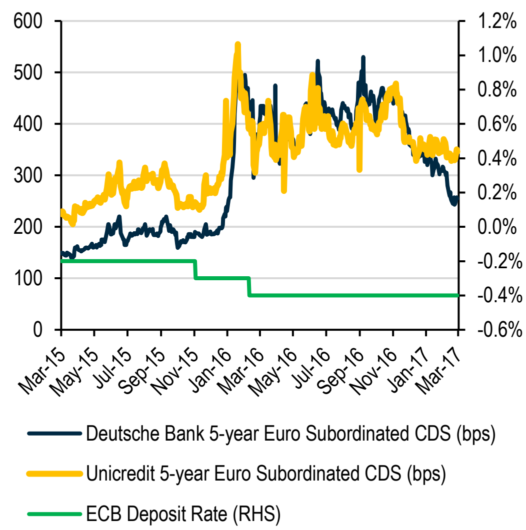
Falling commodity prices no doubt played a role in stoking broad deflationary concerns, but almost without a doubt, the bulk of the credit is owed to the cumulative effect of the ECB and BoJ policies of negative rates and massive bond purchases. These policies, replete with combinations of implied and explicit long-term forward guidance and an ongoing easing bias towards even more negative yields and even bigger bond buying programs, pushed up bond prices and depressed yields.

On balance, the BoJ and ECB's well-intentioned policies, in fact, appeared to have potentially corrosive elements. First, the bond purchases forced excess reserves into the system, which were then taxed with negative rates. Second, the purchases pushed yields on long-duration bonds to unnaturally low levels near and below zero, potentially rendering the bond market both unsafe and unprofitable. In short, the ECB and BoJ appeared to have gone too far—and markets reflected the expected negative impact (see following charts). We made the case for decreased bond purchases and non-negative short rates in our August 2016 piece "Central Banks of the World: Yield to the Markets!". Nonetheless, as long as the hyper-aggressive policies persisted, we hypothesized that the equilibrium central tendency for global 10-year yields would remain ultra-low—say on the order of 0% for JGBs and bunds and 1.75% for Treasuries.

UNTIL THE MIDDLE OF 2016, THE AGGRESSIVE POLICIES OF THE ECB AND BOJ APPEARED TO DAMAGE MARKET SENTIMENT—ESPECIALLY REGARDING FINANCIALS. SUBSEQUENTLY, RISK APPETITE HAS RECOVERED AFTER THE BOJ REVAMPED ITS POLICIES AND THE ECB MOVED TO REDUCE ACCOMMODATION.





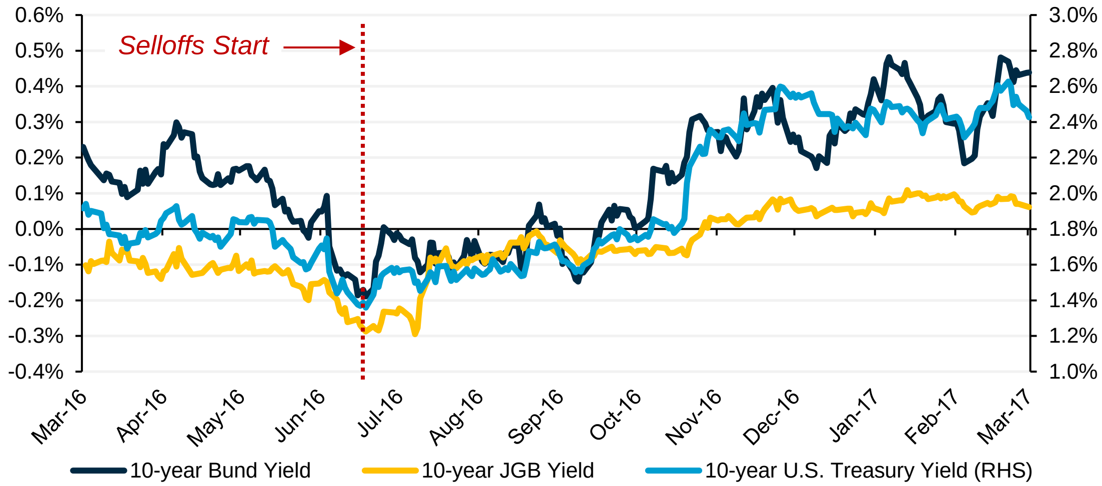


Source: Bloomberg as of March 21, 2017

Mid-2016 to Present: The Global Bond Market's Big Selloff—Beginning of the End or Buying Opportunity?

After last year's wave of economic pessimism and turbo-charged monetary policy brought yields to ultra-low levels, expectations have risen for both growth and inflation in the G-3, and as a result, long-term government bonds have sold off. Is this just the initial move on the way to higher rates, or an opportunity to buy bonds at cheap levels? Let's look at what contributed to the higher rates in each of the G-3 and whether they may have overshot.

THE GLOBAL INCREASE IN RATES SINCE MID-2016: BEGINNING OF THE END OR BUYING OPPORTUNITY?

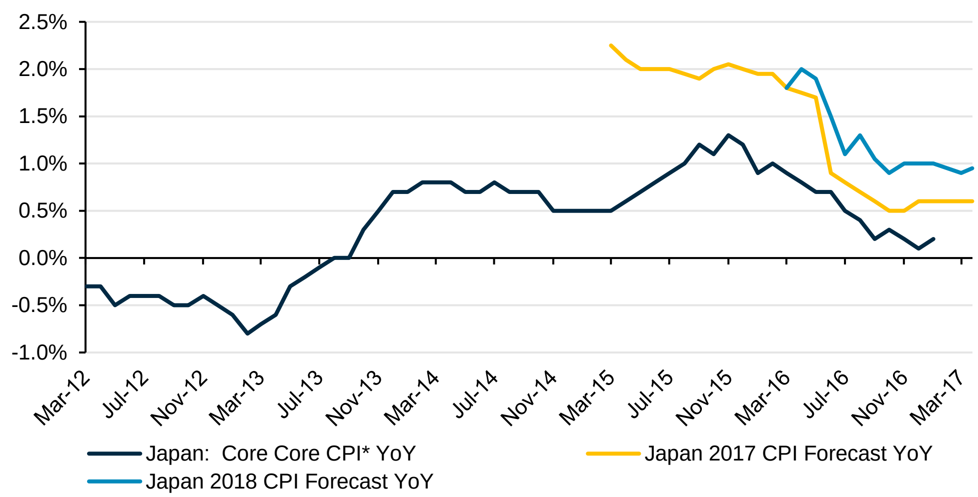


Source: Bloomberg as of March 21, 2017

Japan: Reverse Twist Leaves JGBs at a New, Higher Stasis

Expectations for growth and inflation in Japan have risen modestly over the last nine months—bringing interest rates with them—as the BoJ carried out its reverse twist operation. **Looking ahead, however, growth expectations are quite modest, and it is perhaps more important that inflation expectations are also quite a bit shy of the BoJ's 2% target (see following chart), which is consistent with our long-term outlook for both growth and inflation in Japan that is somewhere between 0 and 1%. As a result, it strikes us as unlikely that any tightening of monetary conditions via higher rates would be required for the foreseeable future, likely leaving Japanese bonds—particularly those with maturities of 10-years and longer—set to outperform cash over the intermediate to long haul.**

CORE CPI—PRESUMABLY A FAIR INDICATOR OF UNDERLYING PRICE PRESSURES—HAS DROPPED TO AROUND 0.1%. ALTHOUGH MARKET EXPECTATIONS FOR INFLATION ARE A BIT HIGHER AT 0.6% AND 0.9%, THEY NONETHELESS REMAIN WELL BELOW THE BOJ'S 2% TARGET.



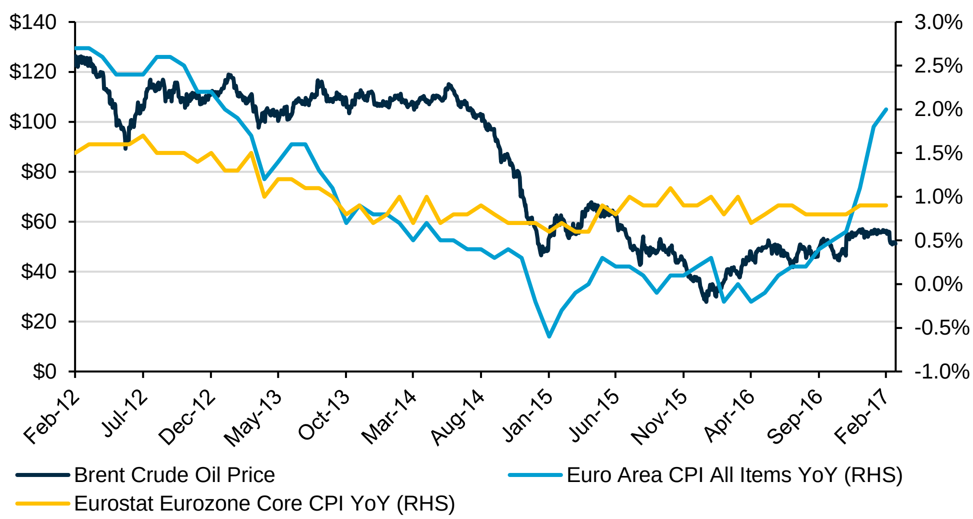
*Source: Bloomberg as of March 21, 2017. * The Core Core CPI reading is adjusted for the consumption tax, initially implemented in April 2014.*

ECB: Basking in the Inflation Bounce, Hawks No Doubt Eyeing the End of QE and NIRP

Following the announced cut in ECB bond purchases, the rise in energy prices of the past year quickly boosted European headline inflation to the ECB's effective target of "close to, but less than 2%." Undoubtedly, negative rates and QE have never been popular with the more hawkish members of the governing council, who see the programs as a form of indirectly financing government deficits, including financing deficits of the peripheral countries, many of which, the members may believe, should be doing more work in terms of budget consolidation and structural reforms. **As a result, the ECB's undercurrents have become more hawkish, presumably suggesting a mindset to end, if at all possible, both its negative-rate policy and its bond purchases over the next year or two.**

While we wouldn't doubt the ECB's ability to potentially end its current bond purchases and negative-rate policies, it nonetheless looks probable that it will get stalled at a short rate of zero as it moves up from negative territory. Similar to the BoJ, perhaps the most important hurdle facing the ECB in potentially tightening policy is the likelihood of an inflation undershoot relative to target. In particular, as the rise in commodity prices slows, the headline Eurozone inflation rate is likely to quickly drop back to the core rate of around 1%. And considering the Eurozone's early stage in the economic cycle, inflation pressures remain muted overall. Given the ECB's single mandate of achieving its near 2% inflation target, inflation stalling below target is likely to impede *any* effort to tighten, let alone push rates above zero.

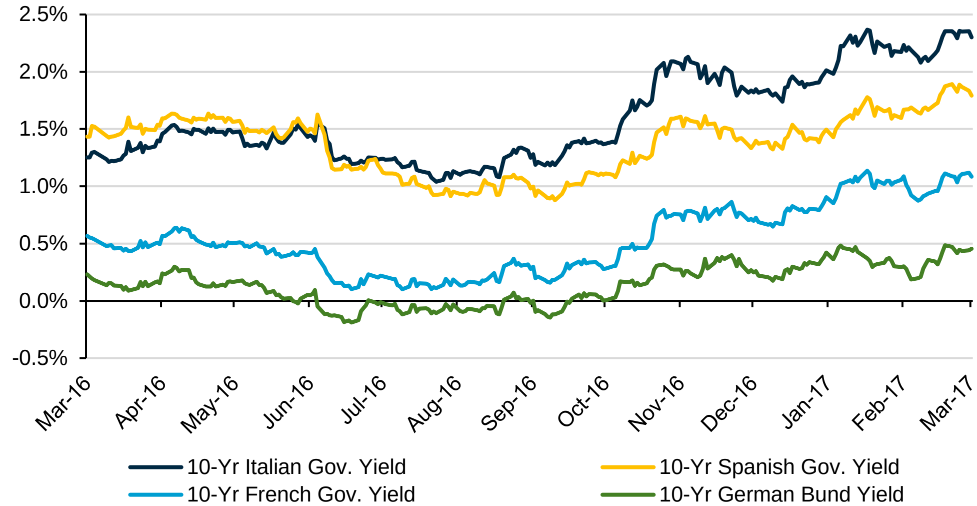
OIL PRICES AND EUROZONE INFLATION: ALTHOUGH HEADLINE INFLATION HAS ZOOMED RIGHT UP TO, AND ARGUABLY EVEN SLIGHTLY EXCEEDED, THE ECB'S TARGET OF "CLOSE TO, BUT LESS THAN 2%," THE SUBDUED RATE OF CORE INFLATION SUGGESTS UNDERLYING INFLATION PRESSURES ARE WELL CONTAINED.



Source: Bloomberg as of March 21, 2017

Furthermore, the Eurozone is likely to face other headwinds that should impede both the growth outlook and the potential for inflation to return to target on a sustained basis. **First, there is the tightening of financial conditions via higher rates. As the ECB has reduced its purchases, yields have risen, especially for the countries already in the markets' cross-hairs—namely France and the peripherals as observed in the following chart—and financial conditions have tightened. The Eurozone also faces growth headwinds from ongoing fiscal consolidation pressures and the potential pall on consumer and business sentiment cast by both nationalistic political movements and the possible dampening effects from Brexit. Additionally, the support that the weakening euro has provided to both growth and inflation in recent years may come to an end as the ECB approaches an exit to QE. In fact, as the ECB exits its aggressive policy stance, the euro may even strengthen as a result of the Eurozone's massive current account surplus, putting unwanted *downward* pressure on both growth and inflation.**

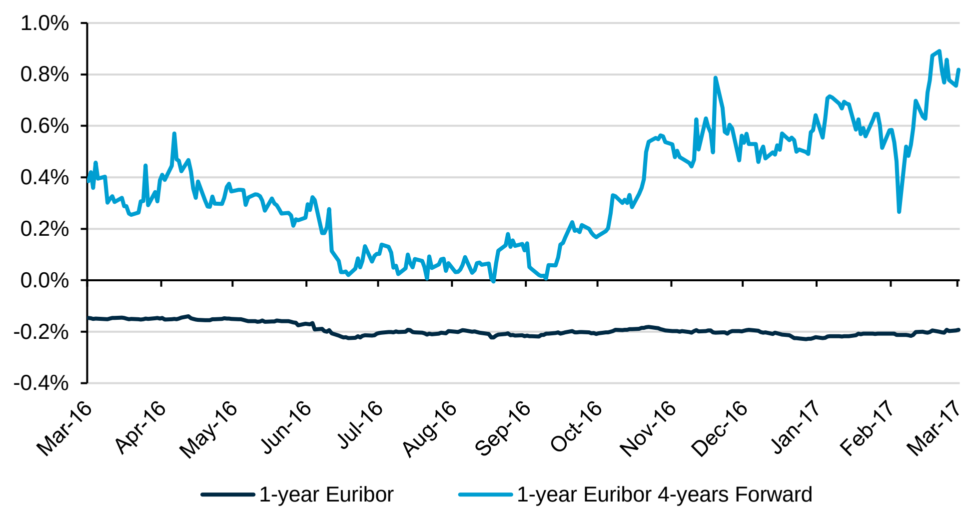
RISING YIELDS HAVE TIGHTENED FINANCIAL CONDITIONS ACROSS THE EUROZONE.



Source: Bloomberg as of March 21, 2017

In short, as seemingly hawkish as the ECB's narrative may be at present, we are dubious that it will be able to hike rates at the pace currently priced into the markets (following chart). As a result, we believe that most intermediate and long-term bonds in the Eurozone are also positioned to outperform cash over the intermediate to long term.

WHAT'S CURRENTLY "PRICED IN" FOR ECB TIGHTENING OVER THE NEXT FIVE YEARS? WITH 1-YEAR EURIBOR AT -20BP AND 4-YEAR FORWARD 1-YEAR EURIBOR CURRENTLY AT 79 BPS, ROUGHLY 99 BPS OF TIGHTENING IS PRICED IN OVER THE NEXT FOUR YEARS. WHILE EMINENTLY REASONABLE AS AN OPTIMISTIC SCENARIO, IT STRIKES US AS UNDULY OPTIMISTIC AS A BASE CASE.



Source: Bloomberg as of March 21, 2017

The U.S.: Trump Bump Fast Forwards the Rate Cycle

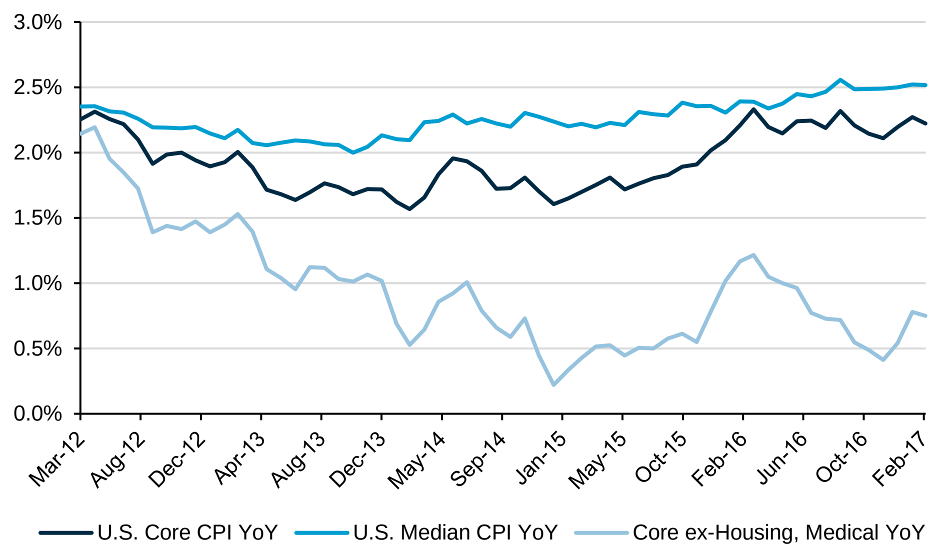
As for the U.S., inflation is coming right up to target (or has it? See the following box regarding whether inflation is something the Fed should squash at current levels or whether the Fed is really shadow boxing), and the economy is seen as near full employment (are we sure we're near full employment? We've taken issue with this concept elsewhere and will leave it at that in the interest of brevity). **Is it time for the Fed to get to its long-term neutral 3-3.5% Fed funds rate, or at least, as the Fed Chair herself has referenced, get to a 2% nominal / zero real Fed funds rate? While that may be the case, it strikes us that a conundrum may be buried in that logic: if GDP is rather muted and wage growth is sub-par in both nominal and real terms, is it reasonable to expect the economy to continue to chug along even if**

rates are 1, 2, or 3 percentage points higher? Frankly, if the performance of the economy is only at or below trend at the moment, it would seem more reasonable to think that little adjustment in rates is justified at all—that is, that the current rate structure of a sub-1% Fed funds rate is closer to neutral than the 3%+ rate suggested by the Fed's dot plot. If that's true, then the Treasury forward curve, which has priced in several hikes over the next few years, is probably too high, leaving Treasuries positioned to outperform cash by some margin in the years ahead.

U.S. Inflation: At Target or is the Fed Shadow Boxing?

For some time, it's been possible to make the case that the underlying rate of inflation in the U.S. is running roughly at target, i.e. running at or above 2% on a “core” basis if one refers either to core CPI, or other measures such as the median CPI. With the rise in energy prices of late, the headline rate has also moved above 2%. If we focus on core as a better indicator of underlying price pressures, however, a couple aspects of the "core CPI is above 2%” story give us pause.

HOUSING AND MEDICAL CONTRIBUTING TO HIGHER RATES OF U.S. CORE CPI.



Source: Bloomberg as of February 28, 2017

In particular, one could argue that the rise in core inflation is not broad based, driven predominantly by just two components: housing and medical. **Ex-housing and medical, core inflation is actually on a volatile, but declining trend that is currently around 0.75%.** If it turns out there are structural rather than cyclical elements responsible for these two subcomponents' high rates of inflation—e.g., that medical inflation is driven by structural constraints in the medical industry and not by the economy's overheating and, similarly, that the firmness in real estate prices is concentrated in certain metro-areas and has become more of a function of capital concentration, supply constraints, and consumer preferences rather than economic overheating—then the Fed may actually push the true economically-driven, underlying-rate of inflation well below target. But only time will tell.

Will Growth be Great Again and Other Risk Scenarios

The big caveat in the U.S. story: What will be the ultimate impact of the anticipated government reforms and stimulus programs, assuming they come to pass? We currently estimate that U.S. GDP will accelerate from 2016's tepid 1.6% pace to 2.4% in 2017 and to 2.7% in 2018, but then tick back down towards 2% as the stimulus sequentially flattens out, resulting in a net, cumulative GDP boost of 1 percentage point. If we're correct in our skepticism about the potential for a long run "Trump bump" to growth, then the 100 bp+ rise in the rates market since mid-2016 is presumably an overreaction, suggesting that a 2.5% 10-year Treasury yield is actually cheap. But in the event of a major upside policy surprise that delivers growth on a sustained basis of 3% or higher, then the central tendency for the 10-year Treasury yield could actually end up being closer to 3%.

Additionally, we could be wrong about inflation—what if the combination of diminishing economic slack, protectionist trade policies, and anti-immigration reforms are set to precipitate a price wage spiral? While of course that scenario is possible, we would nonetheless counter that—given the world's overall economic balance, which seems to be one of far more supply than demand—a scenario where inflation measures around the world tend to undershoot rather than overshoot seems more likely.

Another wild card: is there downside economic and inflation risk stemming from an inevitable secular slowdown in Chinese growth? In recent years China's rapid expansion has been the single biggest driver of world growth. As a result, a moderation in China's rate of growth could open up a more bond bullish scenario. While that may seem remote at present, the fact is that ultra-high growth economies eventually moderate, suggesting it is more a question of "when" rather than "if." **And when this moderation arrives—granted this may be way in the future—it would seem reasonable to not only expect a drop in the pace of global growth, but also in global inflation and interest rates as well.**

Conclusion: Don't Fade the Bull

True, the world's economies are arguably doing better now and deflation risks are lower than they were in the middle of last year. Risks, though, abound. While some would point to the potential for growth to overheat and inflation to overshoot as a result of stimulative monetary and fiscal policies, **we think the markets have swung from excessive pessimism to an overly optimistic view of the current upswing and the potential for stimulative policy shifts ahead. Instead, we believe the secular forces of moderate growth and inflation stemming from an aging demographic and high levels of indebtedness, along with the intense price competition of globalization, will ultimately moderate expectations for both growth and inflation.**

So, as low as yields may seem, by our best estimate, the current levels appear to offer more-than-sufficient compensation for the risks. As a result, we see a greater likelihood for lower, rather than higher, G-3 long-term interest rates over the intermediate to long term, leaving government bonds poised for positive performance relative to cash. In other words, we believe that despite rumors to the contrary, the Bond Bull is, in fact, alive and well.

NOTES

NOTICE: IMPORTANT INFORMATION

Source(s) of data (unless otherwise noted): PGIM Fixed Income as of April 2017.

PGIM Fixed Income operates primarily through PGIM, Inc., a registered investment adviser under the U.S. Investment Advisers Act of 1940, as amended, and a Prudential Financial, Inc. ("PFI") company. PGIM Fixed Income is headquartered in Newark, New Jersey and also includes the following businesses globally: (i) the public fixed income unit within PGIM Limited, located in London; (ii) PGIM Japan Co., Ltd. ("PGIM Japan"), located in Tokyo; and (iii) the public fixed income unit within PGIM (Singapore) Pte. Ltd., located in Singapore. Prudential Financial, Inc. of the United States is not affiliated with Prudential plc, which is headquartered in the United Kingdom. Prudential, PGIM, their respective logos, and the Rock symbol are service marks of PFI and its related entities, registered in many jurisdictions worldwide.

These materials are for informational or educational purposes only. The information is not intended as investment advice and is not a recommendation about managing or investing assets. In providing these materials, PGIM is not acting as your fiduciary as defined by the Department of Labor.

These materials represent the views, opinions and recommendations of the author(s) regarding the economic conditions, asset classes, securities, issuers or financial instruments referenced herein. Distribution of this information to any person other than the person to whom it was originally delivered and to such person's advisers is unauthorized, and any reproduction of these materials, in whole or in part, or the divulgence of any of the contents hereof, without prior consent of PGIM Fixed Income is prohibited. Certain information contained herein has been obtained from sources that PGIM Fixed Income believes to be reliable as of the date presented; however, PGIM Fixed Income cannot guarantee the accuracy of such information, assure its completeness, or warrant such information will not be changed. The information contained herein is current as of the date of issuance (or such earlier date as referenced herein) and is subject to change without notice. PGIM Fixed Income has no obligation to update any or all of such information; nor do we make any express or implied warranties or representations as to the completeness or accuracy or accept responsibility for errors. **These materials are not intended as an offer or solicitation with respect to the purchase or sale of any security or other financial instrument or any investment management services and should not be used as the basis for any investment decision. No risk management technique can guarantee the mitigation or elimination of risk in any market environment. Past performance is not a guarantee or a reliable indicator of future results and an investment could lose value. No liability whatsoever is accepted for any loss (whether direct, indirect, or consequential) that may arise from any use of the information contained in or derived from this report. PGIM Fixed Income and its affiliates may make investment decisions that are inconsistent with the recommendations or views expressed herein, including for proprietary accounts of PGIM Fixed Income or its affiliates.**

The opinions and recommendations herein do not take into account individual client circumstances, objectives, or needs and are not intended as recommendations of particular securities, financial instruments or strategies to particular clients or prospects. No determination has been made regarding the suitability of any securities, financial instruments or strategies for particular clients or prospects. For any securities or financial instruments mentioned herein, the recipient(s) of this report must make its own independent decisions.

Conflicts of Interest: PGIM Fixed Income and its affiliates may have investment advisory or other business relationships with the issuers of securities referenced herein. PGIM Fixed Income and its affiliates, officers, directors and employees may from time to time have long or short positions in and buy or sell securities or financial instruments referenced herein. PGIM Fixed Income and its affiliates may develop and publish research that is independent of, and different than, the recommendations contained herein. PGIM Fixed Income's personnel other than the author(s), such as sales, marketing and trading personnel, may provide oral or written market commentary or ideas to PGIM Fixed Income's clients or prospects or proprietary investment ideas that differ from the views expressed herein. Additional information regarding actual and potential conflicts of interest is available in Part 2A of PGIM Fixed Income's Form ADV.

In the United Kingdom and various European Economic Area (`EEA') jurisdictions, information is issued by PGIM Limited with registered office: Grand Buildings, 1-3 Strand, Trafalgar Square, London, WC2N 5HR. PGIM Limited is authorised and regulated by the Financial Conduct Authority of the United Kingdom (registration number 193418) and duly passported in various jurisdictions in the EEA. These materials are issued by PGIM Limited to persons who are professional clients or eligible counterparties for the purposes of the Financial Conduct Authority's Conduct of Business Sourcebook. In certain countries in Asia, information is presented by PGIM Singapore, a Singapore investment manager registered with and licensed by the Monetary Authority of Singapore. In Japan, information is presented by PGIM Japan, registered investment adviser with the Japanese Financial Services Agency. In South Korea, information is presented by PGIM, Inc., which is licensed to provide discretionary investment management services directly to South Korean investors. In Hong Kong, information is presented by representatives of PGIM (Hong Kong) Limited, a regulated entity with the Securities and Futures Commission in Hong Kong to professional investors as defined in Part 1 of Schedule 1 of the Securities and Futures Ordinance.

2017-1860

PGIM FIXED INCOME