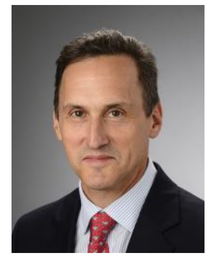
March 2018

Long-Term Interest Rates: Perfect Storm, Buying Opportunity, or Both?

A confluence of factors has pushed developed long-term interest rates higher over the last few months. This paper takes a look at the drivers of the recent selloff and attempts to handicap the outlook for the bond market going forward. So, what's the punch line? It looks like the decades-old bull market in bonds has given way to a new environment where long-term rates are likely to remain low and range bound. More importantly, we believe that we're a lot closer to the top of the yield range than the bottom, leaving bonds positioned to perform well over the intermediate to long term.



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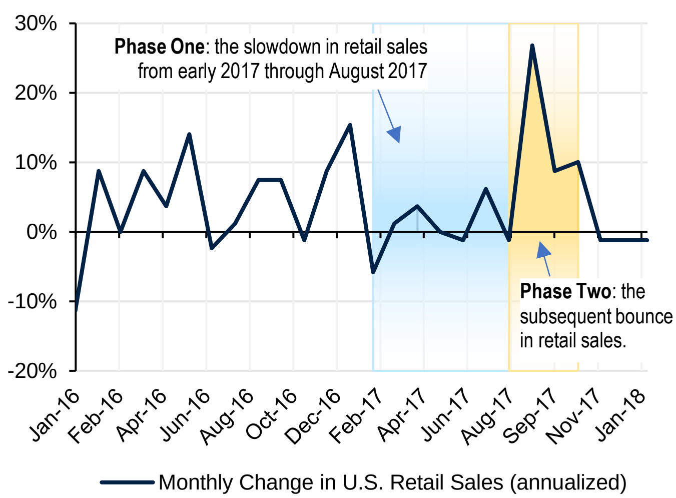
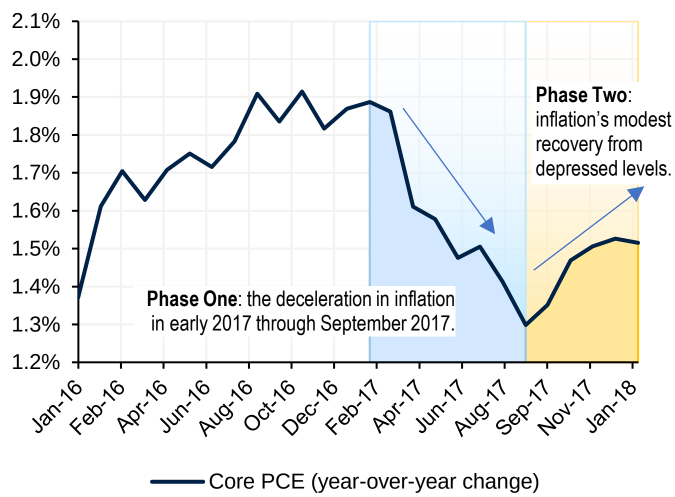
Why the backup in rates since September 2017? First, the starting point…

Part of the severity of the recent selloff stems from the fact that yields in September 2017—when the 10-year Treasury was brushing 2%—were arguably too low. The Fed was taking a pause in its rate hike cycle in Q3 2017 as it kicked off the well-telegraphed portfolio roll off. Meanwhile, the normal quarter-to-quarter volatility in the U.S. economic data signaled that, by some measures, both growth and inflation had moderated (see Figures 1 and 2 below). The markets took it all in and extrapolated the lower economic trajectory into the future and proceeded to take the yield curve to levels that ended up being too low relative to what was coming in terms of the economy and fiscal policy.

FIGURE 1 AND 2: 2017 SAW TWO DISTINCT MARKET PHASES. **IN PHASE ONE**, MODERATING ECONOMIC ACTIVITY AND INFLATION DROVE A STRONG TREASURY RALLY. **IN PHASE TWO**, TREASURY YIELDS SOARED AS ECONOMIC ACTIVITY AND INFLATION REBOUNDED AND, CONTRARY TO EXPECTATIONS, TWO FISCAL STIMULUS PACKAGES WERE PASSED.





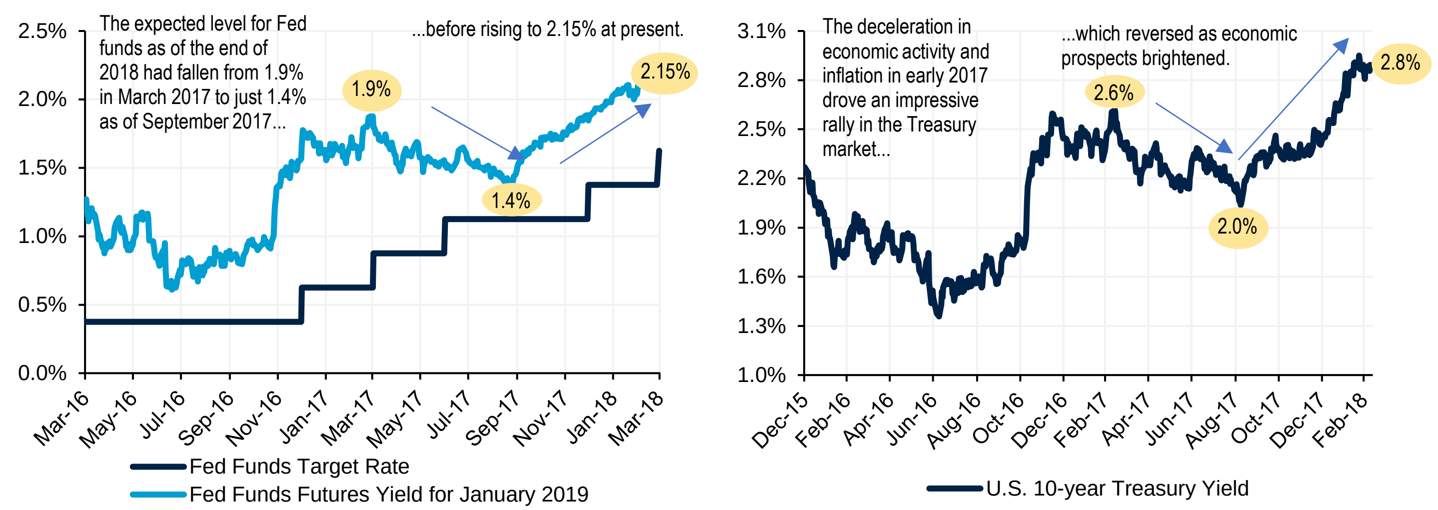
Source: Bloomberg and PGIM Fixed Income as of March 2018

Why all the fireworks since September 2017?

As has often been the case in this nearly 10-year old U.S. expansion, the first few quarters in 2017 gave way to an equal and opposite rebound. In Q4 2017, retail sales and durable goods orders sprang back to life and core inflation measures accelerated.[1] But that was only the half of it: after months of fading prospects, the U.S. government came through with not just one, but two pro-cyclical stimulus packages.

And so the markets reassessed, as observed in Figures 3 and 4. The Fed funds market moved from an expected year-end 2018 level of around 1.35% circa September 2017—or, pricing in just one rate hike between September 2017 and the end of 2018—all the way to the current 2.15% level for year-end 2018—or, pricing in two additional 25 bp rate hikes between now and the end of 2018. Meanwhile, the 10-year Treasury yield increased from a low of 2.0% in September 2017 to its current level of just below 3%. **This paradigm shift was arguably driven not just by the fears of stronger growth and higher inflation, but also by concerns that higher yields would be required to clear the Treasury market going forward considering: 1) higher-than-expected Treasury issuance due to the stimulus packages, exacerbated by 2) the Fed's ongoing balance sheet roll-off program. The combination of the two takes us from a world where the Fed was underwriting *part* of a smaller deficit, to one where they underwrite *none* of a much larger deficit, leaving the entire supply of Treasuries for investors to digest on their own.**

FIGURE 3 AND 4: IN THE FIRST THREE QUARTERS OF 2017, AS FAR AS THE MARKET WAS CONCERNED, IT ALMOST LOOKED LIKE THE WINDOW FOR RATE HIKES WAS CLOSING. SINCE SEPTEMBER, HOWEVER, GROWTH AND INFLATION FIGURES HAVE REBOUNDED, LIFTING THE EXPECTED YEAR-END 2018 FED FUNDS RATE TO 2.15%.



Sources: Bloomberg and PGIM Fixed Income as of March 2018

Meanwhile, what's going on abroad?

Another moving part in the bond market landscape is the monetary normalization processes in motion in Japan—where the Bank of Japan's bond purchases have been in a slow-taper process—and in Europe where the European Central Bank is shifting from "emergency policies" towards normality. Once all tallied, will this leveling off of the G-4 central banks' balance sheets, as observed in Figure 5, result in a higher developed-market rate regime? We think not, but we'll come back to that later. In the meantime…

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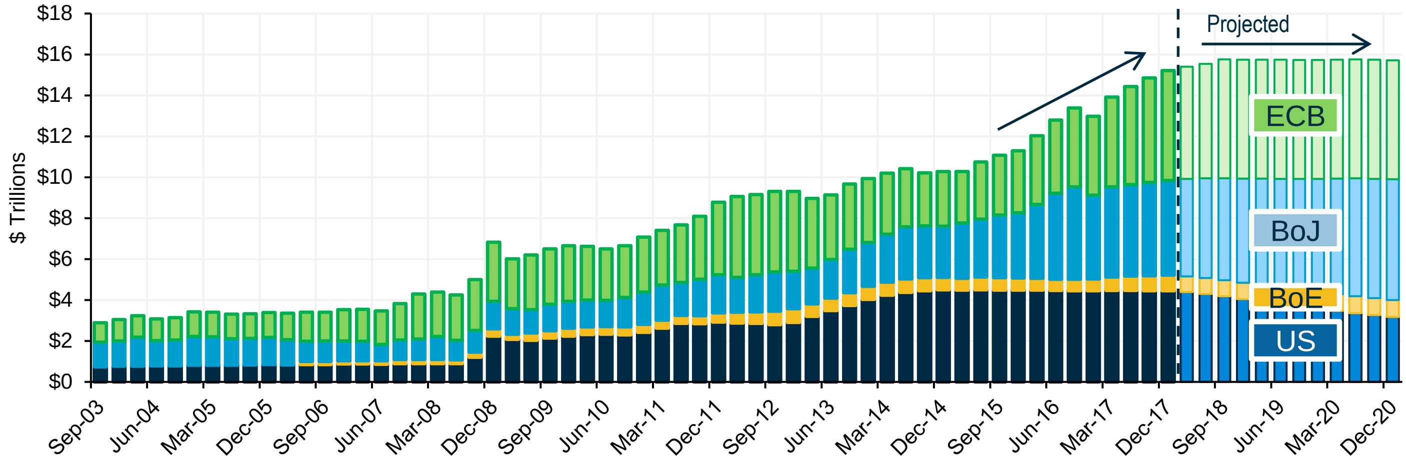
[1] *Hurricane-related damage likely affected retail and durable goods sales in late 2017.*

FIGURE 5. ACROSS THE WORLD'S MAJOR CENTRAL BANKS, THE PACE OF QE IS EXPECTED TO WANE AS THE ECB AND BOJ REDUCE THEIR PURCHASES, AND THE FED BEGINS TO PASSIVELY SHRINK ITS BALANCE SHEET.



Source: Bloomberg, Haver Analytics, and PGIM Fixed Income as of March 2018. Assets are as of December 2017. There is no guarantee that the projections shown will be achieved.

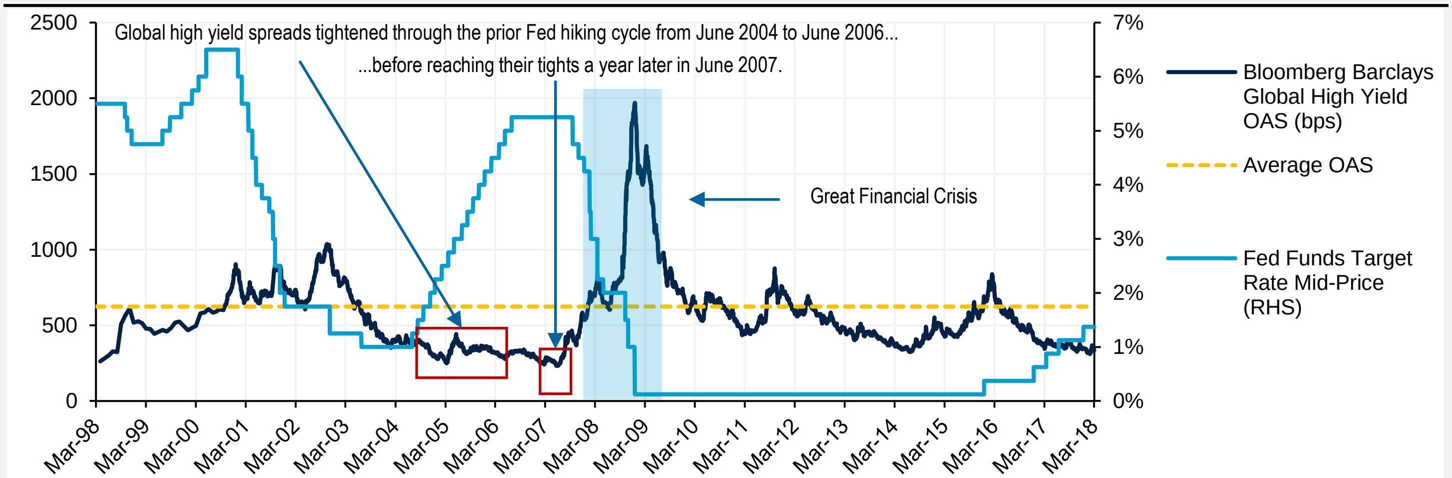
What's that smell—is something burning?

As with all market reassessments, this one was not without its own special twists. **Similar to the first wave of the 2013 taper tantrum, this bond market selloff took a toll on the risk markets. Stock prices fell, and spreads on corporate and other spread products widened relative to Treasuries.** And as of late March, rising trade tensions stemming from the Trump "America First" approach to trade are continuing to rock the markets for risk product—i.e. equities and non-government products. While the near-term outlook is clouded, over the intermediate to longer term, we continue to see the spread product cup as "half full" for reasons outlined in the following box.

NON-GOVERNMENT SPREAD PRODUCT OUTLOOK: PICKING UP PENNIES IN FRONT OF THE STEAM ROLLER, OR A LONG WAY TO GO?

While valuations are at below average levels, the fact is that spread product outperformance usually continues until the economy runs aground into recession. In light of the fact that fiscal stimulus will be boosting an already healthy U.S. economy in the quarters ahead, barring some unforeseen shock, prospects for a recession appear to be at least several quarters, or possibly even years, into the future. As a result, the most likely scenario in our view is for spread product, periods of volatility not withstanding, to resume outperformance in the quarters and years ahead as spreads remain relatively stable, or tighten further, as they have in past cycles. Granted, spreads are not nearly as wide as they were earlier in the cycle, and so excess returns will be more modest. Greater selectivity will also be required to find relative outperformers.

FIGURE 6: IN GENERAL, SPREAD PRODUCT HAS FARED REASONABLY WELL DURING FED TIGHTENING CYCLES, ONLY BEGINNING TO SYSTEMATICALLY WIDEN WHEN THE ECONOMY IS BEGINNING TO TURN SOUTH, WHICH SEEMS A DISTANT PROSPECT AT PRESENT.



Source: Bloomberg, PGIM Fixed Income as of March 2018

Back to the bond show: Eye of the storm, or come in, the water's warm?

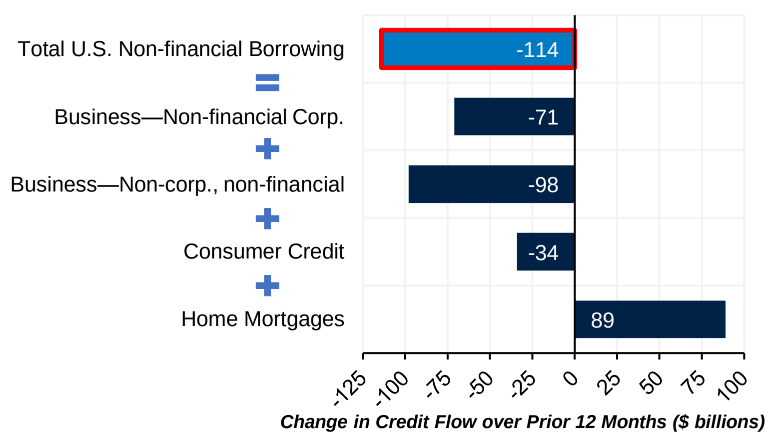
With the 10-year Treasury yield now pushing 3%, is this high enough? Perhaps the big test for the market will arrive over the next few months as the Federal Government's income tax withholding tables change, boosting consumers' disposable income and possibly translating into faster economic activity. If so, U.S. growth in Q2 and Q3 could be strong by recent standards.

Nonetheless, in terms of "bracing for the Fed," the Treasury market is now priced for about two rate hikes over the balance of 2018 followed by further hikes that take the implied Treasury short-term forward rate to 2.7% in 2023, where the market pricing suggests it will remain. This would represent about 100 bps of additional rate hikes from current levels. **Will the balance of the Fed's normalization process require both quantitative tightening in the form of balance sheet roll off as well as another 100 bps of additional rate hikes? That seems unduly optimistic regarding the resiliency of the economy.** Why? Consider that over the past five years while rates have been at modest levels—to pick a benchmark, the five-year Treasury yield has averaged just under 1.6%—U.S. core PCE inflation averaged around its current level of 1.5%, below the Fed's 2% target on average and not once reaching that threshold. Meanwhile, GDP has averaged an understated rate of just above 2% (the current year-over-year trailing rate is 2.5%). **In other words, with much easier financial conditions in the form of lower rates and the Fed holding its balance sheet steady, U.S. economic performance has been quite muted. Is it reasonable to think that the Fed can tighten significantly without unduly dampening economic activity and pushing inflation further below target?**

Now perhaps the slow growth of recent years has been the result of post-crisis headwinds from a limping financial sector and/or stringent regulation of the financial sector that are presumably now fading. On the other side of the ledger, however, there were also sources of pent-up demand post crisis—e.g., the recovery from depressed, sub-replacement levels of housing and vehicle sales—that may have now run their course and could slow growth going forward. While it's difficult to know which of these factors—fading headwinds versus fading pent-up demand—will dominate going forward, **it nonetheless seems a bit of a stretch to expect the economy to power ahead, particularly considering the Fed's current expected path of doubling short-term rates over the next few years, *and* to expect inflation to *rise* to target despite a significant tightening of monetary conditions.** While some econometric models might suggest just that, it's worth noting that models have proved increasingly unreliable in forecasting inflation in recent decades and particularly so since the Great Financial Crisis (see What's Driving Global Inflation?, by Nathan Sheets, PhD, PGIM Fixed Income Chief Economist and Head of Global Macroeconomic Research).

One interesting signal from the markets: the net issuance of debt from the private sector has been slowing in recent quarters, as observed in Figure 7.[2] With the economy expanding, why would private sector credit growth be slowing? Does this suggest the federal deficit is already crowding out private sector financing? It may. But more likely, it is the result of private sector entities generating more cash from operations than they need for investment. Moreover, recent U.S. tax changes have reduced the attractiveness of debt issuance. **While declining private sector demand for money may seem like a small point, it may actually be the crux of the issue: we may be adjusting to an environment where long-term rates are not low enough to encourage borrowing. And if demand for credit continues to fall, long-term yields will likely drop under the weight of the ongoing search for income-producing securities in a world driven by aging demographics.**

FIGURE 7: CHANGE IN CREDIT FLOW OVER 12 MONTHS SIGNALS THAT BORROWING ACTIVITY IS ALREADY COOLING OFF.



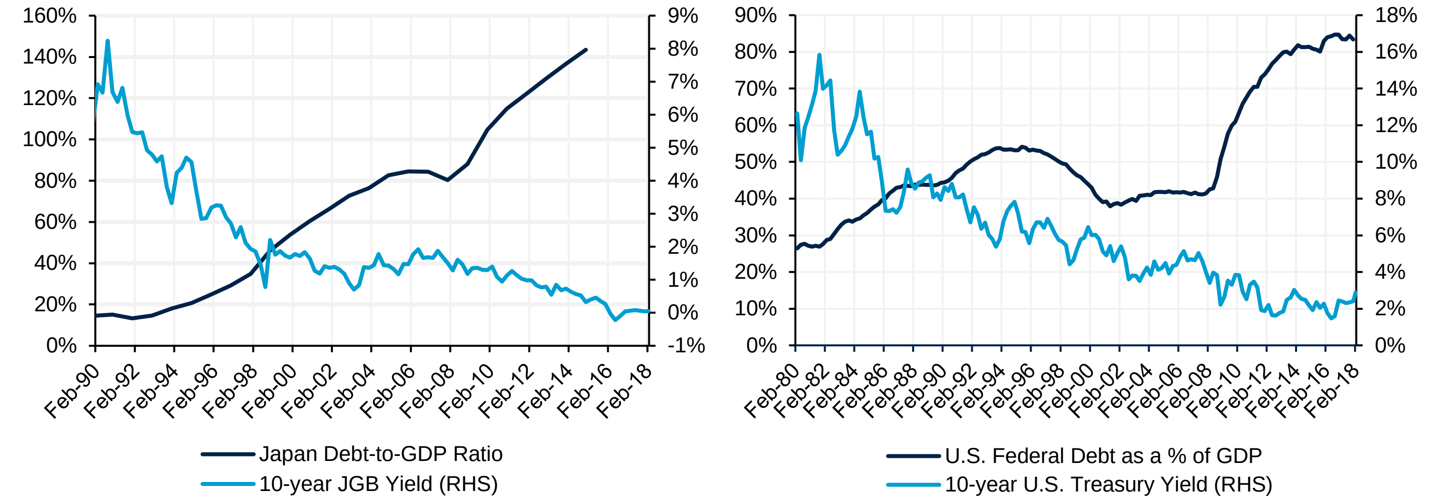
Source: U.S. Federal Reserve Flow of Funds as of September 2017

[2] *While mortgages stand out in Figure 7, the Fed's flow of funds data arrives with a lag, and as long rates have risen recently, home sales have fallen sharply.*

But what about the rising deficits? Death to bonds?

Will the rising U.S. federal budget deficit push up long-term interest rates? If the past is prologue, no. In Japan, where the deficit has been high and the debt-to-GDP ratio has been climbing, rates have generally been on a downward course, as observed in Figure 8. And this experience isn't unique to Japan. Since the 1980s, the U.S. government debt load has also grown more rapidly than GDP, all the while government bond yields have generally declined, as seen in Figure 9. Therefore, **historically, the deficit hasn't been a key driver of the U.S. bond market, nor has the level of U.S. indebtedness.**

FIGURE 8 AND 9: JAPAN'S CLIMBING DEBT-TO-GDP RATIO HAS COINCIDED WITH FALLING RATES AS THEY HAVE IN THE U.S. SINCE THE 1980S.



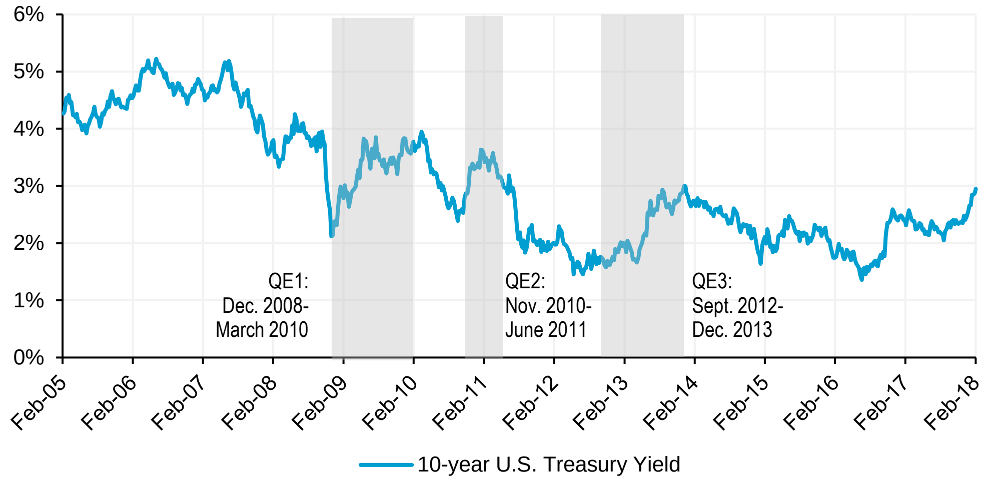
Source: Bloomberg and PGIM Fixed Income as of March 2018

How about the end of QE in Europe and the Fed's roll off? Death to bonds?

While popular wisdom has it that quantitative easing depresses interest rates, the reality of things has not borne that out, especially in the United States.[3] As shown in Figure 10, periods of QE in the U.S. (QEs I, II, and III) coincided with *rising* rates, *not falling* rates. Is this because the depressing impact of the purchases is priced in by the time the Fed begins to buy? And/or, is it because by the time the Fed begins to buy, the market has moved on to pricing in the positive expected economic impact of the purchases? It's hard to say. Given the consistency of the sequencing though—QE starts, then rates rise—**we would argue that now that the Fed is allowing its balance sheet to roll off, the reverse effect—i.e., falling rates—should probably be expected, resulting either from the withdrawal of liquidity, which may dampen economic activity, or perhaps more plausibly, because the markets will have priced in the impact of the roll off by the time it is in full swing—not after**.

[3] In Europe and Japan—net savings blocks—the impact of large scale QE purchases is less clear cut. Aggressive purchases in Japan have clearly depressed rates. In Europe, however, the results resemble that of the U.S. more than not—e.g., long-term German rates have spent the vast majority of the time higher than the lows hit when the ECB began its purchases in early 2015—that is, most of the yield-depressing impact of the ECB's massive bond purchase program was seen in just its first few months.

FIGURE 10: CONTRARY TO POPULAR PERCEPTION, HIGHER LONG-TERM RATES, NOT LOWER, ACCOMPANIED THE EXPANSION OF THE FED'S BALANCE SHEET DURING EACH QE PROGRAM. DOES THIS SUGGEST THAT THE FED'S BALANCE SHEET ROLL OFF WILL COINCIDE WITH FALLING RATES?

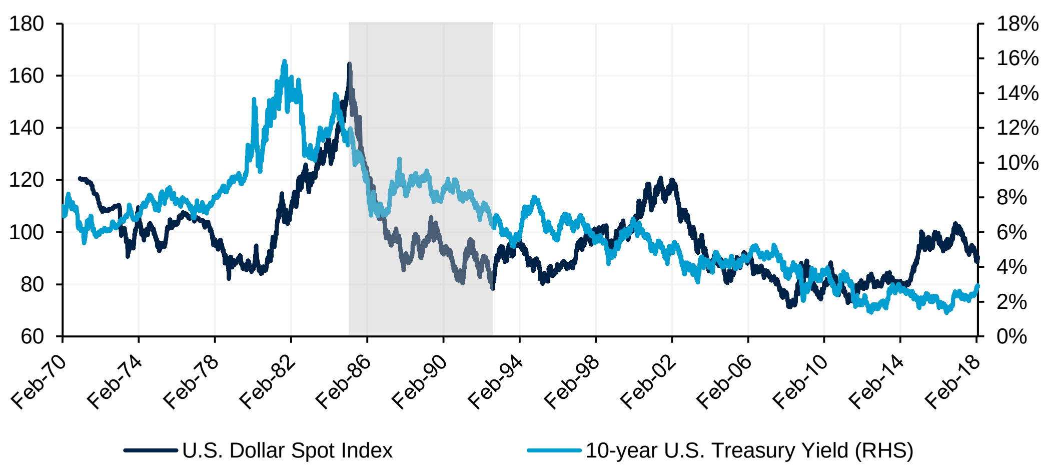


Source: Bloomberg and PGIM Fixed Income as of March 2018

How about a weak U.S. dollar—will *that* be the straw that breaks the camel's back and kills the bull market in bonds?

Again, if the past is any indication, it seems unlikely that a weak dollar will kill the bond market. **If anything, it seems that a weak dollar is more typically accompanied by a falling, rather than a rising, interest-rate environment.** And for reference, perhaps a somewhat analogous period to the current environment, or at least one that rhymes, would be the period from the mid-1980s (as indicated in the shaded area in Figure 11)—when long-term rates and an over-valued dollar declined and equity prices rose against the backdrop of a rising government debt-to-GDP ratio.

FIGURE 11: OVER THE LAST 40 YEARS, INTEREST RATES HAVE GENERALLY FALLEN WHEN THE DOLLAR HAS DECLINED.

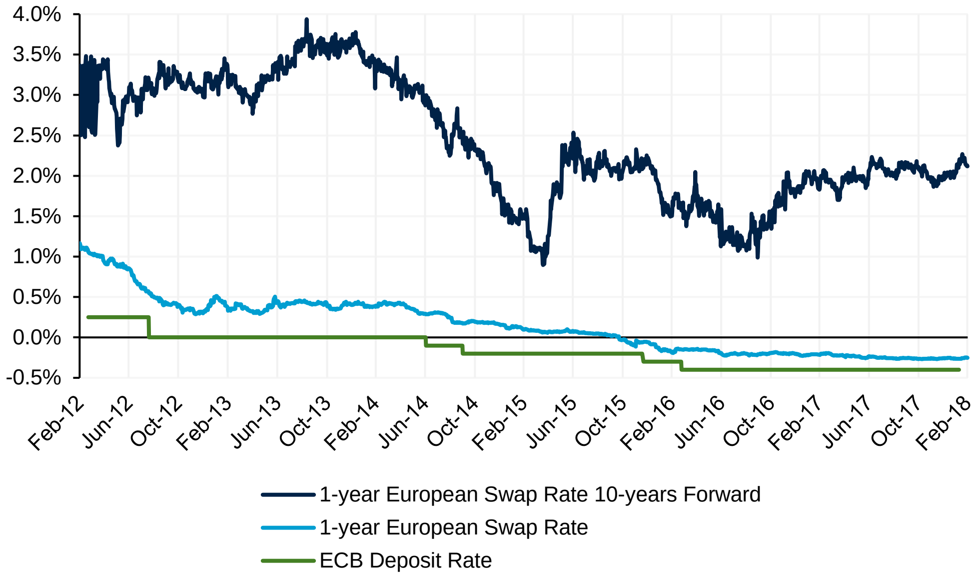


Source: Bloomberg and PGIM Fixed Income as of March 2018

Bonds look like they're at the "value point." So, where to from here?

Will the bond market continue to selloff until the economy's rate of growth crests later this year? While it's possible, market interest rates often crest *before* the economy. This may be especially likely in the current instance given the global backdrop where significant monetary tightening is priced into global yield curves in the years ahead, despite the fact that inflation has been stubbornly low. While on the face of it, in much of the developed world, rates are ostensibly quite low—in fact, what's priced into their forward curves suggests that normalization of monetary policy is both expected and accounted for by the markets, perhaps too much so, as observed in Figure 12.

FIGURE 12: WHILE A 10-YEAR EUROPEAN SWAP RATE OF 1.1% MAY NOT KNOCK YOUR SOCKS OFF, THE FACT OF THE MATTER IS **THAT THE EUROPEAN SWAP MARKET, JUST LIKE THE U.S. TREASURY MARKET, HAS PRICED IN OVER 200 BPS OF TIGHTENING OVER THE NEXT 10 YEARS…IN OUR VIEW, THAT IS LIKELY TO PROVE TO BE MORE THAN ENOUGH CUSHION, LEAVING BONDS POSITIONED TO OUTPERFORM CASH.**



Source: Bloomberg and PGIM Fixed Income as of March 2018

So, while we can't be sure when rates will peak, or even how close to that peak we may or may not be, it strikes us that rates have risen more than long-term growth and inflation fundamentals would demand. Although growth may accelerate for a handful of quarters as a result of the recently enacted U.S. fiscal stimulus, it seems likely to then decelerate towards the past, modest trend. The market, on the other hand, appears to have priced in robust growth and higher rates—seemingly in perpetuity.

Despite lingering fears, the rising U.S. budget deficit, the Fed's balance sheet roll off, as well as the ECB and BoJ tapering processes may not actually represent much of a threat to the bond market if history is any guide. Furthermore, private sector actors that might be expected to **increase their borrowing and push market rates higher at this point in the cycle (financial and non-financial corporates) are actually reducing—not increasing—their borrowings.**

Meanwhile, allocations to fixed income seem destined to continue to increase—maybe demographics is destiny after all. **Flows from public pensions and non-U.S. sovereign wealth funds continue to move towards bonds. As yields, equity values, and the costs of underfunding have risen, U.S. pensions have continued to move towards bonds as well. Similarly, for their part, households continue to buy bonds to prevent their asset allocations from becoming even more skewed towards equities as a result of capital appreciation.**

Conclusion: All things considered, bonds look attractive

So, it's been a tough few months for bonds no doubt. But similar to other backups of recent years, in our best estimation, this one has probably overshot, taking government yields to attractive levels. Furthermore, while valuations are not nearly as favorable as they have been, spread sectors still seem poised to outperform government bonds, at least modestly, in the quarters, if not years, ahead. This, again, will likely be thanks to moderate growth and the vigorous search for yield that seems destined to resume, with the highest fixed income returns likely to be posted by the higher-yielding sectors.

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Source(s) of data (unless otherwise noted): PGIM Fixed Income as of March 2018.

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