PGIM FIXED INCOME

From Low Ranger to High Plains Drifter

PERSPECTIVES | AUGUST 2023

AUTHOR

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- Interest rates have migrated from a decade of ultra-low levels back to their historical **"home"** range of 3-5%. Factors that depressed growth, inflation, central bank administered rates, and, therefore, long-term interest rates have passed, giving way to a post-COVID configuration of growth, inflation and fiscal policy that supports higher, but historically more normal, long-term yields—4%+/- for the dollar bloc as well as the UK markets and a 3%+/- center of gravity for European governments (e.g., French bond yields).
- The renewed higher level of yields should easily support investment grade returns in the mid-single digits, with high-single digit returns likely on the higher-risk sectors, such as high yield corporates and hard currency emerging market debt.
- Rather than a harbinger of recession, the inverted yields in many DM markets suggest **investors' collective psyche remains anchored in the low**-rate era, convinced that rates will be lower in the near future. Just as investors never caught up with the 40-year secular decline in rates, the inverted curve could be with us for some time, leaving a boon for yield-curve strategies.[1] Furthermore, with the vast majority of rate hikes behind us, market volatility is set to fall. A reemergence of the "search for yield" is likely to follow, providing a tailwind for spread product and further boosting returns.
- These newly restored higher yields should fuel a continuation of the bull market that began in Q4 2022, one driven not by a rapid drop in yields, but simply driven by yield itself.

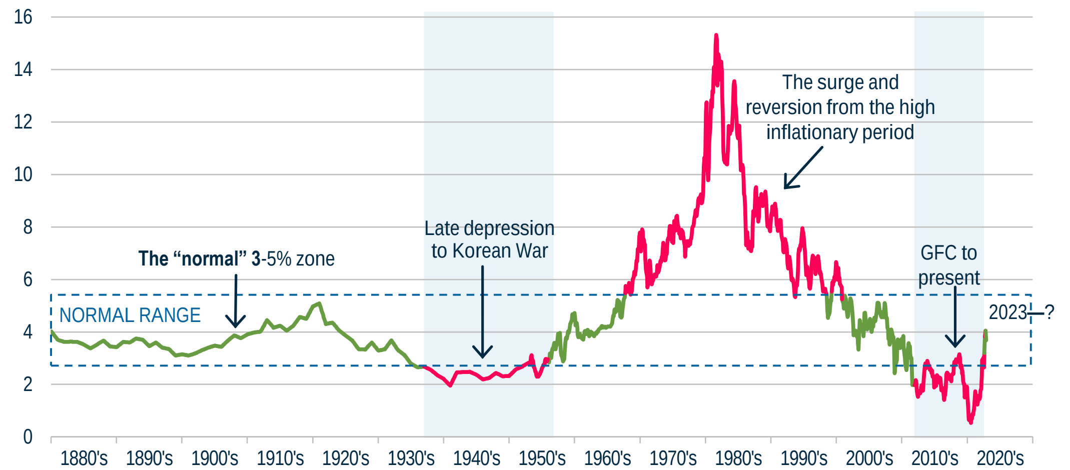
For Professional Investors Only. All Investments involve risk, including the possible loss of capital.

[1] For more on this period, see "The Low Ranger," PGIM Fixed Income, September 2013, and "Economic Recovery Creates Opportunities in Bonds" PGIM Fixed Income, December 2023.

WHEN PARADIGMS SHIFT

Over the past 150 years, the U.S. 10-year yield historically traversed between 3-5%, with a central tendency around 4% (Figure 1). Excursions outside of the 3-5% range have been triggered by unusual circumstances, such as the Great Depression, the 1970s oil crisis, or the COVID pandemic, as we discuss in the following section.

Figure 1: The latest paradigm shift has pushed U.S. long-term rates back up into their "normal" range. (%)



Sources: PGIM Fixed Income; 1875-1961, Robert Shiller, Yale; 1962-Present, Bloomberg

THE POST-FINANCIAL CRISIS, LOW-RANGE PARADIGM

Part I—Slow growth, low inflation

Factors similar to the high yielding 1970's—but working in the opposite direction—drove yields down to a 2% average during the decade-plus period that spanned from the Financial Crisis to COVID.

The 1970's economic backdrop featured rigid labor structures across DM economies, isolation of communist economies, and negative energy supply shocks that combined to trigger a wage-price spiral. In contrast, the interval between the Financial Crisis and COVID encountered a confluence of factors that created intense downward price pressures. Surging global trade following China's entry to the World Trade Organization brought a massive, positive supply shock, just as the advent of online platforms, such as Alibaba and Amazon, demonstrated the internet's potential as a driver of disinflation. Structural shifts in the labor market, such as employer consolidation and the declining influence of labor, also emerged as a disinflationary force that contributed to the low-rate regime.

In the aftermath of the Financial Crisis, the so-called "Reinhart/Rogoff" environment comprised a decade of sluggish growth and subdued inflation. Governments intervened to facilitate the recapitalization of financial institutions and households—a process aided by low interest rates and liquidity provided by the world's central banks.[2]

In addition, by 2012, a major pro-cyclical fiscal retrenchment in the wake of Europe's sovereign-debt crisis and a comparatively moderate consolidation in the U.S. with the

[2] The period that followed the financial crisis was accurately foretold in "This Time is Different Eight Centuries of Financial Folly," by Carmen M. Reinhart and Kenneth S. Rogoff. Princeton University Press, 2009.

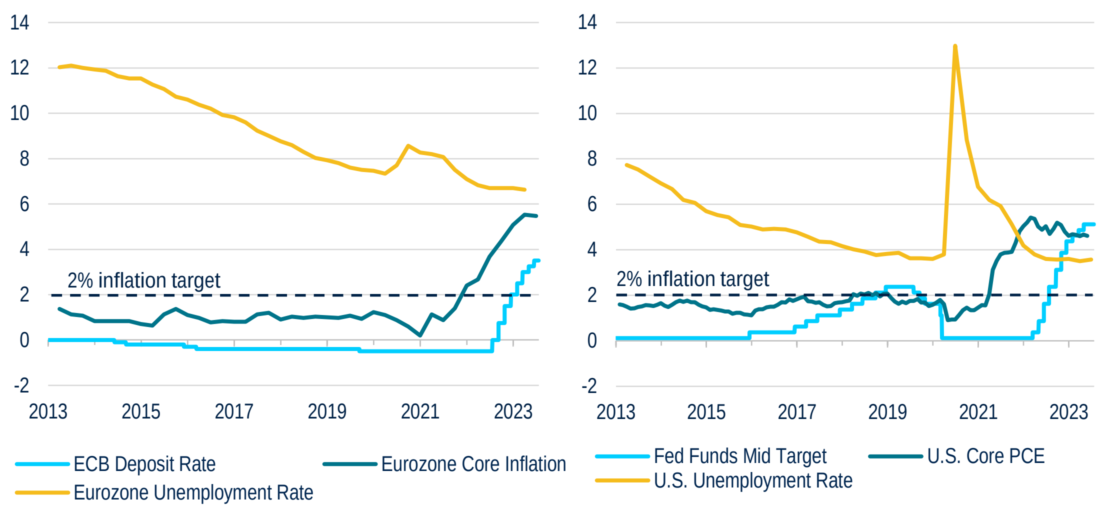
2012 budget sequester added to the economic headwinds and contributed to the disinflationary trend.

Part II: Sub-target inflation + central bankers' mania to boost inflation

Once inflation fell below target, central bankers anxiously worked to prevent a drop in inflation expectations and pursued low (even negative) interest-rate policies with a missionary zeal (Figure 2). These monetary policy easings—including quantitative easing (QE)—started after the GFC and Eurozone crisis as counter-cyclical measures. Once the crises had passed, however, the extreme policies were extended **in what proved to be a futile effort to reverse a structurally low level of inflation** (see the following box). In an effort to avoid negative yields, investors bought longer maturity bonds, driving yields on more than $17 trillion of debt into negative territory (Figure 3).

Central bankers used extreme monetary policy measures in a futile effort to raise a structurally low level of inflation.

Figure 2: In the pre-COVID decade: central bankers attempted to lift inflation to 2%—even using QE in the cases of the ECB and BoJ—despite historically low levels of unemployment. In the post-COVID period: central bankers face inflation at a multiple of target and record-low unemployment. (%)



Source: PGIM Fixed Income and Bloomberg

Figure 3: Investors extended duration to avoid negative deposit rates, creating a bond bubble of unprecedented proportions: at its peak, more than $17 trillion of negative yielding debt. ($ trillion)

Source: Bloomberg

Bottom line: the pre-COVID nexus of persistently below-target inflation and central banks inexorably moving to their effective lower-policy bounds (with Japan and Europe carrying out open-ended QE programs to boot) drove investors to push long rates down to levels not seen since the Great Depression.

Overstaying aggressive policy measures—like negative rates—may have negative consequences.

The costs of unnaturally-**low interest rates…fine**-tuning inflation targeting

In the pre-COVID decade of chronically below-target inflation, central bankers went to extremes. In the U.S., the Fed cut interest rates in 2019 to less than 2% in an effort to lift inflation (PCE) from 1.6-1.9% to 2%. Meanwhile, finding a steady rate of 1% inflation to be unacceptable, the ECB cut rates to -0.5% and initiated its QE-infinity program.

Setting aside the question of whether these failed attempts to boost inflation had merit, we can think of several potential costs of these aggressive policy easing measures:

1. encourages borrowing and discourages saving in aging DM economies where higher savings rates are actually in order;
2. contributes to financial imbalances, increasing economic cyclicality. Consider how each of the last several recessions has involved a reckoning of the excessive debt incurred in the preceding expansion, which may owe to the repeated, aggressive rate-cutting cycles that occurred during each slowdown of the 1980-2020 period;
3. penalizes those who live off the income from their savings, such as retirees;
4. hampers the ability of people to accumulate a nest egg for retirement, while possibly…
5. …misallocates capital and decreases the economy's efficiency by motivating investments that would not be undertaken at naturally occurring, higher market rates of interest;
6. and exhausts central bankers' tool kits…after using their most effective tools during times of full employment, central banks were at risk of being unable to right the economy in the event of a recession.

Should rates end up back in their historically normal, higher range, this may bring unexpected economic benefits, such as encouraging saving and discouraging excessive borrowing. While this may result in a slower rate of growth during expansions, less reliance on borrowing may increase economic resiliency, thereby reducing both the cyclicality and the severity of economic downturns.

POST COVID—BACK TO HIGHER, MORE NORMAL RATE LEVELS: WHY?

Post COVID, the rate paradigm appears to have changed from one of depression-era lows back up to, or even a bit above, long-term norms. Why?

The rate depressants of the 2010-2020 period have faded, including the post-Financial Crisis, Reinhart-Rogoff headwinds, U.S. and European fiscal tightening, as well as the one-time disinflationary shocks of China's emergence as an export powerhouse and the Alibaba/Amazon effect. **Moreover, these downforces on rates haven't just passed; they have been replaced by new factors now driving up growth and/or inflation and, hence, interest rates.**

Immigration of historic proportions may be a significant driver of growth.

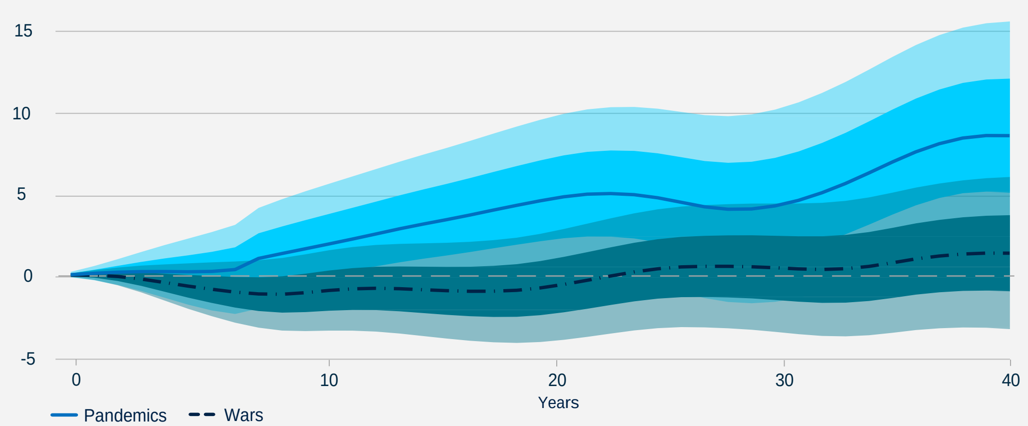
Faster growth in the UK, Australia, Canada, and the U.S. is being driven by an unexpectedly large post-COVID influx of immigrants. Their decisions to enter the labor force or not (although, in the U.S. it appears that they are) will determine their relative impact on supply and demand. But in any case, the presence of immigrants will undoubtedly boost consumption as well as the demand for shelter—and their numbers are substantial. For example, the surge of nearly 5 million foreign-born workers entering the U.S. labor force over the past two years has equaled the total net increase from the entire pre-COVID decade. Australia's 2023 net overseas immigration levels of 400,000 are running nearly two times pre-COVID levels.[3] Canada's influx of more than 600,000 immigrants in 2022 was the highest on record, with UK immigration of also more than 600,000 last year representing a record and a 24% increase from the prior year.[4] For the time being at least, this would seem to be trumping the demographic impact of aging that might otherwise, all else equal, depress rates.

A more speculative driver of higher rates may be the pandemic itself and the effects typically seen in post-pandemic economies: a multi-decade interval of above-trend growth and elevated wage pressures (see the following box).

Post-pandemic behavioral considerations

Is it a coincidence that the roaring '20s came after the 1918 Spanish Flu? That the 1957 global flu pandemic was followed by growth in the 1960s that exceeded growth in both the 1950s and 1970s? Maybe not. **According to research looking back over the centuries, faster economic growth and upward wage pressures have historically followed pandemics.** One study by the San Francisco Federal Reserve identified the following typical post-pandemic phenomena: depressed real rates, elevated wage pressures, and growth that is faster than the prevailing, non-pandemic trend (Figure 4), which, incidentally, is quite different than the economic effect of wars.

Figure 4: In contrast to wars, the impact of pandemics on growth appears to be positive and long lasting. (Response of real GDP per capita in England, %)



Source: Longer-Run Economic Consequences of Pandemics, San Francisco Federal Reserve, June 2020.

[3] "Australian Migrant Population Growth Hits All-Time High as Borders Reopen," Australian Broadcast Corporation, April 28, 2023.

[4] "Canada's Population Estimates: Record-High Population Growth in 2022," Statistics Canada, March 22, 2023, and "Rishi Sunak Faces Tory Backlash as Net Migration Reaches Record High," The Guardian, May 25, 2023.

Post-pandemic expansions: long, strong, and with upward wage pressures.

When trying to draw analogies to the current crisis, it's worth keeping in mind that the vast majority of pandemics in the study ended of natural causes without vaccines. **Given that the COVID pandemic ended with vaccines as well as massive fiscal stimulus, it would stand to reason that the economic outcome might prove more robust than the pandemics of old.**

In terms of upward wage pressures, there may be some evidence of a change in worker preferences—specifically, the desire to work fewer hours. As a result, post-COVID wages may mimic the wage increases of other pandemics.

All said, should the current expansion end up being one for the records in terms of strength and/or duration with elevated wage growth, some of that may be chalked up to typical, post-pandemic behavior. And one of the side-effects could be higher rates.

New inflationary forces also argue for higher rates. First, **the lingering supply chain disruptions from COVID, including disruptions in energy, several key commodities, and other products resulting from the Russia/Ukraine war added significant upward pressure to goods prices.** Second, faced with mounting disruptions from geopolitical tensions and climate change, desire to increase the resilience of supply chains has **prompted the motivation for "friendshoring" as well as increased investment in renewable and traditional energy sources. While possibly disinflationary in the long run, supply chain effects, along with the Russia/Ukraine war and reinvigorated defense spending, could boost short-term growth and possibly add to inflation.**

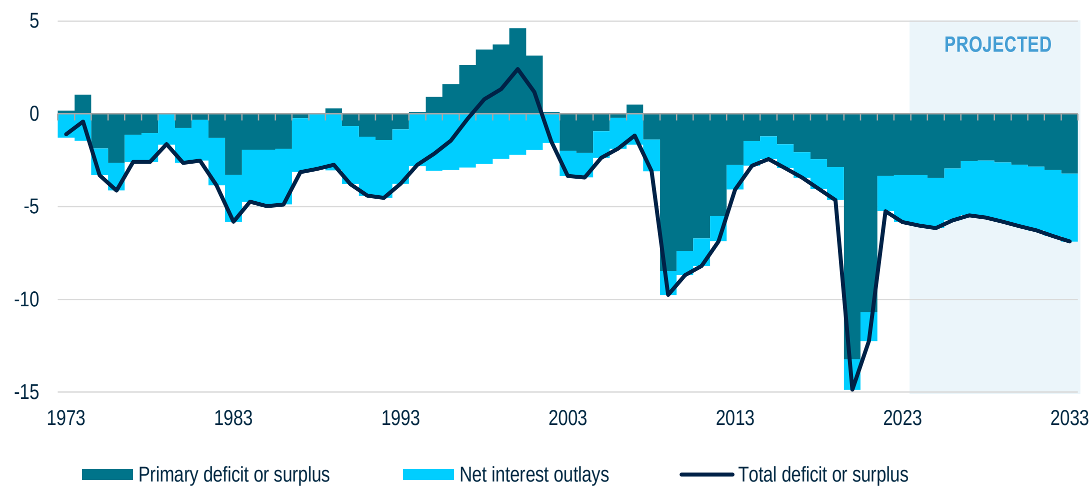
Backing up, we can see that many of these micro drivers are part of bigger macro themes, such as trends towards domestic and geopolitical polarization. In some sense, the fiscal dominance and institutional decay associated with this polarization are playing a role in ending the great moderation and pushing up interest rates via higher inflation and larger deficits.

In addition to the fundamental drivers of higher rates discussed above, further upward pressure on long rates may come from elevated government bond issuance. On a short-term basis, supply concerns can evaporate as evidenced by the relatively stable long-term Treasury and European rates over the past year, despite heavy issuance and a fair dose of quantitative tightening. But Fitch's recent decision to drop the U.S.' credit rating from AAA to AA+ begs the question: Does indebtedness matter?[5] This question is particularly important as the U.S. deficit is already quite large and likely to remain so, or expand further, in the years ahead (Figure 5).

[5] The downgrade by Fitch Ratings pertained to the United States' long-term issuer default rating as opposed to its county ceiling rating.

Fitch's recent decision to drop the U.S.' credit rating from AAA to AA+ begs the question: Does indebtedness matter? Yes.

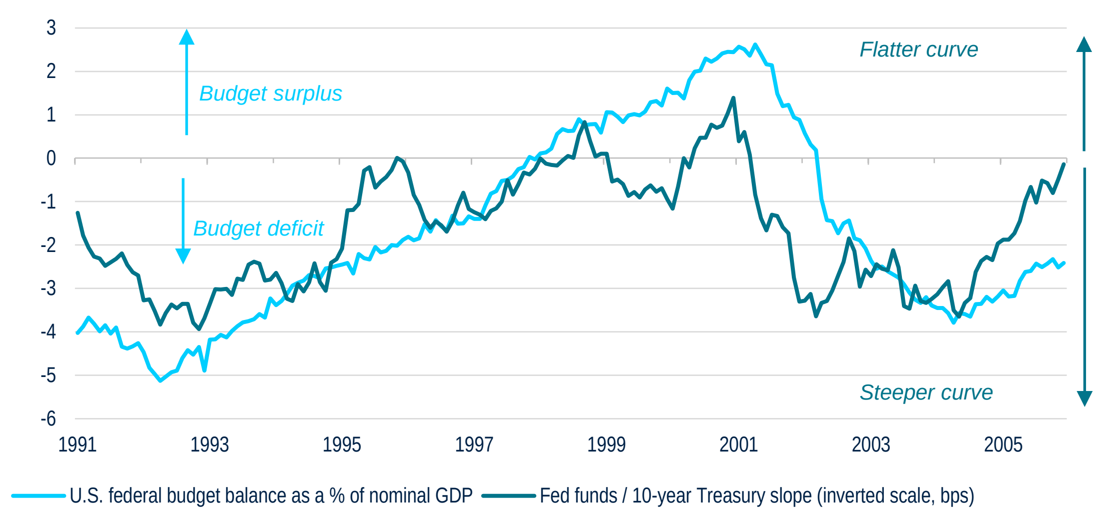
Figure 5: The U.S. deficit is already quite large—at levels seen during recessions of the last 50 years, surpassed only by the worst points during the Financial Crisis and COVID. Going forward, the situation is set to get worse at higher rate levels. It's worth noting that projections in recent years have, ex-post, turned out to be optimistic. (% of GDP)



Source: PGIM Fixed Income and the Congressional Budget Office

Figure 6 shows how large swings into surplus and back to deficit in the 1990s and early 2000s very clearly transmitted to large swings in long-term rates.

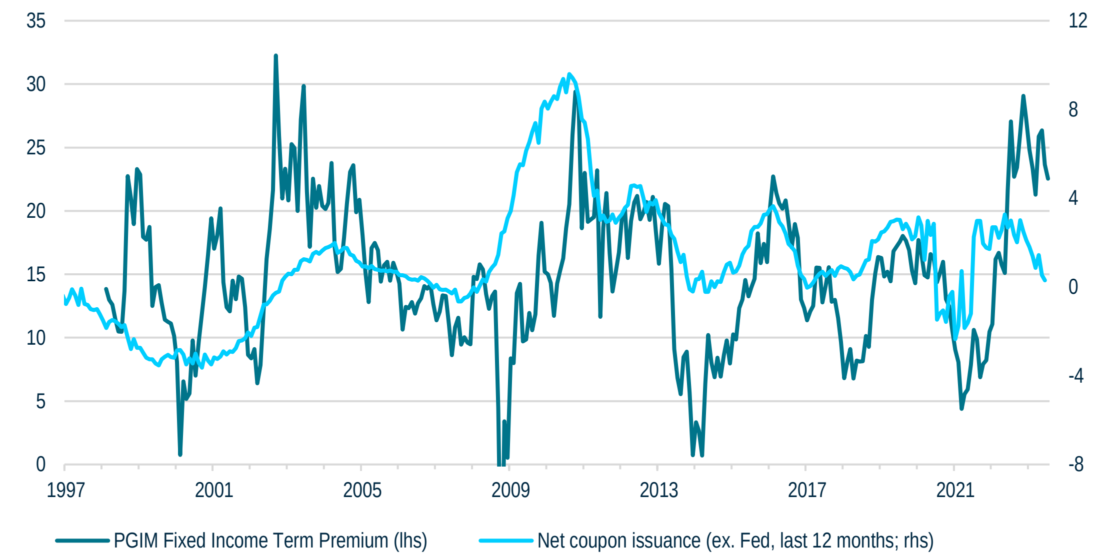
Figure 6: Treasury issuance is an important determinant of long-term rates: the U.S. Treasury yield curve aggressively bull flattened from 1993-2001 as the massive deficit was turned to surplus, only to rapidly steepen as the deficit surged in 2002-2003.



Source: PGIM Fixed Income and Bloomberg

In Figure 7, PGIM Fixed Income's proprietary model that measures term premium—a risk-adjusted measure of the yield-curve slope—shows a clear, positively correlated relationship between total Treasury issuance and the term premium (i.e., the term premium increases during periods of increased issuance).

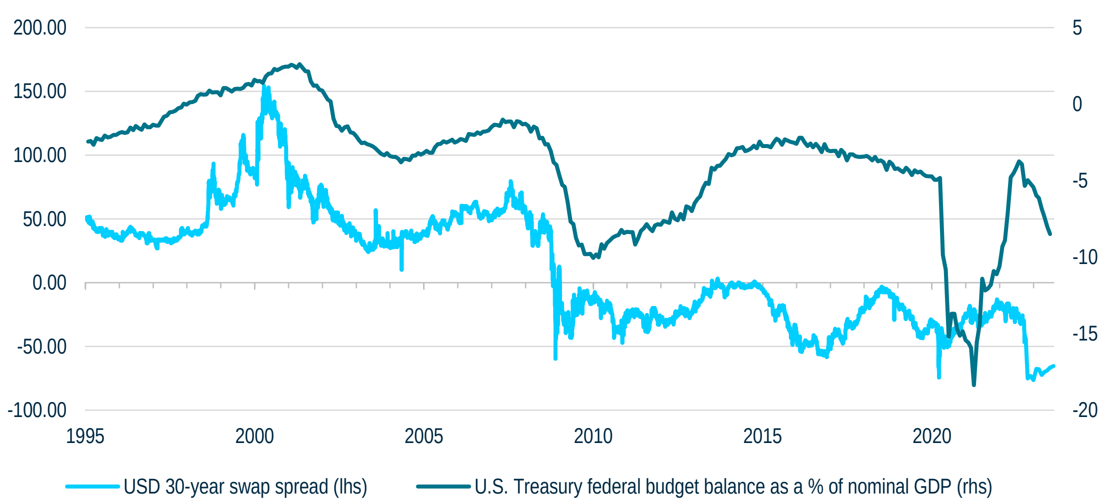
Figure 7: The relationship between Treasury issuance and PGIM Fixed Income's Term Premium Model (lhs: bps; rhs: % of GDP)



Source: PGIM Fixed Income

Finally, a similar correspondence between Treasury issuance and the relative value of Treasuries versus interest-rate swaps is observed in Figure 8. Although diminished since the Financial Crisis, the overall secular trend has remained clear: long-term Treasury yields have pushed above swap rates as government debt issuance has mushroomed. Therefore, the prospect of high and rising deficits in the future is another factor set to put upward pressure on Treasury yields.

Figure 8: Treasury supply has materially impacted U.S. interest-rate swap spreads. (lhs in bps)



Source: PGIM Fixed Income and Bloomberg. Swap spread based on LIBOR until October 2022 and based on SOFR thereafter.

Taken together, the post-pandemic elevated rates of growth and inflation as well as heavy government bond supply suggest a high probability of an extended period with rates near their current, "elevated" levels.

Central bankers will be reluctant to cut rates too soon or too aggressively, lest they "repeat the mistakes of the 1970s."

HIGH PLAINS DRIFTER—**WHY RATES REMAIN "HIGH" AND** RANGE BOUND

In the previous section, we discussed economic developments that boosted rates back up into their normal range. We now turn to the role central banks are likely to play in anchoring rates around their newly, re-elevated levels. Countervailing economic forces are likely to keep central bankers on a fairly stable, but elevated, path, which should help anchor long-term rates at the mid-point or upper end of their 3-5% range of old.

With growth and inflation slowing, central bankers believe they have entered restrictive territory—it's an area where accidents can happen, as evidenced by the recent U.S. regional bank mini-crisis. This **suggests that rate hikes yet to come—if any—will be limited and carried out with great care. This cautious approach should increase the odds of an extended expansion, which should keep short-term rates around current levels.**

On the other hand, central bankers will be reluctant to aggressively cut rates for fear of "repeating the mistakes of the 1970s" by prematurely assuming inflation is under control. Unemployment is at record lows, and central bankers have just witnessed an unexpectedly high and tenacious surge of inflation with labor's pricing power increasing. No doubt, central bankers will be concerned about the risk of inflation expectations anchoring at above-target levels of inflation and triggering a wage-price spiral.

The curbs described above are likely to prevent aggressive hikes or cuts in DM policy rates, leaving the respective short-term rates close to current levels, which should consequently anchor long-term rates around their current range.

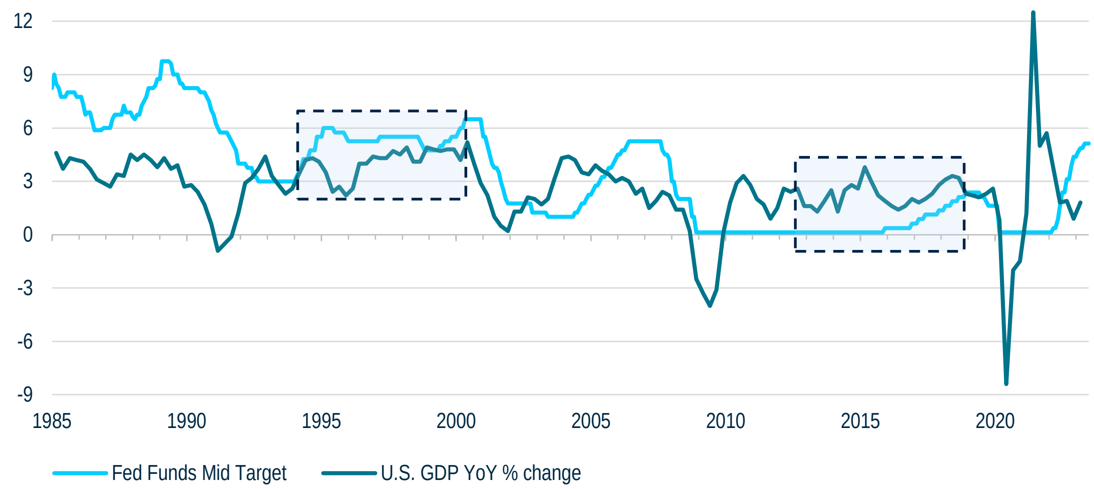
WHAT ABOUT THE **CONSENSUS' RECESSION?**

One could argue that **rate hikes don't cause hard landings; rather, it's the icebergs—the hidden excesses that build up during expansions that come to the fore after rate hikes—that sink economic growth.** The 1989 rate cycle exposed the financial excesses of the 1980s' LBO boom and the Savings and Loan crisis; the 1999-2000 rate-hikes revealed accounting fraud at major companies and popped a stock market bubble, while the 2004-2006 rate-hike cycle ran headlong into morass of inflated assets, with aggressive leverage, illiquidity, and opacity applied in the bond market (under the guise of financial innovation), creating heretofore unseen levels of complexity.

By contrast, the rate peaks in 1995 and 2018 resulted in soft landings (Figure 9). Since both rate-hike cycles followed fairly dramatic recessions, exuberance, as well as its associated excesses, had yet to accumulate, allowing economic growth to continue and the respective rate-hiking cycles to conclude without much fanfare, i.e., in a soft landing.

Another factor that may decrease the odds of recession: clearer central bank communications. In particular, the transparency on the course of rates in recent years may also help prevent dangerous excesses from accumulating during expansions, which should decrease the severity of downturns.

Figure 9: Two of the last three rate hiking cycles—1994/1995 and 2015/2018—resulted in soft landings.



Source: PGIM Fixed Income and Bloomberg

A hidden source of strength in the post-Pandemic expansion: the lack of financial excesses that typically turn a slowdown into a recession.

The cleaner recoveries of 1995 and 2018 rhyme with that of the post-COVID environment, an expansion that appears to have avoided the typical financial excesses that are fodder for recession. Households and companies have acted cautiously as questions loomed about whether the post-COVID expansion would continue once the fiscal stimulus ended. Then came the war in Ukraine, which stoked a general sense of anxiety as well as a disruptive loss of purchasing power via rising commodity prices, followed by the ensuing global surge in interest rates. This cocktail of threats brought on a chorus of economists forecasting hard landings—another factor that has presumably kept economic actors cautious in their behavior.

In summary, we may continue to see soft spots in the economy, such as last year's residential real estate correction, or this year's office real estate and regional banking difficulties. Rather than an iceberg that could sink the economy, **these are likely** to amount to no more than just workaday flotsam and jetsam and **of insufficient magnitude to halt growth.**

BUT DOESN'T AN INVERTED YIELD CURVE SIGNAL A LOOMING RECESSION?

Rather than an indication of tightening credit and an impending recession, we attribute the current inversion to bond investors' conviction that we are near the peak of the interest-rate cycle. Investors are therefore extending their durations and pushing down yields in an effort to lock in these regained higher rate levels for the long term—even if it means giving up some yield in the short term. We do not see a recession in the offing.[6]

This gives rise to two questions:

1. How long can investors be wrong about the level of rates (see the following box)?; and
2. What are the investment implications of a chronically inverted curve?

[6] At the time of publication, "weakflation" is our base case for the U.S. economy. Please see our Q3 2023 Market Outlook for further details.

The inverted yield curve is not signaling recession; rather, it is a sign of investors' eagerness to lock in long-term yields at the peak of the cycle.

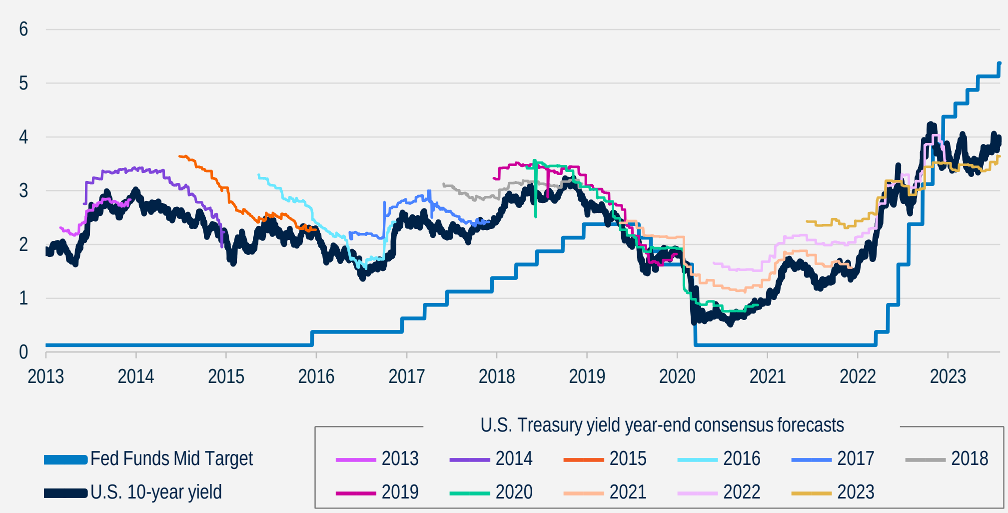
Can investors be wrong about the level of rates and, if so, for how long?

If the last 60 years is an indication, market participants don't embrace new paradigms until they have passed. Forecasters and investors never fully embraced the low-for-longer thesis that began in 1980—until 2022, when it was already over. The most recent instance of this is shown in Figure 10, where consecutive year-end forecasts generally start above market levels and then get marked-to-market over time. With a positively-sloped curve, investors who ran short-duration positions over the 1980-2020 period gave up yield and yield curve roll down, sacrificing return as a result of their slow rate of adaptation. Conversely, investors who were long during this period, on average, earned higher yields and benefitted from rolling down the yield curve in addition to the capital appreciation from the downtrend in rates.

This forecasting phenomenon continued until mid-2022 when the picture reversed: Initial forecasts are now starting below market levels and then getting marked up to reality over time. In our estimation, these forecasters have missed the paradigm shift back up to more normal yield levels.

If rates remain around current levels, investors who extend on the curve in anticipation of lower rates may end up sacrificing yield and lose out by "rolling up" the inverted yield curve. Conversely, those able to embrace the new paradigm **should add value via active management of term-structure positioning.**

Figure 10: Pre-COVID: Despite 30 years of bull market misses, the consensus still expected rates to go up. For most of that interval of bearish forecasts, the Fed funds rate was below the 10-year yield, indicating that these investors forfeited carry and roll-down opportunities. Post-COVID: The opposite holds—the consensus is now bullish, expecting lower yields. Once again with the curve inverted, they are on the wrong side of carry and roll opportunities. If the past is prologue, this misalignment can last generations. (%; YE connotes the year of the respective forecast; the dark black line is the actual 10-year yield)



Source: PGIM Fixed Income and Bloomberg

Higher yields, higher returns—Yield is destiny

The bond market is set once again to deliver solid returns (Figure 11), one driven not by a rapid drop in yields, but simply driven by yield itself. Yields are back up at the levels of the early 2000s, setting the bond market up for solid returns in the years ahead.

Figure 11: Returns in the new bull market will likely be driven by yield itself. (%)

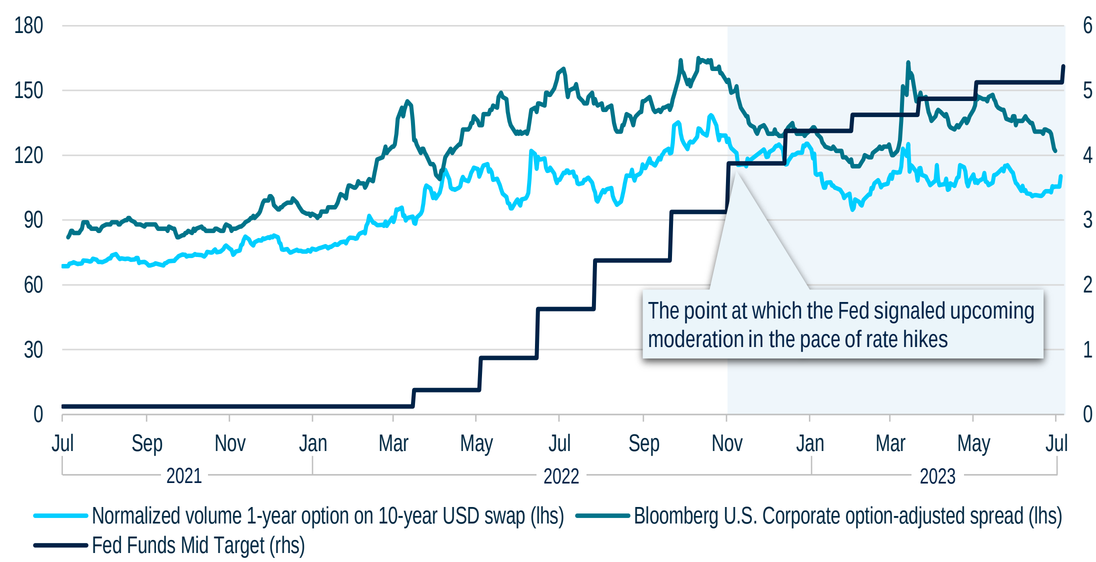
Periods	1992-2002	2002-2012	2012-2022	2022-
Starting yield	6.76	4.38	1.75	4.38
	↓	↓	↓	↓
Aggregate return	7.45	5.29	1.27	?

Source: PGIM Fixed Income. Yield and returns based on the Bloomberg U.S. Aggregate Bond Index

An additional return boost: declining volatility to support spread product performance

The enemy of the spread sectors over the last two years has been the fear of interest-rate fluctuations. Over the past few years—a period of relatively favorable and stable credit performance—changes in the implied volatility of interest rates were a dominant driver of credit spreads (Figure 12).[7] Whether the taper tantrum volatility of 2022 or 2023's regional-bank downdraft, sudden movements in interest rates have spooked investors, triggering bond fund outflows and credit spread widening.[8] **With central bank rate hiking cycles winding down, interest-rate volatility is likely to decline, allowing spreads to remain range bound or narrow, providing a further boost to fixed income returns.**

Figure 12: A unique feature of the recent market environment has been the tight correspondence between implied interest-rate volatility and credit spreads. As the Fed began to moderate its pace of hikes in late 2022, volatility and spreads seemingly peaked. As DM central banks' rate actions become increasingly measured, interest-rate volatility is likely to fall, with stable to tighter credit spreads boosting fixed income returns. (lhs: bps; rhs: %)



Source: PGIM Fixed Income and Bloomberg

[7] A measure of uncertainty regarding the magnitude and direction of expected fluctuations.
[8] Referring to spread product broadly, structured products, emerging market debt, as well as corporate bonds, both high yield and investment grade.

CONCLUSION

Investors could be pardoned if they have whiplash, but the fact is that interest rates go through paradigm shifts.

Interest rates have just migrated from a decade of ultra-low levels back to what may be a sustained period back "home" in their long-term 3-5% range. Factors that depressed growth, inflation, central bank administered rates, and, therefore, long-term interest rates have passed, giving way to a post-COVID configuration of growth, inflation and fiscal policy that supports higher, but historically more normal, long-term yields—4%+/- for the dollar bloc as well as UK markets and a 3%+/- center of gravity for European governments (e.g., French bond yields).

Yield is destiny... yields back up to the level of the early 2000s bode well for long-term return prospects.

The renewed higher level of yields should easily support investment grade returns in the mid-single digits, with high-single digit returns likely on the higher-risk sectors, such as high yield corporates and hard currency emerging market debt.

Rather than a harbinger of recession, the inverted yields of many DM markets suggest investors' collective psyche remains anchored in the low-rate era, convinced that rates will be lower in the near future. Just as investors never caught up with the 40-year secular decline in rates, the inverted curve could be with us for some time, **leaving a boon for yield-curve strategies.** Furthermore, with the vast majority of rate hikes behind us, market volatility is set to fall. A re-emergence of the "search for yield" is likely to follow, providing a tail wind for spread product and further boosting returns.

These newly restored higher yields should fuel a continuation of the bull market that began in Q4 2022, one driven not by a rapid drop in yields, but simply driven by yield itself.

After all, in bonds, yield is nearly destiny.

NOTICE: IMPORTANT INFORMATION

Source(s) of data (unless otherwise noted): PGIM Fixed Income, as of August 2023.

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