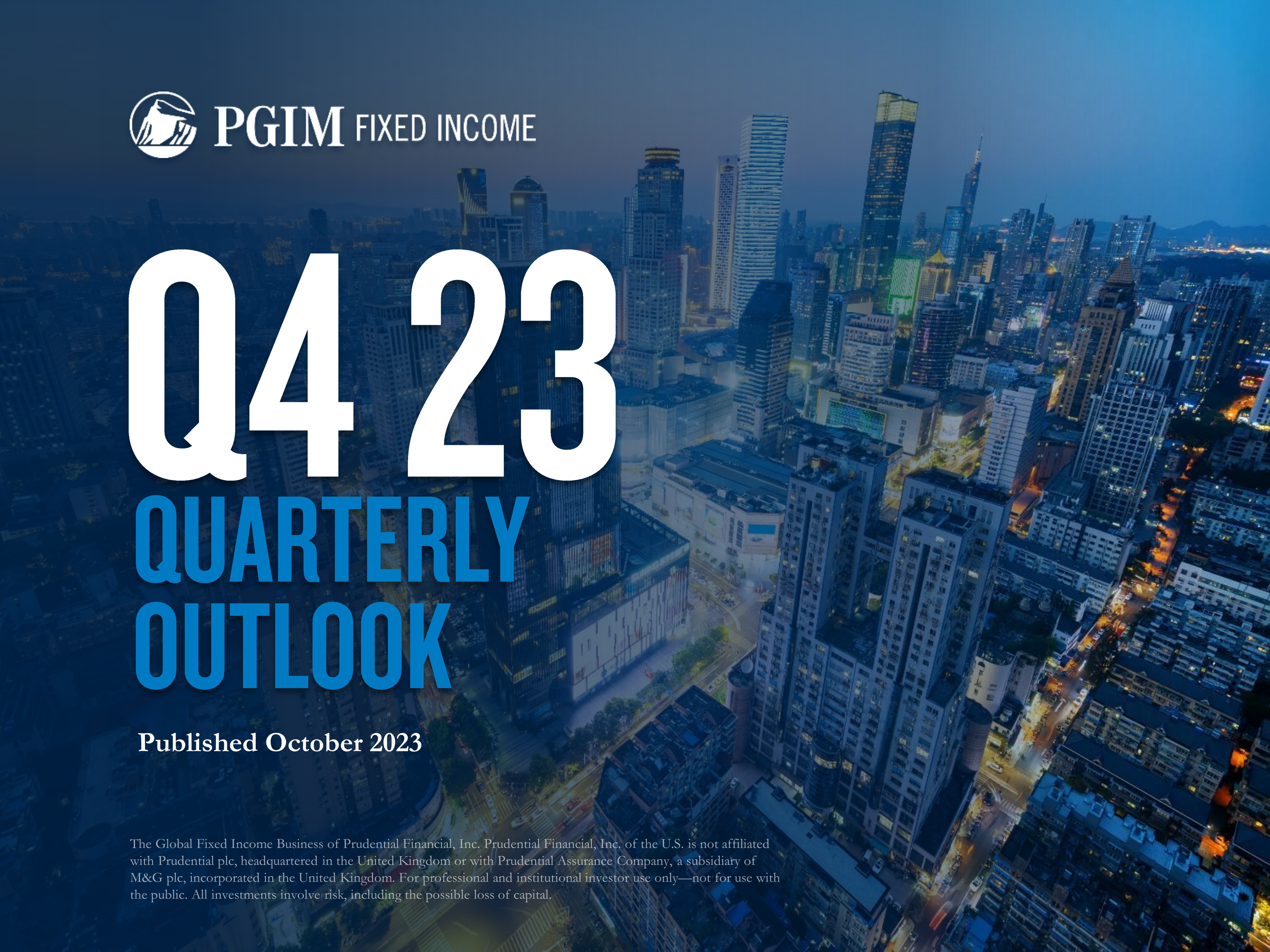


PGIM FIXED INCOME

Q4 23 QUARTERLY OUTLOOK

Published October 2023

WHATS INSIDE?

Select a section to jump ahead.

	Total Returns (%)				
Individual FI Sectors	Q3 '23	YTD '23	2022	2021	2020
European Leveraged Loans	4.10	11.66	-3.36	4.87	2.4
U.S. Leveraged Loans	3.37	9.91	-1.06	5.40	2.8
European High Yield Bonds	1.88	6.76	-11.13	3.32	2.9
U.S. High Yield Bonds	0.46	5.86	-11.19	5.36	6.2
European IG Corporate	0.34	2.53	-13.65	-0.97	2.77
EM Currencies	-0.92	3.00	-7.14	-3.09	1.73
CMBS	-1.02	0.16	-10.91	-0.64	8.11
EM Local (Hedged)	-1.18	3.12	-8.85	-5.52	6.07
EM Debt Hard Currency	-2.23	1.76	-17.78	-1.80	5.26
U.S. Treasuries	-3.06	-1.52	-12.46	-2.32	8.00
U.S. IG Corporate Bonds	-3.09	0.02	-15.76	-1.04	9.89
Municipal Bonds	-3.95	-1.38	-8.53	1.52	5.21
Mortgage-Backed (Agency)	-4.05	-2.26	-11.81	-1.04	3.87
U.S. Long IG Corporates	-7.23	-2.71	-25.62	-4.65	13.94
Long U.S. Treasuries	-11.83	-8.55	-29.26	-1.13	17.7
Multi-Sector					
Euro Aggregate (Unhedged)	-1.63	0.59	-17.18	-4.71	4.05
Global Agg. Hedged	-1.82	1.09	-11.22	-0.15	5.58
Yen Aggregate	-3.08	-0.41	-5.30	-2.85	-0.8
U.S. Aggregate	-3.23	-1.21	-13.01	-1.39	7.51
Global Agg. (Unhedged)	-3.59	-2.21	-16.25	-1.54	9.2
Other Sectors					
3-Month SOFR	5.3	3.78	1.66	0.03	-1.5
U.S. Dollar (DXY Index)	3.2	2.6	8.21	6.37	-6.69
S&P 500 Index	-3.3	13.1	-18.11	28.71	18.4

Past performance is not a guarantee or a reliable indicator of future results. See Notice for important disclosures and full index names. All investments involve risk, including possible loss of capital. Sources: Bloomberg except EMD (J.P. Morgan), HY (ICE BofA), Bank Loans (Credit Suisse). European returns are unhedged in euros unless indicated. Performance is for representative indices as of September 30, 2023. An investment cannot be made directly in an index.

PGIM FIXED INCOME

SECTION 1

KEY CONVICTIONS & INVESTMENT THEMES

01

KEY CONVICTIONS & INVESTMENT THEMES

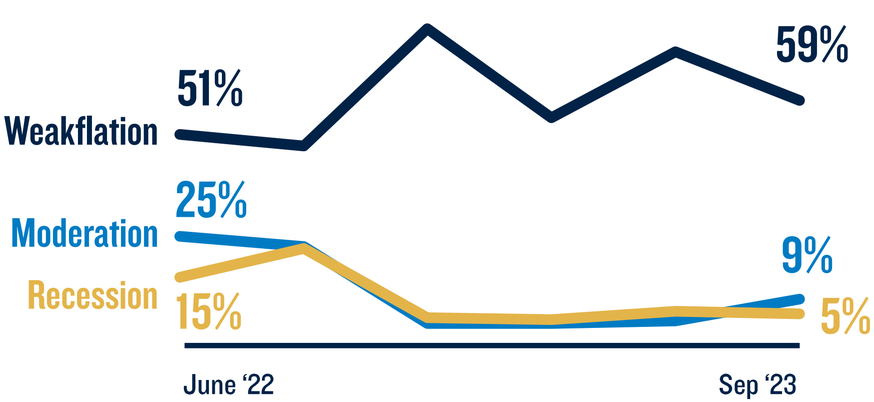
1) The realities of a new paradigm. Economic shocks, market volatility, and geopolitical tensions make for an unpalatable investing stew. Rather than assessing each of these attributes in isolation, we view them as contours of the new global paradigm referenced in our economic and market outlooks. As investors monitor the emergent risks, they likely need to reacquaint themselves with the opportunities in the new paradigm.

2) What was old can be new again. Driven by a level of value absent from the fixed income markets for decades, the traditional characteristics of fixed income investing—roll, carry, and income—are moving to the fore. These aspects can generate performance that meets or exceeds investors' objectives. Furthermore, if economies hit a surprise air pocket, ample room now exists for yields to decline and provide an additional boost to returns.

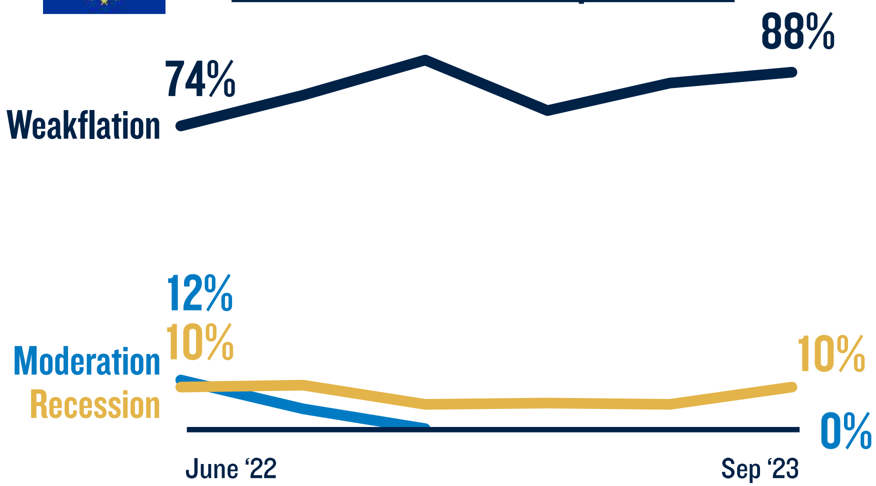
3) Broadening dispersion and its opportunities. The theme of broadening dispersion—and the attendant expansion in the investment opportunity sets—extends across economies and fixed income sectors. Indeed, we see the U.S. economy outperforming other major developed markets, while the emerging markets are experiencing greater dispersion on multiple levels. Credit profiles will diverge further amidst varied idiosyncratic developments and economic trajectories.

Our sixth survey cycle again asked PGIM Fixed Income professionals about their expectations for the U.S. and Euro Zone economies. The diverging expectations underscore the changes in economic sentiment over the past 18 months and provide context to our sector outlooks in the following pages. Click the flags for more on our scenarios.*

U.S. Economic Expectations



Euro Zone Economic Expectations



Source: PGIM Fixed Income. *The survey totals do not sum to 100 as the lowest probability scenario, The Roaring 2020s, was omitted for presentation purposes.

PGIM FIXED INCOME

SECTION 2

BOND MARKET OUTLOOK

By Robert Tipp, CFA, Chief Investment Strategist & Head of Global Bonds

02

EMBRACING CHURN AND EARN

Most bond market participants were ready for the bear market to end a year ago. In terms of total return, you could make the case that it did: many bond market total return indices are above their 2022 lows, if only slightly (Figure 1), yet higher risk fixed income sectors have chalked up substantial gains (see the preceding returns table). But in terms of yield, the market churn of Q3 pushed yields to new highs (Figure 2), begging the questions: are we still in a transition to a new bull market, and if not, how far along is the bear market?

Blame Q3 on the Government

The coincidences are too strong to ignore. On August 2nd, the Treasury refunding announcement signaled that, thanks to elevated budget deficits (the U.S. isn't the only one as the following box shows), increased issuance was on the way. On the same day, Fitch downgraded the U.S. from AAA to AA+. It was all too much for the market, and yields cruised above 4.1%, notching new highs for the year (Figure 3). That was the first shoe to drop.

By the time the September 20th Federal Reserve meeting rolled around, the 10-year had moseyed up to 4.35%—last year's cycle highs. Despite a trend toward lower inflation numbers and an ongoing slowdown in employment—a backdrop that could have justified a dovish pivot—FOMC members opted instead to double up on the hawkish stance by significantly lifting their expected path for the Fed funds rate (their dot plot) with the expected 2024 year-end Fed funds rate rising by 50 bps to 5.1%. Like so many times this cycle, investors who were expecting a dovish pivot were caught offsides, and renewed selling pushed U.S. yields to fresh cycle highs in the 4.60% area as the quarter drew to a close, and they proceeded to nearly reach 4.90% following the September payroll report. That was the second shoe.

Financial Sector's Vicious Cycle & Other Risks

In addition to the Fed and supply, other risks lie on the horizon—with volatile energy prices and emboldened labor unions topping the list. Markets also remain susceptible to the vicious cycle of higher rates and bank capital concerns if banks again shed interest-rate risk to shrink their balance sheets, leading to a further increase in rates. If depositors begin to move their money from perceived weaker institutions, triggering further asset sales, the vicious cycle may accelerate. Although the situation appears contained for now, it nonetheless bears watching as a potential driver of interest rates and risk appetite (Figure 4).

Economic Data and the Central Banks: Like Ships Passing in the Night

However, the overarching economic backdrop

Figure 1: Market return indices: Investment grade markets have given up ground with the Euro Agg. particularly close to new lows. However, higher-risk fixed income sectors, such as high yield and emerging markets, have chalked up strong returns since their fall 2022 lows. (indexed to 100)

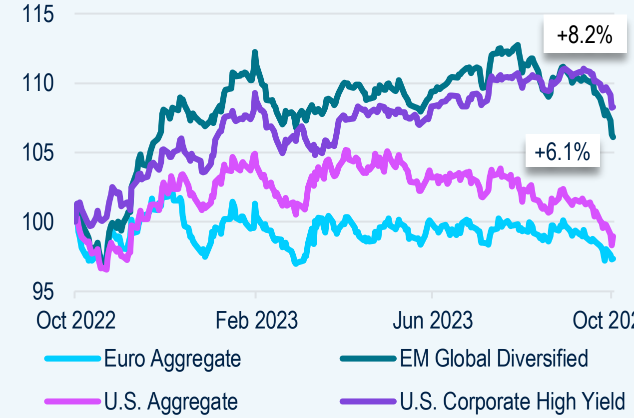
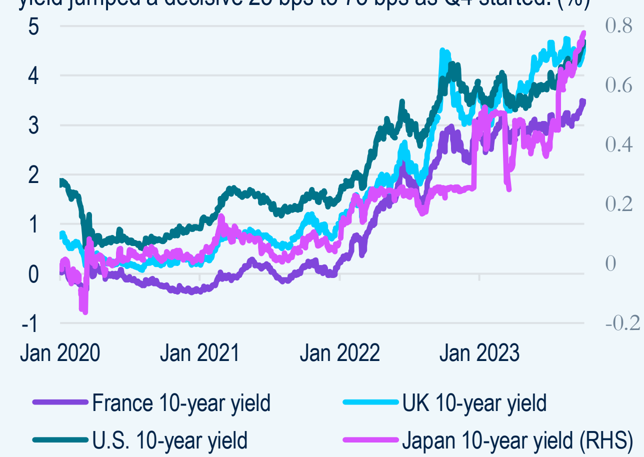


Figure 2: Major developed market yields: The big bad bear still trundling across the finish line…While most market yields scratched new cycle highs by narrow margins during Q3's market churn, not so in Japan, the last country to join the monetary policy "normalization" party, where the 10-year JGB yield jumped a decisive 25 bps to 75 bps as Q4 started. (%)



Sources: PGIM Fixed Income and Bloomberg

SPOTLIGHT Who's Afraid of Deficits?

Government-debt related flare ups across the developed markets are becoming more common. Last year, the markets lost patience with Britain. This year, U.S. bonds have struggled amid surging Treasury issuance and the slipping credit ratings. U.S. Treasury issuance, while gargantuan in its own right, is all the more impactful as the Fed is no longer buying assets, allowing its portfolio to run off as bonds mature—the process known as quantitative tightening (QT) (Figure A).

The upshot of QT is that, in contrast to the post-GFC environment where the Fed was either an outright buyer via quantitative easing or a reinvestment buyer via holding a constant portfolio, the government's entire supply now has to be underwritten by investors—an unprecedented amount of supply to digest in the absence of an accommodative Fed. While this has rankled the bond market, the currency markets remain unfazed, continuing to see the U.S. as the cleanest dirty shirt in the hamper (Figure B).

Who's next to go through the wringer? Maybe Italy. Growth has flagged, raising concerns about Italy's ability to improve its debt dynamics. This has caused Italian bonds to widen relative to euro denominated investment grade corporates and German Bunds—a sign of building anxiety (Figure C). Next year's budget forecasts suggest the deficit will be heading in the right direction, and, in a benign environment, Italian spreads may stabilize or narrow. But this will be a situation to watch, as a turn for the worse in market risk appetite and / or Italy's fundamentals could put the government under pressure to tighten its belt.

Alternatively, the ECB may be forced to enter the market using its Transmission Protection Instrument (TPI) to stabilize spreads and ensure fair monetary policy transmission to Italy — i.e., to avoid an undue tightening of credit conditions.

Figure A: Rising Treasury issuance and QT leaves investors with a full plate to underwrite. (% of GDP)

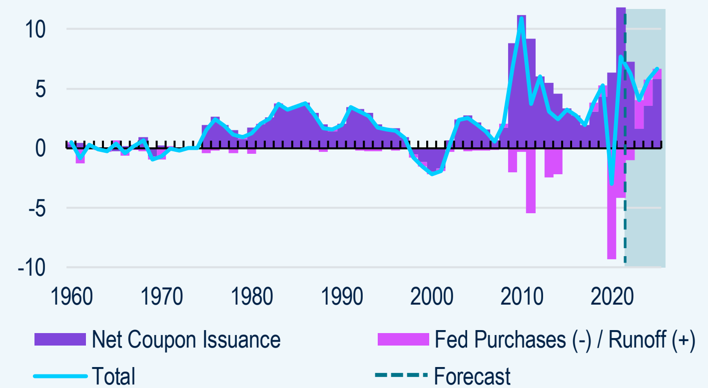


Figure B: Treasury issuance into the wind. Despite the surge in supply, the U.S. dollar resumed its bull market in July, again heading higher. (index level)

Figure C: Italian yields show signs of stress relative to European corporates and German Bund yields. (bps)

Sources: PGIM Fixed Income and Bloomberg appears to be turning surprisingly bond friendly. Employment growth has moderated steadily across DM for several quarters, bringing the labor markets into better balance (Figure 5) and reducing upward pressure on wages.

Furthermore, inflation looks like it's rapidly coming down to target in Europe and the U.S. (Figure 6). Another bond market positive is that investors are showing faith in central banks' ability to contain inflation, as demonstrated by stable breakevens throughout the recent rise in rates (see concluding box on real rates).

Outlook: Base Case of "Churn and Earn," with Symmetrical Risks Around the Bull Case

At this point, the main forces pushing the yield curve higher are the central banks and a heavy supply of government bond issuance. Upward momentum in long-dated yields could easily continue through year end—pushing Treasuries towards 5% and Bunds to 3%— and yields could go beyond those levels if fundamentals heat up again.

However, our base case envisions bullish market fundamentals continuing to develop as they have in recent months, coming to the fore as a market driver as we move towards and into 2024. This market outlook implies that the major central banks are on the precipice of an inflection point—for the Fed, that may mean 50-75 bps of rate cuts in 2024 from the current Fed funds midpoint of 5.375%. In the end, this forecast for government bond yields remains

Figure 3: The U.S. 10-year yield climbed progressively to new cycle highs, spurred on by bearish policy developments: rising issuance, ratings downgrade, hawkish Fed meeting outcome. (%)

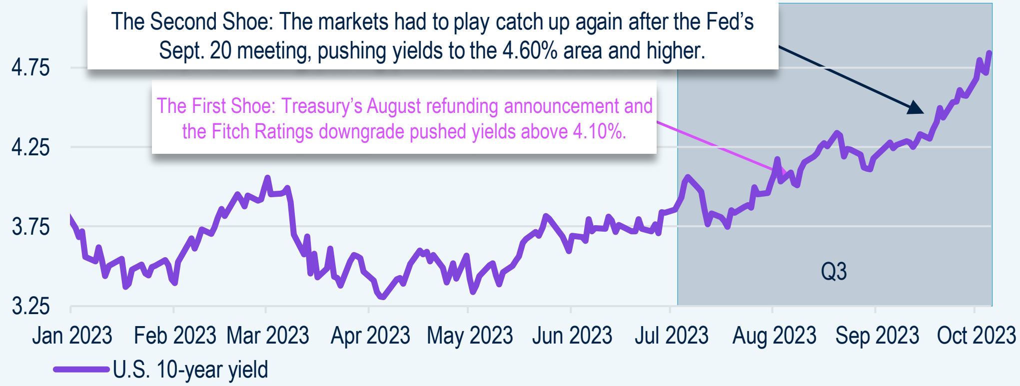


Figure 4: Money center and regional banks have underperformed the S&P 500 as capital concerns linger. (indexed to 100)

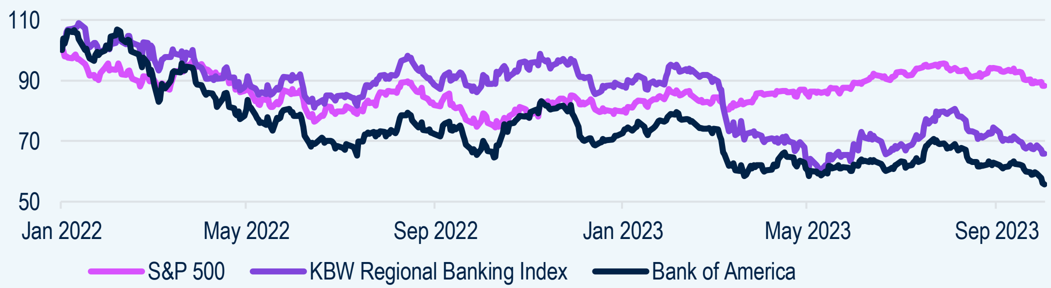
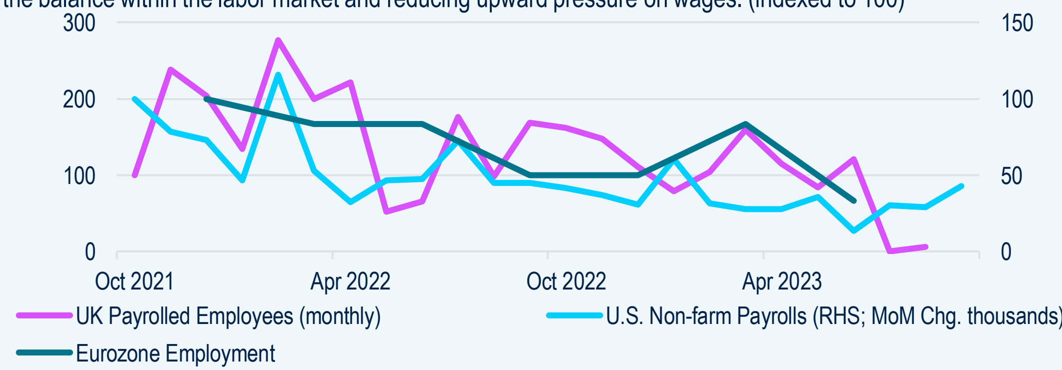


Figure 5: Moderating demand for workers has generally been met with an increase in labor supply, improving the balance within the labor market and reducing upward pressure on wages. (indexed to 100)



Sources: PGIM Fixed Income, Bloomberg, and Macrobond consistent with the formula for returns that we put forth at the end of 2022: **yields are back up at respectable levels, and we expect them to stay roughly around current levels for the long run. This should allow bonds to earn their yield in the years ahead, albeit with intermittent volatility, i.e., churn and earn.**

Given the DM world's flat or inverted curves, at least for the near term, government bond returns may only be in the realm of cash in the quarters ahead. In that case, why bother with bonds at all? Five reasons come to mind: 1. alpha, 2. credit beta, 3. long-term income hedge, 4. potential risk hedge, and 5. relative valuations.

Alpha: The past year of tumult has offered opportunities for adding value in all areas of fixed income: term structure positioning, sector allocation, local EM rates, and even FX.

Credit beta: Ever since the central banks abandoned their outsized rate hikes, credit product performance has been positive — a trend we generally expect to continue, which should benefit diversified fixed income portfolios.

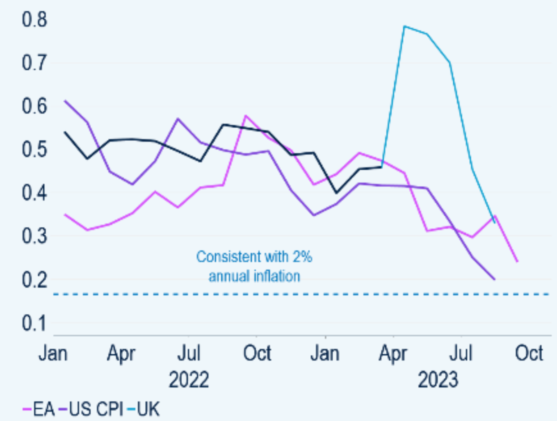
Long-term income hedge: If past is prologue, an unexpected shock will eventually take short rates down. When it does, they could stay at those levels for a long time. In that event, those who opted for cash and failed to lock in higher rates at the peak of the rate cycle will end up losing out in the long run (…ask anyone who remembers the 1980s).

Potential risk hedge: In a risk off event, government yields may fall, providing ballast in portfolios.

Relative valuations: With the post-COVID repricing, bond yields are back to respectable levels not seen for more than a decade. Bonds have revalued. On the other hand, equities have not, and, therefore, some would argue they look expensive by comparison, leaving stocks vulnerable to a repricing due to either economic or interest-rate risk.

Bottom Line: Bumpy transition to a bull market still underway with visible clouds near term; The longer-term outlook is favorable with rates near their cycle peaks. A broad range of fixed income products appear well positioned for solid risk adjusted returns over the long term on both an absolute and relative basis.

Figure 6: Monthly core inflation rates approach levels consistent with 2% annual inflation. (%)



Source: PGIM Fixed Income, Bloomberg, and Macrobond

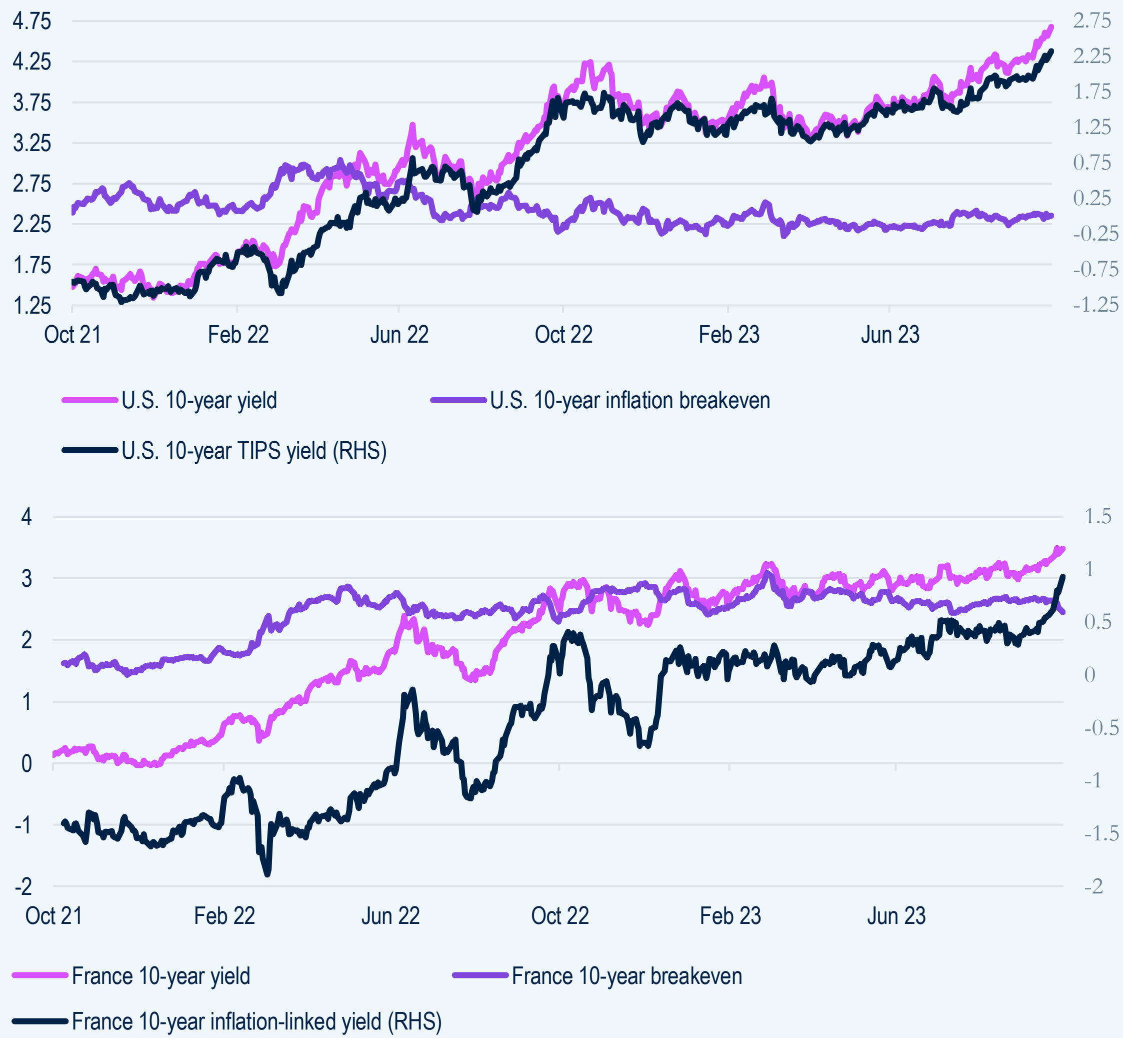
SPOTLIGHT It's Been Real

It's been real — no really, all of it. The latest increase in nominal government bond yields has been driven by a whopping increase in real yields, not inflation expectations (Figure D).

Looking at the inflation-linked government bond market, we can see that investors have faith in central banks' ability to contain inflation: inflation expectations have been stable for months and appear headed back to target in the U.S. The increase in real yields suggests investors expect central bankers to run policy with higher real rates going forward. From a longer-term perspective, these are more normal levels and much more palatable for investors relative to the ultra-low, post-GFC/post-Eurozone crisis period (current 10-year real yields in the U.S. and France of around 2% and 80 bps, respectively, vs. pre-COVID levels of +0.5% and -0.5%).

In other words, just as central banks are reiterating their conviction to remain higher for longer—and to run higher nominal and real rates than previously envisioned—the economic data have generally moderated. This suggests that these rate hiking cycles are close to, if not at, their peaks. This inflection point for major central banks bodes well for the bond market outlook.

Figure D: The latest bond selloff was solely led by real yields—an indication that investors expect tight policy ahead.



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Check out more of PGIM Fixed Income's latest thought leadership and media spotlights at www.PGIMFixedIncome.com

WHITE PAPER

FROM LOW RANGER TO HIGH PLAINS DRIFTER

With the vast majority of rate hikes behind us, market volatility is set to fall. A tailwind from the reemergence of the "search for yield" is likely to follow.

PODCAST

CYBER-SAVVINESS: WEIGHING TODAY'S CYBERSECURITY RISKS AND IMPACTS ON TOMORROW'S INVESTMENTS

Limor Kessem, Principal Consultant with IBM X-Force Crisis Management, talks cybersecurity and what to look for when assessing a company's cybersecurity.

BLOG POST

THE FED'S HIGHER-FOR-LONGER MANTRA IS OK FOR BONDS

The Federal Reserve indicated that policy rates will likely remain elevated for some time and that neutral policy may indeed be higher than previously projected at its September meeting.

PGIM FIXED INCOME

SECTION 3

GLOBAL MACROECONOMIC OUTLOOK

By Daleep Singh, Chief Global Economist & Head of Global Macroeconomic Research

03

NEW GLOBAL CONTOURS, GREATER DISPERSION

The challenge of adjusting to a new economic paradigm includes identifying its contours and assessing how they evolve over time. With the final quarter of 2023 underway, the gradual loosening of several structural anchors continues to shape our new regime. As the anchors give way, they're affecting global regions differently, and the growing dispersion across the global economy is evident in the latest adjustments to our economic scenarios.

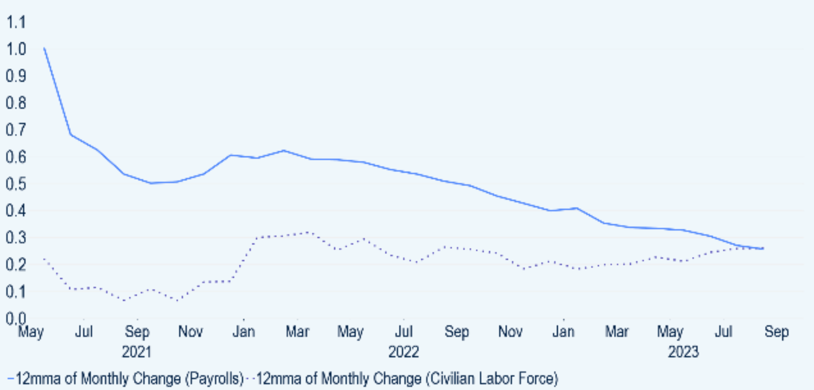
In the **U.S.**, the consistency of above-trend growth over the prior four quarters has surprised many. Household consumption has played a significant role in supporting the expansion, particularly as real wage growth climbed into positive territory amid the moderation in goods inflation. However, wage pressures should continue to ease going forward as demand for workers cools while the labor supply increases (Figure 1), particularly as households' pandemic-related excess savings gets worked down. Although recently struck labor union contracts, as well as those sought by the United Auto Workers, include sizable wage increases, the relatively limited pool of union workers is unlikely to affect the national wage picture. As balance in the labor market improves, services inflation also appears set to moderate further, which will be a welcome development by the Fed given the relative stickiness in services prices.

With that backdrop, we believe that the Fed reached the end of its tightening cycle in Q3. While the FOMC went to great lengths at its most recent meeting to convey its higher-for-longer Fed funds message, we believe that effort was largely an attempt to keep its options open regarding future policy decisions. As the Fed awaits additional economic data, financial conditions may continue tightening given that real interest rates are also in positive territory. Hence, the Fed could implement 50-75 bps of "fine tuning" rate cuts—particularly in a scenario of moderating growth and further easing in labor demand—in 2024.

Following the stronger-than-expected September payroll report, the latest lift in yields should tighten conditions even further. At this point, the Fed can wait and evaluate how the economy fares from here. If robust job growth translates into another upward turn of inflation, the balance of risks for the Fed would again shift towards further tightening.

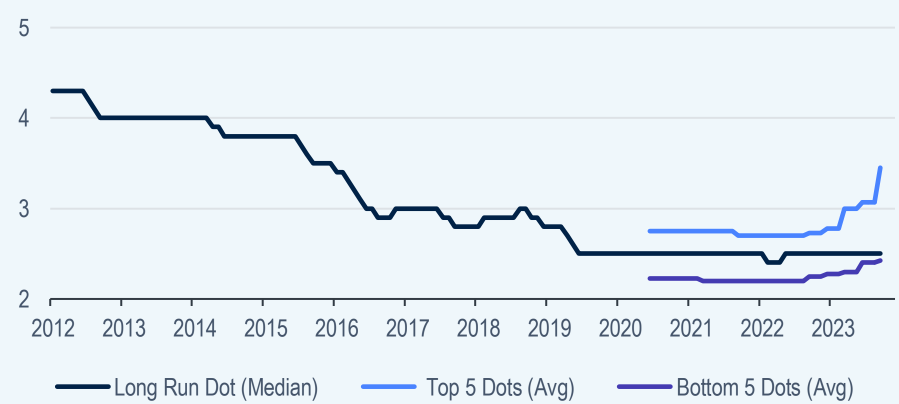
When considering the longer-term policy outlook, Fed officials appear to be coalescing around the notion that the economy's neutral long-run interest rate may be higher than previous estimates of 2.5%, possibly gravitating to the 3.0% area (Figure 2).

Figure 1: More workers returning to the labor force improve the labor market balance.



Source: PGIM Fixed Income and Macrobond

Figure 2: Fed hawks and doves are taking a hawkish approach to the long-run dot.



Source: PGIM Fixed Income

While the developing inflation picture might be a positive one for the U.S., the economy still faces the cyclical risks from tighter monetary, fiscal, and credit conditions. Additional risks are unfolding across political arenas and markets.

For example, recent supply cuts in the energy sector have led to a market imbalance where demand outstrips supply (Figure 3) with consequent implications for inflation as well as the winners and losers in what has become a zero-sum competition.

Meanwhile, there is no shortage of U.S. political drama, particularly with the recent leadership change in an already fractious House of Representatives and the looming prospect of a Federal government shutdown in mid-November. Coming on the heels of Fitch Ratings' U.S. credit ratings downgrade, the latest political wrangling provides another reminder of the United States' growing inability to cohesively govern itself.[1]

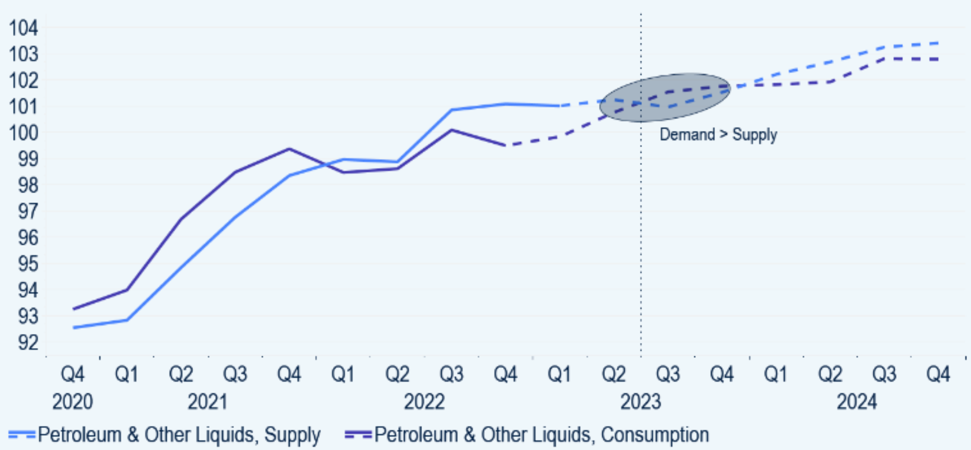
The imbalance in the energy market and ongoing political drama demonstrates how political polarization and the bumpy transition to renewable energy continue to shape the current paradigm for the world's largest economy (see Figure 6 at the end of this section for more on structural anchors).

Yet, anchor-related developments can lead to regionally positive effects as well. As the Great Power Competition intensifies, countries will increasingly use government policies to de-risk their supply chains for critical goods. Indeed, re-invigorated industrial policy in the U.S. could see related spending triple over the coming decade with the potential for positive effects on productivity, inflation, and economic growth. As a result, we shifted 10 percentage points to the probabilities for our high-growth scenarios with "nominal GDP boom" rising from 10% to 15% and "roaring 2020s" climbing from 5% to 10%. The increased probabilities for the high-growth scenarios underscore our expectation for the U.S. to generally outperform the global economy over the coming 12 months.

The probability increases come at the cost of our soft-landing scenario, which decreased from 25% to 15%. Meanwhile, the probabilities for our "weakflation" base case and recession scenario remained at 35% and 25%, respectively (click here for a summary of our latest economic scenarios).

[1] Based on prior experiences, for each week that the Federal government is closed, current quarter real GDP may contract by 20 bps, and the GDP drawdown would conceivably be recovered in the quarter after the government reopens.

Figure 3:
The energy sector is emerging as a key cyclical risk and a reminder of the uneven path to renewables.



Source: PGIM Fixed Income and Macrobond

The higher-for-longer mantra is also echoing in **Europe**, but for different reasons. The inflation picture in Europe appears more fraught than in the U.S., as the sharp rise in energy prices following Russia's invasion of Ukraine continues to work its way through non-energy goods and services. Moreover, the prospect of continued energy volatility due to inelastic supply in the region will likely persist for years to come.

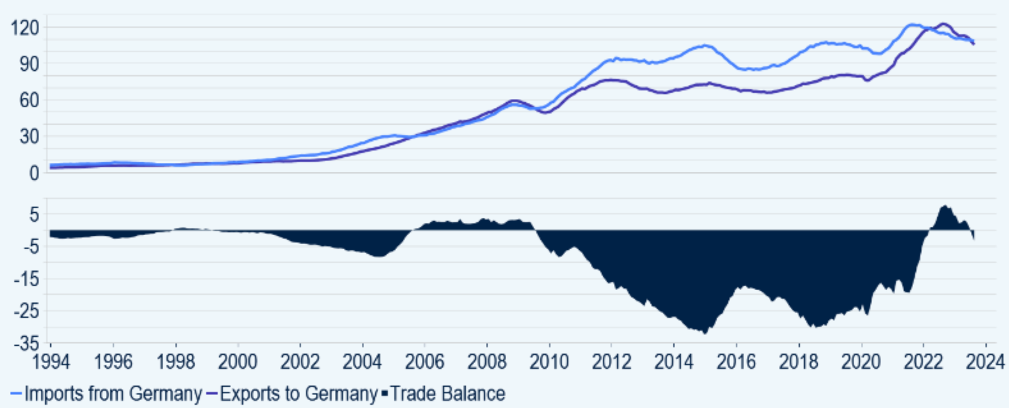
These worries have tilted European Central Bank policy in favour of a higher-for-longer posture to avoid prolonged above-target inflation from becoming entrenched. The forceful transmission of tighter lending standards in a bank-centric financial system has resulted in an unpleasant mix of weak domestic demand against a backdrop of still-elevated inflation. Although the factors above may be symptomatic of the current cycle, the European economy also faces mounting structural headwinds. Its traditional growth engine of German exports appears to be fading and no longer represents a reliable source of growth, especially with the mounting uncertainty surrounding China's economic picture (Figure 4).

As a result, we believe that the Bank of England and the ECB may have also concluded their rate-hiking cycles, particularly given the region's lingering vulnerability to an energy shock. However, the ECB could still look to tighten policy by accelerating the pace at which securities purchased during the pandemic roll off of its balance sheet. An acceleration poses the risk of further tightening credit conditions and weakening domestic demand for Italian government debt amidst the country's unpalatable combination of higher deficits and slowing growth, possibly pushing the yields on Italian government debt (BTPs) wider relative to Bund yields.

Participants may also hear more noise about central bank losses due to their significant asset purchases during the prior cycle and through the pandemic. Although losses had been expected and viewed as part of the monetary policy process, in practice, the sharp rise in interest rates has meant that losses will be larger than anticipated, introducing a heightened level of political scrutiny going forward. Our economic scenarios underscore the Euro Area's myriad challenges over the coming 12 months. Weakflation remains the base case (40%), followed by a 25% chance of a recession, and a 10% chance of stagflation. From there, we shifted 5 percentage points from the soft-landing scenario (a decrease from 15% to 10%) to the nominal GDP boom outcome (from 10% to 15%), largely due to the potential for increased exports to the U.S.

Our outlook for **China's** economy remains segmented into the near- and long-term views. The mounting near-term challenges to the country's post-COVID recovery include its over-extended property sector, which raises questions about its role as a store of value, as well as record youth unemployment and the attendant risks to social stability.

Figure 4:
After more than a decade of a positive trade surplus with China, Germany's net exports recently flipped to a deficit. (USD billions)



Sources: PGIM Fixed Income and Macrobond

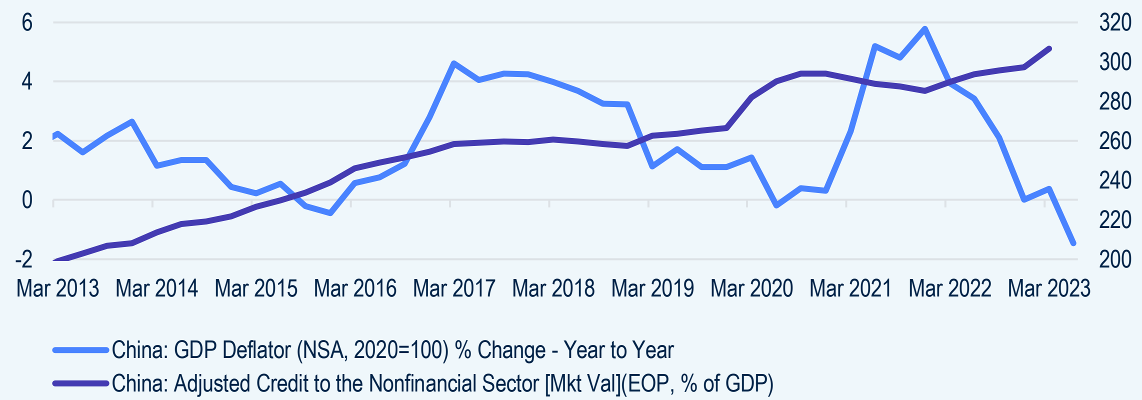
China's authorities likely view the immediacy of these risks as unacceptable, which should prompt additional monetary and fiscal stimulus that will place a floor of about 5% under growth. However, that stimulus will do little to rectify the headwinds facing China's longer-term growth prospects.

Figure 5 shows that debt in China continues to reach historic highs as GDP deflation hits a new, recent low.

As the challenges to China's longer-term growth prospects appear more intractable, we increased the probability of our recession scenario from 5% to 20%. The 15 percentage point increase came at the cost of a 5 pp reduction for each of our scenarios for a soft landing (still our base case at 45%), nominal GDP boom (20%), and weakflation (10%), while the roaring 2020s scenario remained at 5%.

Our updated economic scenarios are not designed to encapsulate all possible outcomes in an increasingly complex economic environment. Rather, they are designed to be distinct enough to capture structural developments, such as the growing dispersion across major economies, which consequently emerges as a theme throughout the following sector outlooks.

Figure 5:
With GDP deflation, lower credit growth pushed debt in China to another historic high.



Sources: PGIM Fixed Income and Haver Analytics

Figure 6:
A new paradigm shaped by loosening structural anchors

	Trend	Implications
1	**Intensified Great Power Competition**	a) More frequent conflict & proxy wars b) More frequent and potent use of economic statecraft c) Less cross-border risk management
2	**Unprecedented Political Polarization**	a) Erosion of political center; institutional decay b) Less orthodox policy; fiscal dominance c) Resurgence of organized labor
3	**Bumpy Transition From Fossil Fuels → Renewables**	a) Higher inflation & inflation expectations b) Larger fiscal transfers to cushion worst off c) Winners & losers amid zero sum competition
4	**Supply Chain De-risking**	a) Reorientation around geopolitical alliances b) Less focus on efficiency; more focus on resilience
5	**Distinct Technology Ecosystems**	a) More public investment in foundational technologies, BUT... b) Fewer positive spillovers from technology diffusion, AND c) New forms of hybrid warfare using AI, biotech, quantum, etc.

PGIM FIXED INCOME

SECTION 4

GLOBAL SECTOR OUTLOOKS

04

DEVELOPED MARKET RATES

Outlook: Higher for longer. The recent, multi-year highs for long-term interest rates in the U.S., the UK, and Europe were spurred by central banks' higher-for-longer messaging. Yet, economic growth and inflation appear to be moderating, signaling the likely end of the respective rate-hiking cycles. Higher JGB yields may foreshadow a rate hike in early 2024.

■ Developed market rate complexes were anything but docile heading into the final quarter of 2023. Although markets have anticipated the end of the tightening campaigns for some time, the latest surge in long-term DM rates—supported by generally hawkish central bank sentiment—indicates that the end stage to the tightening cycle likely arrived in Q3. As a result, investors face a compelling inflection point where U.S. and European rates trade at multi-year highs against an increasingly fraught economic backdrop.

■ In the **U.S.**, market expectations and projections from the Federal Reserve were gradually converging heading into the most recent FOMC meeting. However, the Fed's hawkish skip—particularly the adjustments to each of its Fed funds projections in the coming three years—forced the market to play catchup. Indeed, the Fed's 50 bps increase in its 2024 projection to 5.1% recalibrated the market's understanding of "higher for longer." Thus, the market aggressively sold off, and in early Q4, we see the market's adjustment to the Fed's updated projections as one of the main factors contributing to the latest jump in yields.

■ Furthermore, as asset managers, or other real money accounts, increase their Treasury futures exposure (see Figure), the consequent prevalence of futures basis trades is generating regulatory and media interest again. While we don't see systemic risks similar to those in March 2020 amid regulatory steps and the reduction in leverage, the volume of long Treasury futures positions could be another factor that prompts the cash market to overshoot fair value under current conditions.

■ Another factor weighing on price action is the overwhelming supply of U.S. Treasuries. The sheer amount of supply, combined with the Fed's Quantitative Tightening program, continues to influence price action. Despite the last-minute agreement to fund the Federal government through mid-November, the market's ability, or willingness, to digest the incoming supply with less Fed participation and the potential for additional political stalemates warrants further monitoring.

■ After maintaining a negative view on U.S. rates through much of Q3, we shifted to neutral positioning toward the end of the quarter.

Asset managers' rising futures exposure drives futures basis trades and renewed attention. (number of open contracts)

Source: PGIM Fixed Income and Bloomberg

Our neutral view underscores the fragile nature of the prevailing crosscurrents.

- For example, the trailing, underlying economic data appear similar to the 2018/2019 cycle that ended relatively softly with lower rates providing support. Yet, market-related data (as reflected in the prices for shelter and energy as well as the effects from union labor strikes) continue to keep inflation risks alive.

- Thus, our view of the U.S. rate complex may depend on whether another bout of inflation lies ahead or if the weaker data continue. We see the latter scenario materializing and expect that U.S. rates are near their peak.

- **European** rates also climbed on the higher-for-longer message from the Bank of England and the ECB given that their respective inflation rates remain higher than those in the U.S. and their unemployment rates remain historically low. As a result, 10-year German bund yields pushed higher through the end of Q3. While the ECB's inflation-focused mandate may keep front-end Bund yields elevated, the broader curve appears susceptible to lower rates given the region's precarious growth prospects.

- The **BoE** is walking a fine line as its recent decision to hold interest rates steady may be due to economic concerns, particularly as the country remains vulnerable to an energy shock. Yet, currency weakness and rising import prices could again stoke inflation. Therefore, we believe UK policy rates may remain at or near their current level for the foreseeable future while likely keeping term premia and long-term interest rates elevated.

- Long-term rates in **Japan** have also moved higher recently. When considering recent weakness in the yen, rising inflation, and an ongoing economic expansion, the Bank of Japan could allow, if not encourage, the 10-year JGB yield to approach 1%.

- JGB yields could move even higher if the BoJ were to possibly conclude its yield curve control policy in conjunction with a rate hike or if it adjusts policy prior to a potential rate hike in Q1 2024. However, a rate hike may only lift policy rates out of negative territory to zero—it will be an even higher hurdle to lift them into positive territory.

AGENCY MBS

Outlook: Value remains, rates to set tone. The end of the Fed's hiking cycle could bring short-term volatility as future policy moves remain data dependent. Once the Fed implements a prolonged pause or fine-tuning rate cuts, volatility should subside and give way to our constructive long-term view. We still favor specified pools over TBAs.

- The latest surge in U.S. rates also swept up the MBS sector, which generally traded in line with rates in Q3. While the Fed is likely in the final stages of its rate hiking cycle, inflation risks remain, which could prompt additional action from the Fed. In that scenario, the MBS sector could continue trading alongside rates, possibly constraining excess returns.

- However, any further hikes should soon lead to a prolonged period where the Fed holds policy steady, or implements a few fine-tuning rate cuts. This transition may introduce a more constructive period for MBS, particularly given the decade-highs in yield (see Figure)—which yield-based buyers may find compelling—and the factors likely to support the sector over a longer-term time horizon.

- Indeed, the technical picture for MBS could support the sector into the coming months as the 20-year high in mortgage rates restrains loan origination, while refinancing activity remains non-existent. The previous increases in rates since early 2022 also mean that MBS durations have already extended across the coupon stack, leaving only minimal convexity risk in production coupons.

- The risks we're watching start with Fed policy as additional rate hikes, or signals about further policy tightening, could produce performance headwinds. A changing buyer base also poses a risk with the Fed continuing to withdraw from the market and bank buyers generally appearing inactive. Furthermore, TBA dollar rolls are trading near the cost of carry, which makes the asset class a challenging proposition for accounts that cannot buy specified pools.

- In terms of positioning, despite the limited refinancing activity, we continue to prefer older, seasoned bonds given their more steady and predictable performance. Although we're wary of the convexity risk in production coupons (30-year 5.5% issues and higher), they only represent about 10% of what needs to be held in most MBS portfolios. On the other hand, lower coupons, which are more broadly represented in the benchmark index, are showing positive convexities.

Demand from yield-based buyers could offset reduced activity from banks and the Fed. (%)

Source: PGIM Fixed Income and Barclays

ENVIRONMENTAL, SOCIAL, AND GOVERNANCE

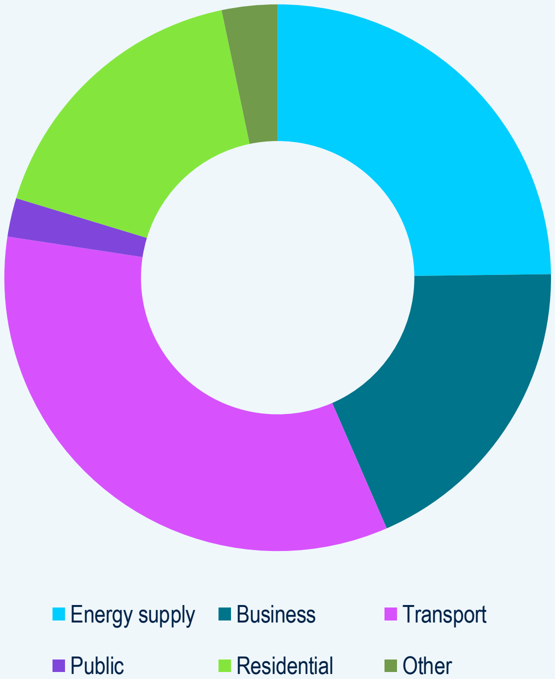
UK Climate Policy—From Ambition To Political Realism

- From 2019 to 2021, climate ambition was on a positive trajectory nearly everywhere. Net-zero pledges by companies and governments proliferated. In 2020, emissions posted their largest annual decline since World War II, albeit due to COVID lockdowns. And sustainability moved into the mainstream, including in finance.
- Global emissions rebounded to new highs in 2021, but pledges continued to accelerate. The United Nations' COP26 in Glasgow enhanced many countries' ambitions. It produced new global commitments on deforestation and methane and targeted initiatives, such as the Just Energy Transition Partnership with South Africa.
- Since then, however, the situation has become more complicated. After initial enthusiasm, governments met voter resistance when the time came to implement targets. From the end of 2021, supply chain constraints and materials shortages started to bite. Previously rapid declines in the cost of clean energy slowed.
- The spike in energy prices after Russia's invasion of Ukraine amplified concerns. Reducing dependence on fossil fuels may be the best long-term strategy to avoid such exposure. But some politicians used higher, post-invasion prices as an argument against green policies. Those policies would, they argued, increase energy bills when the public could least afford it.
- Opposition to green policies gained pace in 2023, even in places where they previously had bipartisan support. The UK government's recent proposals are a high-profile example of this reversal, watering down key climate policies.
- The previous UK government planned to phase out combustion engines in cars by 2030, but the current cabinet wants to delay this to 2035. Its announcement came on the heels of a local election, in which the Conservative candidate made eliminating fines on high vehicle emissions a vote winner. Domestic transport made up 34% of UK emissions in 2022, mostly from cars, so this shift is significant. That said, the government would still require 80% of new car sales from 2030 to be zero-emissions. Several automakers have publicly criticised the proposed delay and may push on despite the shift in policy.
- The UK government also aims to delay its ban on fossil fuels for off-grid heating, from 2026 to 2035. A ban on fossil-fuel boilers in new buildings from 2025 remains in place, but now with exemptions for "households that struggle the most." Up to a fifth of UK homes could qualify for that exemption. It comes after a backlash in Germany forced the government to water down a similar policy.
- Around 90% of the UK's residential buildings rely on gas for heating and cooking. Compounding this problem, the UK has among the least efficient buildings in Europe. Residential buildings are responsible for about 17% of UK carbon emissions, so the government's proposals materially lower its ambitions. The opposition Labour Party has criticised the government's watered-down policy on combustion engines, but it has been mute on changes to building policies.
- In addition, the UK government will scrap plans to raise minimum energy efficiency levels in rental properties.
- Furthermore, the UK's latest renewable energy auction failed to secure any bids from wind power developers. Developers had warned the government that the bid ceiling in the auction was too low to be economic. But the government left the ceiling unchanged, resulting in the failed auction. In parallel, the government recently offered new permits for oil and gas drilling in the North Sea.

ENVIRONMENTAL, SOCIAL, AND GOVERNANCE

- More positively, the UK government intends to increase grants under a government-funded heat-pump upgrade scheme, from £5,000 to £7,500. But that only partially offsets the watering down of other policies.
- Despite his policy changes, Prime Minister Sunak claims that he has no plans to abandon the UK's Climate Change Act 2008. That law requires the country to achieve net-zero emissions by 2050, including in international aviation and shipping. Many of Sunak's proposed changes remain vague, but initial analysis suggests that they may cause the UK to miss its interim targets for 2033-2037. These targets are legally binding, but the repercussions of missing them are unclear.
- The UK government's announcements and similar developments in other countries don't mark a complete reversal in global ambition. For example, the U.S. Inflation Reduction Act provides massive subsidies for clean energy. And California—the world's fifth-largest economy if it were a country—is expected to implement a sweeping new climate disclosure rule. Renewables continue to grow, and the International Energy Agency suggests that the uptake of electric vehicles and heat pumps is approaching what is required to limit the global temperature rise to 1.5C. Even the UK government's watered-down policies would continue to reduce UK emissions—just not at a rate that aligns with COP21's Paris objectives.
- As the picture on climate change policies becomes increasingly complicated, investors may need to re-assess if governments' targets are credible. In doing so, they also need to consider scenarios in which global temperatures rise more than 2C.

Total UK CO_2 emitted in 2022 (%)



Source: UK Department for Energy Security & Net Zero

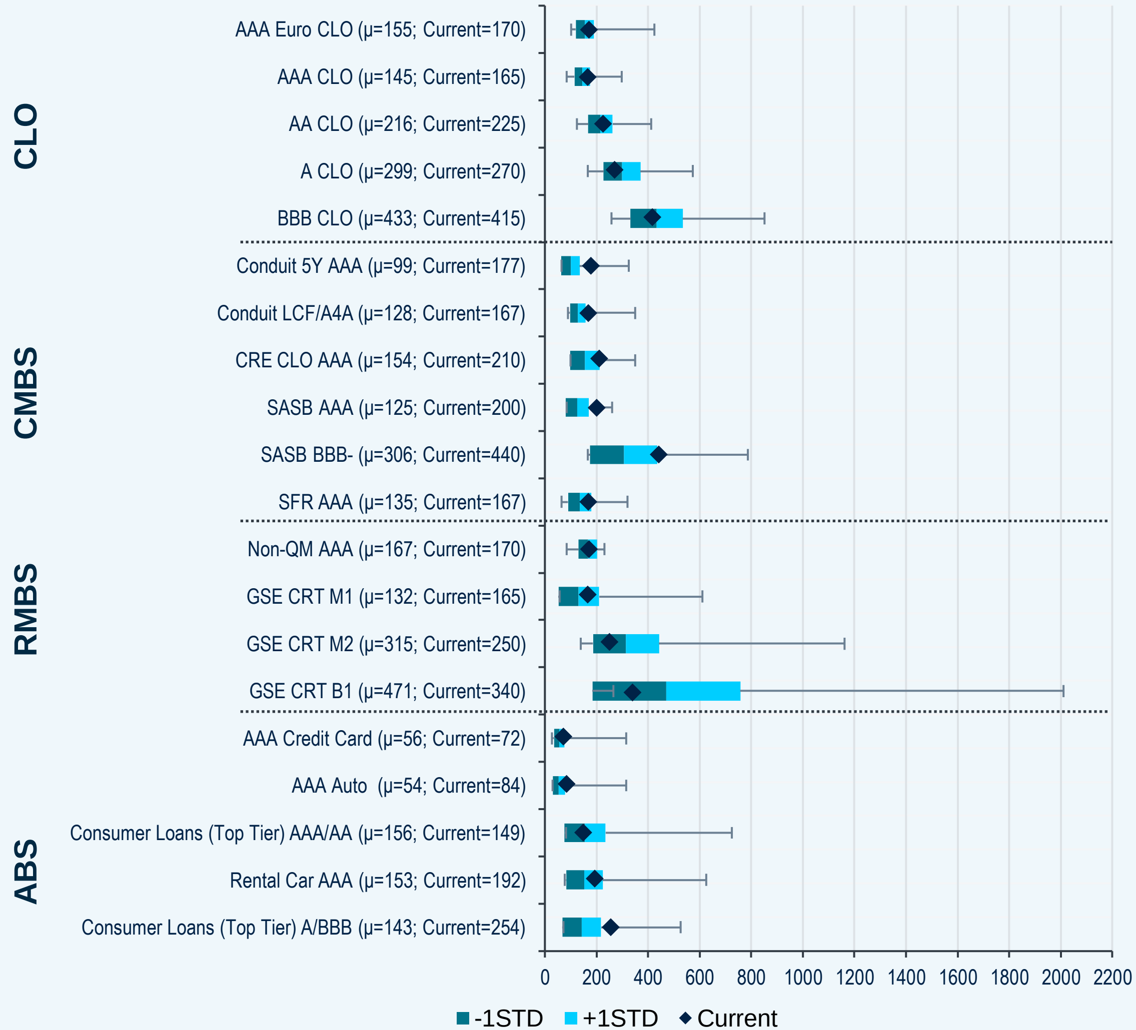
SECURITIZED CREDIT

Outlook: Senior tranches remain attractive. We continue to favor senior tranches given the potential for attractive risk-adjusted returns and robust structural credit protection in an uncertain macroeconomic backdrop. Increasing bank regulation continues to tighten financial conditions for CRE, corporate, and some consumer segments—contributing to persistently wider spreads in certain asset classes. Although most credit curves remain steep, we find that the valuation of many mezzanine tranches does not fully price in the economic uncertainty and potential for larger tail events. While we've seen a justified rally in RMBS mezz, we remain cautious on mezzanine tranches in CRE, CLOs, and some unsecured consumer deals.

- **ABS:** Overall, consumer credit remains resilient. However, the effects of inflation and lower disposable income continue to weigh on the weakest segment of consumer credit. While most lenders have tightened financial conditions, many second tier and/or fintech platforms continue to experience high losses as their underwriting models are miscalibrated for the current environment. We remain vigilant for signals suggesting consumer credit is weakening more broadly. We continue to find value within some subprime auto, rental car, solar, and unsecured consumer securitizations.

- **CLOs:** We expect further deterioration in underlying bank loan credit fundamentals via downgrades to CCC, increasing default rates, and lower default recovery rates. Senior tranches trade

Valuation perspective in securitized credit (spreads in bps; μ refers to the set mean)



Source: PGIM Fixed Income

SECURITIZED CREDIT

at attractive levels and benefit from robust structural protection. We continue to favor senior AAA and AA tranches in the U.S. and Europe.

- **CMBS:** Historically wide spreads in Conduit and SASB creates opportunity. Higher cap rates have pressured property valuations and will continue to do so, especially if the higher-for-longer interest rate scenario prevails. Our expectation is property values will generally fall 20%, though dispersion will abound. Office is likely to do the worst, with our expectation being a 25%-60% decline as work-from-home leads to higher vacancies. Despite these challenges, there is value in AAA conduit bonds and select SASB securities.

- In conduit, we're adding super-senior AAA bonds, which are trading at historical wides to comparable corporate bonds, and selectively adding new issue 5-year interest-only (IO) issues that have potential upside from extension. We're avoiding mezz bonds that pose both downgrade and write-down risk. In SASB, we're selectively adding high-quality retail bonds and senior office bonds. There is a large dispersion in levels depending on asset quality. Industrial and Multifamily sectors continue to outperform. In the agency asset class, we're selectively adding Freddie K IOs with stable cashflows. We maintain a preference for conduit AAA bonds over agency bonds amid a historically wide basis.

- **RMBS:** Home prices continue to benefit from strong technicals as homeowners with low mortgage rates are locked into their homes and limiting supply. We expect home prices to cool in response to higher rates, but remain in the 0% to -5% range from the recent peak in home price appreciation. Credit performance remains robust across most sectors. However, Federal Housing Administration and non-qualified mortgage delinquencies have risen from post-COVID lows but remain in check. We remain constructive on RMBS performance, particularly credit risk transfer (CRT) bonds backed by high-quality GSE mortgages, though the impressive spread rally is leading us to shorten our CRT positions.

INVESTMENT GRADE CORPORATES

Outlook: Range bound spread conditions. The factors referenced in our economic and market outlooks imply IG spreads may remain in their current range through year end. Pockets of value exist among banks, cyclical credits, and utilities. Conditions also underscore the importance of security selection and relative-value trades. Macroeconomic and company risks to our base case also guide our positioning.

■ After tightening for much of the year, U.S. IG corporate spreads traded in a narrow band of +/- 2 bps, around the 120 bps level, through Q3. Spreads subsequently widened beyond that range in early Q4.

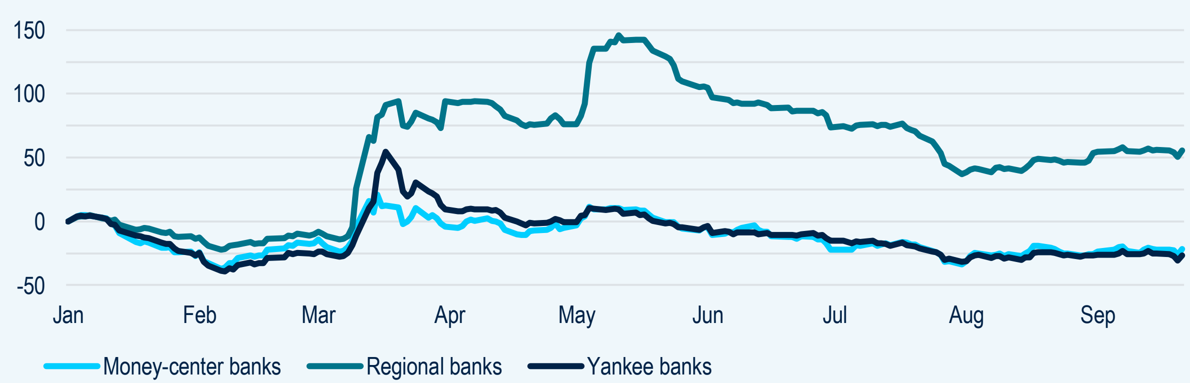
■ Bonds of industrial firms have outperformed financials and utilities this year. Perhaps surprisingly, bond spreads have tightened for money-center banks and for Yankee banks (foreign banks borrowing in U.S. dollars). But spreads of U.S. regional bank bonds have widened significantly since their crisis in March. Utilities' bonds have underperformed so far this year on heavy issuance due to increased capital expenditures. Long-dated bonds (10 years+) have outperformed short-dated bonds (1-5 years) in the year to date. That's mainly because of the regional banking crisis' outsized impact on the 1-5 Corporate Index and the favorable supply/demand dynamics impacting the Long Corporate Index.

■ Given the conditions referenced in our economic and market outlooks, most of our scenarios foresee range-bound or slightly tighter U.S. IG corporate spreads over the rest of 2023. As macroeconomic risk retreats, we expect that security selection can continue driving investment returns, as it has for most of the year.

■ The risks to our views also guide our positioning, and several market segments look promising. Bonds of high-quality, A-rated money-center banks are trading at spreads more like those of BBB-rated industrial firms. Both Yankee banks and regional banks trade at attractive spreads as well. Before COVID, utilities' bonds traded at spreads 10 bps tighter than those of industrial firms, but now they trade 5-10 bps wider than industrials. In addition, some of these utilities' bonds are secured first-mortgage bonds, making them even more attractive.

■ The difference between 30-year and 10-year IG spreads has narrowed, i.e., the spread curve has flattened. The recent rise in yields means that issuers are less keen to issue long-dated bonds, but investor demand for them is high—so the 10s/30s spread curve could continue to flatten.

After the crisis in March, U.S. regional bank spreads continue to trade well wide of money center and Yankee banks. (indexed; change in bps)



Source: PGIM Fixed Income and Barclays

■ By some measures, BBB-rated bonds may not look particularly cheap. But with the economy likely to avoid a recession, there is less risk of ratings downgrades. There are currently more "positive" outlooks or credit watches on low-BBB and high-BB rated bonds than there are "negative" outlooks or credit watches. Many companies in more cyclical industries have successfully de-levered their balance sheets and now have lower net debt/EBITDA ratios than the broader market. For example, companies in the automotive sector are, on average, in a net cash position, the metals & mining sector is less than 1x leveraged, and the energy sector less than 2x leveraged.

■ In terms of macroeconomic risks we're watching: inflation is down, but it's still above the Fed's 2% target. Monetary policy works with an uncertain lag, so the Fed's rate hikes may yet start to bite. The manufacturing sector's Purchasing Managers' Index (PMI) is still below 50, a sign that it is contracting. Labor markets and consumer confidence could weaken. And autoworker strikes could reverberate outside of the car industry.

■ At the company level, analysts' earnings estimates could turn out to be too high, merger & acquisition activity may increase as management teams regain confidence, and commercial real estate remains vulnerable.

■ Spreads on **European IG corporate bonds** have tightened in the year to date. In Q3, bank bonds and BBB-rated non-financial bonds led the tightening.

■ The main macroeconomic risk in Europe is inflation, stoked by Russia's war in Ukraine. But, as in the U.S., a recession in Europe has become less likely, and the risk of a significant downturn is small. As a result, European IG corporate spreads are likely to be range-bound or even mildly tighter for the rest of 2023.

■ Spreads are unlikely to move much, so we continue to approach our portfolios on a credit-by-credit basis, with a focus on relative value. Our portfolios' main overweight allocations are to banks, energy firms, and utilities. Real estate bonds may become more attractive once central banks reach their peak policy rates. We expect European issuance to diminish in Q4, which should provide a supportive technical backdrop.

GLOBAL LEVERAGED FINANCE

Outlook: Cautious longer term due to economic slowdown risks. Technicals remain supportive over the shorter term, and we are looking for signals to shift to a more risk-on stance. In the U.S., we are looking to add higher-quality, short-duration positions on pullbacks. Increased credit dispersion adds to alpha-generating opportunities.

■ While the overall economy remains resilient, excess consumer savings are approaching depletion, and it appears we're returning to a more normal relationship between spending patterns and household income. Should the consumer continue to pull back, recessionary risks and pressures will trend higher, and the probability of a recession is likely higher than what is currently priced into the U.S. high yield market.

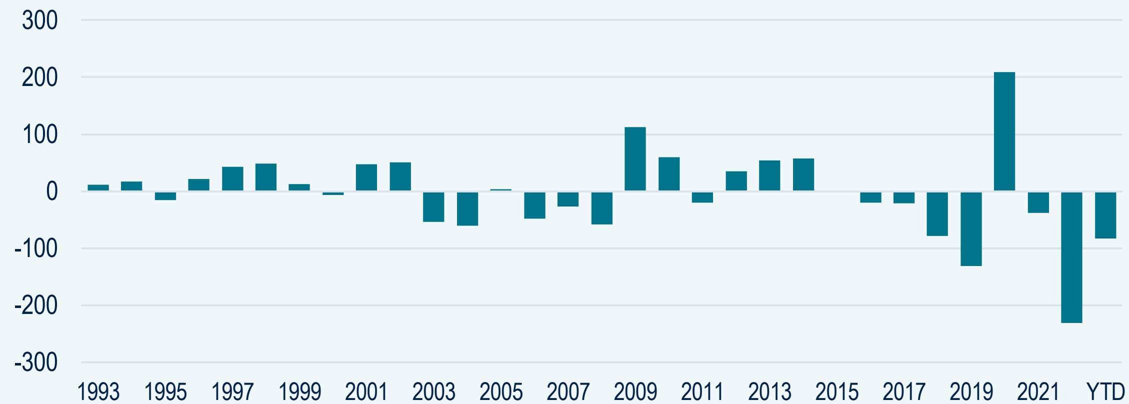
■ While consumers' preference for services over goods creates challenges for certain sectors, such as chemicals, companies' earnings and liquidity generally remain strong, and leverage remains well below the long-term average. The high yield market is of a higher quality than prior cycles, with BBs and Bs comprising nearly 90% of the market as many of the weaker credits were either purged during the COVID shutdown or migrated to the loan market. That said, credit metrics have shown signs of deterioration, with leverage rising for the first time in eight quarters, while revenue and EBITDA is declining year-over-year for the first time since 2020.

■ Meanwhile, the technical backdrop remains supportive due to a variety of factors including lower new issuance, sizeable rising stars, and a growing share of below-investment grade companies opting to issue in the private credit markets. This has led to a meaningful supply deficit and an overall shrinking of the high yield market, which has continued to support market technicals and contributed to overall spread tightening in 2023.

■ Given the strength of most balance sheets and the absence of a maturity wall through 2024, we don't see a sharp increase in default rates. That said, the number of credit rating downgrades is now higher than the number of upgrades. Should the economy follow our base case, we expect default rates to rise to a manageable 5.0% over the next 12 months.

■ With the positive technicals showing no signs of abating, our short-term outlook is modestly positive, and we are looking to take advantage of an expected

U.S. high yield supply surplus/shortfall ($bn)



Source: PGIM Fixed Income and J.P. Morgan issuance uptick to opportunistically add higher-quality, short duration high yield in the secondary market. We are maintaining our overweight to home construction and maintaining our underweights to technology and media & entertainment.

■ Against the backdrop of strong total returns for **U.S. leveraged loans** so far this year, we recently boosted our 2023 total return forecast to 12-13% from 8.75%, supported by high all-in current coupons and yields, decelerating outflows from bank loan mutual funds, and modest net new supply.

■ While still below the long-term average, loan defaults have picked up in recent months, and we expect ratings agencies to be quicker to downgrade than to upgrade credits. The loan market is of lower quality than in prior cycles, with sponsor-owned low single-B loans comprising a large portion of the overall market. Given expectations that the rising cost of capital will reduce free cash flow, we continue to expect that loan default rates will rise to 4-4.5% by year-end 2023.

■ Given the current macro environment, we favor public, BB and high single-B loans over sponsor-owned, low single-B and CCC loans. We expect those lower-quality loans will be most impacted by the more challenging fundamental backdrop given their elevated leverage levels and higher interest expenses in a higher-for-longer rate environment. Therefore, we believe that credit selection and deep, fundamental credit research/modeling is becoming increasingly important, and that avoiding defaults will be the biggest driver of alpha over the next 12–24 months.

■ We remain cautious on **European High Yield and European Loans**. Spreads have tightened significantly in 2023 as the supply of new issuance has been modest and markets have priced in a lower probability of recession over the next few months. While yields remain attractive on an absolute basis, they are less so than earlier in the year, and credit spreads are only modestly wider than the five-year historic median. While we expect spreads to remain rangebound over the short term amid a general lack of supply, we expect them to widen over the medium term.

■ Persistently high inflation and geopolitical challenges create a difficult environment for consumers, corporates, and central bankers to navigate, and the probability of tightening credit conditions and low economic growth remains high in our view. That said, we continue to look for signals to shift to a more risk-on stance as we expect bonds and loans to post modestly positive total returns over the next 12 months.

■ An earnings recession and/or increased interest costs will erode fundamentals, and we expect to see a pickup in defaults over the next 12 months, but this should be relatively modest given the lack of near-term maturities, strong issuer liquidity, and the market's generally high quality. Higher defaults in 2024 and 2025 are likely, particularly among lower-rated loan issuers.

■ In terms of positioning, we are running slightly above market neutral levels of risk. We see positive short-term technicals with reduced levels of risk in cyclical sectors, lower conviction credits, and credits that are sensitive to rising interest costs. We are also opportunistically adding carefully selected credits that have dislocated from fair value and present compelling relative-value opportunities. Ultimately, we think active management and accurate credit selection will be rewarded amid increased credit dispersion.

EMERGING MARKET DEBT

Outlook: Compelling opportunity set. Emerging market countries can benefit from changing global dynamics, and our hard-currency credit barbell—with a mix of government and corporate bonds—is well-suited for the current environment. We expect EM local-currency bonds to trade sideways, with country-level factors supporting lower yields. We remain cautious on EM currencies and maintain short positioning vs. long exposure in the U.S. dollar.

- **The EM landscape**—EM debt asset classes have been resilient this year, despite economic uncertainty and idiosyncratic headlines regarding individual countries. The global backdrop still matters, but accurate assessments of fundamentals, valuations, capital flows, and geopolitics will help active management deliver alpha in the quarters ahead.

- China's global impact—How will weaker Chinese growth, gradual stimulus, and the country's changing policy priorities affect emerging markets and the global economy?

- EM debt is not monolithic: changing global trade, liquidity, and growth dynamics have disparate impacts. Yet, those dislocations can be opportunities. Emerging markets can benefit from the shifting macro anchors (nearshoring/energy transition) as well as foreign direct and portfolio investments.

- Downside tail risks include a hard landing in China if its fiscal stimulus doesn't counter the negative shock to confidence, broad disappointment in global growth outcomes, concerns on declining global trade and investment, and unconstructive outcomes in the heavy election calendar in developed and emerging markets over the next six quarters.

- **EM Hard-Currency Government Bonds**—Over the last two quarters, EM hard-currency bonds outperformed when the market was strong and remained resilient in the face of headwinds. These bonds, particularly the high-yield segment, rallied considerably during that time. In August, however, prices softened amid slowing growth in China and Europe.

- Since August, EM hard-currency bonds have recovered somewhat, although the Fed's recent signaling of higher-for-longer interest rates has been a headwind. Slowdowns in China and, to a lesser extent, in Europe, are also headwinds, but the details of these slowdowns matter. Growth expectations for China are loosely centered around 5%; disappointing to some, but still high enough to boost global growth. India, Indonesia, and other emerging markets also have attractive

EM corporate high yield continues to trade well wide of its U.S. counterpart.

(Difference of U.S. high yield vs. EM corporate high yield: positive means U.S. high yield is wider)

	Value of difference (bps)	Date
High	278	3/14/2008
Low	(568)	10/29/2008
Average	(84)	
Current	(241)	9/29/2023

Source: PGIM Fixed Income

growth outlooks in the medium term. Given this dynamic, we believe that global growth will continue to support EM hard-currency bonds. However, short-term volatility could emerge as data remain inconclusive regarding the direction of the global economy.

- While the near-term context remains cloudy due to concerns over economic growth and volatility in U.S. markets, the hard-currency bonds continue to offer attractive carry opportunities. Current yields are over 6.2% and nominal yields-to-maturity are almost 9%, a significant cushion against near-term spread volatility or an increase in U.S. Treasury yields. With a duration near 6.5 years, it would take an increase of more than 90 bps in spreads or U.S. Treasury yields to erode that carry and result in negative total returns over a one-year period. Conversely, small amounts of spread tightening or Treasury yield compression would take returns into double digits.

- We don't foresee a significant positive catalyst in the near term, but EM debt has several medium-term tailwinds. Emerging market economies are set to materially outgrow those in the developed markets for the foreseeable future, historically an important driver of capital flows and returns.

- Spreads remain at historically high levels in many rating buckets, as well as relative to other growth-sensitive bond sectors, such as U.S. high-yield. Technical factors should continue to support the asset class as well: outflows have been persistent, but will eventually turn to inflows. Investors' positioning across their EM debt portfolios remains defensive, and cross-over allocators from other sectors have generally left the market. Recent government issuance has been limited, and targeted at segmented pockets of demand: sukuk, ESG-related, euro-denominated, and liability management exercises, including debt buybacks, have emerged recently. This has helped keep spreads in primary and secondary markets in check.

- We believe our barbell positioning is best suited for this environment. At the longer end of the barbell, we focus on BBB-rated and BB-rated government, quasi-sovereign, and corporate bonds. Our largest exposure remains in Mexican quasi-sovereign issuers, such as Mexico City Airport and Pemex. BB-rated issues remain the largest exposure by rating, given the attractive relative value in the government bonds of Ivory Coast, Brazil, Serbia, the Dominican Republic, and Morocco, as well as in quasi-sovereigns Ecopetrol in Colombia and lower-rated Eskom in South Africa. Within IG, we see opportunities in Indonesian government and quasi-sovereign bonds, euro-denominated Romanian government debt, as well as Middle Eastern exposure (UAE, Israel, Saudi Arabia and Qatar) given the countries' limited external vulnerabilities.

EM sovereign high yield also trade about 200 bps wide of U.S. high yield.

(Difference U.S. high yield vs EM sov. high yield: positive means U.S. high yield is wider)

	Value of difference (bps)	Date
High	1,151	12/15/2008
Low	(386)	3/7/2022
Average	39	
Current	(199)	9/29/2023

Source: PGIM Fixed Income

■ At the front end of the barbell, our B-rated and distressed exposure remains selective, focused on Angola, Gabon, and Senegal, with smaller overweight allocations in Ukraine, Pakistan, Zambia, and Mozambique. Although valuations of B-rated and distressed credits may appear attractive on the surface, we expect greater dispersion going forward (some countries still suffer from imbalances), which should present alpha opportunities from underweight allocations.

■ In the past few years, successive shocks, including COVID, supply chain disruption, Russia's invasion, and changing global trade have resulted in disperse performance, valuations, and defaults. For some distressed issuers, prices already reflect that downside risk, and those have upside potential. In other instances, the possible outcomes are binary. A persistently strong U.S. dollar could also impact some EM issuers' capacity to repay external debt.

■ Relatedly, we think the official sector and "the West" are keen to stay engaged with emerging markets. Multilateral organizations want to make sure that countries have a format to support restructurings and that all creditor parties can effectively engage. Emerging markets are not going away, and geopolitics are dynamic and shifting. EM countries can use these developments to their growth and stability advantages.

■ Another development we monitor is how commodity prices affect EM debt. Some emerging markets import and others export commodities. Metals and agricultural prices have their own dynamics, and energy prices, especially oil, are high right now. When we invest in EM commodity producers, we focus on low-cost producers. Current prices should not lead to broad balance of payment problems, but the situation warrants further monitoring. Although well-balanced for the moment, persistently high commodity prices could impact EM inflation. In addition, many EM commodity countries can benefit from the energy transition.

■ **EM Hard-Currency Corporate Bonds**—Spreads on the CEMBI Broad Diversified Index have tightened 16 bps year to date, but IG spreads have hardly moved and Chinese corporate spreads have widened. The strength of oil and gas firms as well as the recovery in Turkish bonds has supported recent performance, but that's not all. High-yield spreads have tightened across the board, and the lowest-rated categories have outperformed.

■We upgraded our outlook for EM Corporate bonds in Q3, and the high-yield segment outperformed with spread returns of close to 3%, despite the drag from Chinese real estate. As Q4 continues, we remain invested in EM corporate bonds. We continue to prefer BB-rated issuers and have opportunistically covered some underweight allocations in B-rated issuers. Risks in EM corporate high-yield bonds include credit stress related to higher funding costs and/or economic slowdowns. We expect EM corporate high-yield defaults (ex-Russia/China) to remain within their historical range of 3-4%, in line with developed markets.

■ Issuance has picked up in Central and Eastern Europe, the Middle East, and Africa (CEEMEA) as well as in Latin America. But expected total net financing for the full year represents a decline of more than $100 billion, which offsets the negative effect of capital outflows from the asset class. New issues have met with strong demand, and we have selectively participated in primary offerings, such as those from Brazilian petrochemical producer Braskem (7-year, BBB-rated bonds priced at a 8.75% yield to maturity) and Brazilian food processor Minerva.

■ Elsewhere, we still favor issuers in economically stable countries, such as Mexico, India, and Israel. Spreads of about 233 bps for BBB-rated issuers and of 370 bps for BB-rated issuers continues to look attractive compared to DM spreads. We expect the EM-DM spread differential to compress going forward. Near-term macroeconomic risks remain, but the medium-term outlook appears favorable.

■ **EM Local-Currency Government Bonds**—In Q3, the yield on the EM local-currency GBI-EM index rose 20 bps, giving up almost one-third of its decline in the first half of the year. The U.S. Treasury yield curve bear-steeped during the quarter, i.e. long-dated yields rose more than short-dated ones, and most EM yield curves also steepened.

■ However, yield curves in Chile, Brazil, Poland, and Peru steepened because their central banks started to cut rates after being on hold for nine to twelve months. We expect these four central banks to continue their cutting cycles, albeit cautiously. Towards the end of the year, the Czech National Bank and the National Bank of Hungary are likely to cut rates for the first time. In Mexico, Colombia, and South Africa, monetary easing seems to be delayed until Q1 2024, despite high real rates. With the exception of China, we don't expect rate cuts in Asia.

■ In early Q4, higher U.S. interest rates, the strong U.S. dollar, and rising energy prices are testing local-currency EM government bonds. Considering that context, we prefer regional relative value over directional calls.

■ We're positioned with overweight allocations to Asia, underweights to CEEMEA, and neutral positioning in Latin America. Due to concerns over negative roll and fiscal conditions, we expect medium-term issues (5 to 7 years) to outperform short-dated and long-dated segments. Beyond the 7-year horizon, we have a bias towards steeper local-currency yield curves.

■ If the Fed's rate hikes have ended, or even with an additional Fed hike in November or December, we expect EM local-currency yields to trade sideways from current levels: country-level factors should support lower yields, while global macroeconomic forces push yields higher. But given the level of yields, carry opportunities can still contribute to positive total returns within the local currency bond market.

■ **EM Currencies**—At the start of Q3, we held a high-conviction, cautious attitude towards EM currencies. Our portfolios were positioned short EM currencies, and we increased those short positions during the quarter, particularly in European EM currencies. We were mainly underweight Asian EM currencies and, to a lesser extent, European and Latin American EM currencies.

■ Our view was based on the continued slowdown in global economic growth, China's seeming unwillingness to introduce impactful stimulus, high and rising real interest rates that weigh on growth, and fragile technical factors (i.e., historically heavy positioning in high-carry EM currencies). We also thought that expected rate cuts in certain countries, such as Brazil and Chile, might become headwinds for the respective currencies.

■ As Q4 commences, we're sticking with our cautious view and maintaining short positions in EM currencies. We think that U.S.-dollar strength can broaden if China's stimulus doesn't prove impactful. We continue to worry about lackluster growth in Europe. Historically, the U.S. dollar benefits when U.S. growth outperforms Europe and China.

■ By currency exposure, our largest underweights remain in Asian EM currencies, followed by Europe and Latin America. However, we have shrunk our portfolios' Asian currency underweights and increased our underweights to Europe and Latin America.

MUNICIPAL BONDS

Outlook: While near-term challenges lie ahead, we believe there is ample room for munis to perform over the medium term.

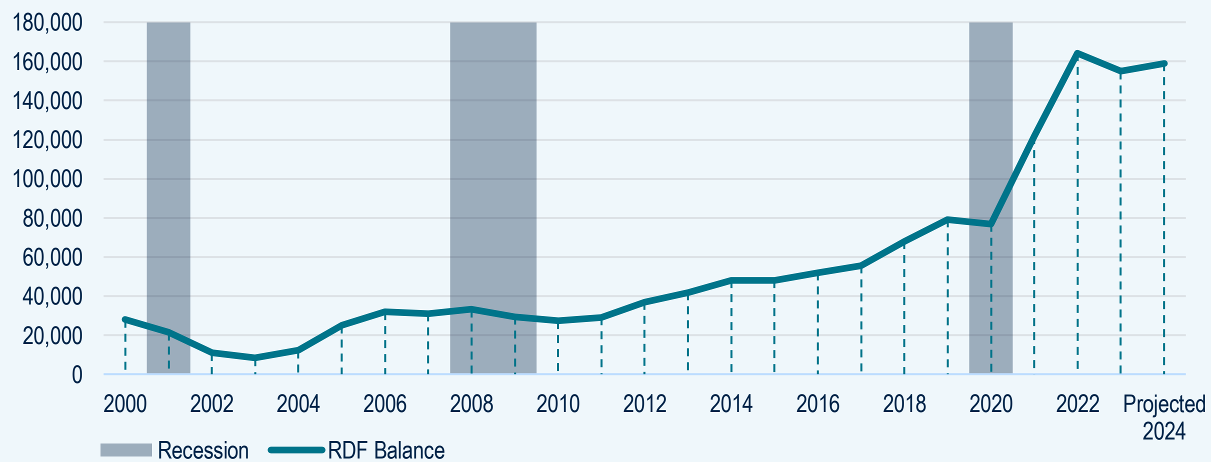
■ Q3 marked the only second consecutive summer of underperformance in 20 years despite this summer's favorable seasonal technical picture. This was due to persistent outflows, which followed a backdrop of higher Treasury rates. With continued uncertainty in rates, less favorable technicals are likely to weigh on the market as we move into the Fall.

■ Additional sources of rate volatility in the short-term include higher Treasury supply – in light of potential U.S. budgetary allocations (e.g., Ukraine support, emergency relief, etc.), the automotive strike, upcoming elections, etc.

■ Uncertainty, driven by the Fed's aggressive hiking regime led to outflows and higher yields in recent quarters. However, as investors adjust to the Fed's "higher for longer" messaging against the backdrop of resilient economic data (e.g., a still robust labor market and resilient economic growth) we are optimistic about a reversal in outflows.

■ Further out, we are constructive on munis. In relative terms, muni yields remain wider than their pre-lift off tights and underlying fundamentals hold strong. Spreads remain relatively wide, particularly for select high yield sectors. Additionally, credit quality remains healthy following a period of strong tax collections and rising rainy-day funds. Airports, toll roads, and pre-pay gas are sectors that have maintained their fundamental integrity, and we believe long-term opportunities exist in these segments. However, we remain cautious around cyclical credits as we head into a slower growing economic environment.

The vast increase in states' rainy-day balances underscores the strength of their credit quality. ($ millions)



Source: National Bureau of Economic Research and National Association of State Budget Officers

PGIM FIXED INCOME

SECTION 5

SUMMARIES

05

SUMMARY OF OUTLOOKS & ASSET CLASS VIEWS

This summary consists of our short- and long-term (1-yr) sector outlooks. The latter is based on a scale of 1-10 and indicates our expectation for the sector's excess return relative to its broader, regional fixed income market (which is assigned its own 1-10 market score in the box to the right). A sector score of 1 represents an expectation for it to vastly underperform the market, and 10 indicates an expectation for the sector to vastly outperform the market.[1]

NEGATIVE VIEW

POSITIVE VIEW

Market Scores	
U.S.	
Europe	
EM	

Sector	Short-term Outlook	Long-term (1-yr) Outlook[1]			
DM Rates	Higher for longer. The recent, multi-year highs for long-term interest rates in the U.S., the UK, and Europe were spurred by central banks' higher-for-longer messaging. Yet, economic growth and inflation appear to be moderating, signaling the likely end of the respective rate-hiking cycles. Higher JGB yields may foreshadow a rate hike in early 2024.	U.S. Germany Japan	  		
Agency MBS	Value remains, rates to set tone. The end of the Fed's hiking cycle could bring short-term volatility as future policy moves remain data dependent. Once the Fed implements a prolonged pause or fine-tuning rate cuts, volatility should subside and give way to our constructive long-term view. We still favor specified pools over TBAs.	Agency MBS			
Securitized Credit	Senior tranches remain attractive. We continue to favor senior tranches given the potential for attractive risk-adjusted returns and robust structural credit protection in an uncertain macroeconomic backdrop. Increasing bank regulation continues to tighten financial conditions for CRE, corporate, and some consumer segments—contributing to persistently wider spreads in certain asset classes. Although most credit curves remain steep, we find that the valuation of many mezzanine tranches does not fully price in the economic uncertainty and potential for larger tail events. While we've seen a justified rally in RMBS mezz, we remain cautious on mezzanine tranches in CRE, CLOs, and some unsecured consumer deals.	CMBS CLOs	 	ABS	
Global IG Corporates	Range bound spread conditions. The factors referenced in our economic and market outlooks imply IG spreads may remain in their current range through year end. Pockets of value exist among banks, cyclical credits, and utilities. Conditions also underscore the importance of security selection and relative-value trades. Macroeconomic and company risks to our base case also guide our positioning.	U.S. Corps. 1-10 U.S. Corps. 10+	 	European Corps. 1-5 European Corps. 5+	 
Global Leveraged Finance	Cautious longer term due to economic slowdown risks. Technicals remain supportive over the shorter term, and we are looking for signals to shift to a more risk-on stance. In the U.S., we are looking to add higher-quality, short-duration positions on pullbacks. Increased credit dispersion adds to alpha-generating opportunities.	U.S. High Yield 1-5 U.S. High Yield 5+ U.S. Leveraged Loans	  	Euro High Yield BB Euro High Yield B and below Euro Leveraged Loans	  
EM Debt	Compelling opportunity set. Emerging market countries can benefit from changing global dynamics, and our hard-currency credit barbell—with a mix of government and corporate bonds—is well-suited for the current environment. We expect EM local-currency bonds to trade sideways, with country-level factors supporting lower yields. We remain cautious on EM currencies and maintain short positioning vs. long exposure in the U.S. dollar.	Sov. Hard Currency IG Sov. Hard Currency HY Local rates[2]	  	EMFX[2] Corps. IG Corps. HY	  
Municipal Bonds	While near-term challenges lie ahead, we believe there is ample room for munis to perform over the medium term.	Tax-Exempt[2]		Taxable	

[1] The positioning in a respective portfolio may not be identical to the long-term ratings. The ratings and information herein is for comparison purposes.
[2] The scores on the indicated asset classes are on an absolute basis; i.e., the expectations for risk-adjusted market returns are embedded within the asset class specific returns.

SUMMARY OF MARKET PERFORMANCE

Sector		Subsector	Spread change (bps) Q3	SOFR OAS 9/30/23
CMBS	CMBS: Conduit AAA	First-pay 10-year	-10	168
	CMBS: Conduit BBB-	BBB-	1	961
	CMBS: SASB – Senior	AAA	-10	200
	CMBS: SASB - Mezz	BBB-	-20	440
	CMBS: Agency Multifamily	Senior	11	102
Non-Agency RMBS	Legacy	RPL Senior	-13	159
	Legacy	'06/'07 Alt-A	5	285
	GSE Risk-Sharing	M2	-55	250
CLOs	CLO 2.0	AAA	-10	165
	CLO 2.0	AA	-35	225
	CLO 2.0	BBB	-125	400
ABS	Unsecured Consumer Loan ABS	Seniors	-27	151
	Unsecured Consumer Loan ABS	Class B	-42	196
	Refi Private Student Loan	Seniors	-2	181
	Credit Card ABS	AAA	-4	74

Source: PGIM Fixed Income.

	Total Return (%)		Spread Change (bps)		OAS (bps)
	Q3	YTD	Q3	YTD	9/30/23
U.S. Corps.	-3.09	0.02	-2	-9	121
European Corps.	0.34	2.53	-10	-14	153

Source: Bloomberg. Represents data for the Bloomberg U.S. Corporate Bond Index and the Bloomberg European Corporate Bond Index (unhedged).

	Total return (%)		Spread / yield change (bps)		OAS (bps)/ yield %
	Q3	YTD	Q3	YTD	9/30/23
EM Hard Currency	-2.23	1.76	-2	-22	431
EM Local (Hedged)	-1.18	3.12	+76	-10	6.76
EMFX	-0.92	3.00	+123	+117	8.49
EM Corps.	-0.26	3.38	-15	-17	329

Source: J.P. Morgan.

	Total return (%)		Spread change (bps)		OAS/ DM (bps)
	Q3	YTD	Q3	YTD	9/30/23
U.S. High Yield	0.46	5.86	4	-74	394
Euro High Yield	1.88	6.76	-9	-65	447
U.S. Leveraged Loans	3.37	9.91	-30	-101	551
Euro Leveraged Loans	4.10	11.66	-74	-189	521

Source: ICE BofAML and Credit Suisse.

	Total return (%)	
	Q3	YTD
High Grade Tax-exempt	-3.95	-1.38
High Yield Tax-exempt	-4.24	0
Long Taxable Munis Agg Eligible	-5.61	-0.15

Source: Bloomberg. Represents the Bloomberg Municipal Bond Indices.

Past performance is not a guarantee or a reliable indicator of future results. See Notice for important disclosures. All investments involve risk, including possible loss of capital. An investment cannot be made directly in an index. All data as of September 30, 2023.

UNITED STATES—POTENTIAL SCENARIOS 12 MONTHS OUT

Scenarios	Prior Probability	Q4 Probability
Weakflation Tight monetary, fiscal, and credit conditions slow cyclical momentum to a below-trend pace of real GDP growth of between 1.0-1.5%. Inflation descends to 2.5-3% - somewhat higher than the 2% target – due to sticky services inflation and structural forces. Still, the downward movement of inflation – plus below-trend growth – allows the Fed to “fine-tune” policy rates with a 50 basis points easing next year. Risk assets perform reasonably well, though elevated inflation keep yields elevated.	35%	35%
Recession The labor market runs out of steam, denting income and spending just when the combined weight of tight monetary and credit conditions begins to mount. Unemployment rises and inflation falls rapidly, leading to a substantial Fed easing cycle starting in Q4 23. U.S. rates rally and risky assets correct lower.	25%	25%
Soft Landing Growth remains solid in the 1.5-2.2% range, while inflation converges toward the 2% PCE target. Labor supply outpaces demand but consumption remains robust enough to power growth. Fed cuts rates to 3%, creating a favorable environment for interest rates and risk assets.	25%	15%
Nominal GDP boom Growth is moderately above trend while inflation reaccelerates due to energy market volatility and structural labor imbalance in the services sector. Solid labor market supports consumer demand, while above-target inflation means the Fed raises rates by another ~100bps. Front-end repricing further inverts curve with widespread losses across fixed income.	10%	15%
Roaring 2020s U.S. growth accelerates above trend, supported by high productivity growth as the dividend of public investments and diffusion of technology during the pandemic. Inflation drops rapidly as supply shocks, rents, and the labor market ease, and the Fed can eventually ease policy. Risky assets and rates rally.	5%	10%

EURO AREA—POTENTIAL SCENARIOS 12 MONTHS OUT

Scenarios	Prior Probability	Q4 Probability
Weakflation Growth slows to close to zero in Q4 2023 and inflation remains well above target. Tighter financial conditions weigh on activity, adding to supply constraints related to the war and the associated energy shock. ECB hikes to c.3.75% in 2023 hurting growth and corporate profits. Risk assets perform reasonably well and rates remain elevated.	40%	40%
Recession Growth weakens due to weaker global demand, tighter credit conditions and the cost of living crisis. Inflation falls as real incomes drop, supply chains ease, and energy supply shocks dissipate, allowing ECB to cut rates in 2023. Financial assets fall before recovering. Rates rally.	25%	25%
Soft Landing Growth and inflation moderate towards EA trend growth and 2% headline inflation target. Limited spillovers from China, a resilient U.S. economy, and orderly normalisation of supply chains disruptions. Lower inflation allows the ECB to pare back peak rate to ~3%. Favorable environment for long-term interest rates and risk assets.	15%	10%
Nominal GDP boom Growth remains resilient while inflation stays high. The ECB needs to raise rates further in 2023 in order to bring inflation down. Rates curve flattens further, driven by the front end. Risky assets resilient.	10%	15%
Stagflation Growth weakens sharply and inflation remains very high. Negative shocks such as a credit crunch, higher conflict tension, supply chains strains, and EA fragmentation/debt dynamics risks materialize. ECB tightens further in 2023, exacerbating the recession. Rates sell off and risk assets perform poorly.	10%	10%

CHINA—POTENTIAL SCENARIOS 12 MONTHS OUT

Scenarios	Prior Probability	Q4 Probability
Soft landing / Moderation Despite only moderate re-opening momentum and medium term growth challenges, China stimulus helps deliver consensus growth expectations around 4.5-5.5% and inflation around 1.5%. Real estate woes and COVID risks are contained. China-linked assets rally.	50%	45%
Strong nominal GDP Growth surprises to the upside and inflation rises above trend, boosted by China policy stimulus, consumer demand linked to the re-opening, and a robust global economy. Authorities start considering policy withdrawal. China-linked assets rally.	25%	20%
Weakflation Growth weakens and inflation rises above 2%. Higher commodity prices and a weaker RMB push inflation higher. Policy stimulus is not enough to offset the headwinds of real estate and weaker exports. China-linked assets weaken.	15%	10%
Recession Growth continues to weaken rapidly due to weaker demand for Chinese exports (notably from the U.S. and the EA) and structural headwinds to growth (e.g. property sector fails to bottom out). Policy stimulus proves insufficient. Inflationary pressures remain minimal. China-linked assets weaken sharply.	5%	20%
Roaring 2020s Growth surprises to the upside and inflation stays low. Property stabilization, and resultant pickup in consumer confidence and private investment support growth, but inflation remains low as total factor productivity rises as a result of infrastructure investment and other targeted supply policies. China-linked assets rally strongly.	5%	5%

IMPORTANT INFORMATION

Source of data (unless otherwise noted): PGIM Fixed Income and Bloomberg as of October 2023.

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INDEX DESCRIPTIONS

U.S. INVESTMENT GRADE CORPORATE BONDS

Bloomberg U.S. Corporate Bond Index: The Bloomberg U.S. Investment Grade Corporate Bond Index covers U.S.D-denominated, investment-grade, fixed-rate or step up, taxable securities sold by industrial, utility and financial issuers. It includes publicly issued U.S. corporate and foreign debentures and secured notes that meet specified maturity, liquidity, and quality requirements. Securities included in the index must have at least 1 year until final maturity and be rated investment-grade (Baa3/ BBB-/BBB-) or better using the middle rating of Moody's, S&P, and Fitch.

EUROPEAN INVESTMENT GRADE CORPORATE BONDS

Bloomberg European Corporate Bond Index (unhedged): The Bloomberg Euro-Aggregate: Corporates bond Index is a rules-based benchmark measuring investment grade, EUR denominated, fixed rate, and corporate only. Only bonds with a maturity of 1 year and above are eligible.

U.S. HIGH YIELD BONDS

ICE BofAML U.S. High Yield Index: The ICE BofAML U.S. High Yield Index covers US dollar denominated below investment grade corporate debt publicly issued in the US domestic market. Qualifying securities must have a below investment grade rating (based on an average of Moody's, S&P and Fitch), at least 18 months to final maturity at the time of issuance, and at least one year remaining term to final maturity as of the rebalancing date.

EUROPEAN HIGH YIELD BONDS

ICE BofA European Currency High Yield Index: This data represents the ICE BofA Euro High Yield Index value, which tracks the performance of Euro denominated below investment grade corporate debt publicly issued in the euro domestic or eurobond markets. Qualifying securities must have a below investment grade rating (based on an average of Moody's, S&P, and Fitch). Qualifying securities must have at least one year remaining term to maturity, a fixed coupon schedule, and a minimum amount outstanding of €100 M. ICE Data Indices, LLC, used with permission. ICE DATA INDICES, LLC IS LICENSING THE ICE DATA INDICES AND RELATED DATA "AS IS," MAKES NO WARRANTIES REGARDING SAME, DOES NOT GUARANTEE THE SUITABILITY, QUALITY, ACCURACY, TIMELINESS, AND/OR COMPLETENESS OF THE ICE DATA INDICES OR ANY DATA INCLUDED IN, RELATED TO, OR DERIVED THEREFROM, ASSUMES NO LIABILITY IN CONNECTION WITH THEIR USE, AND DOES NOT SPONSOR, ENDORSE, OR RECOMMEND PGIM FIXED INCOME OR ANY OF ITS PRODUCTS OR SERVICES.

U.S. SENIOR SECURED LOANS

Credit Suisse Leveraged Loan Index: The Credit Suisse Leveraged Loan Index is a representative, unmanaged index of tradable, U.S. dollar denominated floating rate senior secured loans and is designed to mirror the investable universe of the U.S. dollar denominated leveraged loan market. The Index return does not reflect the impact of principal repayments in the current month.

EUROPEAN SENIOR SECURED LOANS

Credit Suisse Western European Leveraged Loan Index: All Denominations EUR hedged. The Index is a representative, unmanaged index of tradable, floating rate senior secured loans designed to mirror the investable universe of the European leveraged loan market. The Index return does not reflect the impact of principal repayments in the current month.

EMERGING MARKETS U.S.D SOVEREIGN DEBT:

J.P. Morgan Emerging Markets Bond Index Global Diversified: The Emerging Markets Bond Index Global Diversified (EMBI Global) tracks total returns for U.S.D-denominated debt instruments issued by emerging market sovereign and quasi-sovereign entities: Brady bonds, loans, and Eurobonds. It limits the weights of those index countries with larger debt stocks by only including specified portions of these countries' eligible current face amounts of debt outstanding. To be deemed an emerging market by the EMBI Global Diversified Index, a country must be rated Baa1/BBB+ or below by Moody's/S&P rating agencies. Information has been obtained from sources believed to be reliable, but J.P. Morgan does not warrant its completeness or accuracy. The Index is used with permission. The Index may not be copied, used, or distributed without J.P. Morgan's prior written approval. Copyright 2020, J.P. Morgan Chase & Co. All rights reserved.

EMERGING MARKETS LOCAL DEBT (UNHEDGED)

J.P. Morgan Government Bond Index-Emerging Markets Global Diversified Index: The Government Bond Index-Emerging Markets Global Diversified Index (GBI-EM Global) tracks total returns for local currency bonds issued by emerging market governments.

EMERGING MARKETS CORPORATE BONDS

J.P. Morgan Corporate Emerging Markets Bond Index Broad Diversified: The CEMBI tracks total returns of U.S. dollar-denominated debt instruments issued by corporate entities in Emerging Markets countries.

EMERGING MARKETS CURRENCIES

J.P. Morgan Emerging Local Markets Index Plus: The JP Morgan Emerging Local Markets Index Plus (JPM ELMI+) tracks total returns for local currency–denominated money market instruments.

MUNICIPAL BONDS

Bloomberg Municipal Bond Indices: The index covers the U.S.D-denominated long-term tax-exempt bond market. The index has four main sectors: state and local general obligation bonds, revenue bonds, insured bonds, and pre-refunded bonds. The bonds must be fixed-rate or step ups, have a dated date after Dec. 13, 1990, and must be at least 1 year from their maturity date. Non-credit enhanced bonds (municipal debt without a guarantee) must be rated investment grade (Baa3/BBB-/BBB- or better) by the middle rating of Moody's, S&P, and Fitch.

U.S. TREASURY BONDS

Bloomberg U.S. Treasury Bond Index: The Bloomberg U.S. Treasury Index measures U.S. dollar-denominated, fixed-rate, nominal debt issued by the U.S. Treasury. Treasury bills are excluded by the maturity constraint but are part of a separate Short Treasury Index.

MORTGAGE BACKED SECURITIES

Bloomberg U.S. MBS—Agency Fixed Rate Index: The Bloomberg U.S. Mortgage Backed Securities (MBS) Index tracks agency mortgage backed pass-through securities (both fixed-rate and hybrid ARM) guaranteed by Ginnie Mae (GNMA), Fannie Mae (FNMA), and Freddie Mac (FHLMC). The index is constructed by grouping individual TBA-deliverable MBS pools into aggregates or generics based on program, coupon and vintage.

COMMERCIAL MORTGAGE-BACKED SECURITIES

Bloomberg CMBS: ERISA Eligible Index: The index measures the performance of investment-grade commercial mortgage-backed securities, which are classes of securities that represent interests in pools of commercial mortgages. The index includes only CMBS that are Employee Retirement Income Security Act of 1974, which will deem ERISA eligible the certificates with the first priority of principal repayment, as long as certain conditions are met, including the requirement that the certificates be rated in one of the three highest rating categories by Fitch, Inc., Moody's Investors Services or Standard & Poor's.

U.S. AGGREGATE BOND INDEX

Bloomberg U.S. Aggregate Bond Index: The Bloomberg U.S. Aggregate Index covers the U.S.D-denominated, investment-grade, fixed-rate or step up, taxable bond market of SEC-registered securities and includes bonds from the Treasury, Government-Related, Corporate, MBS (agency fixed-rate and hybrid ARM passthroughs), ABS, and CMBS sectors. Securities included in the index must have at least 1 year until final maturity and be rated investment-grade (Baa3/ BBB-/BBB-) or better using the middle rating of Moody's, S&P, and Fitch.

The **S&P 500®** is widely regarded as the best single gauge of large-cap U.S. equities. There is over U.S.D 9.9 trillion indexed or benchmarked to the index, with indexed assets comprising approximately U.S.D 3.4 trillion of this total. The index includes 500 leading companies and captures approximately 80% coverage of available market capitalization.

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PGIMJP102700