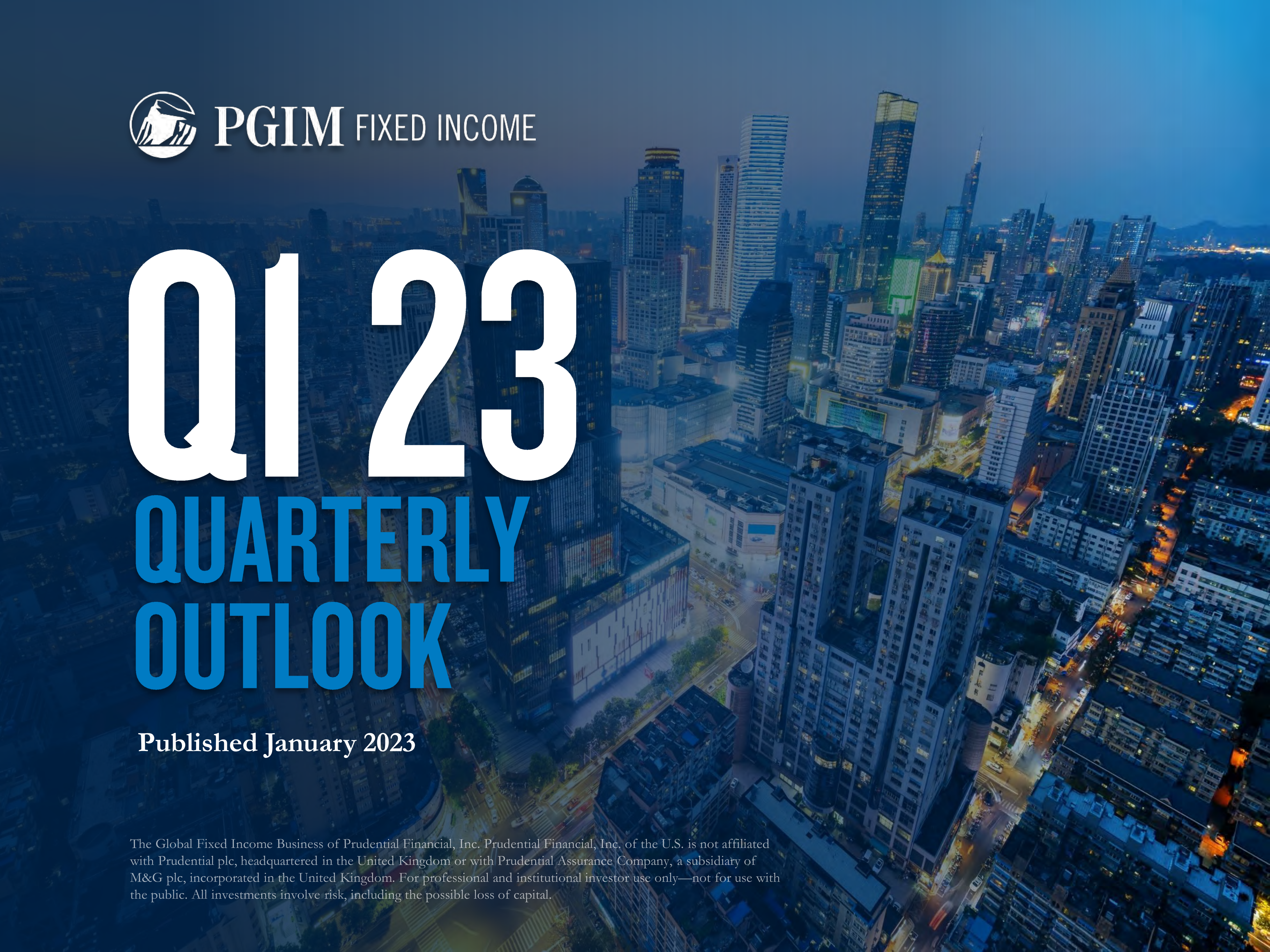


PGIM FIXED INCOME

Q1 23 QUARTERLY OUTLOOK

Published January 2023

WHATS INSIDE?

Select a section to jump ahead.

	Total Returns (%)				
Individual FI Sectors	Q4 22	2022	2021	2020	2019
EM Debt Hard Currency	8.11	-17.78	-1.80	5.26	15.04
EM Currencies	7.26	-7.14	-3.09	1.73	5.2
U.S. Long IG Corporates	5.40	-25.62	-4.65	13.94	23.9
European High Yield Bonds	4.70	-11.13	3.32	2.9	11.4
U.S. High Yield Bonds	4.17	-11.19	5.36	6.2	14.4
Municipal Bonds	4.10	-8.53	1.52	5.21	7.54
U.S. IG Corporate Bonds	3.63	-15.76	-1.04	9.89	14.5
European Leveraged Loans	3.42	-3.36	4.87	2.4	4.38
EM Local (Hedged)	2.95	-8.85	-5.52	6.07	9.14
U.S. Leveraged Loans	2.33	-1.06	5.40	2.8	8.17
Mortgage-Backed (Agency)	2.14	-11.81	-1.04	3.87	6.35
European IG Corporate	1.09	-13.65	-0.97	2.77	6.24
CMBS	1.02	-10.91	-0.64	8.11	8.29
U.S. Treasuries	0.72	-12.46	-2.32	8.00	6.86
Long U.S. Treasuries	-0.59	-29.26	-1.13	17.7	14.8
Multi-Sector					
Global Agg. (Unhedged)	4.55	-16.25	-1.54	9.2	6.84
U.S. Aggregate	1.87	-13.01	-1.39	7.51	8.72
Global Agg. Hedged	0.99	-11.22	-0.15	5.58	8.22
Euro Aggregate (Unhedged)	-1.21	-17.18	-4.71	4.05	5.98
Yen Aggregate	-1.90	-5.30	-2.85	-0.8	1.64
Other Sectors					
S&P 500 Index	7.56	-18.11	28.71	18.4	32.6
3-Month SOFR	0.92	1.66	0.03	-1.5	-0.85
U.S. Dollar (DXY Index)	-7.67	8.21	6.37	-6.69	1.35

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 December 31, 2022. An investment cannot be made directly in an index.

PGIM FIXED INCOME

SECTION 1

KEY CONVICTIONS & INVESTMENT THEMES

01

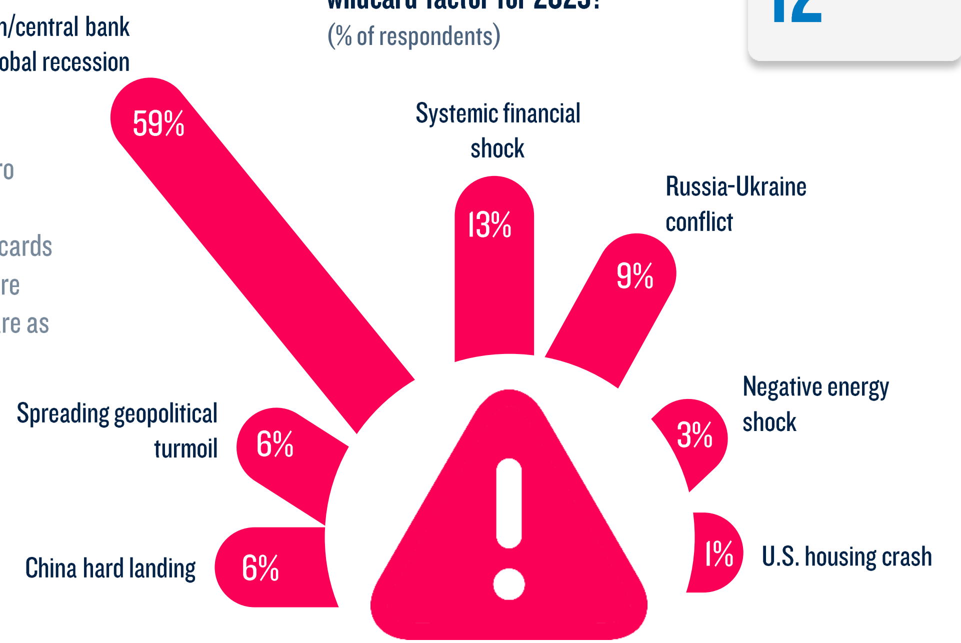
1) Moderation/recession supplants inflation. Signs of moderating global inflation are clearly positive. Yet, developed market central banks will likely continue tightening policy given the potential damage from lingering, elevated price increases. Hence, a global economic moderation/recession—rather than inflation—stands as one of the pre-eminent negative risks in early 2023.

2) The markets vs. the central banks. Markets see a path lined by further easing in inflation *and* benign economic conditions as they continue to price in cuts in monetary policy rates later this year. The markets' opposition to the central banks is a dangerous game that will contribute to periods of heightened volatility, regardless of which player blinks first.

3) Grasping yield opportunities. While 2023's potential outcomes remain expansive (see the accompanying infographic), the opportunity to secure yield is readily apparent after last year's repricing in interest rates and credit spreads. The breadth of potential outcomes will also generate greater dispersion in corporate results, credit spreads, and alpha relative to beta. Thus, accurate sector rotation, bottom-up credit research, and relative-value assessment should outperform indiscriminate market exposure given the volatility to come.

4) Exploiting regional divergences. Investing across regions with different fundamental profiles brings opportunities in varying asset classes. For example, the contrasting macro/policy cycles in Europe and the U.S. carries broad implications for government debt. Meanwhile, China's policy u-turns on COVID and the property sector present ramifications for Asia, EM asset classes, and commodities, amongst other areas.

Our first-quarter internal macro survey sought opinions about negative risks and bullish wildcards in 2023. The answers from more than 275 global respondents are as follows:



What do you think is the biggest risk to the market in 2023?* (% of respondents)

*2% responded other

PGIM FIXED INCOME

SECTION 2

BOND MARKET OUTLOOK

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

02

"GAME ON" FOR BONDS

Early 2023 is now just another year beginning with an overhang of uncertainty and a preponderance of economic negatives—and if you doubt that, see the economic outlook that follows. But do not despair. There is one **dividend of 2022's brutal bond bear market: the** elevated level of yields.

As we discuss in our recent bond blog entry, yield, of course, is the lynchpin for bond returns. The markets' newly (and quickly) rediscovered high yield levels have effectively turned the clock back two decades, setting fixed income up for strong returns over the long term, notwithstanding periods of volatility to come (Figure 1).[1]

A dispiriting array of incredibly weighty issues undoubtedly pends as 2023 get underway: hard economic landing? War in Ukraine and European gas prices? ECB quantitative tightening? China's COVID reopening? These will keep pundits guessing and may create bouts of volatility. But 2022's selloff in government bonds and widening in credit spreads lifted all-in yields into lofty territory (Figure 2). As a result, 2023's volatility will likely be no more than speed bumps in the start of a bull phase as the newly re-elevated income stream ultimately powers bond returns through these events.

Headwinds Shifting to Tailwinds

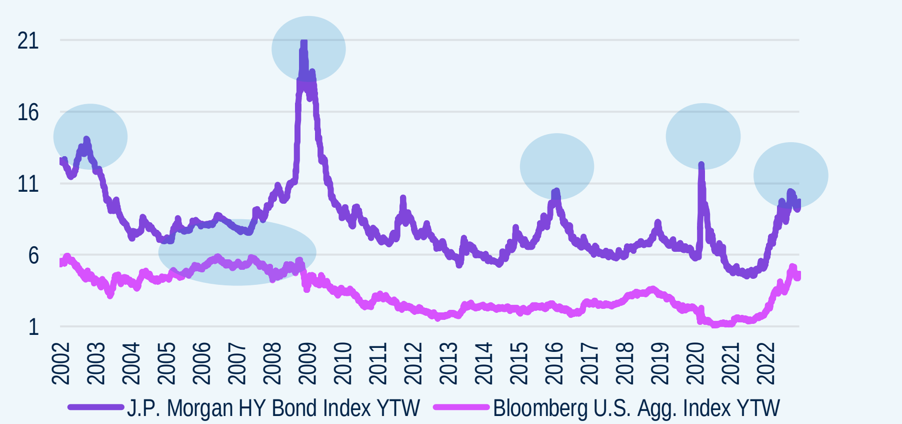
While cautiousness about the outlook is certainly warranted, it's worth considering that the confluence of factors that crushed fixed income returns over the last several quarters—low starting yields, strong growth, high inflation, central bank rate hikes, and energy supply concerns—are arguably turning into tailwinds. Whereas 2022 started with very little yield to cushion against adversity, yields are now at historically respectable levels.

Figure 1
Yield is destiny—higher yields signal higher returns ahead, a la 2002. In contrast to the last decade of 1.27% returns, with the broad investment grade market yield back up at 4.68%, prospects for bond returns in the decade ahead are also looking up.

Periods	1992-2002	2002-2012	2012-2022	2022-
Starting yield	6.76%	4.38%	1.75%	4.68%
Aggregate return	7.45%	5.29%	1.27%	?

Source: PGIM Fixed Income. [1] "Yield is Destiny; Bonds are Back," The Bond Blog, PGIM Fixed Income, December 20, 2022.

Figure 2
Yields have swung from one extreme to the other with U.S. below investment-grade corporate yields back up at levels seen during recessions or extreme market stress. IG yields are back to levels only seen during the mid-2000s housing/lending boom and the 2002/2003 recession/corporate accounting crisis (%).



Source: PGIM Fixed Income and Bloomberg

The incredibly strong growth in the first half of 2022 has given way to a moderate pace. Meanwhile, inflation prints are finally returning to earth with both concurrent and leading indicators promising lower inflation numbers ahead (Figures 3 and 4). In contrast to last year, not only have most DM central banks notched substantial rates hikes, but markets have priced in more hikes to come—e.g., peak pricing for the Fed funds and the ECB's deposit rate are around 5% and 3.5%, respectively (Figure 5). The shift in fundamentals to bond positive suggests that the taper-tantrum type of damage to the rates and spreads markets is largely behind us.

So Goes Rates, So Goes Risk Appetite

Although growth momentum is clearly slowing, this may prove an ironic positive for credit products. The 2022 rout in spreads and equities, just like the taper tantrum in 2013 or the rout of 2018, revealed that these days, it seems that the biggest threat to risk appetite is simply the fear of monetary policy tightening, higher interest rates, and the negative spillover into credit spread widening. Just as those bearish cycles were followed by strong spread market performance once rates stabilized, during the recent bear market, spreads similarly tightened whenever the rates' selloff abated (never mind the prevalence of hard-landing headlines). Therefore, as the DM central banks bend their course, signaling the slowing and the ending of their rate hike cycles, spread products should perform well as central banks' focus turns from fighting inflation to extending the expansion.

Figure 3
High energy prices, an important driver of the inflation cycle, are well off their peak levels.

Figure 4
Meanwhile, our inflation pressure indicator is signaling further moderation in U.S. core prices.
(Left; Difference in Z-score. Right; 6-Month, %SAAR; Latest Data: December

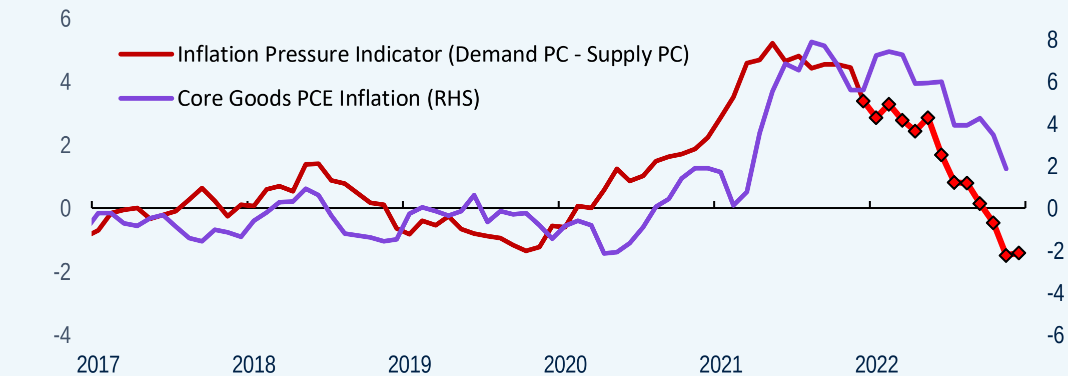
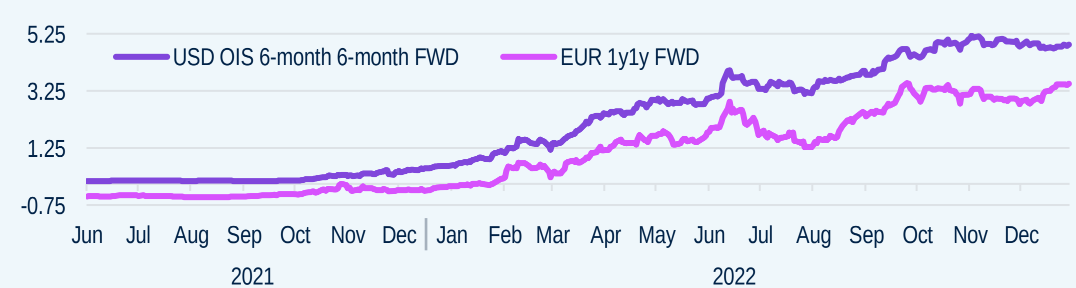


Figure 5
After surging 4-5 percentage points from their COVID lows, peak expectations for interest-rate hikes may finally be in sight. (%)



Source: PGIM Fixed Income and Bloomberg

Rate Outlook: A Higher Floor?

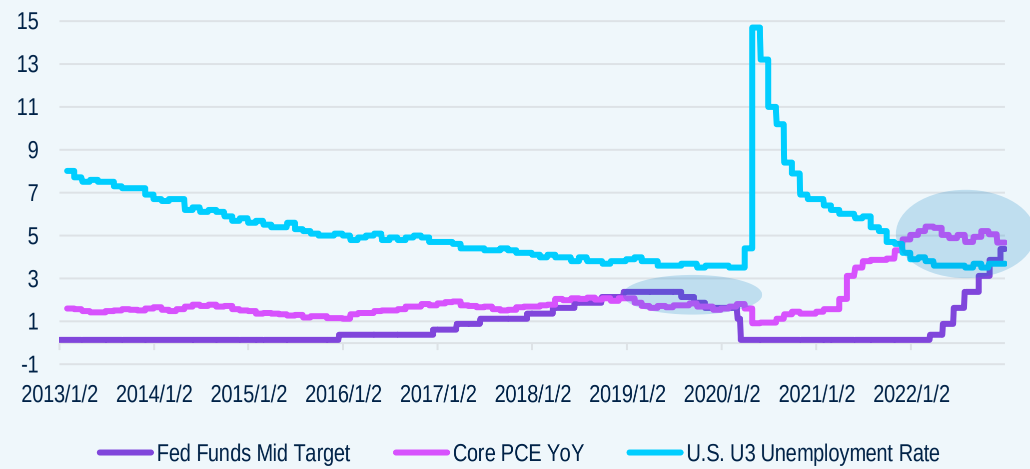
In contrast to most cycles where the bear market increase in rates is followed by a quick, round-trip drop, this cycle may be different, ending with an interest-rate plateau, rather than the typical up-and-down pattern.

The most salient reasons for this cycle's difference: with unemployment low and inflation high, central bankers will be reticent to ease monetary conditions, fearing a resurgence of inflation (Figure 6). A second reason: rates may not need to fall. In the wake of the Global Financial Crisis (GFC), financial policies have been prudent, leaving this cycle absent of the kinds of asset bubbles and overleveraging that have historically necessitated big drops in rates.

The End of R&R

As economies lumbered through the GFC and the consequent doldrums, the Reinhart-Rogoff study of the day highlighted how banking crises have historically been followed by several years of economic malaise where central banks keep rates low to facilitate an economic recapitalization.[2] Pro-cyclical tightening in the U.S. and in Europe (particularly in the latter after the 2012 sovereign debt crisis) likely extended these periods of subdued economic growth. But now, the bad debt overhangs are gone, financial institutions are well capitalized, and pro-cyclical fiscal tightening is behind us. As a result, DM economic expansions may continue—even with

Figure 6
Low inflation in 2019 afforded the Fed the latitude to quickly cut rates in response to moderating growth. This time, however, high inflation, upward wage pressures, and low unemployment will keep central bankers wary of cutting rates too soon, lest they allow a re-acceleration of inflation. (%)



Source: PGIM Fixed Income and Bloomberg. [2] Reinhart, Carmen M. and Rogoff, Kenneth S., "This Time is Different Eight Centuries of Financial Folly," Princeton university Press, 2009.

SPOTLIGHT — BoJ Policy Shift Increases Flexibility Ahead of Leadership Change ... Not a Declaration of Victory over Deflation

In contrast to the aggressive hiking cycles elsewhere, Japan remains on its own course as it remains unclear whether the rise in inflation will be sustained. But with inflation above target (at least for now), the BoJ recently took a range of reinforcing steps to increase its flexibility: it widened the 10-year JGB trading band from +/-0.25% to +/-0.50%, increased regularly scheduled open-market bond purchase amounts, and maintained its "too soon to be sure it's not transitory" refrain. Although yields have moved to the top of the newly widened range following the announcement, these steps will keep conditions accommodative for now, while giving the new leadership at the BoJ more flexibility to further modify policy next year if ultimately warranted.

[2] Reinhart, Carmen M. and Rogoff, Kenneth S., "This Time is Different Eight Centuries of Financial Folly," Princeton university Press, 2009.

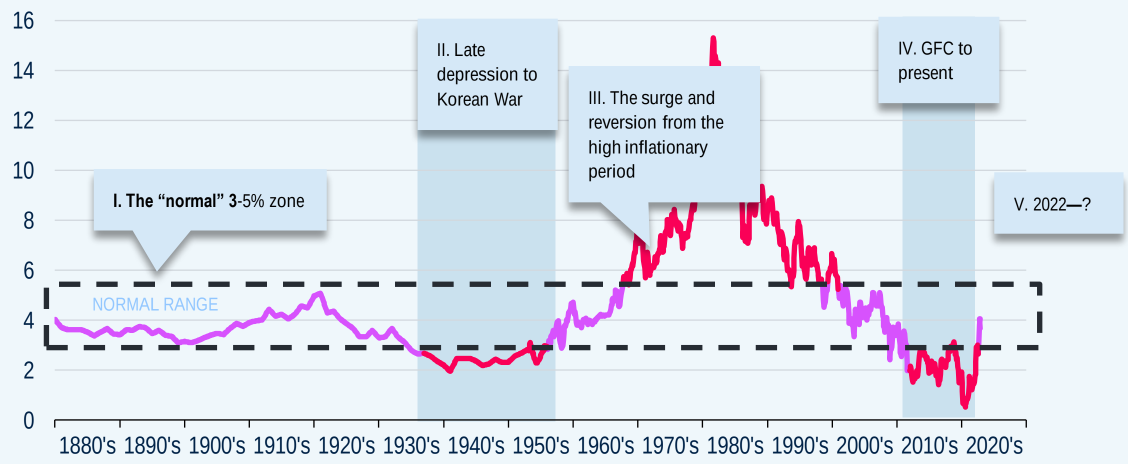
rates back up at the higher levels that existed before the 2008 GFC. While this "back up to normal" hypothesis may sound speculative, we will get an answer in relatively short order. If growth proves surprisingly resilient at these elevated rates, that may signal that they are not high, but rather just back to the "new" old normal levels. The *true* outlier period may be the 2012-2022 period, which saw rates get to ultra-low levels not seen since the 1940s and 1950s (Figure 7).

So, in summary, the rates outlook appears finely balanced. Yes, further central bank policy tightening is in the offing. But fundamentals appear to be turning for the better with both growth and inflation moderating, suggesting rates are in the vicinity of a peak. Scope for rates to fall, however, is likely limited given central banker fears of resurgent wage pressures and low levels of unemployment.

Conclusion: Bond Market 180°

True, the investment horizon remains clouded, and anxiety is running high. But as compensation for risk, yields have swung from their unprecedented 2020 lows all the way to the high end of their range of recent years, leaving bonds well positioned for strong, long-term performance.

Figure 7
What's normal? Historically, barring extreme circumstances, rates have generally been between 3-5%. Are we just back to normal?



Source: PGIM Fixed Income

LOOKING FOR MORE INSIGHTS?

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

BLOG POST

YIELD IS DESTINY; BONDS ARE BACK

Bond investors shouldn't lose sight of the fact that 2022's historic increase in bond yields could lead to returns that are two to three times higher than those during the prior decade.

WEBCAST

PLUS SECTOR SNAPSHOTS

Watch our Chief Global Economist, Chief Investment Strategist, and Portfolio Managers set the stage for the fixed income markets in 2023.

PODCAST

SUPPLY CHAIN STRAIN REFRAME

Guillermo Felices, PhD, Global Investment Strategist, explains our proprietary inflation model and provides an update on our inflation expectations for 2023.

PGIM FIXED INCOME

SECTION 3

GLOBAL MACROECONOMIC OUTLOOK

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

03

ASSESSING 2023's MIXED BAG OF MACRO CHALLENGES

Three months ago, we reflected on the particular challenges in making forecasts for an economic cycle plagued by the uneven recovery from the pandemic, the ongoing ripple effects from the war of Ukraine, and the loss of inflation-fighting credibility among major central banks. Against this backdrop, the global economy has so far evolved along the contours of our expectations: backward- and forward-looking data are showing clear downward trends for goods and shelter inflation in the U.S., while services inflation is beginning a gradual descent as wage growth shows nascent signs of moderation. Relatedly, the unprecedented pace of monetary tightening by global central banks is slowing the momentum of the real economy, most visibly in the sectors most sensitive to interest rates, though the labor market and consumption remain more resilient than we had anticipated. Even more surprising has been the latest developments from China, where the exit from **the "dynamic zero-COVID" policy has been** faster and more wide-ranging than expected, perhaps offering the global economy a much needed shot in the arm.

Taken together, the big question for investors worldwide is shifting from how much higher inflation and interest rates might go to how deep the growth slowdown will be and when policymakers will offer their support. In this quarterly outlook, we'll present a fundamental framework to understand economic downturns before delving into our outlook for the various major economies.

Fundamental Framework for Understanding Recessions

A review of post-World War II economic history reveals three main channels through which recessions occur. **The most common channel, responsible for setting off about half the recessions since 1945, is restrictive monetary and/or fiscal policy.** As policymakers attempt to sand off the sharp edges of inflationary expansions, they often hasten an economic downturn that results in outright contraction. The classic example is when the Federal Reserve raised its policy rate to 20%, both in the spring of 1980 and again for most of 1981, to slay the inflation beast and re-anchor inflation expectations—but at the cost of a double-dip recession.

Policy-triggered recessions are normally what we dub the "garden variety" type because historically they were milder and easier to recover from, unlike the second channel of recession: **those caused by an abrupt unwind of financial imbalances that limits the ability of central banks to counteract the downturn with lower interest rates.** The 2008 GFC was a case in point, when excessive and concentrated leverage ultimately burst the housing bubble, with losses impairing bank balance sheets worldwide and causing a system-wide credit crunch.

The last channel of recession results from exogenous shocks, such as geopolitical conflicts and health crises that damage the supply side of the economy and suddenly upend economic expansions. The most salient examples are the COVID pandemic of 2020, the 1973 oil embargo, and the 1990 Gulf War.

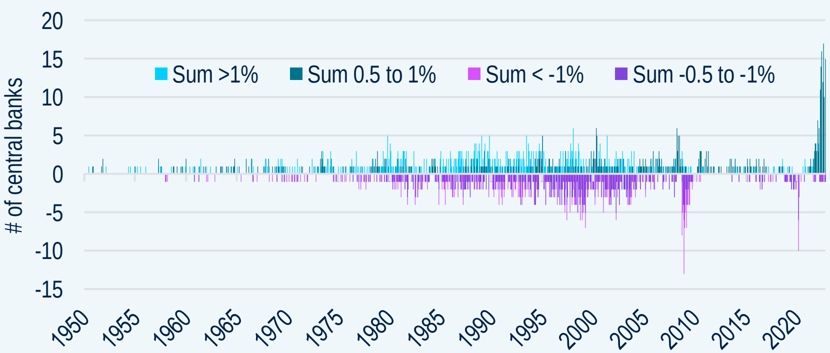
It's important to note that these three channels are not mutually exclusive; sometimes they occur concurrently, or sequentially. **Our view is the current downturn involves at least two recessionary channels—restrictive policy and supply-side shocks—and potentially all three, depending on whether pockets of financial instability emerge.**

At a global level, we've never seen so many central banks tighten policy so much, so fast, in modern history (Figure 1). **We believe the cumulative effect of unprecedented and synchronized monetary restraint is likely to produce compounding damage to global growth through trade, financial, and sentiment channels.** Policymakers will struggle to measure the precise extent of the damage in real time, in part due to the lags and uncertain magnitudes of cross-border spillovers. A related policy concern is the limited scope for countercyclical fiscal support in countries such as the U.S., the UK, and large emerging economies, depriving a slowing global economy of policy cushion at a time when the overall contribution from government policy to real GDP growth in the U.S. is already negative.

Second, though supply chains are clearly on the path to normalization, the aftershocks of the pandemic and the invasion of Ukraine are still evident—both in the ongoing labor market shortages brought about by the COVID pandemic as well as the volatility of energy and commodities markets where Russia plays an outsized role. **More generally, we find it difficult to overstate the cumulative risk of future supply-side shocks that are symptomatic of a range of profound and persistent structural trends: intensified great power competition and use of economic statecraft (e.g., sanctions, export controls), deepening political polarization, the reorientation of critical supply chains for goods and technologies around geopolitical alliances, and a necessary (but bumpy) energy transition from fossil fuels to renewables.**

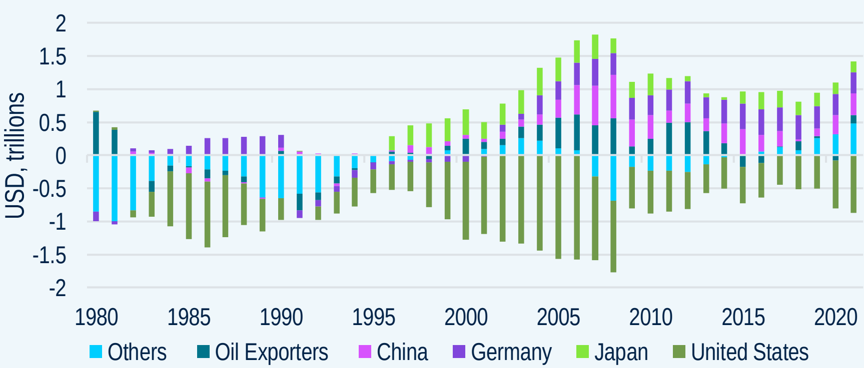
Lastly, after more than a decade of cheap money and the accumulation of debt, **we do not rule out the possibility that financial imbalances may unwind abruptly in an environment of higher interest rates in ways that amplify the growth downturn.** At the global level, the uneven post-COVID economic boom coincided with the largest aggregate balance-of-payments imbalances since the GFC (Figure 2), making current-account deficit countries particularly vulnerable to capital flight and volatile market conditions. In the U.S., the current account deficit is the biggest since 2008, and, as an accounting identity, there have been comparably sized capital inflows into stocks and bonds that can reverse with little notice. Meanwhile, the euro area, which had been in sizeable current account surplus for the better part of the past two decades, now faces record deficits due to higher energy prices and a vanishing surplus in non-energy goods. Surplus countries—namely China and the major oil producers—may continue to recycle capital to the U.S. and Europe, but the risk of a sudden stop is growing with the geopolitical divide.

Figure 1
Central Banks Hiking 0.5% or More



Source: BIS, PGIM Fixed Income

Figure 2
Global Current Account Balances as of End-2021



Source: IMF, PGIM Fixed Income

One particular concern in the U.S. is the mounting stock of short-term liabilities held by non-banks outside of the so-called "regulatory perimeter" (Figure 3). Post-GFC reforms successfully ensured that the banking system is stocked with adequate capital and liquidity to absorb losses in a stressful episode. As a consequence, risks have migrated to non-banks, such as money-market funds and other vehicles, that may have accumulated large amounts of opaque and illiquid positions. These liabilities may prove difficult to unwind without broader disruption, particularly since these highly leveraged vehicles typically lack recourse to a government backstop.

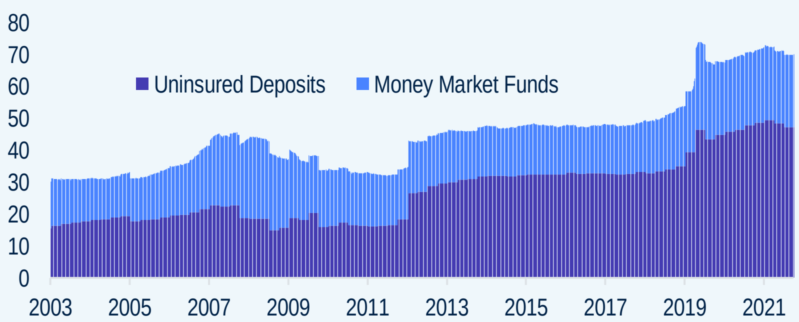
U.S. Outlook

Taking into consideration the challenging mix of headwinds described above, we continue to find it unlikely that the U.S. will avoid a recession in 2023. Moreover, we believe the looming contraction will likely be larger than the "garden variety." **In the post-war period, the average peak-to-trough recession is 3.7 ppts of GDP (the median contraction is 2.4 ppts), and our base case is for a 4.0% contraction (Figure 4).** Already, interest-sensitive sectors, such as construction activity and consumer durable goods, have begun to decline, though we acknowledge that consumer spending in the aggregate remains resilient, as households benefit from solid labor income and the ample savings accumulated during the pandemic. Our expectation remains that consumption will soften substantially in the first half of 2023 as labor markets loosen, savings are depleted, and credit conditions tighten.

The most encouraging development in the U.S. economy over the past quarter is inflation: almost every category of consumer prices has exhibited a disinflationary trend in the past three months. Services inflation excluding shelter—the most important category for the Fed as it makes up roughly half of the core price consumption expenditure—is finally showing clear signs of deceleration that will likely continue into 2023 as nominal wages moderate. Meanwhile, core goods prices are nearing a return to outright deflation, driven by broad-based softness in previously "hot" categories, such as used vehicles and household equipment. Supported by the lagged effect of a strong dollar and the normalization of supply chains, we think the disinflationary trend in core goods will continue in the first half of 2023.

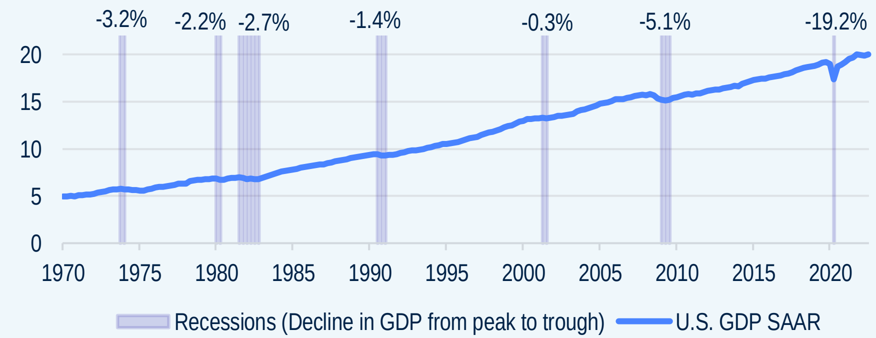
Turning to monetary policy, the favorable developments on inflation validate the Fed's recent stepdown in the pace of tightening. **From the current bound of 4.5%, we expect the fed fund rate to peak at 5% by the March meeting,** although risks remain skewed to the

Figure 3
Runnable Liabilities in the U.S. as % of GDP (%)



Source: Federal Reserve, Investment Company Institute, PGIM Fixed Income

Figure 4
The Potential Peak-to-Trough Move for U.S. GDP (USD, Trillion)



Source: BIS, PGIM Fixed Income

upside if the labor market remains tighter—and services prices remain higher—for longer than we currently expect.

Our base case is for the PCE price index to fall to 2.5% by Q4 2023, **allowing the Fed to pivot towards a more neutral posture amid the economic downturn by delivering 50-75 bps of rate cuts by the end of 2023.** However, we readily acknowledge that the path back to the Fed's 2% inflation target may not be linear, as the structural forces described earlier exert upward pressure on trend inflation and may keep policy rates near the peak for longer than we envision in our base case.

Europe and UK Outlook

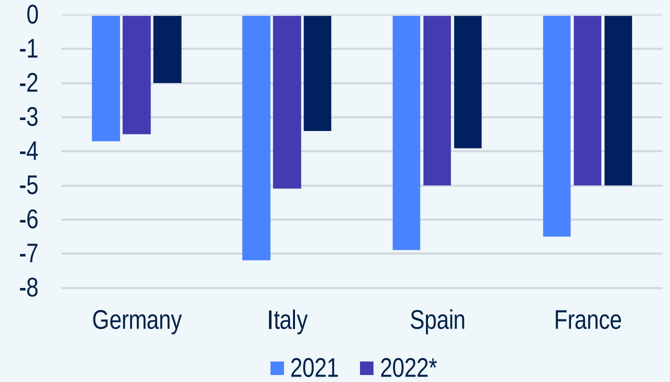
In contrast to the U.S., Europe faces a stark and very real possibility of stagflation. We expect euro-area GDP to contract by 0.9% by end-2023, which is lower than the median consensus of a 0.1% decline. While many analysts expect an economic rebound by the second half of next year, **we see a high likelihood that the growth momentum will be sapped by a further curtailment of Russian energy imports to roughly 15 billion cubic meters from around 70 bcm in 2022.**

Having to walk the tightrope between persistent energy inflation and loss of growth momentum, ECB policymakers sent an exceptionally hawkish, if not confusing, message at their latest meeting by simultaneously stating their intention to be data-dependent and providing explicit forward guidance of successive rate increases at forthcoming meetings. These conflicting messages raise the specter of market volatility in 2023 and increase uncertainty for an economy that is already struggling with supply-side disruptions.

That said, fiscal policy offers a glimmer of hope for Europe, as the pre-war economic boom leaves some wiggle room for national governments to support households and businesses to combat the energy crisis without substantially expanding the fiscal deficits (Figure 5). Also, nations such as Italy and Spain will continue to benefit from Next Generation EU funds until 2027, and additional funding may become available to central and eastern European economies that are most exposed to the Russian energy shock.

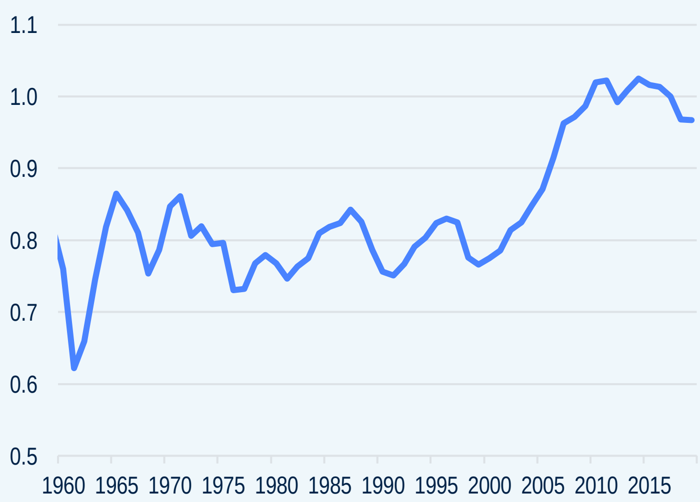
Across the English Channel, financial stability in the UK looks to have mostly recovered as institutional credibility is clawed back with a new government and a reset of fiscal policy. Despite the prospect of weak growth and high inflation, the central bank has managed to steer clear of actions that would further spook investors. While we think GDP will likely decline by 1.4% in 2023, high inflation will necessitate the BOE raising the bank rate to around 5% by year-end from 3.5% currently.

Figure 5
Euro Area Fiscal Balances (% of GDP)



Source: European Commission. *From Draft Budget.

Figure 6
China Total Factor Productivity (Ratio)



Source: Penn World Table, PGIM Fixed Income.

China Outlook

China's economy faces markedly a different set of risks than the West. After the rest of the world had moved on from pervasive lockdowns and restrictions, China abandoned its dramatic restrictions much faster than expected and did so in the middle of a seasonal omicron-variant outbreak. Irrespective of the severity of the outbreak in the coming weeks and months, the Chinese authorities likely have little appetite to revert to past policies and enforce the tough restrictions again.

Despite this shift, we do not assume that the economic patterns associated with re-opening in the rest of the world will apply to China, as the country's industrial sector never completely shut down production. For this reason, the industrial and manufacturing sectors should see only a limited re-opening bounce. Meanwhile, households did not receive large cash transfers and thus don't have high excess savings to be spent in the aggregate. **Even so, key services, such as restaurant and entertainment as well as travel and tourism, experienced a massive drop during the past three years, and we expect the services sector to be the main beneficiary of the re-opened economy.**

Overall, we are skeptical that the re-opening by itself will lift the country to a significantly higher growth trajectory. For that to happen, the free fall in the property sector — largely a result of the "Three Red Lines" policy enacted in mid-2021 — has to be arrested. Since November and December of last year, the policy has been actively reversed, and we expect additional policy support for the sector.

Besides the re-opened economy, a stabilized property sector and fiscal stimulus in infrastructure (which appears to be coming online) should be sufficient for the economy to bounce back in 2023, and **we're sticking to our above-consensus forecast of 5.7% annual average growth, which will attenuate the global growth drags emanating from developed markets to some degree.**

Beyond the near term, however, we see nothing but headwinds — cyclical and structural — for the world's second-biggest economy. Cyclically, external demand, China's last remaining growth driver last year, is stalling as global consumers tighten their belts.

Structural headwinds present even more challenges to growth in the long run. In the past, the debt-driven investment in properties was a key growth driver, which we do not expect to return. Furthermore, overinvestment extends to many other sectors, making further capital accumulation an unlikely growth driver. Besides, growth in the labor force is falling due to an already quickly aging population. **However, the most worrying aspect of China's long-term growth case is the sharply curtailed growth in total factor productivity (Figure 6). If history is any guide, China's TFP increase has slowed to a pace that seems insufficient to escape the middle-income trap.**

As a concluding thought, our fundamental framework for understanding the triggers of recession—restrictive policy, supply side shocks, and financial imbalances—reinforces our downbeat outlook for the global economy in the year ahead. **That said, the probability of brighter scenarios — including a "soft landing" of growth back to trend levels in the U.S., or even a "nominal GDP" boom driven by the sizeable public investments legislated in the past year — has moved higher in recent months, particularly with inflation retreating from the recent peak.** These positive developments provide monetary policymakers with more flexibility to steer the global economy towards continued expansion, even in an environment of ongoing and persistent shocks, and our mindset will remain humble and open-minded to a wide range of outcomes as the year unfolds.

PGIM FIXED INCOME

SECTION 4

GLOBAL SECTOR OUTLOOKS

04

DEVELOPED MARKET RATES

Outlook: Enhanced relative-value opportunities. Market liquidity should continue to improve as rates volatility finally trends lower, leading to ample relative-value opportunities.

■ The sovereign bond market was negatively impacted by worsening liquidity and market functioning issues throughout 2022, but we are seeing nascent signs of improvement in the U.S. Treasury market. Implied and realized volatilities have started to decline from their historically high levels as market participants begin to see the end of hiking cycles in many developed markets (see accompanying Figure).

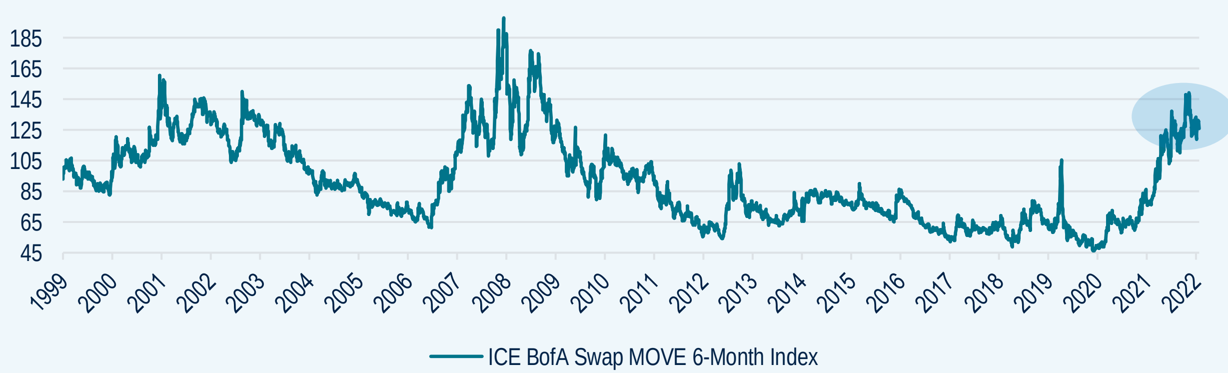
■ In the U.S., the Fed has pivoted from aggressive policy tightening. After consecutive 75 bps rate hikes in 2022, market expectations are now for relatively moderate 25-50 bps increments. We believe that, as inflation subsides and the Fed approaches its terminal rate, market pricing is appropriate. In Europe, the endpoint of the rate hiking cycle is somewhat farther off on the horizon, as the ECB just recently reminded investors of the inflation challenges facing the euro zone. Overall, with short rates leveling out, we think yield curves will gradually become less inverted and, while there are upside risks for the long end, we do not believe we will see bond yields continue to move higher at the rapid rate observed last year.

■ In addition to the points raised in our bond market outlook, the BoJ's recent policy shift makes a distinction between rates and liquidity. For example, despite leaving the 10-year yield target at 0, the BoJ will increase its JGB purchases to ¥9T a month from ¥7.3T, giving it the flexibility to use the additional liquidity, if needed, to defend the new 50 bps band.

■ Market liquidity and structure around year end proved surprisingly resilient relative to the recent past. Year-end market stresses failed to materialize as systemically important banks acted early to meet their regulatory requirement by addressing their repo and derivatives exposures. These early actions provided sufficient room for dealers to make markets toward year-end. With market pricing for the equilibrium nominal policy rate (5y5y fed funds OIS) and forward implied volatility (1y10y) peaking, we think liquidity conditions will continue to improve next year.

■ Stabilization of rates and the decline in implied volatility should bode well for relative-value strategies. We are optimistic that better liquidity will alleviate dislocations in various cash and derivative products, and we expect the historically high divergence of valuations within sovereign bond markets to compress.

Figure
Further easing in interest-rate volatility should improve Treasury market functioning and provide greater relative-value opportunities.



Source: PGIM Fixed Income and Bloomberg.

AGENCY MBS

Outlook: Remaining positive. Origination will likely continue declining in early 2023 amid elevated primary rates, and lower volatility could provide additional support. In a recession, MBS could outperform other spread sectors. We are covering underweights in lower 30-year coupons and adding higher 30-year coupons for carry opportunities. We're trading the 15-year segment opportunistically as we focus on GNMAs and specified pools.

- Although MBS spreads have tightened from October's wides, valuations still appear historically attractive. The recent, positive performance was uniform across the MBS universe, and excess returns were particularly prominent among specified pools with most TBA rolls trading close to the cost of carry.

- We expect the tailwinds of reduced origination and lower volatility to continue in early 2023. In terms of supply, the highest mortgage rates in 20 years, the lack of affordable housing prices, and the typical seasonal slowdown should continue to constrain purchase activity. Furthermore, refinancing activity remains muted with less than 1.0% of all loans eligible to refinance at today's rates, and the market has priced in prepayment speeds reflective of the current rate environment.

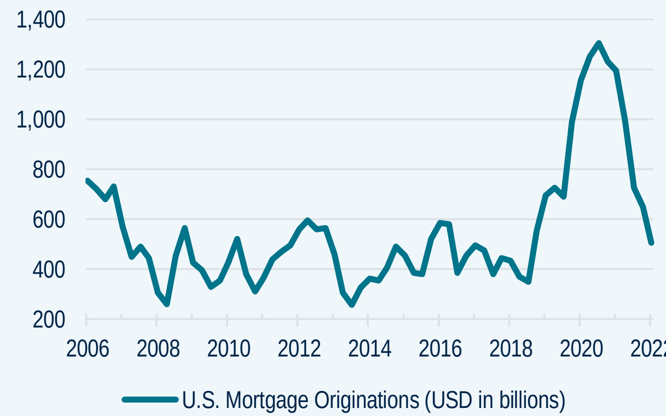
- As those conditions develop, the market impact from lower supply probably won't be completely apparent until somewhat later in 2023.

- Considering our expectations for reduced volatility, long positioning in MBS equates to selling implied volatility at the highest levels since 2013. In addition, MBS durations have extended across the coupon stack, and the risk of convexity selling appears low as 30-year 1.5s through 2.5s and 15-year 1.5s through 2s trade with positive convexities.

- Finally, the FOMC still has not considered MBS sales and, with the market expecting peak Fed-funds by mid-2023, the likelihood of MBS sales appears lower than what the market originally expected.

- There are a few, negative risks to our positive outlook, including the possibility that inflation worsens/stays persistently high, prompting the Fed to prolong its tightening cycle and prepare MBS sales from its balance sheet. In terms of demand, we expect banks will remain quiet until late 2023, and accounts that cannot buy specified pools may also scale back given the dynamics with TBA dollar rolls. Other risks could emerge if higher volatility returns, poor liquidity on the Street leads to lower trade intermediation, and U.S. dollar strength limits overseas demand.

Figure
Mortgage origination should continue declining from the recent, historic high.



Source: PGIM Fixed Income and Bloomberg.

ENVIRONMENTAL, SOCIAL, AND GOVERNANCE

Our ESG outlook to start 2023 focuses on themes related to the evolution of global supply chains. The prevalence of these themes underscores that, **regardless of an investor's preference for traditional** fixed income or ESG-oriented portfolios, supply chain considerations are critical to identifying credit risks as well as ESG impacts.

■ From a broad perspective, human rights laws, resource security, and environmental initiatives may contribute to the re-alignment of supply chains in the quarters and years ahead.

■ The increasing inclusion of human rights language into due diligence laws and reporting requirements may culminate in greater industry cohesion. For example, the European Commission's draft of its Corporate Sustainability Due Diligence Directive focuses on the harm that may traverse supply chains. Yet, the identification process may be highly challenging for individual issuers as supply chains remain fragmented across industries, and companies' generally have limited direct relationships beyond tier 1 suppliers.

■ Therefore, we expect an increase in collective action and collaboration at industry levels. These initiatives may have a greater potential to increase uniformity among respective supply chains over time.

■ Furthermore, the push to "onshore" or "friend-shore" the production of critical fuels, materials, and technologies will likely intensify. The post-COVID supply chain constraints and the effects from the war in Ukraine provided momentum to the onshoring push, which should continue given the awareness of trade dependencies on certain countries, such as China.

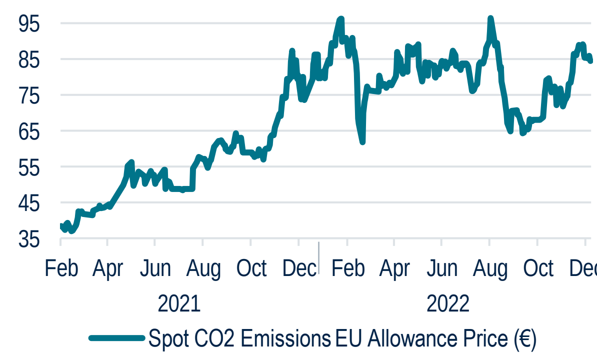
■ In addition to the EU's strategy to secure critical supply chains, the U.S. Inflation Reduction Act (IRA) included strong incentives for domestically producing key items, and the U.S. recently placed significant restrictions on the export of advanced semiconductors and related equipment to China. While these efforts may help insulate developed economies from future supply chain disruptions, many new production facilities will require significant time and investment.

■ Although re-adjusting supply chains—and the underlying effects on global trade—could impede near-term cost reductions in cleaner, more secure technologies, increasing the scale of these technologies may unlock cost savings over the long term.

■ Finally, we're monitoring the effects from the EU's recent agreement to eventually levy an import tax (i.e., border adjustment mechanism) based on Europe's emissions trading system, under which CO_2 prices have jumped in recent years (see accompanying chart).

■ Europe's pending emissions-related import tax plan has been met with consternation (particularly from EM exporters to the continent) and concerns that the rules will add another layer of bureaucracy to global trade. But it's a significant move from one of the world's largest trading blocs and one that warrants monitoring amid similar discussions in Canada, the UK, and within the U.S. after Democrats recently introduced emissions-related import tax legislation.

■ The objectives of the efforts outlined above range from ensuring basic human rights to incentivizing cleaner manufacturing. While the goals differ, the significance of each will likely affect global supply chains in 2023 and beyond. These themes emphasize the growing prevalence of ESG issues across companies, industries, and economies, regardless of one's preference for fixed income investing.



SECURITIZED CREDIT

Outlook: Expanding opportunities. Given the relative underperformance of high-quality securitized spreads in 2022, they may provide more than adequate compensation for credit migration protection in 2023. In a recession, we believe high-quality securitized products in the U.S. and Europe will outperform similarly rated credit sectors. Conversely, mezzanine tranches may come under price pressure, which could provide opportunities in lower capital structure bonds later this year.

■ We generally expect steeper securitized credit curves as dispersion in underlying asset performance and valuation underscores mezzanine tranches' sensitivity. Decompression should continue between risk-remote, high-quality bonds and mezzanine tranches.

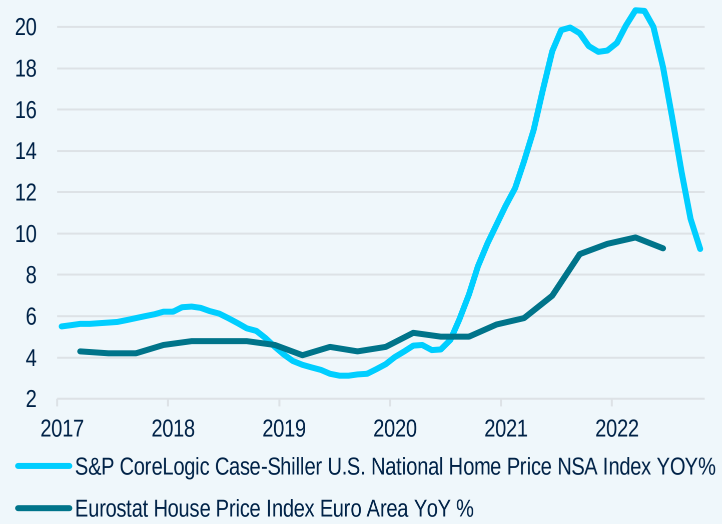
■ Within **CMBS**, we see pressure on commercial real estate (CRE) valuations as capitalization rates increase and economic moderation challenges net operating income. Higher coupons on new CRE loans could squeeze debt service coverage ratios and add to refinancing uncertainty. Loan delinquencies and special servicing rates may increase, though we expect dispersion across sectors. For instance, the office outlook remains mixed and uncertain, while industrial properties appear much more stable. We anticipate high-quality conduit bonds will outperform while performance of single-asset, single-borrower (SASB) bonds remains property specific.

■ In **CLOs**, we expect to see an increase in underlying loan default rates, particularly in CCCs, albeit from a very low level. The impact from input-cost inflation, along with rising interest expense, will increase pressure across bank loan issuers. Those with more negatively affected cash flows are more likely to experience greater negative credit migration. Weakening bank loan fundamentals may cause some CLO deals to fail their over-collateralization tests (a key CLO debt covenant). This would result in partial early amortization of AAA tranches (a positive for AAA debt investors) as cash flows are diverted from equity to debt repayment.

■ Although we see home prices in the midst of a peak-to-trough decline of about 15%, **residential mortgage credit** should hold up well given conservative underwriting. We expect other subsectors, such as "non-qualifying mortgages," to face greater pressure as more aggressive underwriting is exposed and originator platforms face further pressure on their business models.

■ In **ABS**, increasing unemployment and decreasing disposable income may pressure consumer-oriented subsectors, such as sub-prime auto and consumer loans. Less sophisticated or more adventurous underwriters may become exposed in 2023. Overall, senior tranches should outperform mezzanine tranches.

Figure
U.S. home price metrics have tumbled faster than those in Europe



Source: PGIM Fixed Income and Bloomberg

INVESTMENT GRADE CORPORATES

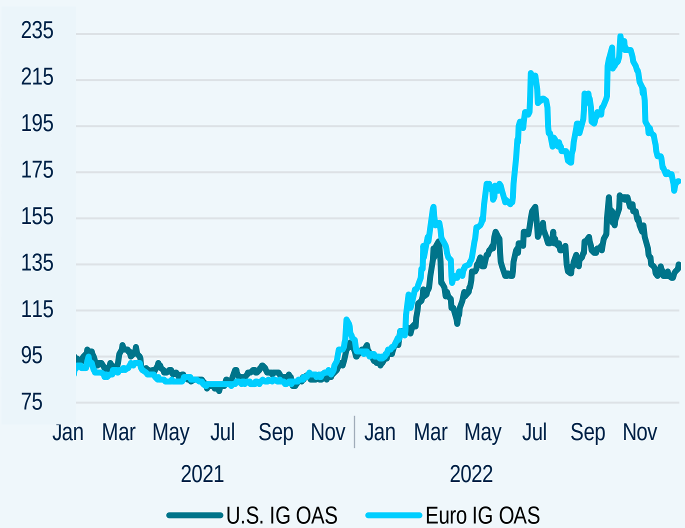
Outlook: Incrementally constructive. As we gain clarity on key macro issues, such as signs of moderating inflation and reopening in China, we believe investment grade corporate spreads appear attractive from a long-term perspective. Areas of lingering uncertainty may lead to bouts of spread widening—particularly in the first half of the year—which could provide opportunities to add risk.

■ Moderating expectations for a hard economic landing support our improved view of the **U.S. IG** sector. At this point, spreads of about 130 bps also indicate the prospects for a more benign economic outcome as they are slightly tighter than the sector's long-term average and well inside of the +200 bps level historically associated with recessions. Furthermore, following the compression of BBB spreads in Q4, the 50 bps spread differential between BBB and A spreads also appears inconsistent with a severe recession on the horizon.

■ That being said, we believe that spreads could widen over the next few months due to lingering concerns about an economic downturn and/or declining corporate profitability. In a scenario where spreads widen, we believe the 165-170 bps area appears attractive (and may generate broad buying interest) amid expectations that spreads retighten as 2023 progresses. Hence, given the choice of selling now vs. adding risk, we would opt for the latter. In the event spreads widen in the coming months—and fundamentals remain relatively healthy—we could considerably boost our risk exposure.

■ From a sector perspective, even after the recent outperformance among bank issues, the sector generally remains attractive given the sector's long-term fundamentals. Yankee bank paper at the front of the curve also appears compelling, but requires a high degree of selectivity. Elsewhere, we continue to overweight energy, and we're leaning toward pipeline issuers while considering whether/when it may be appropriate to reduce exposure to refiners. Fundamentals in the chemical sector remain healthy, but the sector faces another few quarters of tough earnings comparables.

Figure
The expanded gap between Euro and U.S. IG spreads broadens the relative-value opportunities in Europe (bps)



Source: PGIM Fixed Income and Bloomberg.

■ While IG credit fundamentals remain sound, estimates of 1% earnings growth in Q1 2023 appear too high considering the macro backdrop. Companies' Q4 results should provide additional clarity on their full-year prospects, and projections in the commodity, auto, retail, and media sectors are of particular interest. In general, we anticipate the results will show greater dispersion within the corporate sector, which emphasizes the need for accurate, bottom-up credit selection.

■ The outlook for the **European IG** sector is slightly more challenging given the proximity to the war in Ukraine, the associated energy crisis, the ECB's hawkish posture, and the Q4 rally in European IG spreads. Hence, we expect spreads to generally trade in a 160-180 bps range with occasional bouts in the 200 bps area, possibly as early as Q1.

■ In terms of sectors, we expect that financial spreads, particularly those on bank issues, will compress into corporate spreads. Pockets of value also remain in select corporate hybrids, strong BBB credits, and non-ECB eligible paper. We also favour utilities over lower-beta industrials. From a broader perspective, there are ample carry opportunities, especially within the 5-year segment, and we're avoiding BBB cyclicals as well as credits where spread is only serving as compensation for beta exposure.

■ In **global IG** portfolios, we're maintaining spread duration with underweight positioning in non-core markets. As we look ahead, we may rebalance our euro market overweight into the U.S. market—with a possible preference for lower-beta issues at the back of the curve—especially if the prospects for a soft landing solidify further.

GLOBAL LEVERAGED FINANCE

Outlook: Near-term cautious. Recession risk presents a meaningful concern, especially for lower-rated credits. We are positioned for further spread widening, but see value in idiosyncratic situations and relative value opportunities. Active management and accurate credit selection will be rewarded given the likelihood for continued volatility.

■ While recent inflation data provided encouraging signs that the likelihood of a more severe stagflation scenario is waning, we remain cautious in light of the Fed's signaling that interest rates may rise further, increasing the risk of overtightening. Still, **U.S. high yield** market fundamentals remain on solid footing heading into what may be a more challenging backdrop.

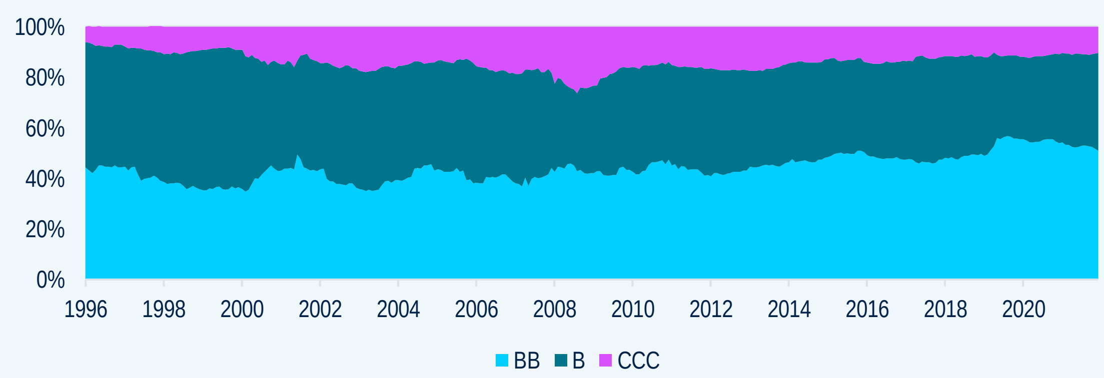
■ While the technical backdrop remains supportive due to a variety of factors—including the absence of any significant near-term maturity wall, a lack of gross new issuance, and a meaningful supply deficit—concerns over slowing corporate earnings and margin compression is keeping us cautious over the medium term.

■ Although we remain defensive, we don't expect defaults to be as severe as in previous downturns due to the favorable positions of most issuers, with strong debt serviceability and favorable maturity profiles. Leverage amongst U.S. high yield issuers decreased in Q3 and is now at its lowest level since Q4 2012. Meanwhile, interest coverage increased to a record 5.85 times (or a record 3.87 times after backing out capex).

■ Moreover, the market is of a higher quality today than in prior cycles (see accompanying Figure), with BBs and high single-Bs comprising a majority of the overall market as many of the weaker credits were purged during the COVID shutdown and more middle market credits migrated to the loan market. That said, the pace of credit ratings upgrades continues to slow, with the number of downgrades now outpacing the number of upgrades.

■ Should the economy follow our base case recession scenario, we anticipate high yield defaults to rise to 5% over the next 12 months. In terms of positioning, we continue to position portfolios defensively, with elevated cash and liquidity, as we expect spreads to widen the second half of Q1 as issuance picks up again following the typical January slowdown.

Figure
Composition of U.S. High Yield Market by Credit Rating



Source: ICE BofAML U.S. High Yield Index. As of November 2022.

- We are maintaining overweights to independent energy and power producers, as well as housing. We are underweight technology, leisure, and media & entertainment.

- For **U.S. leveraged loans**, ratings downgrades have started to pick up, and we expect ratings agencies to be quicker to downgrade than to upgrade credits going forward. Given that 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 and the expectation that the rising cost of capital will reduce free cash flow—we expect loan default rates to rise to 4-4.5% by year-end 2023.

- While our outlook is tempered by recession risk and price volatility, we expect loans to post positive total returns of 6-6.5% in 2023, with any expected decline in prices to be offset by currently high, all-in current coupons of approximately 8.0% (and rising) and a yield-to-maturity of nearly 10.0%.

- Given our ongoing macro concerns, we favor public, BB and high single-B loans over sponsor-owned, low single-B and CCC loans as we expect those lower-quality loans to be most impacted by the more challenging fundamental backdrop. We believe that credit selection and deep, fundamental credit research/modeling is becoming increasingly important and that the avoidance of defaults will be the biggest driver of alpha over the next 12–24 months.

- We remain cautious over the near term on European High Yield and European Loans given our base case scenario of a recession in Europe and expect spreads to widen over the next three to six months. Inflation remains persistently high and the pace of normalization uncertain, while a re-escalation of the Russian/Ukraine war could further complicate the economic situation. That said, we expect to turn more constructive once these headwinds have been adequately priced by the market, with an expectation that loans will outperform bonds in 2023. While an earnings recession and/or increased interest costs can quickly erode fundamentals, we don't expect to see a pickup in defaults over the next 12 months given the lack of near-term maturities. However, we could see a pickup in defaults in 2024 and 2025, particularly among lower-rated loan issuers.

- In terms of positioning, we are running below market neutral levels of risk with elevated cash balances and 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 as volatility continues.

EMERGING MARKET DEBT

Outlook: Waning headwinds. Inflation appears to be easing, so the Fed may be nearing its terminal policy rate. As a result, the U.S. dollar's strength is abating. The Chinese government is addressing the property sector's problems and moving away from its zero-COVID policy. Geopolitical tensions are off their late-summer peak, but remain high, as do the risks of recession and financial market fragility.

■ EM debt ended 2022 with negative total returns. But the asset class exhibited resilience in the fourth quarter of 2022: EM hard-currency spreads rallied, EM local-currency yields declined, and some EM currencies strengthened. Some of this resilience reflects earlier, defensive positioning among investors and the recognition that they had priced in too much bad news. Now that headwinds are shifting, individual bonds within each sector can better reflect their own fundamentals and relative value.

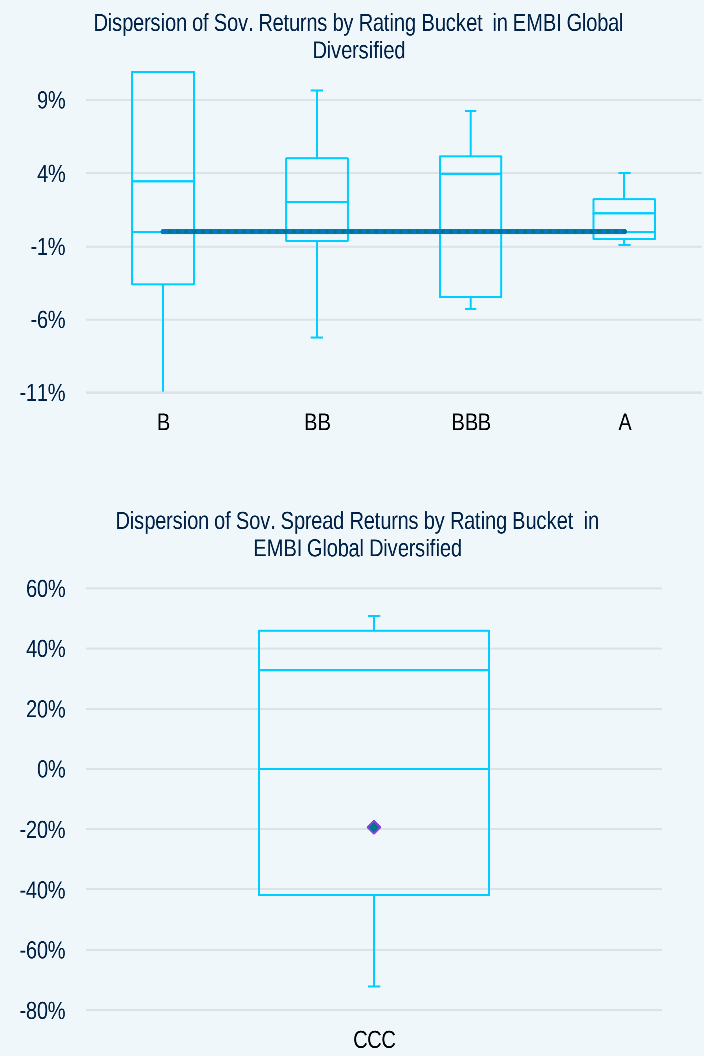
■ In 2022, we limited risk exposure in the portfolios we manage. Given fourth-quarter developments, selectively adding back risk is now the appropriate decision, and EM debt offers several ways to express our views. But risk can go two ways, so we construct portfolios that can withstand an uncertain environment.

■ During three years of global shocks, **EM hard currency government bonds** have exhibited both resilience and vulnerability. Differences in performance have reflected individual countries' different fiscal, balance-of-payments (BOP), growth, and external financing positions, and this will continue. We expect defaults to increase among the most distressed issuers. However, prices already reflect this reality, so defaults should not negatively impact the asset class at large. We intend to maintain our barbell approach, focused on investment grade and double-B issuers.

■Investment grade bonds have performed well on a relative basis and have tightened about 67 bps since their widest spreads over U.S. Treasuries in mid-July. We continue to see opportunities in Gulf countries like Saudi Arabia, Qatar, and the United Arab Emirates, as well as in Indonesia and Croatia.

■ Investors will likely continue to differentiate by credit quality. The spread gap between EM investment-grade and EM high-yield government bonds is over 650 bps. High-yield spreads hit a wide of 1,087 bps in mid-July, but they have rallied 265 bps on the back of reduced headwinds, low valuations, and supportive technical factors, such as defensive investor positioning and a lack of issuance.

Figure
The Dispersion of Returns Across EM Quality Tiers



Source: JPMorgan EMBI Global Diversified, 1 Jan 2022 – 30 Nov 2022

■ Within BB-rated bonds, we see value in Serbia. Its government is operating with a prudent fiscal policy, and we expect the benefits from its possible accession to the European Union to keep politics in check. We also like bonds from the Dominican Republic given that country's fundamentals and its solid growth outlook. Brazil and Colombia are two nations with uncertain policy and fiscal issues. But in a selloff, these issuers can outperform and continue to offer strong carry. We also believe that there will be attractive opportunities among new issues of green, social, and sustainable (GSS) bonds, as more countries seek to take advantage of investors' interest in this market segment.

■ Among higher-beta and lower-rated issuers, we continue to select those with manageable financing needs, like Angola, Iraq, Gabon, Ivory Coast, Mozambique, and Egypt. Sovereign defaults are likely to increase to around 3% over the coming years, and recovery rates may fall. That's not necessarily a bad outcome: successive growth shocks have impacted many countries with large debt burdens, and rising food and energy prices have pressured government budgets and led to social unrest— so sustainable restructurings are warranted. Recent signals from the G20 and other multilateral forums, such as COP 27, are encouraging. They suggest that concessional financing will be available, and it's likely that credit enhancements will become a part of restructurings. We expect to see restructurings in Ghana, El Salvador, potentially Kenya, and, at some point, Argentina (again). The role of both private-sector creditors and China will be key.

■ The high carry on hard-currency EM government bonds and their relative value versus other growth asset classes are attractive. But technical indicators are also supportive. Outflows reached more than U.S.$40 billion in 2022, with muted issuance but significant interest payments and amortizations by issuers. That adds up to significant negative net financing, which we expect to continue in 2023. Unless a severe recession materializes, EM debt is likely to deliver solid total returns.

■ The 360 bps spread at the end of 2022 on the main **EM corporate debt** index, the CEMBI Broad Diversified, retraced two-thirds of its widening from last year. However, we continue to find good value, especially in the BB and BBB rating categories. EM corporate spreads of 125 bps to their own governments' bonds are at the wider end of the historical range. The EM corporate spread to similarly-rated developed-market bonds is wide as well. For example, recent EM corporate BB-rated spreads of 400 bps offer a 120 bps spread pick up versus U.S. corporate BB-rated spreads of 280 bps. The EM corporate BBB-rated segment was recently only 25-30 bps tighter than U.S. BB-rated corporates.

■ Fundamentally, we're starting to see EM corporates experience margin pressure from higher input costs, a stronger U.S. dollar, and lower product prices. However, corporate balance sheets were solid as of mid-2022, with EM high-yield leverage of less than 3x and limited refinancing needs over the next two to three years. We think that EM corporate high-yield defaults will trend upwards from the current 1%-2% (ex-Russia, ex-China) to its historical average of 3%-4%. Ratings upgrades and downgrades have been relatively balanced in areas like Latin America and the Middle East.

■ Gross supply of EM corporate bonds is low and net financing will probably remain negative because yields are high. EM corporates have alternative financing available in local markets and, in some cases, equity capital. J.P. Morgan expects negative U.S.$70 billion of net financing in 2023, an improvement over the negative U.S.$200 billion in 2022.

■ We had reduced risk at the beginning of 2022 but, given the rise in EM corporate spreads, we're now opportunistically looking to put cash to work. We continue to like corporate issues from Mexico, India, Thailand, Colombia, and Peru, as well as quasi-sovereigns like Mexico's Pemex and South Africa's Eskom. We recently bought a Middle Eastern bank's tier-2 bonds at 8% yield and extended some positions from seven- to 10-year maturities for a significant spread pick-up. We believe China property bonds have upside given wide-ranging government support, even if the physical market for Chinese real estate will take time to recover. In B-rated corporate issues, we are selective and prefer secured bonds from companies like Mexico's Braskem Idesa and India's Vedanta.

■ EM central banks continued to hike interest rates in 2022. In doing so, the **EM local-currency** index's yield rose from 5.75% at the end of 2020 to close to 7% at the start of 2023, a level we last saw in 2016/2017. EM local currency returns were negative in two consecutive years (2021, 2022) for the first time in 20 years.

■ We underweighted duration and positioned the portfolios we manage for yield curve flattening for most of 2022. But now, headline inflation is peaking in most emerging markets and core inflation is slowing down. Global inflation was a 2022 story and global slowdown will be the story for 2023. As a result, EM central banks have toned down their hawkish rhetoric, but none are close to cutting rates, and the Fed is nearing the end of its hiking cycle. Since November, therefore, we have changed our stance to overweight duration. The current index yield of about 7% is high enough to offset some price declines in EM local-currency bonds if they were to occur.

■ For fixed income investors, trading this "end of the cycle" is challenging. Inverted yield curves with negative carry and negative roll-off are punitive. Volatility in U.S. benchmark yields will be the principal driver for EM local-currency markets from a "top down" or "beta" standpoint. But differences in EM governments' monetary and fiscal policies will be key to identifying winners and losers.

■ Using spot inflation, real yields are still negative. But using one-year forward inflation expectations, real yields are positive in Latin America, Asia, and South Africa. In general, we favor these early hikers with positive forward real yields. By region, we prefer Asia and Latin America over Central and Eastern Europe. We continue to overweight Brazil, Mexico, South Africa, Indonesia, and Malaysia and to underweight EMEA and Chilean issues.

■ EM local-currency bond markets registered outflows in each of the last two years, with almost U.S.$45 billion of outflows in 2022. However, our view is that inflows are now more likely to resume given that there isn't an overhang of capital waiting to leave the asset class and headwinds from a more hawkish Fed are behind us.

■ The challenging environment for **EM currencies** could be shifting as the Fed nears the end of its hiking cycle and China's policies change. In addition, commodity price inflation is moderating, which supports EM consumers and EM current accounts. And as many EM central banks near the end of their hiking cycle, this should support growth, typically a tailwind for EM currencies. Fundamentals aside, the U.S. dollar's real effective exchange rate is at a stretched, two-decade high, and investor positioning is favorable. EM bond flows were negative in 2022, but EM equity flows improved.

■ Against this backdrop, we have pivoted the portfolios we manage. We have abandoned our long U.S.-dollar bias and now focus on relative value among EM currencies. Most "fast money" investors, such as hedge funds, already reduced their long U.S.-dollar positioning in Q4 2022. Now, there is scope for "real money" investors to capitulate and power EM currencies higher in the first half of 2023. Equity inflows have improved lately, particularly in Asia. As a result, some equity currencies, like the South Korean won and the Taiwanese dollar, are starting to benefit.

MUNICIPAL BONDS

Outlook: Cautiously optimistic. Valuations will be driven by falling rate volatility, attractive yields, and solid credit fundamentals.

■ While higher interest rates led to record municipal mutual fund outflows in 2022, the technical headwinds that led to underperformance should begin to dissipate as the Fed nears the end of its hiking cycle. Credit quality remains strong with 29 states seeing positive ratings actions over the past 12 months vs. just one negative ratings action—the removal of a positive outlook. State tax collections, while slowing, remain materially higher than pre-COVID levels and record reserves should protect against an economic slowdown.

■ With a yield-to-worst of approximately 3.55%, the Bloomberg IG Muni Index (AA average quality/six-year duration) currently provides a taxable-equivalent yield of 6.00%, with a further benefit to be gained by residents in high-tax states. With tax-equivalent yields increasingly attractive, we expect the market to continue to generate interest as technicals are expected to improve in January in February.

■ Airports, tollroads, and pre-pay gas are sectors that have maintained their fundamental integrity, but sold off due to technicals and where we believe long-term opportunities exist. We remain cautious around the healthcare sector given the prevailing headwinds.

■ Meanwhile, we are modestly positive on taxable munis as spreads remain relatively attractive versus corporates and should hold in better during a slowing economic environment. Taxable supply is expected to remain muted, in part, due to less taxable issuance to refund tax-exempt debt in this higher-rate environment.

■ The main risk to our constructive outlook is prolonged rate volatility with upward pressure on rates, which could put a damper on municipal fund flows. We believe the best way to navigate the current environment is through a combination of bottom-up fundamental analysis and relative-value emphasis to unlock stored alpha created during 2022's selloff.

Figure

The increase in muni yields provides a tax-equivalent yield of about 6.00%, which should continue to generate interest from individuals in high income-tax states.

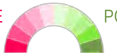
Source: PGIM Fixed Income and Bloomberg Municipal Bond Index.

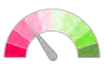
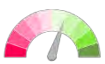
PGIM FIXED INCOME

SECTION 5

SUMMARIES

05



Sector	Outlook	Asset class views*			
DM Sovereign Rates	Enhanced relative-value opportunities. Liquidity should continue to improve as rates volatility finally trends lower, leading to ample relative-value opportunities.	U.S. Germany Japan	  	UK Canada Australia	  
Agency MBS	Remaining positive. Origination will likely continue declining in early 2023 amid elevated primary rates, and lower volatility could provide additional support. In a recession, MBS could outperform other spread sectors. We are covering underweights in lower 30-year coupons and adding higher 30-year coupons for carry opportunities. We're trading the 15-year segment opportunistically as we focus on GNMAs and specified pools.	Agency MBS			
Securitized Credit	Expanding opportunities. Given the relative underperformance of high-quality securitized spreads in 2022, they may provide more than adequate compensation for credit migration protection in 2023. In a recession, we believe high-quality securitized products in the U.S. and Europe will outperform similarly rated credit sectors. Conversely, mezzanine tranches may come under price pressure, which could provide opportunities in lower capital structure bonds later in the year.	CMBS CLOs	 	ABS	
Global IG Corporates	Incrementally constructive. As we gain clarity on key macro issues, such initial signs of moderating inflation and reopening in China, we believe investment grade corporate spreads appear attractive from a long-term perspective. Areas of lingering uncertainty may lead to bouts of spread widening—particularly in the first half of the year—which could provide opportunities to add risk.	U.S. Corps.		European Corps.	
Global Leveraged Finance	Near-term cautious. Recession risk presents a meaningful concern, especially for lower-rated credits. We are positioned for further spread widening, but see value in idiosyncratic situations and relative value opportunities. Active management and accurate credit selection will be rewarded given the likelihood for continued volatility.	U.S. High Yield U.S. Leveraged Loans	 	Euro High Yield Euro Leveraged Loans	 
EM Debt	Waning headwinds. Inflation appears to be easing, so the Fed may be nearing its terminal rate. As a result, the U.S. dollar's strength is abating. The Chinese government is addressing the property sector's problems and moving away from its zero-COVID policy. Geopolitical tensions are off their late-summer peak but remain high, as do the risks of recession and financial market fragility.	Sov. Hard Currency Corporates	 	Local Rates EMFX	 
Municipal Bonds	Cautiously optimistic. Valuations will be driven by falling rate volatility, attractive yields, and solid credit fundamentals..	Tax-Exempt		Taxable	

*Based on most-recent views of one-year excess return within the sector.

Sector		Subsector	Spread change (bps) Q4	Spread change (bps) YTD	SOFR OAS 12/31/22
CMBS	CMBS: Conduit AAA	First-pay 10-year	2	76	165
	CMBS: Conduit BBB-	BBB-	76	369	752
	CMBS: SASB – Senior	AAA	10	144	235
	CMBS: SASB - Mezz	BBB-	0	164	400
	CMBS: Agency Multifamily	Senior	-7	43	95
Non-Agency RMBS	Legacy	RPL Senior	2	86	182
	Legacy	'06/'07 Alt-A	10	159	290
	GSE Risk-Sharing	M2	-150	175	325
CLOs	CLO 2.0	AAA	10	78	220
	CLO 2.0	AA	10	104	300
	CLO 2.0	BBB	25	234	575
ABS	Unsecured Consumer Loan ABS	Seniors	15	130	216
	Unsecured Consumer Loan ABS	Class B	40	175	286
	Refi Private Student Loan	Seniors	15	115	206
	Credit Card ABS	AAA	10	48	81

Source: PGIM Fixed Income.

	Total Return (%)		Spread Change (bps)		OAS (bps)
	Q4	YTD	Q4	YTD	12/31/22
U.S. Corps.	3.63	-15.76	-29	38	130
European Corps.	1.09	-13.65	-58	72	167

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 %
	Q4	YTD	Q4	YTD	12/31/22
EM Hard Currency	8.11	-17.78	-107	84	453
EM Local (Hedged)	2.95	-8.85	-46	114	6.86
EMFX	7.26	-7.14	-136	299	7.32
EM Corps.	4.72	-12.26	-58	34	346

Source: J.P. Morgan.

	Total return (%)		Spread change (bps)		OAS/ DM (bps)
	Q4	YTD	Q4	YTD	12/31/22
U.S. High Yield	4.17	-11.19	-84	186	469
Euro High Yield	4.70	-11.13	-119	194	512
U.S. Leveraged Loans	2.33	-1.06	-16	213	652
Euro Leveraged Loans	3.42	-3.36	-59	295	710

Source: ICE BofAML and Credit Suisse.

	Total return (%)	Total return (%)
	Q4	YTD
High Grade Tax-exempt	4.10	-8.53
High Yield Tax-exempt	3.48	-13.10
Long Taxable Munis Agg Eligible	1.89	-22.23

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 December 31, 2022.

IMPORTANT INFORMATION

Source of data (unless otherwise noted): PGIM Fixed Income and Bloomberg as of December 2022.

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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.

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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.

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

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