PGIM FIXED INCOME

Q2 23

QUARTERLY OUTLOOK

Published April 2023

WHATS INSIDE?

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	Total Returns (%)				
Individual FI Sectors	Q1 23	2022	2021	2020	2019
Long U.S. Treasuries	6.17	-29.26	-1.13	17.7	14.8
U.S. Long IG Corporates	5.45	-25.62	-4.65	13.94	23.9
European Leveraged Loans	3.88	-3.36	4.87	2.4	4.38
U.S. High Yield Bonds	3.57	-11.19	5.36	6.2	14.4
U.S. IG Corporate Bonds	3.50	-15.76	-1.04	9.89	14.5
EM Currencies	3.13	-7.14	-3.09	1.73	5.2
U.S. Leveraged Loans	3.11	-1.06	5.40	2.8	8.17
U.S. Treasuries	3.01	-12.46	-2.32	8.00	6.86
European High Yield Bonds	2.89	-11.13	3.32	2.9	11.4
Municipal Bonds	2.78	-8.53	1.52	5.21	7.54
Mortgage-Backed (Agency)	2.53	-11.81	-1.04	3.87	6.35
EM Local (Hedged)	2.31	-8.85	-5.52	6.07	9.14
EM Debt Hard Currency	1.86	-17.78	-1.80	5.26	15.04
CMBS	1.81	-10.91	-0.64	8.11	8.29
European IG Corporate	1.75	-13.65	-0.97	2.77	6.24
Multi-Sector					
Global Agg. (Unhedged)	3.01	-16.25	-1.54	9.2	6.84
U.S. Aggregate	2.96	-13.01	-1.39	7.51	8.72
Global Agg. Hedged	2.90	-11.22	-0.15	5.58	8.22
Yen Aggregate	2.36	-5.30	-2.85	-0.8	1.64
Euro Aggregate (Unhedged)	2.09	-17.18	-4.71	4.05	5.98
Other Sectors					
S&P 500 Index	7.50	-18.11	28.71	18.4	32.6
3-Month SOFR	1.14	1.66	0.03	-1.5	-0.85
U.S. Dollar (DXY Index)	-0.98	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 March 31, 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

On the face of it, Q1 brought bad news. A banking crisis joined an economic backdrop already at risk from central bank rate hikes. Economies will now have to cope with the frictions and the long tail of the crisis. The culmination of risks, including intensifying global competition and the dire consequences of the U.S. debt ceiling showdown, could bring a U.S. recession—and its global knock-on effects—even closer.

2

Yield is destiny. There are periods when negative developments can be market positive. The cumulative impact of higher rates and the mounting risks from Q1 are negatives for growth; point taken. But once yields reach elevated levels—thanks to last year's bear market—and the economy begins to slow, bonds can be quite productive as observed in the following table of returns. Hence, the game is still on for the bond market.

3

Volatility, Perspective, and Dispersion. Confusion and volatility are disorienting, yet they provide a reminder to maintain a long-term perspective. The sector outlooks that follow clearly delineate short-term effects from long-term opportunities. An array of dispersion throughout the sectors—from property types to emerging market spread levels—enhances the potential for alpha generation through sector rotation, issue selection, term structure positioning, and foreign exchange exposure.

SECTION 2

BOND MARKET OUTLOOK

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

02

READY FOR A PAUSE?

Despite all the chaos of the first quarter, one thing is looking clearer: the post-COVID bear market has given way to a new bull market in bonds. The renewed elevation in yields has emerged as the silver lining of the 2022 bond bear market since, with bonds, yield is virtually destiny.

In that vein, **the first three months of 2023 marked the second consecutive quarter in what is in all likelihood a newly-minted bond bull market.** No doubt, the bank crisis has increased uncertainty.

But **the crisis may have introduced a major positive for the economy and markets alike: central banker caution.**

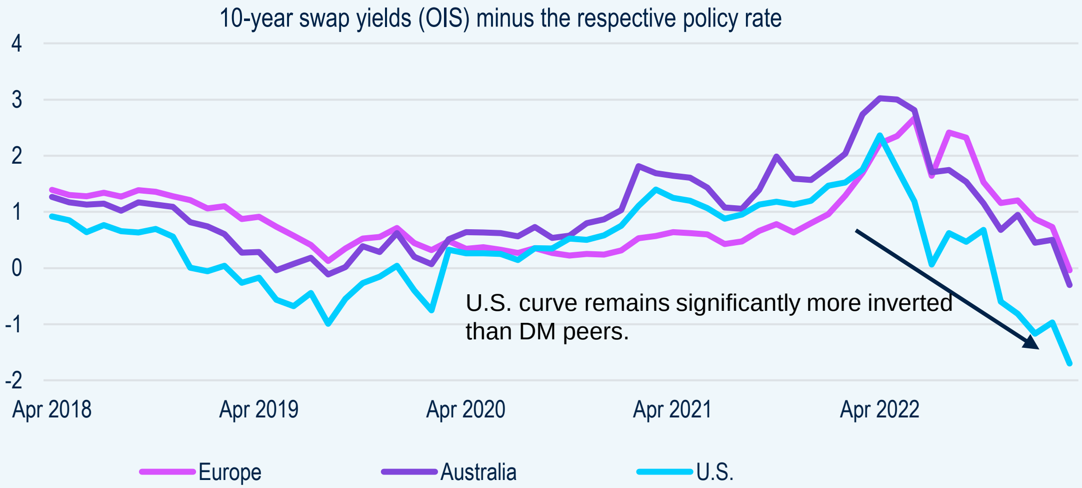
Fed Misses the Signs

With most developed market central banks hiking rates, flattening yield curves have become commonplace. But curve inversions are a different story, typically a sign of restrictive policy and notorious for portending recessions and / or financial calamities. Alas, with the U.S. curve handily winning the inversion race (Figure 1), the Fed should have arguably heeded the warning and slowed its pace of hikes.

But Sometimes a Little Bit of Chaos is Not a Bad Thing ... Especially for Bonds

Prior to the collapse of Silicon Valley Bank, central bank rate hikes were widely seen as the main threat to the economic expansion. Reducing inflation was the singular priority of consumers and businesses, politicians, and, hence, central bankers. In the wake of the crisis, however, central bankers may be more balanced in their efforts to tamp down inflation given their newfound appreciation for unforeseen risks. Ironically, markets may appreciate the more cautious approach to fighting inflation, even if that means taking longer to get it back to target.

Figure 1: Central banks hike until something breaks…oh snap!
True, DM central bank rate hikes caused yield curves to flatten. But the Fed appears to have outdone itself: ignoring this classic sign of rising risk, Fed officials drove a level of curve inversion not seen for decades. (%)



Source: PGIM Fixed Income and Bloomberg

Markets' Q1 Whiplash to Give Way to a Range in Q2

The first quarter experienced a phenomenal shift in market pricing from expecting a string of rate hikes following the January 31 FOMC meeting to expecting a string of rate cuts as a result of the SVB/CS banking crises. This swing in sentiment carried over to other DM bond markets to varying degrees. **In Q2, the Fed and markets are likely to step back, reflect, and regroup as they struggle to evaluate the post SVB landscape.** Are there other weak links? What are the knock-on effects across the broader economy? While investors await answers during this interval, **interest rates are likely to remain within the broad—even bipolar—range covered during the first quarter as they wait for the dust to settle (Figure 2).**

Return Driver Rotation: Rates to Spreads as Volatility Drops and Spreads Narrow

With monetary policy posing the biggest threat to the economy, it's no surprise to see that movements in credit spreads have closely corresponded with interest-rate volatility (Figures 3 and 4). To the extent that our "reflect and regroup" hypothesis and the range for interest rates plays out, we expect interest-rate volatility to decline and credit spreads to stabilize, or narrow, as economic uncertainty begins to clear. In fact, in the final days of the quarter, credit spreads narrowed and the broader stock market rallied, suggesting markets are trying to move beyond the SVB/CS crises.

Figure 2

Interest rates will likely remain range bound within the hawkish/dovish extremes of Q1, awaiting a clear read on the economy and policy in the wake of the banking woes. (%)

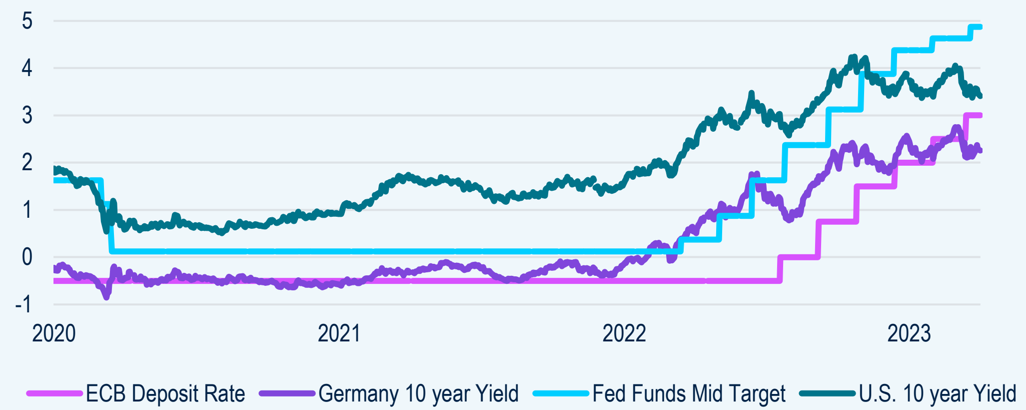
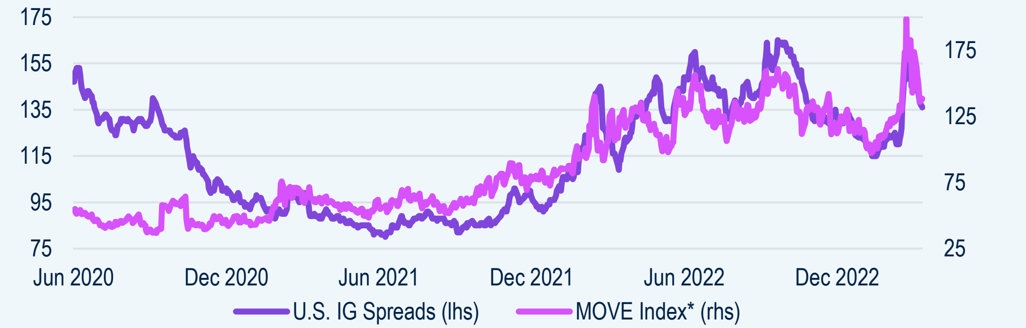
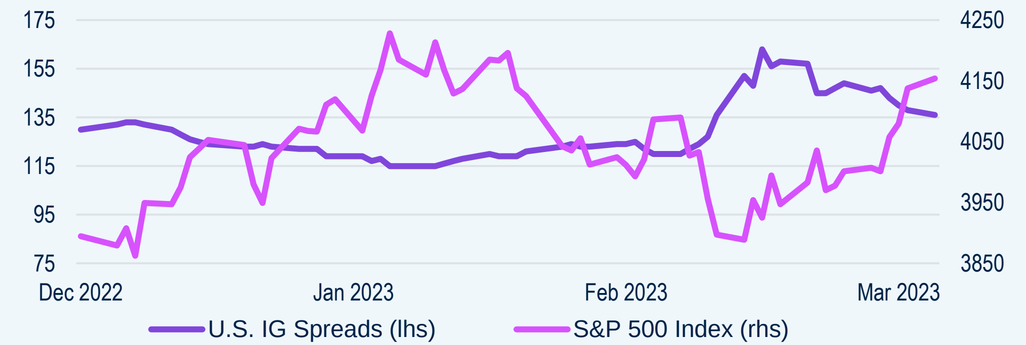


Figure 3 and 4: So goes volatility, so go credit spreads

If our "quarter of refection" results in range bound interest rates, interest-rate volatility is likely to fall and credit spreads appear set to narrow. (lhs: bps; rhs: index level)





Source: PGIM Fixed Income, Bloomberg. Bloomberg U.S. Corporate Index. MOVE Index is percent of implied yield volatility.

But Big Picture, Investors Aren't Splitting Hairs: the Yield is Just Too Darn High!

As 2022 came to a close and the relentless rise in bond yields began to level off, bond fund flows quickly flipped from outflows to significant inflows (Figure 5). In fact, a quick review of bond fund flows in recent years suggests that, unless rates are rising rapidly or volatility is soaring, fund flows have generally been positive and substantially so (Figure 6). That was true even in 2020, which was a time of extremely low yields. With yields now substantially higher, strong fund flows could provide an important tailwind for the markets as volatility begins to abate.

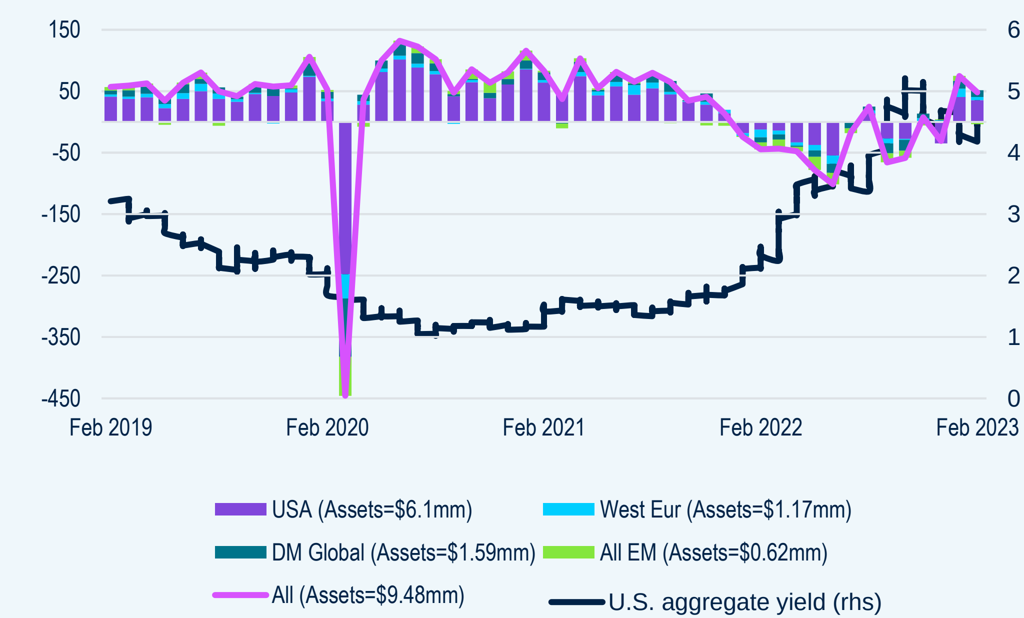
No Time for Blinders

From a big-picture perspective, the high-yield configuration provides a positive backdrop for fixed income in general. Nonetheless, the outlook is hardly devoid of risks. Geopolitical strains pose further market risks. International divisions are flaring in the wake of the ongoing Russia/Ukraine war. During the next quarter or two, markets will have to grapple with the morass of a potential U.S. government bond default. At this point, though, we see these risks as more peripheral than primary, but that could quickly change. As a result, we will keep our eyes and minds open while remaining prepared to revise our outlook as the quarter progresses.

Conclusion: Still "Game On" for bonds, but expect primary return drivers to rotate as Q1's interest-rate driven rally gives way to Q2's spread recovery as well as sector and issuer spread realignments.

Figure 5:
Responding to the stabilization of bond yields, fund flows have turned positive this year. (USD billions)

Figure 6:
In fact, barring rising yields or huge pandemic scale volatility, fund flows have been positive, perhaps reflecting strong underlying demographic driven demand for fixed income (lhs: USD billions; rhs: %)



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BLOG POST

SVB FALLOUT—THE FED TO GEOPOLITICS

While reverberations from the collapse of Silicon Valley Bank and Credit Suisse will continue, we can at least sketch out a set of broad implications.

WEBCAST

THE BANK BLOWUP

Listen as our experts assess the state of the global banking sector and discuss what investors might look for going forward.

BLOG POST

THE BENEFITS OF GLOBAL HIGH YIELD

Investors should remain cognizant of the structural benefits of traversing regions, which we explain in the concluding post of our series on European High Yield.

PGIM FIXED INCOME

SECTION 3

GLOBAL MACROECONOMIC OUTLOOK

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

03

THE LONG TAIL OF THE BANKING CRISIS

In previous outlooks, we emphasized the need to remain open-minded about the wide range of outcomes that could unfold for the global economy, in part because of the unprecedented pace of global monetary tightening to restrictive levels, but also due to the historic degree of uncertainty and complexity in the geopolitical backdrop.

The unraveling in the U.S. banking sector affirmed our sense of foreboding and led us to recalibrate the balance of risks in our outlook. More so than any other industry, the banking sector is an amplifier of the economic cycle. The fragilities of the sector—revealed by spectacular failure—will likely subtract a percentage point from GDP growth this year (taking our forecast to near zero), while limiting policymakers' scope to place singular focus on fighting inflation, particularly since we believe the challenges facing the banking sector go well beyond liquidity. Below we examine how the banking crisis will propagate through the economy and shape our expectations for the U.S., before looking at the broader implications for Europe, China, and beyond.

For **the U.S.**, the banking crisis will impose an immediate and long-lasting economic drag from reduced bank lending and the associated hit to sentiment.

The immediate hit is from the rotation of uninsured depositors from regional banks towards the biggest lenders, where deposits enjoy implicit guarantees from the government. The loss of cheap deposit funding among regional banks, which represents roughly 85% of the total, will likely reduce their propensity to lend, which had been growing at a 15% annual rate before the crisis hit, or almost double the rate of lending growth from larger banks. The pullback in regional bank lending will most directly threaten small businesses and industries, such as commercial real estate, where small lenders are responsible for a disproportionate amount of credit creation.

However, the impact goes beyond just regional banks. Headlines of deposit flight have shone a light on the near-zero rates that most depositors are earning—at banks large and small—compared to the 4+% yield that they could instead earn at the click of a few buttons if they move savings to liquid cash alternatives, such as money market funds, or directly purchase Treasury debt at auction. In fact, deposits at banks had already been declining throughout the past year (Figure 1); so far, the banking crisis has only accelerated the flight from banks into money-market funds (Figure 2).

Figure 1: U.S. deposit flows declined sharply…
(lhs: USD billions; rhs: USD trillions)

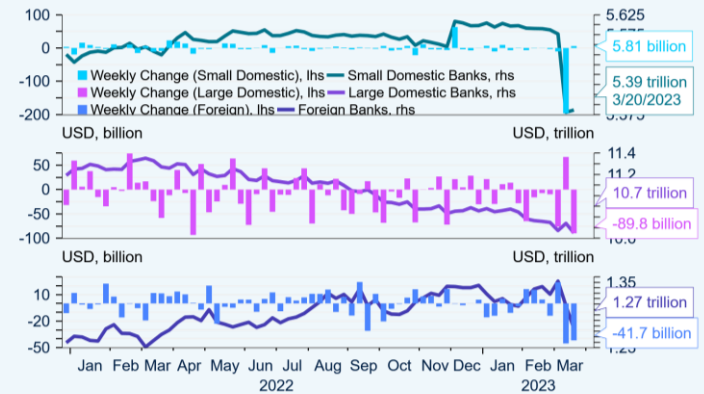
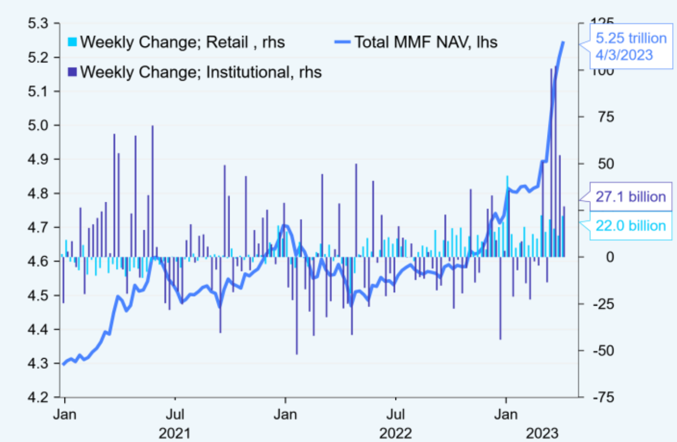


Figure 2:…while money market flows surged.
(lhs: USD trillions; rhs: USD billions)



Sources for charts: PGIM Fixed Income and Macrobond

To compensate for the loss of funding, banks are now forced to secure short-term funding in repos and the fed funds market at much higher costs. The higher funding costs cause banks' net interest margins to narrow and will likely further curtail their desire to lend to the real economy.

The path ahead sets up in sharp contrast to the decade of easy money and loose liquidity, during which policymakers had ample room to set monetary policy in tandem with measures that could shore up financial stability at or near the zero effective bound. In the current circumstances, the so-called separation principle between policies to manage the macroeconomy and preserve financial stability will be tested, and the tools available to inject liquidity may prove insufficient in stemming further runs from banks with fatally flawed business models.

In light of the recent shocks and the Fed's constrained ability to contain the broader crisis, we have increased the probability of a recession in the U.S. to 40% from 30%. We've also raised the odds of stagflation to 15% from 5%, owing to the possibility that the Fed may have to prematurely pause its rate hike campaign to prevent further financial instability.

Consistent with these adjustments, the shock has reduced the likelihood of a soft-landing (moderate growth and inflation) or a roaring 2020s scenario (high growth, low inflation). For the Fed, we believe the March hike to an upper bound of 5% likely marked the end of its tightening cycle: the credit crunch that is already brewing will likely cause economic contraction in the second half of the year, forcing the Fed to make 50-75 bp of rate cuts in Q4.

Our more somber outlook is also informed by unresolved risks on the horizon that may upend financial markets and the economic expansion. The recurring saga to raise the debt ceiling is back, this time with more potential to inflict damage on the economy and financial markets than ever. It's unclear the point at which Treasury will exhaust its capacity to meet its obligations, but some analysts expect the so-called X-date could happen as early as June. Instead of reaching a last-minute resolution by that deadline, some politicians seem willing to push the Treasury Department into prioritizing debt repayments over other obligations—an unprecedented circumstance that will be perceived by some as tantamount to default. Even in the less adverse scenario of a last-minute resolution, the economic hit could be deeper than during the 2011 episode because of the comparatively worse initial conditions. The more-than-doubled stock of national debt, the greater polarization within and across political parties, and the uncertain foreign demand for Treasuries amid geopolitical tensions have raised the likelihood of an amplified macro shock compared to the episodes of the past.

Internationally, the range of profound and persistent structural trends that we have highlighted in the past continues to impose heightened geopolitical risks to our outlook: Russia's continued war on Ukraine; the intensified great power competition between the U.S. and China and the increasing use of economic statecrafts such as export controls and sanctions; 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.

In Europe, the impact from the recent bout of market turbulence will depend on the degree of contagion vs. spillovers. Despite existing fault lines, such as the lack of a fiscal and banking union, there are good reasons to believe that contagion to euro area banks will remain contained. For example, regulatory and supervisory oversight is more consistent across euro area banks. The UK is seen to have gold-plated its application of Basel 3.

However, even in the case where contagion risks to banks are contained, market focus could swiftly turn to sovereigns. In such a scenario, we might expect Italy to come under particular pressure given its high debt-to-GDP ratio and Italian bank exposure to government debt (Figure 3). If such a risk were to crystalize, it could test the ECB's resolve in its use of the Transmission Protection Instrument.

In the absence of contagion, the spillover impact from the U.S. banking crisis will nevertheless tighten the provision of credit across the region, dampen demand, and bring inflation back to target more quickly than would have otherwise been the case. Moreover, any slowdown in U.S. economic activity would be expected to impact the macro outlook for both the UK and the euro area given their high degree of openness to trade and the importance of the U.S. as a key trading partner.

We expect these concerns to manifest themselves in a shallower path for further ECB rate rises and a likely lower terminal rate of around 3.5%.

Given recent developments, we have raised the probability of recession in the euro area to 30% from 20% while keeping the risks of stagflation at 45%. Overall, the latest developments have reinforced our expectations of a weak backdrop facing Europe in the next 12 months.

For **China**, we continue to see distinct contrasts between the cyclical and structural outlooks. The likelihood of solid GDP growth in line with our above-consensus growth projection of 5.7% in 2023 has increased.

Following the end to zero-COVID in late 2022, significant policy easing across a wide range was implemented, and recent hard and soft data have confirmed some bounce back in (lockdown-depressed) services demand, as well as continued policy-driven strength in infrastructure investment and incipient signs of life in the property sector. Against the background of a still difficult employment outlook, especially for young cohorts (Figure 4), we expect the new government to keep policies supported throughout at least Q2.

Looking beyond the current year, these stimulus policies will do little to address overcapacity and debt problems, and we continue to be relatively downbeat about China's long-run outlook. From a growth input perspective, further capital accumulation on a substantial scale is unlikely because debt is already at very high levels and funding is becoming increasingly difficult to come by; meanwhile, growth in the labor force is falling due to an already quickly aging population. But the most worrying aspect of China's long-term growth case is the sharply curtailed growth in total factor productivity. If history is any guide, China's TFP increase has slowed to a pace that seems insufficient to escape the middle-income trap (Figure 5).

As a concluding thought, the U.S. banking crisis is likely only Exhibit A for the various areas of the U.S. economy buckling under higher interest rates. The vast and complex financial system makes it difficult to know ex-ante which shoe is going to drop next, pointing to the need to keep a humble and open mind as we try to understand the known and unknown forces driving the global economy.

Figure 3: Banks' sovereign holdings reveal the linkages between the entities. (% of total)

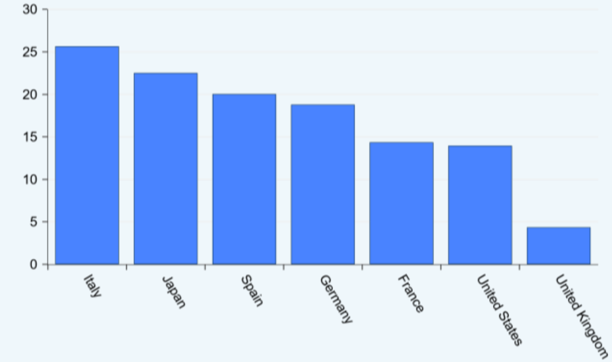


Figure 4: New government policies should remain supportive amid tough labor conditions. (%)

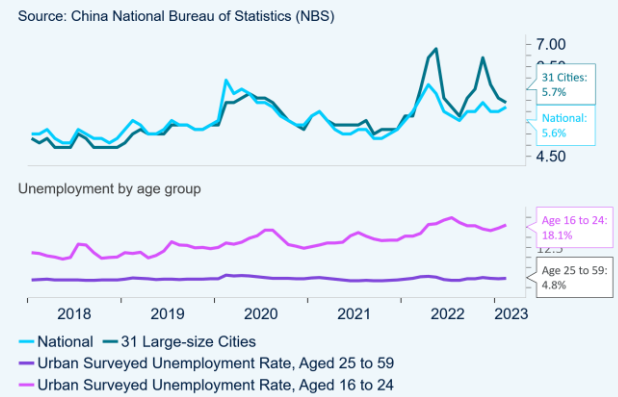
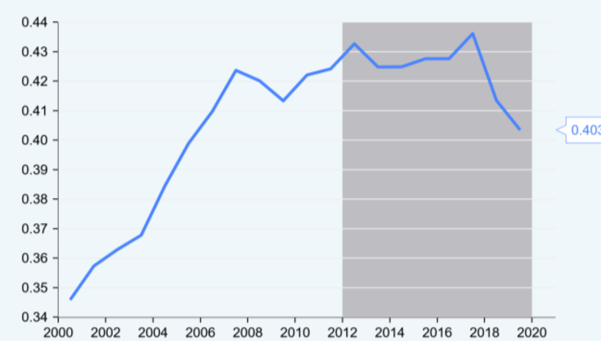


Figure 5: An ominous decline in China's total factor productivity as it seeks to escape the middle-income trap. (ratio)



Sources for charts: PGIM Fixed Income and Macrobond:

SECTION 4

GLOBAL SECTOR OUTLOOKS

04

DEVELOPED MARKET RATES

Outlook: Remaining tactical. In the event volatility subsides, developed market interest rates may drift higher across their respective curves. Hence, we generally remain neutral while trading tactically. Without a deal on the U.S. debt ceiling, perilous market and economic ramifications loom.

■ Global banking developments introduced another bout of extreme volatility into the developed market rate complex as the first quarter concluded. The volatility was most pronounced in front-end rates as they tumbled with the uncertainty, only to rise again as market conditions steadied. The volatility was such that some trading days brought moves of 50 bps or more. During the height of the volatility, the U.S. 2- to 30-year yield curve steepened by 100 bps over the course of two weeks as about 80 bps of rate cuts by the end of 2023 were priced in. A similar pattern developed across the German bund complex as well.

■ Although the turbulence strained market functioning, the markets showed greater resilience than during prior crises. For example, the U.S. repo markets remained operational, unlike the episode in September 2019 (i.e., excess reserves appeared adequate), and off-the-run issues continued trading, unlike the COVID-related freeze in March 2020. Therefore, we have generally been able to move risk as needed.

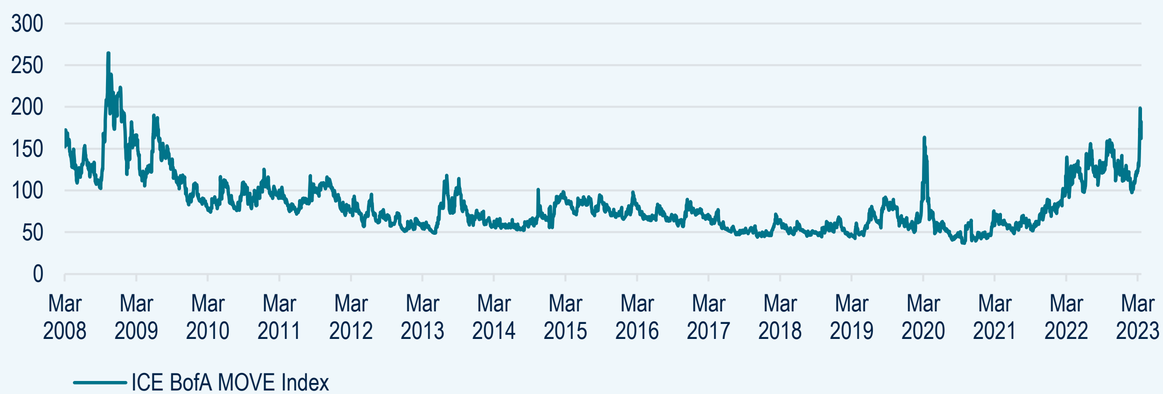
■ While we continue to tactically trade around specific opportunities in the sector, our broad positioning in the developed market rates complex remains close to neutral. In the event the banking situation lingers or intensifies, we would expect the bid for developed market rates to remain. However, once the crisis fully passes, we expect to see declining volatility and some upward pressure on U.S. and European rates.

■ Our favorite trades remain familiar. We favor long positioning in the 20-year vs. long-dated futures (WN and US contracts), long positioning in 7-year swap spreads vs. 10-year swap spreads, and short positioning in off-the-run 10-year cash bonds vs. on-the-run 7- and 10-year bonds.

■ Unfortunately, the ominous cloud of the U.S. debt ceiling lies ahead, and markets pricing will increasingly reflect the heightened uncertainties around the situation. The date to reach an agreement, face debt prioritization, or potentially default looms as early as June and should become clearer with incoming tax receipts. While the U.S. has faced prior debt-ceiling showdowns, this iteration is increasingly perilous given the country's elevated debt levels, heightened political polarization, and uncertain overseas demand for Treasuries.

Figure

Implied Volatility During the Banking Crisis Soared Past COVID Levels, But Just Shy of GFC Levels.



Source: PGIM Fixed Income and Bloomberg.

AGENCY MBS

Outlook: Constructive over the long term. While the recent improvement in valuations supports our outlook over a longer-time horizon, the potential re-emergence of event risk and volatility remains a primary concern. We favor 30-year 4.5-5.5% issues, specified MBS pools, and Ginnie Mae's.

■ The long-term support we see for the U.S. MBS sector remains a function of broader monetary-policy and interest-rate conditions. For example, the recent interest-rate volatility renewed the cheapening in valuations, while historically elevated mortgage rates as well as constrained home affordability may limit originations and refinancings. Although mortgage rates could decline in the near term, limited origination activity in recent months should continue to constrain prepayment speeds. Furthermore, MBS durations have already extended (see the accompanying Figure), hence minimizing overall convexity risk.

■ As we look ahead, given that the Fed likely wants to avoid adding pressure to the sector, MBS sales from its balance sheet appear even less likely. That said, if quantitative tightening stops, the Fed will likely let MBS roll off the balance sheet and will reinvest the proceed into Treasury holdings, which is consistent with its longer-term objective.

■ The risks to the sector are also familiar given the shifting trajectory of inflation readings in recent months. While inflation pricing currently points to easing pressure, if it ticks higher again, the Fed's hiking cycle may extend and restart another bout of volatility across markets.

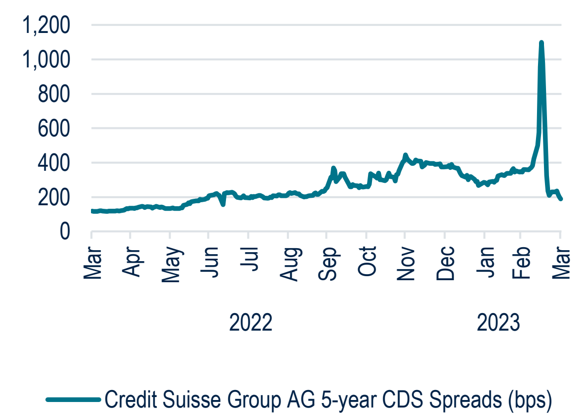
■ The recent events around the regional banking sector have also introduced uncertainty regarding the demand for MBS despite the better risk treatment for banks holding the securities. MBS demand could also wane if investors' appetite shifts to the CMBS sector, which has underperformed recently. TBA dollar rolls in the sector are also trading near the cost of carry, thus limiting the appeal of the assets for accounts that cannot buy specified pools.

Figure
Durations (mod. adj.) have extended to historical lengths across the MBS coupon stack (years)

Source: PGIM Fixed Income and Bloomberg. Based on the Bloomberg U.S. MBS Agency Fixed Rate Index

ENVIRONMENTAL, SOCIAL, AND GOVERNANCE

- Environmental and social considerations—and climate change in particular—often take centre stage within the world of ESG. However, the recent crisis of confidence facing banks around the world serves as a stark reminder of the importance of the "governance" component of ESG.
- Governance in the corporate context encompasses a wide range of factors including the leadership team of an organisation, its rules practices, processes, and ownership. In particular, the quality of the executive team and its decisions are instrumental to a firm's success.
- A failure of governance can be particularly impactful for business models that are heavily reliant on human capital, such as banks, as cultural weaknesses at the top of organization can have a cascading impact across the wider organization.
- Credit Suisse serves as an interesting case study. In recent years, the bank faced a series of high-profile ethical allegations. These include the setup of a surveillance scheme to spy on former executives and senior managers who ordered secretaries to complete compliance courses in their place.
- A weak culture at the top of an organization significantly raises the risk of misconduct and excessive risk taking across the wider organization. In the case of banks, such as Credit Suisse, this can prove especially costly. Ethical failures by Credit Suisse bankers led to hundreds of millions in fines, including £350 million to UK, U.S., and other Swiss regulators due to the bank's role in a corruption scandal in Mozambique, one of the poorest countries in the world. The bank also repeatedly failed to implement appropriate risk protocols, leading to billions of dollars in losses from its exposure to stressed clients (Archegos) and investments (Greensill).
- Large organisations are likely to have a few bad apples. Yet the frequency and severity of the missteps at Credit Suisse were, in our view, indicative of poor governance and led our investment team to "Fail" the company on our SFDR Good Governance assessments framework in March 2022, making it ineligible for all of our Article 8 ESG-oriented strategies.
- While there are many factors linked to better governance, meeting these characteristics in isolation provides limited assurance that companies will practice good governance. In the case of Credit Suisse, the bank performed strongly in many third-party ESG rating organizations due, in part, to the firm meeting a number of governance best practices, such as having strong diversity and independence of the board. This highlights the pitfalls of relying simply on a "check-the-box" approach to assessing governance.
- Pre-emptively identifying poor governance will always be challenging. Investors frequently face imperfect and asymmetrical information. Silicon Valley Bank is a case in point. While there were certainly some red flags, such as its unconventional risk management functions and its rapid growth relative to peers, investors ultimately had limited information as to the scale of the bank's risky interest-rate bets until it was arguably too late. However, when a company exhibits a pattern of scandals, we believe this is a strong indication of a systematic failure in the company's governance.



SECURITIZED CREDIT

Outlook: Seeking higher ground: value in senior tranches; too soon for junior credit. Rising liquidity premia, elevated market volatility, and a deteriorating macro picture have continued weighing on spreads. Credit curves across capital structures have steepened and should decompress further as credit weakens, creating value in mezzanine tranches of sound assets (RMBS and upper mezzanine CLOs) and signaling distress in mezzanine tranches of challenged assets (CRE). Senior tranches have given back much of the gains achieved in the early months of the year and look attractive on a risk adjusted basis, though volatility could persist. Banking sector stress could further pressure spreads, especially if banks need to deliver.

■ **ABS:** Prime consumers continue to perform. Credit deterioration is accelerating for the sub-prime cohort, particularly, for issuers with more aggressive underwriting criteria. Banks, especially smaller institutions, have pulled back from originating consumer loans, which reduces credit creation. ABS issuance could see a boost if larger banks securitize assets to reduce the size of their balance sheets. ABS mezzanine performance will likely be idiosyncratic, and bonds from issuers with sophisticated controls should outperform.

■ **CLOs:** We expect defaults and downgrades to CCC to continue increasing, resulting in dispersion in CLO mezzanine and equity performance. AAA/AA CLO tranches will likely remain structurally protected. The fortunes of lower mezzanine CLOs will likely be linked to bank loan defaults and CCC downgrades. So far, so good, but the trend is deteriorating. We see value in AAA/AA tranches.

■ **CMBS:** Lagging capitalization spreads will likely continue pressuring capitalization rates and, in turn, commercial real estate valuations. Net operating income will remain challenged, particularly for office properties, though dispersion exists. Defaults are increasing, especially for properties falling short of business objectives and those with floating-rate debt. Regional and small banks are large CRE lenders, and their likely withdrawal will reduce credit availability. AAA conduit bonds are attractive, while CRE credit bonds should have better entry points ahead.

■**RMBS:** Mortgage credit performance should remain stable despite higher mortgage rates and the ongoing decline of home values from recent peaks. Housing supply remains tight, which consequently supports valuations. Market volatility could weigh on spreads despite benign credit conditions. We expect this to be a buying opportunity. CRT bonds referencing 2021 or prior mortgages are attractive.

Figure
Recent changes and future projections for CRE prices

Sector	Estimated peak to trough price change (%)	Commentary	Near-term Outlook
Office	-20% to -50%	Leasing activity declining and availability rates continue rising as companies right size	
Multifamily	-12.5% to – 17.5%	Expect rent/NOI growth to slow and cap rates to widen given record tight risk premia; agencies to remain active lending	
Retail	-10% to -15%	Remain constructive on A+/A++ malls that will benefit from consolidation	
Hospitality	-7.5% to -12.5%	RevPar up over pre-pandemic levels, but cautious amid recession risks	
Industrial	-7.5% to -12.5%	Expect slower growth given less incremental demand from e-commerce and supply pipeline	

Source: PGIM Fixed Income

INVESTMENT GRADE CORPORATES

Outlook: Caution in the U.S. with some relief in Europe. Given the uncertainty with U.S. regional banks, we forecast range bound to wider U.S. spreads in the short term. In Europe, the CS resolution lifted a foremost market risk, and we forecast range bound to tighter spreads.

■ Following a resilient end to a turbulent first quarter, the macroeconomic landscape facing the **U.S. IG** sector appears increasingly fraught: geopolitical uncertainty (e.g., tensions with China) has increased, the debt ceiling showdown looms, and credit tightening may increase recession risk. Conversely, the Fed may be increasingly close to concluding its rate hiking campaign.

■ Corporate fundamentals remain solid, but are deteriorating: revenue growth is slowing, EBITDA appears to have peaked, strong profit margins are trending downwards, and earnings per share are expected to decline 5%-10%, a bit worse than our earlier expectations for a decline of 0-5%. Leverage levels are also ticking up from recent lows.

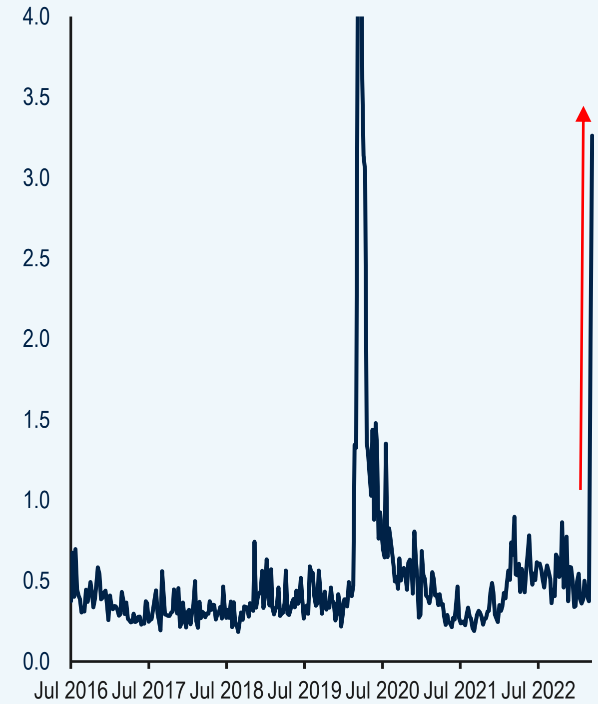
■ Along with a more challenging economic backdrop and a higher risk of a recession, we also believe that tail risks have climbed, which leaves us more cautious on the outlook. In our view, spreads are likely to be range bound or wider in the short term, but we are more optimistic over the longer term as the Fed moves beyond its tightening phase, inflation cools, and investors look ahead to stronger growth on the horizon, which should allow spreads to recover.

■ In addition, market volatility and dispersion have risen to levels comparable to the Financial Crisis of 2009 (see Figure), the latter of which bodes well for alpha generated by bottom-up security selection.

■ In an environment of volatility and ultimately somewhat range-bound spreads, we view periods where spreads are wider than 150 bps as potential buying opportunities and periods when spreads are tighter than 120 bps as potential selling opportunities (for context, the spread range over the last 12 months was 115-163 bps).

■ Near term, we plan to capitalize on an expected increase in corporate issuance, which should come at significant concessions to existing bonds. Likely issuers include U.S. regional banks, which are rebuilding their capital buffers and may want to increase non-deposit liabilities, and industrial firms, which may want to raise liquidity to insulate themselves from tighter bank lending. Issuers may want to take advantage of the recent decline in rates and to get ahead of potential debt ceiling-related volatility.

Figure
Standard deviation of weekly excess returns by ticker (%)



Source: PGIM Fixed Income and Barclays Research

■ In terms of individual opportunities, we view bank bonds as attractive investments at current spreads, led by the "big six" money-center banks. These have historically traded inside the spreads of industrial firms but are currently trading slightly wider and may benefit from depositors moving their funds from smaller institutions. Next in our order of preference are bonds from super-regional banks and large Yankee bank issuers. BBB-rated bonds of non-financial firms don't look particularly cheap versus A-rated, non-financial bonds, so we favor higher-rated bonds in this segment. And as the U.S. IG yield curve flattened, we also favor short-maturity bonds with relatively high carry over longer-maturity bonds.

■ As Q1 ended, the **European IG** corporate sector ended on a different footing than its U.S. peers. In contrast to the U.S., the acquisition of CS by UBS resolved a key problem with a limited widening of spreads in a market that was already keenly priced. Despite recent volatility around Deutsche Bank, investors in the region remain wary of lingering risks regarding U.S. regional banks.

■ The March widening in European IG corporate spreads was probably fair given the tight levels to which spreads had compressed earlier in the quarter. In Q2, we forecast resilient corporate earnings, without an immediate sign of an economic downturn. Geopolitical tensions in Europe have probably been priced in, and we foresee moderately tighter spreads in the long run if not sooner.

GLOBAL LEVERAGED FINANCE

Outlook: Remaining cautious in the near term as recession risk has grown. We are positioned for near-term widening but are more constructive over the longer term and looking for signals to shift to a more risk-on stance. Active management and accurate credit selection will continue to be rewarded as volatility continues.

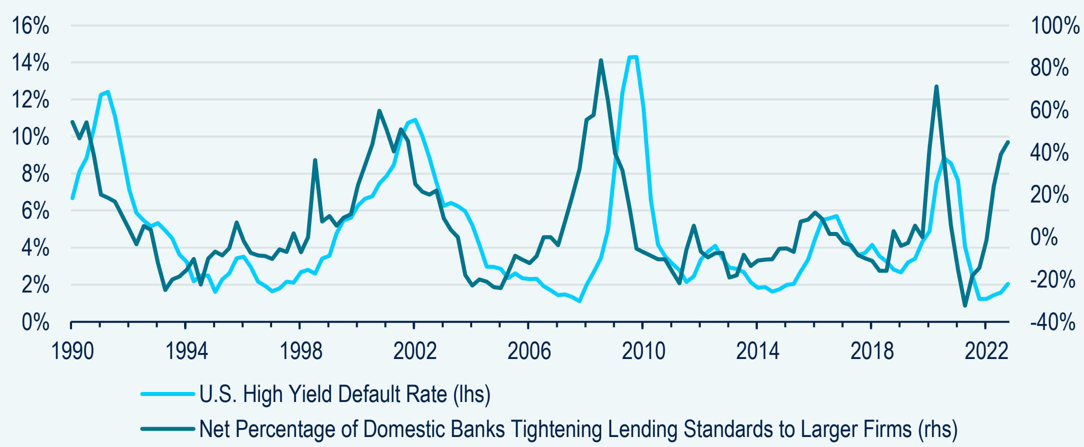
■ While we believe contagion risks around the recent U.S. banking shock and forced tie-up of UBS and Credit Suisse will be contained, we are concerned about the impact on the economy arising from the likely pullback of credit from the banking sector going forward. Historically, tighter lending standards, as measured by the Fed's Senior Loan Officer Opinion Survey (SLOO), have been correlated with higher default cycles. As such, we have raised our probability of recession and remain somewhat cautious over the near-term.

■ While the technical backdrop remains supportive due to a variety of factors including lower gross new issuance and a meaningful supply deficit, U.S. high yield spreads are likely to widen amid slowing earnings and declining corporate outlooks. Although we remain defensive, we don't expect defaults to be as severe as in previous downturns due to the strength of most issuers' balance sheets and the absence of a near-term maturity wall.

■ Moreover, the market is of a higher quality today than in prior cycles, 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 is now modestly higher than the number of upgrades.

■ Should the economy follow our base case recession scenario, we expect defaults to remain manageable, rising to 3.5% over the next nine months and to 5% over the next 12 months. While we are currently positioned defensively, our one-year outlook is far more favorable and we are looking to opportunistically add higher-quality and shorter-duration positions on pullbacks from here. We are maintaining overweights to independent energy and power producers, while reducing our overweight to home construction, reducing our underweight to cruise lines, and maintaining underweights to technology and media & entertainment.

Figure
Tighter Lending Standards Typically Precede Higher Defaults



Source: Board of Governors of the Federal Reserve System. Moody's Investors Service. As of March 2023.

■ 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 8.5% 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 in the near-term on **European High Yield and European Loans**. Recession probabilities are on the rise again, in our view, against an increasingly complex backdrop. Persistently high inflation, banking system fragilities, and geopolitical challenges create a tough environment for consumers, corporates, and central bankers to navigate, and the probability of tightening credit conditions and an economic slowdown remain high in our view.

■ That said, we continue to look for signals to shift to a more risk-on stance. We remain nimble and would turn more constructive if the aforementioned headwinds subside, or more adequately price into the market if they persist. Yields are increasingly attractive on an absolute basis and spreads are currently above the historic average, unlocking value for investors with longer time horizons.

■ While an earnings recession and/or increased interest costs will erode fundamentals, we don't expect to see a material pickup in defaults over the next 12 months given the lack of near-term maturities, strong liquidity of issuers, and generally high quality of the market. 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 slightly 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 continue to be rewarded as volatility continues.

EMERGING MARKET DEBT

Outlook: Minimizing vulnerabilities while remaining focused on opportunities. Favoring hard currency sovereigns and quasi-sovereigns with solid fundamentals and government support. Overweight BBB/BB corporates in economically stable countries. Gaining confidence in local rates as rate cuts approach. Cautious on EM currencies on risks of slower growth.

■ **Risks and Opportunities:** The conditions outlined in our macro section raise some key questions pertaining to the emerging market debt sector. For example, where are the weakest links in the sector given how leveraged emerging markets are to global growth, funding conditions, and U.S. dollar strength? And will the combination of these risks raise the probability of more defaults and keep investors risk averse?

■ In terms of opportunities, valuations, positioning and technicals appear supportive. The carry in EM debt is high, and price returns can also be attractive if the U.S. economy manages a soft landing. China's growth outlook can remain a tailwind even if the U.S. imposes (limited) targeted sanctions. "Reshoring" may bring opportunities in Asia and Latin America.

■ Despite geopolitical tensions, multilateral organizations and development banks remain aware that vulnerable emerging markets need support. This could aid EM sovereign debt restructurings and prevent drawn-out defaults.

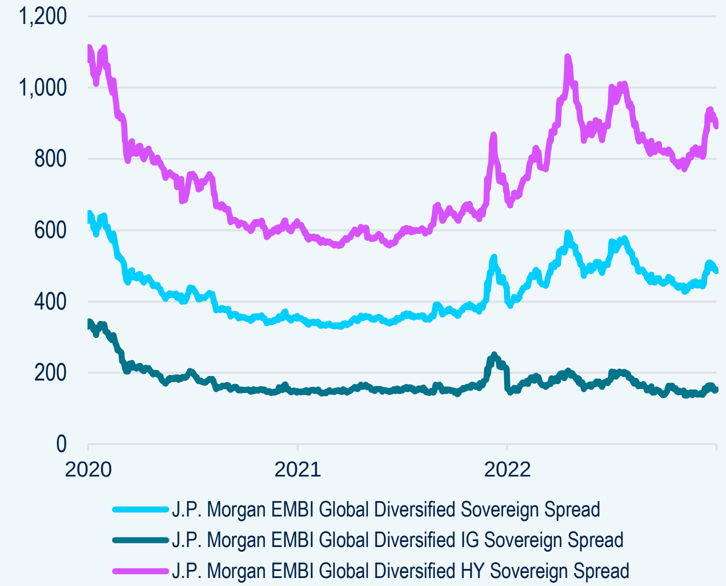
■ Local rates in some countries with slowing inflation or disinflation appear attractive. Our conviction in EM currencies is low, but relative-value opportunities exist. If risk-off sentiment remains high, there are tactical opportunities to overweight the U.S. dollar.

■ Uncertainties abound in **EM hard-currency government debt**, but opportunities exist. The constructive tone from the start of 2023 has waned amid higher inflation data in February and bank crises in March. The resulting confidence shock lifted EM hard-currency government bond spreads to more than 500 bps while increasing the dispersion between higher-quality and lower-quality issuers (see Figure).

■ Given the elevated tail risks and threat of further contagion, confidence will take time to recover, and spreads are unlikely to quickly snap back after pricing in some substantial risk in March. The spread on the EMBI Global Diversified index widened almost 50 bps, past the 90th percentile set over the last 15 years. The high-yield segment of the index is only 250 bps shy of its widest point from the financial crisis of 2008.

Figure

Recent volatility increased the spread dispersion amongst segments of the hard currency sovereign index. (bps)



Source: PGIM Fixed Income and J.P. Morgan

■ We have maintained conservative positioning over the last two years given the multiple sources of market pressure. This strategy has included an underweight to B-rated sovereigns. Despite the recent spread widening, we are likely to stay that course: most B-rated issuers that we have avoided are still not attractive enough to cover our underweights.

■ In our view, the best opportunities exist in sovereign and quasi-sovereign issuers that have solid fundamentals with low financing needs or quasi-sovereigns that have government support. Within the IG universe, we find the steep curves in Middle Eastern countries with high reserves attractive. Indonesia combines strong fundamentals with attractive valuations. Romania became more attractive in January after it covered most of its financing needs for the year.

■ Our largest exposures are in BB-rated issues. We find the Dominican Republic and Serbia attractive, as both have likely covered their financing needs earlier this year. We also see value in Colombian, Moroccan, and Brazilian sovereign bonds—all solid issuers that can perform well in various environments.

■ Our B-rated and higher-beta exposure is limited to issuers like Ivory Coast, Angola, and Gabon. Ivory Coast and Gabon have diversified export bases and have resolved their deficit issues with the help of the IMF. While Angola is a larger oil exporter, it has materially reduced its debt, also with IMF help.

■ Quasi-sovereigns with the support of their respective governments offer significant value. South African electricity provider Eskom remains a core position: many of its financial issues were resolved when the government took over some of its debt and provided interest support. We have increased positioning in Colombian state oil company Ecopetrol after issuance at the end of last year which relieved a wall of maturities. We also see value in Mexican quasi-sovereigns, such as Mexico City Airport and shorter-ended bonds of state oil company PEMEX. Both offer wide spreads over the Mexican government's bond yields, but enjoy government support.

■ **EM corporates may be down, but they're not out.** The spread of the CEMBI Broad Diversified (average credit quality of Baa2/ BBB-) over U.S. Treasuries widened 60 bps to 380 bps since its February tights as it priced in an economic slowdown. When excluding the strength in Chinese property bonds, spreads widened even further.

■ EM corporate spreads of about 110 bps over EM government bonds appear attractive as they trade notably wide of developed-market bonds. For example, the 455 bps spread of BB-rated EM corporate issues recently offered a pick-up of 135 bps over similarly-rated U.S. corporate issues. For reference, spreads on BBB-rated EM corporates are only about 35 bps tighter than those on U.S. BB-rated corporates.

■ EM corporate earnings and their outlook have remained resilient, despite unexpected distress, e.g., in some Brazilian issuers. There is margin pressure due to higher input costs, the stronger U.S. dollar, and lower product prices. But balance sheets have remained resilient, albeit with higher leverage, and refinancing schedules are mostly manageable. Unless commodity prices or economic activity collapse, we believe that defaults will remain below their historical average.

■ We continue to have core overweight positions in BB/BBB-rated corporates in economically stable countries, such as Mexico, India, Israel, and Peru, as well as in quasi-sovereigns including South African transport firm Transnet.

■ We have added higher-quality risk in South Korea and Hong Kong and reduced risk in B-rated commodity-sensitive issuers, which would be vulnerable in a slowdown. We have reduced exposure to commodity-sensitive and/or lower-rated credits and raised cash to put to work if the market corrects further.

■ Prospects for an economic slowdown favor select long-duration positions in local-currency bonds. Local rates have been volatile year-to-date and have traded directionally with developed market rates. Inflation data have been mixed to start the year—inflation remains sticky in some countries while falling in others.

■ Given developments in the banking sector and continued price declines in commodities, such as oil, we are gaining confidence that: 1) select central banks are getting closer to cutting interest rates, and; 2) inflation will take a backseat to concerns over a growth slowdown.

■ We are net long duration and expect curve steepening across most countries. Regionally, we favor Latin America and Asia. We are long duration in higher-quality markets, such as Brazil, Mexico, and Korea—three countries that are either close to cutting (i.e., Brazil, Korea) or near end of hiking cycle (Mexico). We are partially offsetting these long-duration positions with short-duration positions in Colombia and Malaysia, where we think rate cuts are probably further off.

■ We have low conviction in the direction of **EM currencies**, but relative-value opportunities exist. In early 2023, we were positive about EM currencies for three reasons: 1) Economic growth was resilient and higher than expected; 2) the Chinese government was re-opening the economy, stabilizing its property market, and investing in infrastructure; and 3) the Fed and other central banks were reducing the size of their hikes and nearing the end of their hiking cycles.

■ EM currencies have registered gains year-to-date, but those have been concentrated in Latin America and Europe. Overall, high-carry currencies have outperformed.

■ Given the recent developments in the banking sector, we have become more cautious as the risk of lower-than-expected growth has risen. Our conviction on the direction of EM currencies is low, so we think it is wise to focus on relative-value positioning. If a recession appears more likely than not, we would look to complement the relative-value positioning with a short EM currencies bias.

■ We are keeping our EM currency beta neutral. We are long high-carry currencies (Colombian peso, Hungarian forint, South African rand) versus lower-carry currencies (Chinese yuan, South Korean won).

■ The Colombian peso and Hungarian forint benefit from high carry and are attractively valued. In our analysis, the South African Rand is undervalued while South Africa's central bank continues to raise rates.

■ The Chinese yuan offers little carry, and we expect China's current account balance to deteriorate. The Korean won is vulnerable to slowing global growth.

MUNICIPAL BONDS

Outlook: Neutral. We see pockets of uncertainty heading into Q2 but fundamentals remain solid and long-term opportunities exist.

■ While credit quality remains strong, with state tax collections elevated and rainy-day funds near all-time highs, technicals may be challenged over the coming months. We are entering what is typically a seasonally weak period for municipals, with declining reinvestment activity and typically higher new issuance. Additionally, fund flows have turned modestly negative in recent weeks following the large inflows to begin the year.

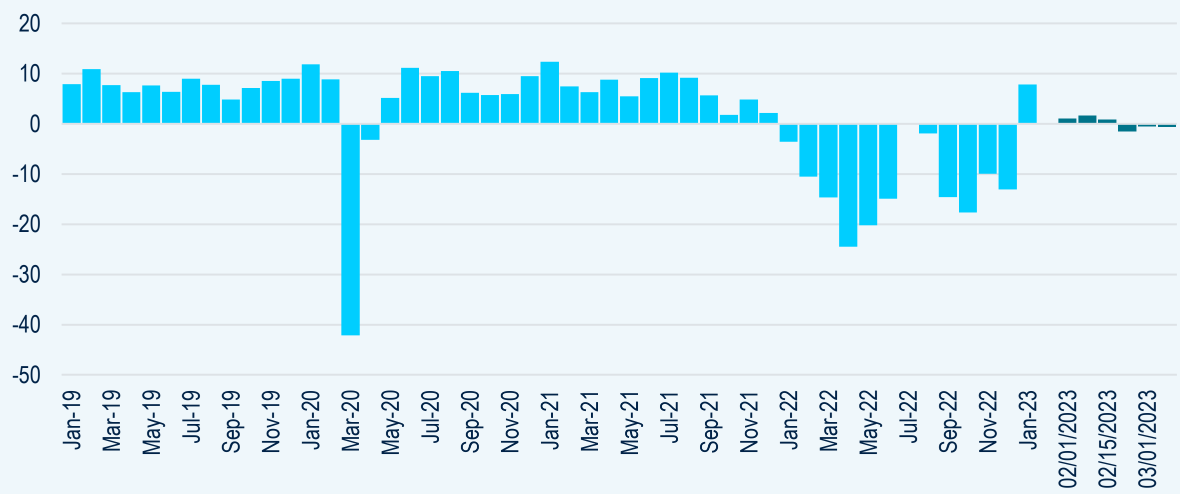
■ Moreover, the recent U.S. bank shock has introduced additional pockets of uncertainty, with the health of the financial sector a potential headwind. This includes the need for regional banks to liquidate large municipal bond portfolios in recent weeks and the potential for additional sales should more banks need to raise liquidity.

■ Balancing our somewhat cautious stance, spreads remain relatively wide, particularly for high yield and pre-pay gas bonds, unlocking value for longer-term investors. The recent underperformance of munis versus corporates may also generate interest from new buyers and tax liabilities should be lower than normal in 2023, which means less selling to pay taxes. Meanwhile, a decline in rate volatility once the Fed signals an end to its hiking cycle could also be a longer-term tailwind.

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

■ Taxable munis have marginally outperformed corporates in recent weeks, making them less attractive from a valuation perspective. However, taxable supply is expected to remain muted in 2023, in part, due to less taxable issuance to refund tax-exempt debt, higher rates, and Fed uncertainty.

Figure
Muni fund flows have turned slightly negative in recent weeks. (USD billions)



Source: PGIM Fixed Income and ICI as of March 20, 2023.

SECTION 5

SUMMARIES

05

SUMMARY OF OUTLOOKS & ASSET CLASS VIEWS

NEGATIVE VIEW — POSITIVE VIEW

Sector	Outlook	Asset class views*
DM Rates	Remaining tactical. In the event volatility subsides, developed market interest rates may drift higher across their respective curves. Hence, we generally remain neutral while trading tactically. Without a deal on the U.S. debt ceiling, perilous market and economic ramifications loom.	U.S.; Germany; Japan; UK; Canada; Australia
Agency MBS	Constructive over the long term. While the recent improvement in valuations supports our outlook over a longer-time horizon, the potential re-emergence of event risk and volatility remains a primary concern. We favor 30-year 4.5-5.5% issues, specified MBS pools, and Ginnie Mae's.	Agency MBS
Securitized Credit	Seeking higher ground: value in senior tranches; too soon for junior credit. Rising liquidity premia, elevated market volatility, and a deteriorating macro picture have continued weighing on spreads. Credit curves across capital structures have steepened and should decompress further as credit weakens, creating value in mezzanine tranches of sound assets (RMBS and upper mezzanine CLOs) and signaling distress in mezzanine tranches of challenged assets (CRE). Senior tranches have given back much of the gains achieved in the early months of the year and look attractive on a risk adjusted basis, though volatility could persist. Banking sector stress could further pressure spreads, especially if banks need to delever.	CMBS; CLOs; ABS
Global IG Corporates	Caution in the U.S. with some relief in Europe. Given the uncertainty with U.S. regional banks, we forecast range bound to wider U.S. spreads in the short term. In Europe, the CS resolution lifted a foremost market risk, and we forecast range bound to tighter spreads.	U.S. Corps.; European Corps.
Global Leveraged Finance	Remaining cautious in the near-term as recession risk has grown. We are positioned for near-term widening but are more constructive over the longer term and looking for signals to shift to a more risk-on stance. Active management and accurate credit selection will continue to be rewarded as volatility continues.	U.S. High Yield; U.S. Leveraged Loans; Euro High Yield; Euro Leveraged Loans
EM Debt	Minimizing vulnerabilities while remaining focused on opportunities. Favoring hard currency sovereigns and quasi-sovereigns with solid fundamentals and government support. Overweight BBB/BB corporates in economically stable countries. Gaining confidence in local rates as rate cuts approach. Cautious on EMFX on risks of slower growth.	Sov. Hard Currency; Corporates; Local Rates; EMFX
Municipal Bonds	Neutral. We see pockets of uncertainty heading into Q2 but fundamentals remain solid and long-term opportunities exist.	Tax-Exempt; Taxable

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

Sector		Subsector	Spread change (bps) Q1	SOFR OAS 3/31/23
CMBS	CMBS: Conduit AAA	First-pay 10-year	39	204
	CMBS: Conduit BBB-	BBB-	257	1009
	CMBS: SASB – Senior	AAA	-10	225
	CMBS: SASB - Mezz	BBB-	100	500
	CMBS: Agency Multifamily	Senior	9	104
Non-Agency RMBS	Legacy	RPL Senior	-3	182
	Legacy	'06/'07 Alt-A	10	300
	GSE Risk-Sharing	M2	15	340
CLOs	CLO 2.0	AAA	-30	190
	CLO 2.0	AA	-50	250
	CLO 2.0	BBB	0	575
ABS	Unsecured Consumer Loan ABS	Seniors	-20	196
	Unsecured Consumer Loan ABS	Class B	-30	256
	Refi Private Student Loan	Seniors	-5	201
	Credit Card ABS	AAA	0	81

Source: PGIM Fixed Income.

	Total Return (%) Q1	Spread Change (bps) Q1	OAS (bps) 3/31/23
U.S. Corps.	3.50	8	138
European Corps.	1.75	2	170

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

	Total return (%) Q1	Spread / yield change (bps) Q1	OAS (bps)/ yield % 3/31/23
EM Hard Currency	1.86	32	484
EM Local (Hedged)	2.31	-27	6.59
EMFX	3.13	159	8.91
EM Corps.	2.24	25	347

Source: J.P. Morgan.

	Total return (%) Q1	Spread change (bps) Q1	OAS/ DM (bps) 3/31/23
U.S. High Yield	3.57	-14	455
Euro High Yield	2.89	-15	497
U.S. Leveraged Loans	3.11	-44	609
Euro Leveraged Loans	3.88	-36	643

Source: ICE BofAML and Credit Suisse.

	Total return (%) Q1
High Grade Tax-exempt	2.78
High Yield Tax-exempt	2.73
Long Taxable Munis Agg Eligible	6.21

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 March 31, 2023.

IMPORTANT INFORMATION

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

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.