

January 2023

Brett S. Kozlowski, CFA
Co-Head of Structured Credit**Jatin Misra, Ph.D., CFA**
Co-Head of Structured Credit**Richard Bihrlé**
Investment Director
Global Investment Strategies

U.S. Structured Credit Outlook

Key takeaways

We believe non-agency RMBS bonds will present a very attractive investment opportunity in 2023.

Prepayment-sensitive assets (e.g., agency IOs) provide a particularly compelling diversification story due to the countercyclical nature of the sector, in our view.

Our current base case is that a recession is likely inevitable, although its timing and depth depend on how quickly the Fed reacts to visible signs of an emerging economic slowdown.

MACRO BACKDROP

Recession looms

The macro landscape looks markedly different today than it did a year ago. After more than two years focused on the pandemic, investor concerns now center on persistent inflation, central bank tightening, and heightened geopolitical tensions. The U.S. Federal Reserve pivoted away from accommodative policy by bringing an end to its purchase program, embarking on a hawkish rate-hike path, and signaling its commitment to reining in inflation. Markets left few places to hide as Treasury rates spiked upward and risky assets sold off, pushing credit spreads wider. Many investors are now heavily focused on the Fed's meaningful impact on rates and other macroeconomic forces, contributing to heightened volatility in virtually all markets and creating pockets of lower liquidity.

Looking forward, the risk of a larger economic slowdown is high so long as the Fed maintains its hawkish stance. Although it appears inflation is past its peak, it's difficult to envision achieving the Fed's stated target while the labor market remains strong. Our current base case is that a recession is likely inevitable, although its timing and depth depend on how quickly the Fed reacts to visible signs of an emerging economic slowdown. This scenario likely leads to a modest rise in unemployment and a tepid housing market. Eventually, the Fed will have to choose between price stability and growth. We anticipate the U.S. economy will enter recession by early 2024 and that unemployment will rise slowly to a more historically normal range of 5%–6%.

STRUCTURED CREDIT STRATEGIES

Cautious optimism

Despite broader volatility through 2022, the fundamentals across many structured credit assets remain on solid footing and, in some cases, continue to improve. Still, market spreads widened significantly last year with some areas underperforming other comparable risk markets. For example, the spread on the ICE BofA BBB CMBS U.S. Fixed Rate Index widened by 371 bps during the year to settle at 683 bps as of December 31. In comparison, the Bloomberg U.S. Corporate High Yield Index widened 186 bps to end the year at 469 bps.

Nonetheless, we do not believe risk markets have fully priced in a recession, so we expect volatility to remain elevated in the near term. We prefer to maintain a lower level of risk in this environment but will selectively take

Sector return expectations (over cash)

Prepayment (agency IO)	Residential mortgage credit (non-agency RMBS)	Commercial mortgage credit (CMBS)
4%–7%	3%–7%	3%–7%

For illustrative purposes only. Expected returns and projections represent probabilities and possible outcomes, not promises of future performance. Security prices fluctuate in value unpredictably, and returns cannot be predicted with certainty. The base case scenario provided above is based on numerous assumptions that are subject to risk and may not be realized. Changes in such assumptions could produce materially different results. The return expectations shown are hypothetical in nature, do not reflect actual results, and are not guarantees of future results.

advantage of attractive opportunities as they arise. This currently includes higher-quality liquid securities with shorter spread durations that now offer attractive spreads with relatively low risk due to significant spread widening during 2022.

The table above provides our current base case return expectations for the three primary sectors we focus on.

U.S. HOUSING

Lack of affordability

U.S. housing prices soared during the pandemic, driven in no small part by strong monetary and fiscal policy responses, heightened pandemic-fueled demand for housing, and constrained supply. But the dynamics that fueled the recent housing rally have shifted. Most notably, the Fed abandoned its loose-money policy by ending the monthly purchases of agency mortgages and aggressively raising the federal funds rate, which caused mortgage rates to spike to the highest level since 2008. In combination with two years of double-digit home price growth, housing affordability has fallen substantially and dampened demand. Meanwhile, supply has slowly started to recover. As a result, the housing market has begun to slow, both in terms of existing home sales as well as valuations. This trend is likely to continue into 2023 as mortgage rates remain elevated and the probability of recession and higher unemployment rises due to the Fed’s aggressive rate hikes. We expect home prices to fall between 5% and 10% in 2023, followed by tepid growth in subsequent years.

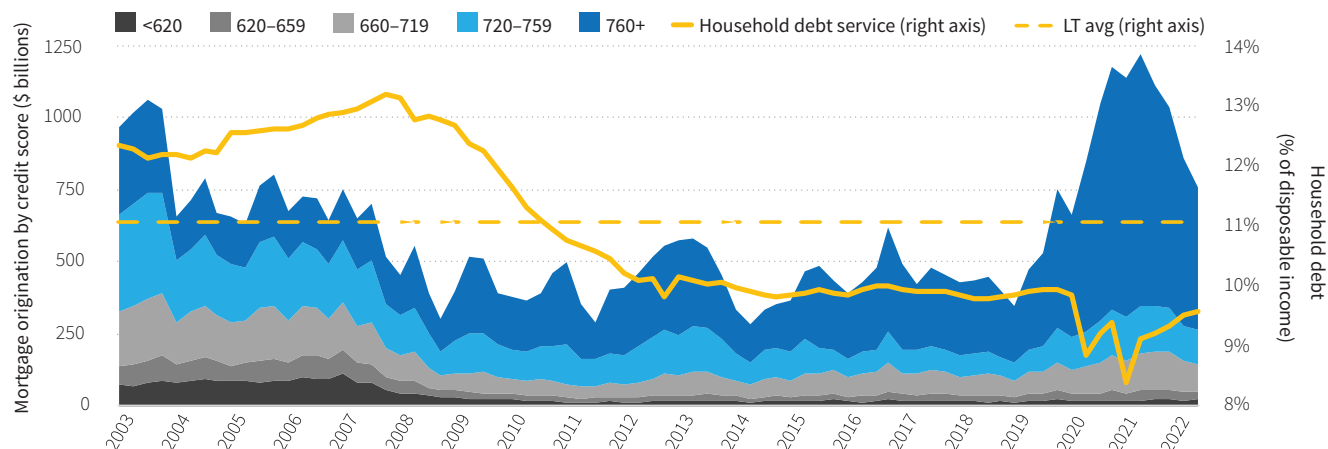
This housing correction will not repeat the late 2000s

The significance of an emerging housing correction should not be understated. Looking back over the past 35 years, there have only been two periods when year-over-year home price growth turned negative: 1990–1991 and 2007–2012. Peak to trough, home prices fell –3.1% and –27.4% during those periods, respectively, as measured by the S&P CoreLogic Case-Shiller U.S. National Home Price Index. So, our base expectation for home prices to fall 5% to 10% is historically significant. However, the downstream impacts will be much more contained than they were during the global financial crisis.

Recall that the housing run-up in the 2000s was fueled in large part by loose lending standards. Mortgage originators issued non-traditional loan products, which were not always in the best interest of the consumer, to a wide borrower base with questionable credit. This pushed housing demand to record levels, which spurred home builders to ramp up production. The result was a cascading effect after the credit box slammed shut, demand plummeted, and a glut of supply sent home prices lower, leaving many homeowners with more debt than their homes were worth. The story we see today is markedly different. Underwriting standards have remained tight since 2008, and the vast majority of the outstanding mortgage market is in the traditional 30-year fixed-rate product with a record-low average mortgage rate close to 3.5%. As a result, the consumer balance sheet is now in very good shape, and homeowners are much less levered by debt. This limits the likelihood that the forthcoming housing correction leads to widespread defaults and delinquencies that would put further downward pressure on the market.

Borrower fundamentals are much healthier today than pre-2008

Higher credit scores and lower household leverage



Sources: New York Fed Consumer Credit Panel/Equifax, Federal Reserve Bank of St. Louis, as of 9/30/22. Credit score is Equifax Risk Score 3.0.

Emerging opportunities

The combination of declining home prices and rising unemployment typically translates into a deteriorating credit profile — and thus lower prices — for non-agency RMBS because the risk of loss is higher. True to form, residential mortgage markets have responded to the weaker housing outlook by pushing prices lower and yields higher across the board. After entering 2022 with historically rich valuations, we're ending the year with what appear to be historically cheap valuations for newly issued securities. Nonetheless, residential balance sheets remain well positioned, supported by the combination of ultra-low mortgage rates that homebuyers have already locked in and the very high home price appreciation they have experienced in recent years. This limits the likelihood of a housing and/or economic correction leading to widespread defaults and delinquencies, so supply is not likely to increase substantially due to distressed home sales. Meanwhile, the supply of new homes, while rising, is still not high enough to create oversupply on a national level.

Due to the combination of these factors, many of the RMBS bonds we've analyzed would see no fundamental losses under most potential housing and employment scenarios short of an unlikely repeat of the 2008 GFC environment. And yet, the yields and spreads offered in the market today are historically high. As a result, we believe this sector will present a very attractive investment opportunity in 2023.

AGENCY MARKETS AND PREPAYMENT TRENDS

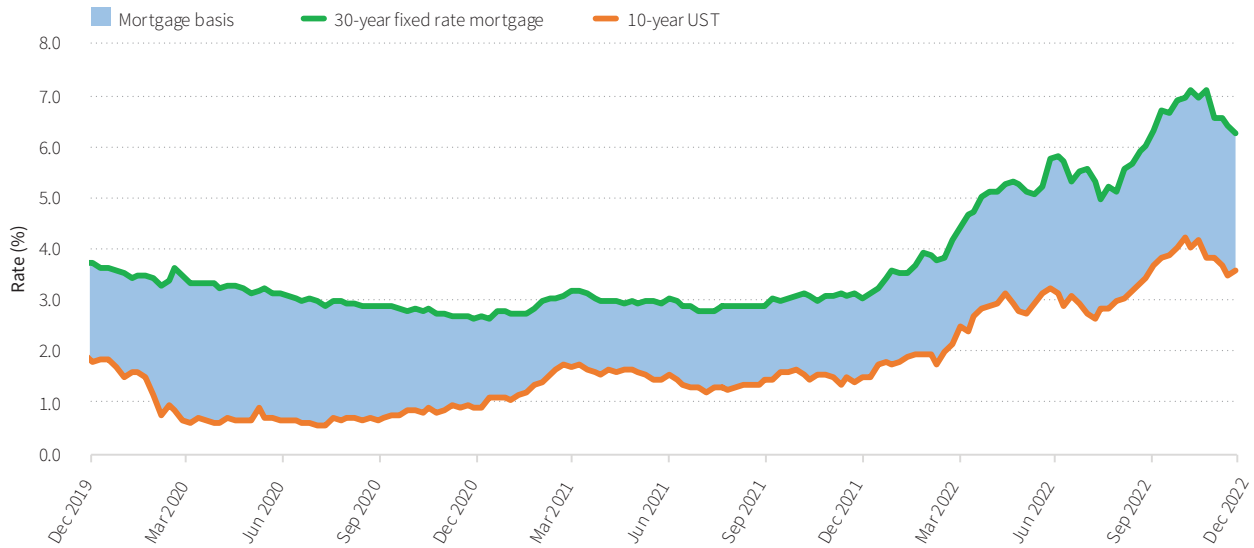
Rate volatility and market technicals drive the basis

The past year was a tumultuous one for the agency mortgage market, which delivered its worst calendar year performance on record in terms of total return and excess return. When the economic outlook deteriorates, the credit markets' negative excess returns can be attributed to increasing credit risk. In contrast, agency MBS carry virtually no credit risk, and in this instance, excess returns were driven negative largely by technical factors. After nearly two years as the largest source of demand for agency MBS, the Federal Reserve backed away from the market and left investors to wonder who might step in to fill the void. Banks have historically absorbed the bulk of supply but have shown reluctance to add to their exposure. The result was a historic downward repricing of agency MBS that, in combination with rising long-term interest rates and increased volatility, caused mortgage rates to soar. Late in 2022, money managers recognized the growing opportunity in the market and stepped in to cover their underweights and to take advantage of the historic cheapness and relative value to other high-quality assets, offering a marginal source of demand that brought prices back in line with fair value.

Looking forward, the carry profile of agency MBS and agency interest-only (IO) securities remains attractive and

Fed’s QE program squeezed the mortgage basis

This gap widened as the Fed backed away in 2022



Sources: Bloomberg, Freddie Mac, as of 12/31/22.

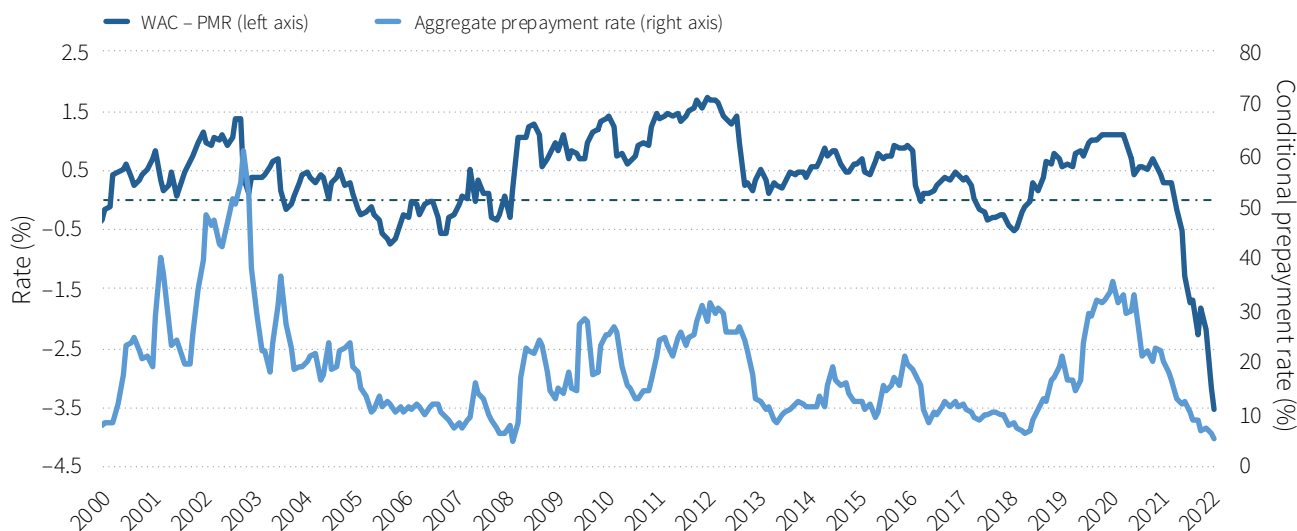
should benefit from slowing prepayment speeds and declining rate volatility, which we anticipate. Still, we remain cautious because of the potential downside risks of continued volatility through the first half of 2023. In addition, the market may face technical pressure as the Fed allows its \$2.7T balance sheet to run off. Banks have been slow to reenter the market, leaving money managers and foreign investors as the marginal buyers. Technicals should be somewhat balanced by low origination supply and could improve if bank demand picks up. We are currently neutral in our positioning in MBS overall but will look for opportunities to take a long position as declining volatility, improving technicals, and a receding housing market are likely to be tailwinds for the sector.

Prepayments grind slower due to “lock in” effect

The pandemic-era refinance wave, driven by ultra-low mortgage rates and historic home price appreciation, wound down in 2022 as interest rates spiked and the housing market lost steam. The percentage of existing borrowers with an interest-rate incentive to refinance quickly plummeted from 35% to 3% during the first quarter and now sits near 0%, as measured by the Morgan Stanley Truly Refinanceable Index. In fact, the rate increase was so drastic that the average borrower’s mortgage rate is nearly 3% lower than the current offering rate, creating a “lock in” effect whereby homeowners become reluctant to forfeit their existing mortgage for a new one. This significantly reduces expectations for cash-out refinancing demand and may also deter many homeowners from selling their existing home to purchase a new one. With expectations for recession and a slowing housing market, we anticipate prepayment speeds will continue to decline in 2023.

Average existing mortgage rate is near an all-time low

Higher current rates discourage prepayments



Sources: Bloomberg, Fannie Mae, Freddie Mac, as of December 2022. Weighted average coupon (WAC) represents the average outstanding mortgage rate for the existing universe of agency-conforming loans. Primary mortgage rate (PMR) reflects the current mortgage rate offered for new originations.

Diversified risk premium with attractive spreads and potential for upside

We believe that prepayment-sensitive assets (e.g., agency IOs) provide a particularly compelling diversification story due to the countercyclical nature of the sector. They benefit from an economic slowdown, change to supportive fiscal policies, and/or a sustained sell-off in rates. In contrast to the mortgage credit market, a scenario of falling home prices, lower turnover and mobility, and/or capacity or underwriting constraints would slow prepayments and benefit the prepayment sector.

In our view, many prepayment-sensitive assets offer an attractive risk-adjusted return potential at current price levels even if prepayment speeds remain at their current levels. The sector could realize significant upside potential if speeds continue to grind lower. We see value across a variety of collateral types that appear attractively priced based upon current prepayment speeds.

COMMERCIAL REAL ESTATE

Property values will face pressure

The outlook for commercial real estate is mixed as the U.S. economy continues to reopen to travel, office use, and retail spending while the Fed's efforts to contain inflation will likely push the country into a recession. In addition, capitalization rates are increasing with rising interest rates, although this is somewhat mitigated by a shrinking spread between comparable Treasury rates and cap rates. Nonetheless, a higher cap rate leads to lower property valuations unless rental income growth can offset the higher cost of capital. Broadly speaking, we think rental income is unlikely to provide the necessary growth and may even be susceptible to decreases if demand slows. And in contrast to housing, which has experienced increased demand and slower new supply during the pandemic, commercial real estate (CRE) continues to see new development despite uncertain demand as tenant leases expire in the future. Overall, we expect that national CRE prices could face pressure over the medium term, although this will vary significantly by geography and property type. For instance, we believe new office properties in large metro areas will continue to see high demand thanks to the amenities and

ESG-friendly enhancements they offer, which allows them to command premium rent. In contrast, older properties that are in need of capital expenditures may see tenants ask for concessions or potentially leave.

Credit premiums growing with recession risk

Despite the deteriorating macro environment and risk-off sentiment, fundamentals for CMBS conduit deals broadly continued to improve in 2022. Cash flows picked up with rent and occupancy growth; forbearance agreements and other loan modifications were successful on well-positioned and well-operated properties; and delinquency rates continued to shrink. Another sign of fundamental strength is higher-than-anticipated payoff rates/refinancing even at now higher interest-rate levels. Furthermore, having real assets serve as collateral and the ability to adjust rents should offer CMBS some protection against inflation. With that said, the market continues to struggle with valuations, weighing this fundamental strength against the increased likelihood of a recession. The market is shifting its concern from hotel and retail properties, which were impacted

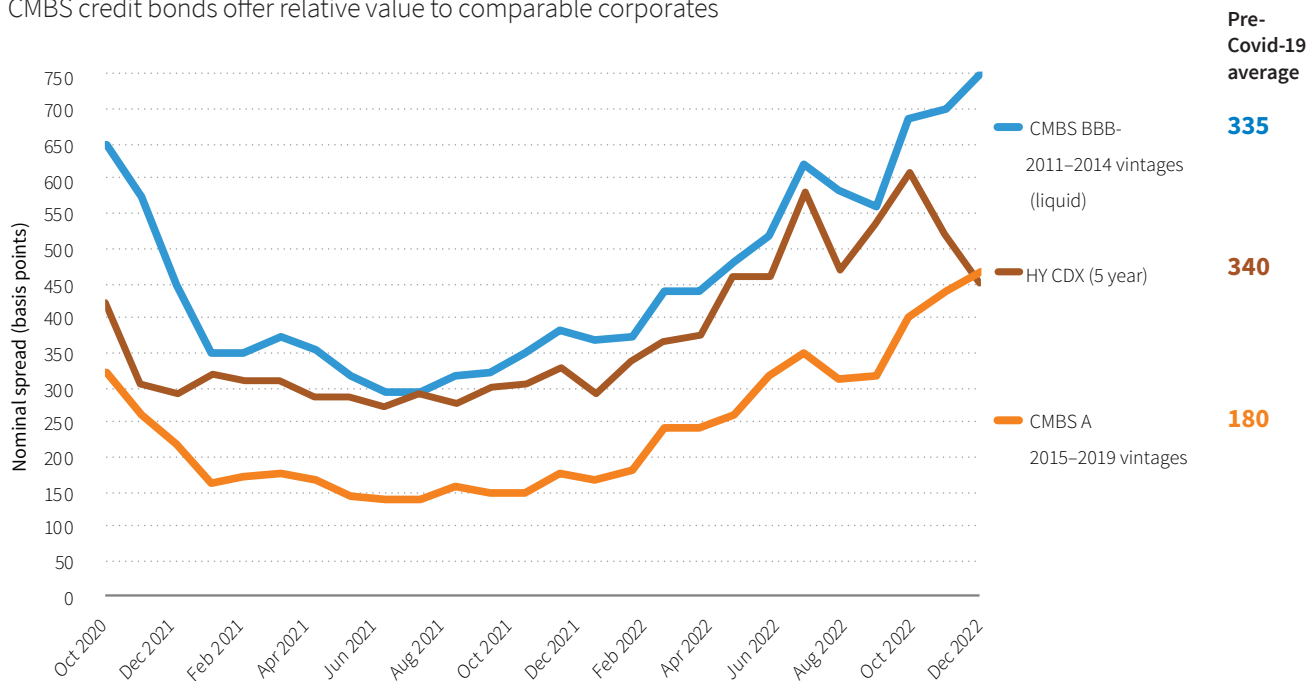
during Covid and then outperformed early pandemic expectations, onto office properties where lesser-quality assets could suffer from work-from-home and hybrid models. We don't believe recession has been sufficiently priced in, and this will likely lead to additional spread widening in the first half of 2023.

Opportunities will arise, but deep credit research is needed

Macro-driven volatility pushed spreads wider across the sector in 2022 despite the continued fundamental improvements, creating strong opportunities for security selection. We expect greater return dispersion across the market in the near term, which increases the importance of rigorous loan-level analysis to uncover relative value. We currently favor shorter spread duration assets, namely seasoned mezzanine tranches on deals with high-quality collateral, which offer very attractive relative value and should be insulated from losses even in recessionary scenarios, in our view.

Macro-driven volatility is creating opportunities in CMBS

CMBS credit bonds offer relative value to comparable corporates



Sources: Bloomberg, Putnam, as of 12/31/22. For illustrative purposes only. Past performance is no guarantee of future results. CMBS represent a Putnam estimate of the overall CMBS market for the given credit tranche and vintages. HY CDX represents the Markit CDX North America High Yield Index, which is composed of 100 non-investment-grade entities. All spreads are in basis points and measure a nominal spread versus comparable Treasuries and are not loss-adjusted. Pre-Covid-19 average represents the average month-end nominal spread over the 3-year period ending December 2019.

CONCLUSION

In summary, we remain constructive on structured credit markets in 2023. We expect the macro environment will continue to put strain on broad fundamentals and spread levels, which is creating attractive opportunities for credit pickers. Overall, we believe that structured credit currently offers both diversification benefits and attractive relative value to corporate debt.

This communication is prepared for use by investment professionals and institutional investors and is provided for limited purposes. This material is a general communication being provided for informational and educational purposes only. It is not designed to be investment advice or a recommendation of any specific investment product, strategy, or decision, and is not intended to suggest taking or refraining from any course of action. The opinions expressed in this material represent the current, good-faith views of the author(s) at the time of publication. The views are provided for informational purposes only and are subject to change. This material does not take into account any investor's particular investment objectives, strategies, tax status, or investment horizon. Investors should consult a financial advisor for advice suited to their individual financial needs. Putnam Investments cannot guarantee the accuracy or completeness of any statements or data contained in the material. Predictions, opinions, and other information contained in this material are subject to change. Any forward-looking statements speak only as of the date they are made, and Putnam assumes no duty to update them. Forward-looking statements are subject to numerous assumptions, risks, and uncertainties. Actual results could differ materially from those anticipated. Past performance is not a guarantee of future results. As with any investment, there is a potential for profit as well as the possibility of loss. Diversification does not ensure a profit or guarantee against a loss. Market commentary is not intended to be relied upon as a forecast, research or investment advice, and is not a recommendation, offer or solicitation to buy or sell any securities or to adopt any investment strategy.

This communication or any portion hereof may not be reprinted, sold, or redistributed in whole or in part without the express written consent of Putnam Investments. The information provided relates to Putnam Investments and its affiliates, which include The Putnam Advisory Company, LLC and Putnam Investments Limited®.

Issued in the United Kingdom by Putnam Investments Limited®. Putnam Investments Limited is authorized and regulated by the Financial Conduct Authority (FCA). For the activities carried out in Germany, the German branch of Putnam Investments Limited holds a permit as a financial investment broker in accordance with Sec. 34f para. 1 sentence no. 1 of the German Trade Ordinance and is registered under the registration number D-F-16077N8-19 in the publicly available broker register. Putnam Investments Limited is also permitted to provide crossborder investment services to certain

EEA member states. In Europe, this material is directed exclusively at professional clients and eligible counterparties (as defined under the FCA Rules, or the German Securities Trading Act (Wertpapierhandelsgesetz) or other applicable law) who are knowledgeable and experienced in investment matters. Any investments to which this material relates are available only to or will be engaged in only with such persons, and any other persons (including retail clients) should not act or rely on this material. Furthermore, this material is only intended for the recipient receiving it directly from Putnam Investments Limited and should not be forwarded to, or relied upon by, the recipient's underlying clients.

This material is prepared by Putnam Investments for use in Japan by Putnam Investments Japan Co., Ltd. ("Putnam Japan"). Putnam Japan is registered with Kanto Local Finance Bureau in Japan as a financial instruments business operator conducting the investment advisory and agency business, and is a member of Japan Investment Advisors Association. This material is prepared for informational purposes only, and is not intended as a solicitation to invest in any securities or other financial product in Japan, or to enter into with Putnam Japan an investment advisory contract or a discretionary investment management contract.

Prepared for use with wholesale investors in Australia by Putnam Investments Australia Pty Limited, ABN 50 105 178 916, AFSL No. 247032. This material has been prepared without taking account of an investor's objectives, financial situation and needs. Before deciding to invest, investors should consider whether the investment is appropriate for them.

Prepared for use in Canada by Putnam Investments Canada ULC (o/a Putnam Management in Manitoba). Where permitted, advisory services are provided in Canada by Putnam Investments Canada ULC (o/a Putnam Management in Manitoba) and its affiliate, The Putnam Advisory Company, LLC.

BLOOMBERG® is a trademark and service mark of Bloomberg Finance L.P. and its affiliates (collectively "Bloomberg"). Bloomberg or Bloomberg's licensors own all proprietary rights in the Bloomberg Indices. Neither Bloomberg nor Bloomberg's licensors approve or endorse this material, or guarantee the accuracy or completeness of any information herein, or make any warranty, express or implied, as to the results to be obtained therefrom, and to the maximum extent allowed by law, neither shall have any liability or responsibility for injury or damages arising in connection therewith.

A world of investing.®



For use with institutional investors and investment professionals only.

Putnam Investments | 100 Federal Street | Boston, MA 02110 | putnam.com

332510 1/23