Perspective from
Franklin Templeton Investments Solutions

An introduction to catastrophe bonds

September 2024

Jordan Strah
Senior Analyst
Franklin Templeton
Investment Solutions

We sat down with Senior Analyst Jordan Strah to learn more about this unique asset class, the benefits and risks to investors and why now might be an opportune time to add them to a portfolio.

Introduction

Catastrophe bonds (cat bonds for short) have received significant interest in recent years, with 2023 breaking the record for total issuance at US$16.45 billion (previously set in 2021).[1] We believe this trend is likely to continue as the first half of 2024 surpassed the prior year's first-half record. As of the time of this writing, the size of the market (capital outstanding) has grown about 32% since the end of 2021,[2] while yields are at attractive levels last witnessed in 2012.

Cat bonds cover specific perils, such as natural disasters. Therefore, it is not surprising that the growth in this market is often attributed to two factors:

1. Concerns about climate change—storms of greater magnitude and intensity could cause greater property damage.
2. Recent inflation—reconstruction from storm damage is now more costly.

Investors are compensated if the disaster does not occur or, if it does, monetary losses remain below a predefined threshold. The returns to investors have not gone unnoticed. Investments in cat bonds have underpinned some of the most successful hedge fund sub-strategies of 2023.[3]

Cat bonds provide investors with the possibility for returns largely independent of market and economic risks that affect traditional equity, fixed income and even most alternative asset classes, potentially making them an appealing diversifier.

Investing in the asset class comes with risks, which we describe below. Nevertheless, we seek to use risk-management techniques to hedge the unpredictability of nature, even while reaping the rewards of the asset class.

What is a cat bond? How are they different from other bonds?

When an investor buys a corporate, municipal or government bond, they are rewarded for taking on the credit risk of those entities. A cat bond investor is compensated by taking on the risk that a specific peril or disaster would occur within a specific time period. For the most part, these perils include natural catastrophes such as earthquakes, floods, hurricanes, wildfires, storms and similar events. There are also cat bonds covering other types of losses including terrorism, cybersecurity attacks, pandemics, mortgage insurance and more.

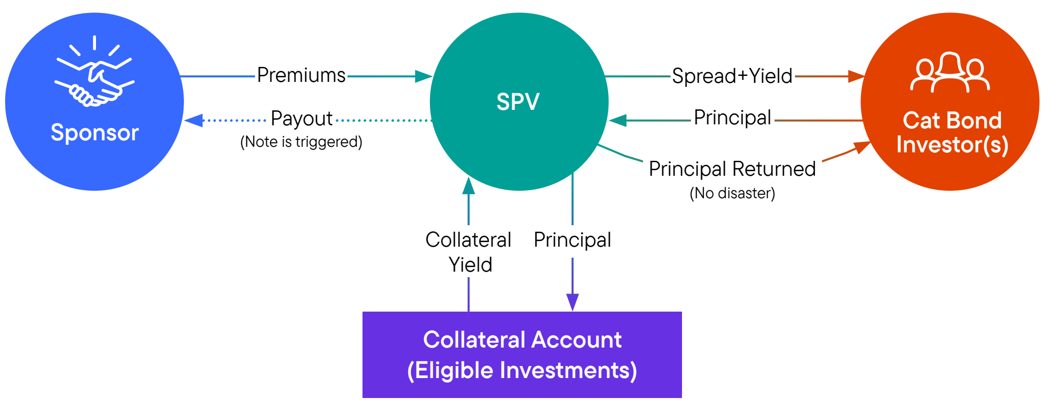
Cat bonds are a subsector of the broader insurance-linked securities market and are typically sponsored by an insurance or reinsurance company. When a reinsurer provides insurance to an insurer, the liability, or risk, sits with the (re)insurer. The creation and issuance of these bonds is a way for insurance companies to transfer the risk away from them and onto the end bond investor. The investor gets paid if these catastrophes don't occur, or if they do occur, the financial losses don't exceed a predefined limit. If the financial losses stemming from such events exceed these limits, the cat bond investor is impacted.

Break it down. How does this work?

A special purpose vehicle (SPV) is created for the sole purpose of issuing a cat bond. When a cat bond is issued, the proceeds from investors are deposited into the SPV's collateral account, which in turn is typically invested in Treasury money market funds (TMMF) and/or notes issues by the European or International Bank for Reconstruction and Development (EBRD and IBRD, respectively).

The interest generated from the vehicle's collateral account is one component of the coupon generated by cat bonds—the short-term nature of this collateral makes cat bonds generally floating-rate instruments. This complements the risk spread, the other part of the cat bond coupon that rewards the investor for assuming the underlying risk associated with the protection they provide to the (re)insurer. Together, the collateral yield plus the risk spread make up the income to the end investor.

Exhibit 1: How SPVs Facilitate the Issuance of Cat Bonds



Source: Franklin Templeton Investment Solutions. For illustrative purposes only.

How is the risk spread on a cat bond determined?

If a disaster occurs, the bond may default, reducing or eliminating the principal of the bond. But the occurrence of an event doesn't automatically cause a default. Monetary losses, or "limits," caused by a defined catastrophe of a certain magnitude or frequency of losses, would need to occur to the underlying company or industry, dependent on the trigger type. The "attachment point" associated with these limits is often explained as the first dollar of loss the bond would incur. The "exhaustion point" is when losses reach their maximum, and the bond defaults.

Attachment and exhaustion points are some of the key metrics used to analyze the riskiness of a bond. Another key metric is "expected loss," or the average loss a bondholder might expect within a specified period, divided by the principal. Together, these metrics help determine the risk spread of a bond.

If a (re)insurer were to go out of business, could this affect a cat bond?

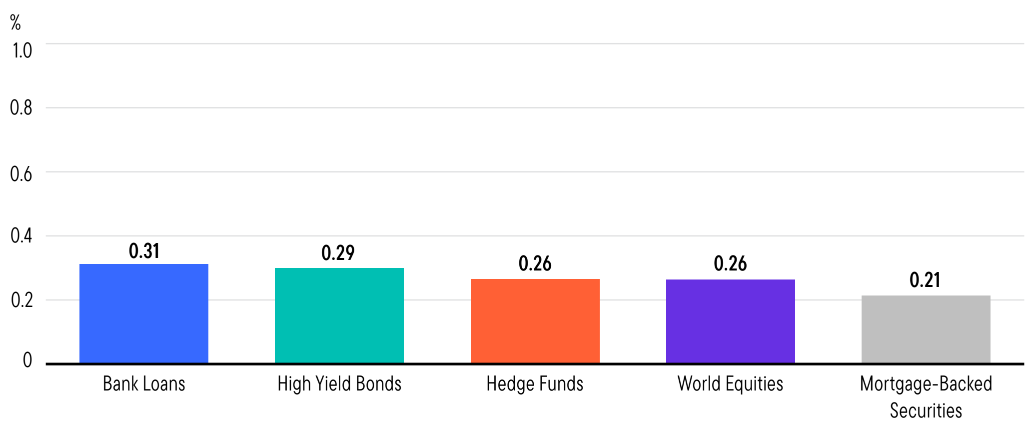
I assume you mean if the (re)insurer goes out of business for reasons unrelated to a catastrophe that would affect the bond itself? In this scenario, if a (re)insurer were to go bankrupt, this would likely impact bond holders in a limited way. The notes are fully collateralized; therefore, bond holders would receive their principal back, minus legal fees for things like dispersing the funds. An example of this occurred last year when an insurance company defaulted. A bond it sponsored was impacted, albeit minimally, in which US$119.25 million of the US$120 million principal was paid out; US$750,000 was held back for trustee fees and expenses associated with the early termination of the bond.

I understand why a (re)insurer would issue cat bonds. But what features might make them appealing to the end investor?

Perhaps the most important feature for investors is that cat bonds, particularly those based on natural catastrophes, have a low correlation to the broader financial markets. Obviously, natural catastrophes are not caused by, or sensitive to business cycles, the macro economy, inflation and monetary/fiscal policy.

Exhibit 2: Cat Bonds Have a Low Correlation to Traditional Asset Classes

July 2004–July 2024



Source: Bloomberg, various index providers as listed. Calculations by Franklin Templeton Investment Solutions, based on monthly index returns. Cat bonds represented by the Swiss Re Cat Bond Total Return Index; Equities represented by the MSCI World Index; Bank Debt represented by the Credit Suisse Leveraged Loan Total Return Index; High Yield Bonds represented by the ICE BofA US High Yield Index; Mortgage-Backed Securities represented by the Bloomberg US Mortgage Backed Securities (MBS) Index; Hedge Funds represented by HFRI Fund of Funds Composite Index. Correlations: A number closer to 1 signifies a higher correlation, whereas a number closer to 0 is the result of a lower correlation, with a negative number being negatively correlated. Indexes are unmanaged and one cannot directly invest in them. They do not include fees, expenses or sales charges. **Past performance is not an indicator or a guarantee of future performance.** See www.franklintempletondatasources.com for additional data provider information. See glossary for definitions.

Taking this one step further—not only do these bonds provide diversification benefits to traditional portfolios, but they are also "intra-diversified"—this refers to diversification within the asset class itself. When owning stocks, academic and professional investors preach "diversify—don't put all your eggs in one basket." But at times, even stocks across a whole index can have a relatively high correlation to one another. Cat bonds are different. One cat bond may be completely uncorrelated to another, because they are based on specific regions and events. A hurricane that hits Florida, for example, does not affect an earthquake in California.

Lastly, as I mentioned above, these are floating-rate instruments, so the sector has benefited from rising interest rates in 2022 and part of 2023. Together, we believe cat bonds offer an attractive source of risk-adjusted returns, particularly as part of a well-diversified portfolio.

What are the potential risks to the investor?

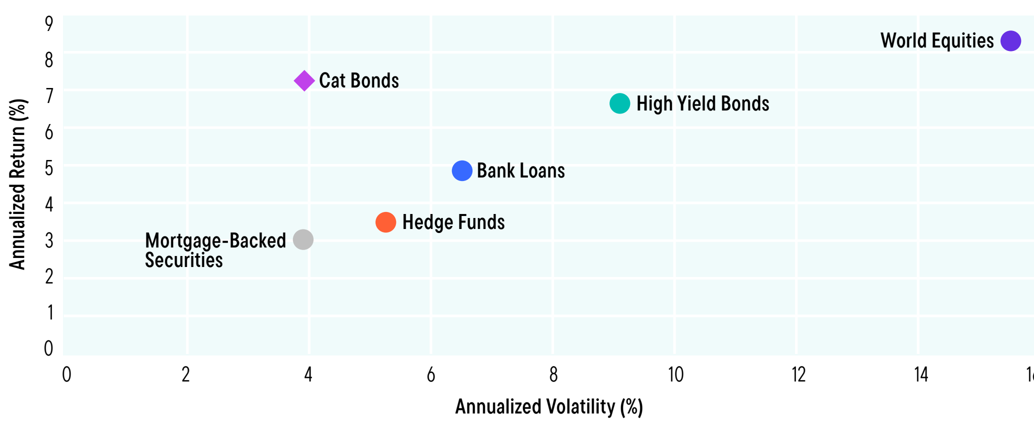
Of course, there are risks like any investment. It's difficult to assess whether a disaster will happen, natural or otherwise. And if such an event occurs, investors can lose 100% of their principal if the catastrophe causes enough monetary losses (which are predefined). For this reason, it's crucial, in our view, for managers to mitigate these risks by investing across different sponsors, structures, perils and geographical areas.

US windstorm bonds make up most of the market and are affected by seasonality. North Atlantic hurricane season runs from June 1 through November 30. Supply and storm forecasting surrounding these months is a determinant factor affecting the liquidity and yield of these notes. Liquidity can dry up, and yields can rise, if the season is active or forecasted to be. The opposite is also true. I suppose this can be viewed as a positive or negative depending upon one's perspective. Even though we have witnessed the secondary market growing as this asset class continues to mature, investors may generally benefit from a longer-term or buy-and-hold approach to these securities.

Investors have been compensated for these uncertainties and relative illiquidity. Historically, cat bonds have exhibited less volatility than other financial instruments while providing equity-like returns (see Exhibit 3).

Exhibit 3: Cat Bonds Have Exhibited Strong Risk-Adjusted Returns

July 2004–July 2024



Source: Bloomberg, various index providers as listed. Calculations by Franklin Templeton Investment Solutions, based on monthly index returns. Cat bonds represented by the Swiss Re Cat Bond Total Return Index; Equities represented by the MSCI World Index; Bank Debt represented by the Credit Suisse Leveraged Loan Total Return Index; High Yield Bonds represented by the ICE BofA US High Yield Index; Mortgage-Backed Securities represented by the Bloomberg US Mortgage Backed Securities (MBS) Index; Hedge Funds represented by HFRI Fund of Funds Composite Index. Volatility is represented by annualized standard deviation. Indexes are unmanaged and one cannot directly invest in them. They do not include fees, expenses or sales charges. **Past performance is not an indicator or a guarantee of future performance.** See www.franklintempletondatasources.com for additional data provider information. See glossary for definitions.

But as you said above, if/when central banks decide to cut rates, that will impact the income generated by their underlying investments in money market investments.

Yes, this feature could be viewed as a double-edged sword. However, the impact of rate cuts on a bond's return depends on how risky the bond is viewed to be. As I said, the coupon that cat bond investors collect is made up of two components: the interest that the collateral earns from investments in safe cash-like instruments (collateral yield) plus a risk spread.

For some bonds, the collateral yield is a meaningful part of the total return. On bonds deemed riskier, it's less significant as risk spreads are often multiples higher than the return stemming from collateral investments. The higher the risk spread, the higher the potential return and the smaller the impact interest rate cuts have (if there are no losses triggered by a catastrophe).

Given the slew of cat bonds covering different risks and regions, how does Franklin Templeton Investment Solutions form a portfolio of these instruments? What do you look for when picking a cat bond for a portfolio?

Within the cat bond universe, we stick to the property market. We utilize modeling that considers a forward-looking view on tropical storm occurrence, given the underlying bonds are typically providing coverage for a few years. While weather forecasting is useful and important, it's important to remember that a hyperactive storm season does not necessarily mean that multiple hurricanes will make landfall, or that the storms will be destructive enough to trigger bond losses. Conversely, a season with only a small number of storms may be marked by one severe hurricane that triggers losses.

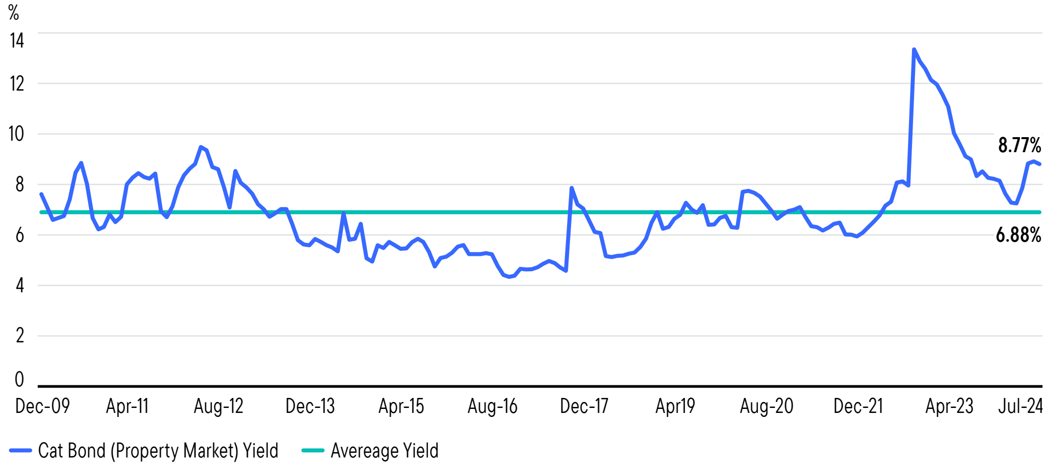
For that reason, we have developed a quantitative buy-and-hold approach, which has been improved upon over the years to adapt to the evolution of the market. We invest according to a rules-based process that ranks the property cat bond universe on various factors that include valuation, structure (which refers to how potential losses to the bond are determined), maturity and other variables. We are always seeking to improve our process and adapt as this market grows and changes.

Is now a good time to invest in cat bonds?

I think right now cat bond yields are attractive. Damage from Hurricane Ian caused a repricing, and the Swiss Re Cat Bond Total Return Index suffered its only calendar year of negative returns. Yet even then, it was only down a little over 2%. Despite some specific notes that were impacted, the index whipsawed back up about 20% in 2023. Currently, yields are at levels higher than the historic average (see Exhibit 4 on the next page).

Exhibit 4: Cat Bond (Property Market) Yields Are Higher than Average

December 2009–July 2024



Source: Swiss Re. Universe created by Franklin Templeton Investment Solutions, based on holdings of the Swiss Re Cat Bond Total Return Index. Non-property market bonds were excluded. Distressed bonds priced under $80 were excluded. Calculations by Franklin Templeton Investment Solutions: End-of-month mid-price (between the bid and offer) is used with the coupon to calculate a weighted average yield of this remaining universe of holdings. Indexes are unmanaged and one cannot directly invest in them. They do not include fees, expenses or sales charges. **Past performance is not an indicator or a guarantee of future performance.** See www.franklintempletondatasources.com for additional data provider information.

And though a large natural disaster could cause traditional asset classes to drop, causing (temporary) higher correlations than usual, cat bonds generally have provided non-market-dependent returns (see Exhibit 2), something investors crave and will continue to seek out, in my opinion. To illustrate this point, I think about how dominant the Magnificent Seven[4] have been:

1. The top 10 stocks (by weight) in the S&P 500 Index are over 35%.[5]
2. From January 2022 through July 2024, about 70% of the return in the S&P 500 was driven by the Magnificent Seven.[6]

And if you look more recently, we've seen that the market was spooked in early August by some shaky economic data and the Bank of Japan's decision to raise rates. Many investors want a source of real returns that is not connected to enthusiasm for artificial intelligence (AI), central bank policy or the macro economy.

This market continues to grow and mature. We look forward to participating in what appears to be another record-setting year of issuance, and I think investor demand will keep up.

Endnotes

1. Source: Artemis. Deal Directory. August 20, 2024.
2. Ibid.
3. Source: S. Lee, G. Naik, "Hedge Funds Rake in Huge Profits Betting on Catastrophe Risk." Bloomberg. January 21, 2024. Original data from Preqin. Annualized as of September 30, 2023. Past performance is not an indicator or a guarantee of future results.
4. Alphabet (parent company of Google), Amazon, Apple, Meta (formerly Facebook), Microsoft, Nvidia and Tesla. These stocks were dubbed the Magnificent Seven in 2023 for their strong performance and resulting increased index concentration in recent years.
5. Sources: S&P, Bloomberg. As of July 31, 2024. Both Alphabet classes (A and C) are in the top 10; for this purpose, we considered these as one position and also included the 11th-ranked holding.
6. Source: Macrobond, based on S&P 500 earnings and performance. The Magnificent Seven stocks consist of Alphabet (parent company of Google), Amazon, Apple, Meta (formerly Facebook), Microsoft, Nvidia and Tesla. These stocks were dubbed the Magnificent Seven in 2023 for their strong performance and resulting increased index concentration in recent years.

Definitions

Correlation describes the linear relationship between two variables, or the co-movement of asset prices over time, and is calculated as the ratio of covariance to the product of the variables' standard deviations. It is a concept to describe the tendency of two asset prices to change in parallel or opposite directions. Importantly, correlation does not equate to or infer causation.

Standard deviation: Measure of the degree to which an investment's return varies from the average of its previous returns. The larger the standard deviation, the greater the likelihood (and risk) that a fund's performance will fluctuate from the average return.

The **Standard & Poor's® 500 Index (S&P 500®)** is a market capitalization-weighted index of 500 stocks designed to measure total US equity market performance.

The **Swiss Re Cat Bond Total Return Index** tracks the performance of catastrophe (cat) bonds, which are a type of insurance-linked security (ILS) designed to raise funds in case of a major insurance event (e.g., natural disasters like earthquakes or hurricanes). This index measures the total return of a basket of cat bonds issued in the market, including interest payments (coupons) and capital gains or losses.

The **MSCI World Index** captures large and mid-cap representation across 23 developed markets countries.

The **Credit Suisse Leveraged Loan Total Return Index** tracks the investable market of the U.S. dollar denominated leveraged loan market.

The **ICE BofA US High Yield Index** tracks the performance of US dollar denominated below investment grade corporate debt publicly issued in the US domestic market.

The **Bloomberg US Mortgage Backed Securities (MBS) Index** tracks fixed-rate agency mortgage backed pass-through securities guaranteed by Ginnie Mae (GNMA), Fannie Mae (FNMA), and Freddie Mac (FHLMC).

The **HFRI Fund of Funds Composite Index** is designed to measure the returns of a diversified portfolio of hedge funds across various strategies (equity hedge, event-driven, relative value, etc.). Managed by Hedge Fund Research (HFR), it serves as a key indicator of how fund of funds, which spread investment across multiple managers and strategies to reduce risk, are performing compared to the broader hedge fund industry.

IMPORTANT LEGAL INFORMATION

This material is intended to be of general interest only and should not be construed as individual investment advice or a recommendation or solicitation to buy, sell or hold any security or to adopt any investment strategy. It does not constitute legal or tax advice. This material may not be reproduced, distributed or published without prior written permission from Franklin Templeton.

The views expressed are those of the investment manager and the comments, opinions and analyses are rendered as of the publication date and may change without notice. The underlying assumptions and these views are subject to change based on market and other conditions and may differ from other portfolio managers or of the firm as a whole. The information provided in this material is not intended as a complete analysis of every material fact regarding any country, region or market. There is no assurance that any prediction, projection or forecast on the economy, stock market, bond market or the economic trends of the markets will be realized. The value of investments and the income from them can go down as well as up and you may not get back the full amount that you invested. **Past performance is not necessarily indicative nor a guarantee of future performance. All investments involve risks, including possible loss of principal.**

Any research and analysis contained in this material has been procured by Franklin Templeton for its own purposes and may be acted upon in that connection and, as such, is provided to you incidentally. Data from third-party sources may have been used in the preparation of this material and Franklin Templeton ("FT") has not independently verified, validated or audited such data. Although information has been obtained from sources that Franklin Templeton believes to be reliable, no guarantee can be given as to its accuracy and such information may be incomplete or condensed and may be subject to change at any time without notice. The mention of any individual securities should neither constitute nor be construed as a recommendation to purchase, hold or sell any securities, and the information provided regarding such individual securities (if any) is not a sufficient basis upon which to make an investment decision. FT accepts no liability whatsoever for any loss arising from use of this information and reliance upon the comments, opinions and analyses in the material is at the sole discretion of the user.

Products, services and information may not be available in all jurisdictions and are offered outside the U.S. by other FT affiliates and/or their distributors as local laws and regulation permits. Please consult your own financial professional or Franklin Templeton institutional contact for further information on availability of products and services in your jurisdiction.

Brazil: Issued by Franklin Templeton Investimentos (Brasil) Ltda., authorized to render investment management services by CVM per Declaratory Act n. 6.534, issued on October 1, 2001. **Canada:** Issued by Franklin Templeton Investments Corp., 200 King Street West, Suite 1500 Toronto, ON, M5H3T4, Fax: (416) 364-1163, (800) 387-0830, www.franklintempleton.ca. **Offshore Americas:** In the US, this publication is made available by Franklin Templeton, One Franklin Parkway, San Mateo, California 94403-1906. Tel: (800) 239-3894 (USA Toll-Free), (877) 389-0076 (Canada Toll-Free), and Fax: (727) 299-8736. **US:** Franklin Templeton, One Franklin Parkway, San Mateo, California 94403-1906, (800) DIAL BEN/342-5236, franklintempleton.com. Investments are not FDIC insured; may lose value; and are not bank guaranteed.

Issued in Europe by: Franklin Templeton International Services S.à r.l. – Supervised by the *Commission de Surveillance du Secteur Financier* – 8A, rue Albert Borschette, L-1246 Luxembourg – Tel: +352-46 66 67-1, Fax: +352-46 66 76. **Poland:** Issued by Templeton Asset Management (Poland) TFI S.A.; Rondo ONZ 1; 00-124 Warsaw. **Saudi Arabia:** Franklin Templeton Financial Company, Unit 209, Rubeen Plaza, Northern Ring Rd, Hittin District 13512, Riyadh, Saudi Arabia. Regulated by CMA. License no. 23265-22. Tel: +966-112542570. All investments entail risks including loss of principle investment amount. **South Africa:** Issued by Franklin Templeton Investments SA (PTY) Ltd, which is an authorized Financial Services Provider. Tel: +27 (21) 831 7400, Fax: +27 (21) 831 7422. **Switzerland:** Issued by Franklin Templeton Switzerland Ltd, Stockerstrasse 38, CH-8002 Zurich. **United Arab Emirates:** Issued by Franklin Templeton Investments (ME) Limited, authorized and regulated by the Dubai Financial Services Authority. **Dubai office:** Franklin Templeton, The Gate, East Wing, Level 2, Dubai International Financial Centre, P.O. Box 506613, Dubai, U.A.E. Tel: +9714-4284100, Fax: +9714-4284140. **UK:** Issued by Franklin Templeton Investment Management Limited (FTIML), registered office: Cannon Place, 78 Cannon Street, London EC4N 6HL. Tel: +44 (0)20 7073 8500. Authorized and regulated in the United Kingdom by the Financial Conduct Authority.

Australia: Issued by Franklin Templeton Australia Limited (ABN 76 004 835 849) (Australian Financial Services License Holder No. 240827), Level 47, 120 Collins Street, Melbourne, Victoria 3000. **Hong Kong:** Issued by Franklin Templeton Investments (Asia) Limited, 62/F, Two IFC, 8 Finance Street, Central, Hong Kong. **Japan:** Issued by Franklin Templeton Investments Japan Limited. **Korea:** Issued by Franklin Templeton Investment Trust Management Co., Ltd., 3rd fl., CCMM Building, 12 Youido-Dong, Youngdungpo-Gu, Seoul, Korea 150-968. **Malaysia:** Issued by Franklin Templeton Asset Management (Malaysia) Sdn. Bhd. & Franklin Templeton GSC Asset Management Sdn. Bhd. This document has not been reviewed by Securities Commission Malaysia. **Singapore:** Issued by Templeton Asset Management Ltd. Registration No. (UEN) 199205211E, 7 Temasek Boulevard, #38-03 Suntec Tower One, 038987, Singapore.

Please visit www.franklinresources.com to be directed to your local Franklin Templeton website.

CFA® and Chartered Financial Analyst® are trademarks owned by CFA Institute.

The views and opinions expressed are not necessarily those of the broker/dealer; or any affiliates. Nothing discussed or suggested should be construed as permission to supersede or circumvent any broker/dealer policies, procedures, rules, and guidelines.

FRANKLIN TEMPLETON

US-GTM-3317402-3217402
FTISU-CATBD-0924