Morgan Stanley

INVESTMENT MANAGEMENT

Global Fixed Income Bulletin

An Early Holiday Present

FIXED INCOME TEAM | MACRO INSIGHT | DECEMBER 2022

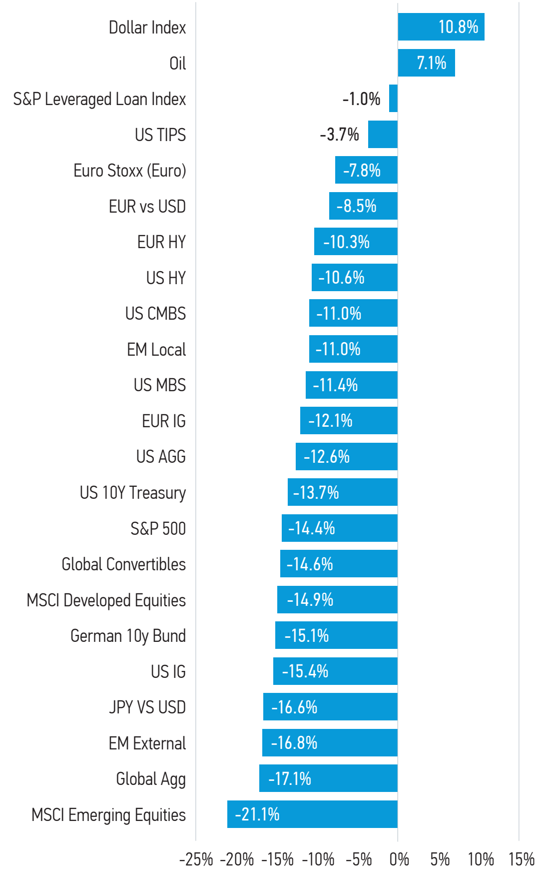
What a difference a few weeks make. October was characterized by stern Fed messaging about inflation risks, a surprisingly strong U.S. labor market report and higher than expected inflation. By October 24, U.S. Treasury 10-year yields were making a new historical high around 4.24%, up 43 basis points (bps) from the end of September. Fast forward to the end of November and things look a lot different. U.S. Treasury 10-year yields ended the month at 3.61%, down a whopping 61 bps lower from their October peak. Real yields joined the party as well with U.S. 10-year real yields down approximately 20 bps over the month, about 50 bps down from their intra-month high. What gives?

First, it wasn't just the U.S. bond market that rallied. It was truly a global phenomenon. Outside of Japan and a few Emerging Market (EM) countries, 10-year yields fell anywhere from 23 bps in Australia to 185 bps in Hungary. Second, not only did risk-free yields fall, but credit spreads narrowed as well, significantly so in Euro denominated bonds. Third, the U.S. dollar fell significantly. The Japanese yen, for example, rose over 8% versus the dollar from its October low, not coincidentally corresponding almost to the day U.S. Treasury yields peaked. November fixed income total returns measured in U.S. dollars or local currency were truly staggering.

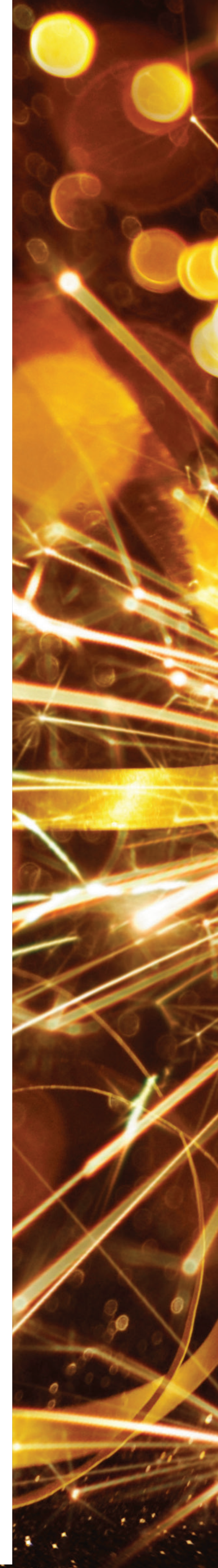
The key to the rally was threefold. Two of which were not so surprising, with the third more so. In October several central banks made it clear they were uncomfortable with raising rates further or

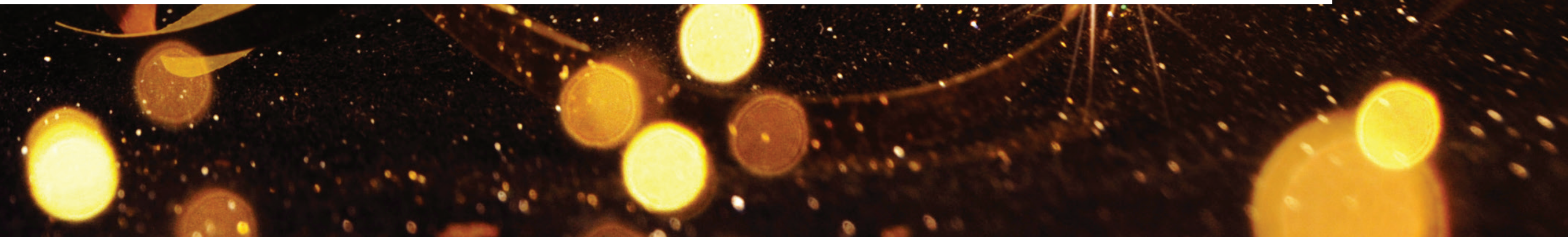
DISPLAY 1

Asset Performance Year-to-Date



Note: USD-based performance. Source: Bloomberg. Data as of November 30, 2022. The indexes are provided for illustrative purposes only and are not meant to depict the performance of a specific investment. **Past performance is no guarantee of future results.** See pages 7-8 for index definitions.





uncomfortable with the size of rate hikes. Eastern European central banks were in the vanguard of this movement, but they were joined by the central banks of Sweden, Norway, Australia and Canada. Notably missing from this list was the Fed, who in October took seemingly the opposite stance. The first November surprise was a better-than-expected U.S. inflation report. After many months of disappointment on this front the market embraced this one data point as evidence that inflation had now peaked and was on its way down. Secondly, the U.S. inflation surprise could not have been better timed relative to market positioning. After the surge in yields over October, bond markets were ripe for a correction or at a minimum bear market rally/squeeze. Lastly, the coup de grace so to speak, was the apparent toning down of Fed hawkishness, with more FOMC members vocalizing their belief that enough had been done, at least for now. While in many ways this wasn't surprising, at some point, the Fed had to start to acknowledge that it had raised rates a lot and needed to slow down/pause to assess its impact. And off to the races we went.

The bond rally was thus sparked by reduced worries about central bank over tightening, better news on the inflation front, a market under exposed to duration and credit, and lastly, high yields, making bonds look attractive. Interestingly, equities also had a gangbuster month. The S&P 500 index was up over 14% from its October low.

But, if central banks were reigning in their hawkishness does this not mean that they also expect economies to weaken in 2023 to the extent necessary to bring down inflation, thus warranting a less hawkish policy? Shouldn't weaker growth be a negative for equities or credit in general? Not necessarily so. What the markets have done is price in a so-called soft landing. In other words, growth slow enough to bring down inflation, but not so slow as to meaningfully hurt earnings/revenue. The higher probability of a soft landing was reinforced by the market's belief that the Fed would be quick to cut rates in 2023/2024 and by a substantial amount. As of early December, the market is expecting up to seven rate cuts over this period.

What central banks have done is narrow the distribution of potential outcomes or scenarios. For example, there was always the chance that the Fed would keep raising rates to 6%. Even if the market did not think this would happen, the possibility that it might happen would have to be incorporated in the baseline forecast for the future Fed funds rate as a possibility. Less central bank hawkishness has reduced the probability of these high-rate outcomes which reduces risk and volatility, which raises expected returns from risky assets, including longer duration bonds. And voila! We have a rally even though the market's central forecast for rates for mid-2023 has not changed. Layer on expectations of medium-term rate cuts, and we have an even more powerful rally across all fixed income sectors.

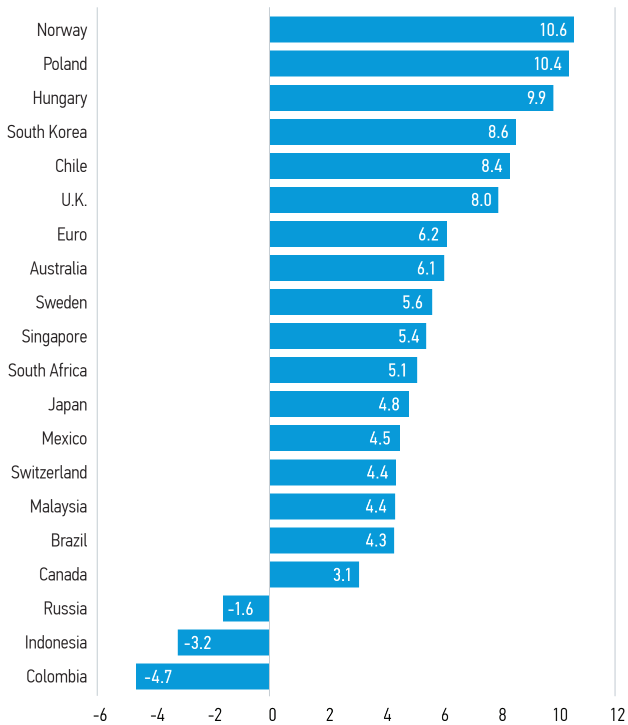
Whether or not this rally can continue or at a minimum maintain these higher bond prices and reduced credit spreads is another matter and ultimately will be determined by data. In the interim enjoy the early holiday present. Let's hope the Grinch does not come and steal it!

[1] Source: Bloomberg. Data as of November 30, 2022.

DISPLAY 2

Currency Monthly Changes Versus U.S. Dollar

(+ = appreciation)



Note: Positive change means appreciation of the currency against the USD.
Source: Bloomberg. Data as of November 30, 2022.

DISPLAY 3

Major Monthly Changes in 10-Year Yields and Spreads

COUNTRY	10-YR YIELD LEVEL (%)	MONTH CHANGE (BPS)	10-YR SPREAD (BPS)	MONTH CHANGE (BPS)
			(Spread over USTs)	
United States	3.61	-44		
United Kingdom	3.16	-36	-44	+9
Germany	1.93	-21	-168	+23
Japan	0.25	+1	-335	+45
Australia	3.53	-23	-8	+22
Canada	2.94	-31	-67	+13
New Zealand	4.08	-10	48	+34
EUROPE			(Spread over Bunds)	
France	2.40	-27	47	-6
Greece	4.15	-47	222	-26
Italy	3.88	-42	195	-21
Portugal	2.88	-27	95	-6
Spain	2.95	-28	102	-7
EM	**10-YR LOCAL YIELD (%)**	**MTD CHANGE (BPS)**	**SPREAD (BPS)**	**MTD CHANGE (BPS)**
EM External Spreads			444	-14
EM Corporate Spreads			393	+4
EM Local Yields	6.89	-23		
			(Spread over USTs)	
Brazil	12.74	+87	913	+131
Colombia	13.07	-73	946	-28
Hungary	8.29	-185	468	-141
Indonesia	6.91	-60	331	-15
Malaysia	4.11	-24	51	+20
Mexico	9.21	-62	561	-18
Peru	7.72	-69	411	-24
Poland	6.58	-176	298	-132
South Africa	10.79	-54	719	-10
CREDIT			**SPREAD (BPS)**	**MTD CHANGE (BPS)**
U.S. IG			133	-25
EUR IG			181	-40
U.S. HY			448	-16
EUR HY			507	-83
SECURITIZED				
Agency MBS			145	-29
U.S. BBB CMBS			476	+31

Positive Neutral Negative

Source: Bloomberg, JPMorgan. Data as of November 30, 2022.

The views and opinions expressed are those of the Portfolio Management team as of December 2022 and are subject to change based on market, economic and other conditions. **Past performance is not indicative of future results.**

Fixed Income Outlook

Strong fixed income performance for 2023 just got a little less strong after November's surprisingly powerful rally. While the foundations for a meaningful rally were in place due to valuations, market positioning, and data surprises, one month does not make a trend. More important, central bank pivoting to a less aggressive path of hiking does not mean that we can sound the all clear. Is it possible? Of course. Market performance and the information flow does increase the probability of a softish landing of the economy and bond market, but we do not think there is enough evidence to justify a bullish stance on rates at current levels.

Increasingly, investors believe peak rates are now embedded in yield curves. While this may prove to be correct, the odds are against it. Indeed, central banks including the Fed, have continued to emphasize the need for further rate hikes or the need to avoid premature cutting of rates, even if inflation looks like it has peaked. Instead of rate cuts in the second half of 2023, the Fed could plausibly be raising rates if wages/inflation are not behaving. And, as a reminder, inflation is still far away from acceptable levels. Central banks are aware of the risk of cutting rates before the disinflationary trend is well established and reigniting inflation. What investors need to figure out is how high is high enough. How long is long enough. The pace, the current market obsession, is of secondary importance. The rally based on future rate cuts in the U.S. looks overly optimistic as does hope that rates are for sure high enough to achieve medium term inflation objectives given the level of inflation and the state of labor markets. We must remember that not only does inflation need to fall, but central banks need to be confident it will stay down. What this means is that the underlying drivers of inflation need to be tamed as well, which as we all know, comes down to wages and the state of the labor market.

While we are skeptical that optimism about inflation and growth will prove to be as easily achieved as the market expects, this is more about market pricing than the likely evolution of fundamentals. However, it is not all doom and gloom. Central banks have made tremendous progress in getting policy rates into restrictive territory, raising policy rates at a pace not seen for 40 years and helping push real rates, the more important indicator of monetary tightness, up substantially. Until the past month, global financial conditions were tighter than they have been for over 20 years, excluding the global financial crisis period in 2008. The U.S. bond market is now discounting a peak Fed funds rate of approximately 4.9%% (down 20 bps from last month) by mid next 2023. Even the most die-hard hawks on the FOMC have not been talking about rates much higher than this. Income has returned to the fixed income market, making bonds a much more attractive investment than they have been for over 15 years. Unless inflation continues to rise, it might just be possible to begin talking about peak rates. But given recent rallies in rates and spreads, we would be cautious about adding more at current valuations.

Given the rally in most non-U.S. bond markets, we remain cautious. We are likely to reduce interest rate exposure on further drops in yields. Valuations have been pushed back to levels last seen in the Spring, which look low relative to current and prospective short rates. This is true for most developed country bond markets. We think UK government and Australian government bonds will be outperformers. Euro government bonds remain bedeviled by high and still rising inflation, a problematic economy with amplified risks, and a hawkish central bank who is somewhat constrained by intra-eurozone fiscal issues in Italy, for example.

Last month we touted the attractiveness of investment grade bonds due to their relatively high yields, a combination of higher-than-average spreads and high government bond yields. This is no longer true, especially with regard to U.S. as yields and spreads are materially lower. Euro investment grade looks better as it's spreads remain above their long-term average. But, given the rally in the U.S. market combined with valuations, we are more cautious. U.S. credit markets have moved to the tighter end of their recent range and do not look especially attractive at the current time. With the bottom of their recent spread approximately at their long-term average, spreads would have to be able to move to the expensive side of their long-term average to be especially good value. For now, we expect the broad ranges established in 2022 to be maintained, which implies credit spreads have little room to rally, near term. But fundamentals still remain solid so there is also no reason to get particularly bearish.

The U.S. high yield market is in a somewhat similar position as investment grade. Returns outpaced expectations this year, bolstered by continued solid economic growth, sound balance sheets (for high yield companies), low defaults and 70% less issuance, a strongly positive technical backdrop. Spreads are also near the bottom of their late 2022 range, making them less interesting. Importantly, although not our central forecast, we do not think hard landing risks are sufficiently discounted. On the other hand, we do not expect any widening in spreads beyond what recent history suggests. We are buyers on dips. The U.S. agency mortgage market has done very well of yet, matching if not exceeding the performance of investment grade corporate bonds. As such, we no longer view them as unambiguously attractive and believe positions should be trimmed. Other securitized sectors (CMBS, ABS) continue to look inexpensive on most metrics. The U.S. dollar looks like it has peaked, falling significantly versus most currencies over the past 2 months. Further gains will likely be more challenging unless there is another reassessment of U.S. monetary policy implying no rate cuts in 2023 and 2024. EM bonds continue to gain in attractiveness, and we expect local markets and FX to outperform. Real yield differentials to U.S. Treasuries remain at historically wide levels. China's reopening should be quite positive for EM in general and helpful for the global economy. On the negative side, a stronger Chinese economy may make it harder for developed market central banks to bring down inflation. EM external remains the least favored sector in the EM fixed income complex. On all fronts we remain patient and conservative.

	MONTHLY REVIEW	OUTLOOK
Developed Market Rate/ Foreign Currency	Developed market rates continued where they left off at the end of October, with yields falling and curves bull flattening during November. While the Fed hiked by a fourth consecutive 75 bps hike at their November meeting, the view that central banks are starting to slow the pace of hikes remained a key theme. Given they have already tightened policy significantly, there is some evidence of inflation slowing, and the growth data is uncertain. The U.S. dollar depreciated broadly as markets started to price less aggressive central bank tightening.[2]	Recent Fed communication indicates a likely reduction in the pace of hikes to 50 bps for the Fed's December meeting. The far more important questions are how high the peak in rates will be, and how long it will stay there. In our view, the market's current pricing is below the likely peak, and it also seems unlikely the Fed will cut rates before the end of 2023 unless the economy is in severe recession. Inflation and labor market data suggest the economy is overheating, so the risk is skewed to yields going higher. In currency markets, the U.S. dollar is richly valued and likely to depreciate broadly unless investors become concerned about central bank tightening causing recession risks.
Emerging Market Rate/ Foreign Currency	Emerging Markets debt (EMD) had a dramatic rebound in November as markets coalesced around the narrative that both inflation and Fed hawkishness may have peaked, and that China may begin relaxing its COVID-zero policies as well as stepping up support of its ailing property sector. Additionally, expected growth differentials between EM and DM have increased, and persistent outflows from the asset class are abating.[3]	We are broadly constructive on EMD markets at this time as macro uncertainty appears to be easing, fundamentals are improving, technical tailwinds are abating, and valuations remain compelling. We continue to place an emphasis on differentiation among countries and credits.

[2] Source: Bloomberg. Data as of November 30, 2022.

[3] Source: Bloomberg. Data as of November 30, 2022. EM corporates represented by The JP Morgan CEMBI Broad Diversified Index.

	MONTHLY REVIEW	OUTLOOK
Corporate Credit	European Investment Grade (IG) spreads outperformed U.S. IG spreads in the rally this month as the marginal news was positive. Generally, this was the second month of spread compression. Subordinated financials outperformed non-financials, BBBs underperformed higher-rated, and short-dated paper tightened less than longer-dated. Following the conclusion of third quarter corporate results, earnings were mixed but broadly stronger than expectations.[4] The high yield market exhibited moderate weakness in the opening days of November before putting together a strong three-week run. Third quarter earnings of high yield issuers, on average, continued to exceed very modest expectations and technical conditions in the high yield market were largely supportive. The lowest quality segment of the market continued to generally underperform in November. The top-performing sectors for the month were gaming, banking and home construction.[5] Global convertibles rose for the second consecutive month in the improving macro environment. Convertibles lagged (at +3.49% compared to other risk assets such as MSCI global equities +7.60% and Bloomberg Global Credit +5.80%) as embedded equity options are out-of-the-money after a year of equity market correction combined with little new supply of at-the-money securities. Issuance in November did provide a bright spot, however, as $7.2 bn in new paper was issued, providing the best month of the year for supply.[6]	Market valuations continue to price a very negative outcome for corporate downgrades and defaults. Our base case view is that we are compensated to own credit as we view corporate fundamentals to be resilient. We view companies as having built liquidity in recent quarters. We expect margins to be pressured and top line revenue challenging, but we believe corporates will be able to manage a slowdown without significant downgrades or defaults (base case low default and mild recession). In the high yield market, corporate fundamentals still appear to be somewhat resilient, and the market is entering 2023 from a place of relative strength. However, today's strong fundamentals are likely to weaken in the year ahead. We anticipate a good rebound year for convertibles in 2023 on the back of attractive technical valuations, equity recovery potential and a stronger outlook for the primary calendar.
Securitized Products	Rates rallied and spreads tightened in November, leading to the best monthly performance of the year for nearly all fixed income assets. However, securitized credit sectors underperformed many other credit markets as securitized spreads tightened less, and as securitized assets tend to have shorter durations and spread durations. Current coupon agency MBS spreads tightened and the Bloomberg U.S. Agency MBS Index returned 4.08% in November and is now -11.42% year-to-date. U.S. Non-agency RMBS spreads tightened in November, although to a slightly lesser degree than other credit markets. U.S. ABS spreads, helped by the lack of new issuance and lighter secondary selling, were also tighter in November. U.S. CMBS spreads followed suit and tightened during the month, however, fundamental credit conditions remain challenging in many commercial real estate markets, most notably office and retail shopping centers. European securitized markets bounced back in November as the heavily selling (mostly UK pension liability driven investment crisis related) from the previous month abated.[7]	Our fundamental credit outlook remains positive overall, although we are becoming slightly more cautious. Credit spreads for many securitized sectors remain at levels last seen at the depths of the pandemic, but credit conditions appear materially better today than during that period. Although we believe that a recession is likely in 2023 for both the U.S. and Europe, we also believe that the post-GFC securitized market has been structured to withstand GFC-level stresses, and these securities should comfortably weather a less severe recession scenario.

[4] Source: Bloomberg Indices: U.S. Corporate Index and the European Aggregate Corporate Index. Data as of November 30, 2022.

[5] Source: J.P. Morgan and Bloomberg US Corporate High Yield Index. Data as of November 30, 2022.

[6] Source: Refinitiv Global Convertibles Focus Index. Data as of November 30, 2022.

[7] Source: Bloomberg. Data as of November 30, 2022.

Risk Considerations

Diversification neither assures a profit nor guarantees against loss in a declining market.

There is no assurance that a portfolio will achieve its investment objective. Portfolios are subject to **market risk**, which is the possibility that the market values of securities owned by the portfolio will decline and that the value of portfolio shares may therefore be less than what you paid for them. Market values can change daily due to economic and other events (e.g. natural disasters, health crises, terrorism, conflicts and social unrest) that affect markets, countries, companies or governments. It is difficult to predict the timing, duration, and potential adverse effects (e.g. portfolio liquidity) of events. Accordingly, you can lose money investing in a portfolio. **Fixed-income securities** are subject to the ability of an issuer to make timely principal and interest payments (credit risk), changes in interest rates (interest rate risk), the creditworthiness of the issuer and general market liquidity (market risk). In a rising interest-rate environment, bond prices may fall and may result in periods of volatility and increased portfolio redemptions. In a declining interest-rate environment, the portfolio may generate less income. **Longer-term securities** may be more sensitive to interest rate changes. Certain **U.S. government securities** purchased by the strategy, such as those issued by Fannie Mae and Freddie Mac, are not backed by the full faith and credit of the U.S. It is possible that these issuers will not have the funds to meet their payment obligations in the future. **Public bank loans** are subject to liquidity risk and the credit risks of lower-rated securities. **High-yield securities (junk bonds)** are lower-rated securities that may have a higher degree of credit and liquidity risk. Sovereign debt securities are subject to default risk. **Mortgage- and asset-backed securities** are sensitive to early prepayment risk and a higher risk of default, and may be hard to value and difficult to sell (**liquidity risk**). They are also subject to credit, market and interest rate risks. The **currency market** is highly volatile. Prices in these markets are influenced by, among other things, changing supply and demand for a particular currency; trade; fiscal, money and domestic or foreign exchange control programs and policies; and changes in domestic and foreign interest rates. Investments in **foreign markets** entail special risks such as currency, political, economic and market risks. The risks of investing in **emerging market** countries are greater than the risks generally associated with foreign investments. **Derivative instruments** may disproportionately increase losses and have a significant impact on performance. They also may be subject to counterparty, liquidity, valuation, and correlation and market risks. **Restricted and illiquid securities** may be more difficult to sell and value than publicly traded securities (liquidity risk). Due to the possibility that prepayments will alter the cash flows on **collateralized mortgage obligations (CMOs)**, it is not possible to determine in advance their final maturity date or average life. In addition, if the collateral securing the CMOs or any third-party guarantees are insufficient to make payments, the portfolio could sustain a loss.

DEFINITIONS

Basis point: One basis point = 0.01%.

INDEX DEFINITIONS

The indexes shown in this report are not meant to depict the performance of any specific investment, and the indexes shown do not include any expenses, fees or sales charges, which would lower performance. The indexes shown are unmanaged and should not be considered an investment. It is not possible to invest directly in an index.

The **Bloomberg Euro Aggregate Corporate Index (Bloomberg Euro IG Corporate)** is an index designed to reflect the performance of the euro-denominated investment-grade corporate bond market.

The **Bloomberg Global Aggregate Corporate Index** is the corporate component of the Bloomberg Global Aggregate index, which provides a broad-based measure of the global investment-grade fixed income markets.

The **Bloomberg US Corporate High Yield Index** measures the market of USD-denominated, non-investment grade, fixed-rate, taxable corporate bonds. Securities are classified as high yield if the middle rating of Moody's, Fitch, and S&P is Ba1/BB+/BB+ or below. The index excludes emerging market debt.

The **Bloomberg US Corporate Index** is a broad-based benchmark that measures the investment grade, fixed-rate, taxable, corporate bond market.

The **Bloomberg US 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. Introduced in 1985, the GNMA, FHLMC and FNMA fixed-rate indexes for 30- and 15-year securities were backdated to January 1976, May 1977 and November 1982, respectively. In April 2007, agency hybrid adjustable-rate mortgage (ARM) pass-through securities were added to the index.

Consumer Price Index (CPI) is a measure that examines the weighted average of prices of a basket of consumer goods and services, such as transportation, food and medical care.

Euro vs. USD—Euro total return versus U.S. dollar.

German 10YR bonds—Germany Benchmark 10-Year Datastream Government Index; **Japan 10YR government bonds**—Japan Benchmark 10-Year Datastream Government Index; and **10YR US Treasury**—US Benchmark 10-Year Datastream Government Index.

The **ICE BofAML European Currency High-Yield Constrained Index (ICE BofAML Euro HY constrained)** is designed to track the performance of euro- and British pound sterling-denominated below investment-grade corporate debt publicly issued in the eurobond, sterling

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The **ICE BofAML US Mortgage-Backed Securities (ICE BofAML US Mortgage Master) Index** tracks the performance of US dollar-denominated, fixed-rate and hybrid residential mortgage pass-through securities publicly issued by US agencies in the US domestic market.

The **ICE BofAML US High Yield Master II Constrained Index (ICE BofAML US High Yield)** is a market value-weighted index of all domestic and Yankee high-yield bonds, including deferred-interest bonds and payment-in-kind securities. Its securities have maturities of one year or more and a credit rating lower than BBB-/Baa3, but are not in default.

The **ISM Manufacturing Index** is based on surveys of more than 300 manufacturing firms by the Institute of Supply Management. The ISM Manufacturing Index monitors employment, production inventories, new orders and supplier deliveries. A composite diffusion index is created that monitors conditions in national manufacturing based on the data from these surveys.

Italy 10-Year Government Bonds—Italy Benchmark 10-Year Datastream Government Index.

The **JP Morgan CEMBI Broad Diversified Index** is a global, liquid corporate emerging markets benchmark that tracks US-denominated corporate bonds issued by emerging markets entities.

The **JPMorgan Government Bond Index**—emerging markets (**JPM local EM debt**) tracks local currency bonds issued by emerging market governments. The index is positioned as the investable benchmark that includes only those countries that are accessible by most of the international investor base (excludes China and India as of September 2013).

The **JPMorgan Government Bond Index Emerging Markets (JPM External EM Debt)** tracks local currency bonds issued by emerging market governments. The index is positioned as the investable benchmark that includes only those countries that are accessible by most of the international investor base (excludes China and India as of September 2013).

The **JP Morgan Emerging Markets Bond Index Global (EMBI Global)** tracks total returns for traded external debt instruments in the emerging markets and is an expanded version of the EMBI+. As with the EMBI+, the EMBI Global includes US dollar-denominated Brady bonds, loans and eurobonds with an outstanding face value of at least $500 million.

The **JP Morgan GBI-EM Global Diversified Index** is a market-capitalization weighted, liquid global benchmark for US-dollar corporate emerging market bonds representing Asia, Latin America, Europe and the Middle East/Africa.

JPY vs. USD—Japanese yen total return versus US dollar.

The **Markit ITraxx Europe Index** comprises 125 equally weighted credit default swaps on investment grade European corporate entities, distributed among 4 sub-indices: Financials (Senior & Subordinated), Non-Financials and HiVol.

The **Nikkei 225 Index (Japan Nikkei 225)** is a price-weighted index of Japan's top 225 blue-chip companies on the Tokyo Stock Exchange.

The **MSCI AC Asia ex-Japan Index (MSCI Asia ex-Japan)** captures large- and mid-cap representation across two of three developed markets countries (excluding Japan) and eight emerging markets countries in Asia.

The **MSCI All Country World Index (ACWI, MSCI global equities)** is a free float-adjusted market capitalization weighted index designed to measure the equity market performance of developed and emerging markets. The term "free float" represents the portion of shares outstanding that are deemed to be available for purchase in the public equity markets by investors. The performance of the Index is listed in US dollars and assumes reinvestment of net dividends.

MSCI Emerging Markets Index (MSCI emerging equities) captures large- and mid-cap representation across 23 emerging markets (EM) countries.

The **MSCI World Index (MSCI developed equities)** captures large and mid-cap representation across 23 developed market (DM) countries.

Purchasing Managers Index (PMI) is an indicator of the economic health of the manufacturing sector.

The **Refinitiv Convertible Global Focus USD Hedged Index** is a market weighted index with a minimum size for inclusion of $500 million (US), 200 million (Europe), 22 billion Yen, and $275 million (Other) of Convertible Bonds with an Equity Link.

The **Russell 2000® Index** is an index that measures the performance of the 2,000 smallest companies in the Russell 3000 Index.

The **S&P 500® Index (US S&P 500)** measures the performance of the large-cap segment of the US equities market, covering approximately 75 percent of the US equities market. The index includes 500 leading companies in leading industries of the US economy.

S&P CoreLogic Case-Shiller US National Home Price NSA Index seeks to measure the value of residential real estate in 20 major US metropolitan areas: Atlanta, Boston, Charlotte, Chicago, Cleveland, Dallas, Denver, Detroit, Las Vegas, Los Angeles, Miami, Minneapolis, New York, Phoenix, Portland, San Diego, San Francisco, Seattle, Tampa and Washington, D.C.

The **S&P/LSTA US Leveraged Loan 100 Index (S&P/LSTA Leveraged Loan Index)** is designed to reflect the performance of the largest facilities in the leveraged loan market.

The **S&P GSCI Copper Index (Copper)**, a sub-index of the S&P GSCI, provides investors with a reliable and publicly available benchmark for investment performance in the copper commodity market.

The **S&P GSCI Softs (GSCI soft commodities) Index** is a sub-index of the S&P GSCI that measures the performance of only the soft commodities, weighted on a world production basis. In 2012, the S&P GSCI Softs Index included the following commodities: coffee, sugar, cocoa and cotton.

Spain 10-Year Government Bonds—Spain Benchmark 10-Year Datastream Government Index.

The **Thomson Reuters Convertible Global Focus USD Hedged Index** is a market weighted index with a minimum size for inclusion of $500 million (US), 200 million euro (Europe), 22 billion yen, and $275 million (Other) of convertible bonds with an equity link.

U.K. 10YR government bonds—U.K. Benchmark 10-Year Datastream Government Index. For the following Datastream government bond indexes, benchmark indexes are based on single bonds. The bond chosen for each series is the most representative bond available for the given maturity band at each point in time. Benchmarks are selected according to the accepted conventions within each market. Generally, the benchmark bond is the latest issue within the given maturity band; consideration is also given to yield, liquidity, issue size and coupon.

The **US Dollar Index (DXY)** is an index of the value of the United States dollar relative to a basket of foreign currencies, often referred to as a basket of US trade partners' currencies.

The **Chicago Board Options Exchange (CBOE) Market Volatility (VIX) Index** shows the market's expectation of 30-day volatility.

There is no guarantee that any investment strategy will work under all market conditions, and each investor should evaluate their ability to invest for the long-term, especially during periods of downturn in the market.

A separately managed account may not be appropriate for all investors. Separate accounts managed according to the particular strategy may include securities that may not necessarily track the performance of a particular index. Please consider the investment objectives, risks and fees of the Strategy carefully before investing A minimum asset level is required. For important information about the investment managers, please refer to Form ADV Part 2.

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