Morgan Stanley
INVESTMENT MANAGEMENT

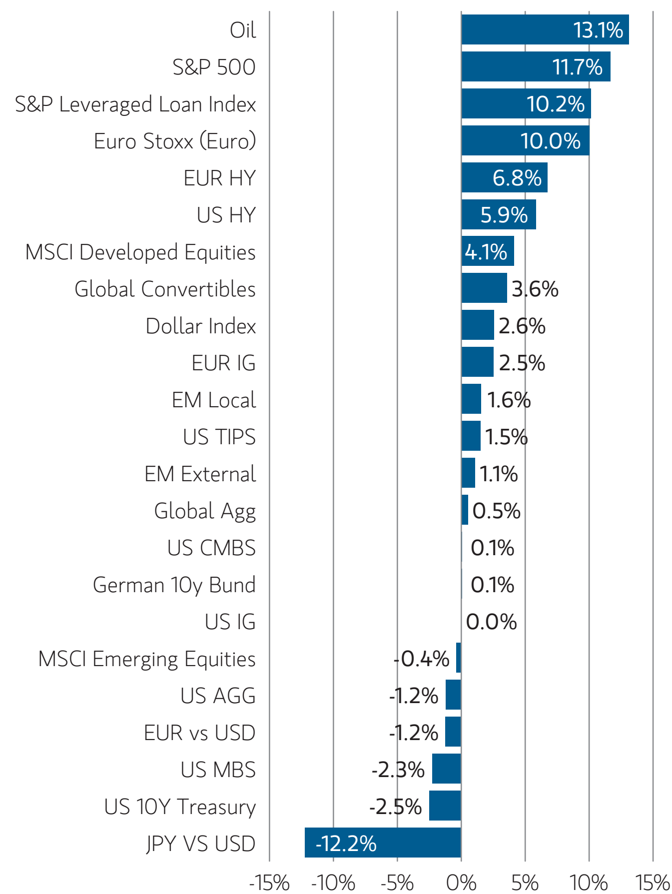
Global Fixed Income Bulletin

September Slump! A "Real" Story

MACRO INSIGHT | BROAD MARKETS FIXED INCOME TEAM | October 2023

September was a difficult month for global fixed income with rates rising, spreads widening and the dollar strengthening. The global growth picture took a turn for the worse, and the probability of a recession next year grew as financial conditions tightened and real yields rose despite improvements in inflation. That said, the inflation picture in both the developed markets (DM) and emerging markets (EM) has proven stickier than previously anticipated, forcing central banks to readjust their expectation for future easing. In the U.S., the FOMC decided to keep the Fed funds rate unchanged but removed multiple rate cuts from their expectations for 2024 and 2025, causing the yields at the long end of the Treasury curve to rise substantially, steepening the yield curve along the way. For example, the U.S. Treasury (UST) 2-Year/10-Year spread in the U.S. steepened by roughly 30 basis points (bps) over the month. Rates in other developed market economies followed the same path as the "higher-for-longer" rhetoric prevailed with yields rising and curves steepening. Emerging market (EM) rates rose broadly, more than any other month this year, as DM yields rose, the price of oil continued to climb, China's growth story continued to deteriorate, and the U.S. Dollar (USD) continued to strengthen. All four factors are undermining the bull story for EM debt. The USD strengthened 2.5% versus a basket of other currencies over the month as the growth picture relative to the rest of the world improved further and the U.S. consumer remained strong. Regarding credit, the U.S. largely underperformed the Euro-area with financials being the main culprit for the underperformance, with high yield also generating negative returns. Securitized spreads were broadly wider over the month as well.

DISPLAY 1
Asset Performance Year-to-Date



Note: USD-based performance. Source: Bloomberg. Data as of September 30, 2023. 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 8-9 for index definitions.

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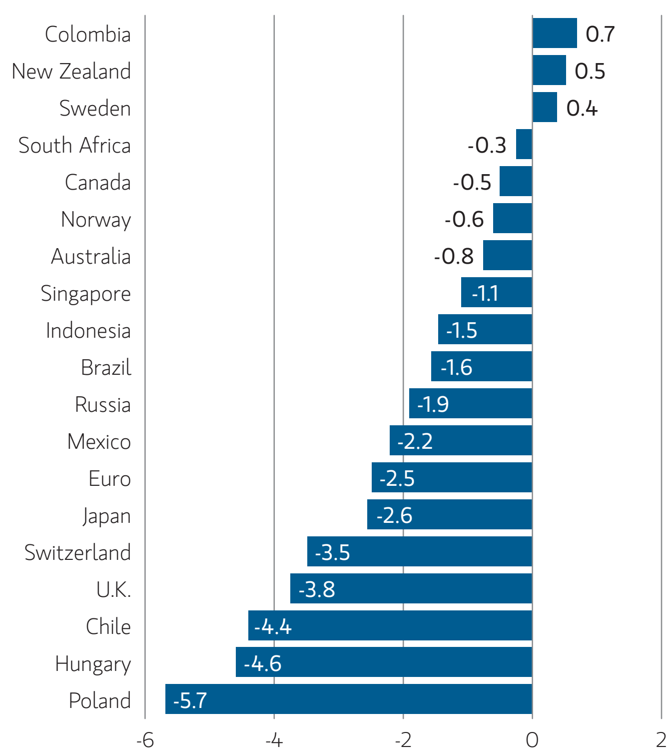
DISPLAY 2

Currency Monthly Changes versus U.S. Dollar

(+ = appreciation)



Note: Positive change means appreciation of the currency against the USD.
Source: Bloomberg. Data as of September 30, 2023.

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	4.57	46		
United Kingdom	4.44	8	-13	-39
Germany	2.84	37	-173	-9
Japan	0.77	11	-381	-35
Australia	4.49	46	-9	0
Canada	4.03	46	-55	0
New Zealand	5.31	43	73	-3
EUROPE			(SPREAD OVER BUNDS)	
France	3.40	42	56	5
Greece	4.36	58	152	20
Italy	4.78	66	194	29
Portugal	3.60	41	76	4
Spain	3.93	45	109	8
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	11.65	49	708	2
Colombia	11.78	115	721	69
Hungary	7.37	35	280	-11
Indonesia	6.89	53	232	7
Malaysia	3.97	13	-60	-33
Mexico	9.87	59	530	13
Peru	7.46	69	289	23
Poland	5.90	33	133	-13
South Africa	12.37	65	780	19
CREDIT			**SPREAD (BPS)**	**MTD CHANGE (BPS)**
U.S. IG			121	3
EUR IG			153	-2
U.S. HY			394	22
EUR HY			431	-10
SECURITIZED				
Agency MBS			177	8
U.S. BBB CMBS			910	106

Positive Neutral Negative

Source: Bloomberg, JPMorgan. Data as of September 30, 2023

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Fixed Income Outlook

After modest underperformance in August, bond yields across the world rose dramatically in September. Is it real? Without a doubt! It actually happened and is likely to hang around for a while, and yes—it was driven by a startling increase in real yields. That's good for longer-term investors, but maybe a problem in the short run. In fact, UST 30-year yields were up close to 50 bps with approximately 32-bp of that due to a rise in real yields as measured by the yield on the UST 30-year TIPs security. Moreover, several EM countries' yields were up over 60 bps. Interestingly, sovereign bonds bore the brunt of the sell-off as investment grade spreads barely moved with only U.S. high yield and U.S. Commercial Mortgage Backed Securities meaningfully underperforming government bonds. It also looked peculiar, at least at first, that government bond yields rose so much as the S&P 500 equity index fell almost 5%.

While there was no specific event in September for which one can blame the sell-off, accumulating data releases over the summer weighed on markets. In a quite unusual move, yield curves bear steepened; that is long-end yields rose more than shorter-maturity ones and rose despite no negative inflation surprises; in other words, real yields and term premiums rose. In addition, inflation was well behaved, so inflation worries were not the cause of the vicious sell off. We believe a reasonable explanation for market volatility goes as follows: U.S. economic growth has been accelerating all year, which surprised analysts; the U.S. budget situation looks bad, sending more and more U.S. Treasuries into the market at the same time that the Fed is shrinking its balance sheet; the Fed has been adamant that the inflation game has not been won so markets should expect the Fed to keep rates unchanged (at the September FOMC meeting, the Fed eliminated several rate cuts from their 2024 forecasts). In other words, rates would be kept higher for longer; market positioning seems to be skewed to being long interest-rate risk, making bonds vulnerable to disappointing news; and lastly, the coup de grace is that the U.S. yield curve has been highly inverted, making longer maturity bonds less attractive than shorter ones. Cash has been king! Add it all up and you have a good cumulative narrative as why longer-term yields rose. Importantly, while the velocity of the selloff looks extreme, the end point, a U.S. Treasury 10-year yield ending September at 4.57%, does not.

Why does this matter? The attractiveness of bonds depends on the reason why yields are high. If it is because real yields are high, that is good. High real yields usually lead to good bond market performance. That certainly is partially what happened in September, but term premium seems to have risen as well and that is a measure of riskiness. So, if the primary reason yields rose was increased riskiness and they still offer lower yields than cash, rising yields are not a reason to get bullish. We remain concerned that the rise in real yields/ term premiums is likely to continue as long as two things transpire: one, the yield curve remains inverted, making longer maturity bonds less attractive; and two, the U.S. economy cools. An accelerating economy is not conducive to lower yields, in fact, it is usually associated with higher yields.

Economic growth outside of the U.S. has been much less impressive with Europe and China flirting with recessionary conditions. However, that has not stopped European and EM bond yields from rising (China's yields have essentially not moved at all). If growth outside the U.S. had not been so weak, U.S. yields would probably have moved even higher. While non-U.S. bond markets have generally outperformed USTs, absolute yields have been driven higher by the surprising strength of the U.S. economy and the doggedness of the Fed in combating inflation with high rates. Therefore, although most central banks are likely finished hiking rates, we are not finished with the era of high rates, the maintenance of which remains critical to win the war against inflation. Although valuations have improved considerably, we are not yet ready to declare they have peaked and remain cautious in interest rate positioning in portfolios. While growth fundamentals are worse outside the U.S. (except ironically perhaps for Japan) we do not think non-U.S. government developed markets are much more attractive than U.S. Treasuries. There is a reasonable probability that growth dynamics are in the process of bottoming in Europe and Asia and will turn up next year at the very time the surge in real yields slows the U.S. economy. As such we are fairly neutral on DM government markets on a relative basis.

We do think selective EM bond markets look attractive, but that attractiveness has been undermined by the strong U.S. economy, hawkish Fed, and rising yields. Selectivity remains the name of the game and patience is necessary to realize value in many of these markets while the U.S. economy and USD outperform.

One potential casualty of higher yields, wider credit spreads and softer equity prices is the economy, particularly in the U.S. Until September, the probability of a "soft landing" grew as falling inflation, stable unemployment, and reasonable growth looked increasingly

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feasible. However, the rise in yields on the back of increased confidence the Fed would not be lowering rates as much and as soon as expected, resulting in a meaningful rise in real interest rates, increases the chances a harder landing will occur and possibly a recession. While it is way too early to assign this as the most likely scenario given what we currently know about economic activity, credit and equity markets have had to price in this higher probability, resulting in poor performance. We are also concerned about the ability of higher risk assets to outperform in an era of inverted yield curves and high cash rates. The solid fundamentals we have witnessed year to date (low default rates, more credit rating upgrades than downgrades, etc.) could easily begin to deteriorate over the months ahead. We therefore remain cautious about maintaining anything above a modestly long position in lower-quality fixed income. Selectivity will remain of paramount importance. Avoiding defaults and blow-ups will eventually be key as higher rates and refinancing risks feed into corporate performance and outlooks. The high yields on offer will blunt underperformance if fundamentals do deteriorate, in our view. As always—*caveat emptor!*

We continue to favor shorter maturity securitized credit (Residential Mortgage Backed Securities (RMBS), Asset Backed Securities (ABS), selected CMBS) as offering the best opportunities in fixed income. That said, the outlook has modestly deteriorated as household balance sheets come under more pressure and excess savings run down. We are trying to take advantage of higher yields on higher quality issuers to achieve our target returns, rather than venturing down the risk/rating spectrum. Our favorite category of securitized credit remains non-agency residential mortgages, despite challenging home affordability. Somewhat surprisingly, U.S. housing looks like it may have bottomed out, with prices rising once again.

Recent good news on the U.S. economy and the surge in yields has helped the dollar strengthen further. While the USD looks vulnerable in the medium term, other DM currencies do not offer compelling advantages at the moment. Negative growth dynamics in Europe and China are undermining the attractiveness of these and other EM currencies. The most undervalued currency continues to be the Japanese yen but given the slow-moving nature of Japanese monetary policy and still exceptionally high hedging costs, it will be difficult for the yen to rally until Japanese rates move higher or U.S. rates fall. We have moved to a neutral stance on the dollar versus both developed and EM currencies as the differentiated economic performances in the U.S. and China undermine the ability of EM currencies to strengthen. Likewise, we have downgraded our views and exposures in EM local rates. Longer term, many EM bond markets look attractive, but for now the pincer of stronger U.S. growth, weaker Chinese growth and a stronger U.S. dollar undermines their case.

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	MONTHLY REVIEW	OUTLOOK
Developed Market Rate/ Foreign Currency	Developed market rates moved sharply higher in September as data depicted economic resilience and term premium appears to have increased. Front-end yields did rise, but less than long-end yields, as central bank policy expectations remain relatively consistent as the hiking cycle approaches an end. As a result, continuing from August, yield curves were steeper (U.S. 2/10s rose 28bps), but somewhat unusually the curve bear steepened as the focus was on long-end selling. In the U.S., the 10-year yield rose 46 bps with the Fed reiterating a hawkish, higher-for-longer stance. The Fed's median dots for 2024 policy rates were lifted 50 bps to 5.1% from 4.6%, implying an indicated cut of only 50 bps vs 100 bps prior. Yields in the Eurozone were also higher with the European Central Bank surprising with a 25bps hike vs expectation for a pause. The Bank of England held, but with a hawkish tone, surprising markets expecting a hike. In contrast, Saudi National Bank held rates vs expectations of a hike. Elsewhere, the Reserve Bank of Australia, Bank of Canada, Riksbank, Norges Bank, and Bank of Japan kept policy rates the same, largely as expected.[1]	The key theme that drove markets in September was the steep selloff on the back end. While attributed to many things, the still resilient economy and an increase in term premium likely explain most of it. Looking at term premium, the NY Fed's ACM Term Premium model for 10-year USTs increased from -51 bps at the end of August to +16 bps by the end of September. Going forward, despite the steep sell-off, it's unclear if the full extent of selling is done. The curve is still inverted and term premium, while elevated in the context of the negative levels of the past decade, is still well below the +1-3% levels found before the post-GFC period. At the same time, the higher yields should feed through to tighter financial conditions, putting further pressure on the economy. Given the uncertainty, it is difficult to concretely express an outright view on interest rates; however, we continue to find steepeners attractive at certain parts of the curve as they would keep benefiting from further increases in term premium and/or a more typical bull steepening if the Fed pivots in the face of economic weakness. In terms of foreign exchange, the USD again strengthened during September with the U.S. economy showing more resilience vs weaker global growth. We are fairly neutral on the U.S. dollar now, preferring to focus on other attractive opportunities.
Emerging Market Rate/ Foreign Currency	Emerging Markets Debt (EMD) continued to sell off across all segments of the asset class for the month. A strong USD, rising U.S. yields, and a more hawkish sentiment from the U.S. fed weighed on the asset class. Inflation continues to decrease in emerging markets and a number of EM central banks cut rates including Chile, Uruguay, and Poland. The Turkish central bank massively hiked rates in an effort to implement new orthodox policy. Sovereign spreads widened while corporate spreads tightened month-over month. Commodities prices increased and oil rallied as OPEC cut production. Outflows continued for both hard currency and local currency funds bringing year-to-date flows to $-14.2B and $-3.2B, respectively.[2]	Looking forward, pockets of value and attractive investments remain for EMD, but country and credit level analysis will be crucial to uncover that value. This is especially important as the U.S. Fed remains "higher for longer," which negatively impacts the macro backdrop for EMD.

[1] Source: Bloomberg. Data as of September 30, 2023.

[2] Source: Bloomberg. Data as of September 30, 2023. EM corporates represented by The **JP Morgan CEMBI Broad Diversified Index**.

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	MONTHLY REVIEW	OUTLOOK
Corporate Credit	Euro Investment Grade (IG) spreads outperformed U.S. IG spreads this month as September saw credit markets marginally tighter, driven by three main factors. First, central banks' commentary signalled rates will be higher for longer. Second, fundamental economic data did not change the narrative of a strong labor market and inflation trending lower but still above target and potentially sticky, and forward-looking indicators are still signalling weakness (PMI's/IFO). Finally, there was stronger demand for high quality fixed income, as yields moved higher supporting the positive technical narrative for IG Credit.[3]	Looking forward, our base case remains unchanged with credit expected to range trade around current levels (having widened from the summer tights at the end of July) making carry an attractive return opportunity. We expect supply to slow over Q4 reflecting the front loading of issuance given concerns for the economy in H2 (although we do see risks of pre-financing 2024 supply needs given the inverted yield curve means holding cash is not expensive for corporates). Finally, there are several factors we are closely watching that could shift the narrative: Q3 reporting, the potential for economic policy support in China and higher energy prices.
	The U.S. and global high yield markets recorded a weak month in September. The quarter ended with a softer tone as global rates moved sharply higher on the back of hawkish rhetoric from global central banks. The technical conditions in high yield softened modestly in September amid a post-Labor Day surge in primary issuance and modest outflows. The lower quality segments of the market generally outperformed for the one-month period, even after underperforming in the latter half of September.[4]	The high yield market ended the third quarter with a historically attractive yield; however, our outlook and positioning remain somewhat cautious. The need for caution is predicated on prevailing catalysts that include restrictive monetary policy, near term headwinds facing the U.S. consumer and high yield issuers and valuations that trade inside historical norms. We remain constructive on the asset class as the market is priced around fair value, below par and can be bought at low values of volatility.
	In September, global convertibles fell along with other risk assets for the second month in a row. MSCI global equities declined 4.27% in the month and Bloomberg Global Aggregate Credit fell 2.72% while the Refinitiv Global Convertibles Focus Index was slightly better, falling only 2.04%. Convertibles held up best in Europe, while declining more in the U.S. and Asia. No sectors were spared as all declined in September, but supply remained strong, with $9.2bn in new paper coming in September, the second-best month of the year.[5]	

[3] Source: Bloomberg Indices: U.S. Corporate Index and the European Aggregate Corporate Index. Data as of September 30, 2023.

[4] Source: J.P. Morgan and Bloomberg US Corporate High Yield Index. Data as of September 30, 2023.

[5] Source: Bloomberg and Refinitiv Global Convertibles Focus Index. Data as of September 30, 2023.

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Securitized Products	Securitized credit spreads were mixed in September, with CMBS spreads wider than other securitized credit sectors. U.S. ABS spreads were largely unchanged over the month for consumers, but business-oriented ABS spreads continued to tighten. European securitized spreads tightened over the month and market activity increased, primarily in RMBS and ABS, and supply continues to be met with healthy demand. Agency MBS spreads continued to drift wider during the month as both the Fed and U.S. banks continue to reduce their U.S. Agency MBS positions. Current coupon agency MBS spreads widened 8 bps to +177 bps above comparable duration U.S. Treasuries. Current coupon MBS spreads are now 34 bps wider year-to-date, in contrast to the U.S. IG corporate Index average spread which is 10 bps tighter year-to-date.[6]	We believe that "higher rates for longer" will continue to erode household balance sheets, causing stress for consumer ABS and further stress for commercial real estate borrowers. Residential mortgage credit opportunities look more attractive to us, given that most borrowers have locked in 30-year fixed rate mortgages at substantially lower rates, and given that home price appreciation over the past few years has meaningfully increased homeowner equity. We like agency MBS at these wider spread levels, and we are moving up in credit quality by adding higher rated opportunities and government-guaranteed agency MBS to our portfolios. Securitized yields remain at historically wide levels, and we believe these wider spreads offer more than sufficient compensation for current market risks. Fundamental credit conditions remain stable despite recession risks, although delinquencies across many asset classes are increasing slowly. Overall, delinquencies remain low from a historical perspective, and we believe delinquency and default levels will remain non-threatening to the large majority of securities. Our favorite sector remains residential mortgage credit, and home prices have proved to be extremely resilient to declines despite the increase in mortgage rates, only having fallen 1% since the peak in June of 2023. Within the U.S. residential sector, we have a strong preference for seasoned loans (originated in 2020 or earlier) due to the sizable home price appreciation over the past few years and potential future home price declines. We remain more cautious of commercial real estate, especially office, which continues to be negatively impacted in the post-pandemic world. Our European securitized holdings were down slightly in September, and we have meaningfully reduced our European holdings over the past year.

[6] Source: Bloomberg. Data as of September 30, 2023.

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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.

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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

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).

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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 U.S. 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.

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