



Global Fixed Income Bulletin Unprecedented Volatility, but No Real Clarity

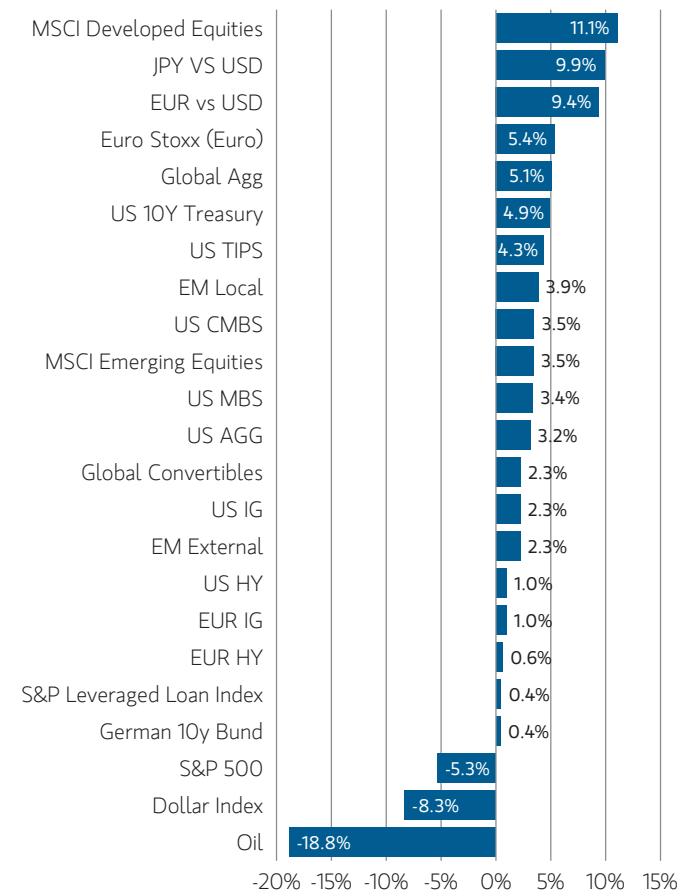
MACRO INSIGHT | BROAD MARKETS FIXED INCOME TEAM | May 2025

T.S. Eliot's line "April is the cruellest month" seemed alarmingly true at the start of the month. President Donald Trump's Liberation Day announcement of unexpectedly large tariff increases set off a chain reaction undermining equities, bonds and the U.S. dollar. Indeed, the shock to markets was on par with past emerging markets and G20 financial crises, in that equities fell, credit spreads widened, bond yields rose (including government bond yields), and the currency fell. There were also parallels to the U.K. market turmoil experienced during Brexit and former British Prime Minister Liz Truss's unfortunate 2022 attempt to reflate the economy with large deficit spending.

In response to the extreme market volatility, the Trump administration subsequently postponed tariff implementation for 90 days and rescinded (for now) certain tariffs on autos and other critical imports. This helped stem the market meltdown and reinforced a belief that the market reaction to U.S. trade policy had reached its low point. Notably, the velocity of the recovery was as dramatic as the sell-off.

By the end of the month, April looked a bit unremarkable as measured by market movements. 10-year U.S. Treasury yields fell by 4 basis points (bps), with non-U.S. government

DISPLAY 1 Asset Performance Year-to-Date

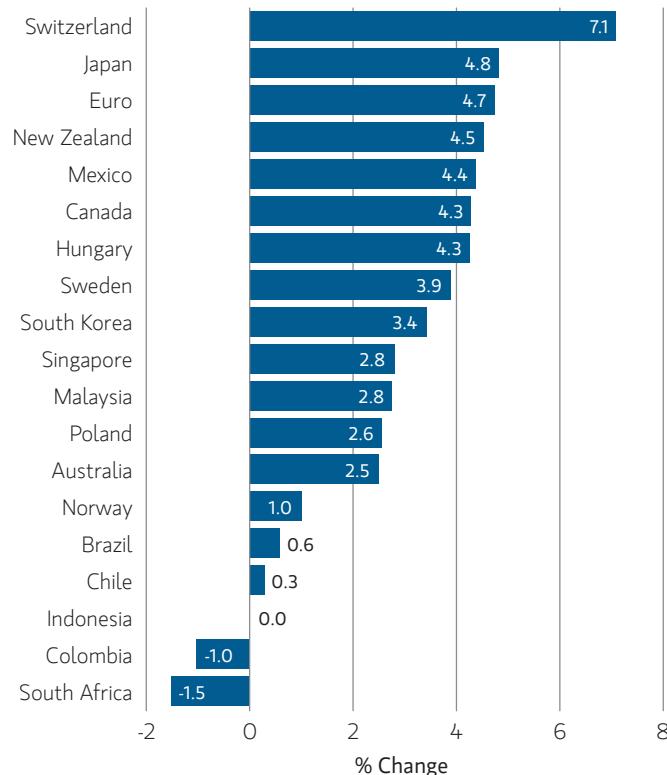


Note: USD-based performance. Source: Bloomberg. Data as of April 30, 2025. The indexes are provided for illustrative purposes only and are not meant to depict the performance of a specific investment. **Past performance is no guarantee of future results.** See pages 8-9 for index definitions.

market bond yields down by more (Germany's 10-year yield fell 29 bps, UK 23 bps, Australia 22 bps, and Japan 17 bps), except in Canada and New Zealand. U.S. credit spreads were the relative big losers, with U.S. investment grade credit spreads widening 12 bps and U.S. high yield credit spreads widening 37 bps. Europe did not fare much better with Euro-Investment Grade spreads widening 14 bps and Euro HY spreads widening 25 bps. The S&P 500 Index was down less than 1% and even more surprisingly, the MSCI World ex-U.S. Index ended the month trading near record highs. These results give little indication of the remarkable intra-month volatility. The S&P 500 fell almost 11% between April 2 and April 8; U.S. high yield spreads widened 110 bps; U.S. Treasury 10-year yields rose 24 bps from the end of March to April 11; and the U.S. dollar fell almost 5% over the same period.

DISPLAY 2 Currency Monthly Changes versus USD

(+ = appreciation)



Note: Positive change means appreciation of the currency against the USD. Source: Bloomberg. Data as April 30, 2025.

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	4.16	-4		
United Kingdom	4.44	-23	28	-19
Germany	2.44	-29	-172	-25
Japan	1.32	-17	-284	-13
Australia	4.16	-22	0	-18
Canada	3.09	12	-107	17
New Zealand	4.44	-5	28	0
(SPREAD OVER BUNDs)				
France	3.17	-29	72	1
Greece	3.30	-26	86	3
Italy	3.56	-30	112	-1
Portugal	3.00	-26	56	4
Spain	3.11	-26	67	4
EM				
EM	10-YR LOCAL YIELD (%)	MTD CHANGE (BPS)	SPREAD (BPS)	MTD CHANGE (BPS)
EM External Spreads			334	17
EM Corporate Spreads			258	33
EM Local Yields	6.08	-21		
(SPREAD OVER USTS)				
Brazil	14.07	-101	991	-96
Colombia	12.35	9	819	14
Hungary	6.81	-41	265	-37
Indonesia	6.86	-13	270	-9
Malaysia	3.65	-12	-51	-8
Mexico	9.34	-1	518	4
Peru	6.54	-15	238	-10
Poland	5.20	-52	104	-48
South Africa	10.57	-4	641	1
CREDIT				
U.S. IG			106	12
EUR IG			112	14
U.S. HY			384	37
EUR HY			359	25
SECURITIZED				
Agency MBS			159	16
U.S. BBB CMBS			643	43

Positive Neutral Negative

Source: Bloomberg, JPMorgan. Data as of April 30, 2025.

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Fixed Income Outlook

By May 5, most stock indexes and U.S. Treasury yields were close to where they started on April 2. However, the dollar and credit spreads remain meaningfully weaker from where they were at the start of April and somewhat out of line relative to U.S. Treasury yields and equity prices. Whether or not that gap will close—via weaker equities or stronger credit—will likely depend on three factors: the ultimate path of tariffs, the strength of the U.S. economy, and level of inflation.

The recovery in markets was driven not only by the apparent backing down of the U.S. administration on tariff policy, but also by recent economic data, which has been much less dire than worst-case scenarios. There is no doubt that the outlook for growth and inflation has deteriorated since April 2. But, so far, it is difficult to see in U.S. or global data. Both the manufacturing and service sectors continued to perform well, and despite the noise coming from the U.S. economy, global gross domestic product (GDP) only decreased at a rate of -0.3% in the first quarter. April data also appears relatively unalarming so far. However, expectations of future growth continue to slide globally. U.S. consumer confidence has fallen precipitously, and business sentiment indicators have been declining in most countries. This divergence between current conditions and expectations will eventually close, but by how much and when are open questions.

Given this backdrop, our view is that the U.S. and global economies will likely slow significantly in the second half of this year. It will take time for the still-elevated tariff levels to hit output, income and prices. Frontloading of imports into the U.S. flatters global production and at the same time portends a possibly significant slowdown outside the U.S. in the third and fourth quarters. The big question is what will happen when high prices hit the U.S. consumer and output is hit by slower demand and slower production post inventory build. While employment has been holding steady across the world despite this tariff shock, it is not clear whether it will remain resilient if sentiment and confidence remain at present levels (or slide further) as the year progresses.

The situation is compounded by the likely inability of U.S. fiscal and monetary policy to offset this coming shock. Policy flexibility in countries outside of the U.S. gives them more freedom to offset the probable aggregate demand shock of lower U.S. import demand in the second half of the year. Both monetary and fiscal policy are likely to be eased in response to weaker demand, cushioning the blow

to their economies and potentially closing the growth gap to the U.S., thereby making the U.S. economy and potentially its asset markets seem less “exceptional”.

In contrast, the U.S. Federal Reserve's (Fed) ability to ease policy is likely to be significantly constrained given the inflationary consequences of higher tariffs and the risk of embedded inflation expectations after the already bad experience of the pandemic inflation shock. Moreover, the negative growth implications are likely to take time to materialise, so any policy easing is unlikely before summer at the earliest. If, however, growth deteriorated faster than expected, the Fed will likely ease aggressively despite elevated inflation. U.S. fiscal policy remains constrained by existing high deficits and Republicans' difficulty with passing a budget reconciliation bill in Congress. As of now, any net fiscal stimulus seems unlikely this year, and it will be considered a success if Congress manages to preserve the tax cuts in the Tax Cuts and Jobs Act of 2017.

Recession risks are elevated everywhere—and probably the highest in North America given the nature of the tariff shock and the more limited policy flexibility there. Whether or not the U.S. and/or global economy tip into recession (and how deeply) will depend on: i) how high tariffs go; ii) whether or not incipient economic or asset price weakness causes the Trump administration to reverse course; and iii) how confident households and corporates are in absorbing the shock without radically cutting spending. Given that the U.S. private sector is still in good financial health, we currently expect only a shallow recession, with year-on-year growth remaining positive but below 2%.

What this means is that U.S. bond yields are stuck near current levels and are unlikely to move out of recent ranges unless there is surprisingly good or bad news on the trade front. The U.S. Treasury yield curve is likely to maintain its steepening bias given higher risk premiums on U.S. assets and the stagflationary nature of the current economic environment. Credit spreads are likely to remain in the ranges defined by movements in April. Spreads will not likely to return to early 2025 or late 2024 levels, nor are they likely to surpass the panicked highs seen in the first two weeks of April. Yields look reasonably attractive relative to history, but maybe not so high given the elevated levels of uncertainty about the next few months. Keeping interest rate risk close to neutral for now seems the best policy, in our view, and opportunistically reacting to sharp movements either way. While continued pressure is likely given the tariff situation, credit fundamentals remain reasonably strong. In addition, corporate behaviour

tends to become more conservative during uncertain times, which usually benefits creditors. This suggests that spreads are unlikely to widen to the highs seen in previous recessionary periods. At some point, with some differentiation among sectors and wider spreads, we expect corporate bonds to be a more attractive buy. Euro investment grade exposure is preferred at the margin, given the European Union's greater flexibility on monetary and fiscal policy to respond to the tariff shock. The high yield market is more vulnerable, but we also do not anticipate a widening to usual recessionary levels. And, there is always the chance that, per most investors' expectations, the current proposed tariff rates will be negotiated down over the next few months.

Securitized credit and U.S. agency mortgage-backed securities (MBS) have also been affected by tariff risks and heightened market volatility. That said, this sector remains our favourite overweight. Agency MBS has been one of the best-performing sectors in 2025, while securitized credit has held its own. Returns over the next few months are likely to be dominated by carry and not capital gains. Any spread tightening is not likely to occur until either tariff risks diminish and/or the Fed cuts interest rates (a possibility in the second half of the year). We believe the most attractive opportunities remain in the residential mortgage segment, and we are more willing to go down the credit spectrum there. Consumer asset-backed securities (ABS) and commercial real estate securities remain challenged by current financial levels. We believe agency MBS remain attractive relative to investment grade corporate credit.

The outlook for the U.S. dollar has also become problematic since the start of April. The Trump administration's tariff policies are undermining the exceptionality of the U.S. economy. The inability of U.S. Treasury yields to fall in the initial days following the Liberation Day tariff announcement points to the rising risk premiums attached to U.S. assets and diminishes their attractiveness. The fact that much of the world is likely overweight dollar assets also bodes poorly, given the large U.S. current account deficit that needs financing and the potential for non-U.S. investors to diversify out of the U.S. The combination of large twin deficits, high valuation, and eroding trust in the U.S. economy and policymaking make it likely the dollar will fall further over the course of 2025. In addition, recent rallies in Asian currencies suggest that a grand bargain may be in the offing between the smaller, primarily export-oriented Asian countries and the U.S. over-allowing/encouraging currency depreciations in

exchange for leniency on tariffs. This situation needs to be monitored as it may also apply to China. However, the dollar has fallen very quickly in recent weeks and a bit of consolidation is likely over the near term. We remain attentive to opportunities to sell the dollar versus other currencies in the weeks/months ahead.

Developed Market Rate/Foreign Currency

MONTHLY REVIEW

April was a particularly volatile month in global markets, mainly because of the aggressive trade policy announcements by the Trump administration. From their peak in mid-February, global equities declined more than 16%, 10-year U.S. Treasury yields fell by 60 bps and investment grade credit spreads widened 40 bps. However, by month-end, following more moderate tariff announcements, risk assets had largely recovered from their slump, but government bonds largely held on to their gains as markets priced in more rate cuts from central banks. Market volatility was amplified by the unwinding of popular leveraged trades, such as U.S. swap spreads and the Treasury-futures basis. On net, global interest rates fell over the course of the month, led by German Bunds which reversed their sell-off in March in response to Germany's expansionary fiscal policy plans.

In early April, the US administration announced larger-than-expected tariffs on key trading partners including China, the European Union, and Japan. Although the tariffs were initially labelled as 'reciprocal', the rates seemed to have been determined by countries' bilateral goods trade surplus with the U.S., rather than existing tariff rates on U.S. goods. Following stresses in financial markets, the U.S. eased its stance by reducing the tariff rate to 10% for all partners except China, and delayed implementation for 90 days. Beijing responded with tariffs of its own on U.S. goods and was met with further escalation, triggering concerns about the potential impact on the world's two largest economies. The U.S. tariff rate on China is now 145% for most goods, while China's rate on the U.S. is 125%. U.S. economic data—particularly survey data—showed downside risks to economic growth and consumer strength, as well as upside risks to inflation and price expectations. The U.S. Q1 GDP data highlighted significant stockpiling by U.S. importers ahead of the tariffs.

In the euro area, markets priced more easing from the European Central Bank (ECB) following the tariff announcements, given U.S. tariffs are likely to be negative for growth and most likely disinflationary as well. Euro appreciation and falling commodity prices are also likely

to bring down inflation. Despite a small upside surprise on the April inflation print, the German yield curve continued to steepen as shorter maturity bonds benefited more from the market pricing more ECB rate cuts. As of the end of April, markets priced 67 bps of cuts by year end, and a terminal ECB rate of around 1.5%.

In currency markets, April saw a rapid and broad-based depreciation of the U.S. dollar, though the selloff stabilised towards the end of the month. Safe-haven currencies, including the Swiss franc and Japanese yen, were the largest winners, but emerging market currencies also registered gains against the greenback. The Bloomberg dollar index fell 4.0% over the month, though at one point was down 4.6%. Markets became concerned about international investors reducing long-held overweight positions in U.S. assets—including Treasury bonds—and/or increasing currency hedges on their investments.

OUTLOOK

We are overweight duration in development markets (DM) given the deteriorating growth outlook. We also retain curve steepening exposures in U.S. Treasuries and Bunds. With increased downside risks to economic activity in the U.S. and globally, we think short maturity bonds are more attractive if central banks could cut more aggressively, thus helping to steepen the curve. Cross-market, we remain overweight duration in the U.S., UK and New Zealand versus Australia and Japan. In Japan, we remain long inflation breakevens but have reduced the size of our duration underweight given the poorer global growth outlook. We maintain a positive view on the Japanese yen against the Chinese renminbi.

Emerging Market Rate/Foreign Currency

MONTHLY REVIEW

Performance was mixed for Emerging Markets Debt (EMD) coming out of a volatile month for global markets. Local markets had positive performance as they continued to be supported by a weakening U.S. dollar. Hard currency sovereign and corporate credit spreads widened during the month, like most credit markets during the broader volatility. U.S. Treasury yields also rose during the period adding a drag to returns. President Trump's April 2 tariff announcements were sweeping and drastic, and the 90-day pause subsequently after caused whiplash in the markets. The IMF and World Bank held their semi-annual meeting in Washington, D.C., but ahead of the meetings global growth was notably revised down compared to the

IMF's January 2025 outlook. Progress towards a peace agreement between Russia and Ukraine continued as Ukraine and the U.S. signed a minerals deal. Heightened uncertainty turned investors risk-off as flows were negative for both hard and local currency funds but hard currency funds in particular saw their largest 1-month outflows since Fall 2022.¹

OUTLOOK

Emerging markets debt is positioned to remain attractive. U.S. foreign policy is likely to keep the dollar weaker and real yield differentials are attractive particularly if we start to see slowdowns in global growth, this will be supportive of local assets. We saw spreads widen for both hard currency sovereign and corporate credit during April volatility, similar to other credit markets, and this introduced an attractive entry point. Concerns surrounding U.S. foreign policy and tariffs keeps uncertainty heightened. Focusing on country fundamentals and positive policy developments will remain crucial to navigate the diverse landscape of emerging markets.

Corporate Credit

MONTHLY REVIEW

In April, volatility spiked and uncertainty increased as higher-than-anticipated reciprocal tariff rates announced by the U.S. government led the market to factor in a higher probability of recession. Risk assets sold off, with European investment grade spreads closing the month 14 bps wider. On Liberation day, Trump administration announced a base 10% global tariff rate, with higher rates on particular countries based on the goods trade deficit. A week later Trump announced a 90-day pause on additional tariffs, excluding China, which faced an increased 125% tariff rate. The ECB delivered another 25 bps cut, flagging additional growth risks. In the U.S., Cleveland Fed's Hammack noted the Fed could move in June with clear data. Euro area PMIs pointed to a growth deceleration, while U.S. survey data indicated stagflationary concerns. March's flash inflation print in Europe was in line with expectations, while U.S. CPI data came in below expectations. Corporate earnings were mixed, notable weakness in autos, chemicals and luxury goods. Defensive sectors like telecoms, utilities and consumer products have fared better. Some companies have removed full year guidance citing the uncertain trade policy and economic outlook. Banks have delivered another uneventful but very strong earnings season. Technical factors weakened, with net outflows from investment-grade funds and gross primary issuance at the higher end of expectations.

¹ Source: JPMorgan, as of April 30, 2025

U.S. and global high yield markets were exceptionally volatile in April. Following the announcement of new U.S. tariff policy on "Liberation Day", the average spread-to-worst in the U.S. high yield market leapt by approximately 100 bps over the subsequent four trading days before reaching a mid-month peak of approximately 475 bps as investors shifted capital to higher quality assets amid increased fears of recession. U.S. high yield retail funds set a record for weekly withdrawals in the second week of the month, while the primary market was virtually shuttered until late April. Ultimately, the high yield market was orderly and price discovery efficient, bid-ask spreads widened, but remained relatively range bound, and institutional capital provided for willing buyers at appropriate, lower levels. Amid the ongoing uncertainty and volatility in risk markets the high yield market slowly climbed back and, ultimately, income generated in April almost perfectly offset what was only a modest month-over-month decline in bond prices by month-end.²

Global convertible bonds generated positive total returns during a volatile April driven by the new tariffs policies announced by the U.S. In terms of performance by region, U.S. and European issuers generated positive returns while Chinese issuers lagged due to the concerns about a brewing trade war between the U.S. and China. Ultimately, global convertible bonds underperformed global bonds and modestly underperformed global equities on a USD-hedged basis in April. New supply was limited during the month amid the volatile market environment as well as the corporate earnings blackouts. Only \$2.3 billion priced across five deals during the month, which marked the weakest month since late 2022. Year-to-date supply in the asset class ended April at \$25.6 billion, which is modestly behind the \$29 billion that was issued over the same time period in 2025.³

OUTLOOK

Looking forward, our base case remains constructive for credit supported by expectations for low growth but not a material rise in downgrade or default risk, fiscal policy that remains supportive of growth/employment/consumption and strong corporate fundamentals, supported by corporate strategy that is low risk. When looking at credit spreads, we view market valuations as fair relative to the uncertain outlook but strong fundamental and technical backdrop and see carry as the main driver of return, with additional gains coming from sector and, increasingly, security selection. We are likely entering a period of tariff negotiation and lower market volatility (relative to April).

While tail risks have decreased following the 90-day pause (supportive short term), uncertainty remains high and recession/stagflation risks have increased. Given the uncertain medium-term fundamental backdrop (U.S./Trump policy uncertainty, political tensions, uncertain growth outlook, above target inflation in the U.S. and increased idiosyncratic news flow) we have less confidence in material spread tightening.

We continue to be cautious on the high yield market as we begin May. This outlook includes the dynamic and uncertain evolution of trade, immigration and tax policy, the expectation for stickier inflation, slowing economic growth with an increased probability of recession, and elevated volatility. Yields have grown more historically attractive and the average spread in the high yield market increased to 417 bps in April, closing in on the all-time median. From our vantage point, valuations remain susceptible to further widening. We come to this conclusion after a thorough analysis of factors including the effects of trade policy, evolving monetary policy of global central banks, U.S. and global economic growth, consumer health, the fundamentals of high yield issuers, technical conditions, and valuations. Ultimately, we believe that caution is warranted and expect more comprehensive price realization, particularly in the lower-rated and more challenged segments of leveraged credit.

We continue to remain constructive on the global convertible bond market as we begin May. Convertible bonds held up well in April amidst the market volatility and we expect that to continue given their asymmetric return profile, particularly their bond floor feature. Additionally, we believe primary issuance will pick up despite limited issuance in April. Corporations will need to continue balancing their financing needs with relatively high interest rates as well as the evolving monetary policies from global central banks.

Securitized Products

MONTHLY REVIEW

Current coupon agency MBS spreads continued to widen in April, in sympathy with other fixed income credit markets. Spreads widened 15 bps in April to +159 bps above comparable duration U.S. Treasuries. Agency MBS spreads remain wide, both relative to other core fixed income sectors and from a historical perspective. The Fed's MBS holdings shrank by \$16 billion in April to \$2.165 trillion, and are now down \$530 billion from its peak in 2022. U.S. Banks holdings held steady in April at \$2.667

² Source: MSIM, ICE Indices, Bloomberg L.P. Data as of April 30, 2025

³ Source: Bank of America, April 30, 2025

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trillion; bank MBS holdings are still down \$335 billion since early 2022. Securitized credit spreads widened more significantly due to increased volatility and credit concerns that emerged in April. After a busy first quarter, April issuance slowed materially with many issuers either pulling or delaying scheduled deals. This lighter supply was easily absorbed, and deals were generally well-subscribed, albeit at these new wider spread levels.

OUTLOOK

We expect U.S. agency MBS spreads to tighten as we expect inflows from relative-value investors and banks due to the attractive return profile of this sector versus other core fixed income sectors and cash alternatives. We don't, however, think this spread tightening will come until the Fed cuts interest rates in the second half of the year. We expect securitized credit spreads to remain at wider levels until we have more clarity about the economic

impacts from Tariff policies. Agency MBS has been one of the best performing sectors YTD and securitized credit has also performed well. We believe that returns will result primarily from cashflow carry in the coming months as we enter May with attractive yields. We still believe that current rate levels remain stressful for many borrowers and will continue to erode household balance sheets, causing stress for some consumer ABS, particularly involving lower income borrowers. Commercial real estate also remains challenged by current financing rates. Residential mortgage backed securities (RMBS) remain our favorite sector and is the one sector where we remain comfortable going down the credit spectrum, as we remain more cautious regarding lower rated ABS and CMBS. We remain positive on Agency MBS valuations as they continue to remain attractive versus investment-grade corporate spreads and versus historical agency MBS spreads.

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.

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DEFINITIONS

Basis point (bp): 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. "Bloomberg®" and the Bloomberg Index/Indices used are service marks of Bloomberg Finance L.P. and its affiliates and have been licensed for use for certain purposes by Morgan Stanley Investment Management (MSIM). Bloomberg is not affiliated with MSIM, does not approve, endorse, review, or recommend any product, and does not guarantee the timeliness, accuracy, or completeness of any data or information relating to any product.

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 generic 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).

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.

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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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