
SPDR[®] ETFs Fixed Income Chart Pack

**Charts for the Latest Bond Market Insights and Analytics
Q1 2020**

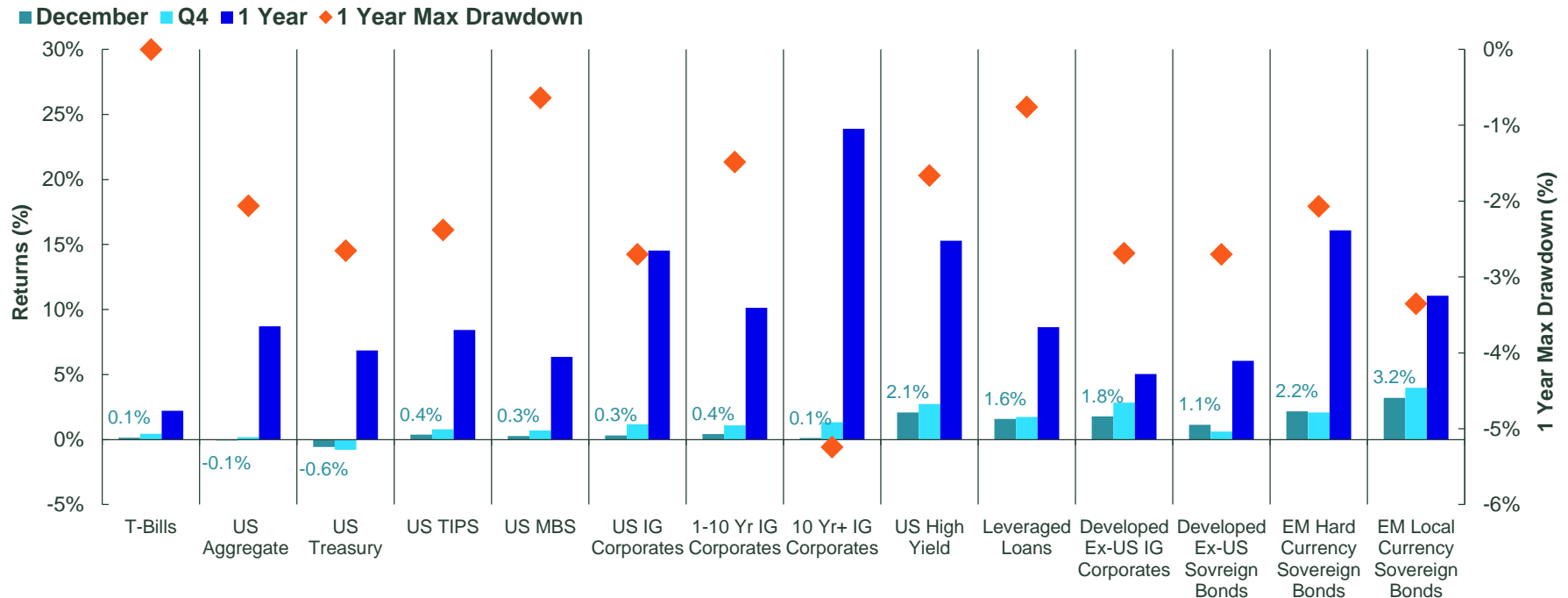
Please see Appendix A for more information on investment terms used in this Chart Pack.

Bond Market Performance

With interest rates rising modestly, rate sensitive sectors posted losses or small gains in December. With spreads tightening, however, credit had strong returns.

Bond Sector Performance

Long-term IG Corporates have had the best returns in 2019, but credit related instruments had stronger returns over the most recent quarter as the curve steepened



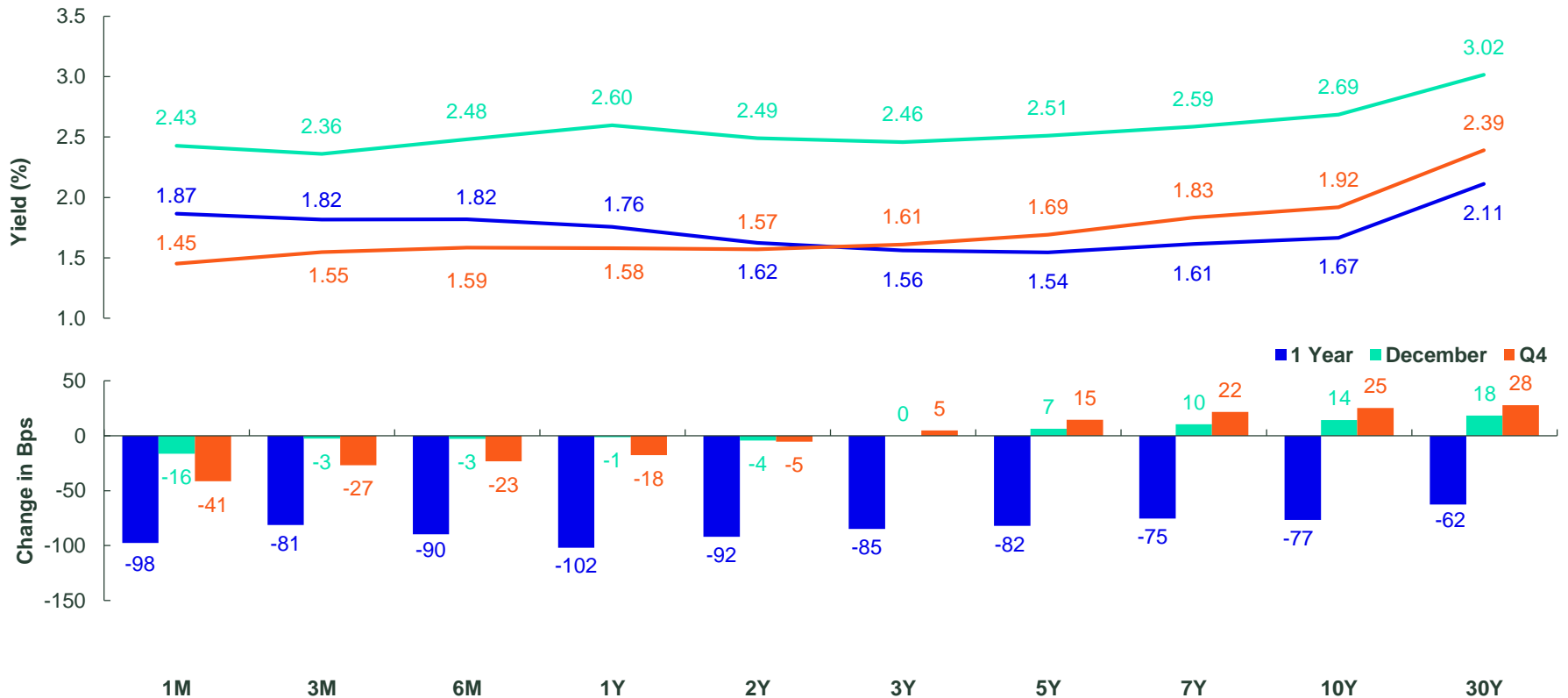
Source: Bloomberg Finance, L.P. As of December 31, 2019. **Past performance is not a guarantee of future results.** T-bills - Bloomberg Barclays U.S. Tr Bills - 1-3 Months Index, US Aggregate — Bloomberg Barclays US Agg Index, US Treasury — Bloomberg Barclays US Treasury Index, US TIPS — Bloomberg Barclays Global Inflation-Linked: U.S. TIPS Index, US MBS — Bloomberg Barclays US MBS Index, US IG Corporates — Bloomberg Barclays US Corporate Index, 1-10 YR IG Corporates — Bloomberg Barclays Intermediate Corporate Index, 10 Yr+ IG Corporates — Bloomberg Barclays Long U.S. Corporate Index, US High Yield — Bloomberg Barclays VLI: High Yield Index, Leveraged Loans — S&P/LSTA Leveraged Loan Index, Developed Ex-US IG Corporates — Bloomberg Barclays Global Agg Corporate ex USD \$1B+ Index, Developed Ex-US Sovereign Bonds — Bloomberg Barclays Global Treasury ex-U.S. Index, EM Hard Currency Sovereign Bonds — J.P. Morgan EMBI Global Core Index, EM Local Sovereign Bonds — Bloomberg Barclays EM Local Currency Govt Diversified Index

Yield Curve

The yield curve steepened in December, as hopes of a trade deal and a pre-Iran strike softening of geopolitical tensions pushed long-term yields higher

US Treasury Curve

US Treasury Active: 12/31/2018 9/30/2019 12/31/2019

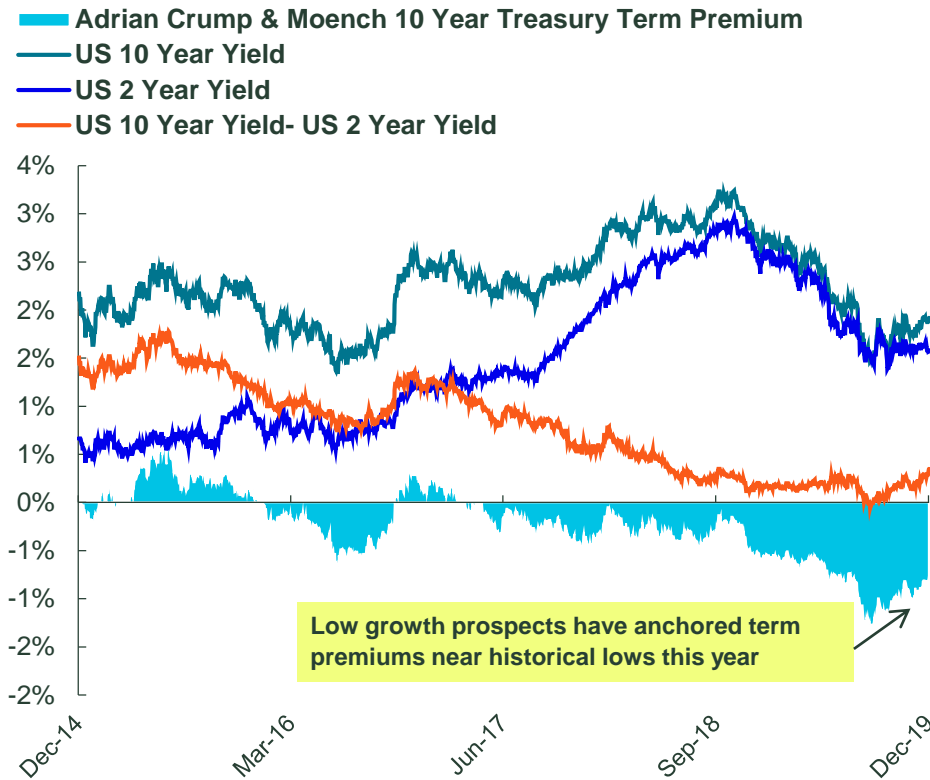


Source: Bloomberg Finance, L.P. As of December 31, 2019. Past performance is not a guarantee of future results.

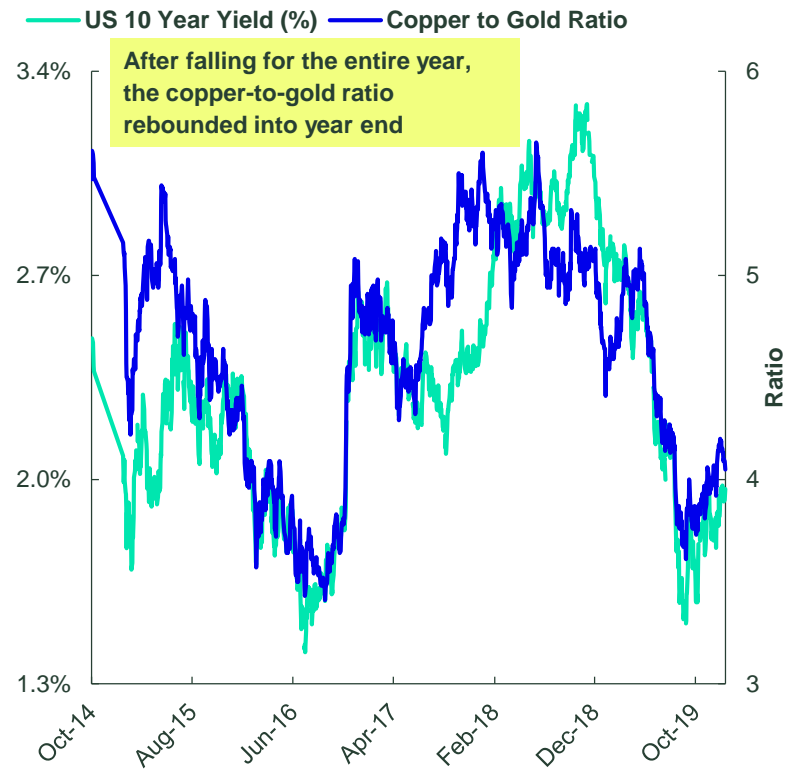
Yield Curve (continued)

While the yield curve steepened in December, it still remains flat as the long end continues to be constrained by slow growth dynamics

US Treasury Curve (10-and-2 Year Spreads) and Term Premium



US 10 Year Yield versus the Copper to Gold Ratio



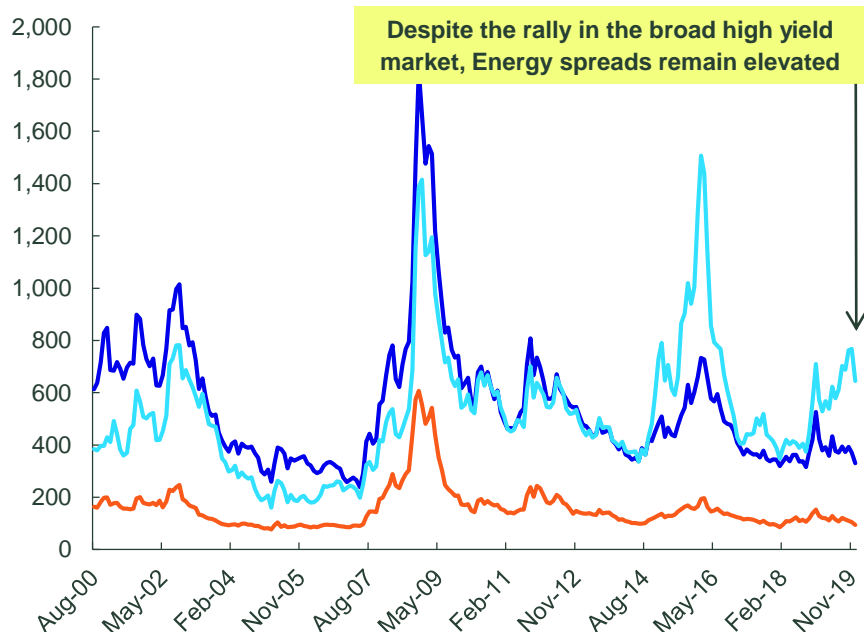
Source: Bloomberg Finance, L.P. As of December 31, 2019. **Past performance is not a guarantee of future results.** The term premium is the excess yield that investors require to commit to holding a long-term bond instead of a series of shorter-term bonds. The copper-to-gold ratio indicates the potential of economic growth as gold is more of a defensive asset while copper is more cyclical.

Credit Trends

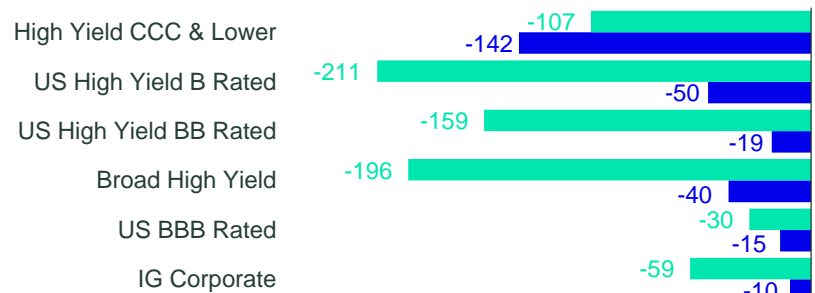
Credit spreads continued to tighten in December, as investors became less concerned about an imminent recession risk

Credit Spreads

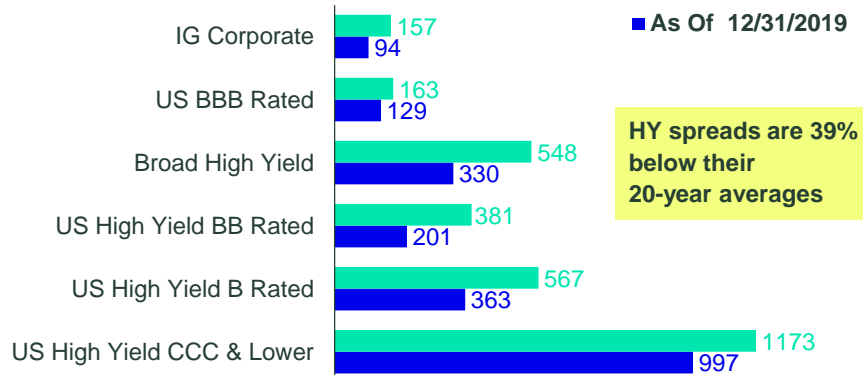
- Bloomberg Barclays US Corporate High Yield Index
- Bloomberg Barclays US Corporate Index
- Bloomberg Barclays High Yield Energy Index



Credit Spread Changes in Basis Points



Credit Spread Current vs. 20-Yr Averages

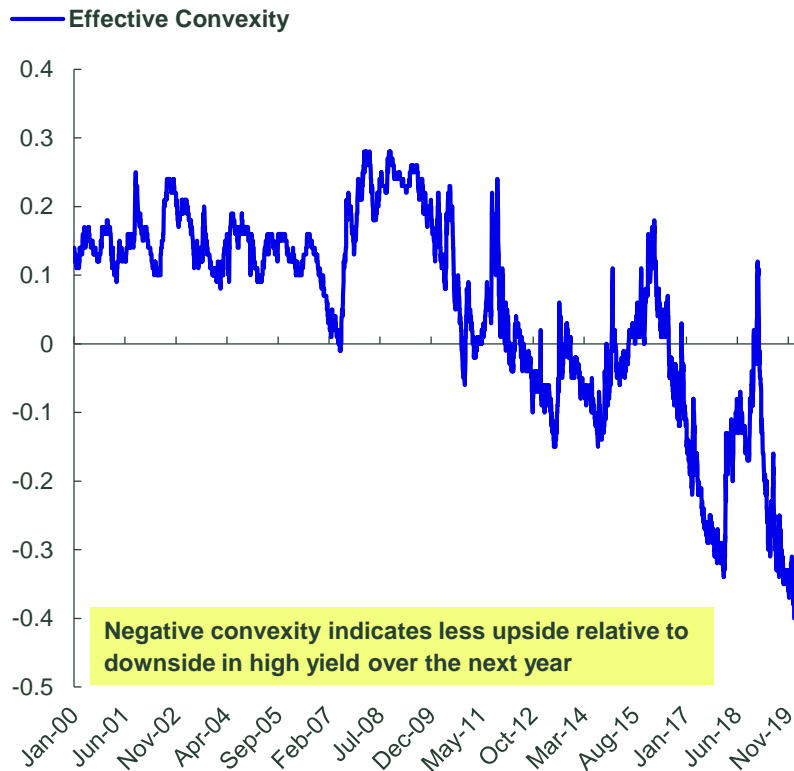


Source: Bloomberg Finance, L.P. BofA Merrill Lynch, As of December 31, 2019. US High Yield CCC & Lower = BofA ML US High Yield CCC & Lower Rated Index. US High Yield B Rated = BofAML US High Yield B Rated Index. BBB Rated = BofA ML US Investment Grade BBB Rated Index. Broad high yield = Bloomberg Barclays US Corporate High Yield Index. IG Corporate = Bloomberg Barclays US Corporate Index. **Past performance is not a guarantee of future results.**

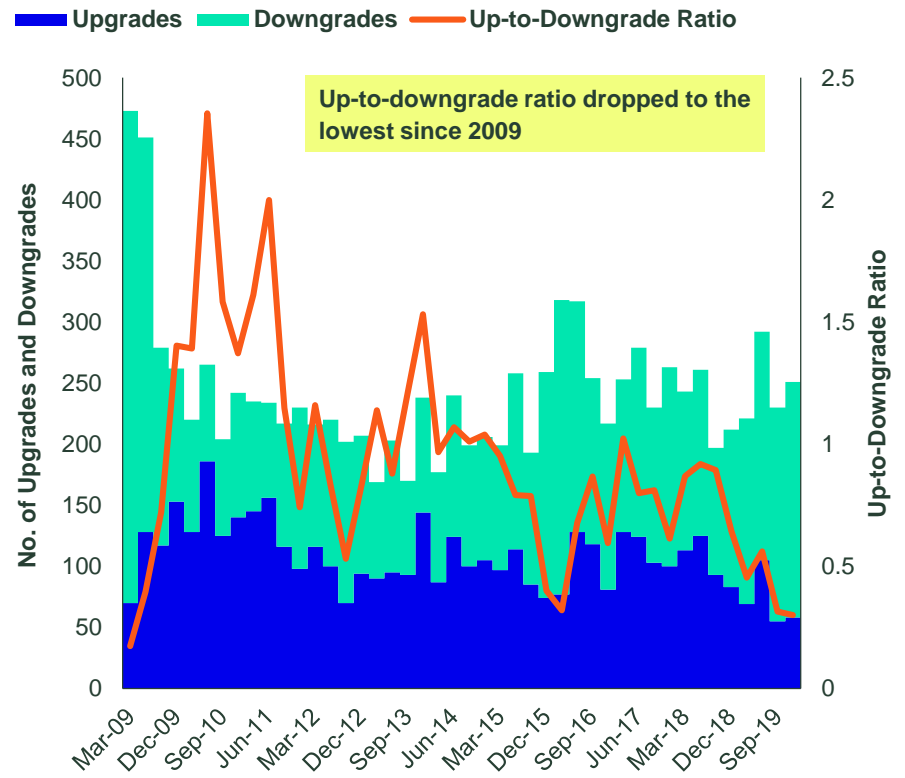
Credit Trends (Continued)

Due to the sizeable spread compression for high yield bonds, they now trade at the most negatively convex level ever. Yet, downgrades have increased

High Yield Bond Convexity



High Yield Upgrade to Downgrade Trends

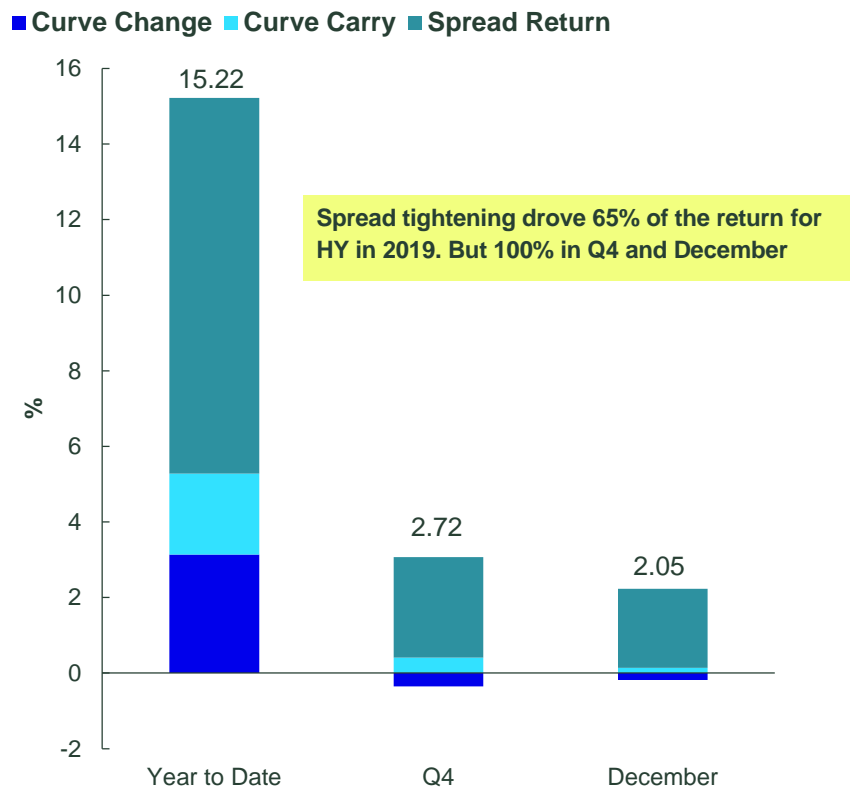


Source: Bloomberg Finance, L.P. As of December 31, 2019. Past performance is not a guarantee of future results.

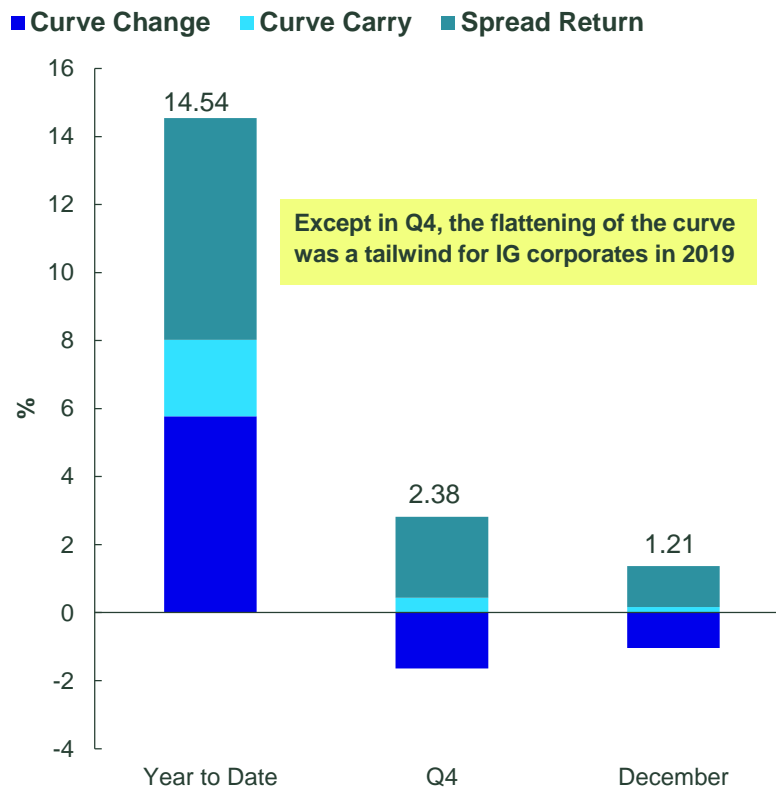
Credit Attribution

High yield credit registered a gain in December, with the change in spread driving more than 100% of the return and offsetting the impact from the curve change

US High Yield Attribution



US IG Corporate Attribution



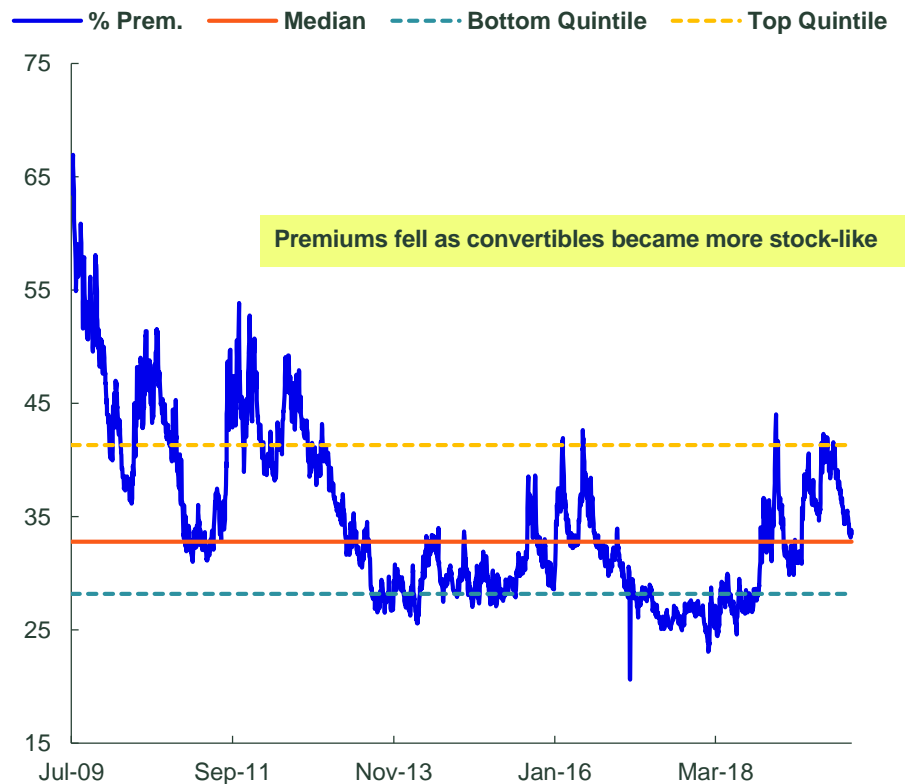
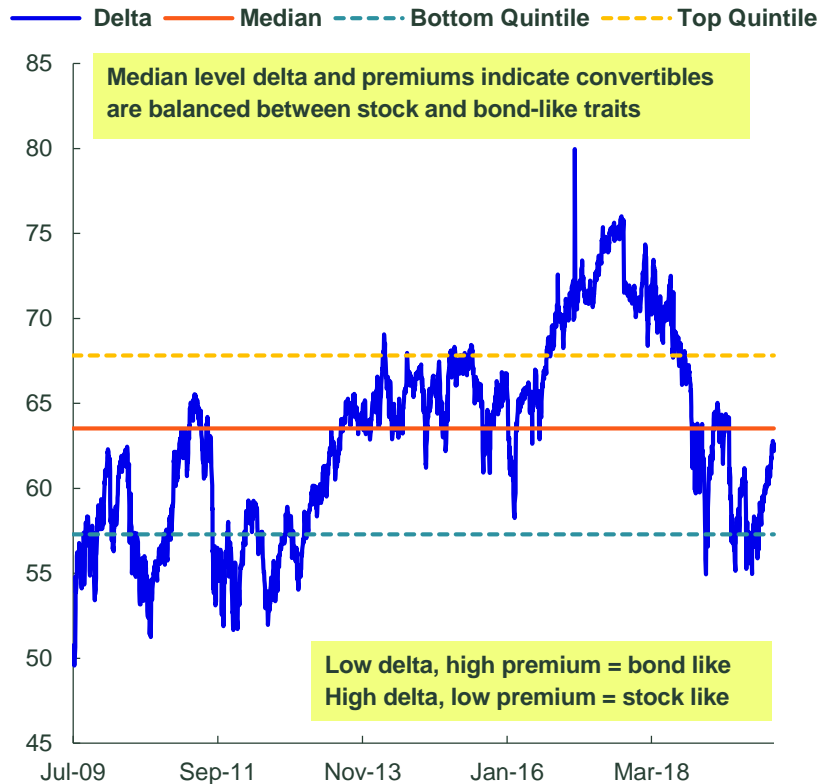
Source: Bloomberg Finance, L.P As of December 31, 2019. **Past performance is not a guarantee of future results.** US IG Corporates - Bloomberg Barclays US Corporate Index, US High Yield - Bloomberg Barclays VLI: High Yield Index

Convertibles Attribution

Convertibles, following a 25% return in 2019, stock sensitivity (delta) increased near its long term median. However, it remains well below the 2017 very stock-like highs

US Convertibles Liquid Bond Index — Average Stock Delta

US Convertibles Liquid Bond Index — Premium to Parity



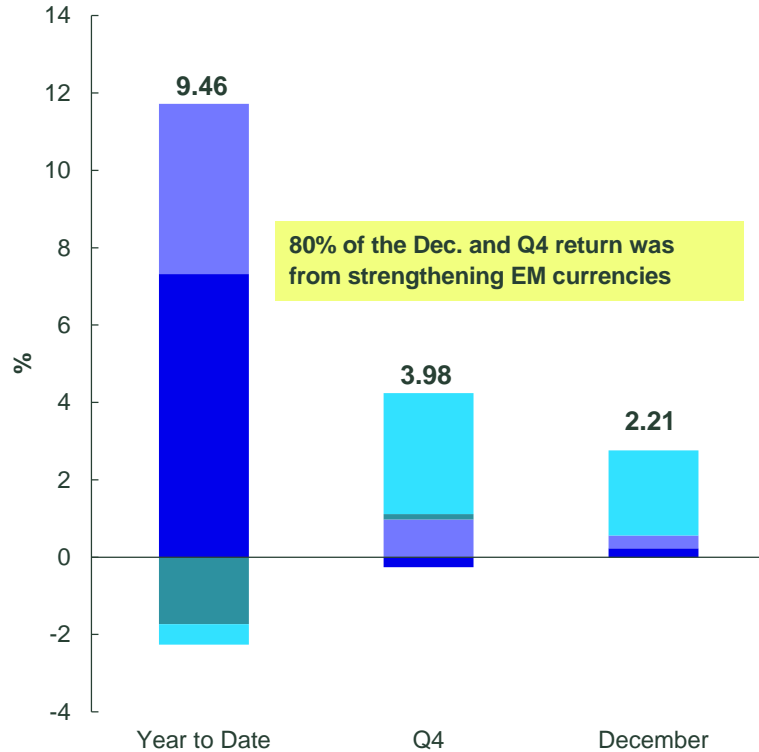
Source: Bloomberg Finance, L.P. As of December 31, 2019. Past performance is not a guarantee of future results.

EM Debt Attribution

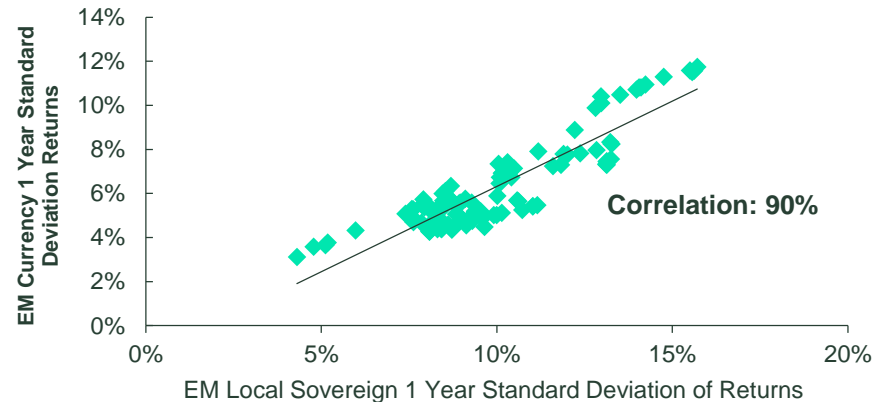
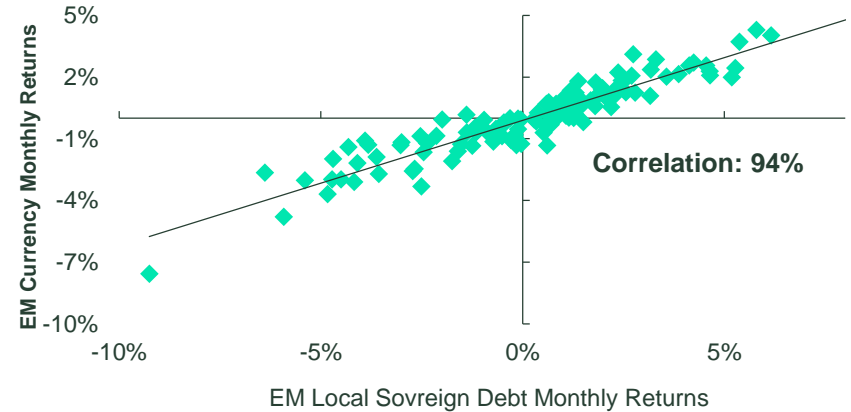
A true softening of trade tensions and a Federal Reserve rate cut boosted emerging market (“EM”) currencies in Q4 by 3.5%, benefiting EM local debt returns

EM Local Sovereign Debt Attribution

■ Curve Change ■ Curve Carry ■ Spread Return ■ Currency Return



EM Local Sovereign Debt Return Correlation to EM Currencies (2009–2019)

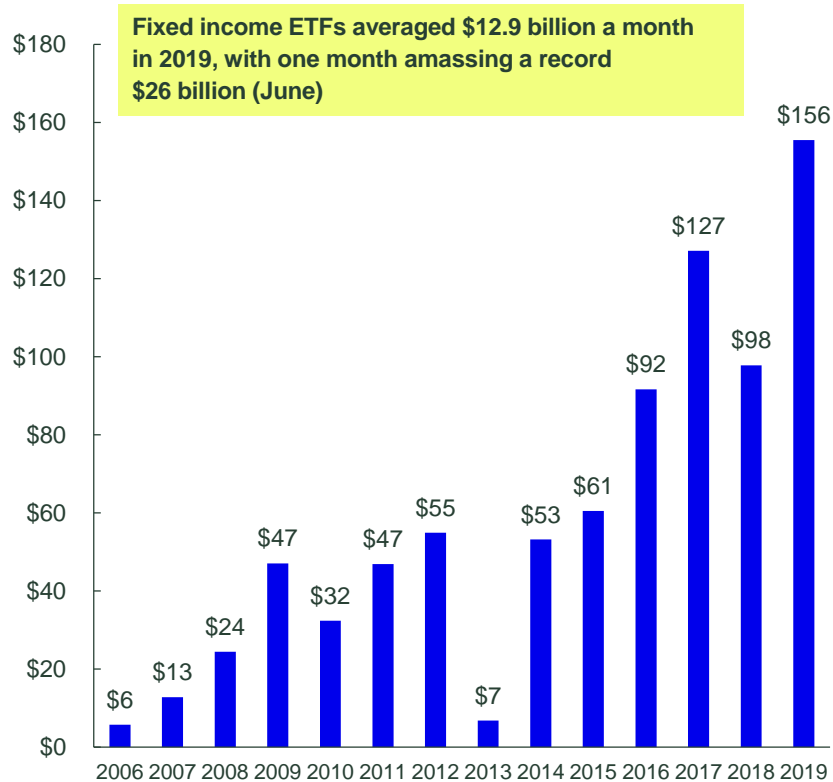


Source: Bloomberg Finance, L.P. As of December 31, 2019
 EM Local — Bloomberg Barclays EM Local Sovereign Bond Index.
Past performance is not a guarantee of future results.

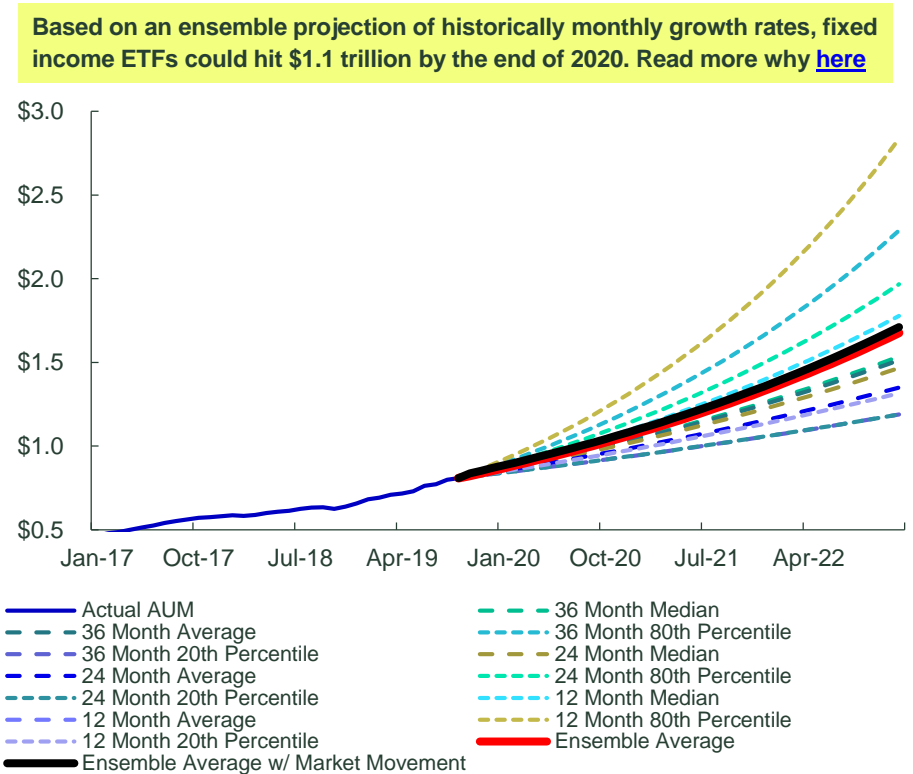
ETF Fund Flow Trends

Fixed Income ETF flows reached an all-time record for a calendar year, taking in over \$150 billion — or 23% of their start of year assets

Yearly US-Listed FI ETF Fund Flows (\$Billions)



US-Listed Fixed Income ETF Asset Levels: Current versus Ensemble Projection (\$ Trillions)

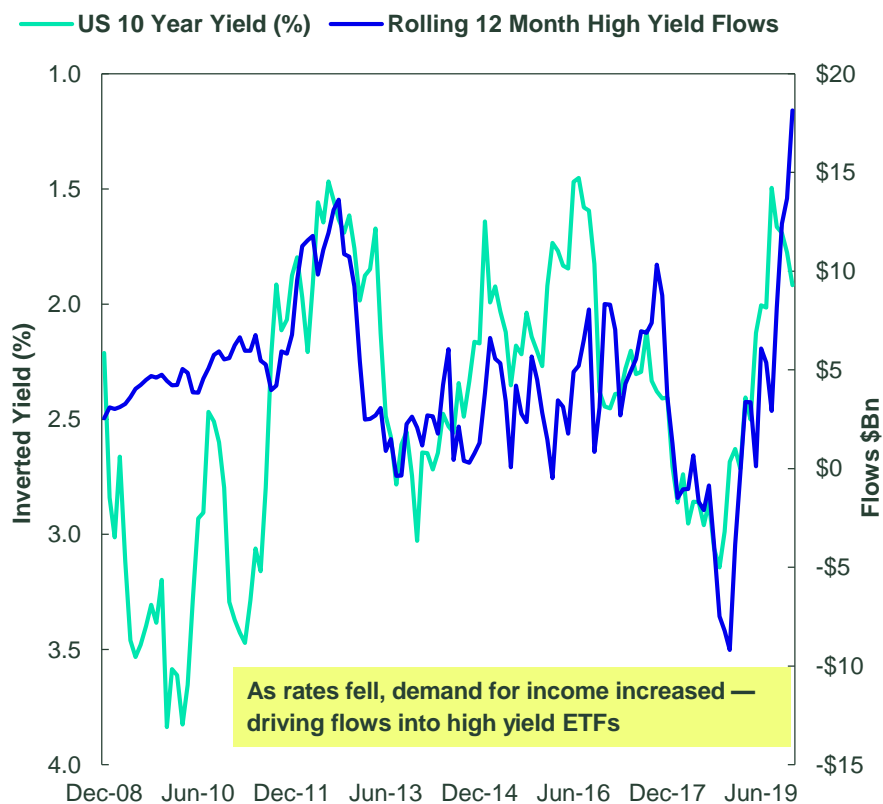


Source: Bloomberg Finance, L.P. As of December 31, 2019 calculations by SPDR Americas Research. Past performance is not a guarantee of future results.

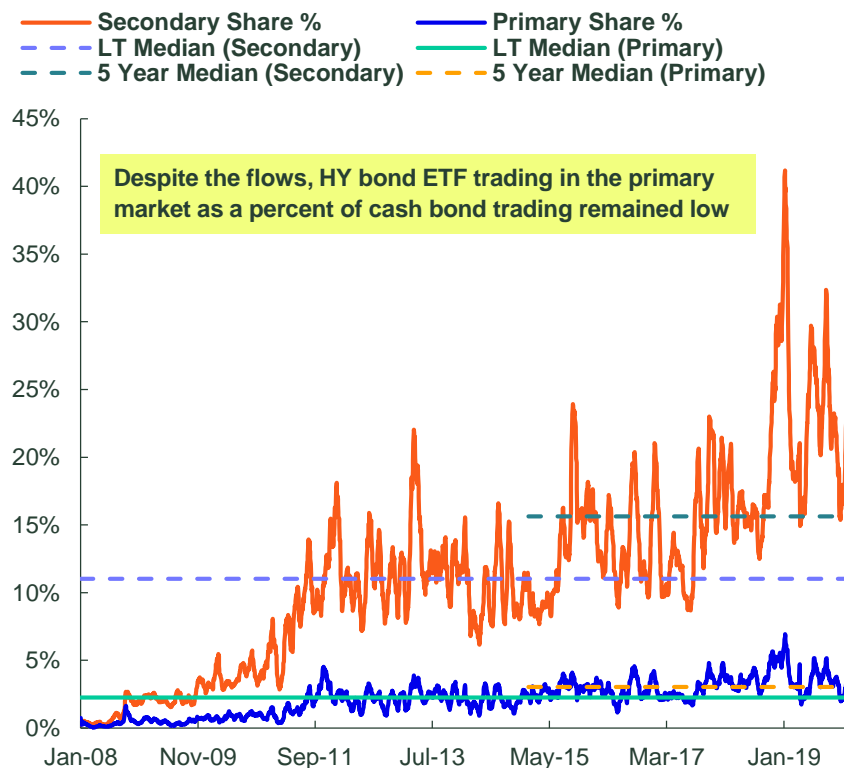
ETF Fund Flow Trends (continued)

High yield ETFs amassed a record \$18 billion of inflows in 2019, pushing their assets to all-time high of \$56 billion

Trailing 12 Month High Yield ETF Flows versus US 10 Year Yield



High Yield ETF Secondary and Primary Market Trading Share of High Yield Market

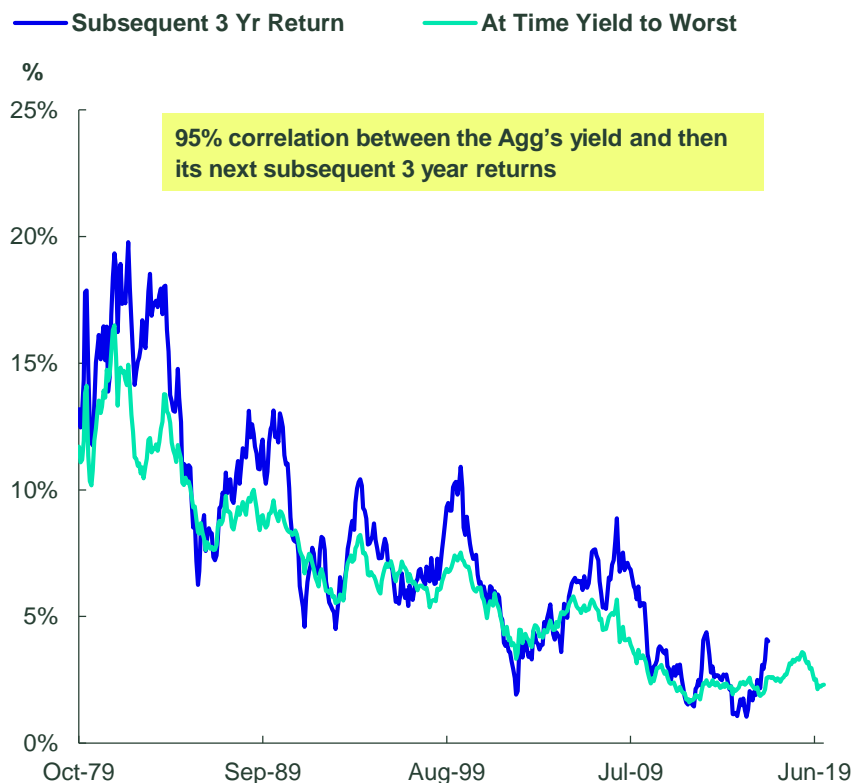


Source: Bloomberg Finance, L.P. As of December 31, 2019. Past performance is not a guarantee of future results.

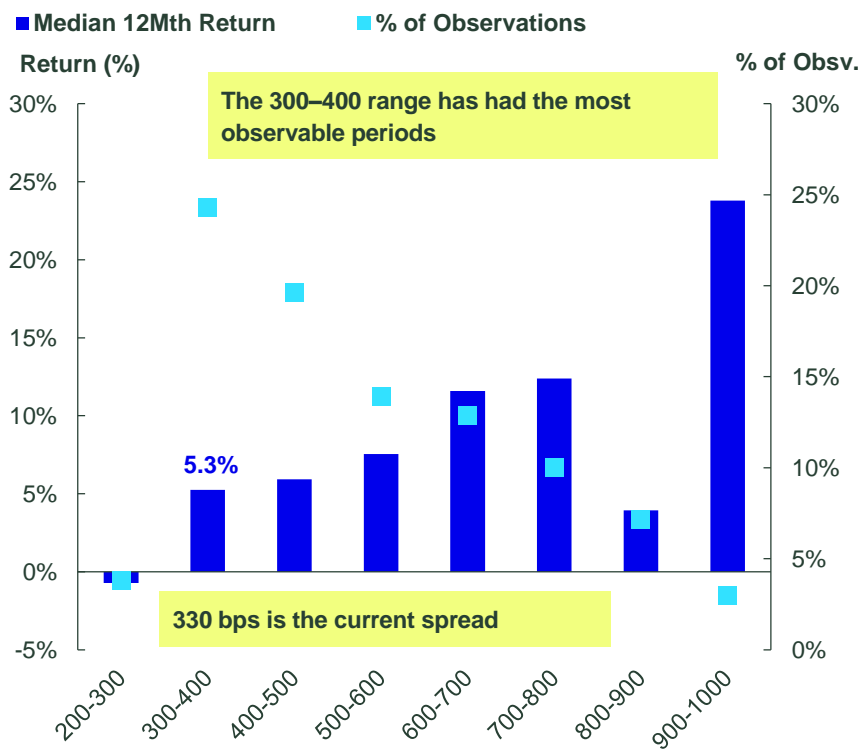
Low Rates = Low Return Expectations

While not at extremes, spreads and current yield levels screen as expensive, indicating lower levels of returns based on historical trends

The Agg Starting Yield Level versus Subsequent 3 Year Return



US High Yield Starting Spread and Median 12 Mth Return (1999–2019)

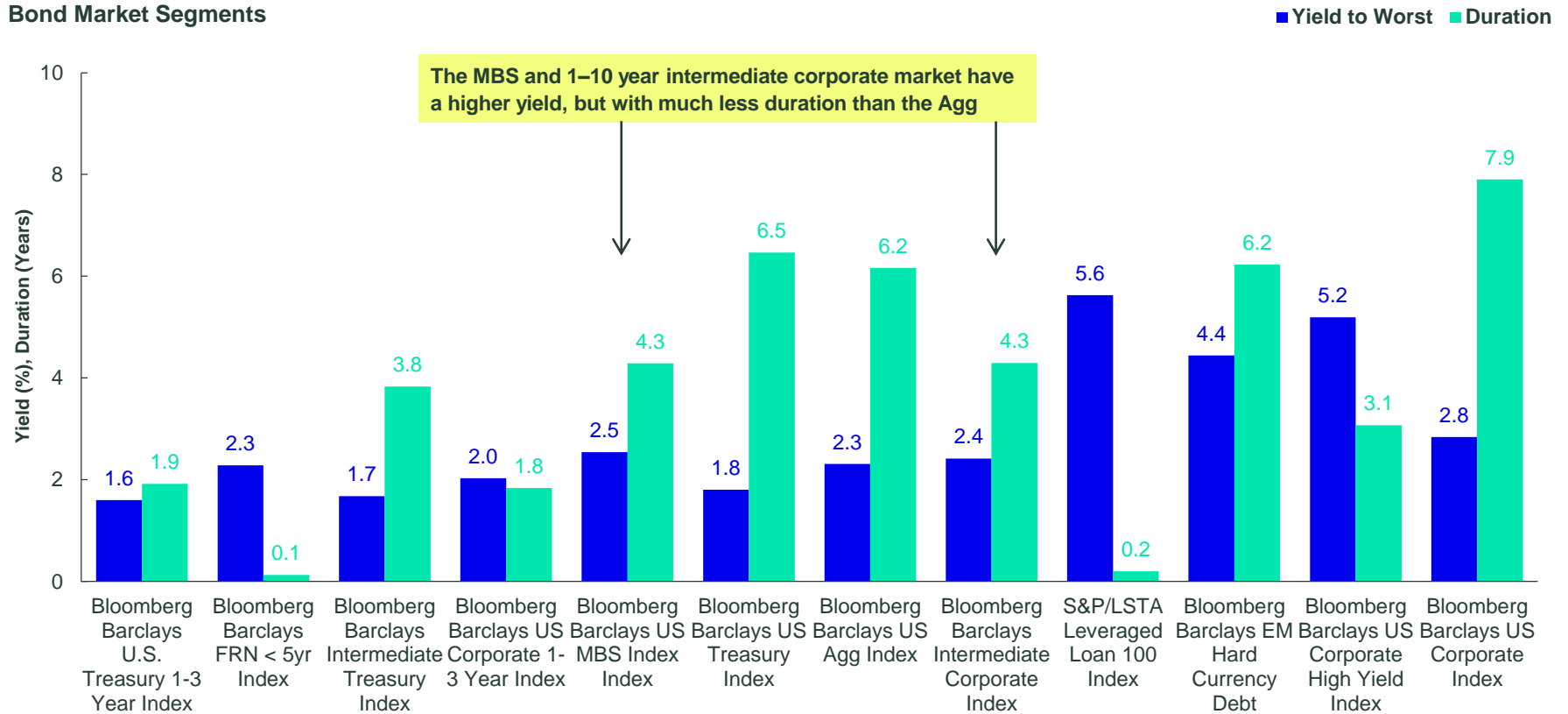


Source: Bloomberg Finance, L.P. as of December 31, 2019. Calculations by SPDR Americas Research, **Past performance is not a guarantee of future results.** Index returns are unmanaged and do not reflect the deduction of any fees or expenses. Index returns reflect all items of income, gain and loss and the reinvestment of dividends and other income. Returns for periods of less than one year are not annualized.

Bond Market Outlook

Taking on duration may not be optimal as long-duration segments' strong returns over the past year have made their yield per duration profile less attractive

Bond Market Segments



Source: Bloomberg Finance, L.P. as of December 31, 2019. Calculations by SPDR Americas Research, **Past performance is not a guarantee of future results.** Index returns are unmanaged and do not reflect the deduction of any fees or expenses. Index returns reflect all items of income, gain and loss and the reinvestment of dividends and other income. Returns for periods of less than one year are not annualized.

Appendix A

Definitions

Basis Point: One hundredth of one percent, or 0.01%.

The Bloomberg Barclays US Treasury Bill Index tracks the market for treasury bills issued by the US government. US Treasury bills are issued in fixed maturity terms of 4-, 13-, 26- and 52-weeks. The US Treasury Bill Index is a component of the US Short Treasury Index along with US Treasury notes and bonds that have fallen below one year to maturity.

The Bloomberg Barclays Global Aggregate Index is a measure of global investment grade debt from 24 local currency markets. This multi- currency benchmark includes treasury, government-related, corporate and securitized fixed-rate bonds from both developed and emerging markets issuers.

The Bloomberg Barclays US Mortgage Backed Securities (MBS) Index tracks agency mortgage pass-through securities (no longer incorporates hybrid ARM) guaranteed by Ginnie Mae (GNMA), 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.

Bloomberg Barclays US Aggregate Index: A benchmark that provides a measure of the performance of the US dollar denominated investment grade bond market, which includes investment grade government bonds, investment grade corporate bonds, mortgage pass through securities, commercial mortgage backed securities and asset backed securities that are publicly for sale in the US.

Bloomberg Barclays US Corporate 1–3 Year Index: The Index includes publicly issued US dollar denominated corporate issues that have a remaining maturity of greater than or equal to 1 year and less than 3 years, are rated investment grade.

Bloomberg Barclays US Corporate Bond Index: The Bloomberg Barclays US Corporate Bond Index measures the investment grade, US dollar-denominated, fixed-rate, taxable corporate and government related bond markets. It is composed of the US Corporate Index and a non-corporate component that includes foreign agencies, sovereigns, supranationals and local authorities.

The Bloomberg Barclays Emerging Markets Local Currency Liquid Government Index is a country-constrained, more liquid version of the flagship Emerging Markets Local Currency Government Index, which is designed to provide a broad measure of the performance of local currency Emerging Markets (EM)

Bloomberg US Treasury Index: The Bloomberg US Treasury Bond Index is a rules-based, market-value weighted index engineered to measure the performance and characteristics of fixed rate coupon US Treasuries which have a maturity greater than 12 months.

The Bloomberg Barclays US Convertible Liquid Bond Index is designed to represent the market of U.S. convertible securities, such as convertible bonds.

Credit Spread: A credit spread is the difference in yield between a US Treasury bond and a debt security with the same maturity but of lesser quality.

Parity The value of the underlying equity if the convertible is converted. It is equal to the current stock price multiplied by the number of shares for which the bond may be exchanged.

S&P/LSTA US Leveraged Loan 100 Index: The S&P/LSTA US Leveraged Loan 100 Index is designed to reflect the largest facilities in the leveraged loan market.

Delta: The sensitivity of one asset to an underlying derivative

Spread Changes: Changes in the spread between Treasury securities and non-Treasury securities that are identical in all respects except for quality rating.

Parity The value of the underlying equity if the convertible is converted. It is equal to the current stock price multiplied by the number of shares for which the bond may be exchanged.

Standard Deviation: Measures the historical dispersion of a security, fund or index around an average. Investors use standard deviation to measure expected risk or volatility, and a higher standard deviation means the security has tended to show higher volatility or price swings in the past.

Yield: The income produced by an investment, typically calculated as the interest received annually divided by the investment's price.

Yield Curve: A graph or line that plots the interest rates or yields of bonds with similar credit quality but different durations, typically from shortest to longest duration. When the yield curve is said to be flat, it means the difference in yields between bonds with shorter and longer durations is relatively narrow. When the yield curve is said to be steepened, it means the difference in yields between short term and long term bonds increases.

Yield to Worst: Yield to worst is an estimate of the lowest yield that you can expect to earn from a bond when holding to maturity, absent a default. It is a measure that is used in place of yield to maturity with callable bonds.

Appendix B

Important Disclosures

The views expressed in this material are the views of SPDR Americas Research Team and are subject to change based on market and other conditions. This document contains certain statements that may be deemed forward-looking statements. Please note that any such statements are not guarantees of any future performance and actual results or developments may differ materially from those projected.

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All the index performance results referred to are provided exclusively for comparison purposes only. It should not be assumed that they represent the performance of any particular investment.

Bonds generally present less short-term risk and volatility than stocks, but contain interest rate risk (as interest rates rise, bond prices usually fall); issuer default risk; issuer credit risk; liquidity risk; and inflation risk. These effects are usually pronounced for longer-term securities. Any fixed income security sold or redeemed prior to maturity may be subject to a substantial gain or loss.

The values of **debt securities** may decrease as a result of many factors, including, by way of example, general market fluctuations; increases in interest rates; actual or perceived inability or unwillingness of issuers, guarantors or liquidity providers to make scheduled principal or interest payments; illiquidity in debt securities markets; and prepayments of principal, which often must be reinvested in obligations paying interest at lower rates.

Equity securities may fluctuate in value in response to the activities of individual companies and general market and economic conditions.

Foreign investments involve greater risks than US investments, including political and economic risks and the risk of currency fluctuations, all of which may be magnified in emerging markets.

Because of their narrow focus, **sector funds** tend to be more volatile.

Commodities investing entail significant risk as commodity prices can be extremely volatile due to wide range of factors Bond funds contain interest rate risk (as interest rates rise bond prices usually fall); the risk of issuer default; issuer credit risk; liquidity risk; and inflation risk.

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