

State Street Global Advisors SPDR[®] ETFs Chart Pack

December 2018 Edition

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

STATE STREET
GLOBAL ADVISORS
SPDR[®]



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Market Environment

Asset Class Performance — EM equities rebounded and outperformed developed by the most since June 2016, while Treasuries rose on lower yields

Major Asset Class Performance (%)

Oil's slump was exacerbated by the WTI oil price reaching the lowest level in more than one year, dragging down broad commodities



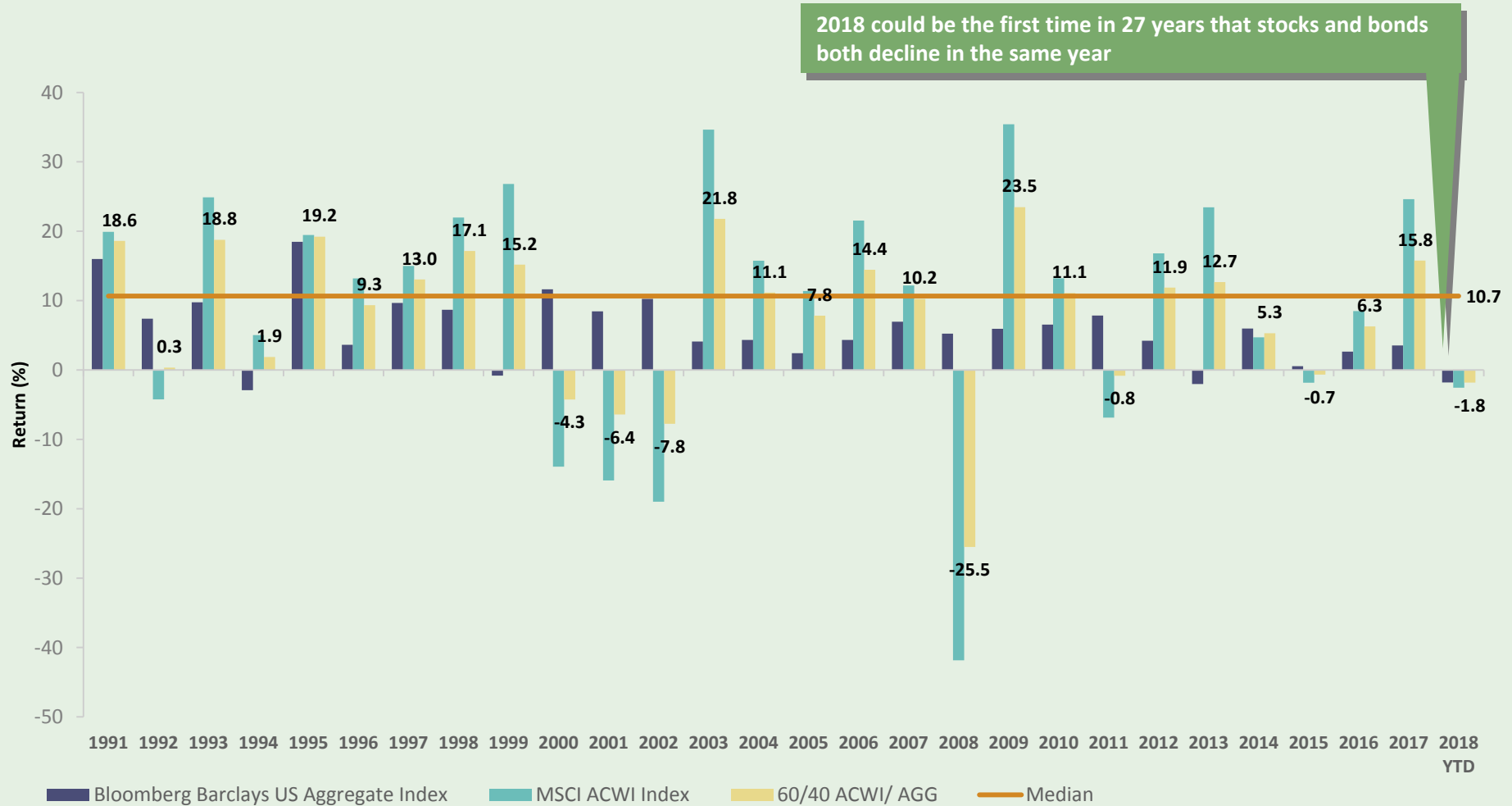
US LARGE CAP	US SMALL CAP	DEVELOPED	EMERGING	HIGH YIELD	SENIOR LOAN	EM HARD CURRENCY DEBT	AGG	TREASURIES	GOLD	BROAD COMMODITIES	US DOLLAR
S&P 500 Index	Russell 2000 Index	MSCI EAFE Index	MSCI Emerging Markets Index	Bloomberg Barclays US Corporate High Yield Index	S&P/LSTA Leveraged Loan Index	Bloomberg Barclays EM Hard Currency Index	Bloomberg Barclays US Aggregate Index	Bloomberg Barclays US Treasury Index	LBMA Gold Price	Bloomberg Commodity Index	DXY Dollar Index

■ Trailing 12 Month ■ YTD ◆ Prior Month

Source: Bloomberg Finance, L.P. As of November 30, 2018. 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. Performance returns for periods of less than one year are not annualized.

60/40 Portfolio Performance — As both stocks and bonds are negative for the year, 60/40 balanced portfolio returns are 13% below their long-term historical median

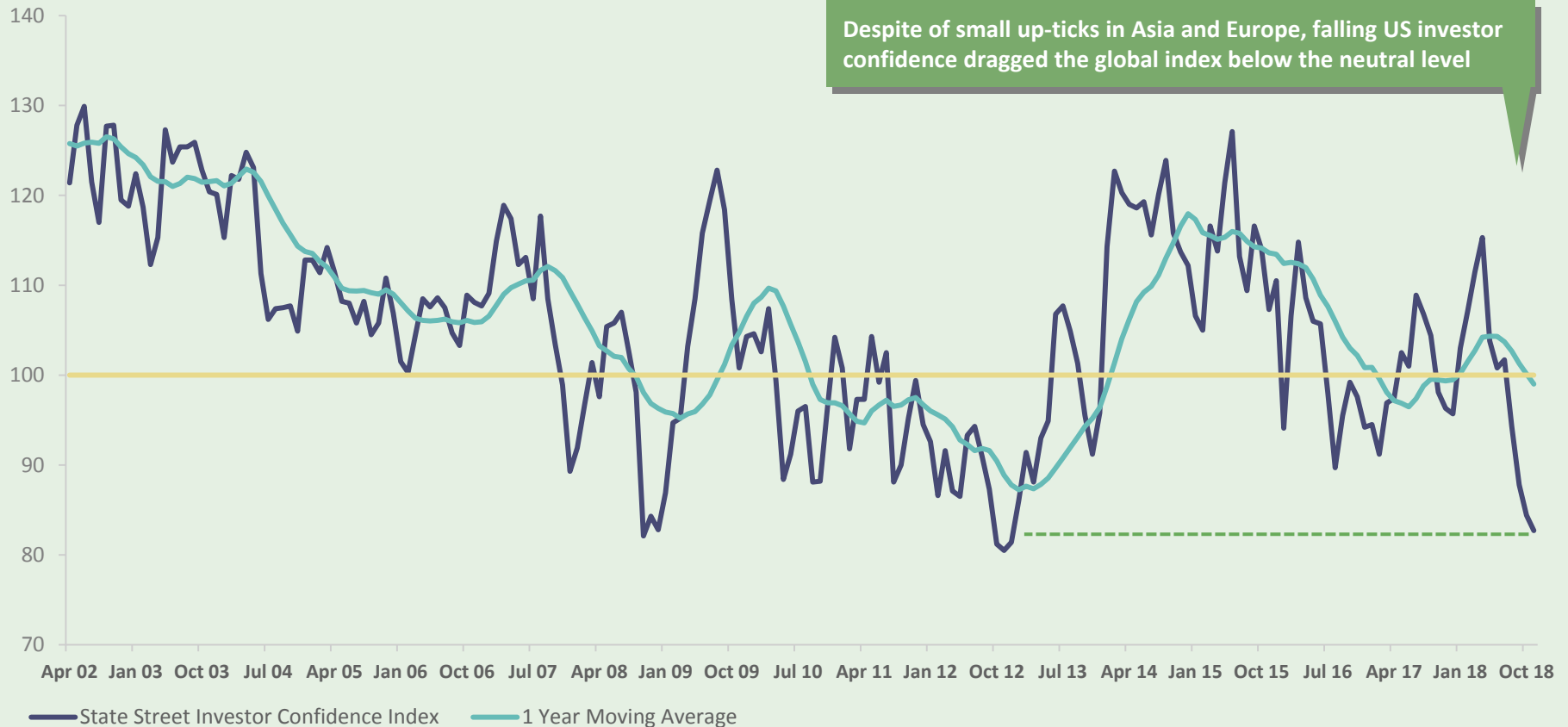
60/40 Historical Calendar Year Returns



Source: Bloomberg Finance, L.P. As of November 30, 2018. Past performance is not a guarantee of future results. Performance of an index is not illustrative of any particular investment. It is not possible to invest directly in an index.

Investor Confidence — Investor confidence weakened further to its lowest level in more than five years, amid trade tensions and political turmoil in Europe

State Street Investor Confidence Index



Source: Bloomberg Finance, L.P. As of November 30, 2018.

State Street Confidence Indexes Measures investor confidence or risk appetite quantitatively by analyzing the actual buying and selling patterns of institutional investors. The index assigns a precise meaning to changes in investor risk appetite: the greater the percentage allocation to equities, the higher risk appetite or confidence. A reading of 100 is neutral; it is the level at which investors are neither increasing nor decreasing their long-term allocations to risky assets. The results shown represent current results generated by State Street Investor Confidence Index. The results shown were achieved by means of a mathematical formula in addition to transactional market data, and are not indicative of actual future results which could differ substantially.

Cross-Asset Volatility — Oil and High Yield bond implied volatility jumped as oil saw its worst monthly drop since 2018

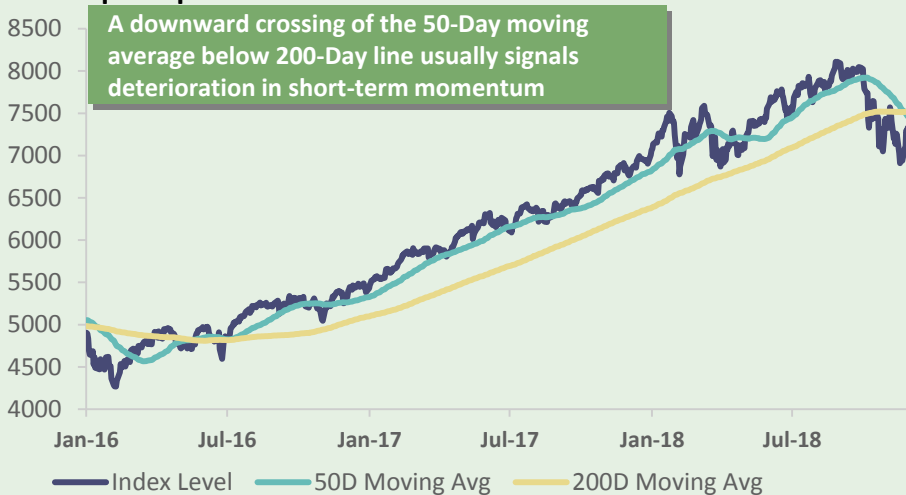
Cross-Asset Implied Volatility (Daily Average, Since January 2016)



Source: Bloomberg Finance, L.P. As of November 30, 2018. **Past performance is not a guarantee of future results.** Index returns are unmanaged and do not reflect the deduction of any fees or expenses. Standard deviation is a historical measure of the volatility of returns. If a portfolio has a high standard deviation, its returns have been volatile; a low standard deviation indicates returns have been less volatile. Currency implied volatility is measured by the J.P. Morgan Global FX Volatility Index. Rates implied volatility is measured by the MOVE Index. Oil implied volatility is derived from oil future contracts. Emerging markets implied volatility is measured by the CBOE Emerging Markets ETF Volatility Index. High Yield bond implied volatility is measured by the CBOE High Yield Corporate Bond ETF Volatility Index.

Technicals — With 50% of the MSCI ACWI stocks 20% below their 52-week highs, most equity indices' 50D moving average crossed below the 200D line for the first time since 2016

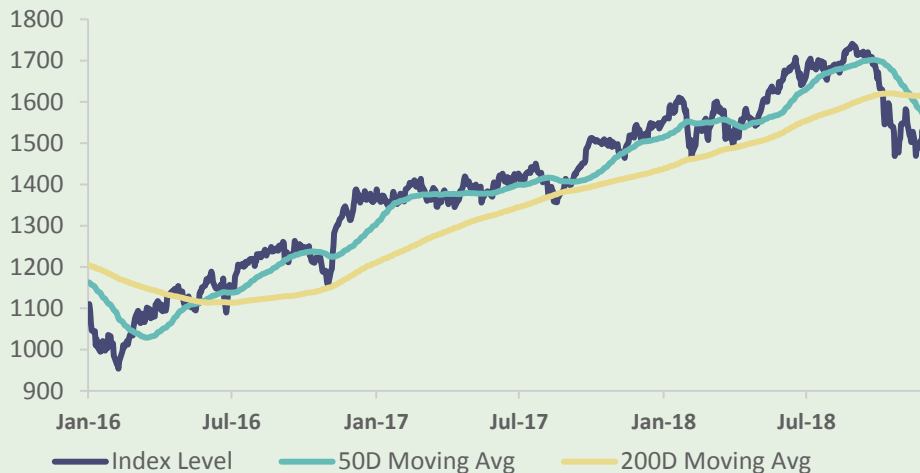
Nasdaq Composite Index



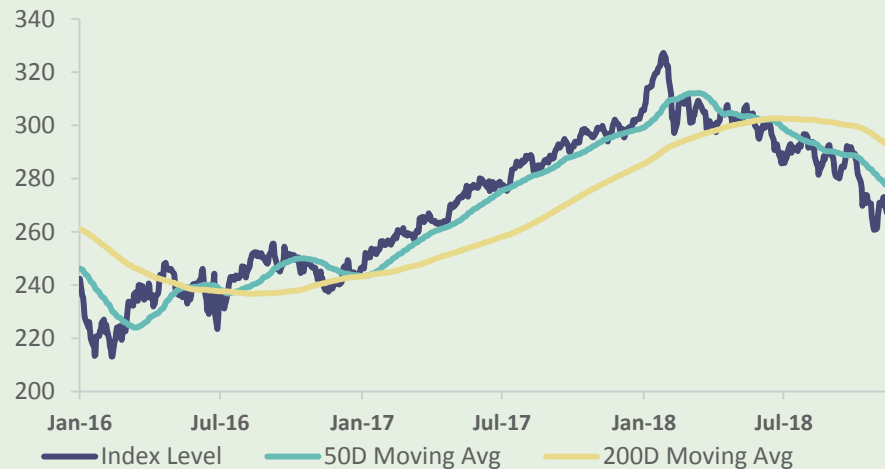
Russell 3000 Index



Russell 2000 Index



MSCI ACWI ex-US Index

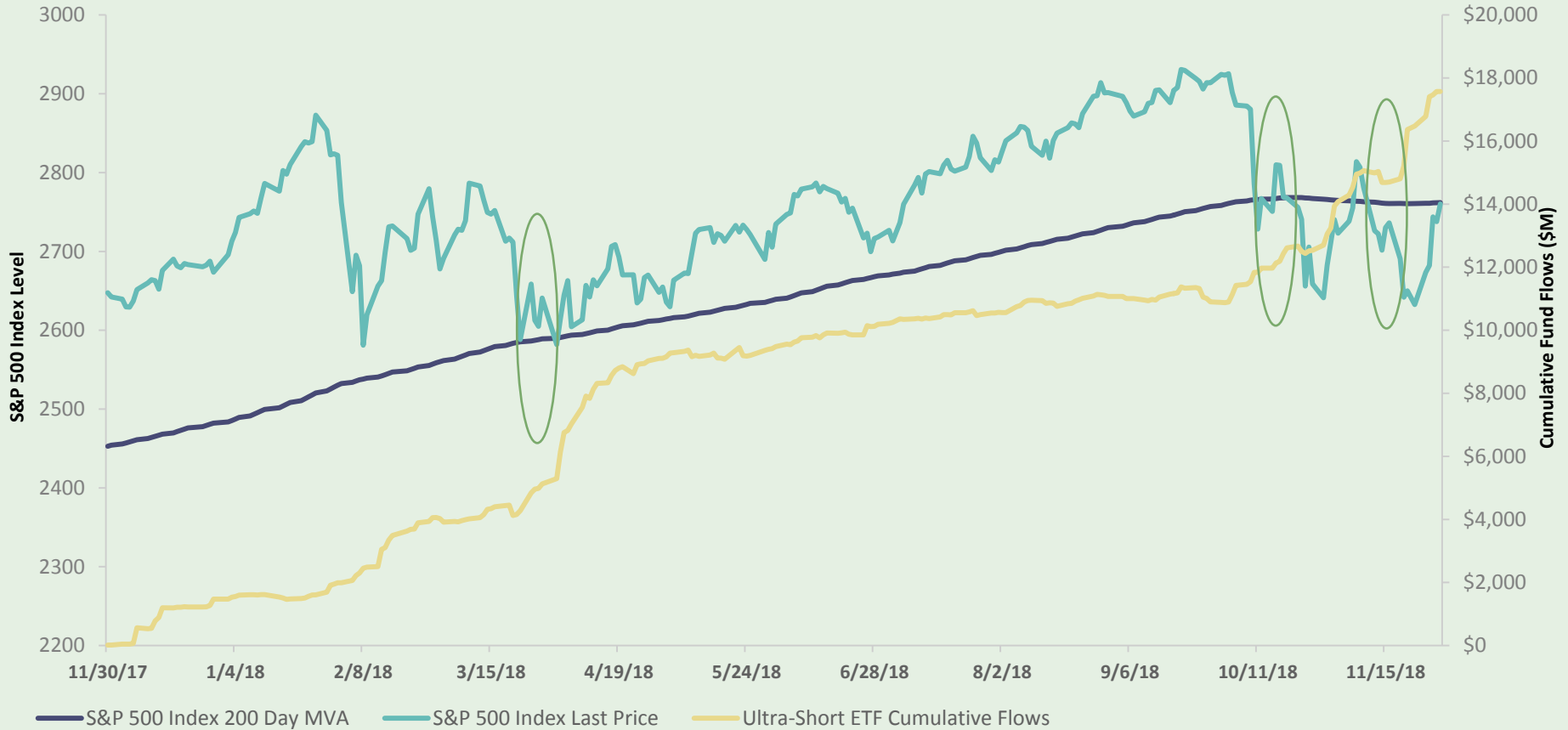


Source: Bloomberg Finance, L.P. As of November 30, 2018. Past performance is not a guarantee of future results. Performance of an index is not illustrative of any particular investment. It is not possible to invest directly in an index.

Sentiment — The risk-off sentiment triggered trend following strategies to rotate into ultra-short cash equivalent exposures during the selloffs this year

S&P 500 200-Day Moving Average vs. Cumulative Flows to Ultra-short Government Bonds

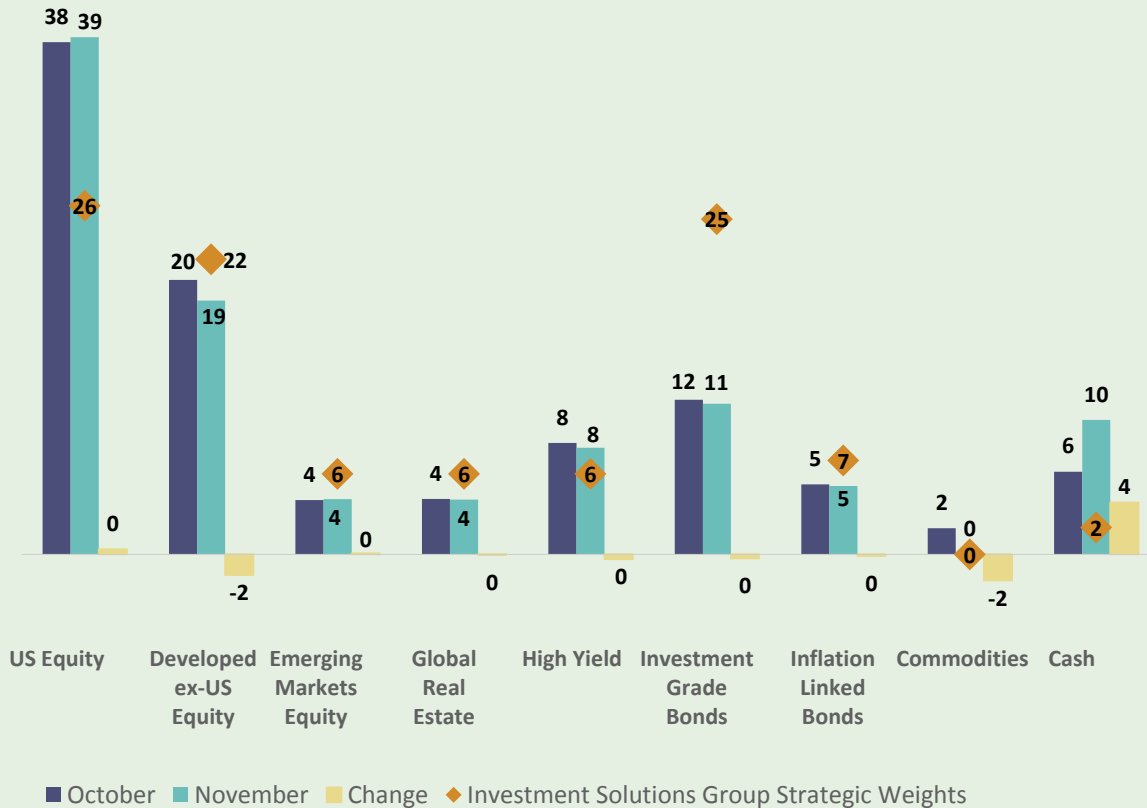
A popular trend following indicator includes the index last price relative to the 200-day moving average



Source: Bloomberg Finance, L.P. As of November 30, 2018. Past performance is not a guarantee of future results. Performance of an index is not illustrative of any particular investment. It is not possible to invest directly in an index.

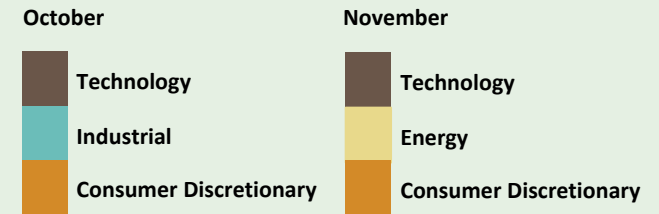
State Street Current Positioning — State Street trimmed down commodities and developed ex-US equities and moved into cash amid increasing market risk

SPDR SSGA Global Allocation ETF [GAL] Current and Strategic Exposures (%)



November Tactical Rebalance Trades:
Sold Commodities
Sold Developed ex-US Equities
Bought Cash

Sector Rotation Trades:



Positions are 2% Each for 6% of US Equity Allocation

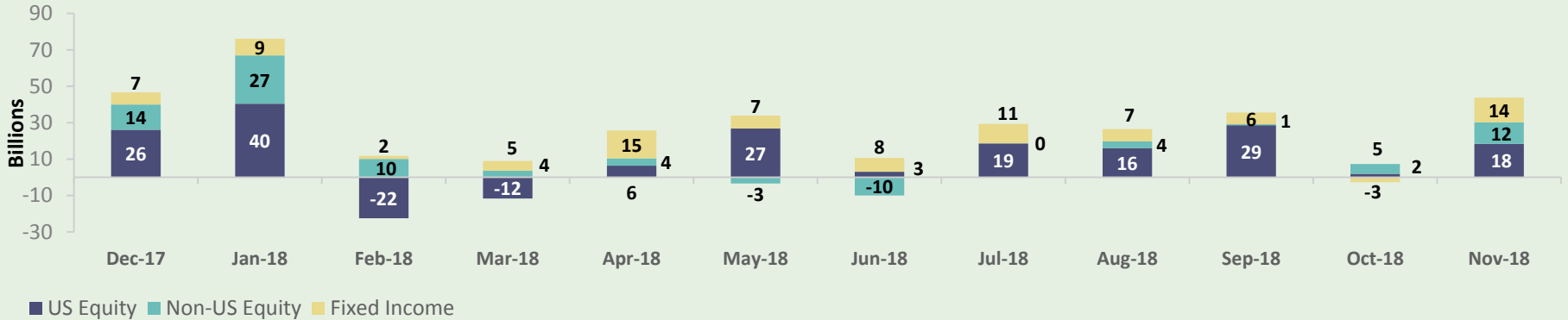
Sectors are included based on their relative valuation, momentum and earnings sentiment

Source: State Street Global Advisors. As of November 30, 2018. Exposures are as of the date indicated, are subject to change, and should not be relied upon as current thereafter. This information should not be considered a recommendation to invest in a particular sector. It is not known whether the sectors shown will be profitable in the future. The information above is rounded to the nearest whole number.

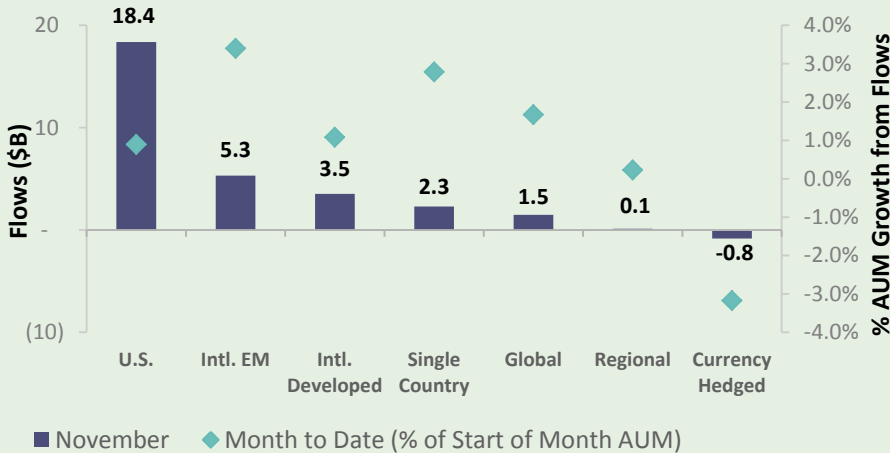
Global Flows & Fundamentals, US Factors

Flow Trends — US-listed ETFs attracted the largest flows since January, as both equity and fixed income flows were above their 5-year monthly average

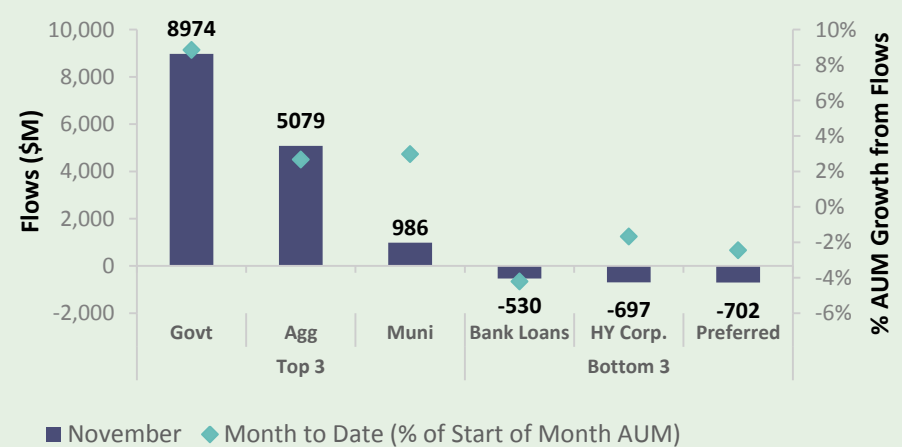
Flows by Asset Class



Flows by Equity Regions



Fixed Income Top and Bottom 3 Sectors by Flows



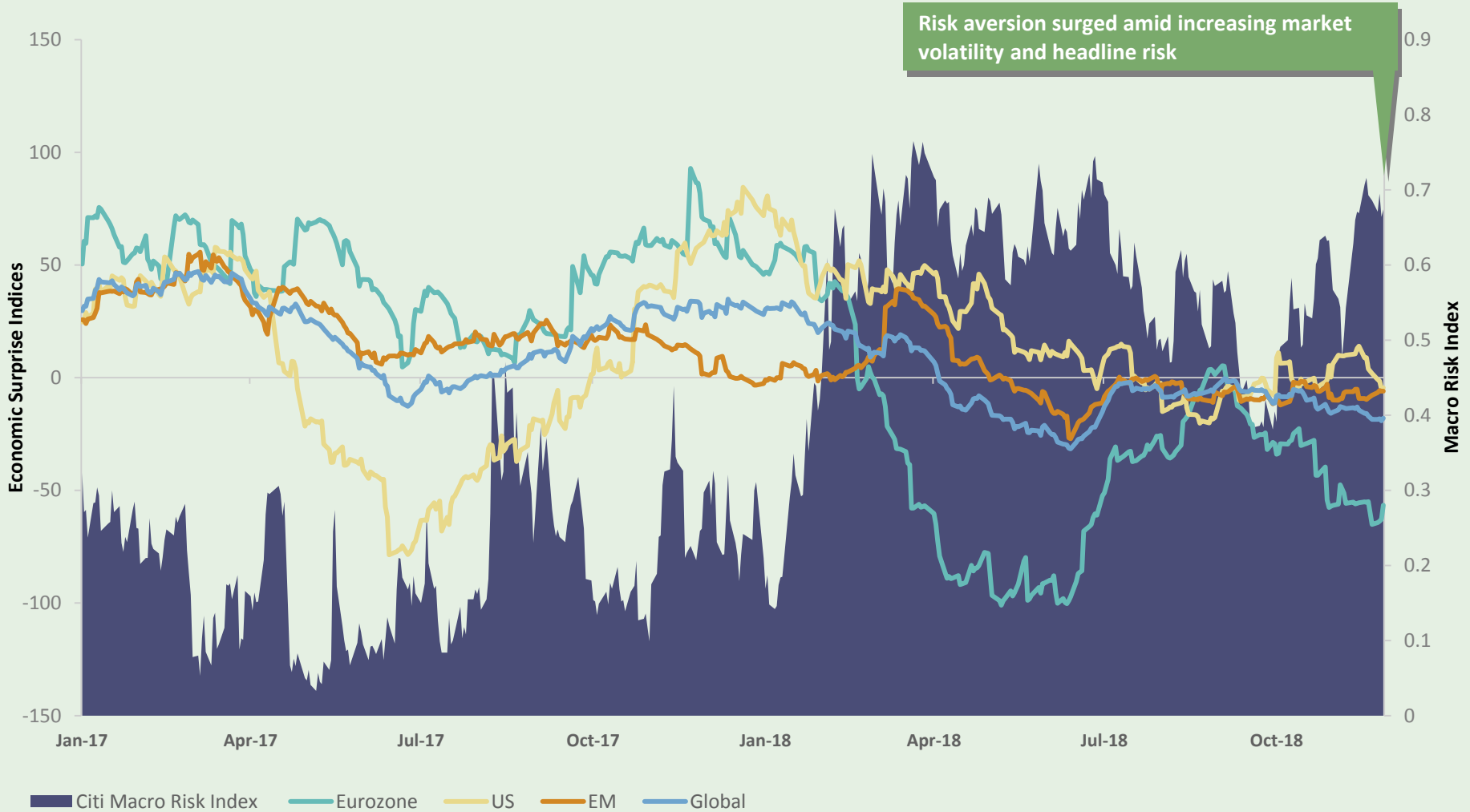
US outpaced developed ex-US equities, while EM equities attracted the largest flows since January of this year

Government and Aggregate bond exposures took in over 104% of fixed income flows in November

Source: State Street Global Advisors, Bloomberg Finance, L.P. As of November 30, 2018. Sectors, asset classes and flows are as of the date indicated, are subject to change, and should not be relied upon as current thereafter.

Global Economy — The bounce-back of Eurozone economic sentiment was short-lived, while US sentiment has trended lower

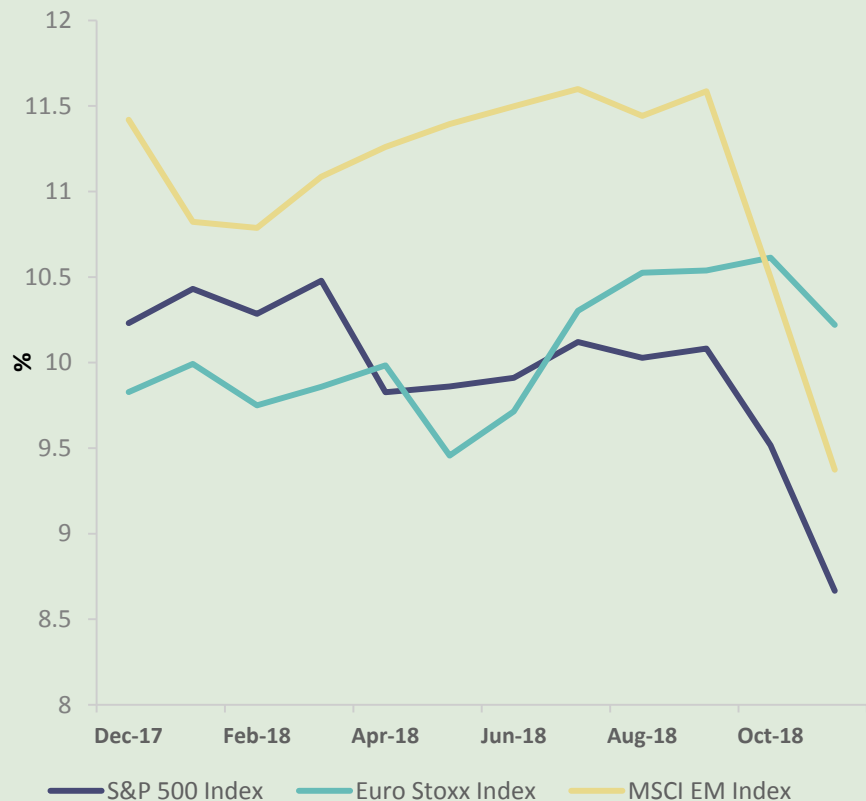
Citigroup Economic Surprise Indices and the Citi Macro Risk Index



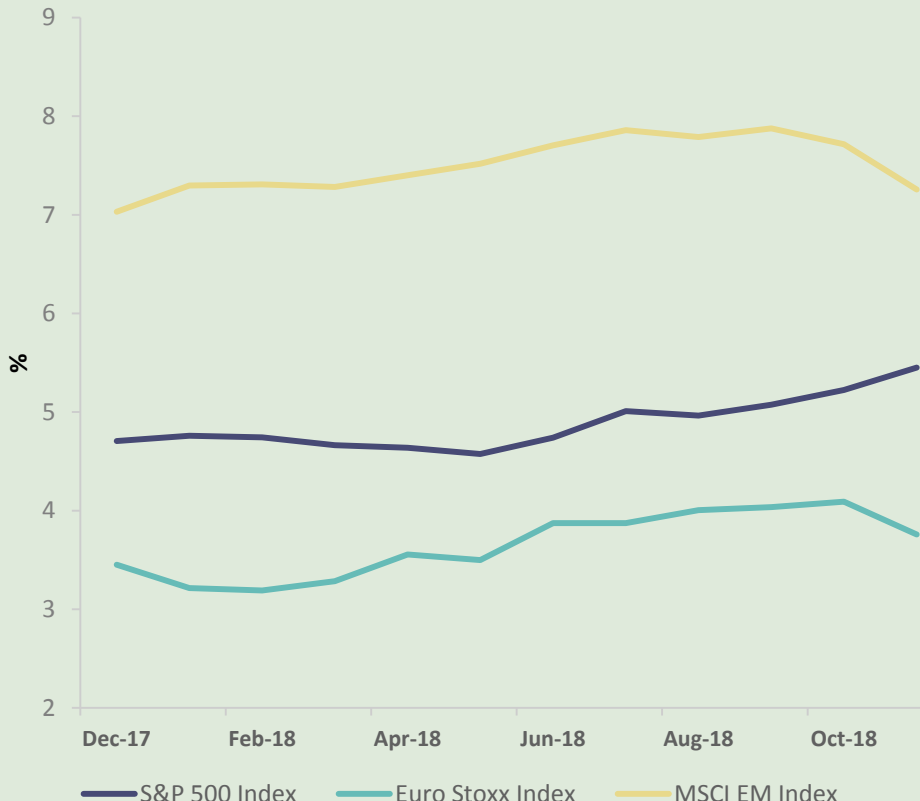
Source: Bloomberg Finance L.P., as of 11/29/2018.

Global Earnings — Despite better sales growth prospects in the US, analysts have downgraded earnings growth, reflecting concerns about margin pressure

2019 EPS Growth Est.



2019 Sales Growth Est.

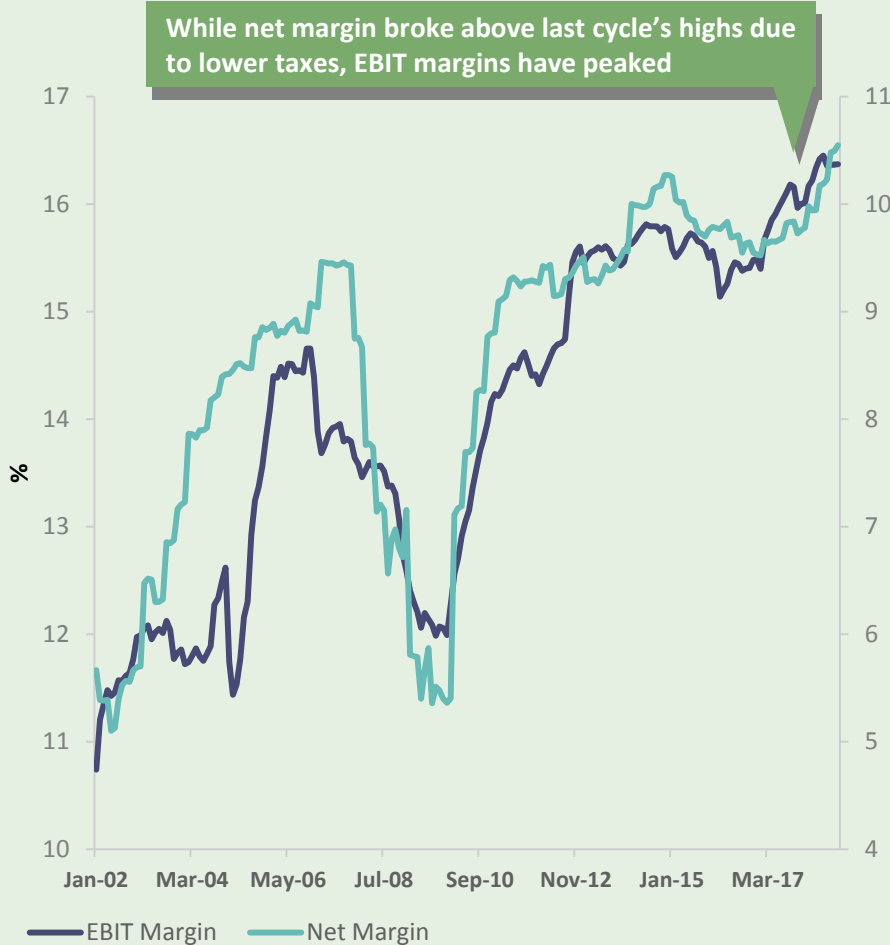


Analysts are projecting declines in both top and bottom lines of emerging and European companies

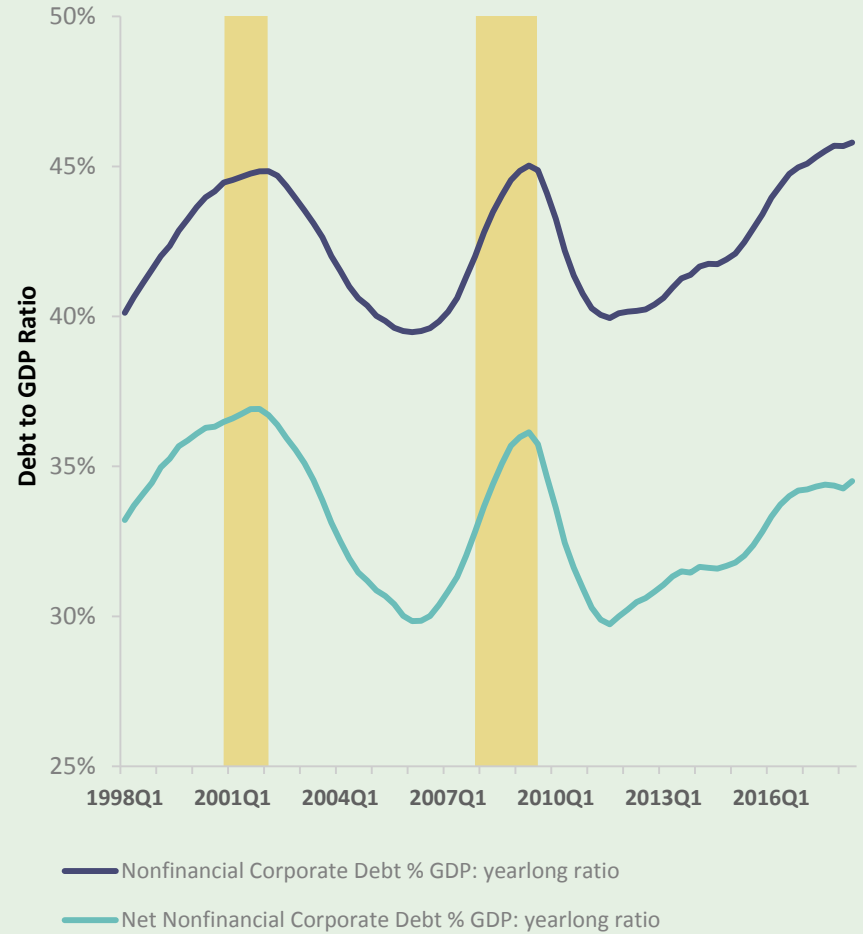
Source: FactSet, as of November 30, 2018. Characteristics are as of the date indicated, are subject to change, and should not be relied upon as current thereafter. EPS growth estimates are based on Consensus Analyst Estimates compiled by FactSet.

US Fundamentals — Increasing margin pressure from higher input costs and record-high corporate debt point to a late economic cycle

S&P 500 Profit Margins



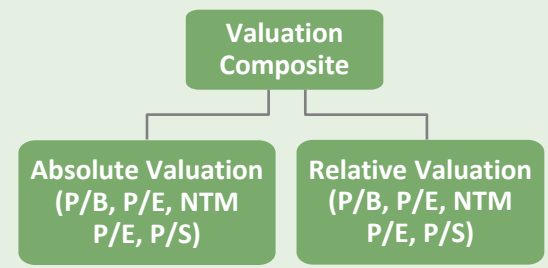
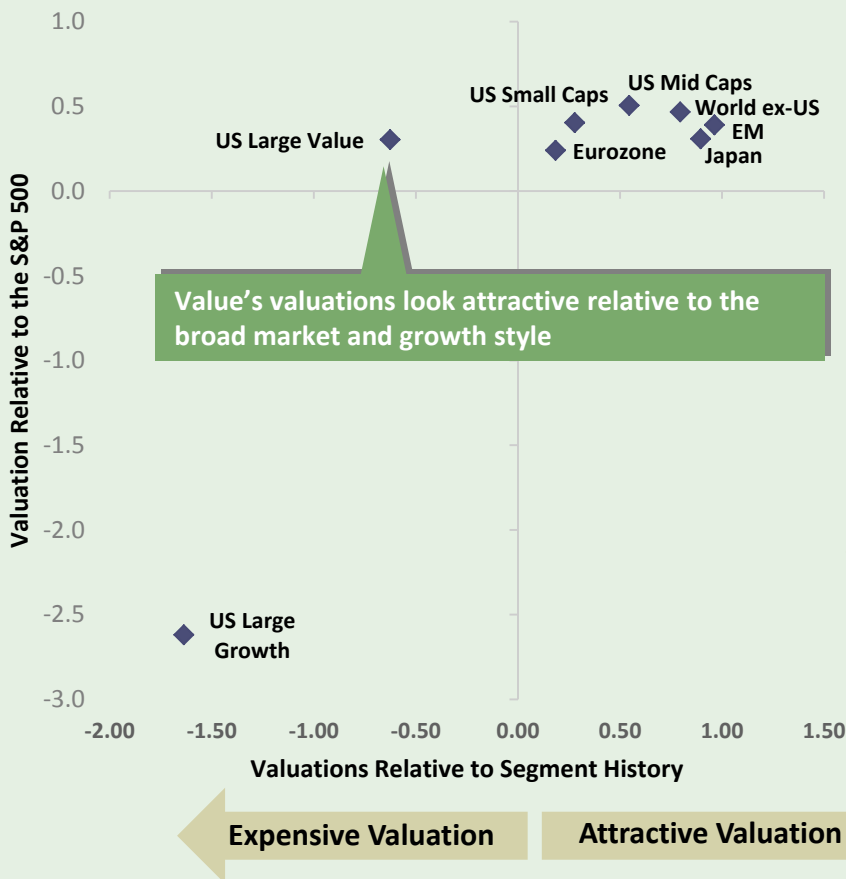
US Nonfinancial Corporate Debt Level to GDP



Source: FactSet, as of 11/30/2018, Debt level to GDP is sourced from Moody's Investors Service, as of 06/30/2018.

Global Valuation — EM valuations appear most attractive on an absolute basis, while US mid-cap valuations are most attractive relative to US large caps

Absolute and Relative Valuation Z-Score*



	Absolute Valuation Relative to Regional History Composite Score	Valuation Relative to the S&P 500 Composite Score	Valuation Composite Score
US Large Cap	-1.40	N/A	N/A
US Mid Cap	0.54	0.51	0.53
US Small Cap	0.28	0.40	0.34
US Value	-0.63	0.30	-0.16
US Growth	-1.64	-2.62	-2.13
Developed ex US	0.79	0.47	0.63
EM	0.90	0.31	0.60
Japan	0.96	0.39	0.68
Eurozone	0.18	0.24	0.21

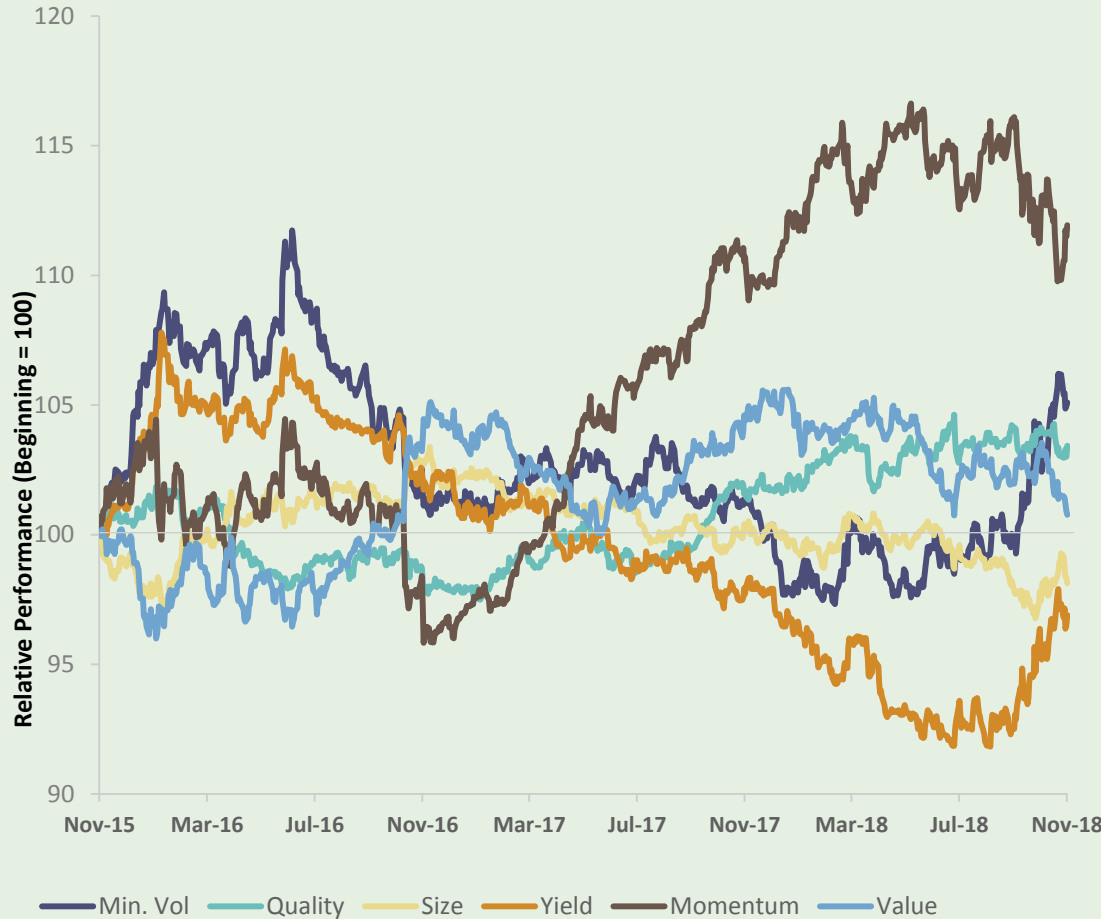


Source: State Street Global Advisors, FactSet, as of November 30, 2018.

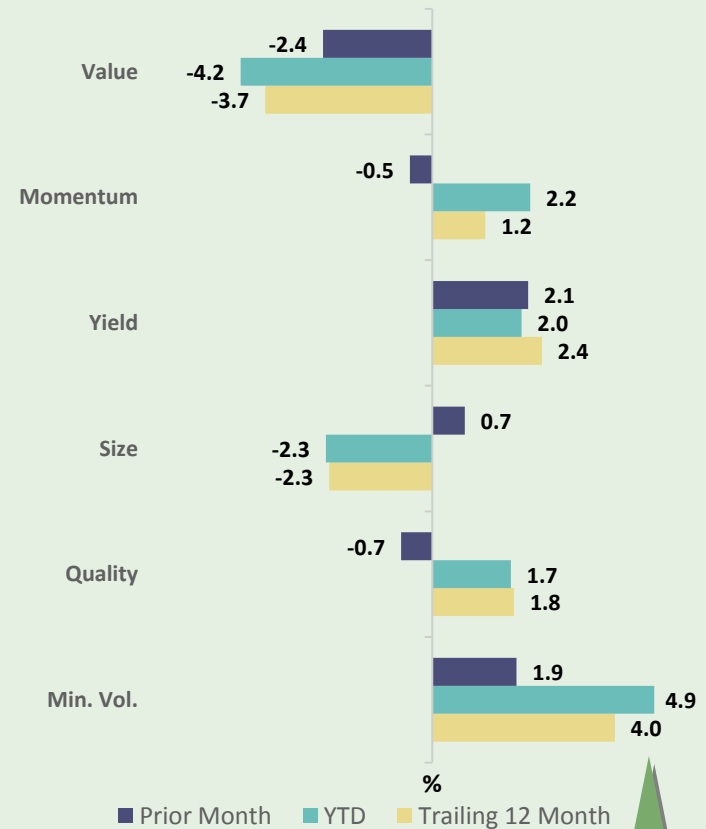
*The z-score is calculated as the average z-score of percentile ranking of P/B, P/E, NTM P/E and P/S valuations last 15 years and valuations relative to the S&P 500 last 15 years. Z-score indicates how many standard deviations an element is from the mean. A z-score can be calculated from the following formula: $z = (X - \mu) / \sigma$ where z is the z-score, X is the segment valuation percentile, μ is the mean of valuation percentile, and σ is the standard deviation of sectors' valuation percentile. Segment valuation are based on following indices: US Large Cap = S&P 500 Index, US Mid Caps = S&P MidCap 400 Index, US Small Caps = Russell 2000 Index, US Value = S&P 500 Value Index, US Growth = S&P 500 Growth Index, Developed ex-US = MSCI World ex-US Index, EM = MSCI Emerging Markets Index, Japan = MSCI Japan Index, Eurozone = Euro STOXX Index.

US Factor Trends — Min. Vol. and Dividend Yield led the market higher, while Value is the worst performer in 2018

MSCI USA Factor Index versus MSCI USA Index (3 Years)



Period Excess Returns versus MSCI USA Index



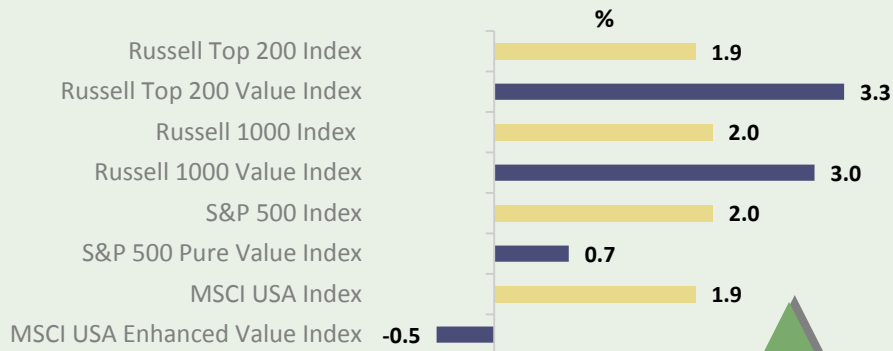
Min. Vol. led in performance across all periods

Source: Bloomberg Finance, L.P. As of November 30, 2018.

Past performance is not a guarantee of future results. MSCI USA Minimum Volatility Index, MSCI USA Enhanced Value Index, MSCI USA Quality Index, MSCI USA Equal Weighted Index, MSCI USA High Dividend Yield Index, and MSCI USA Momentum Index were used above compared to the MSCI USA Index. Index returns are unmanaged and do not reflect the deduction of any fees or expenses.

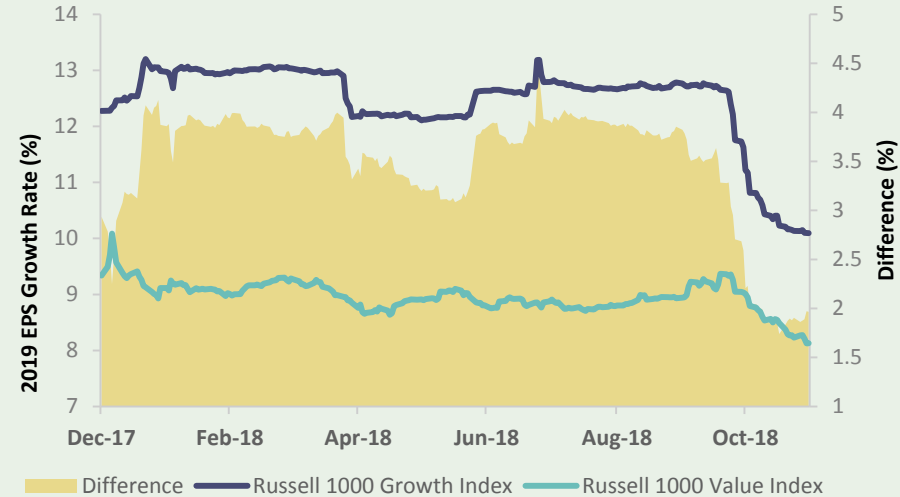
Value vs. Growth — Value's attractive valuations and the narrowing difference in growth prospects between the two styles drove investors to rotate into Value

Value Index vs. the Parent Index



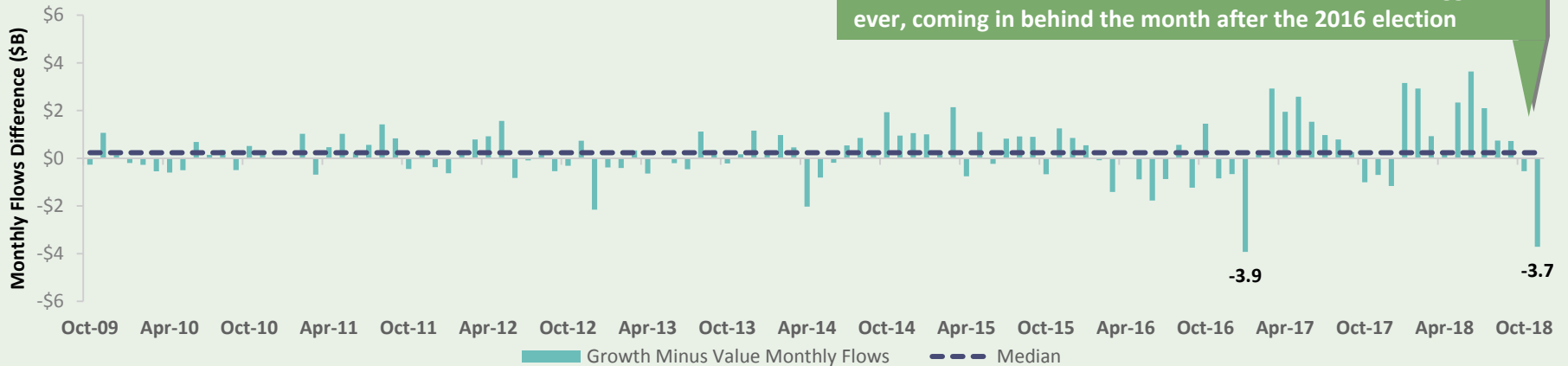
Nuances in Value exposures led to performance variance

Est. 2019 EPS Growth (%) Trends



Flow rotation into value focused ETFs was the second biggest ever, coming in behind the month after the 2016 election

US ETF Flow Rotation from Growth to Value



Source: Bloomberg Finance, L.P., as of November 30, 2018. Valuation z-score is calculated based on Price-to-Book, Price-to-Earnings, Price-to-Sales, Price-to-Free-Cash Flow, Price-to-Next-Twelve-Months-Earnings, and Enterprise value-to-EBITDA. All funds listed as growth or value exposures within the US equity category were used in this calculation. As shown, the rotation witnessed was significant.

Sectors

Sector Flow and Returns Heat Map — Noncyclical sectors, like Health Care, Cons. Staples and Utilities, took in the most flows last month

	Positioning				Returns		
	Prior Month Flow (\$M)	YTD Flow (\$M)	Current Short Interest (%)	1M Prior Short Interest (%)	Prior Month Return (%)	3-Month Return (%)	YTD Return (%)
Consumer Discretionary	(549)	(1,624)	10.8%	12.2%	2.81	-7.83	10.03
Consumer Staples	929	1,507	7.2%	10.5%	1.93	5.37	0.80
Energy	634	(1,376)	11.6%	11.3%	-1.65	-10.47	-6.21
Financial	(1,298)	(4,172)	7.2%	7.0%	2.80	-4.24	-1.98
Health Care	1,886	8,359	10.0%	11.1%	7.05	2.82	16.50
Industrials	(1,489)	(1,255)	9.1%	9.7%	3.84	-5.36	-2.90
Materials	(369)	3,406	7.9%	8.9%	4.05	-7.77	-8.38
Real Estate	(48)	(2,851)	5.0%	5.7%	5.63	1.11	5.60
Technology	(3,550)	10,215	10.7%	11.5%	-1.88	-10.00	8.93
Communication	(359)	3,957	1.5%	0.9%	-5.75	-4.79	0.26
Utilities	780	1,223	21.3%	31.0%	3.58	4.98	8.47

Health Care took in the most flows for the third month in a row, closing the gap between it and Tech on a YTD basis

Flows followed performance, as investors piled into the top three best performing sectors for the last three months

Best Performing Sector
Most Flows in Period

Worst Performing Sector
Least Flows in Period



Source: State Street Global Advisors, Bloomberg Finance, L.P., as of November 30, 2018. Past performance is not a guarantee of future results.

Sector Scorecard — Health Care and Utilities ranked high overall, while Tech continued to lead given its less stretched valuations and supportive momentum

Sector Composite Z-Score*

	Valuation Composite Score	Momentum Composite Score	Earnings Sentiment Composite Score	Aggregate Score	Volatility Composite Score
Consumer Discretionary	-1.44	0.34	0.30	-0.80	1.06
Consumer Staples	-0.27	0.91	-0.39	0.25	0.13
Energy	0.85	-1.21	0.25	-0.10	0.50
Financials	0.94	-0.58	0.23	0.59	-0.71
Health Care	-0.58	0.86	0.36	0.64	-0.86
Industrials	0.38	-0.78	-0.36	-0.76	0.92
Information Technology	-0.55	1.51	0.38	1.34	0.67
Materials	0.55	-1.56	-0.21	-1.21	-0.35
Communication	0.45	0.17	-0.28	0.34	
Real Estate	0.09	0.06	-1.07	-0.93	-0.81
Utilities	-0.43	0.28	0.79	0.64	-0.56

Valuations of certain cyclical sectors have become attractive

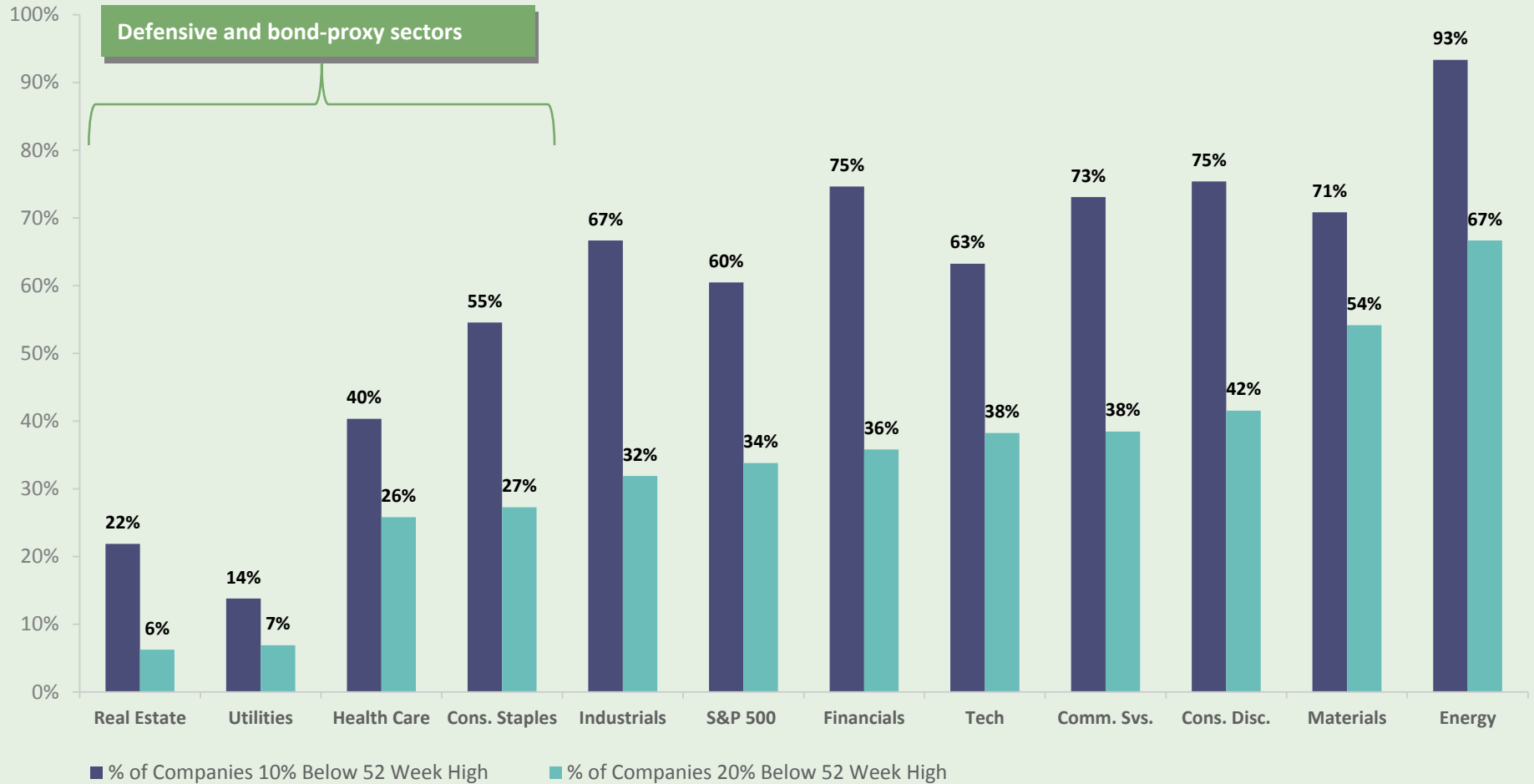
Consumer Staples' momentum improved significantly and exceeded Health Care as the 2nd highest momentum sector

Source: State Street Global Advisors, FactSet, as of November 30, 2018. Green shading is top 3, red shading is bottom 3.

*The scorecard uses z-score for each metric to standardize numbers across sectors and show relativeness among sectors. Composite score is calculated by equally weighting each metric in the same category. Z-score indicates how many standard deviations an element is from the mean. A z-score can be calculated from the following formula. $z = (X - \mu) / \sigma$ where X is the value of the sector, μ is the mean of the eleven sectors. σ is the standard deviation of eleven sectors. S&P 500 sector indices are used to calculate sector scores. Please refer to Appendix C for the metrics used to measure valuation, momentum and earnings sentiment. Volatility score is not available for the communication services sector due to data availability.

Sector Trends — Defensive and bond-proxy sectors stood strong amid recent market turbulence, while concerns about peak growth weighed down growth-oriented sectors

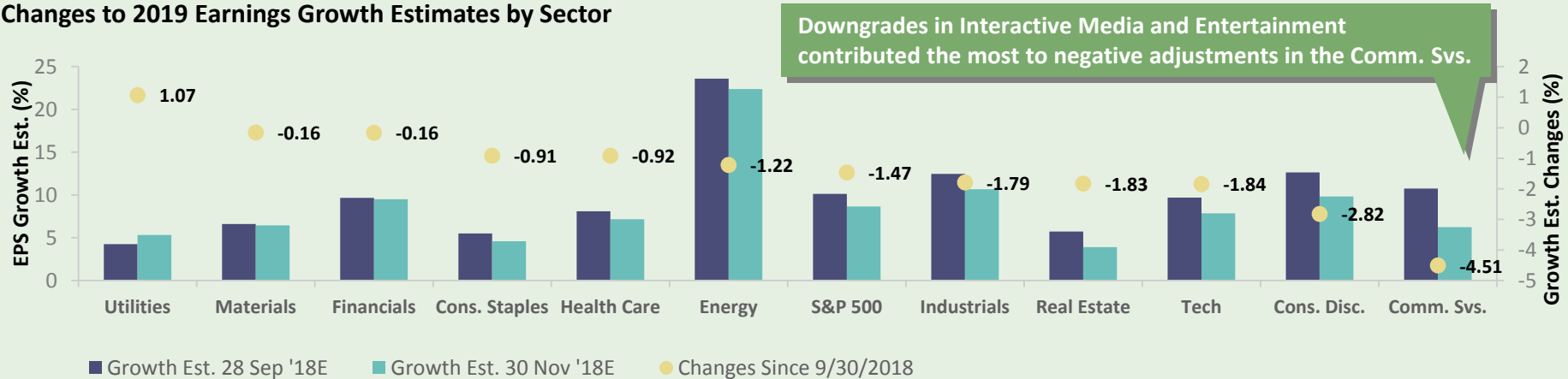
% of S&P 500 Stocks 10% or 20% Below 52-Week Highs



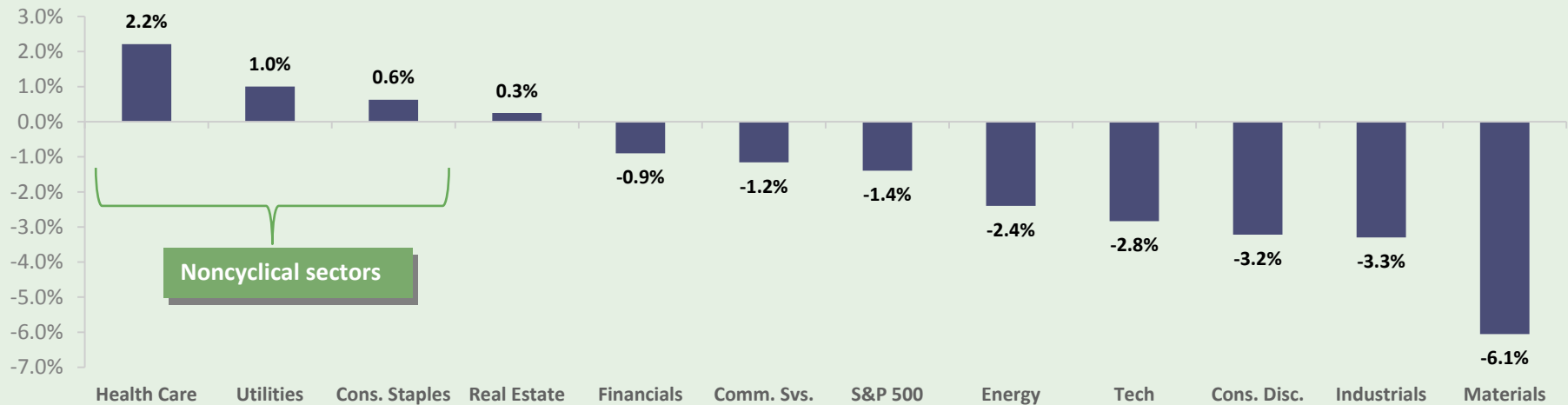
Source: Bloomberg Finance L.P. As of 11/30/2018. Past performance is not a guarantee of future results.

Sector Earnings — Growth-oriented sectors saw greater downgrades for next year's growth than the broad market, while analysts have adjusted noncyclical sectors' price targets upward

Changes to 2019 Earnings Growth Estimates by Sector



Sector Aggregated Price Target Change (%) since 09/30/2018

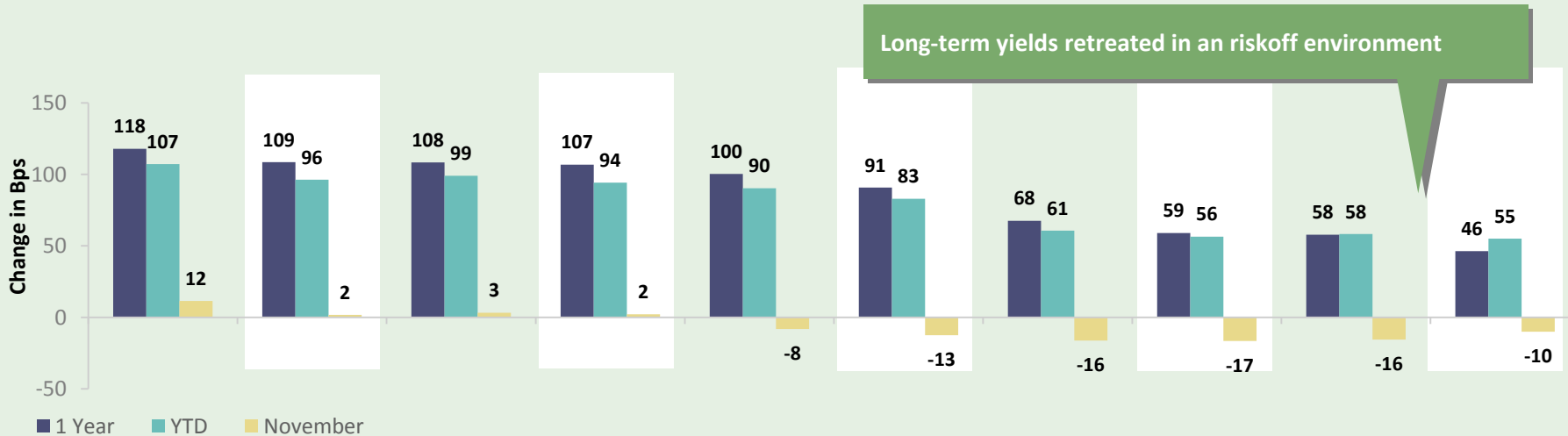
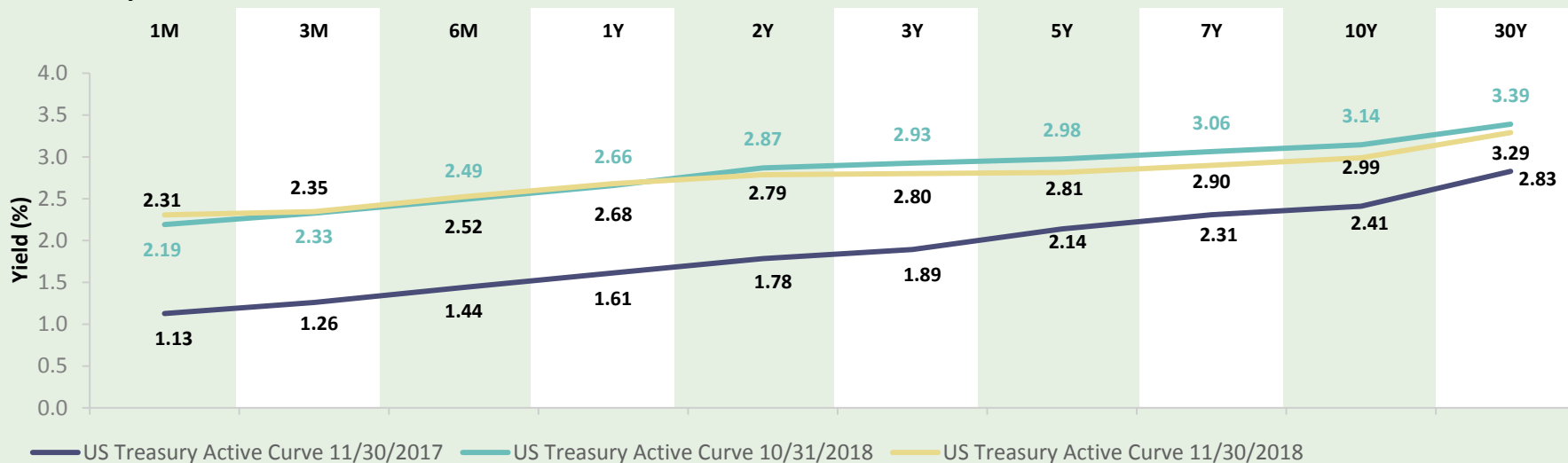


Source: FactSet. As of 11/30/2018. Characteristics are as of the date indicated, are subject to change, and should not be relied upon as current thereafter. EPS growth estimates are based on Consensus Analyst Estimates compiled by FactSet.

Fixed Income

Yield Curve — The yield curve continued flattening as the market re-assessed the rate path for 2019 and adjusted inflation expectations lower

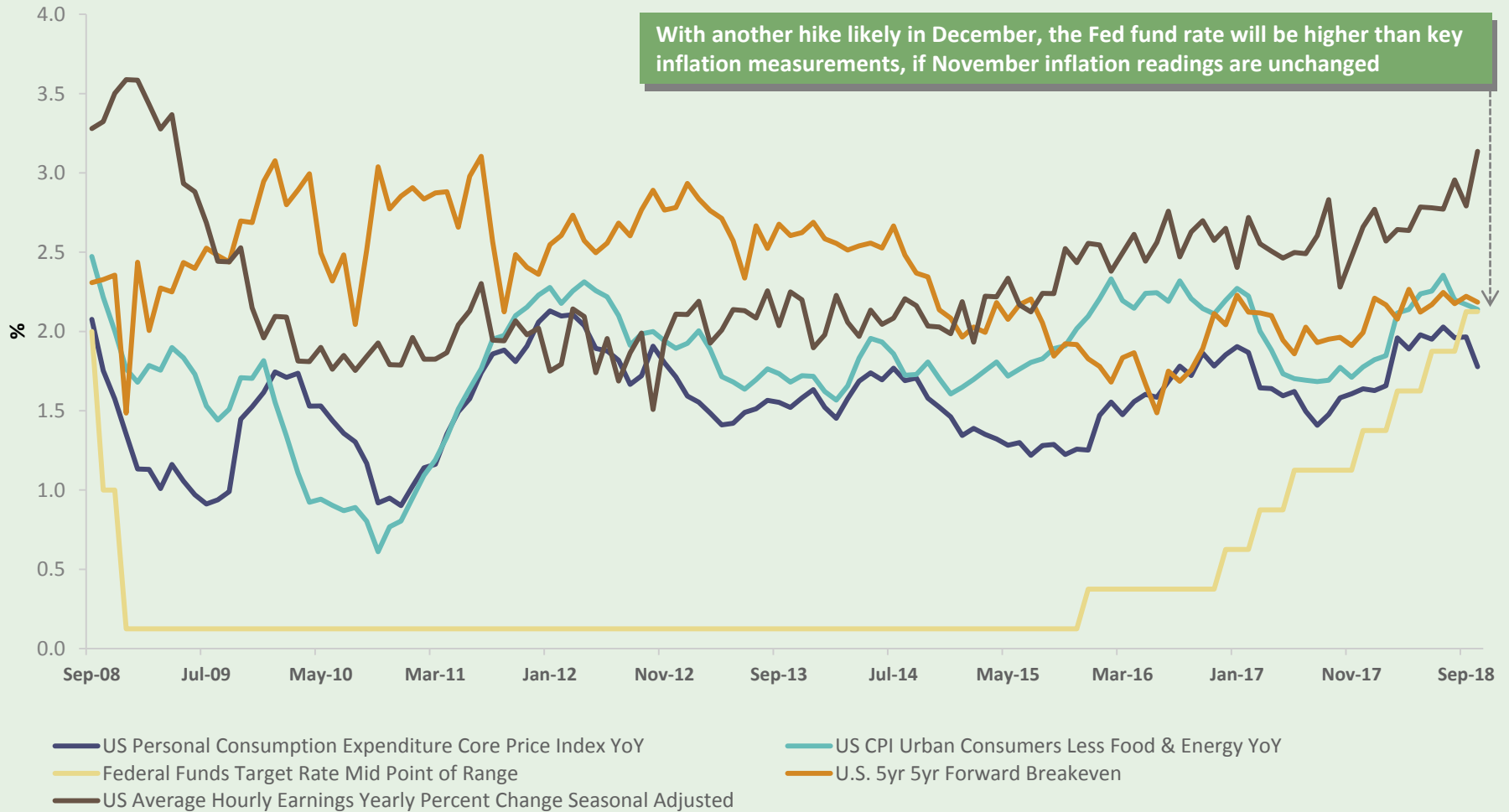
US Treasury Curve



Source: Bloomberg Finance, L.P. As of November 30, 2018. Past performance is not a guarantee of future results.

Inflation — Core inflation and inflation expectations have moderated, but labor costs rose to the highest level since 2009, giving the Fed more leeway to raise interest rates

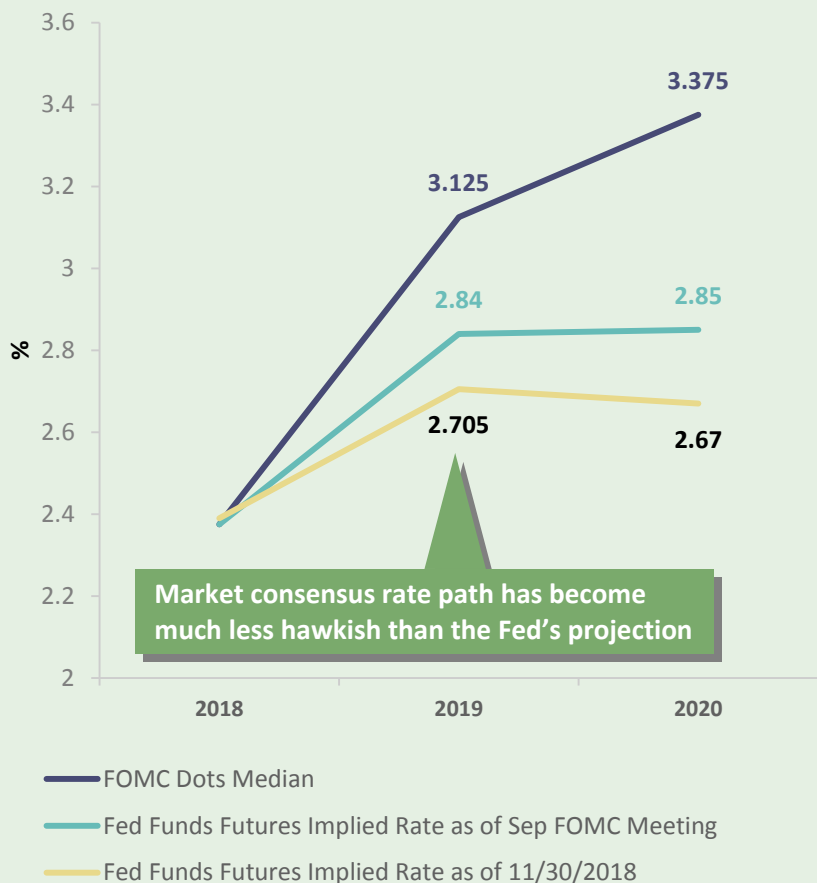
Inflation and the Fed Fund Rate



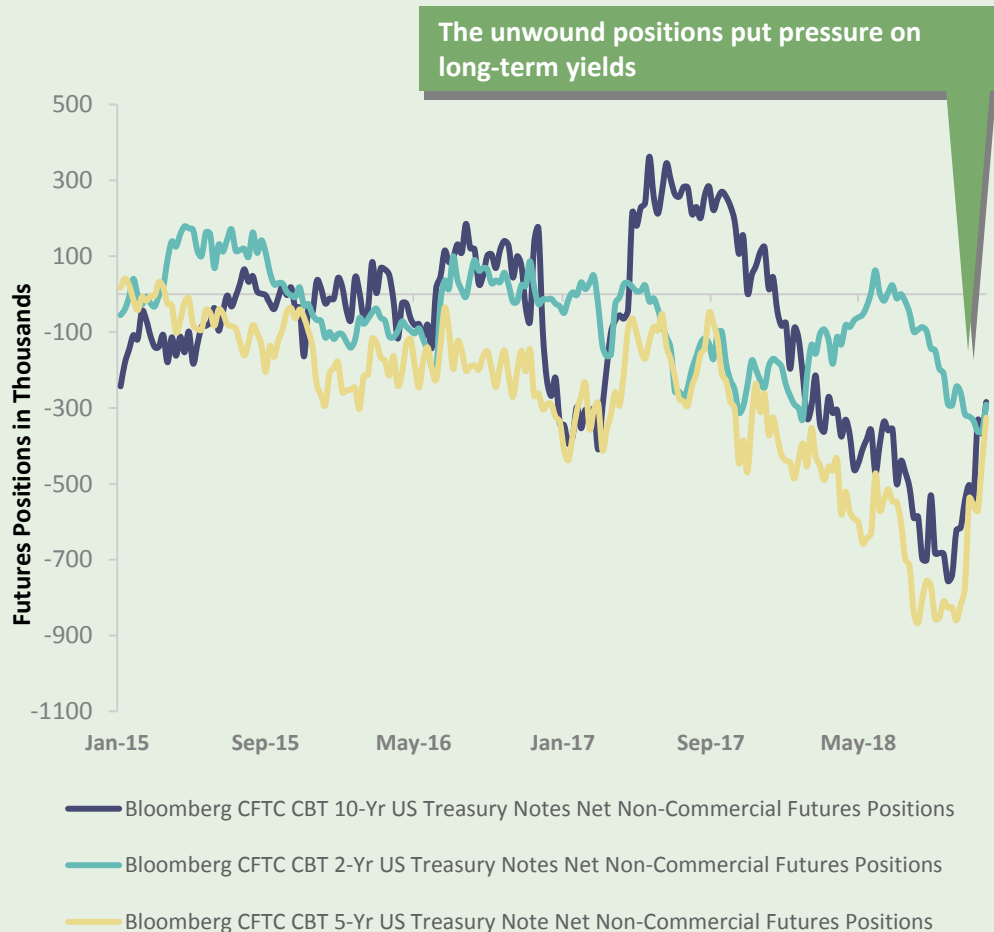
Source: Bloomberg Finance, L.P. As of October 31, 2018.

Rates — Markets re-assessed the rate path for 2019 after Powell's remarks, leading to a significant unwinding in longer term Treasury futures positions

The FOMC and Market Projected Rate Path



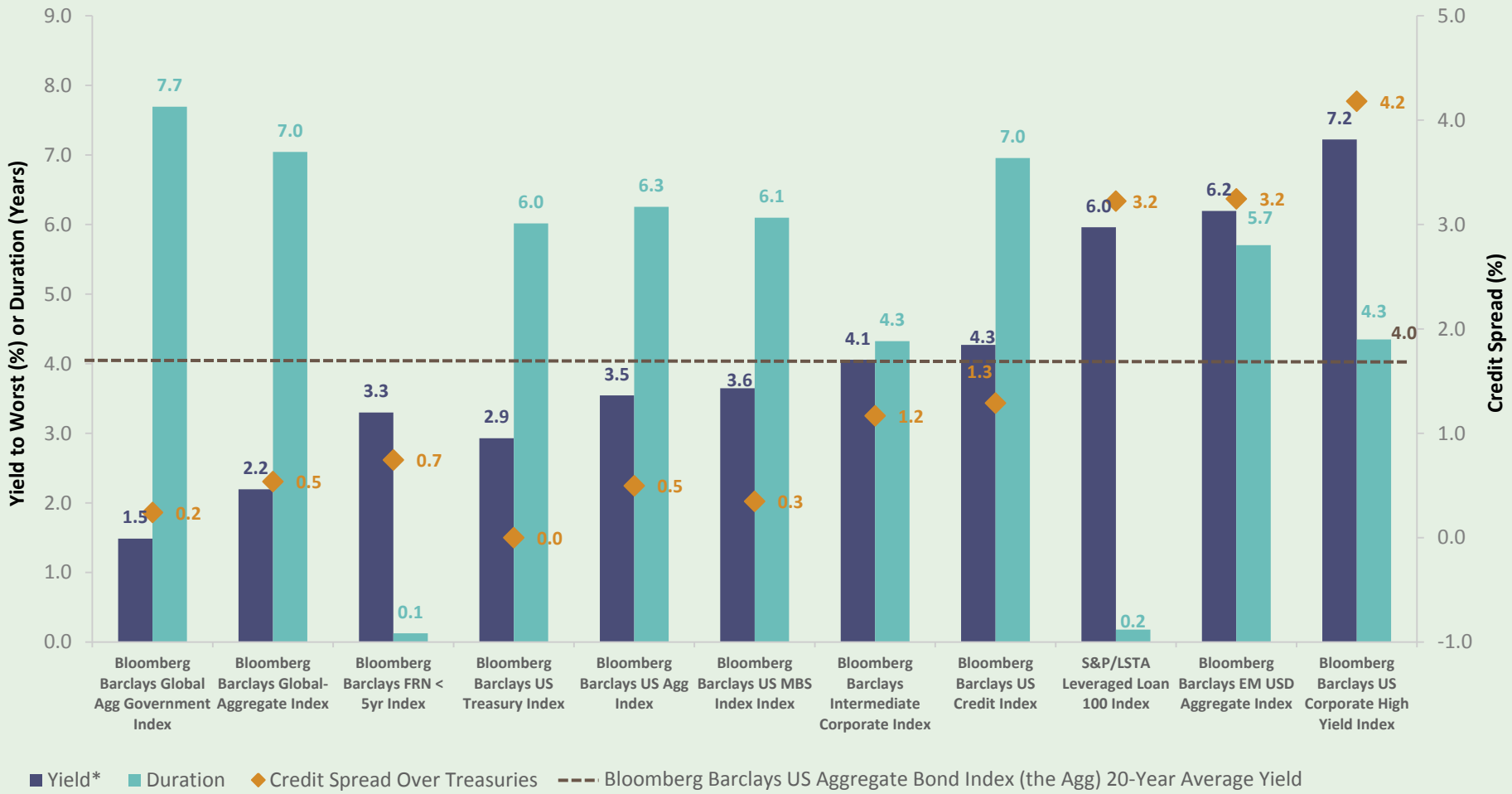
US Treasury Futures Contract Positioning



Source: Bloomberg Finance L.P., as of November 30, 2018. Past performance is not a guarantee of future results. Index returns are unmanaged and do not reflect the deduction of any fees or expenses.

Bond Market — As yields on traditional bonds remain below historical averages, investors may have to turn to other fixed income sectors when allocating portfolios

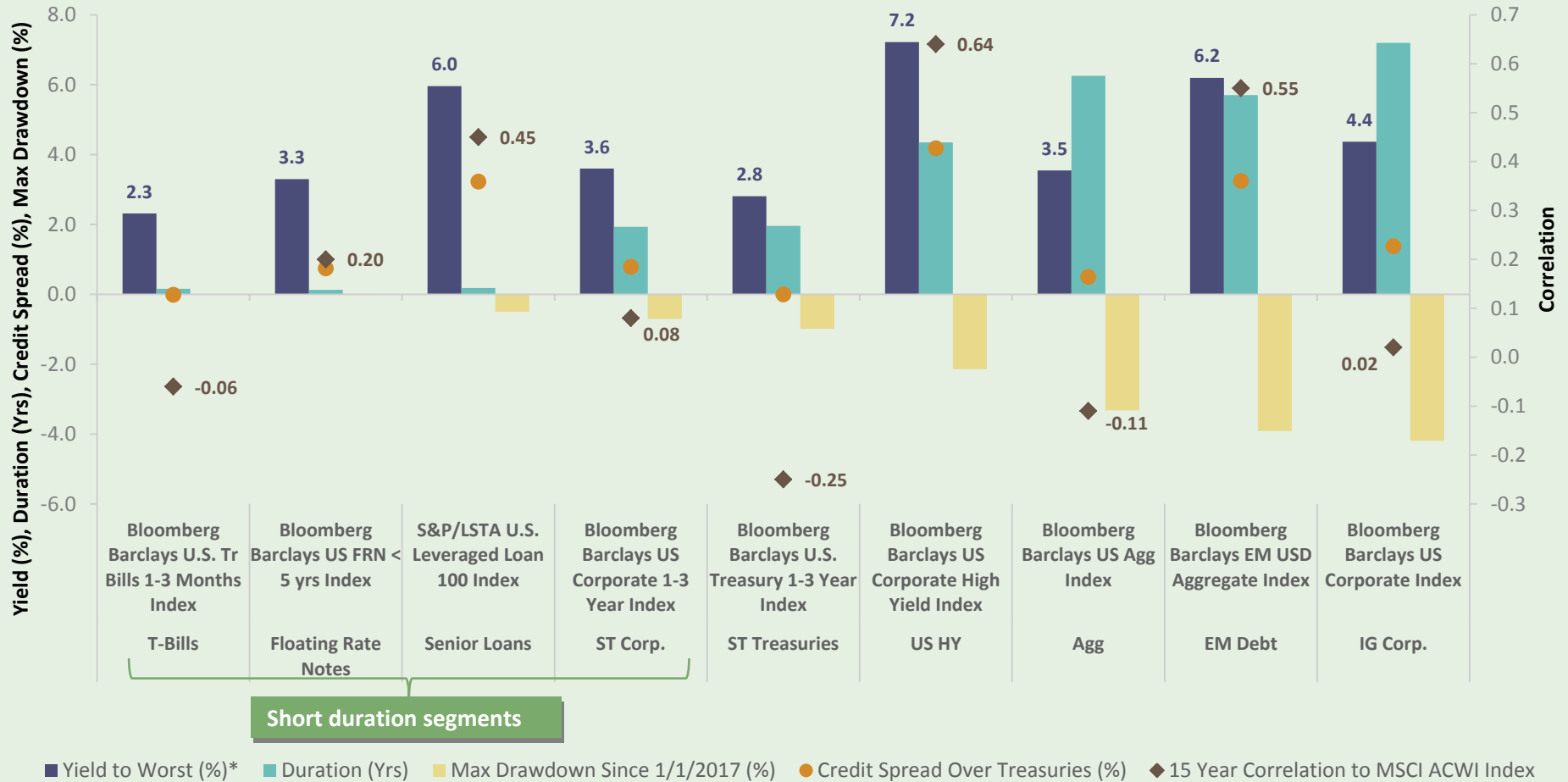
Bond Market Segment Yield, Duration and Spreads



Source: Bloomberg Finance, L.P. As of November 30, 2018. Past performance is not a guarantee of future results. Index returns are unmanaged and do not reflect the deduction of any fees or expenses. *Yield to maturity is used for the S&P/LSTA Leveraged Loan 100 Index. Yield to worst is used for other indices. Yield spreads between the S&P/LSTA Leveraged Loan 100 Index and 3-month LIBOR are used as the credit spread of the loan index.

Short Duration — Focusing on shorter duration bond segments may better mitigate equity risk while still generating income with limited duration risks

Bond Market Segments



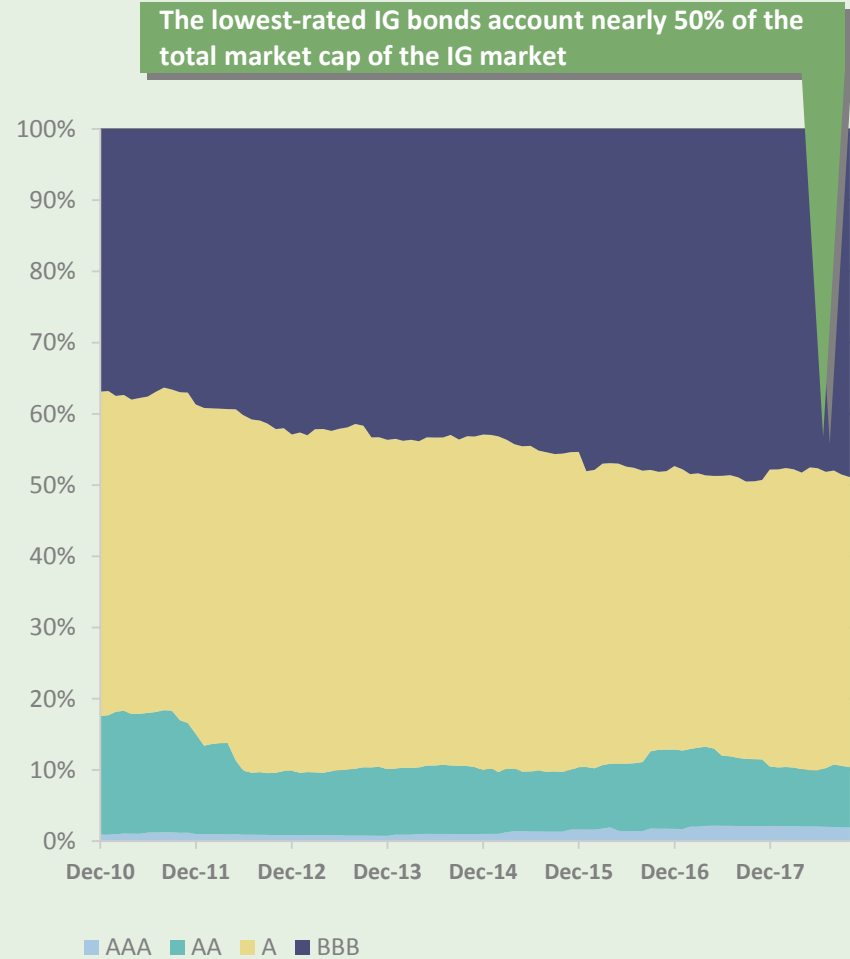
Source: Bloomberg Finance, L.P. As of November 30, 2018. Past performance is not a guarantee of future results. Index returns are unmanaged and do not reflect the deduction of any fees or expenses.
 *Yield to maturity is used for the S&P/LSTA Leveraged Loan 100 Index. Yield to worst is used for other indices.

Corporate Debt — Credit quality in the investment grade market has deteriorated, and a large amount of IG debt needs to be refinanced in the coming two years

IG and HY bonds Outstanding Amount by Maturity Year



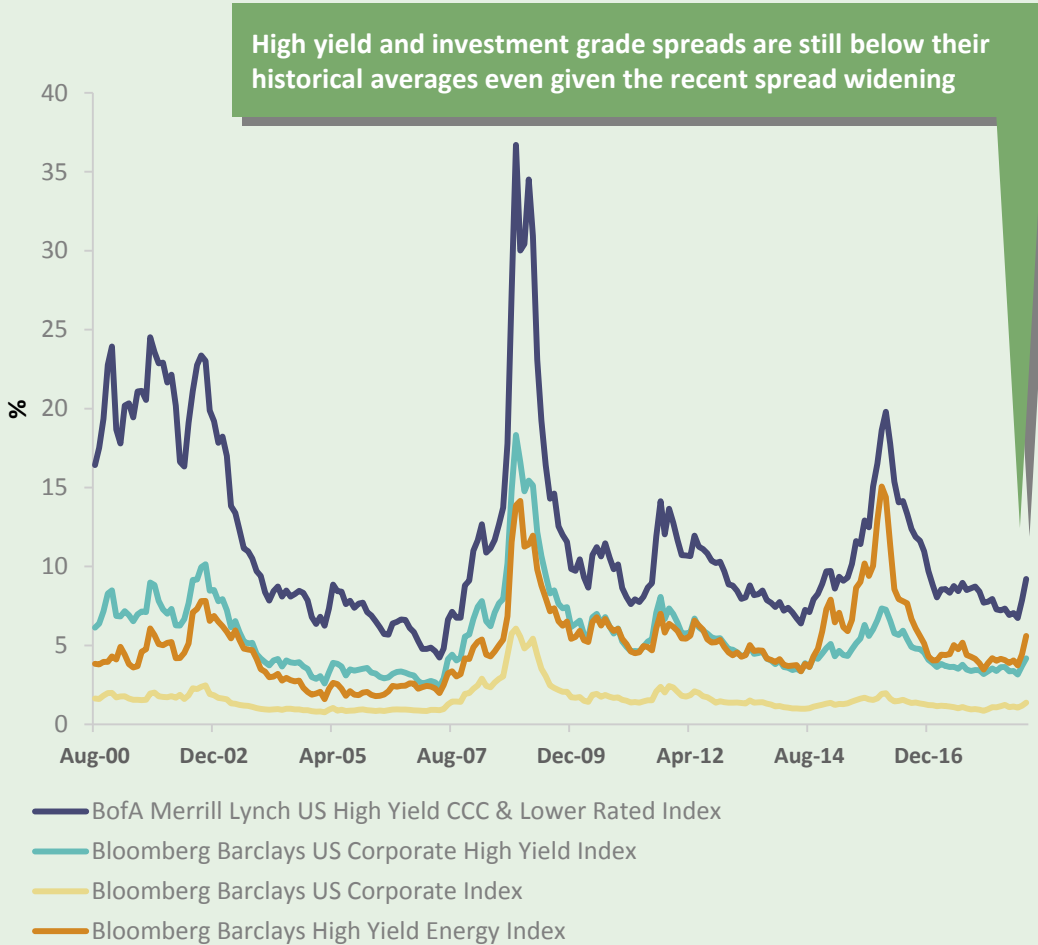
Increasing percentage of BBB rated IG debt*



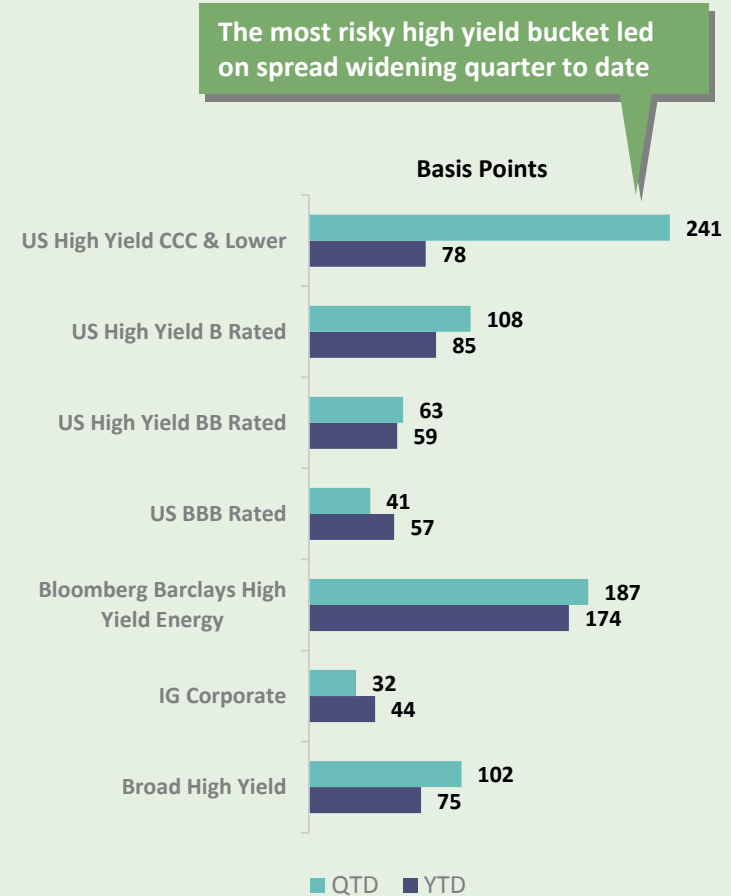
Source: Bloomberg Finance L.P., as of 11/30/2018. Characteristics are as of the date indicated, are subject to change, and should not be relied upon as current thereafter.
 *The Bloomberg Barclays US Corporate Index is used to represent the total investment grade bond market.

Credit Trends — Credit spreads widened further, led by lower rated bonds and the energy sector amidst the oil selloff

Credit Spreads



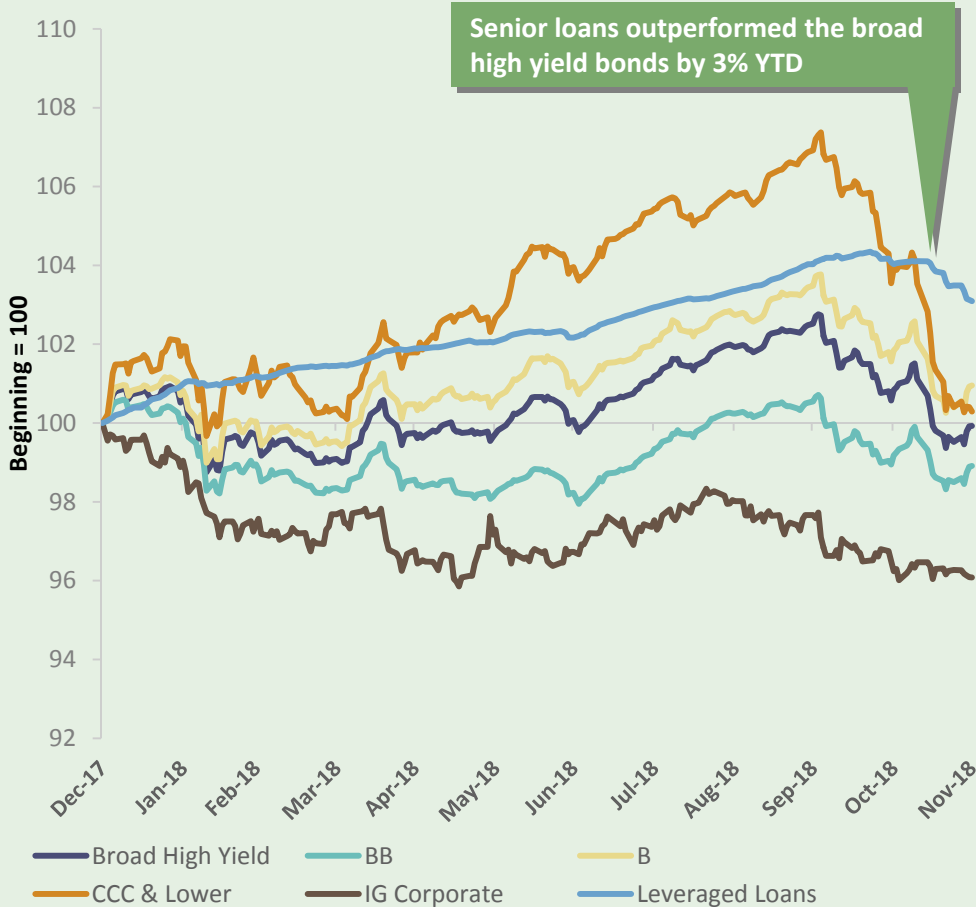
Credit Spread Changes in Basis Points



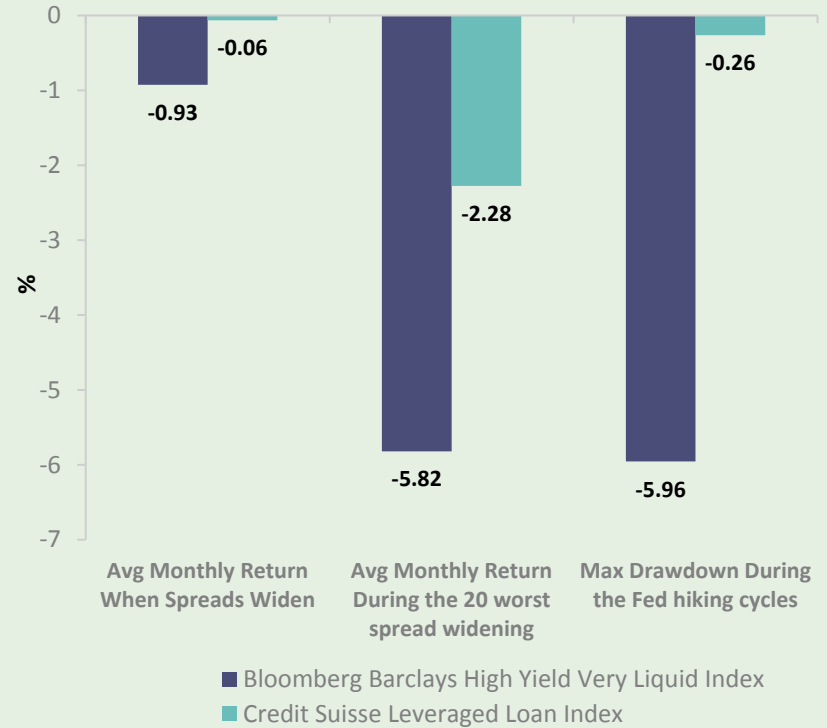
Source: Bloomberg Finance, L.P. BofA Merrill Lynch, as of November 30, 2018. European high yield = Bloomberg Barclays Pan European High Yield Index. US High Yield CCC & Lower Rated Index = BofA ML US High Yield CCC & Lower Rated Index. US High Yield B Rated = BofAML US High Yield B Rated Index. BBB Rated = 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.

Credit Trends — Loans stood strong during the recent setback in credit and historical spread widening

YTD Cumulative Performance of Segments in the Credit Market



Average Monthly Return and Max Drawdown (Since February 1994)



Senior loans outperformed fixed rate high yield bonds during spread widening and the Fed hiking cycles

Source: Bloomberg Finance, L.P., as of November 30, 2018. CCC rated = BofA Merrill Lynch US High Yield CCC Rated Index. Broad High Yield = BofA Merrill Lynch US High Yield Bond Index. BB rated = BofA Merrill Lynch US High Yield BB Rated Index. Single B rated = BofA Merrill Lynch US High Yield B Rated Index. IG Corporate = Bloomberg Barclays US Corporate Index. Leveraged Loans = S&P/LSTA Leveraged Loan Index. Past performance is not a guarantee of future results. Index returns are unmanaged and do not reflect the deduction of any fees or expenses.

EM Debt — As EM currency stabilizes and concerns about US high yield credit emerged amid the oil selloff, EM local currency debt started catching up with HY

High Yield vs. EM Debt 1 Year Performance



Source: Bloomberg Finance, L.P., as of November 30, 2018. Past performance is not a guarantee of future results. Index returns are unmanaged and do not reflect the deduction of any fees or expenses.

Appendix A: Flow Summary

Fund Flow Summary

Asset Category

Equity Region	Prior Month (\$M)	Year to Date (\$M)	Trailing 12 Month (\$M)
US	18,361	125,473	153,560
Global	1,471	15,240	17,488
International-Developed	3,521	38,431	46,306
International-Emerging Markets	5,305	12,887	15,184
International-Region	113	-9,936	-9,514
International-Single Country	2,285	8,566	10,191
Currency Hedged	-842	-12,689	-13,811

US Size and Style

Broad Market	3,670	24,165	27,296
Large-Cap	10,057	38,688	45,045
Mid-Cap	2,020	10,472	12,715
Small-Cap	724	21,059	19,716
Growth	1,488	15,580	15,850
Value	5,197	19,597	23,782

Fixed Income Sectors

Aggregate	5,079	24,935	28,266
Government	8,974	39,415	41,883
Inflation Protected	-208	4,516	5,398
Mortgage-Backed	184	3,805	4,033
IG Corporate	-31	8,645	8,691
High Yield Corp.	-697	-7,062	-8,006
Bank Loans	-530	-120	-439
EM Bond	474	3,300	3,677
Preferred	-702	-1,949	-1,787
Convertible	29	393	340
Municipals	986	4,564	5,492

Government ETF Maturity Focus

Ultra Short	3,609	16,617	18,129
Short Term	4,299	15,450	15,950
Intermediate	1,208	5,800	6,167
Long Term (>10 yr)	-85	2,308	2,530

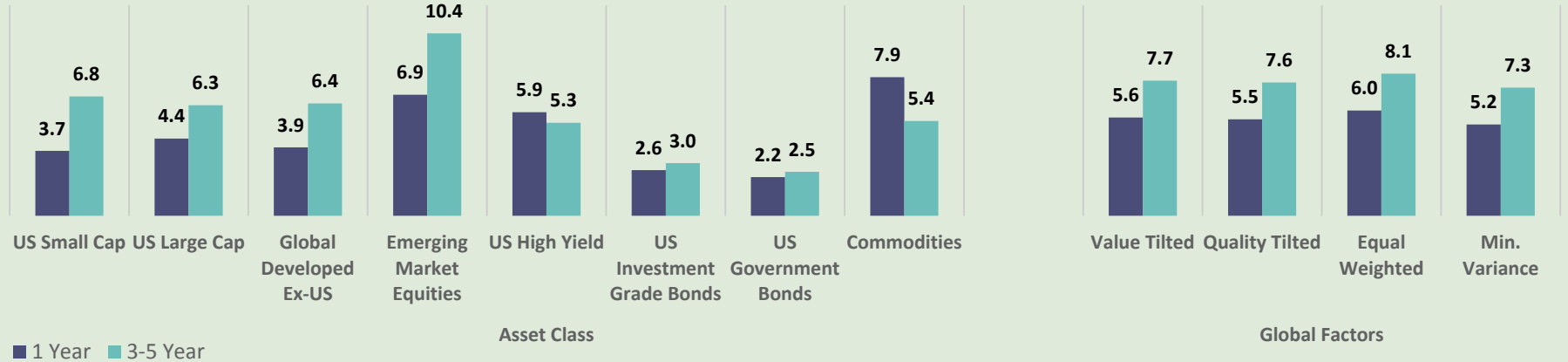
Source: State Street Global Advisors, Bloomberg Finance, L.P. As of November 30, 2018.

Sectors, asset classes and flows are as of the date indicated, are subject to change, and should not be relied upon as current thereafter.

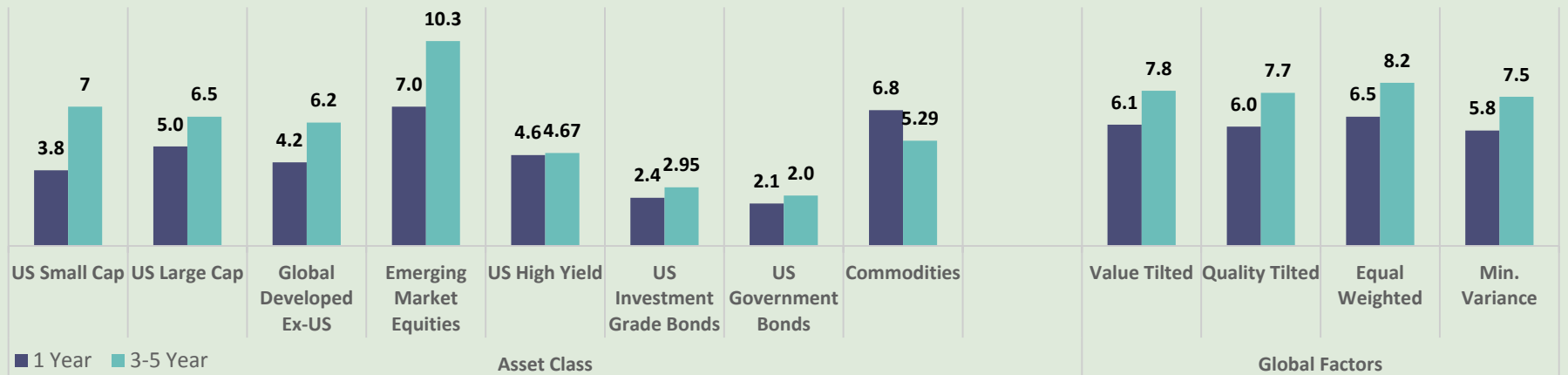
Appendix B: Asset Class Forecast

SSGA Asset Class Forecasts

Forecasted Return (%) as of June 30, 2018



Forecasted Return (%) as of September 30, 2018



Source: State Street Global Advisors (SSGA) Investment Solutions Group. The forecasted returns are based on SSGA's Investment Solutions Group's September 30, 2018 forecasted returns and long-term standard deviations. The forecasted performance data is reported on a gross of fees basis. Additional fees, such as the advisory fee, would reduce the return. For example, if an annualized gross return of 10% was achieved over a 5-year period and a management fee of 1% per year was charged and deducted annually, then the resulting return would be reduced from 61% to 54%. The performance includes the reinvestment of dividends and other corporate earnings and is calculated in the local (or regional) currency presented. It does not take into consideration currency effects. The forecasted performance is not necessarily indicative of future performance, which could differ substantially. Please reference Appendix B for the assumptions used by SSGA Investment Solutions Group to create asset class forecasts.

Asset Class Forecast Assumptions

Forecast Assumptions

For Fixed Income:

Our return forecasts for fixed income derive from current yield conditions together with expectations as to how real and nominal yield curves could evolve relative to historical averages. For corporate bonds, we also analyze credit spreads and their term structures, with separate assessments of investment-grade and high-yield bonds.

For Equities:

Our long-term equity forecasts begin with expectations for developed market large capitalization stocks. The foundation for these forecasts are estimates of real return potential, derived from current dividend yields, forecast real earnings growth rates, and potential for expansion or contraction of valuation multiples. Our forecasting method incorporates long run estimates of potential economic growth based on forecast labor and capital inputs to estimate real earning growth.

For Factor Returns:

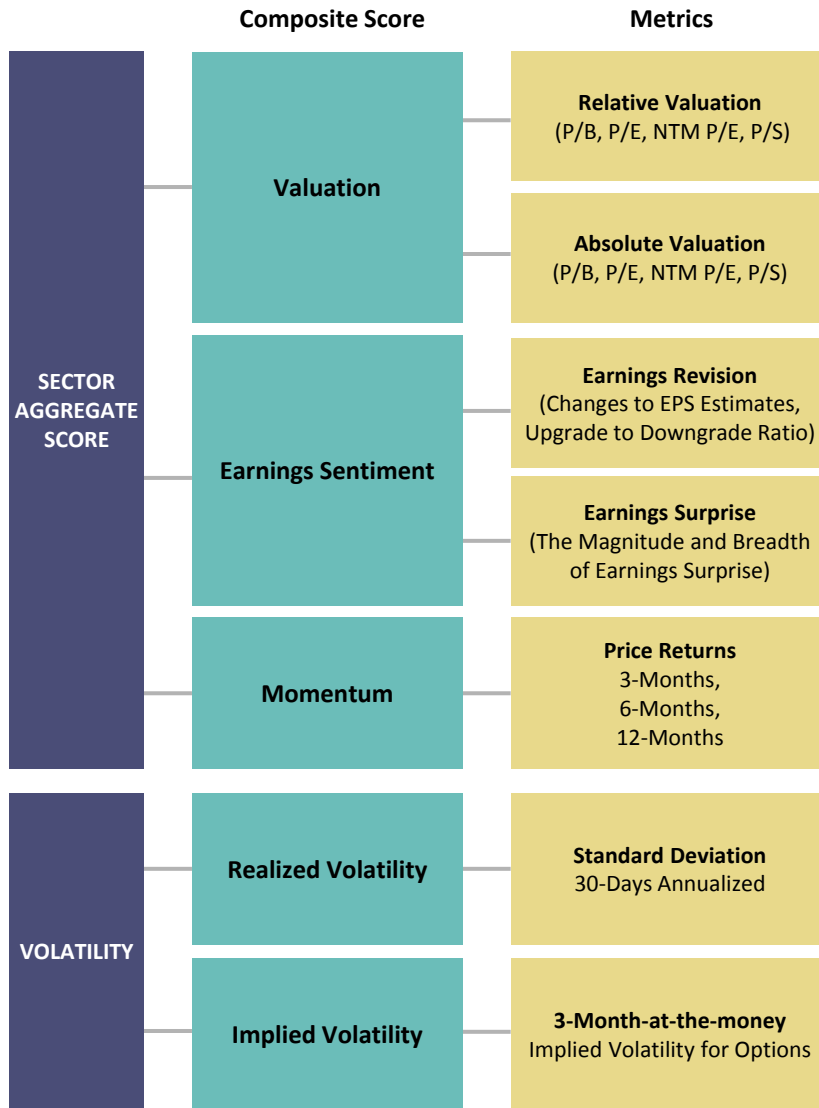
Over a one to three-year forecast horizon, we look to see how cheap each factor is relative to its own history. Specifically, we focus on book/price spreads for each factor and relate that to their subsequent returns. We find that valuation ratios are useful for forecasting market returns.

For Commodities:

Our long-term commodity forecast is based on the level of world GDP, as a proxy for consumption demand, as well as on our inflation outlook. Additional factors affecting the returns to a commodities investor include how commodities are held (e.g., physically, synthetically, or via futures) and the various construction methodologies of different commodity benchmarks.

Appendix C: SPDR Sector Scorecard

SPDR Sector Scorecard



The metrics shown are z-scores, which are calculated using the mean and standard deviation of the relevant metrics within S&P 500 sectors. Using Z-scores to standardize results across all sectors allows for easier relative assessment. Sectors with cheaper valuation, higher price momentum, higher sentiment and higher volatility will have higher z-scores.

We calculate a composite score by equally weighting each metric z-score in the same category.

The scorecard does not represent the investment views of State Street. Metrics used in the scorecard have not been backtested for any sector strategies by State Street. These are for illustrative and educational purposes as we seek to bring greater transparency to the sector investing landscape and the due diligence required to build sophisticated portfolios to meet specific client objectives.

Source: SPDR America Research.

Appendix D: Definitions

Definitions

S&P500 Index: A popular benchmark for US large-cap equities that includes 500 companies from leading industries and captures approximately 80% coverage of available market capitalization.

CBOE VIX Index: The Chicago Board Options Exchange (CBOE) Volatility Index shows the market's expectation of 30-day volatility. It is constructed using the implied volatilities of a wide range of S&P 500 index options.

Implied Volatility: A way of estimating volatility of a security's price based on a number of predictive variables. Implied volatility rises when the market is falling when investors believe that the asset's price will decline over time, and it falls when the market is rising when investors believe that the security's price will rise over time. This is due to the common belief that bearish markets are riskier than bullish markets.

MSCI Emerging Market Index: The MSCI Emerging Markets Index captures large and mid-cap representation across 23 emerging markets countries. With 834 constituents, the index covers approximately 85% of the free float-adjusted market capitalization in each country.

Russell 2000 Index: A benchmark that measures the performance of the small-cap segment of the US equity universe.

MSCI EAFE Index: An equities benchmark that captures large- and mid-cap representation across developed market countries around the world, excluding the US and Canada.

Bloomberg U.S. High Yield Index: The Bloomberg USD High Yield Corporate Bond Index is a rules-based, market-value weighted index engineered to measure publicly issued non-investment grade USD fixed-rate, taxable, corporate bonds. To be included in the index a security must have a minimum par amount of 250MM.

Bloomberg Barclays U.S. 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 U.S. 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. To be included in the index a security must have a minimum par amount of 1,000MM.

Bloomberg Commodity Index: Bloomberg Commodity Index (BCOM) is calculated on an excess return basis and reflects commodity futures price movements. The index rebalances annually weighted 2/3 by trading volume and 1/3 by world production and weight-caps are applied at the commodity, sector and group level for diversification.

MSCI Europe Index: The MSCI Europe Index is a free-float weighted equity index designed to measure the equity market performance of the developed markets in Europe.

Euro STOXX 50 Index: Europe's leading blue-chip index for the Eurozone, provides a blue-chip representation of super-sector leaders in the Eurozone. The index covers 50 stocks from 12 Eurozone countries.

MSCI Japan Index: The MSCI Japan Index is a free-float weighted equity index designed to measure the equity market performance of the developed markets in Japan.

Bloomberg Dollar Spot Index: The Bloomberg Dollar Spot Index tracks the performance of a basket of ten leading global currencies versus the US Dollar. Each currency in the basket and their weight is determined annually based on their share of international trade and FX liquidity.

Bloomberg Barclays Global Aggregate Bond Index: A benchmark that provides a broad-based measure of the global investment-grade fixed income markets. The three major components of this index are the US Aggregate, the Pan-European Aggregate, and the Asian-Pacific Aggregate Indices. The index also includes Eurodollar and Euro-Yen corporate bonds, Canadian government, agency and corporate securities, and USD investment-grade 144A securities.

State Street Confidence Indexes: Measures investor confidence or risk appetite quantitatively by analyzing the actual buying and selling patterns of institutional investors. The index assigns a precise meaning to changes in investor risk appetite: the greater the percentage allocation to equities, the higher risk appetite or confidence. A reading of 100 is neutral; it is the level at which investors are neither increasing nor decreasing their long-term allocations to risky assets. The results shown represent current results generated by State Street Investor Confidence Index. The results shown were achieved by means of a mathematical formula in addition to transactional market data, and are not indicative of actual future results which could differ substantially.

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.

Definitions

MSCI USA Index: The MSCI World Index, which is part of The Modern Index Strategy, is a broad global equity benchmark that represents large and mid-cap equity performance across 23 developed markets countries. It covers approximately 85% of the free float-adjusted market capitalization in each country and MSCI World benchmark does not offer exposure to emerging markets.

MSCI USA Minimum Volatility Index: The MSCI USA Minimum Volatility (USD) Index aims to reflect the performance characteristics of a minimum variance strategy applied to the MSCI large and mid cap equity universe. The index is calculated by optimizing the MSCI USA Index, its parent index, for the lowest absolute risk (within a given set of constraints). Historically, the index has shown lower beta and volatility characteristics relative to the MSCI World Index.

MSCI USA Enhanced Value Weighted Index: The MSCI USA Enhanced Value Weighted Index captures large and mid-cap representation across the US equity markets exhibiting overall value style characteristics. The index is designed to represent the performance of securities that exhibit higher value characteristics relative to their peers within the corresponding GICS® sector.

MSCI USA Quality Index: The MSCI USA Quality Index is based on MSCI USA, its parent index. The index aims to capture the performance of quality growth stocks by identifying stocks with high quality scores based on three main fundamental variables: high return on equity (ROE), stable year-over-year earnings growth and low financial leverage.

MSCI USA Equal Weighted Index: The MSCI USA Equal Weighted Index represents an alternative weighting scheme to its market cap weighted parent index, the MSCI USA Index. At each quarterly rebalance date, all index constituents are weighted equally, effectively removing the influence of each constituent's current price (high or low).

MSCI USA High Dividend Yield Index: The MSCI World High Dividend Yield Index is based on the MSCI USA Index, its parent index, and includes large and mid cap stocks. The index is designed to reflect the performance of equities in the parent index (excluding REITs) with higher dividend income and quality characteristics than average dividend yields that are both sustainable and persistent. The index also applies quality screens and reviews 12-month past performance to omit stocks with potentially deteriorating fundamentals that could force them to cut or reduce dividends.

Price-to-book ratio (P/B Ratio): The price-to-book ratio (P/B Ratio) is a ratio used to compare a stock's market value to its book value. It is calculated by dividing the current closing price of the stock by the latest quarter's book value per share. Also known as the "price-equity ratio."

Price-earnings ratio (P/E Ratio): The price-earnings ratio (P/E Ratio) is the ratio for valuing a company that measures its current share price relative to its per-share earnings. The price-earnings ratio can be calculated as: Market Value per Share/Earnings per Share.

Russell 1000 Growth Index: The index is a style index designed to track the performance of stocks that exhibit the strongest growth characteristics by using a style-attractiveness-weighting scheme.

Russell 1000 Value Index: The index is a style-concentrated index designed to track the performance of stocks that exhibit the strongest value characteristics by using a style-attractiveness-weighting scheme.

Russell 1000 Defensive Index and Russell 1000 Dynamic Index: The index measures a portion of the market based on the sensitivity to economic cycles, credit cycles, and market volatility, referred to as stability. Stability is measured at the company level in terms of volatility (price and earnings), leverage, and return on assets. The more stable half of the index is called the Defensive Index® and the less stable half is called the Dynamic Index®.

Z-score: It indicates how many standard deviations an element is from the mean. A z-score can be calculated from the following formula. $z = (X - \mu) / \sigma$ where z is the z-score, X is the sector relative performance, μ is the mean of the eleven sector relative performance, and σ is the standard deviation of sectors' relative performance.

Implied Volatility: The estimated volatility of a security's price. In general, implied volatility increases when the market is bearish and decreases when the market is bullish. This is due to the common belief that bearish markets are more risky than bullish markets.

Minimum Volatility Factor: A category of stocks that are characterized by relatively less movement in share price than many other equities.

Quality Factor: One of the six widely recognized, research-based smart beta factors that refers to "quality" equities. Companies whose stocks qualify exhibit consistent profitability, stability of earnings, low financial leverage and other characteristics consistent with long-term reliability such as ethical corporate governance.

Size Factor: A smart beta factor based on the tendency of small-cap stocks to outperform their large-cap peers over long time periods.

Yield Factor: A factor which screens for companies with a higher than average dividend yield relative to the broad market, and which have demonstrated dividend sustainability and persistence.

Momentum Factor: The tendency for a security to maintain a certain direction of price trajectory. This tendency is well documented in academic research, which has made "momentum" one of the six smart beta factors that are systematically being isolated in new-generation strategic indexes.

Value Factor: One of the basic elements of "style"-focused investing that focuses on companies that may be priced below intrinsic value. The most commonly used methodology to assess value is by examining price-to-book (P/B) ratios, which compare a company's total market value with its assessed book value.

Definitions

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.

Excess Returns: A security's return minus the return from another security in the same time period.

Current Short Interest (%): The percentage of tradable outstanding shares which have been shorted. Used as a measure of investor sentiment.

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

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

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.

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

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

Bloomberg Barclays U.S. Corporate High Yield Index: The index consists of fixed rate, high yield, USD-denominated, taxable securities issued by US corporate issuers.

Bloomberg Barclays EM USD Aggregate Index: The index is a hard currency emerging markets debt benchmark that includes US dollar-denominated debt from sovereign, quasi-sovereign, and corporate issuers in the developing markets.

Bloomberg Barclays U.S. 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, supnationals and local authorities.

The Global Industry Classification Standard (GICS): An industry taxonomy developed in 1999 by MSCI and Standard & Poor's (S&P) for use by the global financial community. The GICS structure consists of 10 sectors, 24 industry groups, 67 industries and 156 sub-industries [1] into which S&P has categorized all major public companies.

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.

S&P 500 Health Care Sector Index: The Index comprises of those companies included in the S&P 500 that are classified as members of the GICS® health care sector.

S&P 500 Consumer Discretionary Index: The Index comprises of those companies included in the S&P 500 that are classified as members of the GICS® consumer discretionary sector.

S&P 500 Consumer Staples Index: The Index comprises of those companies included in the S&P 500 that are classified as members of the GICS® consumer staples sector.

S&P 500 Financial Sector Index: The Index comprises of those companies included in the S&P 500 that are classified as members of the GICS® financial sector.

S&P 500 Utilities Index: The Index comprises of those companies included in the S&P 500 that are classified as members of the GICS® utilities sector.

S&P500 Information Technology Sector Index: The Index comprises of those companies included in the S&P 500 that are classified as members of the GICS® information technology sector.

S&P 500 Industrial Sector Index: The Index comprises of those companies included in the S&P 500 that are classified as members of the GICS® industrial sector.

S&P 500 Materials Sector Index: The Index comprises of those companies included in the S&P 500 that are classified as members of the GICS® materials sector.

S&P 500 Real Estate Sector Index: The Index comprises of those companies included in the S&P 500 that are classified as members of the GICS® real estate sector.

S&P 500 Communication Services Sector Index: The Index comprises of those companies included in the S&P 500 that are classified as members of the GICS® Communication Services sector.

Breakeven Inflation Rate: It is a market based measure of expected inflation. It is the difference between the yield of a nominal bond and an inflation linked bond of the same maturity.

Appendix D: Important Disclosures

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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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.

Investments in **small-sized companies** may involve greater risks than in those of larger, better known companies.

Investments in **mid-sized companies** may involve greater risks than in those of larger, better known companies, but may be less volatile than investments in smaller companies.

Companies with **large market capitalizations** go in and out of favor based on market and economic conditions. Larger companies tend to be less volatile than companies with smaller market capitalizations. In exchange for this potentially lower risk, the value of the security may not rise as much as companies with smaller market capitalizations.

Value stocks can perform differently from the market as a whole. They can remain undervalued by the market for long periods of time.

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.

Asset Allocation is a method of diversification which positions assets among major investment categories. Asset Allocation may be used in an effort to manage risk and enhance returns. It does not, however, guarantee a profit or protect against loss.

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