SPDR® ETFs Chart Pack

Key Charts to Help Navigate the Market

2020 Outlook Edition

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

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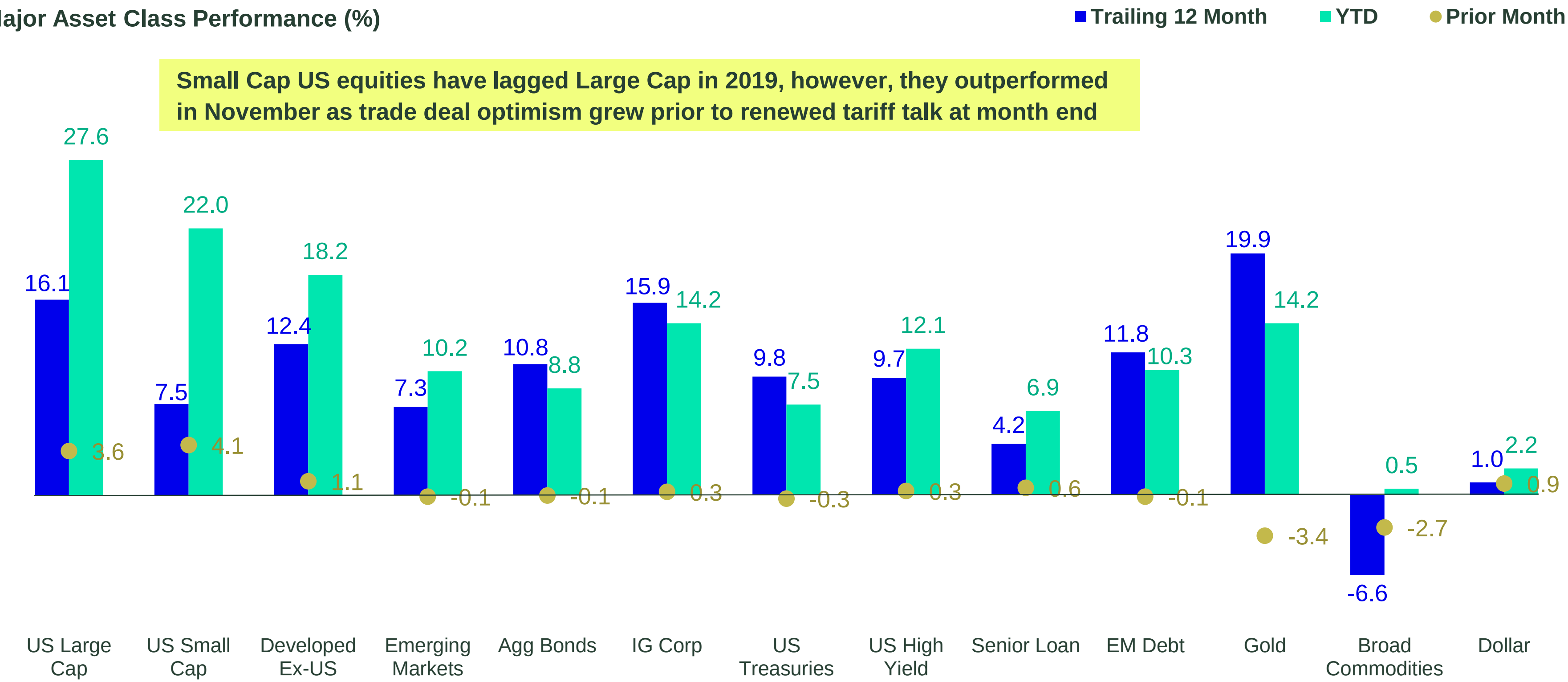
1. Market Environment

Asset Class Performance

The S&P 500 posted its best November since 2016 and is on track to have its best year since 2013. Aggregate Bonds are on track for their best year since 2011.

Major Asset Class Performance (%)

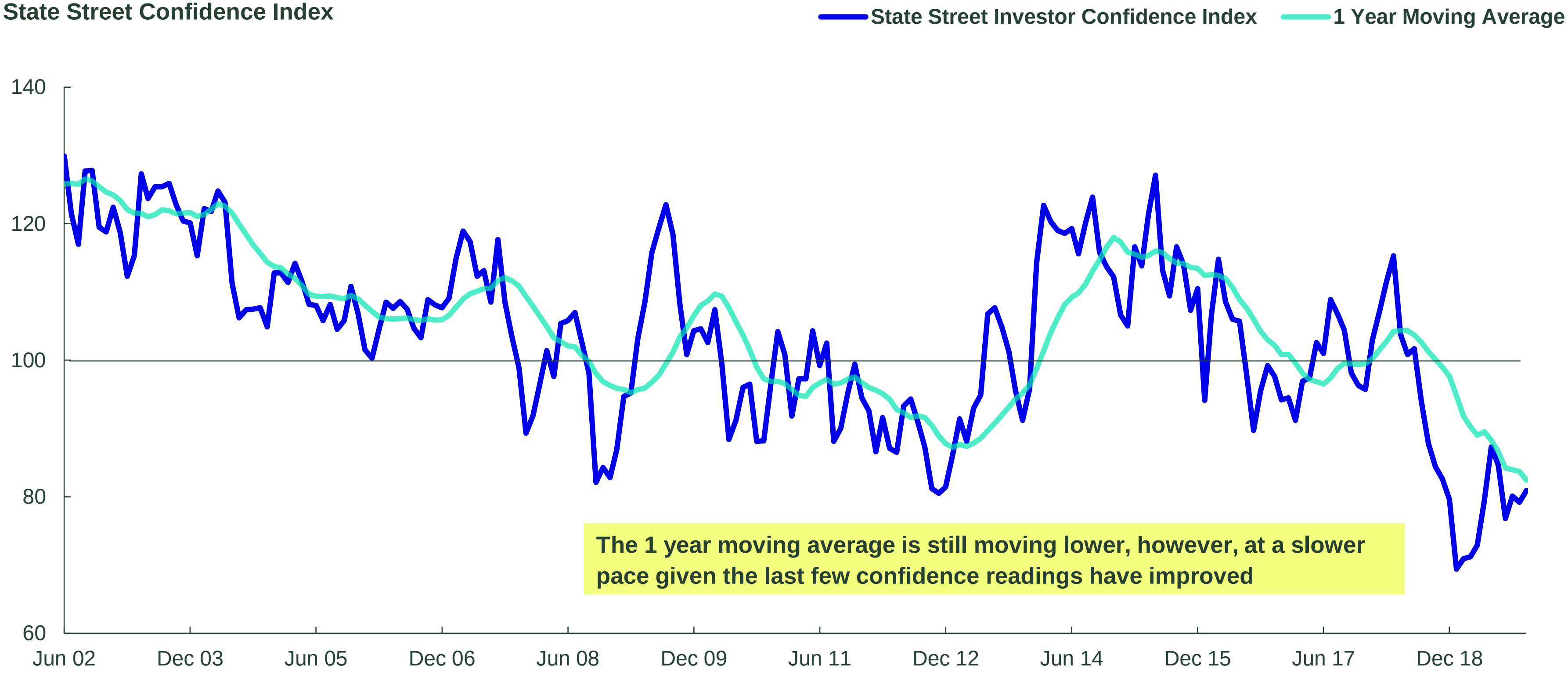


Source: Bloomberg Finance, L.P. as of November 30, 2019. **Past performance is not a guarantee of future results**. Index returns are unmanaged and do not reflect the deduction of any fees or expenses. Index returns reflect all items of income, gain and loss and the reinvestment of dividends and other income. Performance returns for periods of less than one year are not annualized. US Large Cap: S&P 500 Index; US Small Cap: Russell 2000 Index; Developed Ex-US: MSCI EAFE Index; Agg Bonds: Bloomberg Barclays US Aggregate Index; IG Corp: Bloomberg Barclays US Corporate Index, Treasuries: Bloomberg Barclays US Treasury Index; High Yield: Bloomberg Barclays US Corporate High Yield Index; Senior Loans: S&P LSTA Leveraged Loan Index; EM Debt: Bloomberg Barclays EM Hard Currency Debt Index; Gold: LBMA Gold Price: Broad Commodities: Bloomberg Commodity Index; US Dollar: DXY Dollar Index

Investor Confidence

Investor confidence inched higher in November, but still remains well below the neutral 100 level, consistent with the streak of cautionary behavior since late 2018.

State Street Confidence Index



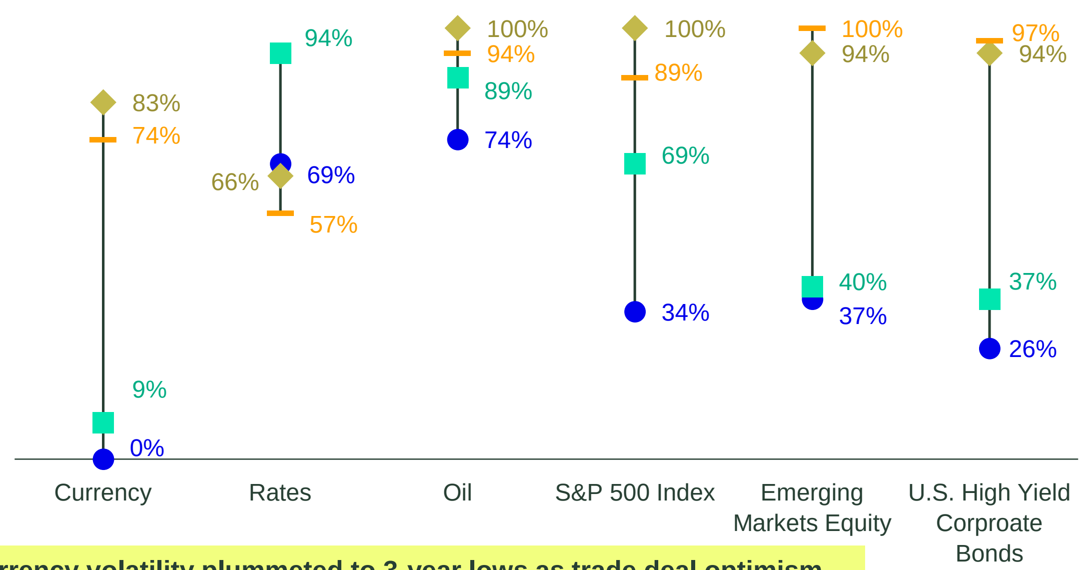
Source: Bloomberg Finance, L.P. as of November 30, 2019. State Street Confidence Indexes Measures investor confidence or risk appetite quantitatively by analyzing the actual buying and selling patterns of institutional investors. The index assigns a precise meaning to changes in investor risk appetite: 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

Implied volatility fell across all asset class segments last month. And with the exception of rates, all segments are below levels from the start of the year.

Cross-Asset Implied Volatility

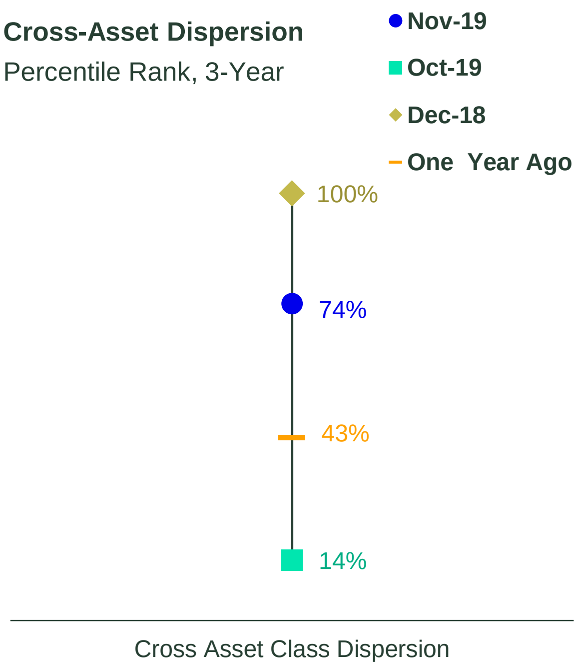
Percentile Rank of Daily Average, 3-Year



Currency volatility plummeted to 3-year lows as trade deal optimism grew. This is likely to revert based on end of month tariff talk.

Cross-Asset Dispersion

Percentile Rank, 3-Year



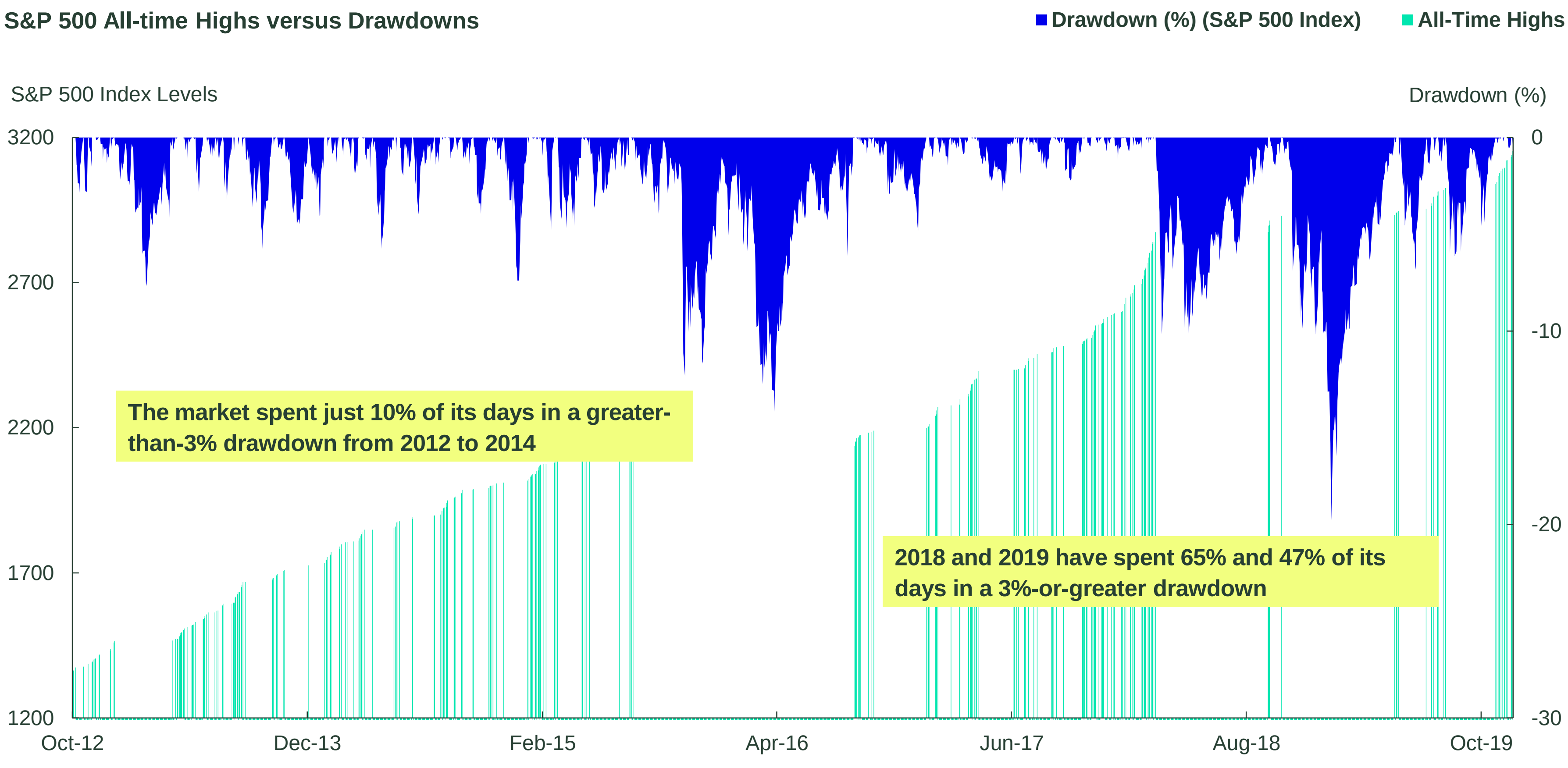
Dispersion spiked due to diverging performance between commodities and equities

Source: Bloomberg Finance, L.P. as of November 30, 2019. **Past performance is not a guarantee of future results.** 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. Cross asset dispersion is measured by standard deviation of monthly returns of S&P 500, Russell 2000, Russell 3000 Growth, Russell 3000 Value, MSCI Emerging Markets, MSCI World ex-USA, Bloomberg Barclays US Aggregate, US Corporate High Yield, EM USD Aggregate, EM Local Currency Government, S&P/LSTA US Leveraged Loan 100, Bloomberg Commodity Indices, LBMA Gold Price PM.

The Volatility Regime Has Changed

Despite low volatility and all time market highs, microbursts of volatility have become more common in recent years, with drawdowns more frequent and severe.

S&P 500 All-time Highs versus Drawdowns



Source: Bloomberg Finance, L.P. as of November 30, 2019. **Past performance is not a guarantee of future results.**

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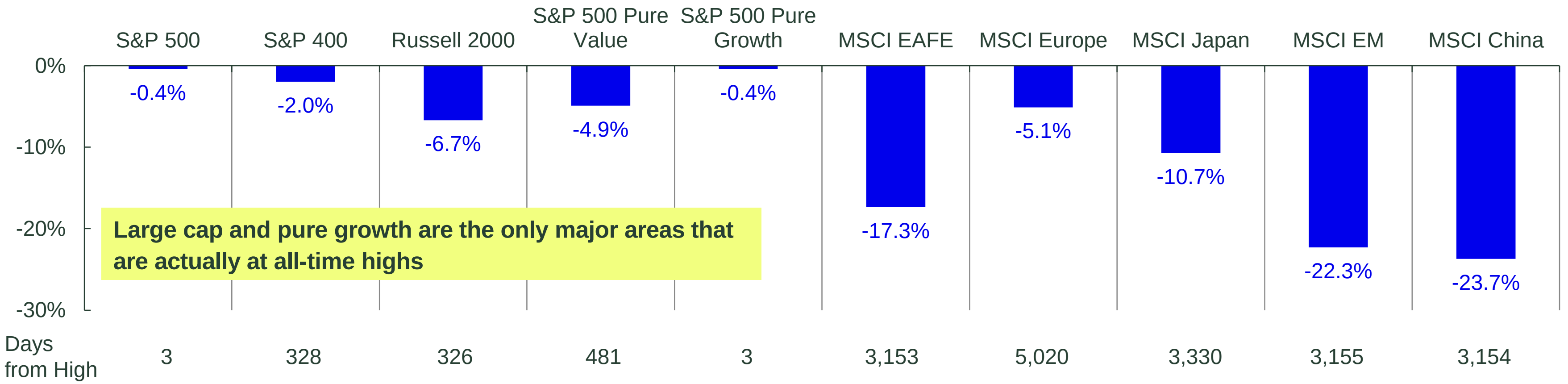
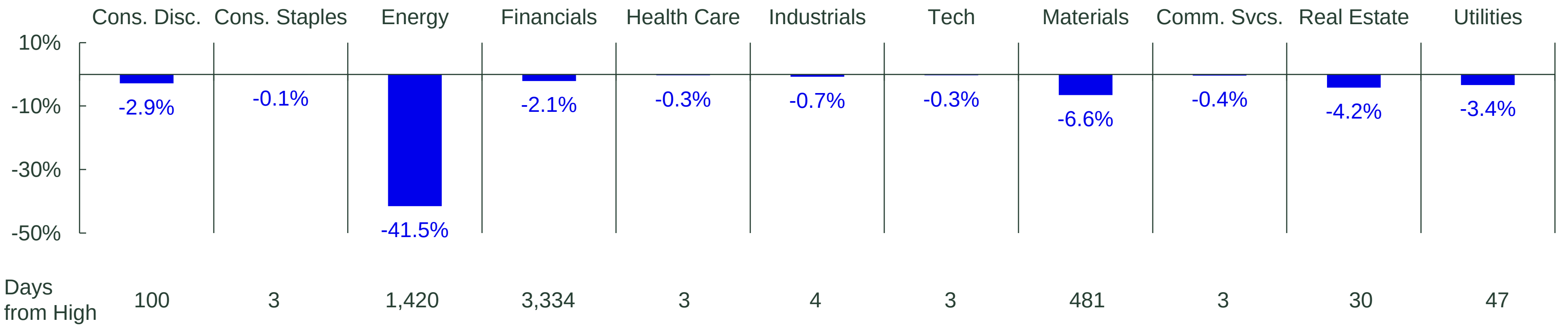
All-time Highs for Some – Not All

US Large Cap equities are pulling the rest of the developed market higher, as regions outside the US are still well below all-time highs.

% Below All-Time High





Source: Bloomberg Finance, L.P. as of November 30, 2019

2. Flows, Fundamentals & Factors

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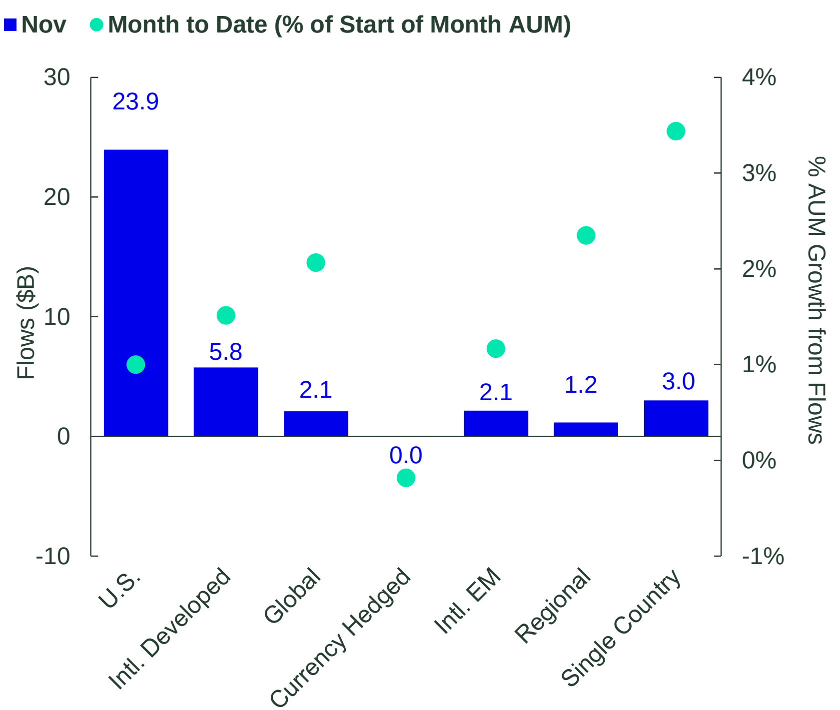
Flow Trends

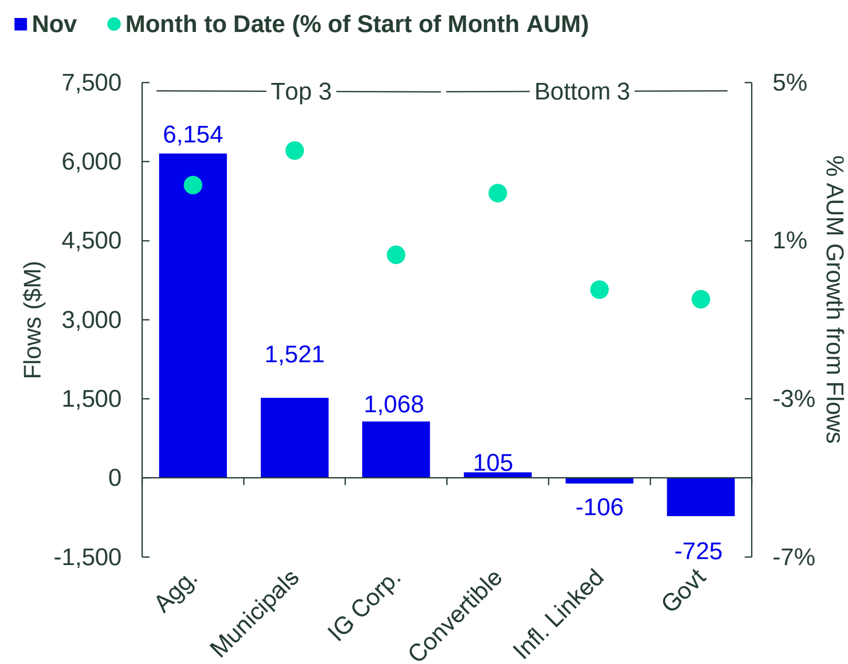
US equity ETFs took in the most flows on the month in terms of notional size, however, flows outside the US were higher relative to those markets asset base.

Flows by Equity Regions



Single country exposures took in the most flows on a % of assets perspective

Fixed Income Top and Bottom 3 Sectors by Flows



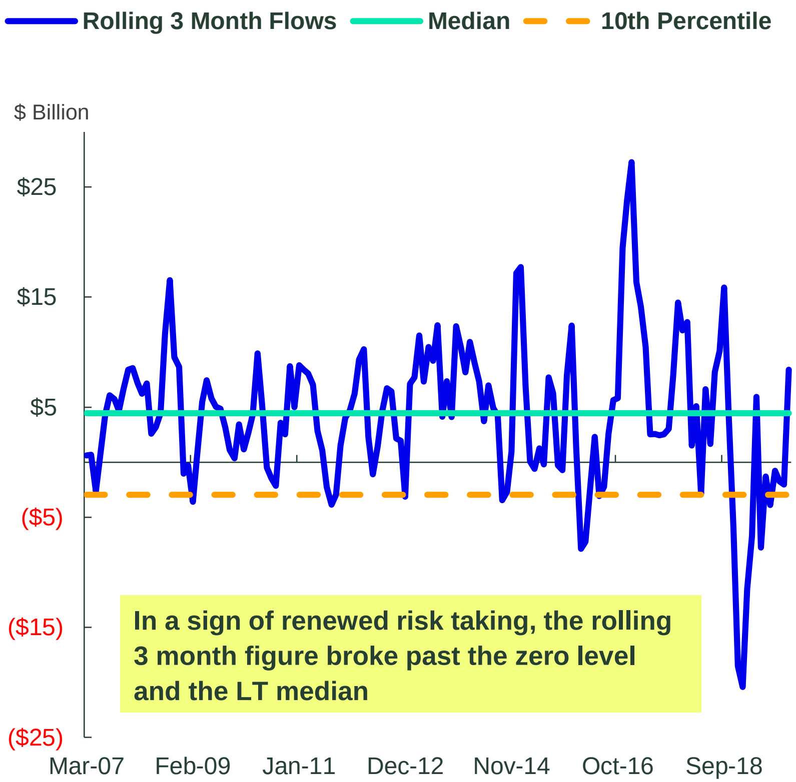
Agg core bond funds had sizeable inflows. 28% of these flows went into active strategies

Source: State Street Global Advisors, Bloomberg Finance, L.P. As of November 30, 2019. Sectors, asset classes and flows are as of the date indicated, are subject to change, and should not be relied upon as current thereafter. All figures are in USD.

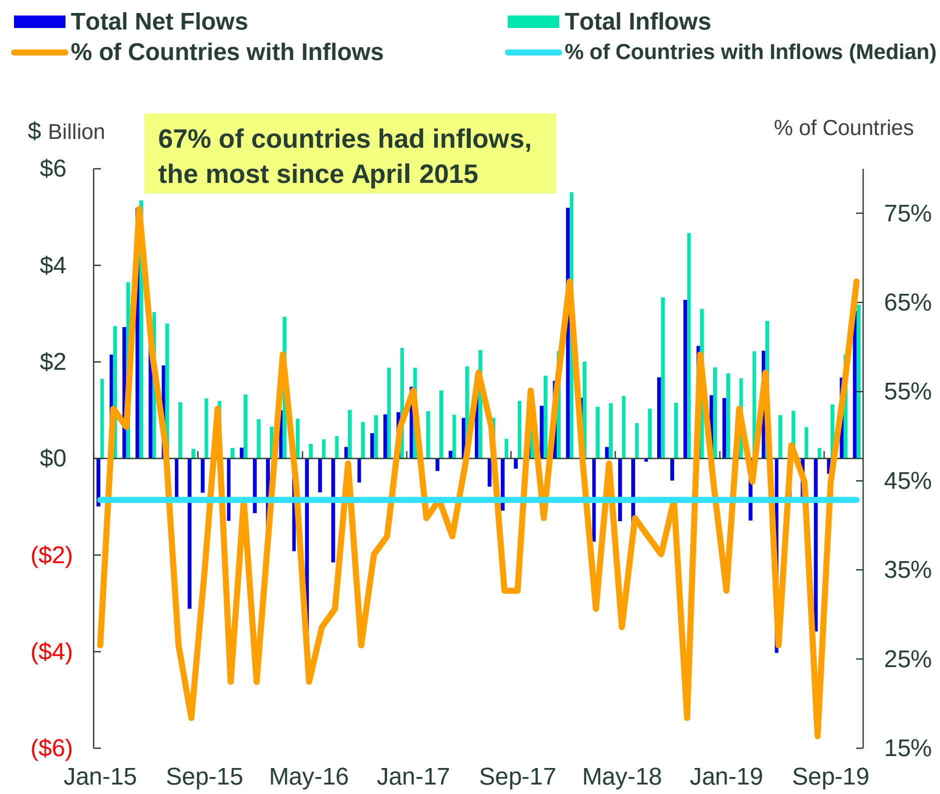
Flow Trends (continued)

Given the risk-on mood, single country ETFs with 2 months of net inflows, have rebounded from 5 consecutive months of outflows and below-average gross inflows.

Rolling Three Month Sector Flows



Single Country Flow Trends

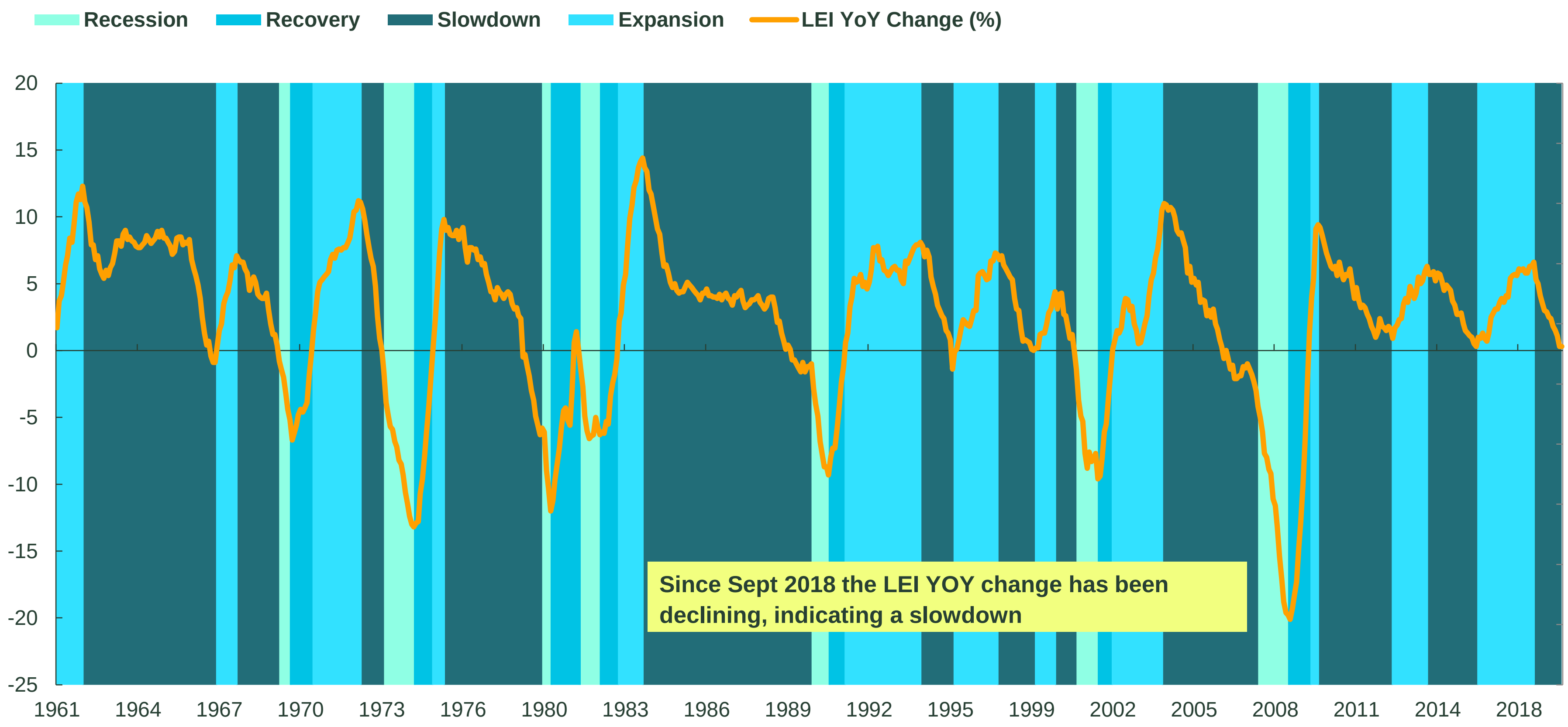


Source: State Street Global Advisors, Bloomberg Finance, L.P. As of November 30, 2019. Sectors, asset classes and flows are as of the date indicated, are subject to change, and should not be relied upon as current thereafter. All figures are in USD.

US Economy

Because governments and central banks are firmly committed to keeping the party going, a US recession is unlikely — but data still indicates an economic slowdown.

Conference Board US Leading Index Ten Economic Indicators YoY Change (%)

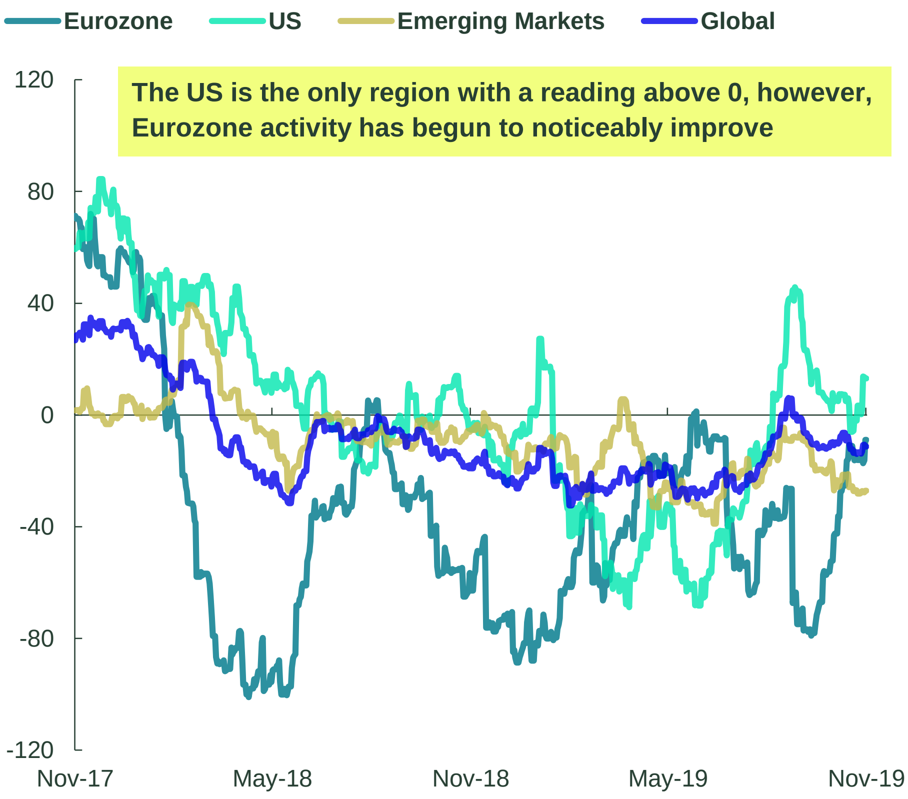


Source: Bloomberg Finance, L.P. as of November 30, 2019.

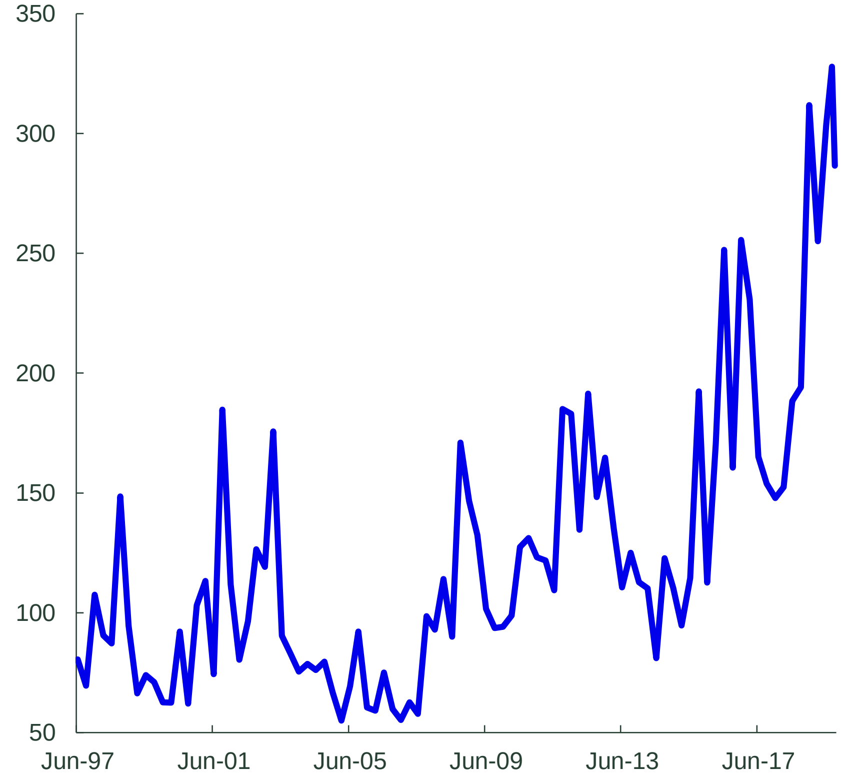
Global Economy

Global economic momentum remains weak, evidenced by data still not significantly surprising to the upside. Meanwhile, uncertainty persists with respect to policy matters.

Citigroup Economic Surprise Indices



Global Policy Uncertainty Index



Source: Bloomberg Finance, L.P. as of November 30, 2019. **Past performance is not a guarantee of future results.**

Global Valuation

US large-caps screen as expensive relative to their own history, while UK equities sport attractive absolute and relative valuations.

Absolute & Relative Valuation Z-Score* and 15-Year Percentile Ranking — Bottom 3 Expensive Valuation — Top 3 Attractive Valuation

	Valuation to Region History (Percentile)				Absolute Valuation Composite Z-Score	Valuation Relative to S&P 500 (Percentile)				Valuation Relative to S&P 500 Composite Z-Score
	P/E	NTM P/E	P/B	P/S		P/E	NTM P/E	P/B	P/S	
S&P 500 Index	13%	3%	1%	1%	-1.21	N/A	N/A	N/A	N/A	N/A
S&P MidCap 400 Index	41%	20%	54%	16%	0.15	89%	93%	99%	97%	0.58
Russell 2000 Index	2%	12%	53%	42%	-0.16	7%	87%	98%	98%	-0.16
S&P 500 Value Index	23%	16%	1%	2%	-0.83	88%	93%	68%	95%	0.10
S&P 500 Growth Index	5%	0%	12%	0%	-1.24	13%	6%	42%	6%	-2.62
MSCI World ex-US Index	46%	22%	44%	18%	0.16	89%	94%	96%	98%	0.56
MSCI UK Index	60%	30%	88%	63%	1.47	89%	98%	100%	100%	0.68
MSCI EM Index	36%	15%	57%	33%	0.24	86%	62%	97%	97%	0.21
MSCI Japan Index	69%	51%	50%	29%	1.13	87%	83%	97%	91%	0.38
Euro Stoxx Index	43%	9%	36%	1%	-0.35	86%	70%	98%	70%	0.05
MSCI Germany Index	31%	3%	58%	8%	-0.30	85%	69%	98%	89%	0.21
MSCI China Index	38%	45%	56%	51%	0.96	55%	80%	92%	93%	0.02

Developed Ex-US stocks are slightly more attractive on a relative basis to the US than emerging markets

Source: State Street Global Advisors, FactSet, as of November 30, 2019. * 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 percentile, and σ is the standard deviation of sectors' valuation percentile.

Global Momentum

Near term momentum favors Japan as well as some European nations, meanwhile the US has a high combined rank as it’s persistence across various metrics is strong.

Momentum Scorecard Rankings Bottom 3 Rank on Momentum Top 3 Rank on Momentum

		Absolute Momentum			Relative Momentum			Continuous Momentum		
		3-1 Momentum	6-1 Momentum	12-1 Momentum	% above 50 Day Moving Average	% above 200 Day Moving Average	% Difference 50 to 200 Day Moving Average	# of Positive Return Days (3 month lookback)	# of Positive Return Days (6 month lookback)	Combined Average Rank
Regions	US Large Cap	8	6	4	4	4	6	5	2	4.9
	US Mid Cap	12	11	12	8	11	9	9	6	9.8
	US Small Cap	14	12	15	3	9	12	11	10	10.8
	Developed Ex-US	6	8	11	7	8	8	2	5	6.9
	Emerging Markets	10	14	9	11	14	14	7	15	11.8
Major Countries	Australia	15	5	5	14	10	7	1	1	7.3
	Canada	11	9	10	9	12	10	9	12	10.3
	Japan	1	4	13	1	1	2	14	14	6.3
	Switzerland	7	2	2	10	5	5	2	3	4.5
	Germany	3	10	14	5	3	4	6	6	6.4
	France	4	7	7	15	6	3	2	3	5.9
	UK	9	15	16	16	16	15	11	6	13.0
	China	13	16	6	6	15	16	7	9	11.0
	Russia	2	1	1	13	2	1	11	12	5.4
	Brazil	16	3	8	12	13	13	14	11	11.3
	India	5	13	3	2	7	11	16	16	9.1

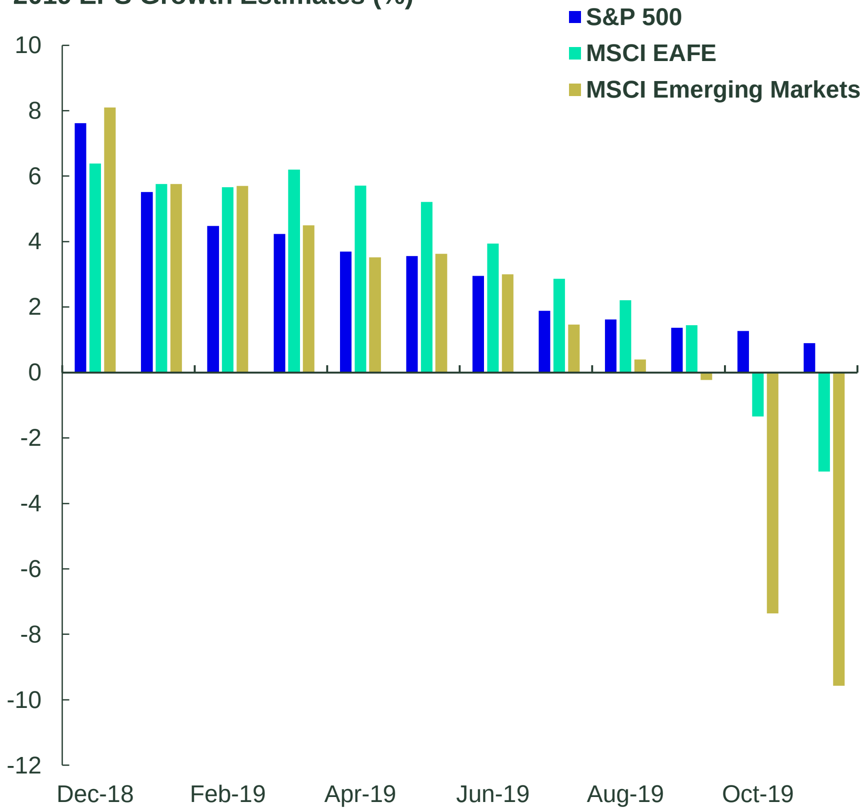
At odds with broader EM, Russia has a high momentum rank — propelled by strong returns from the Energy sector this year (at odds with US energy sector performance)

Source: State Street Global Advisors, FactSet, as of November 30, 2019. * 3-1 momentum looks at the most recent three months return minus the most recent month, 6-1 looks at the most recent six months return minus the most recent months, 12- 1 looks at the most recent 12 months return minus the most recent

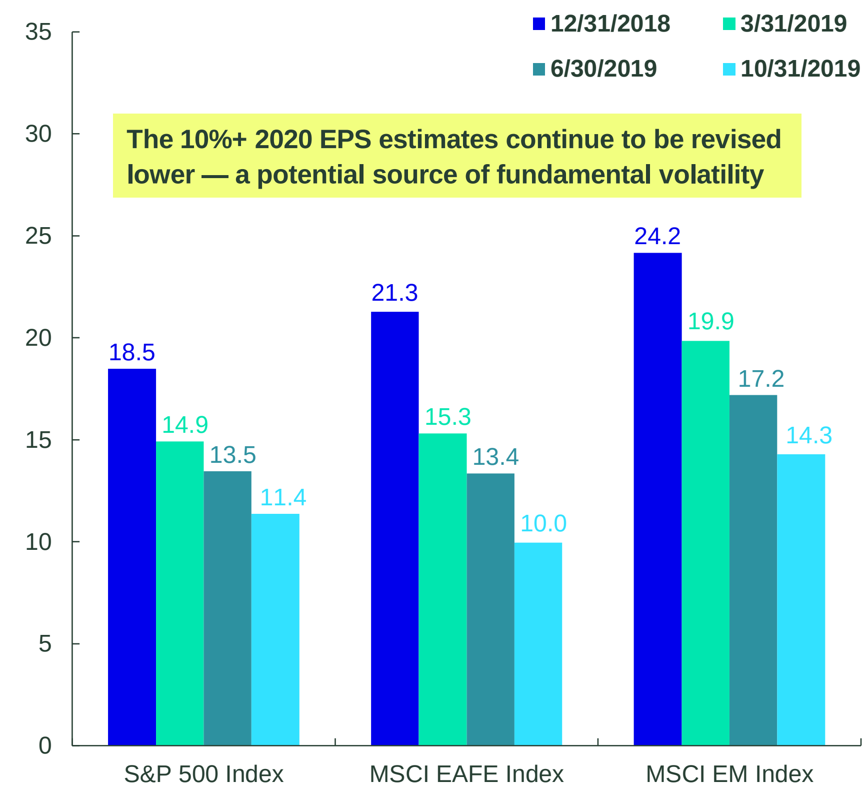
Global Earnings

EPS growth estimates continue to dwindle world wide, while EM also faces the largest EPS revisions in the past two months.

2019 EPS Growth Estimates (%)



2020 EPS Estimates (%)

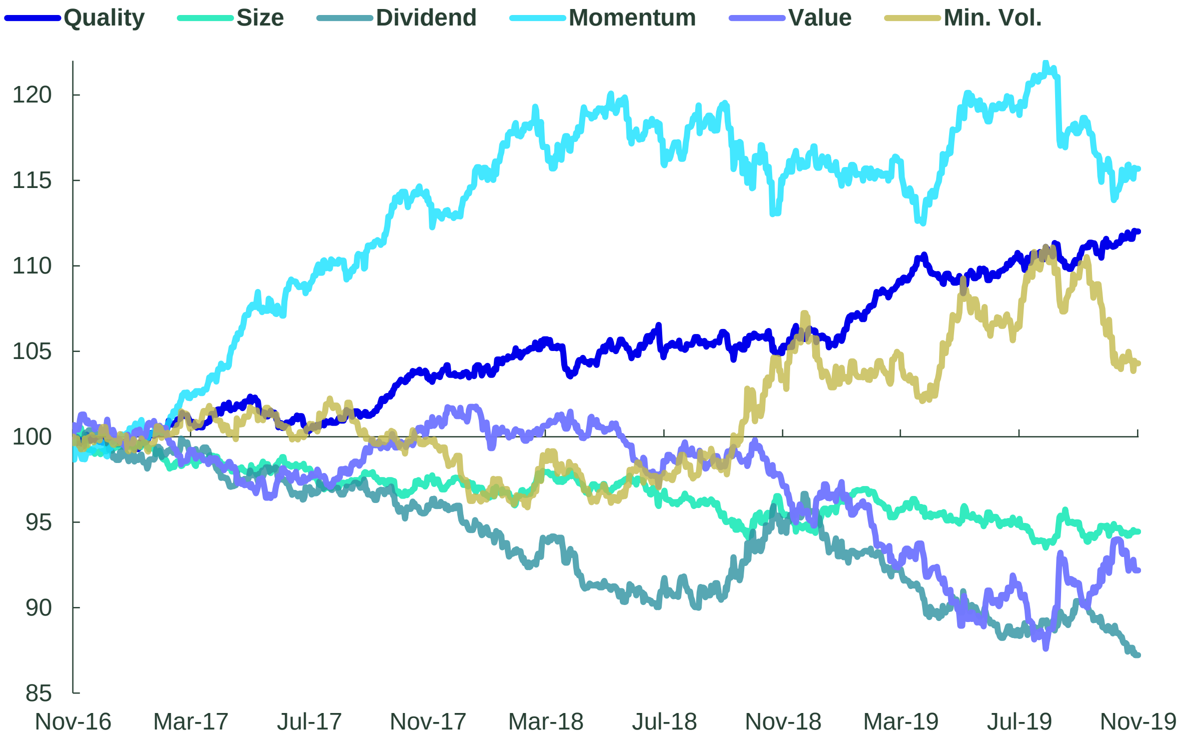


Source: Bloomberg Finance L.P. FactSet, as of November 30, 2019. Characteristics are as of the date indicated, are subject to change, and should not be relied upon as current thereafter. EPS growth estimates are based on Consensus Analyst Estimates compiled by FactSet.

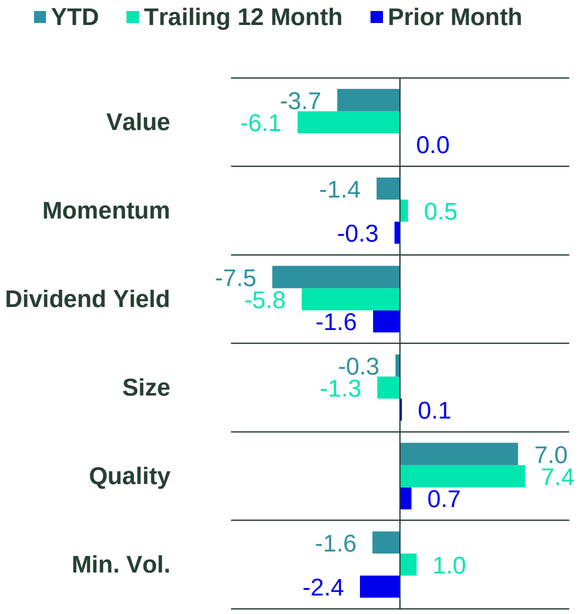
US Factor Trends

Quality stocks continue to outperform in 2019, registering another month of positive excess returns – their ninth over the past year.

MSCI USA Factor Index versus MSCI USA Index (3 Years)
Base = 100



Period Excess Returns versus MSCI USA Index (%)



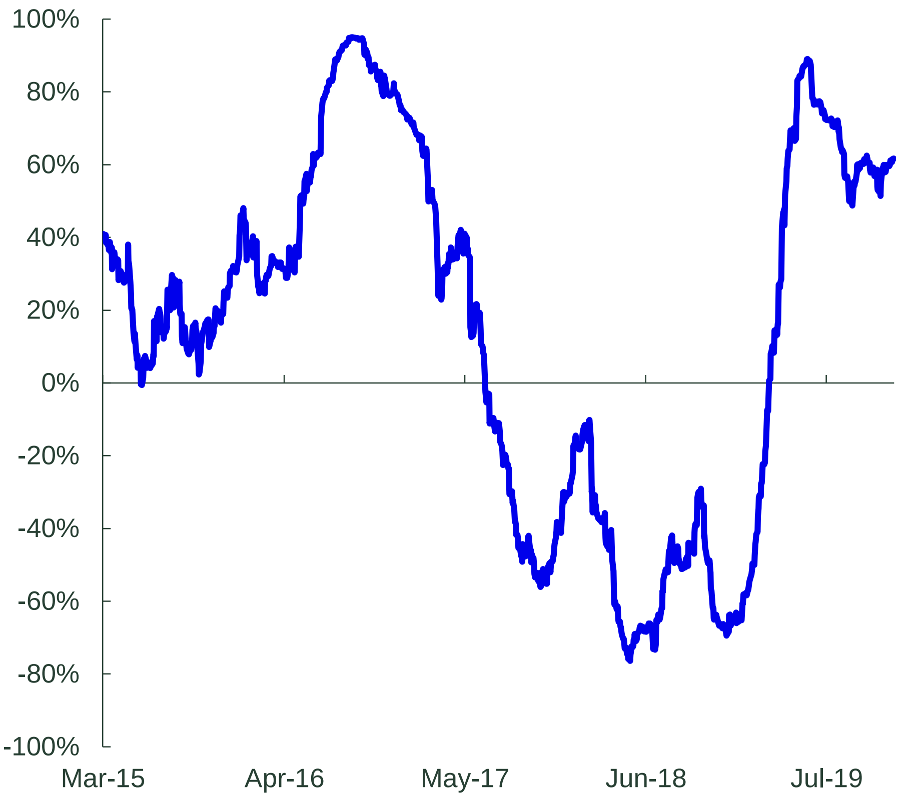
Value, Quality, and Size were the only factors to outperform this past month

Source: Bloomberg Finance, L.P. As of November 30, 2019. **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 to represent Min. Vol., Value, Quality, Size, Dividend, 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.

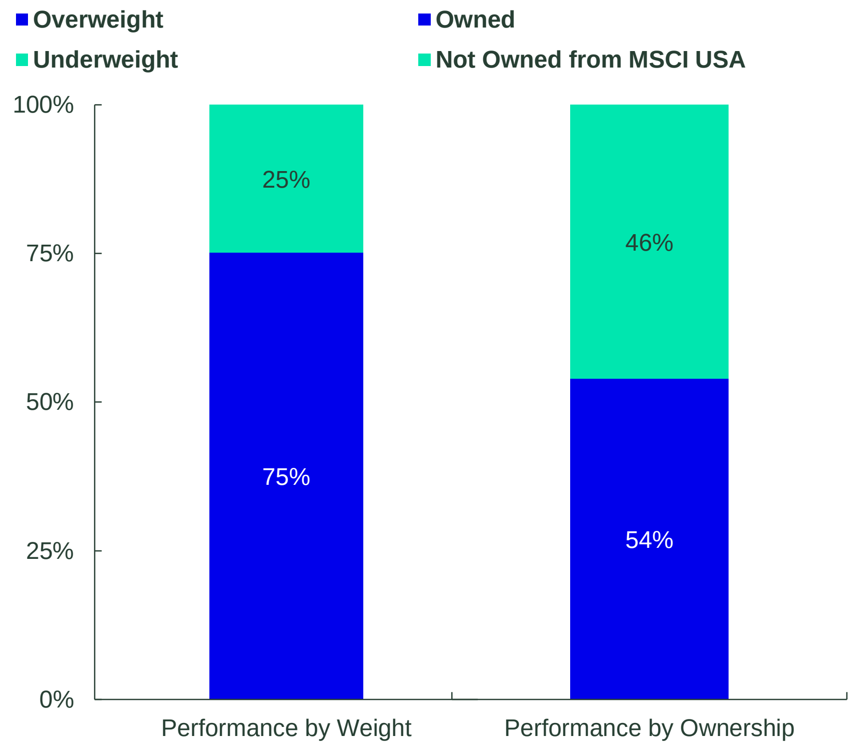
US Factor Trends (continued)

As low volatility stocks were some of the best performers at the start of the year rebalance, momentum and min. vol. performance have been tightly correlated.

Min Vol. and Momentum Daily Excess Return Correlations
Rolling 90 Day



MSCI Quality Index Attribution versus MSCI USA Index
Year to Date Contribution to Performance (%)



Quality performance has been driven by its relative overweights

Source: Bloomberg Finance, L.P. As of November 30, 2019. **Past performance is not a guarantee of future results.**

3. Sectors

Sector Flows & Returns

Cyclical sectors led on flows, as trade deal optimism sparked interest in Materials, Industrials, and Technology. Health Care continues to be shunned, even with strong recent performance.

Equity Sector Heatmap	Positioning				Returns		
	Prior Month Flow ($M)	Trailing Three Months Flow ($M)	Current Short Interest (%)	1M Prior Short Interest (%)	Prior Month Return (%)	YTD Return (%)	12-Month Return (%)
Consumer Discretionary	(191)	(538)	**9.4**	9.5	1.3	24.5	14.0
Consumer Staples	(640)	(999)	**6.3**	5.7	1.3	24.7	13.3
Energy	542	523	**10.8**	12.4	1.8	5.5	-7.9
Financial	1,355	2,715	**9.1**	10.6	5.0	28.7	14.1
Health Care	167	(1,498)	**15.8**	16.2	5.0	16.6	6.6
Industrials	806	640	**6.7**	9.2	4.5	29.4	15.6
Materials	995	1,066	**7.2**	9.0	3.2	20.9	12.6
Real Estate	870	2,844	**3.9**	4.1	-1.7	27.3	17.9
Technology	1,212	1,886	**3.8**	3.7	5.4	43.8	31.7
Communications	80	508	**2.2**	2.4	3.7	30.1	20.6
Utilities	(181)	43	**14.6**	15.6	-1.8	22.2	17.2

Financials had the most flows this month, continuing their reversal from the year to date trend that started in October

Worst Performing Sector
Least Flows in Period

Best Performing Sector
Most Flows in Period

Source: State Street Global Advisors, Bloomberg Finance, L.P., as of November 30, 2019. **Past performance is not a guarantee of future results.**

Sector Scorecard

Health Care valuations are constructive and the sector has strong earnings sentiment, while defensive sectors and tech rank high on momentum

	Sector Composite Z-Score*		
	Valuation Composite Score	Momentum Composite Score	Earnings Sentiment Composite Score
Consumer Discretionary	-0.85	-0.26	-0.21
Consumer Staples	-0.39	0.22	0.45
Energy	0.99	-2.63	-1.56
Financials	0.91	-0.13	-0.06
Health Care	0.53	0.22	1.37
Industrials	-0.17	-0.16	-0.24
Information Technology	-1.08	0.68	1.00
Materials	0.52	-0.27	-0.83
Communication Services	-0.14	0.06	-0.44
Real Estate	0.40	1.04	0.07
Utilities	-0.74	1.22	0.45

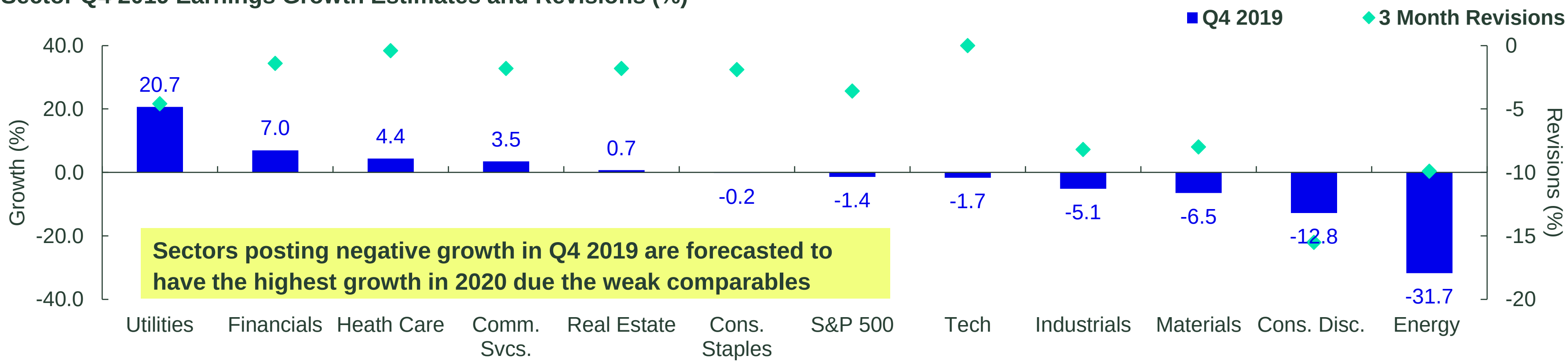
Energy has weak earnings sentiment and price momentum, indicating its valuations may be a trap

Source: State Street Global Advisors, FactSet, Bloomberg Finance, L.P. as of November 30, 2019. 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.

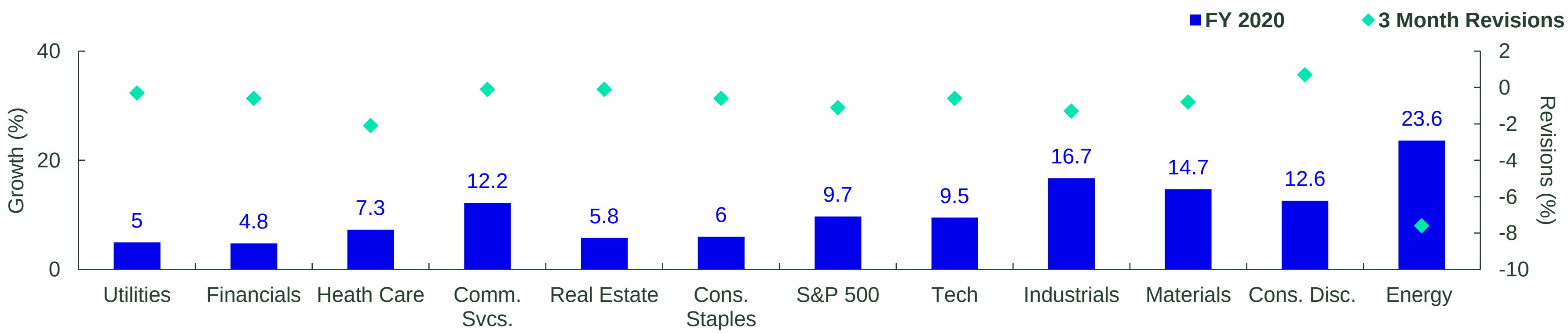
Sector Earnings

Guidance is weak, as no sectors have had their Q4 2019 estimates revised upwards, and only one sector (Cons. Disc.) has had their 2020 estimates revised upwards

Sector Q4 2019 Earnings Growth Estimates and Revisions (%)



Sector FY 2020 Earnings Growth Estimates and Revisions (%)

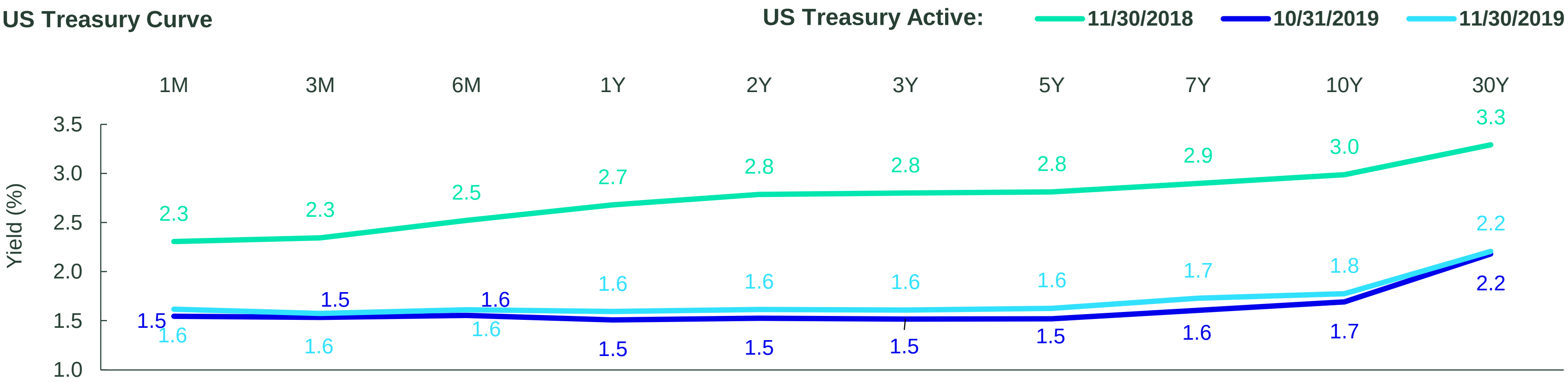


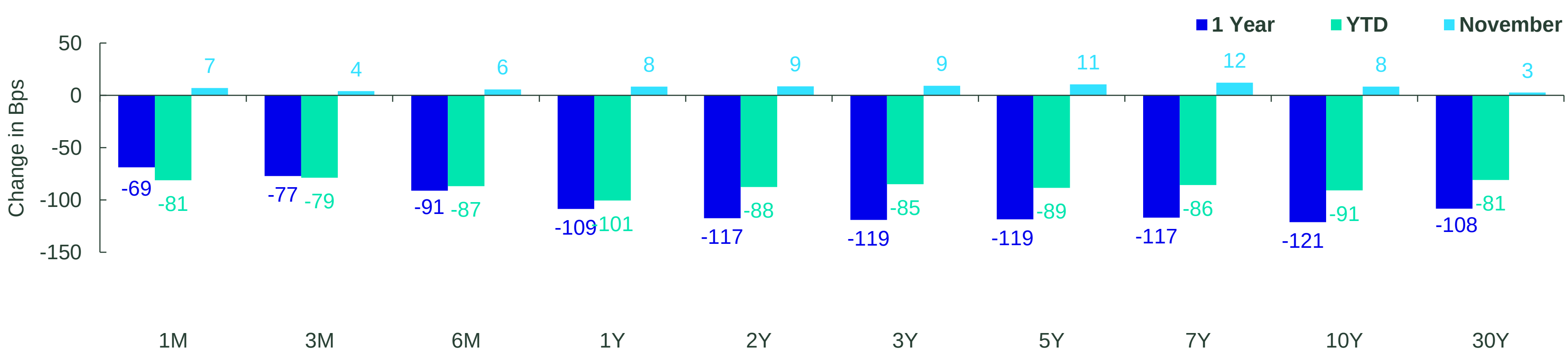
Source: Bloomberg Finance L.P. FactSet, as of November 30, 2019. Characteristics are as of the date indicated, are subject to change, and should not be relied upon as current thereafter. EPS growth estimates are based on Consensus Analyst Estimates compiled by FactSet.

4. Fixed Income

Yield Curve

The yield curve flattened slightly in November, with short-term rates increasing more than long-term rates.



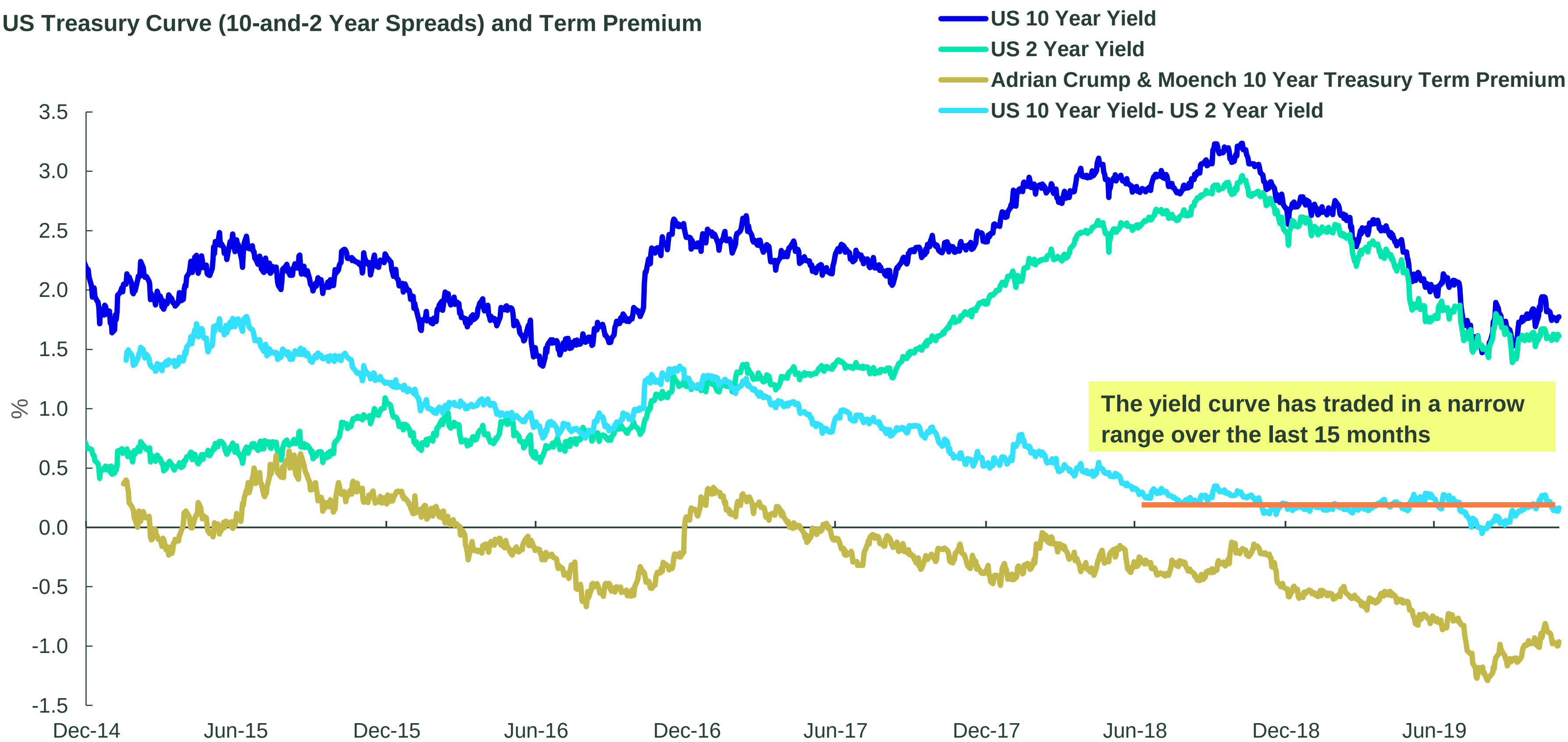


Source: Bloomberg Finance, L.P. As of November 30, 2019. **Past performance is not a guarantee of future results.**

Yield Curve (continued)

Following a brief inversion, the curve has gone back to trading in a narrow range and will likely continue to do so with the Fed on hold and term premiums negative.

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

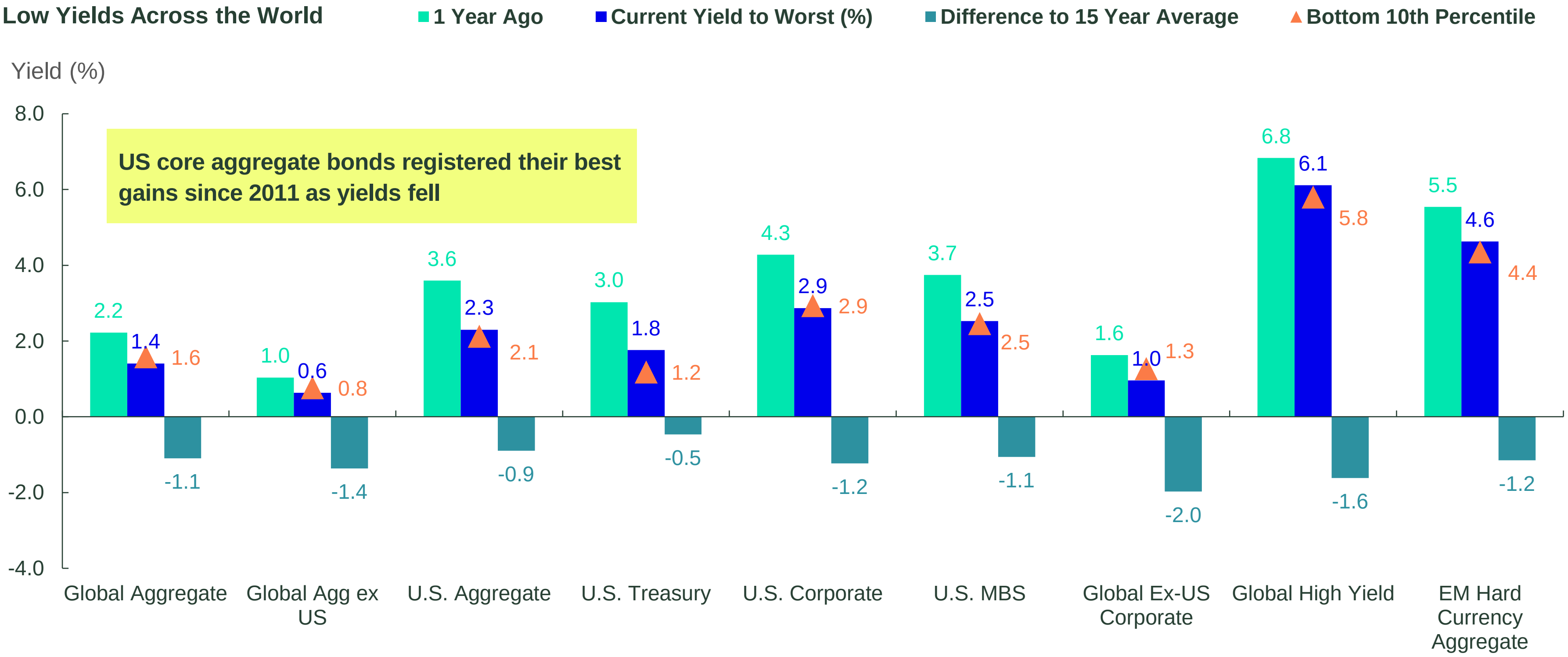


Source: Bloomberg Finance, L.P. As of November 30, 2019. **Past performance is not a guarantee of future results.** The term premium is the excess yield that investors require to commit to holding a long-term bond instead of a series of shorter-term bonds.

Back to a Low Rate Environment

Strong bond returns have pushed interest rates below both their longer-term averages and levels from a year ago – forcing investors to look elsewhere for yield.

Low Yields Across the World

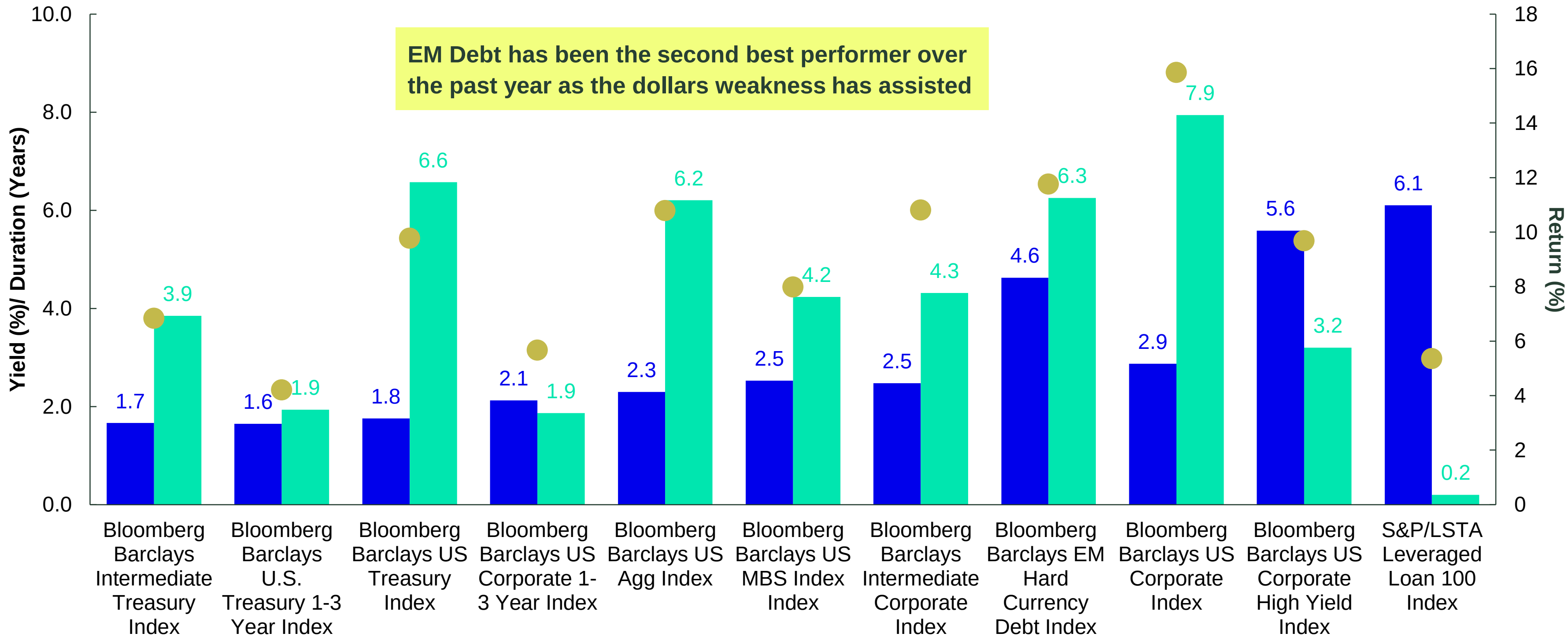


Source: Bloomberg Finance, L.P. as of November 30, 2019. Calculations by SPDR Americas Research, **Past performance is not a guarantee of future results.** Global Aggregate: Bloomberg Barclays Global Aggregate Bond Index; U.S. Aggregate: Bloomberg Barclays US Aggregate Bond Index; U.S. Corporate: Bloomberg Barclays US Corporate Bond Index; U.S. Treasury: Bloomberg Barclays US Treasury Bond Index; Global Agg ex-US: Bloomberg Barclays Global Aggregate Bond Ex-US Index; Global Corporate ex-US: Bloomberg Barclays Global Corporate Bond Ex-US Index; Global High Yield: Bloomberg Barclays Global High Yield Bond Index; EM Hard Currency Aggregate: Bloomberg Barclays EM Hard Currency Aggregate Bond Index; U.S. MBS: Bloomberg Barclays US MBS Index.

Bond Market Overview

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

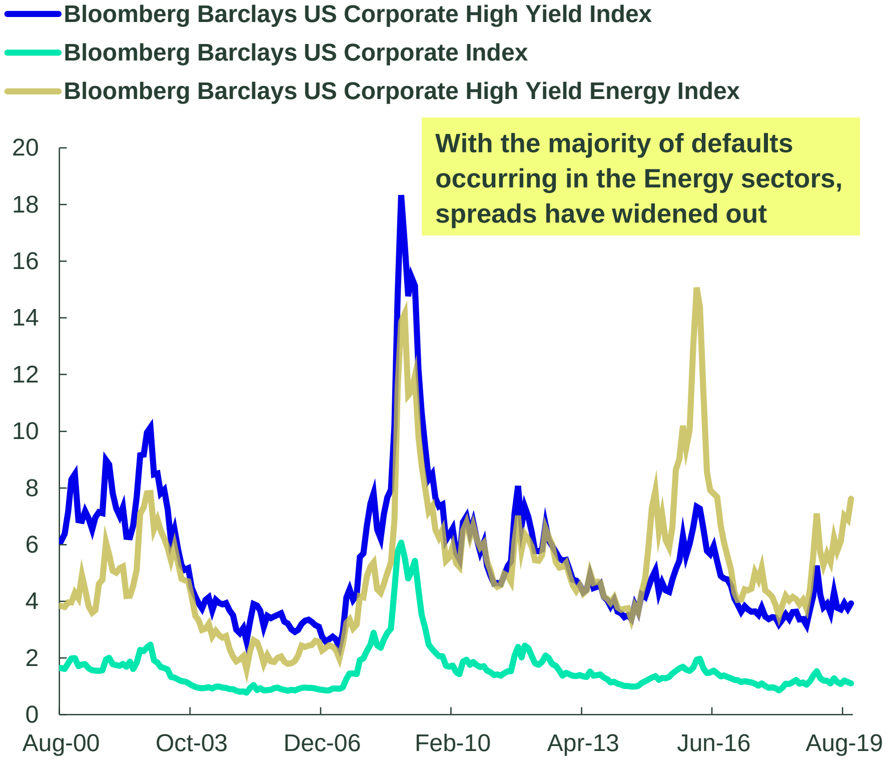


Source: Bloomberg Finance, L.P. As of November 30, 2019. **Past performance is not a guarantee of future results.** Index returns are unmanaged and do not reflect the deduction of any fees or expenses.

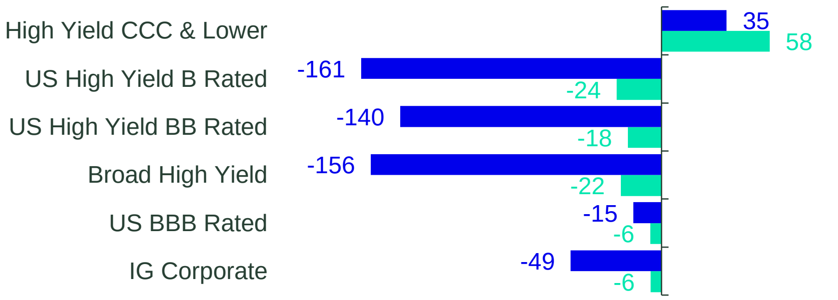
Credit Trends

Broad high yield spreads tightened in November as investors continued to seek out higher yield segments of the bond market.

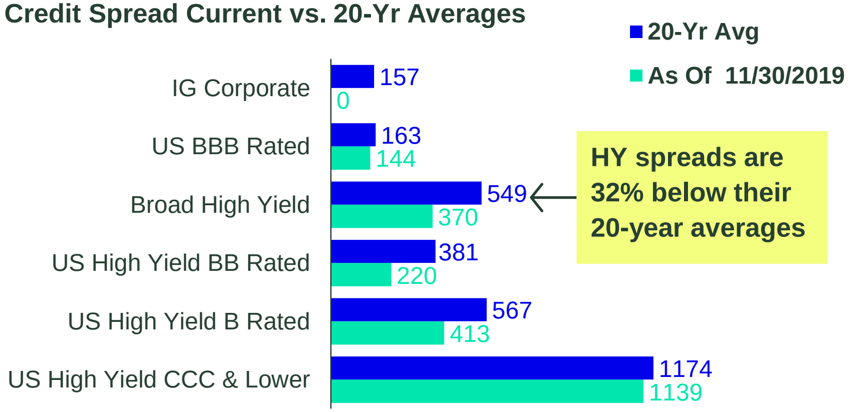
Credit Spreads (%)



Credit Spread Changes in Basis Points



Credit Spread Current vs. 20-Yr Averages

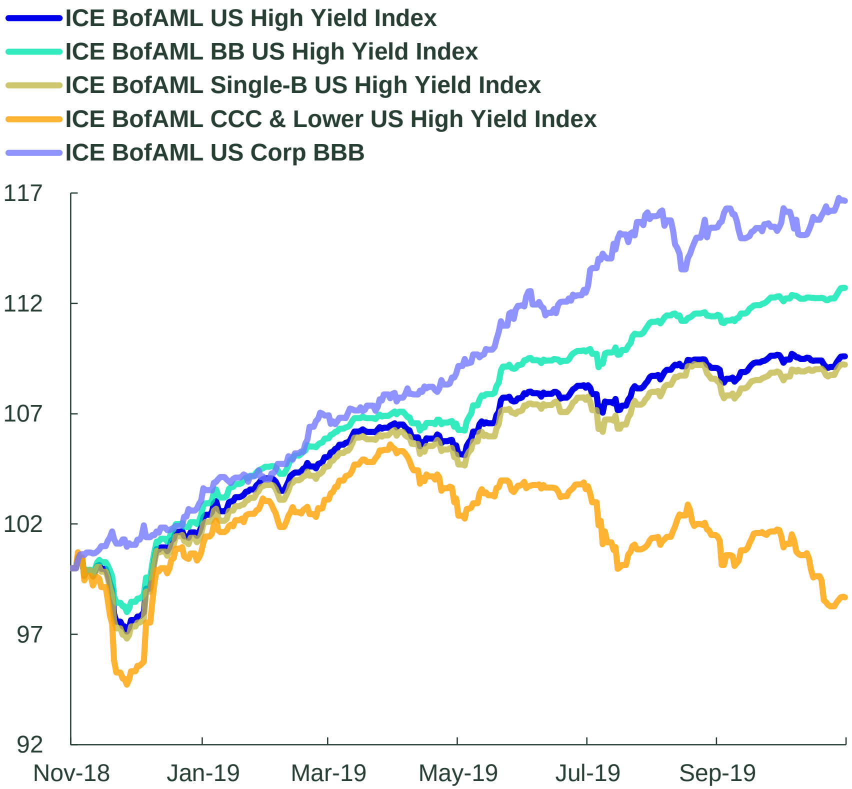


Source: Bloomberg Finance, L.P. BofA Merrill Lynch, as of November 30, 2019. US High Yield CCC & Lower = BofA ML US High Yield CCC & Lower Rated Index. US High Yield B Rated = BofAML US High Yield B Rated Index. BBB Rated = BofA ML US Investment Grade BBB Rated Index. Broad high yield = Bloomberg Barclays US Corporate High Yield Index. IG Corporate = Bloomberg Barclays US Corporate Index. **Past performance is not a guarantee of future results. Performance of an index is not illustrative of any particular investment. It is not possible to invest directly in an index. Performance of an index is not illustrative of any particular investment. It is not possible to invest directly in an index.**

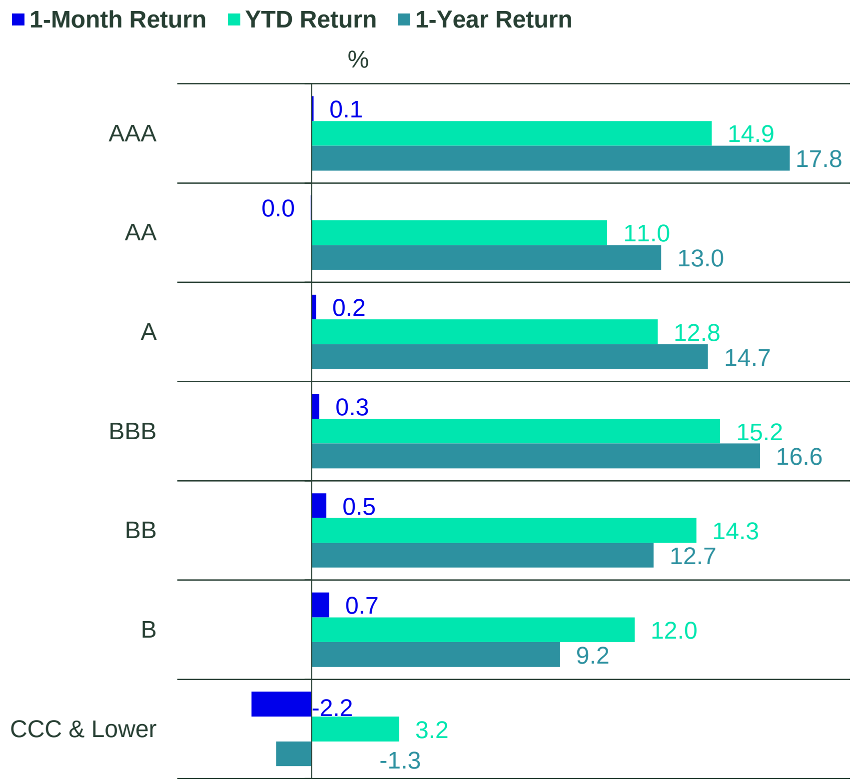
Credit Trends (continued)

The strong returns for high yield have not been led by a “dash for trash”, as CCC-rated issues had their spreads widen, while B and BB had theirs tighten.

Credit Segment Performance (1 Year) Base = 100



IG and HY Performance by Credit Rating

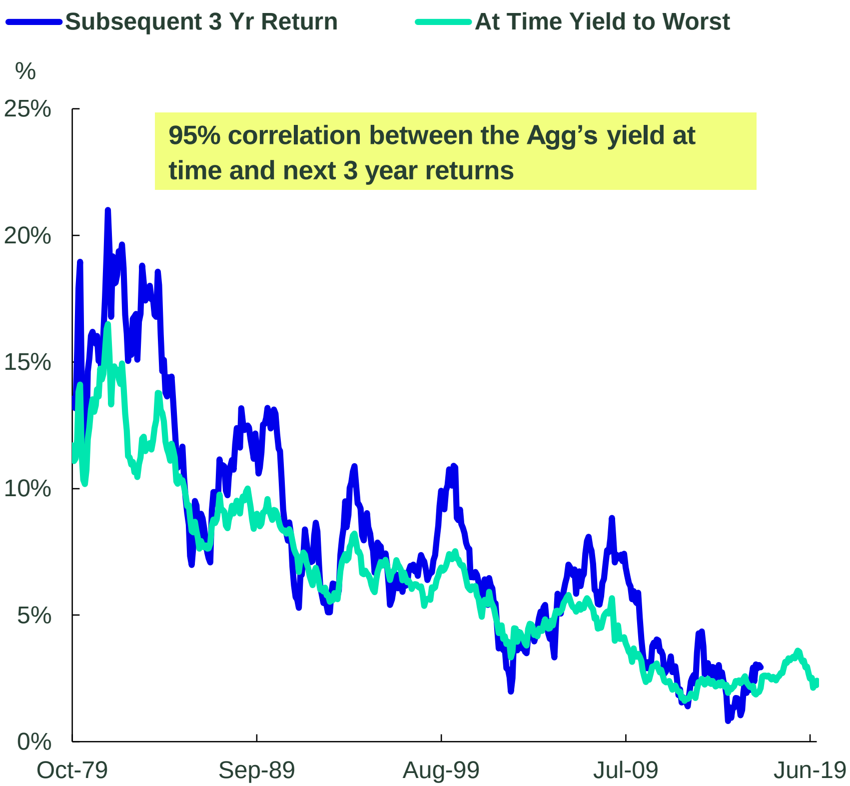


Source: Bloomberg Finance, L.P. BofA Merrill Lynch, as of November 30, 2019. **Past performance is not a guarantee of future results. Performance of an index is not illustrative of any particular investment. It is not possible to invest directly in an index.**

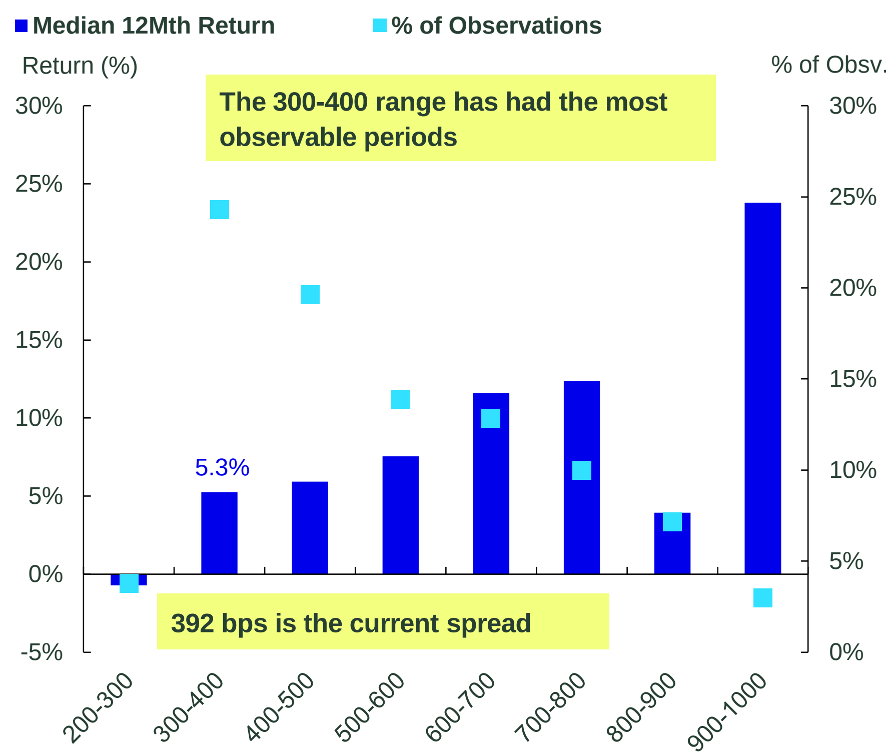
Low Rates = Low Return Expectations

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)



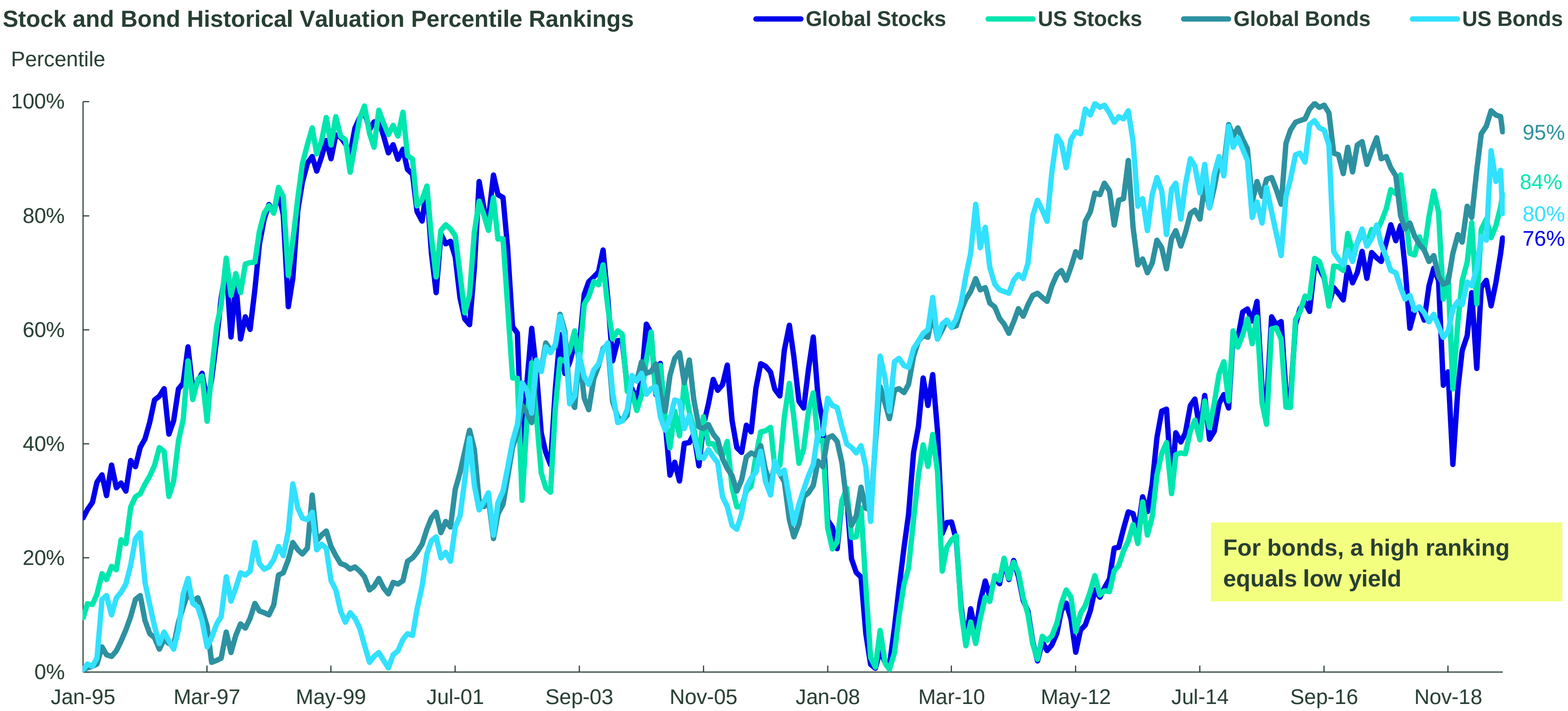
Source: Bloomberg Finance, L.P. as of November 7, 2019. Calculations by SPDR Americas Research, **Past performance is not a guarantee of future results.** Index returns are unmanaged and do not reflect the deduction of any fees or expenses. Index returns reflect all items of income, gain and loss and the reinvestment of dividends and other income. Returns for periods of less than one year are not annualized.

STATE STREET GLOBAL ADVISORS SPDR®

Traditional Assets Have Become Rich

With bonds and stocks expensive, investors may need to consider low-correlating strategies to traditional markets to mitigate macro risk.

Stock and Bond Historical Valuation Percentile Rankings

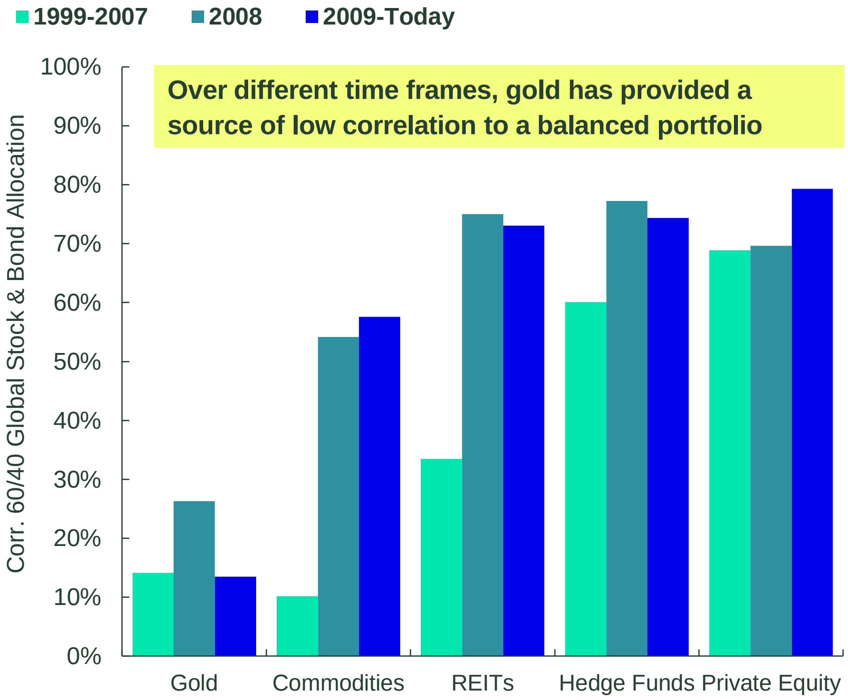


Source: Bloomberg Finance, L.P. as of November 30,2019. Calculations by SPDR Americas Research, **Past performance is not a guarantee of future result.** Global stocks; MSCI World Index, US Stocks: Russell 3000 Index, US Bonds: Bloomberg Barclays US Aggregate Index, Global Bonds: Bloomberg Barclays Global Aggregate Bond Index. Stock valuation screen are blend of five metrics: Price-to-Book, Price-to-Earnings, Price-to-Next-Twelve-Month-Earnings, Price-to-Sales, and Enterprise Value-to-EBITDA. The numbers here differ than on earlier slide as we were able to use data from 1995 as opposed to 1996. Also, to show broad stocks, Russell 3000 Index was used.

Navigating Macro Risk Surprises

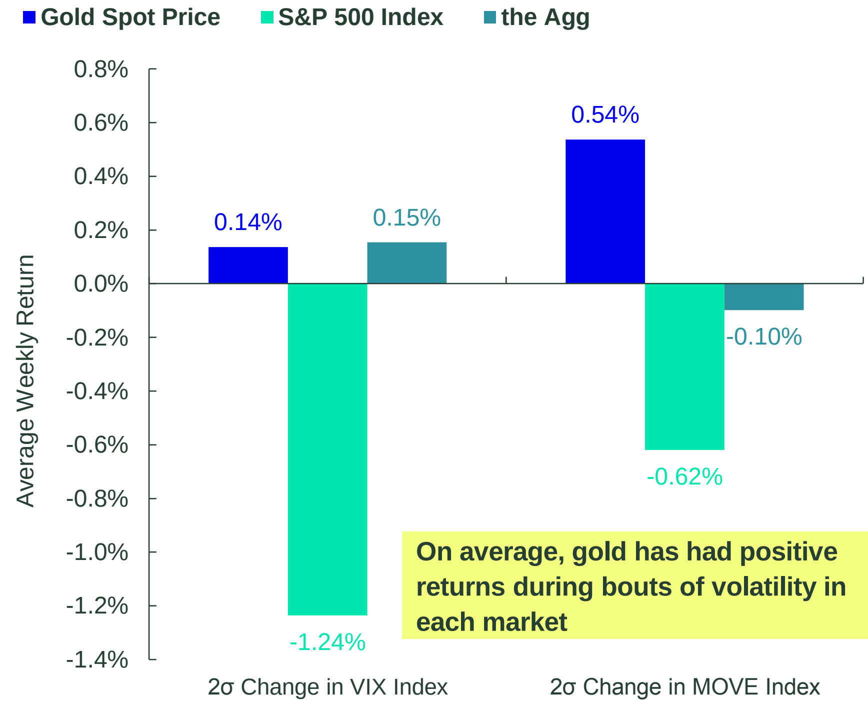
For navigating potential idiosyncratic geopolitical/macro risks, having an alternative solution with low correlations to traditional markets may be beneficial in 2020.

Gold Spot Price Correlation Trends versus Other Alternatives



Source: Bloomberg Finance L.P., Calculations by SPDR Americas Research. Data from 1/1/1999-10/31/2019. Gold = gold spot price. Commodities = S&P GSCI Total Return Index, REITs = FTSE NAREIT All Equity REITS Total Return Index, Hedge Funds = HFRI FOF Diversified Index, Private Equity = LPX50 Listed Private Equity Total Return Index. Correlations based on monthly returns against a 60/40% allocation of the MSCI All-Country World Index Total Return Net Index and the Bloomberg Barclays Global Aggregate Bond Index, rebalanced monthly. **Past performance is not a guarantee of future results.**

Gold Historical Performance During Bond and Stock Volatility



Source: Bloomberg Finance L.P., Calculations by SPDR Americas Research Data from 1/1/1990–11/08/2019. **Past performance is not a guarantee of future results** σ is standard deviation

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Appendix

Appendix A

Fund Flow Summary

Asset Category		Prior Month ($M)	Year to Date ($M)	Trailing 3 Months ($M)	Trailing 12 Months ($M)
Equity Region	US	4,883	84,112	31,725	117,511
	Global	-198	-1,536	-83	2,499
	International-Developed	3,390	13,690	5,093	28,756
	International-Emerging Markets	455	4,354	-4,587	13,301
	International-Region	580	-3,421	-2,128	-3,300
	International-Single Country	1,725	-4,840	-1,899	-1,303
	Currency Hedged	93	-5,535	-661	-8,499
US Size & Style	Broad Market	4,789	28,997	12,978	39,776
	Large-Cap	-572	53,259	17,795	82,342
	Mid-Cap	898	6,433	546	10,367
	Small-Cap	-961	2,140	1,539	3,488
	Growth	-1,251	1,076	-2,560	3,615
	Value	4,493	10,480	8,871	23,658
Fixed Income Sectors	Aggregate	5,065	34,254	17,463	49,773
	Government	2,655	27,013	6,527	50,363
	Inflation Protected	251	957	2,539	-530
	Mortgage-Backed	1,474	11,959	3,028	12,985
	IG Corporate	2,020	25,853	5,813	23,412
	High Yield Corp.	1,465	15,173	3,896	12,406
	Bank Loans	-113	-925	287	-3,232
	EM Bond	-226	-247	-940	-754
	Preferred	886	5,175	2,201	3,368
	Convertible	15	-74	220	-235
	Municipals	1,238	7,999	3,091	11,134
Government ETF Maturity Focus	Ultra Short	225	1,226	-3,068	10,439
	Short Term	1,206	6,535	2,876	16,670
	Intermediate	499	10,629	3,705	13,799
	Long Term (>10 yr)	881	9,206	3,207	10,429

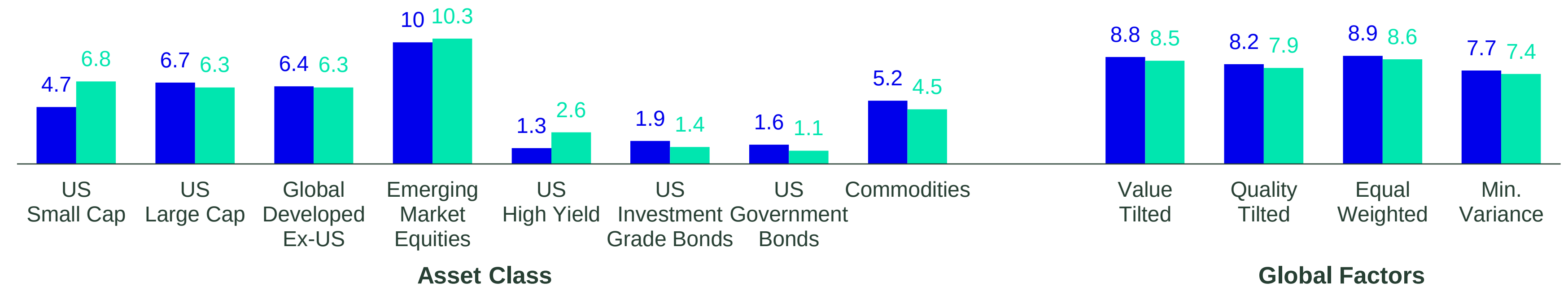
Source: State Street Global Advisors, Bloomberg Finance, L.P. As of November 30, 2019. Segments with top 2 inflows in each category are shaded in green. Segments with bottom 2 flows in each category are shaded in orange. Sectors, asset classes and flows are as of the date indicated, are subject to change, and should not be relied upon as current thereafter. All figures are in USD.

Appendix B

Asset Class Forecast

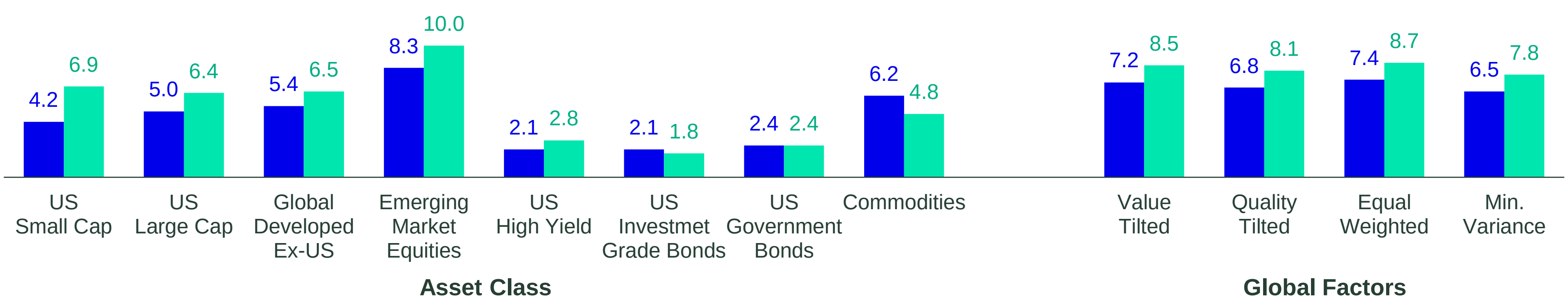
Forecasted Return (%) as of September 30, 2019

1 Year **3-5 Year**



Forecasted Return (%) as of June 30, 2019

1 Year **3-5 Year**



Source: State Street Global Advisors Investment Solutions Group. The forecasted returns are based on SSGA's Investment Solutions Group's September 30, 2019 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 (continued) for the assumptions used by SSGA Investment Solutions Group to create asset class forecasts.

Asset Class Forecast: Assumptions

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.
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.
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.
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

	Composite Score	Metrics
	Validation	**Relative Valuation** (P/B, P/E, NTM P/E, P/S)
		Absolute Valuation (P/B, P/E, NTM P/E, P/S)
	Earnings Sentiment	**Earnings Revision** (Changes to EPS Estimates, Upgrade to Downgrade Ratio)
		Earnings Surprise (The Magnitude and Breadth of Earnings Surprise)
	Momentum	**Price Returns** 3-Months, 6-Months, 12-Months
Volatility	Realized Volatility	**Standard Deviation** 30-Days Annualized
	Implied Volatility	**3-Month-at-the-money** Implied Volatility for Options

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

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

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 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.

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 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.

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

Bloomberg Barclays US Mortgage Backed Securities Index: The index consists of US Mortgage Backed Securities

Bloomberg Barclays US Treasury 1–3 Year Index: The Index is designed to measure the performance of short term (1–3 years) public obligations of the US Treasury.

Bloomberg Barclays US Treasury Bill 1–3 Months Index: The Bloomberg Barclays 1–3 Month US Treasury Bill Index (the "Index") is designed to measure the performance of public obligations of the US Treasury that have a remaining maturity of greater than or equal to 1 month and less than 3 months.

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.

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.

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

Bloomberg US Pure Value Index: The return of the top quintile less the bottom quintile value stocks.

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.

Citigroup Economic Surprise Index: The Citi Economic Surprise Indices measure data surprises relative to market expectations. A positive reading means that data releases have been stronger than expected and a negative reading means that data releases have been worse than expected.

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.

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

Appendix D (continued)

Definitions

Convexity: Convexity is a measure of the curvature in the relationship between bond prices and bond yields. Bond with negative convexity, prices decrease as interest rate fall. Since many high yields bonds are callable,, the price of the callable bonds might drop in the event of falling yields because the bond could be called.

DXY Dollar Index: The DXY Dollar Index tracks the performance of a basket of foreign currencies issued by US major trade partners, including Eurozone, Japan, U.K. Canada, Sweden and Switzerland, versus the US Dollar.

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.

EBITDA: Earnings before Interest Taxes Depreciation and Amortization

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

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.

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.

MACD: Moving Average Convergence Divergence (MACD) is a trend-following momentum indicator that shows the relationship between two moving averages of a security's price. It is designed to reveal changes in the strength, direction, momentum, and duration of a trend in a stock's price.

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

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.

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.

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.

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.

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

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 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.

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.

Definitions

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.

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.

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.

Risk on: Used to describe investment sentiment when investors' risk tolerance increases.

RSI: The relative strength index (RSI) is a momentum indicator that measures the magnitude of recent price changes to evaluate overbought or oversold conditions in the price of a stock or other asset.

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

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.

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.

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 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 High Dividend Index is designed to measure the performance of the top 80 high dividend-yielding companies within the S&P 500® Index, based on dividend yield.

S&P 500 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.

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&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 Low Volatility Index: The S&P 500® Low Volatility Index measures performance of the 100 least volatile stocks in the S&P 500. The index benchmarks low volatility or low variance strategies for the US stock market. Constituents are weighted relative to the inverse of their corresponding volatility, with the least volatile stocks receiving the highest weights.

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 Quality Index: The index is designed to track high quality stocks in the S&P 500 by quality score, which is calculated based on return on equity, accruals ratio and financial leverage ratio.

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.

Definitions

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.

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

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

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.

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.

Quintile Spread: The spread between the top 20% of a data set and the bottom 20% of a data set.

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.

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 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.

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.

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.

Bloomberg Barclays US FRN < 5yr Index: The Bloomberg Barclays US Dollar Floating Rate Note < 5 Years Index consists of debt instruments that pay a variable coupon rate, a majority of which are based on the 3-month LIBOR, with a fixed spread.

Bloomberg Barclays U.S. MBS Index (the "MBS Index") measures the performance of the U.S. agency mortgage pass-through segment of the U.S. investment grade bond market.

Global Economic Policy Uncertainty Index This Index tracks the general state of the economy as it relates to businesses.

Appendix E

Important Disclosures

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Investing in foreign domiciled securities may involve risk of capital loss from unfavorable fluctuation in currency values, withholding taxes, from differences in generally accepted accounting principles or from economic or political instability in other nations. Investments in emerging or developing markets may be more volatile and less liquid than investing in developed markets and may involve exposure to economic structures that are generally less diverse and mature and to political systems which have less stability than those of more developed countries.

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.

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.

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.

Investing in foreign domiciled securities may involve risk of capital loss from unfavorable fluctuation in currency values, withholding taxes, from differences in generally accepted accounting principles or from economic or political instability in other nations.

Investments in emerging or developing markets may be more volatile and less liquid than investing in developed markets and may involve exposure to economic structures that are generally less diverse and mature and to political systems which have less stability than those of more developed countries.

Currency Risk is a form of risk that arises from the change in price of one currency against another. Whenever investors or companies have assets or business operations across national borders, they face currency risk if their positions are not hedged.

Appendix E

Important Disclosures

There are risks associated with investing in Real Assets and the Real Assets sector, including real estate, precious metals and natural resources. Investments can be significantly affected by events relating to these industries.

Exchange traded funds (ETFs) trade like stocks, are subject to investment risk and will fluctuate in market value. The value of the investment can go down as well as up and the return upon the investment will therefore be variable. Changes in exchange rates may have an adverse effect on the value, price or income of an investment. Further, there is no guarantee an ETF will achieve its investment objective.

Investing involves risk including the risk of loss of principal.

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