



**PERSPECTIVES
THAT DRIVE
ENTERPRISE
SUCCESS**

OCTOBER 2018
Capital Markets Update

Market commentary

U.S. ECONOMICS

- U.S. real GDP grew at an annualized quarterly rate of 3.5% (3.0% YoY) in Q3, beating expectations of 3.4%. The economy was supported by the strongest consumer spending growth since Q4 2014. Over the past two quarters, GDP has expanded faster than any two-quarter period since Q2-Q3 of 2014.
- Nonfarm payrolls increased by 250,000 in October, beating estimates by 50,000. The return of workers displaced by hurricane season likely contributed to the beat. The unemployment rate remained near 49-year lows at 3.7%.
- Wages grew at a rate of 3.1% year-over-year, the fastest pace since 2009. However, the month-over-month increase in wages was only 0.2%, in-line with recent readings.

U.S. EQUITIES

- U.S. equities sold off in October despite generally strong Q3 earnings reports, in-line with international equities. The S&P 500 Index fell 6.8% over the month, it's worst monthly performance since September of 2011.
- The CBOE VIX Index advanced significantly, reaching it's highest point since the February sell-off. After starting the month at 12.1, the implied volatility measure reached as high as 27.8 intra-day, and ended the month still elevated at 21.2.
- Third quarter corporate results have been very strong. As of 11/12, 90% of S&P 500 companies had reported, posting aggregate sales growth of 8.4% and earnings growth of 26.8%.

U.S. FIXED INCOME

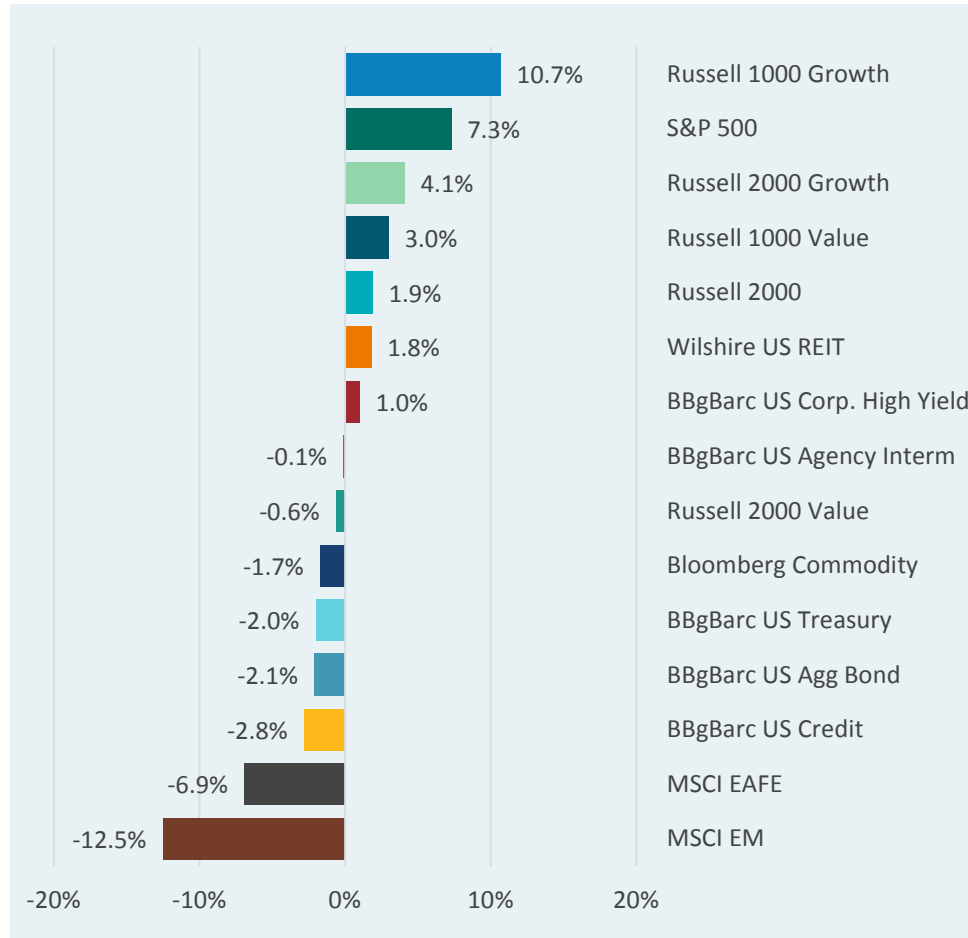
- The Federal Reserve reaffirmed its intention to gradually increase the fed funds rate above the current range of 2.00-2.25%. Hawkish September meeting minutes signaled the committee is considering raising rates above the stated "normalization rate" of about 3%. As of 11/6, the futures-implied probability of a 25 bp rate hike in December was 78%.
- 10-year Treasury yields rose from 3.06% to 3.14% over the month. Yields reached as high as 3.23%, but significant risk-off sentiment helped push yields lower to finish the month.
- The spread between 10- and 2-year Treasury yields widened from 24 bps to 28 bps, remaining within its recent range of 20-30 bps.

INTERNATIONAL MARKETS

- Equities sold off globally in October. Losses were broad across equity markets – the MSCI ACWI Index fell 7.5%.
- U.S. tensions with China remained elevated in October with further yuan depreciation, territorial disputes in the South China Sea, and trade policy standing out as key points of friction. The prospect of a meeting between Presidents Trump and Xi at the upcoming G20 Summit provided brief optimism for a trade deal, though neither country's officials have made formal proposals.
- The Markit Eurozone Composite PMI fell from 54.1 to 53.1 in October. Despite beating expectations of 52.7, the index slumped to its lowest level since September of 2016, suggesting a moderation in Eurozone economic activity.

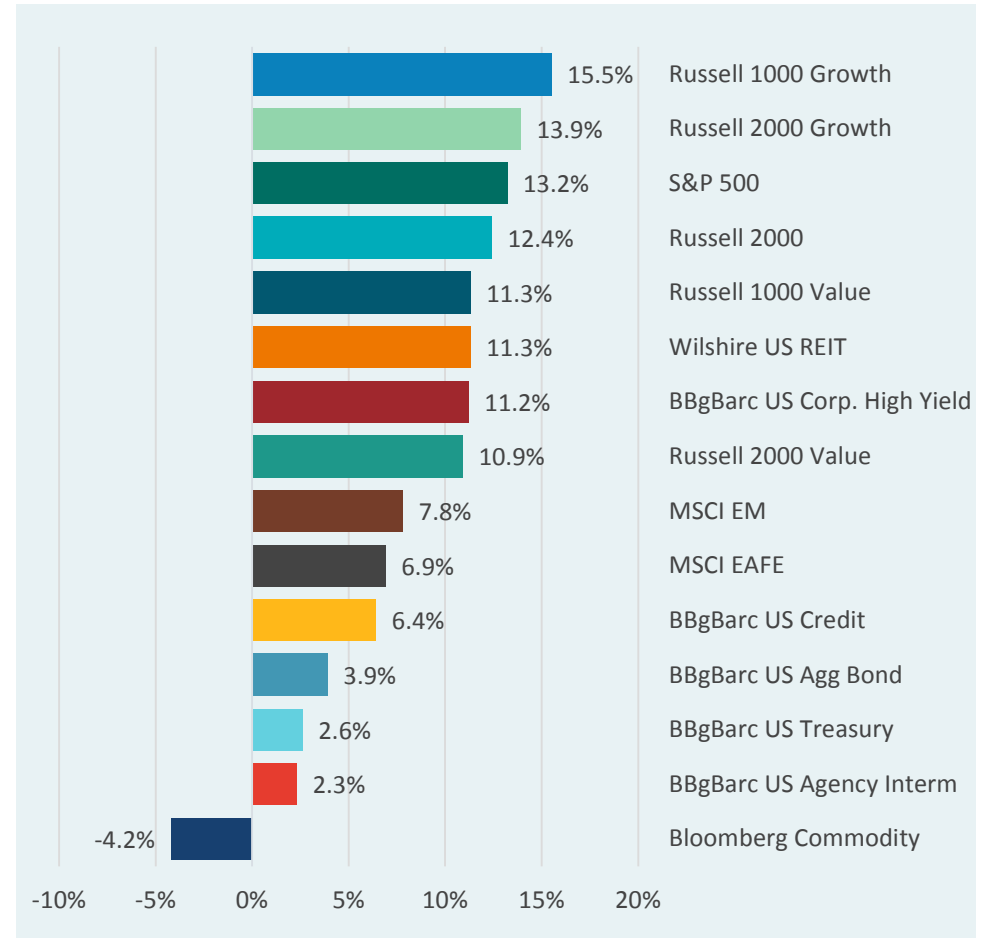
Major asset class returns

ONE YEAR ENDING OCTOBER



Source: Morningstar, as of 10/31/18

TEN YEARS ENDING OCTOBER



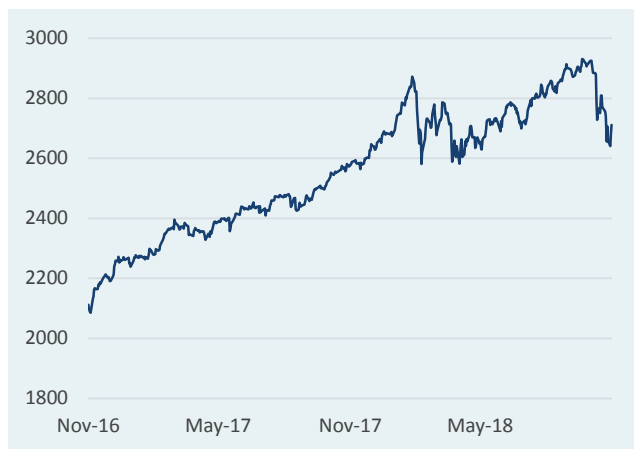
Source: Morningstar, as of 10/31/18

U.S. large cap equities

- The S&P 500 Index experienced a 9.4% drawdown intra-month, before rallying back the last few days of the month to end October down 6.8%. The correction spurred a pick-up in implied volatility, which reached as high as 25.2 before ending the month at 21.2, still above the long-term average of 18.0.
- Earnings in the third quarter were strong, although negative EPS guidance likely presented a headwind to performance. Per FactSet, of S&P 500 companies, 46 have issued negative guidance for Q4, while only 24 have issued positive guidance.
- The market correction in October helped drive a moderation in price/earnings ratios. The trailing P/E ratio for the S&P 500 fell from 21.1 to 18.8 over the period. According to FactSet, the forward 12-month P/E ratio for the S&P 500 is 15.6, in between its 5-year average (16.4) and its 10-year average (14.5).
- The NASDAQ Composite Index fell 9.2% in October, as many of the mega-cap tech stocks that had been leading the year-to-date advance suffered significant drawdowns. Nvidia (-25.0%), Amazon (-20.2%), and Netflix (-19.3%) substantially underperformed the overall index.

Weak guidance accompanied strong earnings

S&P 500 PRICE INDEX



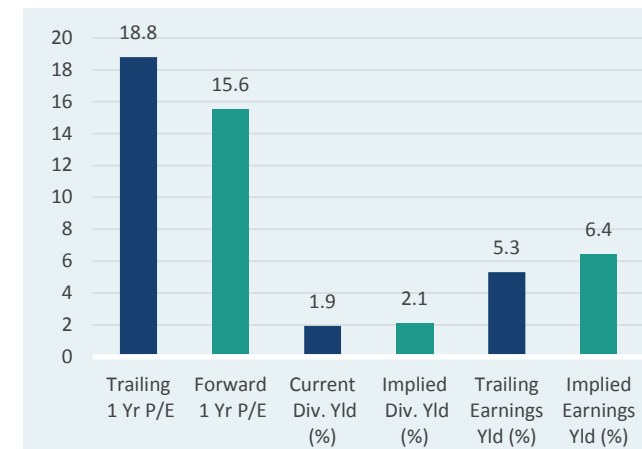
Source: Bloomberg, as of 10/31/18

IMPLIED VOLATILITY (VIX INDEX)



Source: CBOE, as of 10/31/18

S&P 500 VALUATION SNAPSHOT

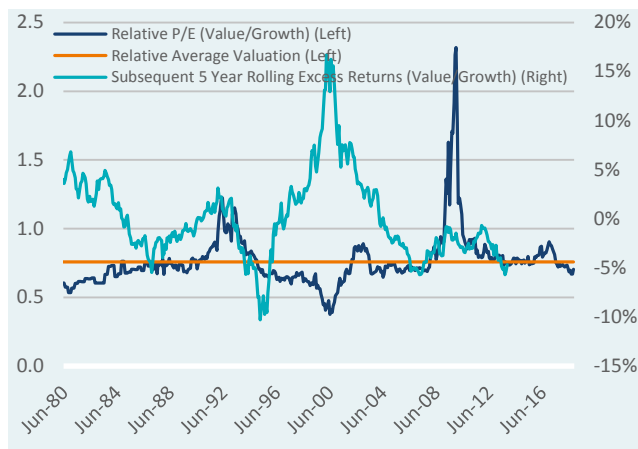


Source: Bloomberg, as of 10/31/18

Domestic equity size and style

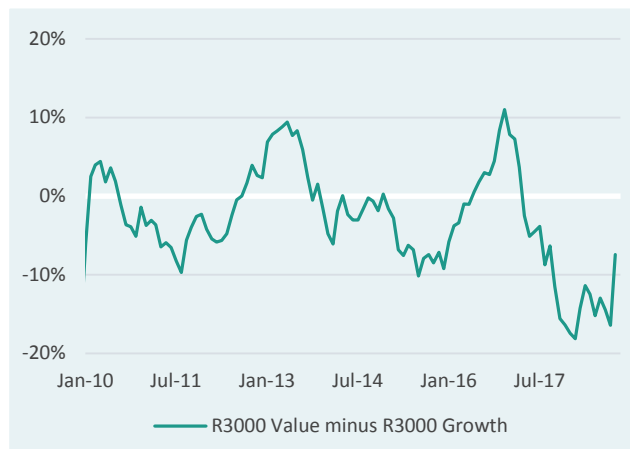
- Large cap equities outperformed small cap equities across styles over the period. The Russell 1000 Growth Index (-8.9%) outperformed the Russell 2000 Growth Index (-12.7%), and the Russell 1000 Value Index (-5.2%) outperformed the Russell 2000 Value Index (-9.0%).
- Value outperformed growth over the period. The Russell 3000 Value Index (-5.5%) outperformed the Russell 3000 Growth Index (-9.2%) by 3.8%.
- Defensive sectors outperformed cyclical sectors over the period. The MSCI USA Defensive Sectors Index lost 3.1%, while the MSCI USA Cyclical Sectors Index fell 8.0%. The defensives-cyclicals return differential of 4.9% was the largest since June of 2016.
- The consumer discretionary sector in the S&P 500 Index fell 11.3%, its largest decline in ten years. Stocks linked to tourism and home improvement contributed to the decline.

VALUE VS. GROWTH RELATIVE VALUATIONS



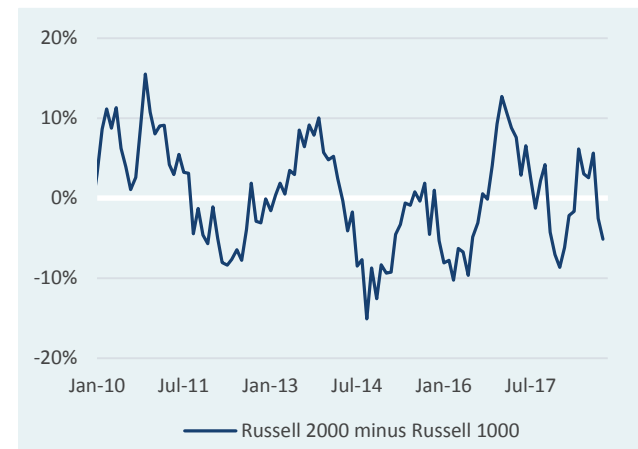
Source: Russell, Bloomberg, as of 10/31/18

VALUE VS. GROWTH 1-YR ROLLING RELATIVE PERFORMANCE



Source: FTSE, as of 10/31/18

SMALL VS. LARGE 1-YR ROLLING RELATIVE PERFORMANCE

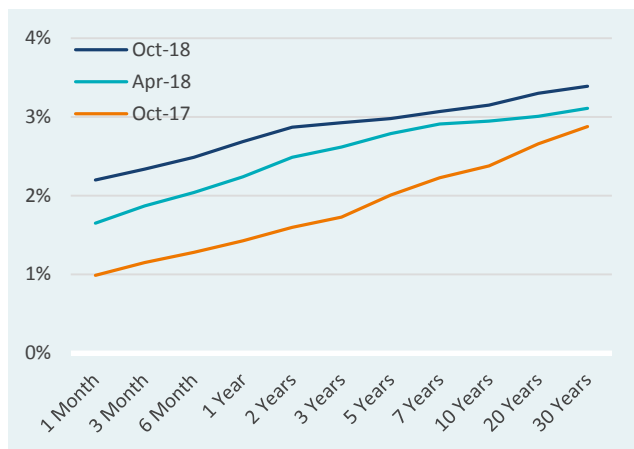


Source: FTSE, as of 10/31/18

Fixed income

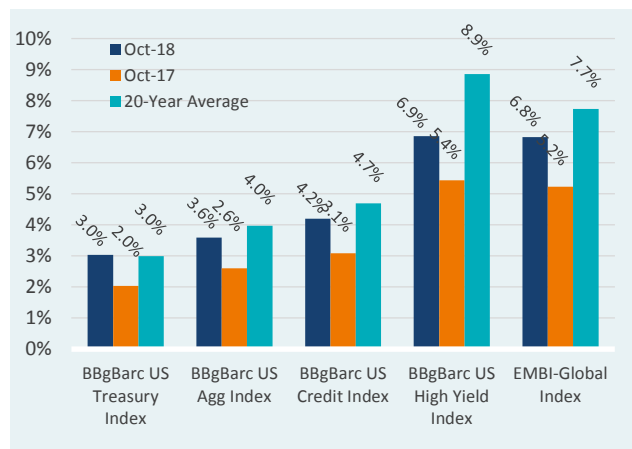
- The European Central Bank left interest rates unchanged and stood by its plan to cut asset purchases from €15 billion per month to zero by year-end. ECB President Mario Draghi commented on an expected pick-up in euro zone inflation, which some analysts interpreted as hawkish. Currently, the ECB is not expected to hike benchmark rates until late 2019.
- The yield spread between 10-year Italian bonds and German bunds continued to expand. Over the month, the spread widened 37 bps to 3.04%.
- U.S. Treasury auctions accelerated as the Treasury Department worked to meet its funding needs amidst a swelling budget deficit, which the Congressional Budget Office has projected to reach \$973 billion for fiscal 2019. At month-end, the Treasury announced an \$83 billion auction of Treasury notes and bonds.
- Spreads on U.S. corporate high-yield bonds expanded from 3.16% to 3.71% over the month. Year-to-date, the average spread has been 3.38%, indicating that the move upward was not a significant deviation from its year-to-date trading range.

U.S. TREASURY YIELD CURVE



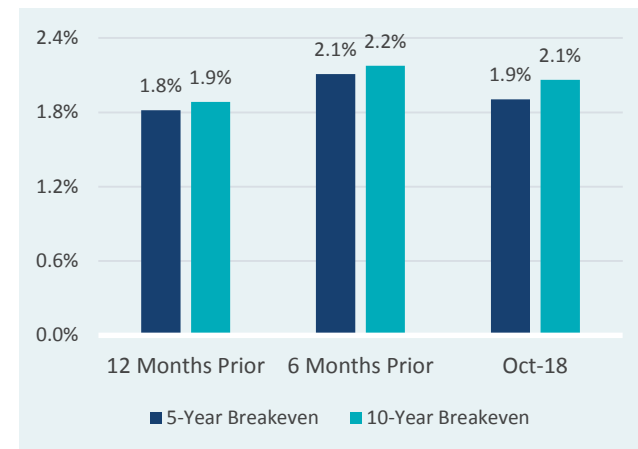
Source: Bloomberg, as of 10/31/18

NOMINAL YIELDS



Source: Morningstar, as of 10/31/18

BREAKEVEN INFLATION RATES



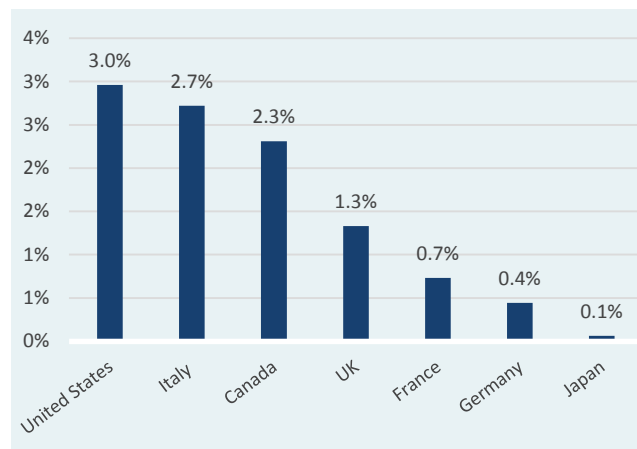
Source: Bloomberg, as of 10/31/18

Global markets

- The Italian coalition government and the European Commission reached an impasse regarding the country's fiscal deficit. Policymakers in Brussels rejected Italy's budget proposal of a 2.4% fiscal deficit for 2019, marking the first instance of the Commission sending back a member state's spending proposal.
- International developed equities declined in October, and underperformed U.S. equities. The MSCI EAFE Index returned -8.0%, compared to the S&P 500 which returned -6.8%. Currency presented a headwind, as the MSCI EAFE 100% Hedged Index lost only 6.2%.
- The Nikkei 225 Index fell 9.1%, it's worst monthly performance since June of 2016. Every sector in the index fell, though industrials (-10.9%) and consumer goods (-9.5%) led the decline.
- Jair Bolsonaro was elected President of Brazil in the country's run-off election. Brazil's regional equity index (IBOVESPA) ended the month 10.2% higher, it's best month since January, as the market reacted to the election of the candidate widely viewed as market-friendly.

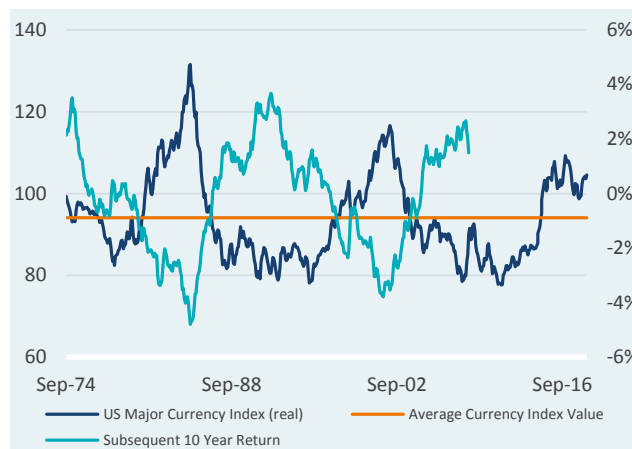
European geopolitical uncertainty weighed on equities

GLOBAL SOVEREIGN 10-YEAR YIELDS



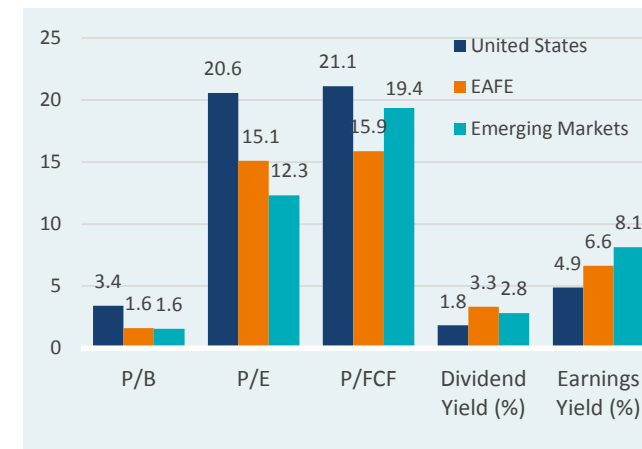
Source: Bloomberg, as of 10/31/18

U.S. DOLLAR MAJOR CURRENCY INDEX



Source: Federal Reserve, as of 10/31/18

MSCI VALUATION METRICS (3-MONTH AVG)



Source: Bloomberg, as of 10/31/18

Commodities

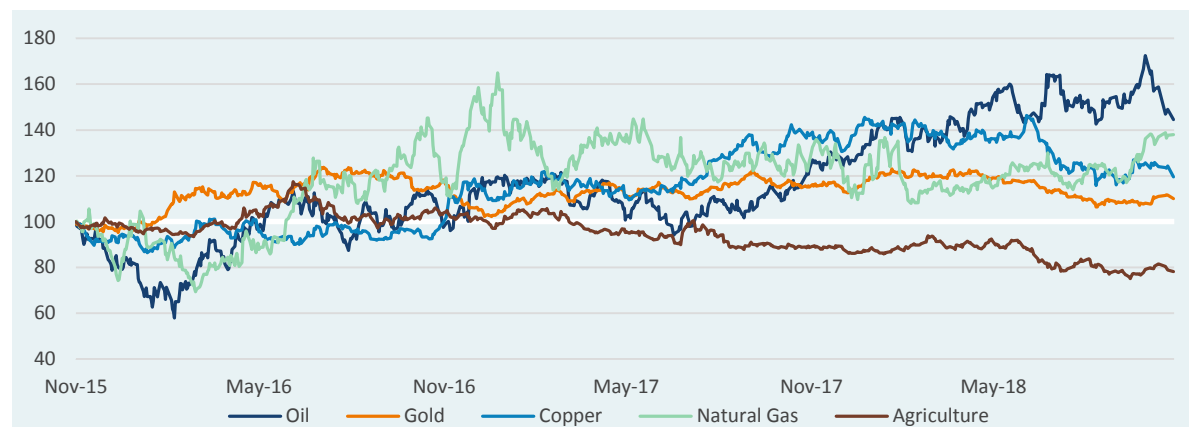
- The Bloomberg Commodity Index fell 2.2% in October, with most subsectors declining. Softs (+11.4%), and agriculture (+2.2%) outperformed, while petroleum (-9.6%) and energy (-5.5%) dragged the index lower.
- Uncertainty related to the implementation of U.S. sanctions on importers of Iranian crude oil contributed to volatility in the oil market. China, India, South Korea, Turkey, Italy, Greece, Japan, and Taiwan were granted 180-day exemptions from the sanctions, which are scheduled to take effect on November 4th. Those eight countries account for about 75% of Iran's oil exports.
- The price of a barrel of WTI crude oil fell from \$73.06 to \$65.31 over the period. The Bloomberg Petroleum sub-index fell 9.6%, notching it's worst month since July 2016. Sanction exemptions as well as building inventories likely helped pull oil prices down.
- The Bloomberg Softs sub-index returned 11.4% in October, it's best return since June of 2016. The rally of the Brazilian real following Jair Bolsonaro's election, as well as tight sugar inventories likely boosted performance.

INDEX AND SECTOR PERFORMANCE

	Month	QTD	YTD	1 Year	3 Year	5 Year	10 Year
Bloomberg Commodity	(2.2)	(2.2)	(4.1)	(1.7)	(0.7)	(7.3)	(4.2)
Bloomberg Agriculture	2.2	2.2	(9.0)	(10.0)	(7.3)	(9.2)	(2.6)
Bloomberg Energy	(5.5)	(5.5)	11.2	18.2	(0.4)	(13.2)	(14.0)
Bloomberg Grains	(0.0)	(0.0)	(6.2)	(8.4)	(10.0)	(11.3)	(4.5)
Bloomberg Industrial Metals	(5.5)	(5.5)	(16.7)	(12.8)	6.9	(2.5)	(0.2)
Bloomberg Livestock	(0.7)	(0.7)	(3.1)	(9.4)	(2.3)	(3.1)	(3.5)
Bloomberg Petroleum	(9.6)	(9.6)	12.3	22.8	3.3	(12.6)	(8.0)
Bloomberg Precious Metals	0.8	0.8	(10.0)	(7.5)	0.1	(4.0)	4.5
Bloomberg Softs	11.4	11.4	(14.0)	(10.5)	(5.1)	(8.2)	(1.6)

Source: Morningstar, as of 10/31/18

COMMODITY PERFORMANCE



Source: Bloomberg, as of 10/31/18

Appendix

Periodic table of returns

	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	YTD	5-Year	10-Year
Large Cap Growth	38.7	66.4	31.8	14.0	25.9	56.3	26.0	34.5	32.6	39.8	5.2	79.0	29.1	14.3	18.6	43.3	13.5	13.3	31.7	37.3	6.6	13.4	15.5
Real Estate	27.0	43.1	22.8	8.4	10.3	48.5	22.2	21.4	26.9	16.2	1.4	37.2	26.9	7.8	18.1	38.8	13.2	5.7	21.3	30.2	5.3	11.1	13.9
Large Cap Equity	20.3	33.2	12.2	7.3	6.7	47.3	20.7	20.1	23.5	15.8	-6.5	34.5	24.5	2.6	17.9	34.5	13.0	0.9	17.3	25.0	2.7	9.6	13.4
Cash	19.3	27.3	11.6	3.3	1.6	46.0	18.3	14.0	22.2	11.8	-21.4	32.5	19.2	1.5	17.5	33.5	11.8	0.6	12.1	22.2	1.4	8.8	12.4
Small Cap Growth	16.2	26.5	7.0	2.8	1.0	39.2	16.5	7.5	18.4	11.6	-25.9	28.4	16.8	0.4	16.4	33.1	6.0	0.0	11.8	21.7	1.1	8.6	11.3
Small Cap Equity	15.6	24.3	6.0	2.5	-5.9	30.0	14.5	7.1	16.6	10.9	-28.9	27.2	16.7	0.1	16.3	32.5	5.6	-0.4	11.3	17.1	-0.6	8.0	10.9
Large Cap Value	8.7	21.3	4.1	-2.4	-6.0	29.9	14.3	6.3	15.5	10.3	-33.8	23.3	16.1	-2.1	15.3	23.3	4.9	-0.8	11.2	14.6	-1.5	7.2	7.8
Hedge Funds of Funds	4.9	20.9	-3.0	-5.6	-11.4	29.7	12.9	5.3	15.1	7.0	-35.6	20.6	15.5	-2.9	14.6	12.1	4.2	-1.4	8.0	13.7	-1.8	3.9	7.3
US Bonds	1.2	13.2	-7.3	-9.1	-15.5	25.2	11.4	4.7	13.3	7.0	-36.8	19.7	13.1	-4.2	11.5	11.0	3.4	-2.5	7.1	7.8	-2.4	2.4	6.9
Small Cap Value	-2.5	11.4	-7.8	-9.2	-15.7	23.9	9.1	4.6	10.4	5.8	-37.6	18.9	10.2	-5.5	10.5	9.0	2.8	-3.8	5.7	7.7	-2.5	2.0	6.4
60/40 Global Portfolio	-5.1	7.3	-14.0	-12.4	-20.5	11.6	6.9	4.6	9.1	4.4	-38.4	11.5	8.2	-5.7	4.8	0.1	0.0	-4.4	2.6	5.1	-3.6	1.8	3.9
Commodities	-6.5	4.8	-22.4	-19.5	-21.7	9.0	6.3	4.2	4.8	-0.2	-38.5	5.9	6.5	-11.7	4.2	-2.0	-1.8	-7.5	1.0	3.5	-4.1	0.8	2.9
International Equity	-25.3	-0.8	-22.4	-20.4	-27.9	4.1	4.3	3.2	4.3	-1.6	-43.1	0.2	5.7	-13.3	0.1	-2.3	-4.5	-14.9	0.5	1.7	-9.3	0.6	0.3
Emerging Markets Equity	-27.0	-1.5	-30.6	-21.2	-30.3	1.0	1.4	2.4	2.1	-9.8	-53.2	-16.9	0.1	-18.2	-1.1	-9.5	-17.0	-24.7	0.3	0.9	-15.7	-7.3	-4.2

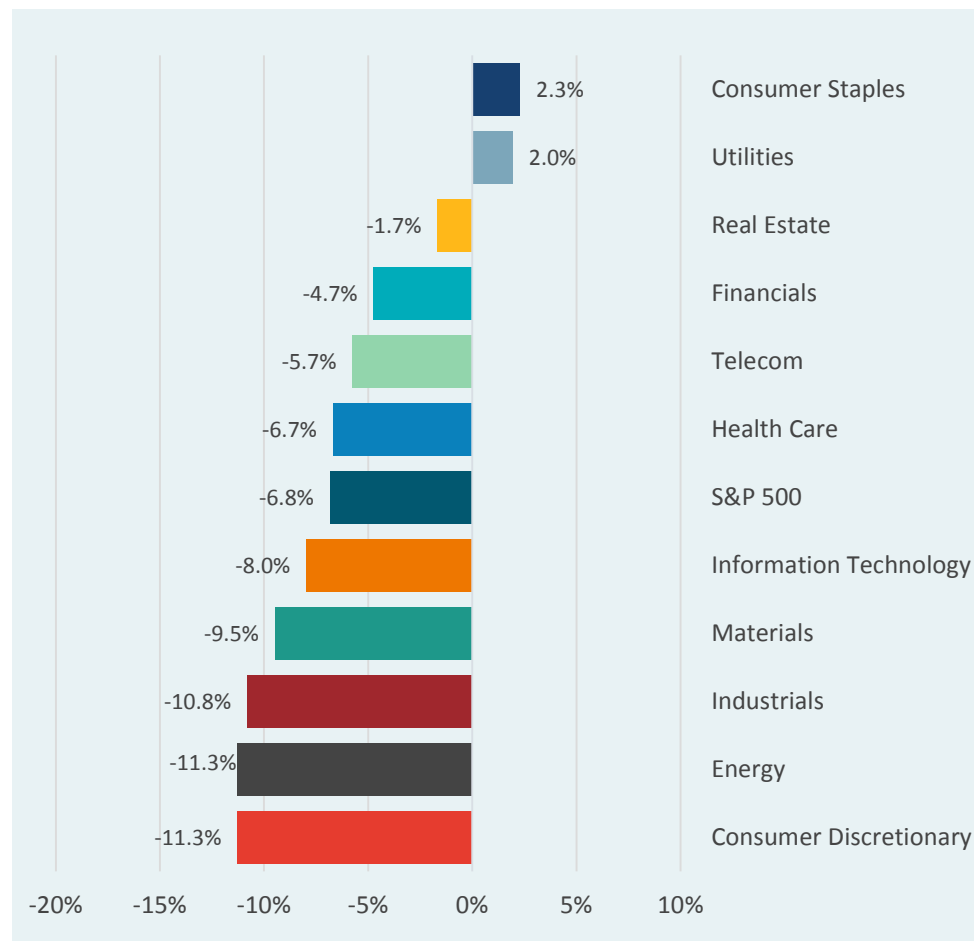
WORST

 Large Cap Equity	 Small Cap Growth	 Commodities
 Large Cap Value	 International Equity	 Real Estate
 Large Cap Growth	 Emerging Markets Equity	 Hedge Funds of Funds
 Small Cap Equity	 US Bonds	 60% MSCI ACWI/40% BBgBarc Global Bond
 Small Cap Value	 Cash	

Source Data: Morningstar, Inc., Hedge Fund Research, Inc. (HFR), National Council of Real Estate Investment Fiduciaries (NCREIF). Indices used: Russell 1000, Russell 1000 Value, Russell 1000 Growth, Russell 2000, Russell 2000 Value, Russell 2000 Growth, MSCI EAFE, MSCI EM, BBgBarc US Aggregate, T-Bill 90 Day, Bloomberg Commodity, NCREIF Property, HFRI FOF, MSCI ACWI, BBgBarc Global Bond. NCREIF Property Index performance data as of 9/30/18.

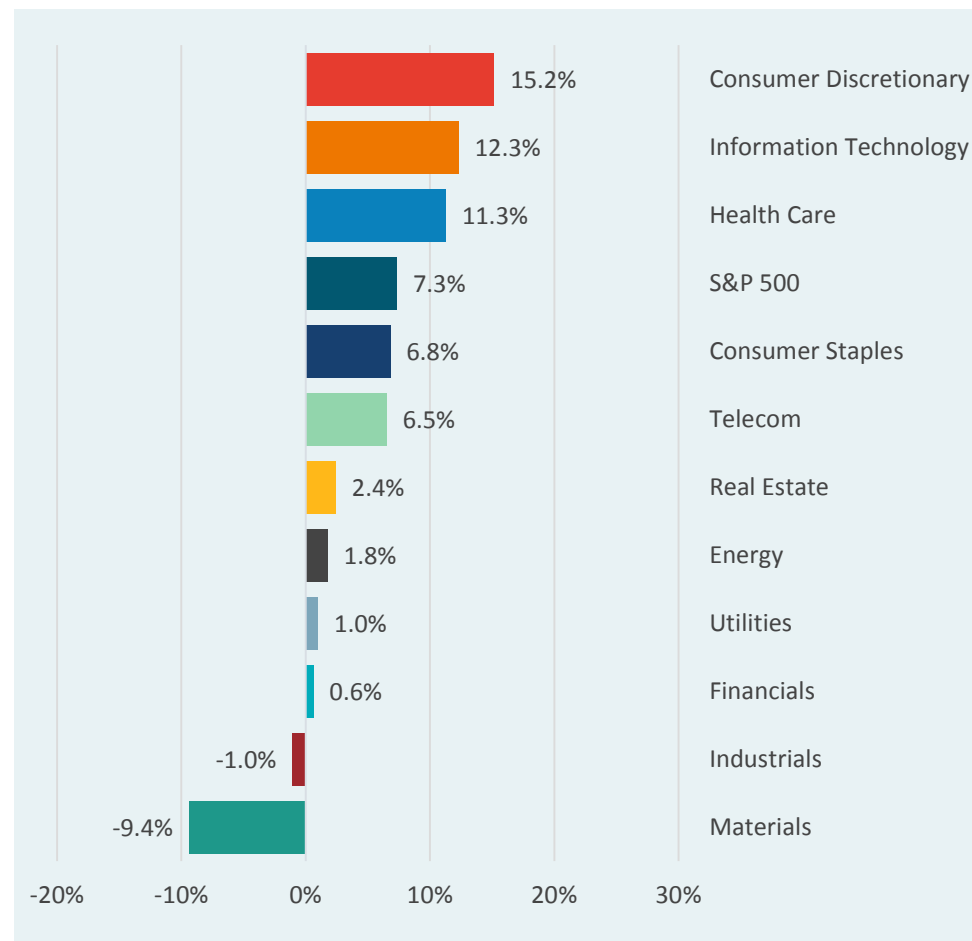
S&P 500 sector returns

QTD



Source: Morningstar, as of 10/31/18

ONE YEAR ENDING OCTOBER



Source: Morningstar, as of 10/31/18

Detailed index returns

DOMESTIC EQUITY

	Month	QTD	YTD	1 Year	3 Year	5 Year	10 Year
Core Index							
S&P 500	(6.8)	(6.8)	3.0	7.3	11.5	11.3	13.2
S&P 500 Equal Weighted	(7.2)	(7.2)	(0.4)	4.6	10.0	9.9	15.0
DJ Industrial Average	(5.0)	(5.0)	3.4	9.9	15.2	12.8	13.3
Russell Top 200	(6.6)	(6.6)	4.3	8.6	12.2	11.9	13.1
Russell 1000	(7.1)	(7.1)	2.7	7.0	11.3	11.1	13.4
Russell 2000	(10.9)	(10.9)	(0.6)	1.9	10.7	8.0	12.4
Russell 3000	(7.4)	(7.4)	2.4	6.6	11.3	10.8	13.3
Russell Mid Cap	(8.3)	(8.3)	(1.5)	2.8	9.0	9.0	14.2
Style Index							
Russell 1000 Growth	(8.9)	(8.9)	6.6	10.7	13.7	13.4	15.5
Russell 1000 Value	(5.2)	(5.2)	(1.5)	3.0	8.9	8.6	11.3
Russell 2000 Growth	(12.7)	(12.7)	1.1	4.1	10.7	8.8	13.9
Russell 2000 Value	(9.0)	(9.0)	(2.5)	(0.6)	10.5	7.2	10.9

INTERNATIONAL EQUITY

	Month	QTD	YTD	1 Year	3 Year	5 Year	10 Year
Broad Index							
MSCI ACWI	(7.5)	(7.5)	(4.0)	(0.5)	7.7	6.1	9.7
MSCI ACWI ex US	(8.1)	(8.1)	(11.0)	(8.2)	4.4	1.6	6.9
MSCI EAFE	(8.0)	(8.0)	(9.3)	(6.9)	3.6	2.0	6.9
MSCI EM	(8.7)	(8.7)	(15.7)	(12.5)	6.5	0.8	7.8
MSCI EAFE Small Cap	(9.6)	(9.6)	(11.6)	(7.8)	6.6	5.2	11.6
Style Index							
MSCI EAFE Growth	(9.2)	(9.2)	(8.7)	(6.0)	4.0	3.1	7.5
MSCI EAFE Value	(6.6)	(6.6)	(9.9)	(7.7)	3.2	0.9	6.2
Regional Index							
MSCI UK	(6.8)	(6.8)	(9.3)	(4.7)	1.3	0.1	6.4
MSCI Japan	(8.5)	(8.5)	(7.0)	(3.6)	5.4	4.9	6.7
MSCI Euro	(8.4)	(8.4)	(11.7)	(12.1)	2.4	0.9	5.2
MSCI EM Asia	(10.9)	(10.9)	(17.0)	(14.6)	6.5	3.3	10.0
MSCI EM Latin American	3.5	3.5	(3.7)	(2.4)	12.7	(2.5)	4.9

FIXED INCOME

	Month	QTD	YTD	1 Year	3 Year	5 Year	10 Year
Broad Index							
BBgBarc US TIPS	(1.4)	(1.4)	(2.3)	(1.2)	1.5	1.0	4.1
BBgBarc US Treasury Bills	0.2	0.2	1.5	1.6	0.9	0.6	0.4
BBgBarc US Agg Bond	(0.8)	(0.8)	(2.4)	(2.1)	1.0	1.8	3.9
Duration							
BBgBarc US Treasury 1-3 Yr	0.1	0.1	0.4	0.2	0.4	0.6	1.0
BBgBarc US Treasury Long	(3.0)	(3.0)	(8.7)	(6.4)	(0.1)	3.5	5.5
BBgBarc US Treasury	(0.5)	(0.5)	(2.1)	(2.0)	0.2	1.1	2.6
Issuer							
BBgBarc US MBS	(0.6)	(0.6)	(1.7)	(1.5)	0.7	1.8	3.4
BBgBarc US Corp. High Yield	(1.6)	(1.6)	0.9	1.0	6.6	4.7	11.2
BBgBarc US Agency Interm	0.1	0.1	0.1	(0.1)	0.6	1.0	2.3
BBgBarc US Credit	(1.4)	(1.4)	(3.5)	(2.8)	2.3	2.8	6.4

OTHER

	Month	QTD	YTD	1 Year	3 Year	5 Year	10 Year
Index							
Bloomberg Commodity	(2.2)	(2.2)	(4.1)	(1.7)	(0.7)	(7.3)	(4.2)
Wilshire US REIT	(3.0)	(3.0)	(0.8)	1.8	4.0	7.7	11.3
CS Leveraged Loans	0.0	0.0	4.4	4.9	5.5	4.2	7.3
Alerian MLP	(8.2)	(8.2)	(3.4)	(0.5)	(2.0)	(4.9)	9.0
Regional Index							
JPM EMBI Global Div	(2.2)	(2.4)	(5.1)	(4.4)	4.3	4.3	9.2
JPM GBI-EM Global Div	(2.0)	(5.5)	(9.9)	(6.6)	2.9	(2.6)	4.1
Hedge Funds							
HFRI Composite	(3.0)	(3.0)	(1.7)	(0.2)	3.7	3.2	5.0
HFRI FOF Composite	(2.7)	(2.7)	(1.8)	(0.9)	2.1	2.4	2.9
Currency (Spot)							
Euro	(2.4)	(2.4)	(5.6)	(2.7)	0.8	(3.6)	(1.1)
Pound	(2.0)	(2.0)	(5.5)	(3.8)	(6.1)	(4.5)	(2.3)
Yen	0.6	0.6	(0.2)	0.7	2.3	(2.8)	(1.4)

Source: Morningstar, HFR, as of 10/31/18

Notices & disclosures

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