S&P 500 POSTS DEEPEST MONTHLY LOSS IN SEVEN YEARS

- With a -6.8% return in October, the S&P 500 locked in its first calendar-month loss since March and its largest since September 2011.
- The decline wiped out nearly 3/4 of the YTD return it had earned through the end of September.
- No other segment of the equity market offered any haven; mid- and small-cap stocks were down 9.5% and 10.5%, while developed and emerging market equities fell 8.1% and 8.6%, respectively.
- EM equities are down 22.7% from their 2018 peak in January and down 15.1% YTD, erasing more than half of their 37.7% return in 2017.
- Consumer staples and utilities were the only positive sectors in October, while industrials, energy and consumer staples endured the biggest sector losses.
- The volatility of the S&P 500 in October was more than 4x what it was in September and more than 2x its five year average.
- As is often the case amidst market turmoil, the correlation of the S&P 500 with other segments of the equity market trended higher, while moving sharply lower against the US aggregate bond market, higher interest rates notwithstanding.

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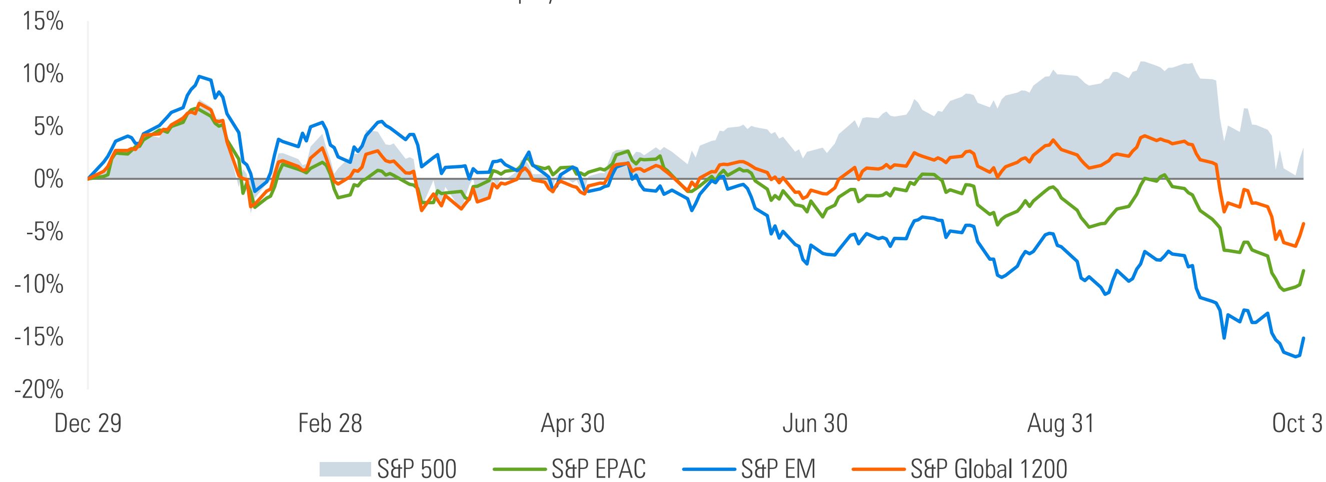
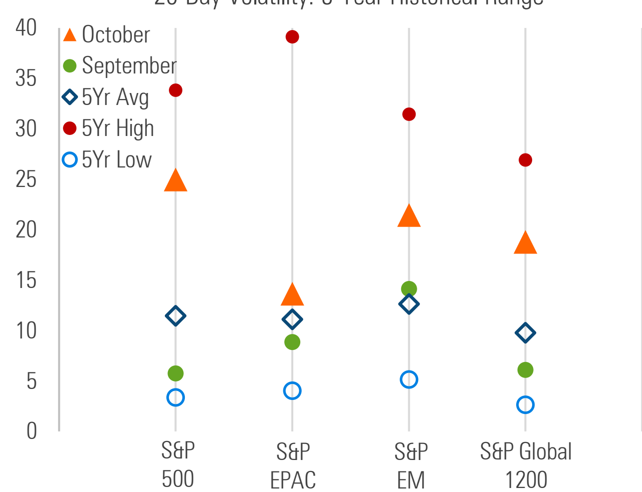
Global Equity Markets: 2018 YTD Cumulative Total Return



20-Day Volatility: 5-Year Historical Range



Rolling 3-Month Correlation to S&P 500

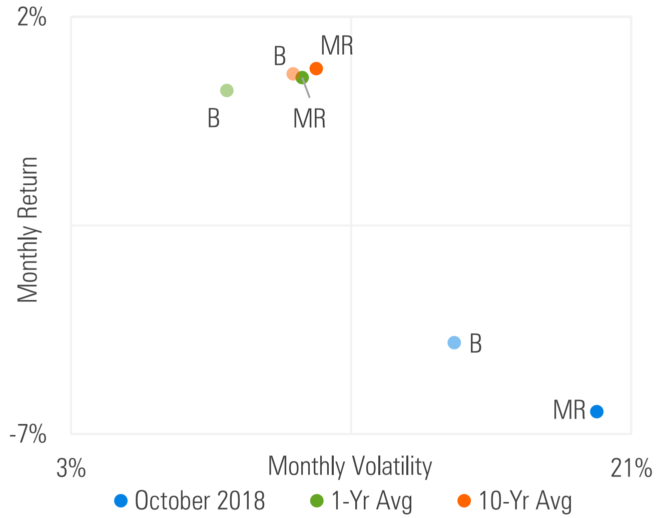
MANAGED RISK INVESTING

- The volatility of the S&P 500 climbed above the 18% volatility threshold of the S&P 500 Managed Risk Index. As a result, the index reduced its equity allocation from 100% at the beginning of the month to 66% by month end.
- By virtue of its hedging, the Managed Risk Index outperformed the S&P 500 by 32 basis points while reducing max drawdown by 111 bps.
- The return of the US aggregate bond market was also negative, but much less so than stocks, so a 70/30 blend* of the two outperformed the Managed Risk Index for the third time in the last 24 months.
- Over the last 10 years, the Managed Risk Index has exhibited marginally higher average monthly volatility than a 70/30 blend*, while generating an average excess monthly return of 11 bps, equal to an annualized excess return of 1.42% per year.

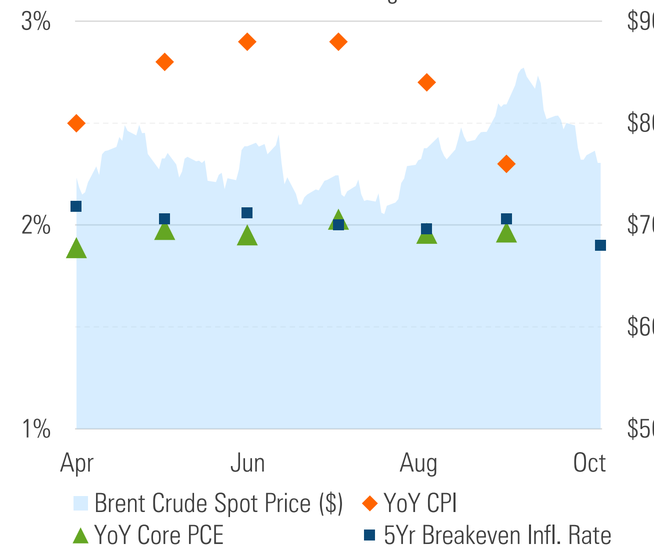
- The price of Brent crude oil continued to climb, reaching $85.44, its highest price in four years, before falling back to $76.
- Year-over-year CPI declined for the second straight month, falling from 2.9% in July to 2.3% in September. Meanwhile YoY PCE and 5-yr inflation expectations continued to hover around 2%.

*Measured by the S&P 500 and the S&P U.S. Agg Bond Index

S&P 500 Managed Risk (MR) vs. 70/30 Blend* (B)



Oil & Inflation: Trailing 6 Months

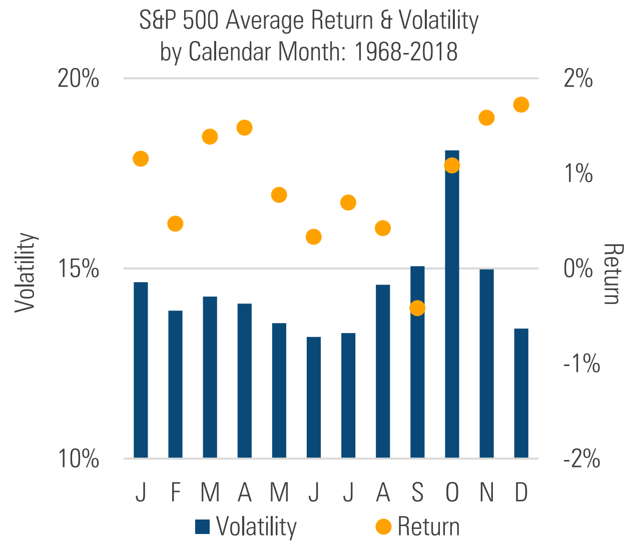


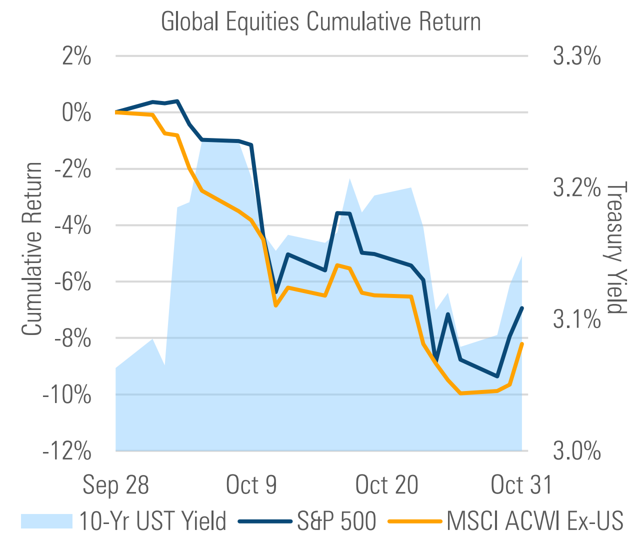
Total Returns as of October 31, 2018

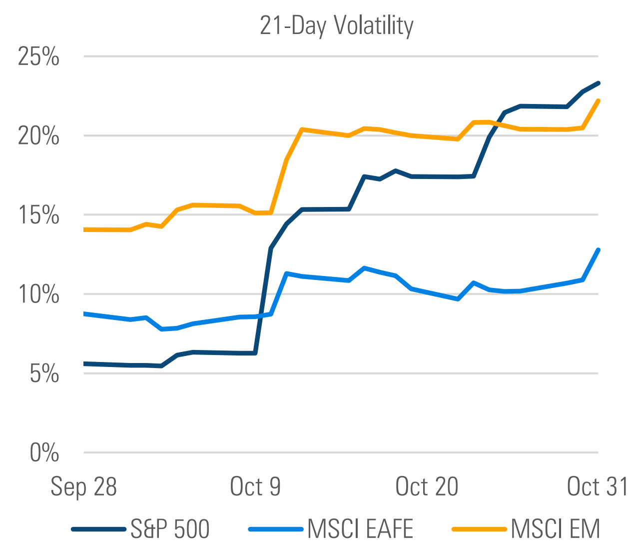
	S&P 500	S&P 500 MR	S&P 400	S&P 600	S&P EPAC	S&P EM	S&P Global 1200	S&P US AGG	Crude Oil (Brent)	US Dollar	70/30 Stock/Bond
1 Month	-6.8%	-6.5%	-9.5%	-10.5%	-8.1%	-8.6%	-7.3%	-0.6%	-7.0%	2.3%	-5.0%
3 Months	-3.3%	-2.9%	-7.7%	-9.1%	-8.8%	-11.7%	-5.6%	-0.6%	1.6%	3.0%	-2.7%
6 Months	3.4%	3.3%	-1.8%	0.9%	-9.7%	-16.1%	-2.4%	0.0%	1.9%	5.6%	1.8%
1 Year	7.3%	6.1%	1.0%	5.6%	-6.3%	-11.9%	1.2%	-1.6%	25.5%	2.5%	3.4%
1M Volatility	25.0%	22.2%	21.8%	25.9%	13.7%	21.5%	18.8%	2.2%	24.9%	4.6%	15.3%

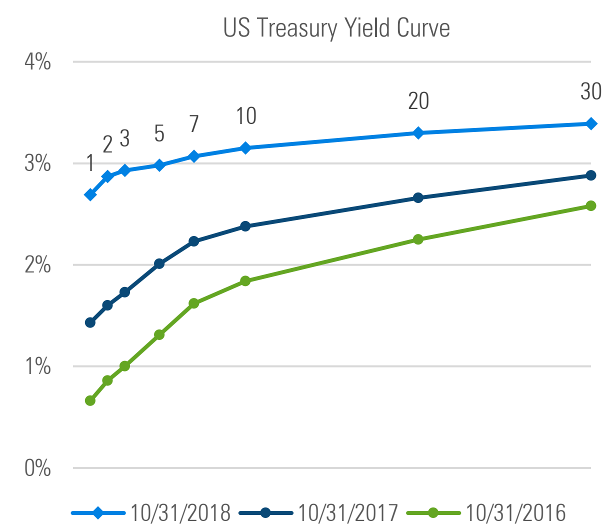
OCTOBER DELIVERED ON ITS REPUTATION FOR HIGHER EQUITY MARKET VOLATILITY

- Over the last 50 years, October has easily been the most volatile calendar month for the S&P 500, exhibiting average volatility of 18.3%.
- In 2018, October lived up to its reputation for higher volatility, although did not quite match the elevated choppiness exhibited during February earlier this year.
- Not only was there a high level of variability in the closing prices, but also in the intraday swings. During the four preceding months, the average intraday move of the index was just 0.63%. In October, it more than doubled, jumping to 1.69%.
- The selloff in equities and the accompanying rise in volatility appear to have been related, at least in part, to ongoing trade concerns as well as a sharp rise in interest rates.
- From the beginning of September through October 5, the yield on the 10-yr US Treasury rose from 2.86% to 3.24%, with a particularly sharp move in early October.
- The increase in volatility was not limited to the US, as stock markets in both developed and emerging countries became increasingly unsettled.
- Past is of course not prologue, but on average, investors who were in the market (i.e. S&P 500) heading into the last two months of the year were rewarded with the year's two best monthly returns on both an absolute and risk-adjusted basis.









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