Capital Markets Outlook

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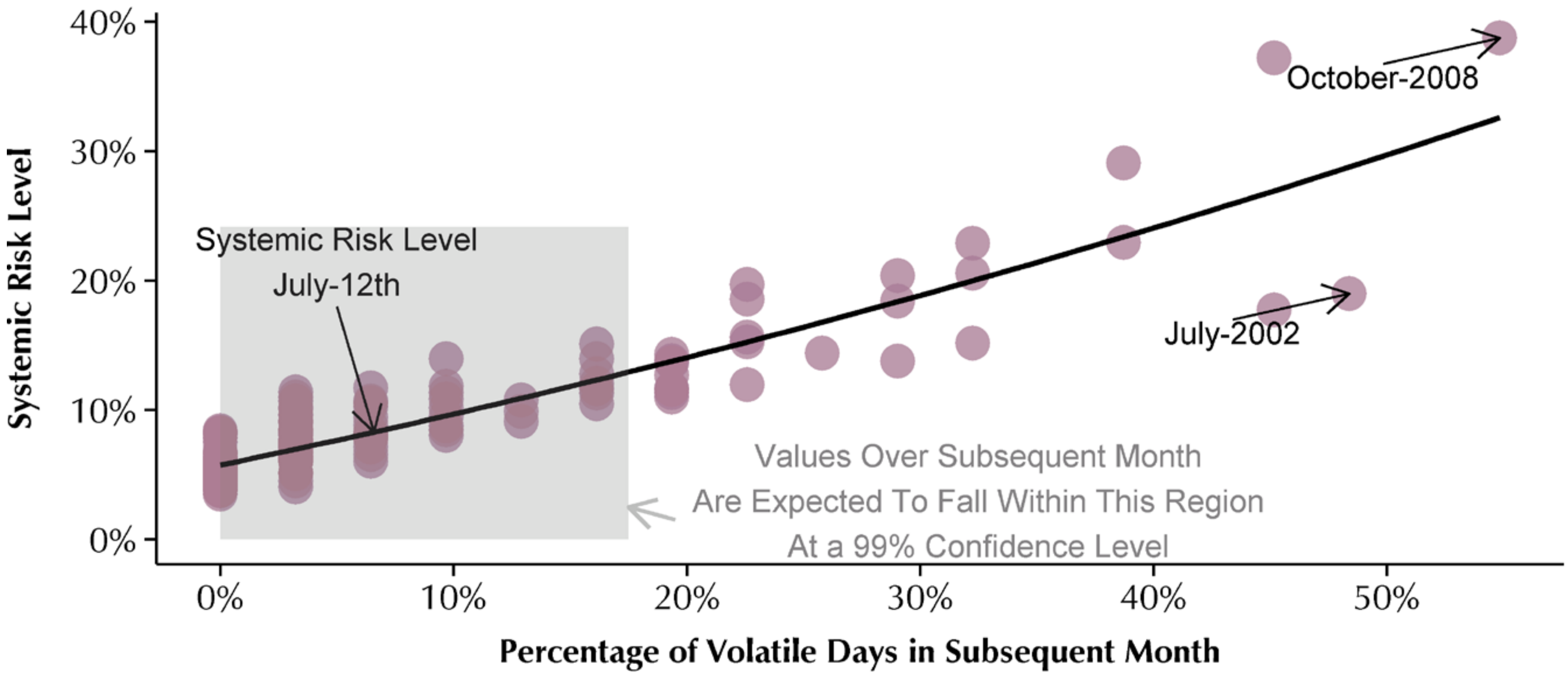
Capital Markets Outlook[1]

- Investors are faced with four primary issues in the near-term: 1) historically low bond yields, 2) the potential for a transition into a rising rate environment, 3) the potential for deteriorating corporate earnings, and 4) the possibility of much lower energy prices for a sustained period.
  - The price of the U.S. stock market relative to ten-year average earnings has trended up after the financial crisis, and remains above its historical average (28.8x versus 21.8x).
    - Valuations of small cap domestic stocks have spiked into a historically expensive range relative to large cap stocks after trending towards the historical average last year.
  - Developed international and emerging market stocks are trading at lower valuations than U.S. stocks.
    - Sovereign debt issues and weak economic growth in Europe, and a cyclical slowdown in emerging economies, are weighing down valuations.
  - Risk across markets measured by our Systemic Risk metric has reacted negatively to the recent increase of uncertainty within markets.
    - The recent ‘Brexit’ vote, along with other political upheaval and monetary policy changes by central banks, will continue to have a meaningful impact.
  - At the end of June, spreads for high yield corporate and investment grade bonds (5.9% and 1.6%, respectively) are slightly above their long-term averages.
  - At 1.5%, the yield on the ten-year Treasury remained far below its post-WWII average of 5.6%.
  - Crude Oil prices have partially rebounded from a steep decline, which has had wide ranging effects across several markets.

[1] Sources: Thomson Reuters, U.S. Treasury, and Standard & Poor’s. Data is as of September 30, 2016.

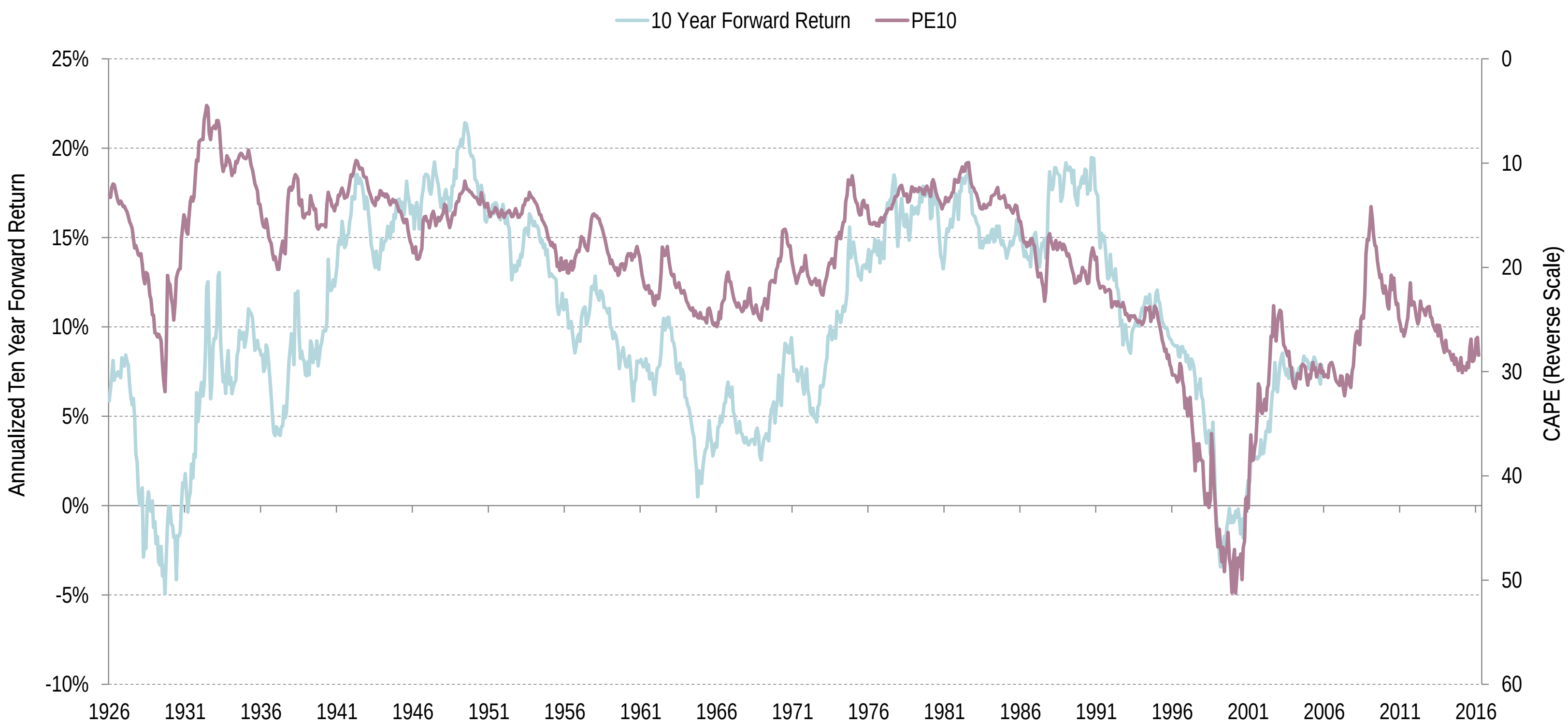
Systemic Risk and Volatile Market Days[1]



- Systemic Risk, which measures risk across markets, is important because the more contagion of risk that exists between assets, the more likely it is that markets will experience volatile periods.
- After a volatile start to the year, our Systemic Risk measure has returned to reasonable levels. While the number of volatile days can differ, this indicates that the next month should be in the lowest 20%.

[1] Source: Meketa Investment Group, as of July 12, 2016. Volatile days are defined as the top 10 percent of realized turbulence which is a multivariate distance between asset returns.

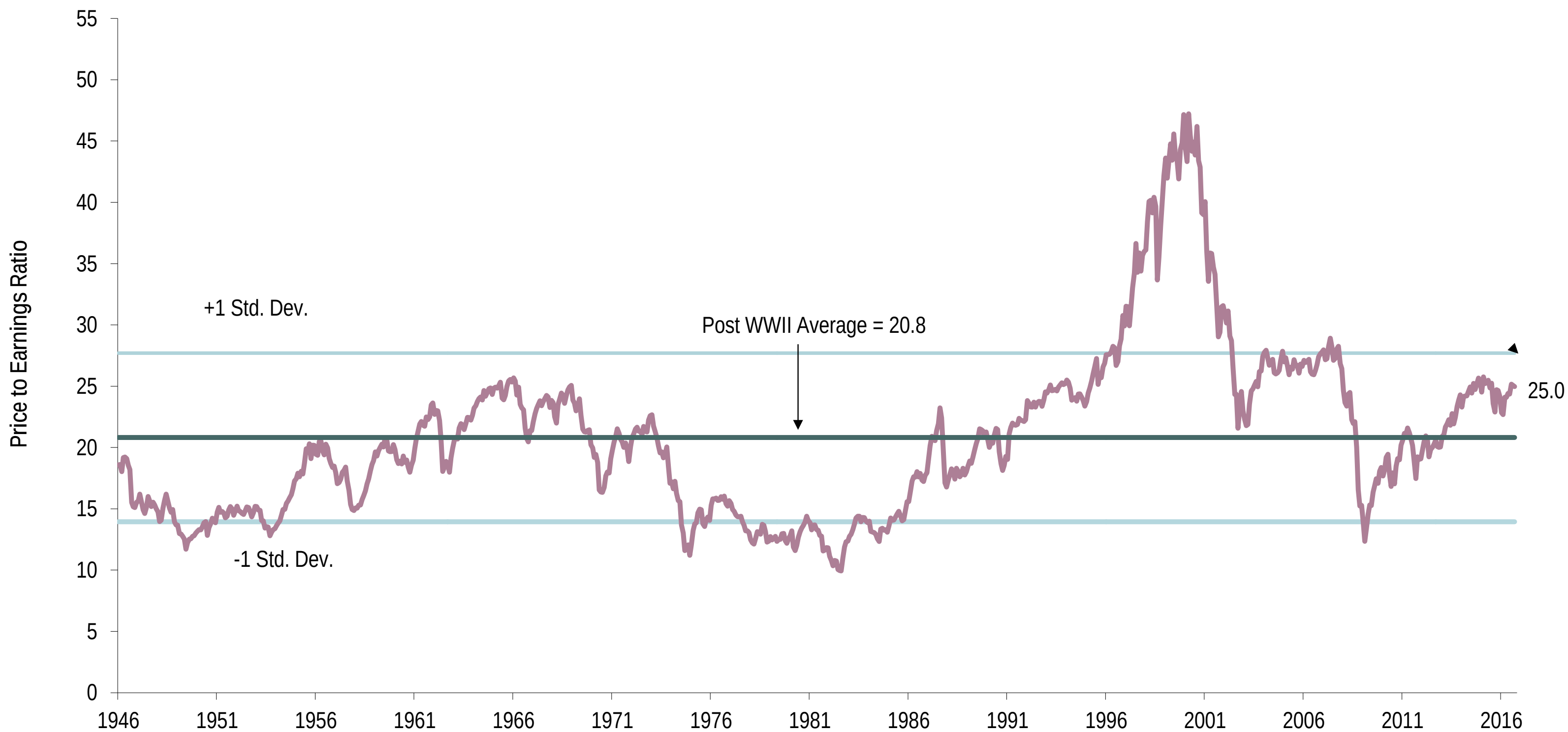
The U.S. Cyclically Adjusted P/E[1] and Long-Term Equity Returns



- One of the most powerful predictors of long-term equity returns has been the Cyclically Adjusted Price to Earnings Ratio (CAPE).
- This fundamentally driven measure is highly correlated with future returns, which are shown in the chart above using the CAPE metric on a reverse scale.

[1] Source: PE data are from Robert Shiller's website from 1926 - 1946; S&P and Thomson Reuters 1946 – present. S&P 500 equity returns are from Morningstar Direct for the entire period. Data is from May 31, 1926 to September 30, 2016.

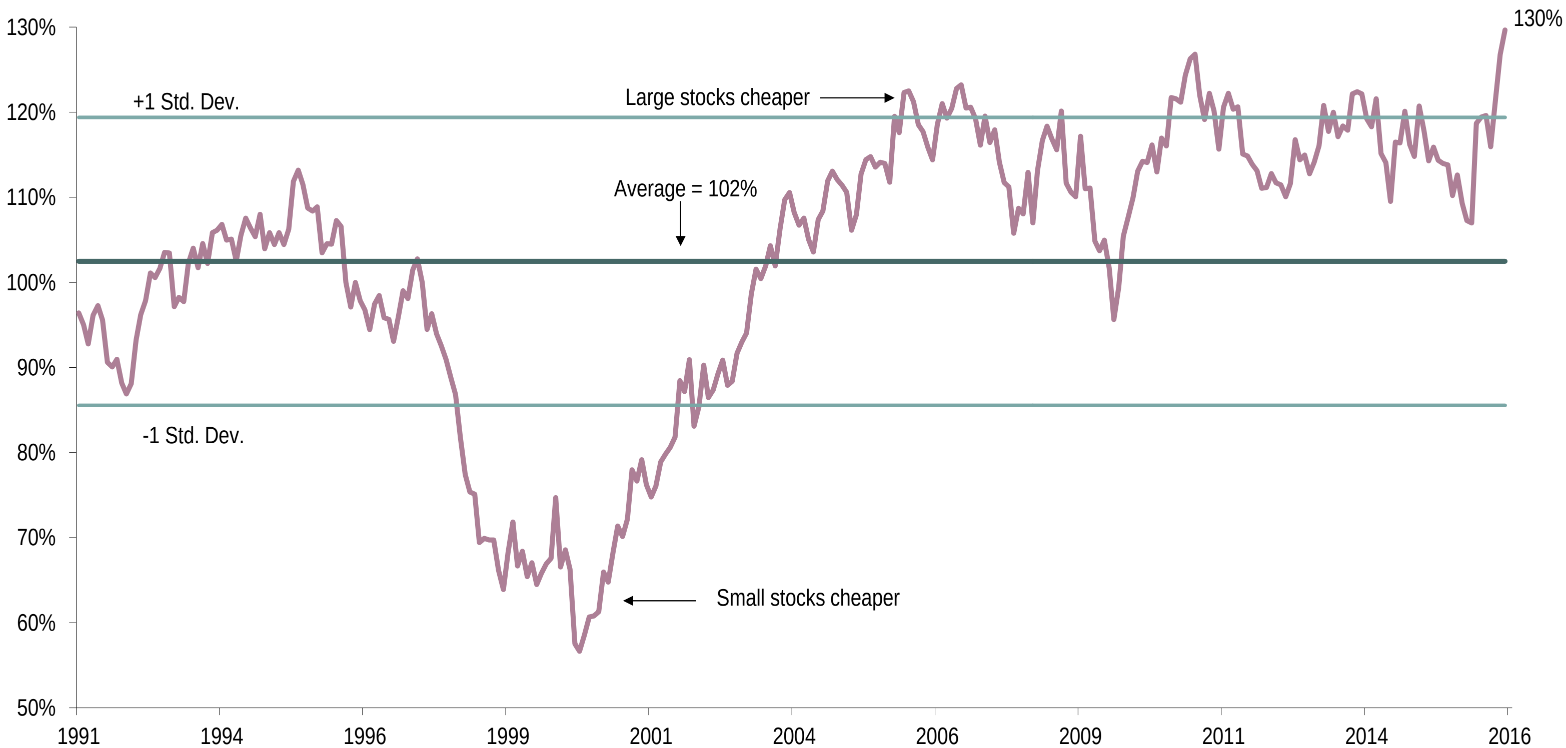
U.S. Equity Cyclically Adjusted P/E[1]



- The cyclically adjusted P/E ratio for the S&P 500 finished June at 28.8x, above its post-WWII average of 21.8x.
- Due to the recent pullback in equity markets, this metric has fallen slightly below the positive standard deviation threshold. Historically, a P/E ratio at this level has led to roughly average future returns over a 10 year horizon.

[1] Source: Standard & Poor's. Earnings figures represent the average of monthly "as reported" earnings over the previous ten years. Data is from January 31, 1946 to September 30, 2016.

Small Cap P/E vs. Large Cap P/E[1]



- The P/E ratio of small cap stocks (Russell 2000) relative to large cap stocks (Russell 1000) recently spiked after trending toward its long term average over last year.
- This relative valuation metric has remained largely range bound since 2010 and remains below the one positive standard deviation threshold.

[1] Source: Russell Investments. Earnings figures represent 12-month "as reported" earnings. Data is as of September 30, 2016.

Growth P/E vs. Value P/E[1]

- The P/E ratio of growth stocks (Russell 3000 Growth) relative to value stocks (Russell 3000 Value) finished June at 135%, well above its level in 2009 but still below its long-term average.
- Of note, the long-term average was sharply influenced by the technology bubble of the late 1990s.

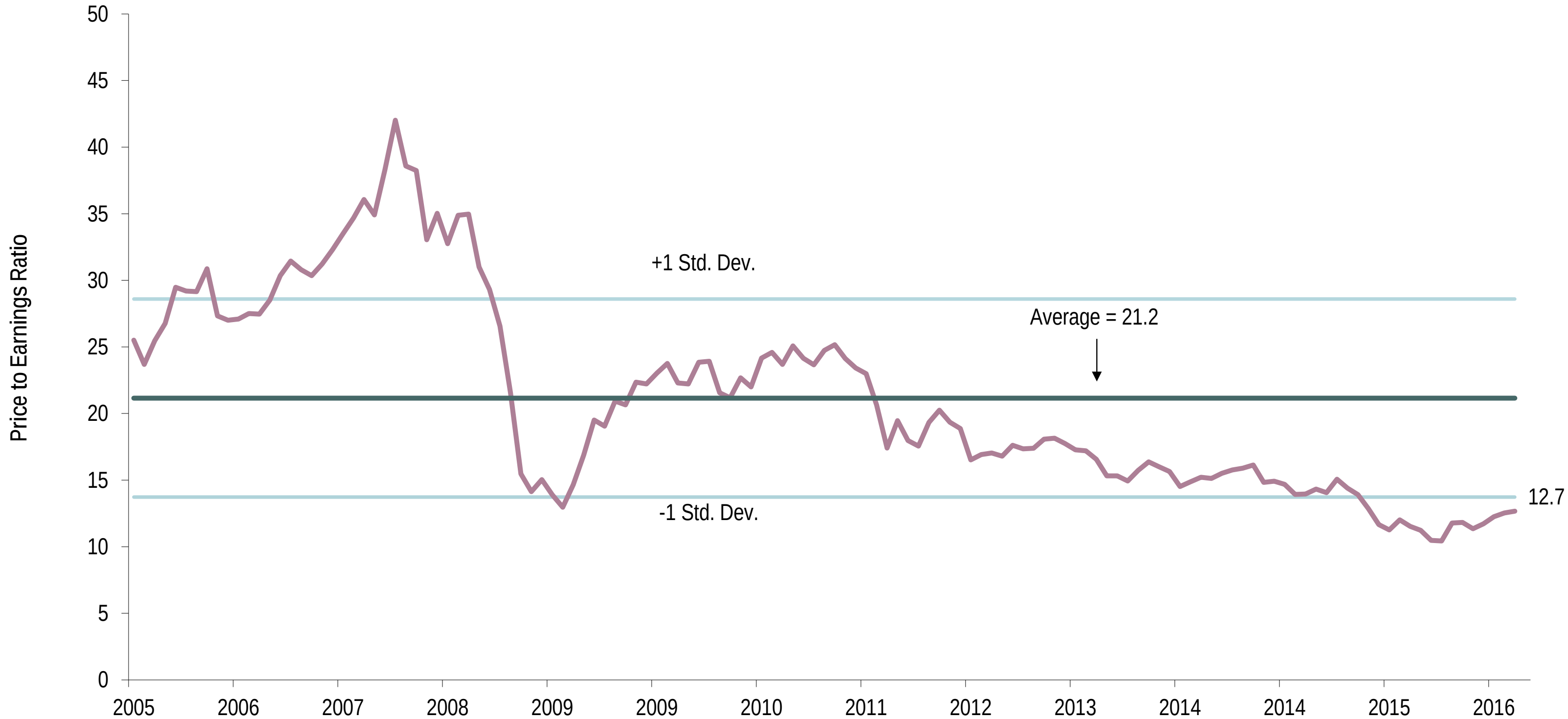
[1] Source: Russell Investments. Earnings figures represent 12-month “as reported” earnings. Data is as of September 30, 2016.

Developed International Equity Cyclically Adjusted P/E[1]

- Valuations for the MSCI EAFE (ex-Japan) remain more than one standard deviation cheaper than their historical average.
- Sovereign debt concerns and the slow pace of economic growth in Europe likely account for the low valuation levels.

[1] Source: MSCI and Thomson Reuters. Earnings figures represent the average of monthly "as reported" earnings over the previous ten years. Data is as of September 30, 2016.

Emerging Market Equity Cyclically Adjusted P/E[1]



- Emerging market equities (MSCI Emerging Markets) are priced more than one standard deviation below their (brief) historical average.
- By this metric, emerging market equities are trading at a much lower valuation than U.S. equities, and at a slightly lower valuation than non-U.S. developed market equities.

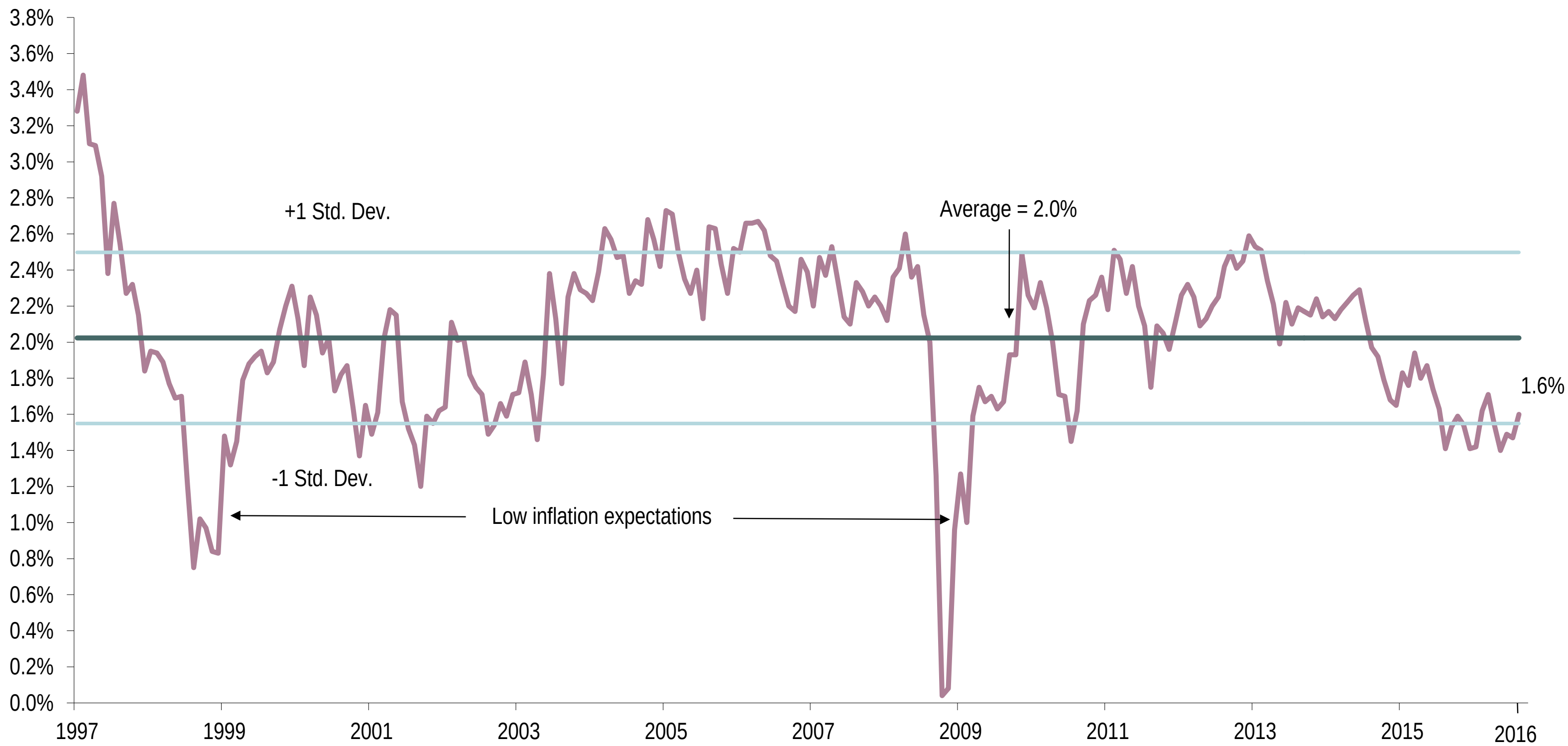
[1] Source: MSCI and Thomson Reuters. Earnings figures represent the average of monthly "as reported" earnings over the previous ten years. Data is as of September 30, 2016.

Ten-Year Treasury Yields[1]

- Ten-year Treasury yields finished June at 1.5%, well below both their post-WWII average and the levels of one year ago.
- Markets have begun to focus on the path of central bank interest rates; at the beginning of the year, the FOMC began the first rising rate environment since 2006, but the guidance remains relatively dovish and long term market expectations remain subdued.

[1] Source: U.S. Treasury. Data is as of September 30, 2016.

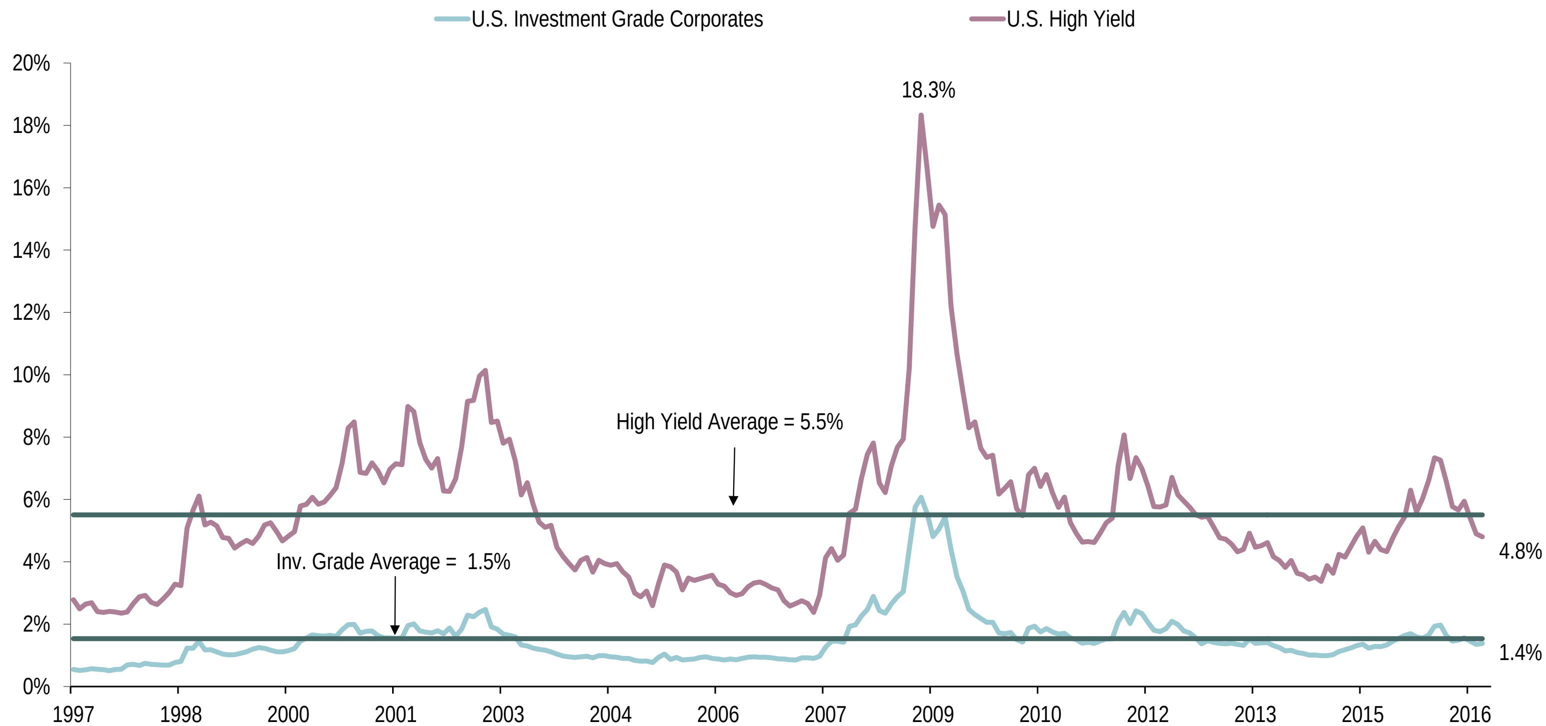
Ten-Year Breakeven Inflation[1]



- Breakeven (or expected) inflation, the difference between the nominal yield on a ten-year Treasury and the real yield on a ten-year TIPS, has fallen well below its long-term average.
- Sharp falls in commodity prices have put pressure on inflation. The most recent Year over Year (YoY) inflation rate was 1.0%, and deflation from commodities (especially energy) has been a major headwind.

[1] Source: U.S. Treasury and Federal Reserve. Data is as of September 30, 2016 for TIPS and Treasuries. Inflation is measured by the Consumer Price Index (CPI-U NSA) for which the most recent data point is from May 31, 2016.

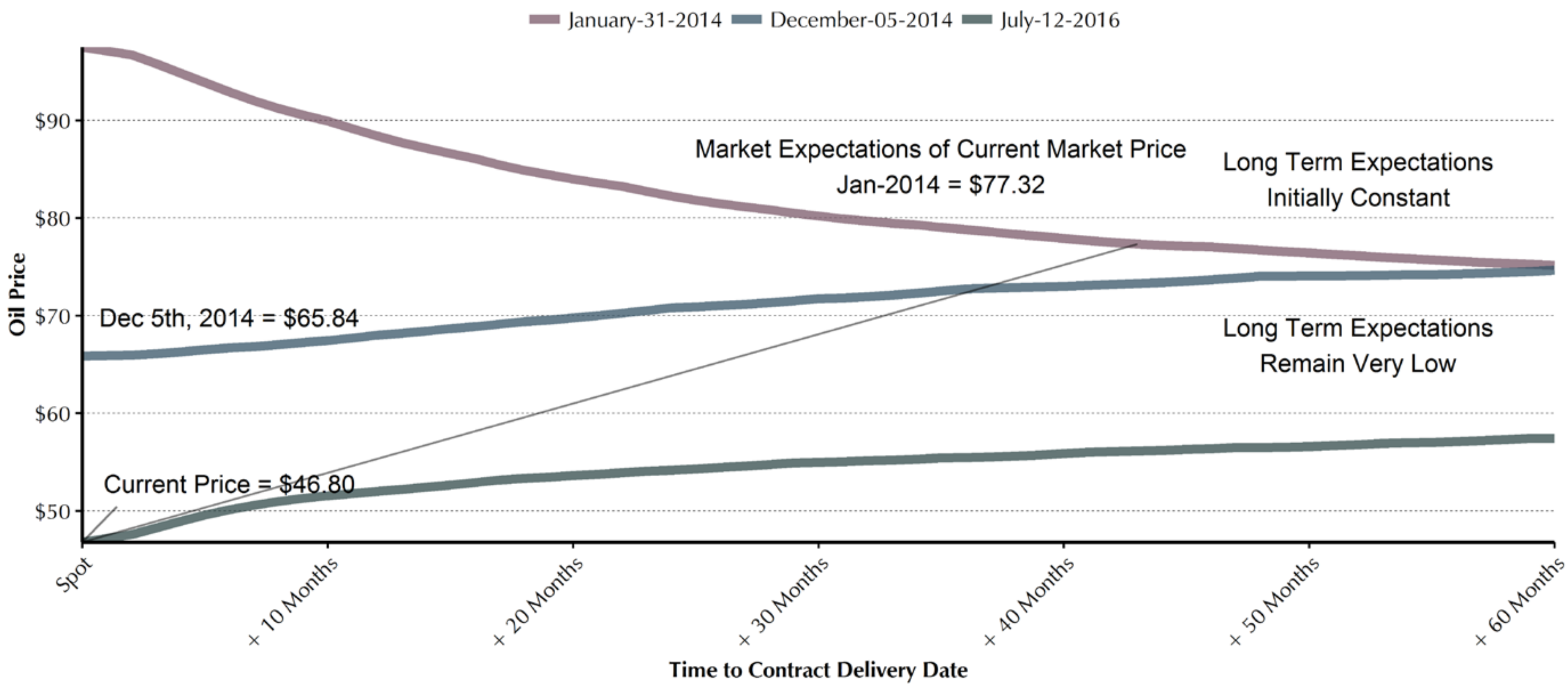
Credit Spreads[1]



- Credit spreads (versus U.S. Treasury bonds) for both high yield and investment grade corporate bonds finished June slightly above or at their respective historical averages.
- The recent jump in market risk caused a widening in spreads, especially within high yield— which was affected by market uncertainty driven largely by the energy sector and political uncertainties surrounding 'Brexit'.

[1] Source: Barclays Capital. High Yield is proxied by the Barclays High Yield index and Investment Grade Corporates are proxied by the Barclays U.S. Corporate Investment Grade index. Data is as of September 30, 2016.

Oil Price Futures Curves[1]



- The chart above shows the WTI Crude Oil futures prices as of January and December of 2014 and July of this year. This highlights how large the price fall has been, especially relative to expectations and history.
- Looking further out on the curve we can see that initially, long-term price expectations remained the same. As the oil price has continued to fall, long-term expectations have settled at a lower price.

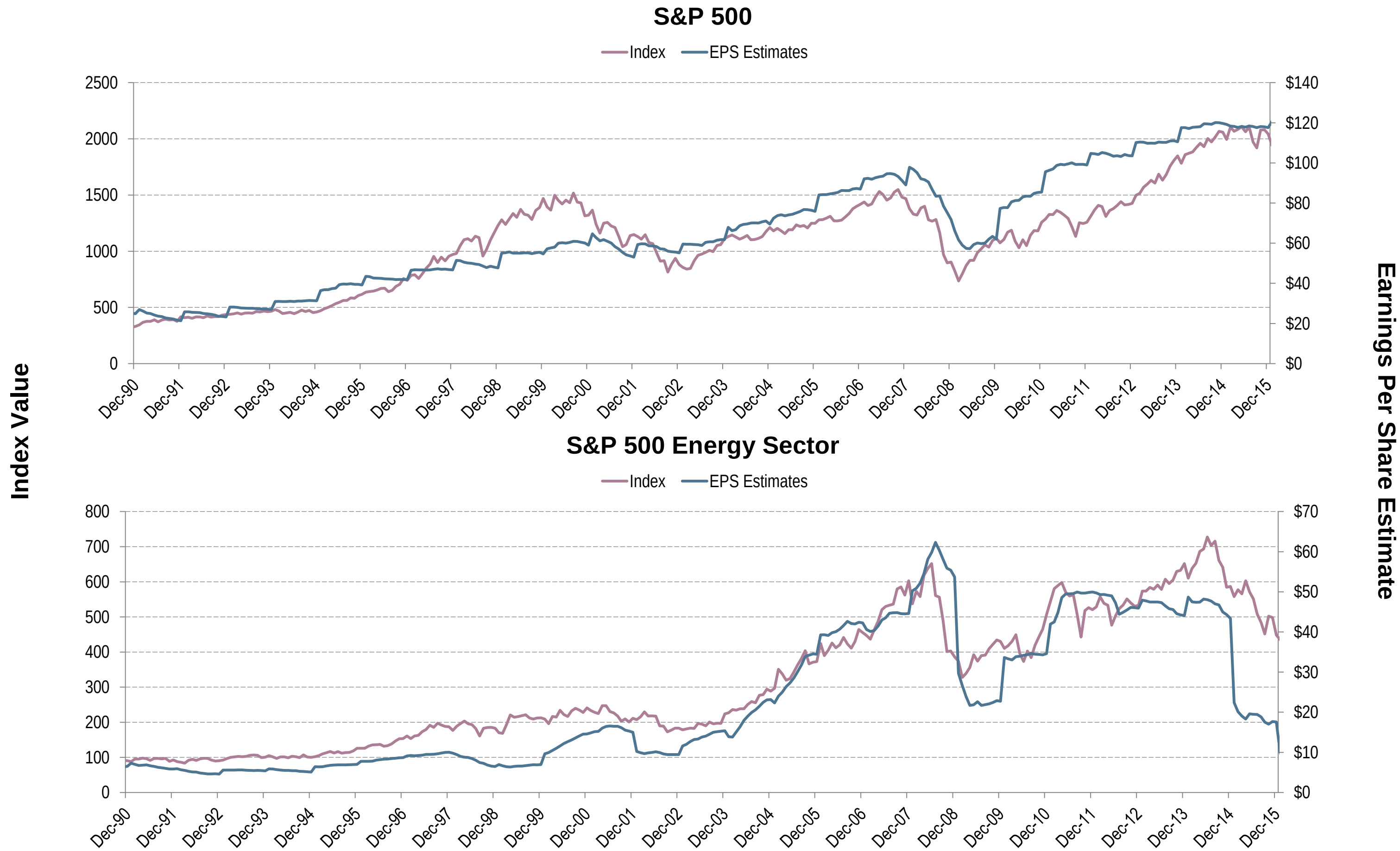
[1] Source: WTI Crude Oil Futures Price via Bloomberg. Data is as of July 12, 2016.

U.S. High Yield Sectors[1]

- The oil price decline has been a major contributing factor to the recent widening of spreads within U.S. High Yield. As the chart shows, spreads have come back in but the energy sector remains risky.
- The energy sector represents roughly 15% of the index, and as illustrated above, most widening of spreads has come from the energy sector which has now surpassed levels seen during the Financial Crisis of 2008.

[1] Source: Barclays and Thompson Reuters. Data is as of July 12, 2016.

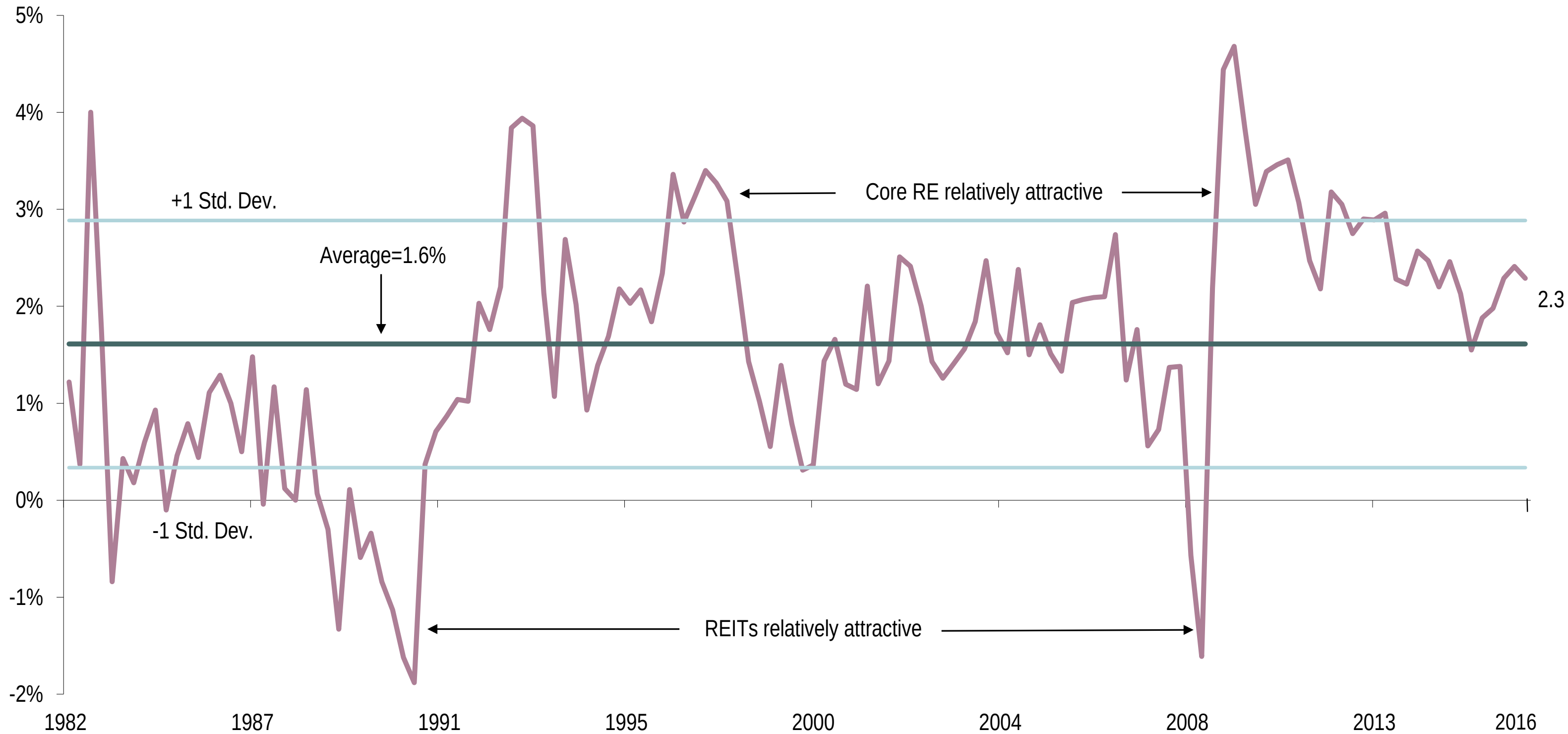
U.S. Corporate Earnings[1]



- The oil price decline has also had a major effect on U.S. earnings expectations. Although the rout in the energy sector continues to be severe, aggregating all sectors, estimates have recently fallen only slightly.

[1] Source: Bloomberg. Earnings Per Share Estimates are the average current quarter estimates of market analyst. Data is as of September 30, 2016.

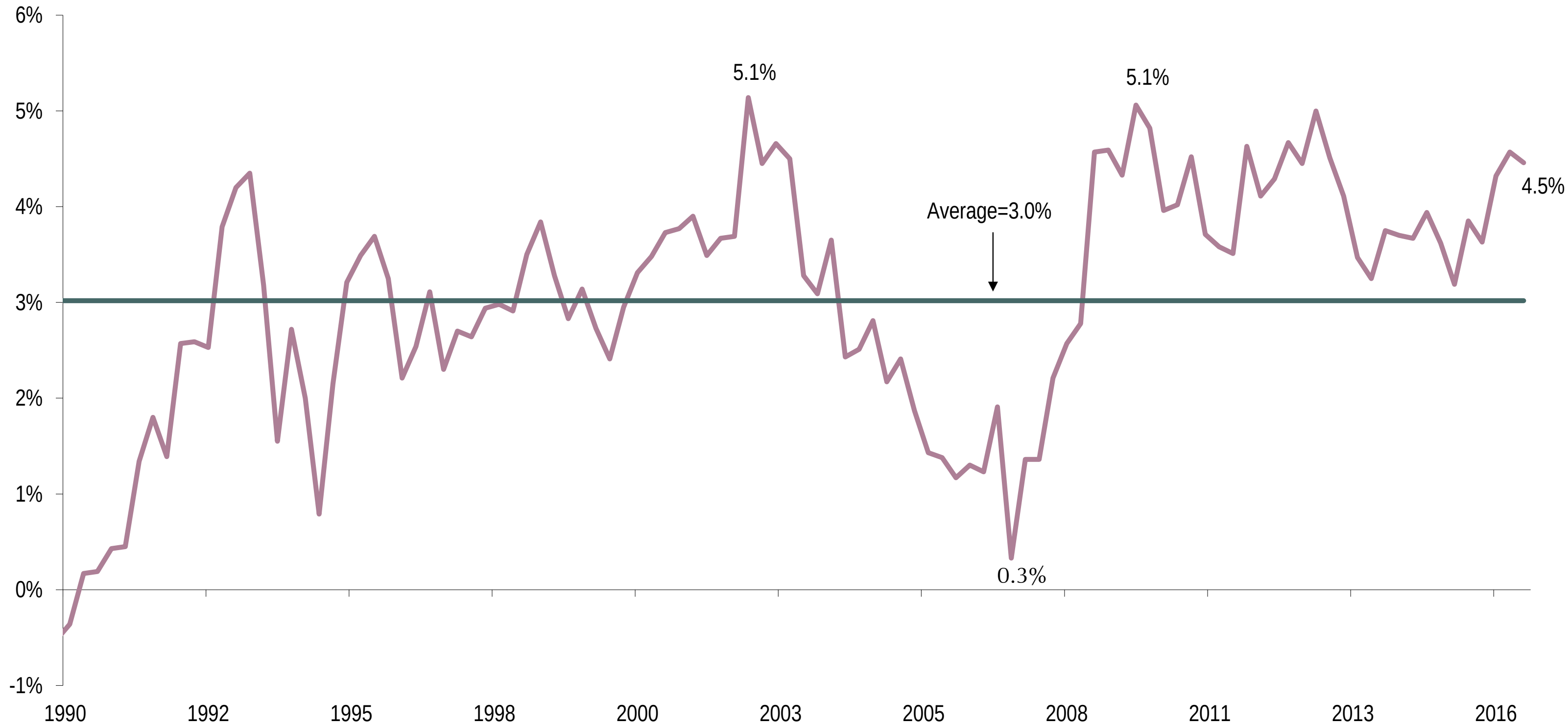
Core Real Estate vs. REITs[1]



- At the end of June, the spread between core real estate cap rates and REIT yields was 2.5%, reaching above the long term historical average level.
- REITs were yielding 3.7%, well below the 10.1% level of early 2009.

[1] Sources: Thomson Reuters and NCREIF. Core Real Estate is proxied by the transaction-based cap rate for the NCREIF NPI index and REITs are proxied by the yield for the NAREIT Equity index. NPI transactional capitalization rates are calculated on a quarterly basis and lagged in their release. Data is as of September 30, 2016 for the NCREIF NPI and September 30, 2016 for the NAREIT Equity index.

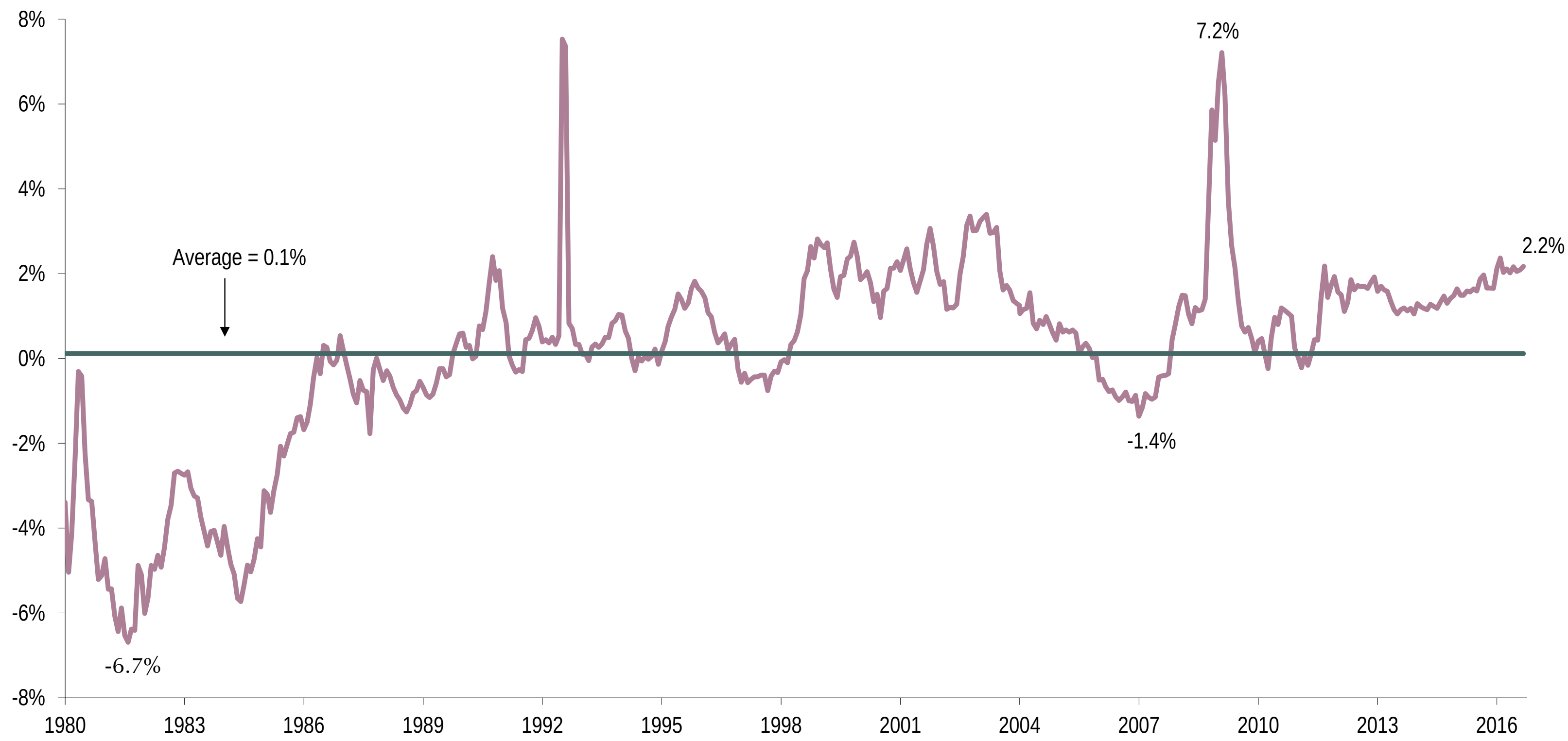
Core Real Estate Spread vs. Ten-Year Treasury[1]



- At 4.6%, the difference between the 6.1% cap rate for core real estate and the 1.5% yield for the ten-year Treasury has begun to widen after trending towards its historical average since 2012.
- Still, the absolute level of core real estate cap rates is near a historical low.

[1] Source: NCREIF, U.S. Treasury. NPI transactional capitalization rates are calculated on a quarterly basis. Data is as of September 30, 2016 for the NCREIF NPI and September 30, 2016 for the ten-year Treasury.

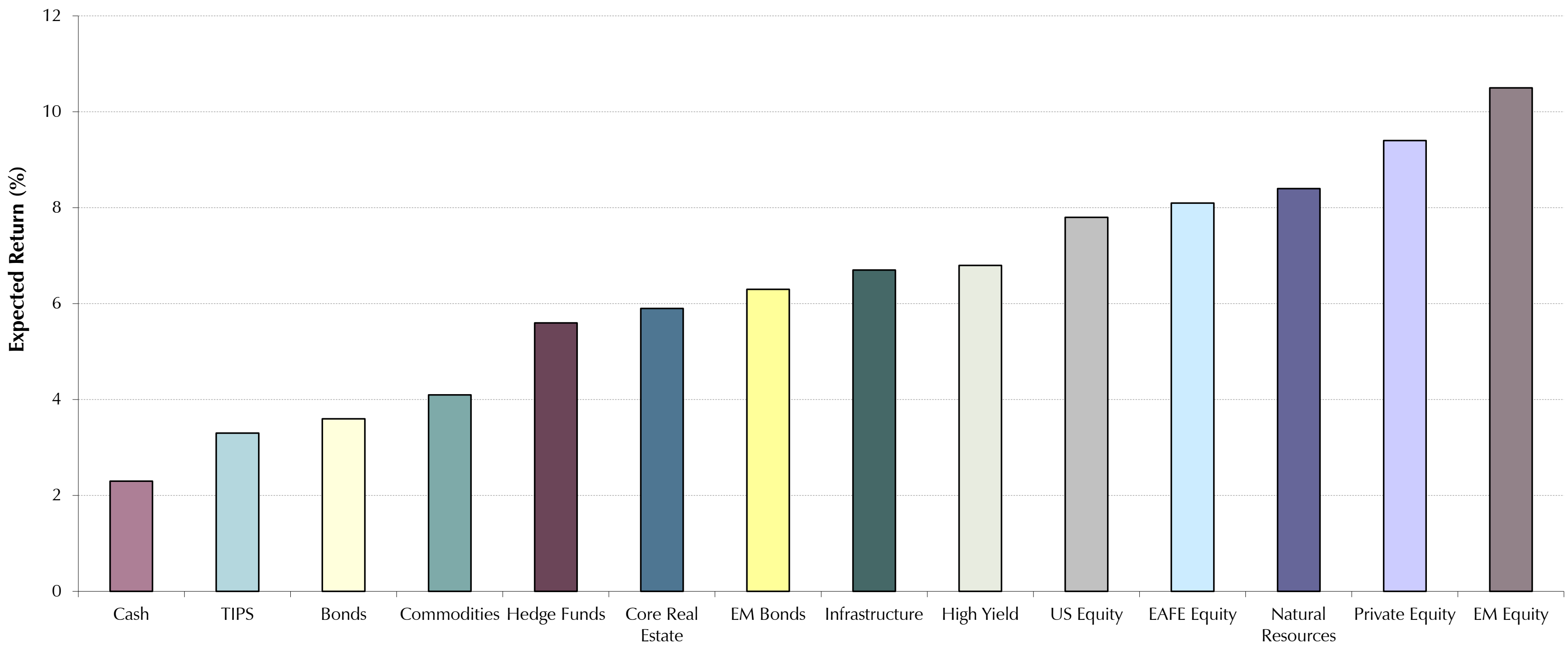
REITs Dividend Yield Spread vs. Ten-Year Treasury[1]



- REIT yield spreads were 2.2% at the end of June. This spread gradually increased last year despite strong REIT performance.
- As with core real estate, the absolute level of REIT dividend yields is near a historical low.

[1] Source: NAREIT, U.S. Treasury. REITs are proxied by the yield for the NAREIT Equity index. Data is as of September 30, 2016.

Long-Term Outlook[1]



- Based on Meketa Investment Group's long-term expectations, only a handful of asset classes are priced to produce returns above 8% per year. All of these asset classes incorporate a high degree of volatility.

[1] Twenty-year expected returns based upon Meketa Investment Group's 2016 Annual Asset Study.

Total Return Comparison of Barclays U.S. Aggregate Minus Barclays U.S. TIPS[1]

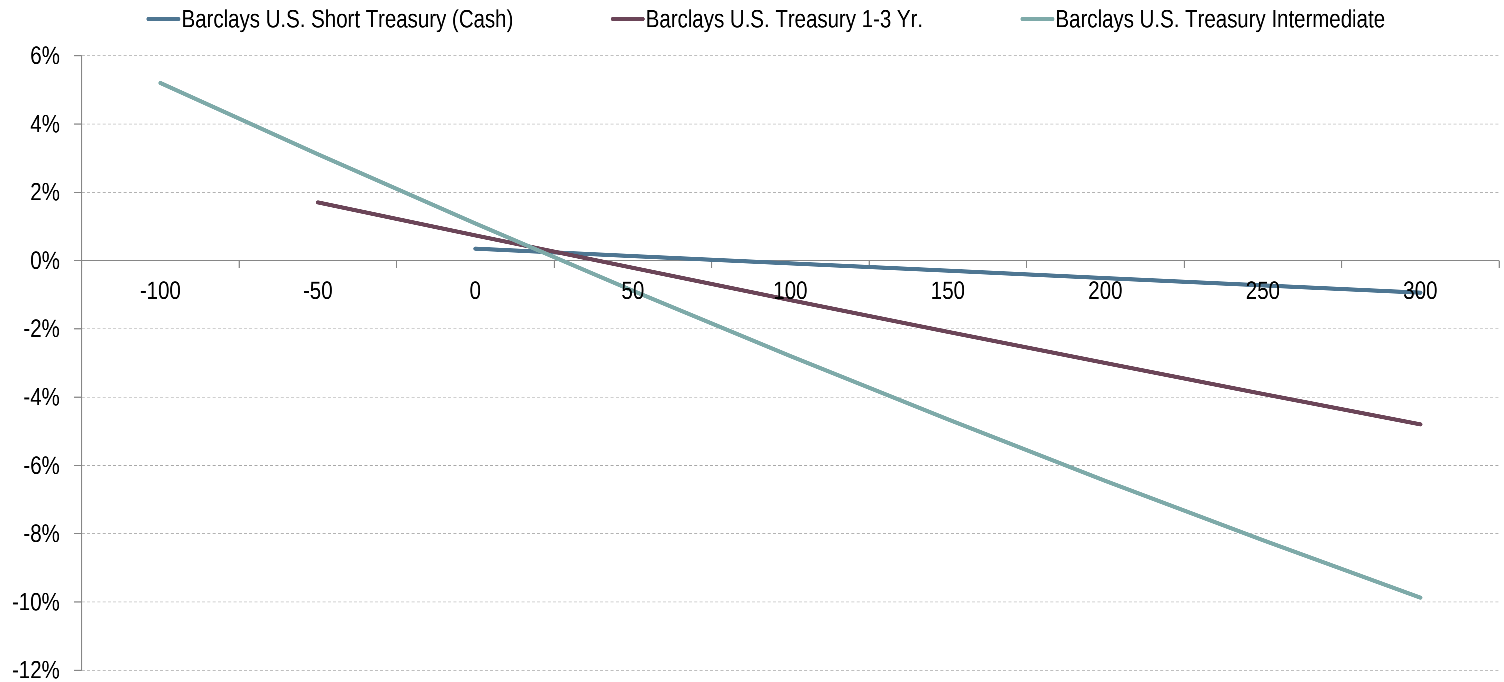
Inflation Rate Scenarios	Changes In Rates (bps): -100	-50	0	50	100
4.0%	-5.74%	-3.96%	-2.33%	-0.85%	0.48%
3.0%	-4.74%	-2.96%	-1.33%	0.15%	1.48%
2.0%	-3.74%	-1.96%	-0.33%	1.15%	2.48%
1.0%	-2.74%	-0.96%	0.68%	2.15%	3.48%
0.0%	-1.74%	0.04%	1.68%	3.15%	4.48%

Total Return Scenario: 100 bps Rate Increase and 2% Inflation

Total Return Over Longer Holding Periods	1 Year	3 Year	5 Year	7 Year	10 Year
Barclays U.S. Aggregate	-3.56%	0.59%	1.44%	1.81%	2.08%
Barclays U.S. Treasury U.S. TIPS	-6.04%	0.06%	1.33%	1.88%	2.29%

[1] Data is as of September 30, 2016 via Barclays, Bloomberg, and Thomson Reuters. Scenario assumes that the rate increase happens over one year.

Total Return Given Changes in Interest Rates (bps)[1]



	Total Return for Given Changes in Interest Rates (bps)									Statistics	
	-100	-50	0	50	100	150	200	250	300	Duration	YTW
Barclays U.S. Short Treasury (Cash)			0.4%	0.2%	0.0%	-0.3%	-0.5%	-0.7%	-0.9%	0.43	0.39%
Barclays U.S. Treasury 1-3 Yr.		1.7%	0.7%	-0.3%	-1.2%	-2.1%	-3.1%	-4.0%	-4.9%	1.93	0.70%
Barclays U.S. Treasury Intermediate	5.1%	3.0%	1.0%	-1.0%	-2.9%	-4.8%	-6.6%	-8.3%	-10.0%	4.03	0.99%
Barclays U.S. Treasury Long	22.5%	11.8%	2.1%	-6.5%	-14.0%	-20.5%	-25.8%	-30.1%	-33.3%	18.29	2.09%

[1] Data represents the expected total return from a given change in interest rates (shown in basis points) over a 12-month period assuming a parallel shift in rates. Data is as of September 30, 2016 via Barclays and Thomson Reuters.