Stembrook
Asset Management

Stembrook Market Review — Fourth Quarter 2018

After a strong first three quarters of the year, especially in U.S. equity markets, mounting trade tensions between the U.S. and China, Federal Reserve tightening, slowing global economies, falling energy prices and political uncertainty in the U.S all took their toll on equity prices in the U.S. and abroad. The U.S. equity market peaked on September 20th, up 11.2% from the beginning of the year. After that point the market tumbled, down -14% through the end of the year to finish the year down -4.4%.[1] As you can see in the center chart at the bottom of this page, equity returns in 2018 were below average and the drawdown that we experienced during the last quarter was greater than normal. Investment grade bond markets in the U.S. bounced back in the fourth quarter, up 1.6% to end 2018 unchanged from a year earlier in a period that saw increased volatility in fixed income markets as the Federal Reserve continued its normalization of interest rates.[2]

Despite volatility in equity markets, economic conditions, especially in the U.S., remain fairly robust. GDP is forecast to grow at a 2.6% annualized rate in the fourth quarter, rounding out an above average year of economic growth in the United States.[3] The employment picture in the U.S. remains strong with the unemployment rate at 3.9%, close to its nearly 50 year low of 3.7% seen in November.[4] The participation rate increased to 63.1%, its highest level since September 2017 as more workers enter the labor force.[5] In addition, wage growth increased in November by 3.9% from a year earlier, its highest level since November 2016.[6] This solid data flow persists, despite sentiment beginning to wane, which we will discuss later in this review.

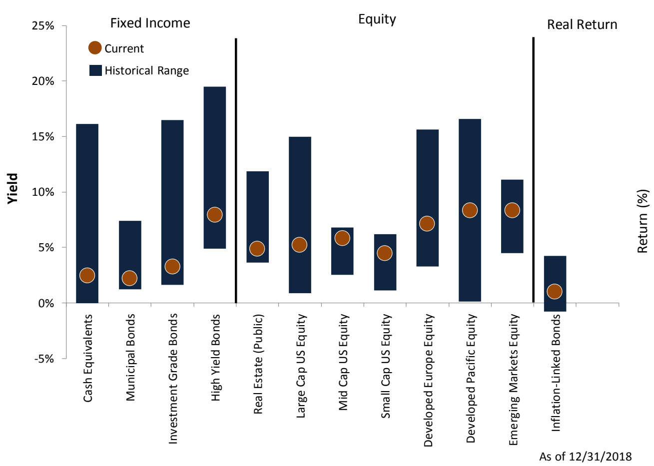
Our proprietary models forecast long-term pre-tax returns ranging from 1% to 5% for fixed income-like asset classes and 5% to 11% for equity-like asset classes (see table to the right). We continue to favor equities over fixed income for long-term investors, and the recent selloff in equities has lowered valuations to more favorable levels. Our more detailed observations and current portfolio positioning are outlined in the following comments.

Expected Market Returns and Risks
7-10 Year Horizon

	Pre-Tax Annualized Return	After-Tax Annualized Return	Volatility[1]
Inflation	1.7%	1.7%	3.1%
Cash Equivalents	1.4%	0.8%	3.5%
Municipal Bonds	2.1%	2.1%	4.4%
Inflation-Linked Bonds	2.5%	1.4%	5.6%
Investment Grade Bonds	3.1%	1.7%	6.7%
High Yield Bonds	4.8%	2.5%	13.2%
Real Estate (Public)	4.8%	2.6%	17.5%
Broad Market US Equity	9.5%	7.4%	16.9%
Developed Non-US Equity	9.2%	7.1%	21.4%
Emerging Markets Equity	11.0%	7.3%	29.6%

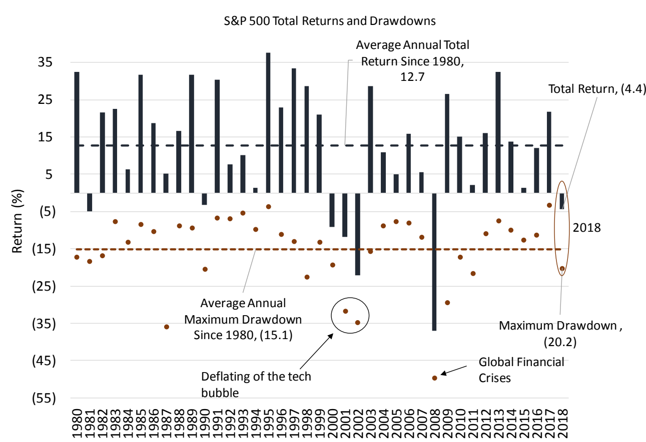
A sampling of return expectations produced by our models. Expected returns are projections and are not guaranteed.

Yields Across Asset Classes



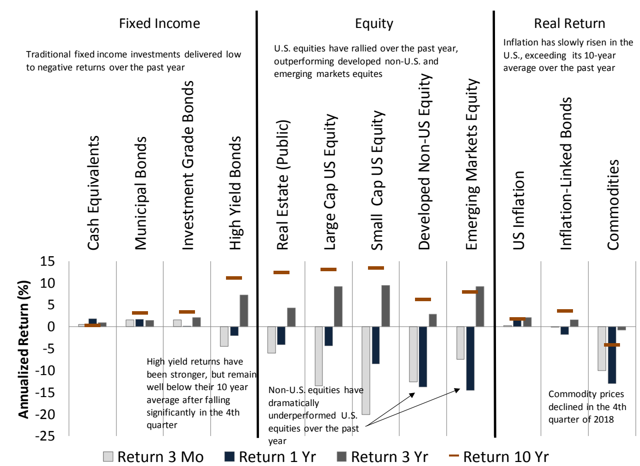
Yields are an indicator of future returns. Orange dots show current yields, blue bars show historical ranges. Yields are generally low versus their historical range.

History of Market Corrections



Drawdowns measure the price change of the S&P 500 index from its highest point (peak) to its lowest point (trough) over each calendar year beginning in 1980.

Historical Market Returns



Historical market returns as of December 31st, 2018. Note that looking backwards at recent returns is not a reliable method for predicting future returns.

Global Asset Class Returns

Asset Class Name	Last 10 Years	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Small Cap US Equity	Small Cap 11.2%	EM Eq 79.0%	Real Estate 28.6%	Infl-Indx Bnd 14.0%	EM Eq 18.2%	Small Cap 41.3%	Real Estate 31.8%	Real Estate 2.8%	Small Cap 26.5%	EM Eq 37.3%	CPI 2.0%
Large Cap US Equity	S&P 500 10.8%	HY Bnd 56.3%	Small Cap 26.3%	Real Estate 9.2%	Real Estate 17.6%	S&P 500 32.4%	S&P 500 13.7%	S&P 500 1.4%	HY Bnd 17.5%	Intl Eq 25.0%	Inv Grd Bnd 0.0%
Real Estate (Public)	Real Estate 10.5%	Intl Eq 31.8%	EM Eq 19.2%	Inv Grd Bnd 7.8%	Intl Eq 17.3%	Intl Eq 22.8%	Inv Grd Bnd 6.0%	CPI 0.8%	S&P 500 12.0%	S&P 500 21.8%	Infl-Indx Bnd -1.8%
High Yield Bonds	HY Bnd 9.0%	Real Estate 28.6%	Commod 16.8%	HY Bnd 4.5%	Small Cap 16.3%	HY Bnd 7.4%	Small Cap 5.8%	Inv Grd Bnd 0.5%	Commod 11.4%	Small Cap 13.2%	HY Bnd -2.1%
Emerging Markets Equity	EM Eq 6.7%	S&P 500 26.5%	HY Bnd 15.2%	CPI 3.0%	S&P 500 16.0%	Real Estate 1.9%	Infl-Indx Bnd 4.6%	Intl Eq -0.2%	EM Eq 11.3%	Real Estate 8.7%	Real Estate -4.0%
Developed Non-US Equity	Intl Eq 5.4%	Small Cap 25.6%	S&P 500 15.1%	S&P 500 2.1%	HY Bnd 15.4%	CPI 1.5%	HY Bnd 2.5%	Infl-Indx Bnd -1.4%	Real Estate 8.6%	HY Bnd 7.5%	S&P 500 -4.4%
Investment Grade Bonds	Inv Grd Bnd 2.9%	Commod 18.9%	Intl Eq 7.8%	Small Cap 1.0%	Infl-Indx Bnd 7.2%	Inv Grd Bnd -2.0%	CPI 1.3%	Small Cap -2.0%	Infl-Indx Bnd 3.6%	Inv Grd Bnd 3.5%	Small Cap -8.5%
Inflation-Linked Bonds	Infl-Indx Bnd 2.9%	Infl-Indx Bnd 10.1%	Infl-Indx Bnd 6.5%	Intl Eq -12.1%	Inv Grd Bnd 4.2%	EM Eq -2.6%	EM Eq -1.8%	HY Bnd -4.6%	Inv Grd Bnd 2.6%	Infl-Indx Bnd 3.0%	Commod -13.0%
Inflation	CPI 1.6%	Inv Grd Bnd 5.9%	Inv Grd Bnd 6.5%	Commod -13.3%	CPI 2.0%	Infl-Indx Bnd -9.4%	Intl Eq -4.5%	EM Eq -14.8%	CPI 1.8%	CPI 2.1%	Intl Eq -13.3%
Commodities	Commod -3.4%	CPI 2.7%	CPI 1.5%	EM Eq -18.4%	Commod -1.1%	Commod -9.5%	Commod -17.0%	Commod -24.7%	Intl Eq 1.6%	Commod 0.7%	EM Eq -14.5%

Returns are arranged in columns, by year. Each color represents a different asset class. Each year, the leaders and laggards tend to shift. Diversification across a range of asset classes can smooth returns and enhance growth.

Economic Backdrop

- Economic growth in developed countries is slowing, as real GDP increased by 2.7% in the quarter.[7] Consumer prices for the same group of G-20 countries continue to increase at a modest pace as inflation increased at an annualized pace of 2.7%.[8]
- Growth in the Eurozone remains sluggish, real GDP is expected to increase at a 1.4% annualized pace in the fourth quarter, slightly slower than the previous quarter.[7]
- Following a quarter where the economy did not grow at all, Japanese real GDP growth is expected to increase by 2.3% annualized in the quarter.[7]
- Despite fears of slowing growth in China, real GDP growth in the Emerging Markets is expected to pick up in the fourth quarter after a slower year to 5.2%, on an annualized basis. [7]
- As expected, the Federal Open Market Committee increased their target rate by 0.25% to 2.5% at their December meeting. Most economists polled by Bloomberg expect rate increases in March and June of this year, each by 0.25%, taking the target rate to 3%. Market participants will continue to keep a close eye on the Fed's announcements for signs of future moves.
- While the Global Purchasing Managers Index remains elevated at 51.5. It is down from recent highs earlier this year. Emerging economies, including China, and select European countries have drifted below 50, indicating declining economic conditions.[9]

Currencies

- The dollar was up just over 1% in the fourth quarter and finished the year up 4.4% after falling by nearly -10% in 2017.[10]

Equities

- The theme of the fourth quarter was a reversal of fortunes. Indices that had outperformed during the first three quarters underperformed in the fourth quarter, as volatility picked up.
- Technology heavy, NASDAQ stocks were down -16.8%[11] over the period while large cap equities in the U.S. were down -13.8% for the quarter.[12]
- Value oriented equities outperformed growth stocks by a 2.2% margin in the quarter after having underperformed during the previous three quarters.[13]
- Emerging Markets equities and REITs had the strongest relative performance in the equity space, down only -6.3%[14] and -4.6% [15] respectively versus a global equity market that fell -12.5%[16] over the quarter.

Fixed Income

- Credit markets retreated in lockstep with equity markets. After a very strong year, floating rate bonds fell by -3.5% in the quarter, but still managed to finish the year up 0.4%—one of the few asset classes that experienced positive performance in 2018.[17]
- The yield curve continued to flatten in the U.S. Treasury market as the Federal Reserve raised its target short-term rate and investors demanded less yield for longer dated bonds. This phenomenon can often point to a recession in the future.

Current Positioning

- We maintain our recent shift to marginally **underweight large cap U.S. equities.** After years of holding an overweight position in an outperforming market, valuations have risen to above average levels and our models indicate that a reduced allocation to the U.S. market is prudent.
- We also maintain our recent shift to **overweight developed non-U.S. and emerging market equities**, where valuations and long-term growth potential remain attractive.
- We favor **lower priced, value-oriented equities, both in the U.S. and abroad,** which tend to outperform the broad market over time, with less volatility.
- We remain **overweight municipal bonds** for taxable investors.
- Our fixed income portfolio continues to be positioned for a normalization of central bank policy. Given our significant concerns regarding a longer-term, secular rise in interest rates and the resulting negative impact on bond prices, we continue to **hold shorter maturity bonds**, while steering away from **U.S. Treasuries.**

We continue to focus our efforts on helping you meet your financial objectives by following our disciplined investment approach. Our approach uses time-tested return and risk models, incorporating fundamental valuations and tax-efficient strategies. This investment discipline is tailored to your individual situation in our continuing effort to craft and implement your customized investment solution.

As always, we thank you for placing your trust in our investment management and advice and welcome your questions and comments at any time.

Peter D. D'Agati, CFA

Thomas Kosinski

Endnotes and Sources:

Text:

(1) Bloomberg: S&P 500 Total Return. 12/31/17-9/20/18, 9/20/18-12/31/18, 12/31/17-12/31/18.
(2) Bloomberg: Bloomberg Barclays U.S. Aggregate Bond Index. 9/30/18-12/31/18, 12/31/17-12/31/18.
(3) Bloomberg: Contributor Forecasted Real U.S. GDP. As of 12/31/18.
(4) BLS: Unemployment Rate (U-3). As of 12/31/18.
(5) BLS: Civilian Labor Force Participation Rate. As of 12/31/18.
(6) Bloomberg: Atlanta Fed Wage Growth Tracker Overall NSA. As of 11/30/18.
(7) Bloomberg, Stembrook Research: GDP measures are based on the most recent annualized quarterly, seasonally-adjusted data. Statistics are stated in inflation-adjusted terms. Aggregate Statistics are weighted by each country's GDP translated into USD. Where available, official estimates are used. Where official estimates are not available, GDP data is based on Bloomberg Contributor Forecasted GDP. Emerging Markets measures are based solely on Bloomberg Contributor Forecasted GDP. As of 12/31/18.
(8) Bloomberg, Stembrook Research: Aggregate inflation statistics are weighted by each country's GDP translated in to USD. As of 12/31/18.
(9) Bloomberg: Markit Global Purchasing Managers Index for Manufacturing and Service. As of 12/31/18.
(10) Bloomberg: Dollar Index. 9/30/18-12/31/18, 12/31/17-12/31/18, 12/31/16-12/31/17.
(11) Bloomberg: Nasdaq 100 Total Return. 9/30/18-12/31/18.
(12) Bloomberg: S&P 500 Total Return. 9/30/18-12/31/18.
(13) Bloomberg: S&P 500 Value Total Return –12.58%, S&P 500 Growth Total Return –14.80%. 9/30/18-12/31/18.
(14) Bloomberg: MSCI Emerging Markets Total Return. 9/30/18-12/31/18.
(15) Bloomberg: FTSE NAREIT All Equity REITS Total Return. 9/30/18-12/31/18.
(16) Bloomberg: MASCI ACWI Total Return. 9/30/18-12/31/18.
(17) Bloomberg: S&P/LSTA All Loan Total Return Index. 9/30/18-12/31/18, 12/31/17-12/31/18.

Charts:

Expected Market Returns and Risks, 7-10 Year Horizon: As of 12/31/18.
Source: Stembrook Research.
(1) Volatility is measured in terms of Standard Deviation. Standard deviation is the statistical measurement of dispersion about an average, which depicts how widely a stock or portfolio's returns varied over a certain period of time. Investors use the standard deviation of historical performance to try to predict the range of returns that is most likely for a given investment. When an investment has a high standard deviation, the predicted range of performance is wide, implying greater volatility. If an investment's returns follow a normal distribution, then approximately 68 percent of the time they will fall within one standard deviation of the mean return of the investment, and 95 percent of the time within two standard deviations. For example, for a portfolio with a mean annual return of 10 percent and a standard deviation of two percent, you would expect the return to be between 8 and 12 percent about 68 percent of the time, and between 6 and 14 percent about 95 percent of the time. Source: Morningstar.

Yields Across Asset Classes: As of 12/31/18.
Sources: *Cash Equivalents Yields* since March 1976. Ibbotson, Federal Reserve Bank, Thomson Reuters, *Municipal Bond Yields* since March 1988. Barclays Capital, Charles Schwab, BofA Merrill Lynch, Standard & Poor's/Investortools Municipal Bond Indices, *Investment Grade Bond Yields* since March 1976. Barclays Capital, *High Yield* since December 1984. BofA Merrill Lynch, Barclays Capital, *Real Estate (Public) Earnings Yield* since March 1976. NAREIT all Equity, *Large Cap U.S. Equity Earnings Yield* since March 1976. Standard & Poor's, BARRA, *Mid Cap U.S. Equity Earnings Yield* since June 1991. Standard & Poor's, BARRA, *Small Cap U.S. Equity Earnings Yield* since December 1993. Standard & Poor's, BARRA, *Developed Europe Equity Earnings Yield* since March 1976. MSCI Europe, Standard & Poor's Europe 350, *Developed Pacific Equity Earnings Yield* since March 1976. MSCI Pacific, S&P/Citi PMI Asia Pacific, S&P Asia 50, *Emerging Market Equity Earnings Yield* since December 1998, *Inflation-Linked Bond Real Yield to Maturity* since March 1997. Citi Yield Book, Federal Reserve Bank. Note: Yields are not perfect predictors of future returns and should not be used in isolation.

History of Market Corrections: As of 12/31/18.
Source: Bloomberg. S&P 500. Drawdowns measure the price change of the S&P 500 index from its highest point (peak) to its lowest point (trough) over each calendar year beginning in 1980. Total returns are calculated on a calendar year basis every year from 1980-2018.

Historical Market Returns: As 12/31/18.
Source: Bloomberg, Stembrook Research.
Indices: Bloomberg Barclays U.S Treasury Bills 1-3 Month Total Return, Bloomberg Barclays Municipal Bond 5 Year (4-6) Total Return, Bloomberg Barclays U.S. Aggregate Bond Total Return, Bloomberg Barclays U.S. Corporate High Yield Total Return, FTSE All Equity REIT Total Return, S&P 500 Composite Total Return, S&P SmallCap 600 Total Return, MSCI EAFE Total Return, MSCI EM (Emerging Markets) Total Return, Consumer Price Index – U.S., S&P 10 Year U.S. TIPS Total Return, Bloomberg Commodity (Total Return) Index.

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Endnotes and Sources (continued):

Global Asset Class Returns: As of 12/31/18.
Source: Thomson Reuters, Bloomberg, Stembrook Research.
Indices: Consumer Price Index – US, U.S. 30-Day Treasury Bills, Bloomberg Barclays U.S. Treasury Bills: 1-3 Month Index, Citigroup Inflation-Linked Index, S&P 10 Year US TIPS Index, Bloomberg Barclays U.S. Aggregate Bond Index, BofA Merrill Lynch U.S. High Yield Cash Pay, Bloomberg Barclays U.S. Corporate High Yield Index, Dow Jones Wilshire REIT Index, FTSE All Equity REIT Index, S&P 500 Composite Total Return, S&P SmallCap 600 Total Return, MSCI EAFE Index, MSCI EM (Emerging Markets) Index, Dow Jones AIG Commodity (Totl Ret) Index, Bloomberg Commodity Index.