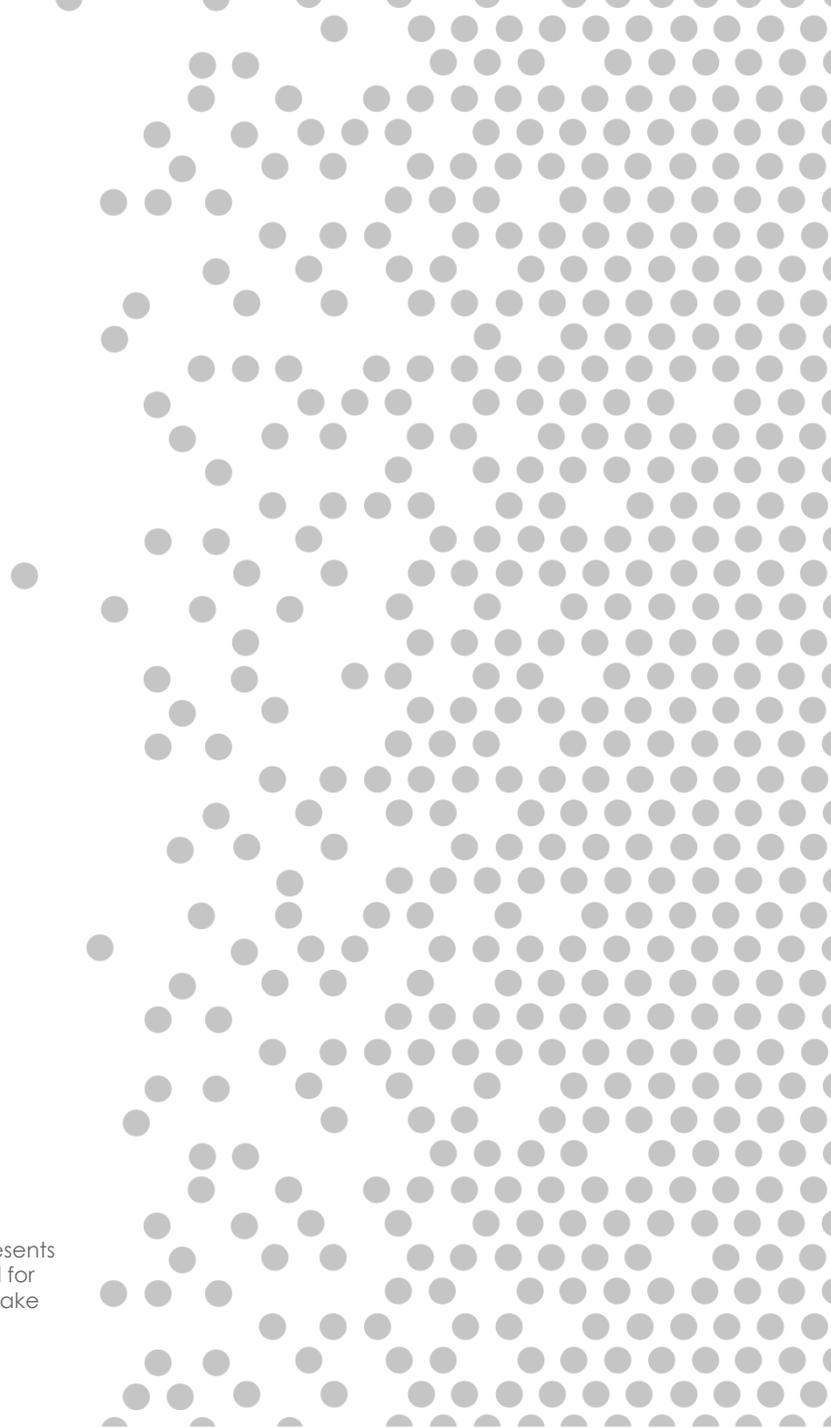


# Market Review and Outlook Q4 2018

as of December 31, 2018

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The views contained herein are as of January 31, 2019 and may have changed since that time.



# Asset Allocation Views

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## Asset Allocation

**The MML Investment Advisers, LLC portfolio management maintains a neutral position for equities versus fixed income** – Concerns over trade, tightening monetary policy, the U.S. government shutdown and a slowdown in global economic activity drove stock market volatility higher and prices lower in the fourth quarter. Even so, global corporate earnings growth continued to be positive. Despite headlines, global fiscal and monetary policy remains supportive of both the economy and stock markets. A neutral stance reflects these positive factors while recognizing downside risk given still elevated stock prices, high debt levels, tightening monetary policy, and political and trade uncertainty.

## Equity & Commodity Related

**Slight negative on U.S. large cap** – Valuations are fair-to-rich, despite strong fundamentals. We believe there are more attractive opportunities in other areas.

**Slight negative on U.S. small cap (upgrade)** – Valuations are now more compelling as stock prices have not kept up with improving fundamentals.

**Neutral on international developed (downgrade)** – Better valuations than U.S. stocks and more supportive monetary policy outside the U.S. are offset by slowing economic growth.

**Slight positive on emerging markets** – Solid global growth and inexpensive valuations are positives, but we are monitoring the impact of global monetary policy changes and the ongoing trade war.

**Neutral on U.S. REITS** – Valuations relative to equities are compelling though expectations that the Federal Open Market Committee (FOMC) will raise interest rates puts pressure on prices.

**Slight positive on commodities [downgrade]** – Prices remain attractive though global demand growth appeared to have slowed further.

## Fixed Income

**Slight Negative on duration** – Positive global economic growth supports rising interest rates while the extra yield on longer-dated bonds is less compelling.

**Slightly positive on U.S. Treasuries** – Yields and inflation expectations are modest. As corporate bond spreads remain tight, the attractiveness of U.S. Treasuries has improved.

**Slight negative on investment grade** – Low yields and potential inflationary pressures mean that the risk-return trade-off is modestly better versus below-investment grade bonds.

**Negative on high yield** – Low yield spreads versus U.S. Treasuries and investment-grade corporate bonds reduce the upside even in best-case scenarios.

**Neutral on U.S. Treasury Inflation-Protected Securities (TIPS)** – Slowing global economic growth is expected to reduce inflationary pressures.

**Neutral on international bonds** – Underperformed U.S. bonds this quarter making the yield differential and currency exposures more compelling.

	Fixed Income*		Equity*	
	-	Neutral		+
<b>Overall Position</b>		◆		
<b>Equity*</b>				
U.S. Large Cap		◆		
U.S. Small Cap	◇	◆		
International Developed			◆	◇
Emerging Markets				◆
U.S. REITS			◆	
Commodities				◆ ◇
<b>Fixed Income*</b>				
Duration		◆		
Treasuries				◆
Investment Grade		◆		
High Yield	◆			
TIPS			◆	
International			◆	

Current Position ◆  
Previous Quarter ◇

\* Equity include equities and alternatives. Fixed income includes fixed income and cash.

# Investors concerns over slowing global economic growth drove stock market volatility higher and prices lower

## Q4 2018 Economic Review

- Investor concerns over slowing global economic growth remained top of mind for good reason. The trade war between the U.S. and China continues to drag on and the risk of a monetary policy misstep appears higher. In addition, the threat of a U.S. government shutdown over immigration policy became real in later December pressuring early 2019 economy growth.
- Economists forecast positive global economic growth in 2019. They expect developed markets to grow by greater than 2% and emerging markets by more than 4%. However, there may be the possibility of a continued slowdown in China
- The FOMC met during the third week of December and unanimously agreed to raise the federal funds rate 0.25%, to a range of 2.25% to 2.50%. Chairman Jerome Powell cited a robust economy while also acknowledging that the economy may be slowing. The 10-year U.S. Treasury yield ended the quarter at 2.68%, down 0.35% from prior quarter. Investors are currently expecting no additional rate hikes in 2019 even though the FOMC signaled two more rate hikes in 2019 and another in 2020.
- U.S. companies in the S&P 500® Index reported third quarter 2018 earnings per share growth of 26.0%. Fourth quarter earnings are expected to grow by 12.2%. The corporate earnings growth story around the globe is similarly positive. Developed country stocks represented in the MSCI World index delivered 12-month earnings per share growth of 21.0%. Emerging market stocks represented in the MSCI Emerging Markets index delivered earnings growth of 10.4%.
- Investor concerns regarding European Union stability remained top of mind as a Brexit agreement remains elusive and the March 29 deadline nears. The French yellow vest protests over the high cost of living is also proving disruptive to the economy.

## Q4 2018 Markets Review

- U.S. bond markets had a strong quarter as investors sought safety from concerns over a slowing global economy and fears that the economy might be heading into a recession.
- The U.S. stock market underperformed the rest of the world. Investor worries about the trade war were amplified by concerns over possible monetary policy missteps by the Federal Reserve Board (Fed) and the uncertainty caused by a prolonged U.S. government shutdown.
- Emerging markets stocks held up better than U.S. stocks though continued to face challenges. A Chinese bear market and continued U.S. dollar strength held back capital flows.

Asset Class	QTD (%)	YTD (%)	1 Year (%)	Benchmark
U.S. Large Cap Stocks	-13.52	-4.38	-4.38	S&P 500 Composite
U.S. Mid Cap Stocks	-14.95	-12.29	-12.29	Russell Mid Cap
U.S. Small Cap Stocks	-20.20	-11.01	-11.01	Russell 2000
U.S. Value Stocks	-12.24	-8.58	-8.58	Russell 3000 Value
U.S. Growth Stocks	-16.33	-2.12	-2.12	Russell 3000 Growth
Developed Market Stocks	-12.54	-13.79	-13.79	MSCI EAFE (net)
Emerging Market Stocks	-7.47	-14.58	-14.58	MSCI EM (net)
U.S. Bonds	1.64	0.01	0.01	Barclays US Agg Bond
Developed Market Bonds	0.91	-2.15	-2.15	Barclays Gbl Agg Ex US
Emerging Market Bonds	-1.19	-4.61	-4.61	JPM EMBI Global
U.S. High Yield Corporate Bonds	-4.53	-2.08	-2.08	Barclays US Corp High Yield
U.S. Long Duration Treasuries	4.17	-2.00	-2.00	Barclays US Treasury 20+ Yr

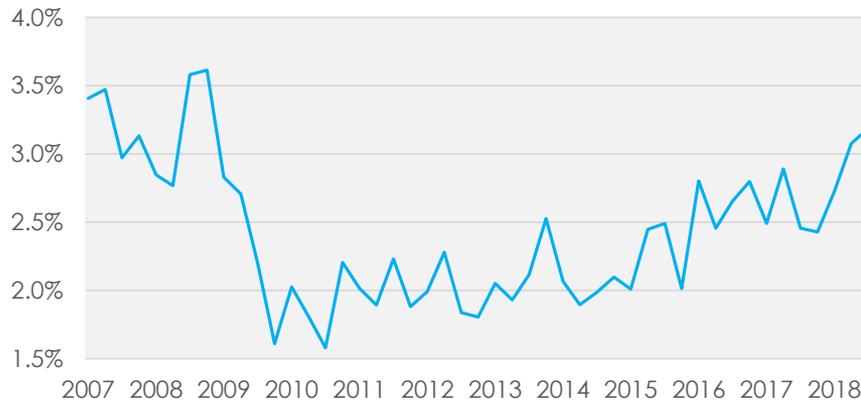
Source: Morningstar Direct<sup>SM</sup> as of 12/31/18

Past performance does not guaranteed future results.

# Consumers still finding good reasons to be optimistic despite increased stock market volatility

Low unemployment, rising income, and increased wealth has pushed consumer confidence near post recession highs.

**Average Hourly Earning of All Employees: Total Private**



Source: U.S. Bureau of Labor

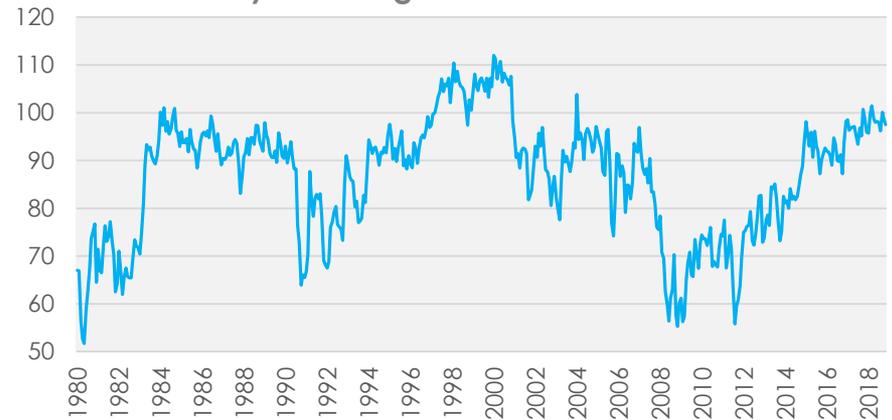
## Consumer confidence has rebounded to near post-recession high.

Confident consumers tend to spend their hard-earned wages. Personal consumption expenditures grew at an annualized rate of 4.7% as of November 2018.

## Wage growth is especially strong in the private sector.

Companies are paying more to attract and retain workers as the unemployment rate has fallen to 3.7%, its lowest level since 1969. We expect continued wage growth to put pressure on corporate earnings.

**University Of Michigan: Consumer Sentiment**



Source: University of Michigan

# Fed policy and rising tariffs dominate investor sentiment despite strong corporate earnings growth

Concerns that rising borrowing costs and rising global tariffs could derail economic growth overshadow positive economic data and strong corporate earnings growth.

(Nonfinancial Business; Credit Market Instruments; Liability, Level)/Gross Domestic Product



Source: Board of Governors of the Federal Reserve System (US)

## U.S. companies continue to deliver strong earnings per share growth.

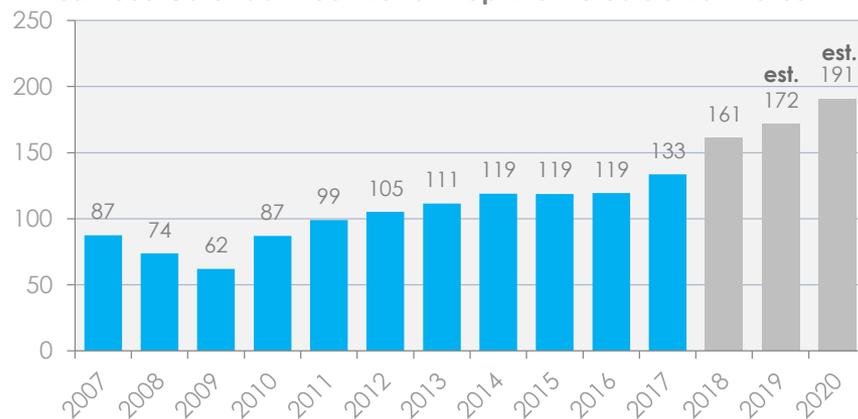
Strong sales growth, operating efficiencies, lower taxes, and net share buybacks among companies in the S&P 500® Index are expected to result in fourth quarter earnings per share growth of 12.2% and a 6.3% earnings per share growth rate in 2019.

Source: Factset

## Corporate debt levels are approaching all-time highs once again.

A decade of expansive low-interest monetary policy has kept borrowing costs low. The Fed is now on a path to monetary policy normalization having raised interest rates nine times in three years. Rising rates will drive up borrowing costs for corporations and put additional pressure on earnings growth.

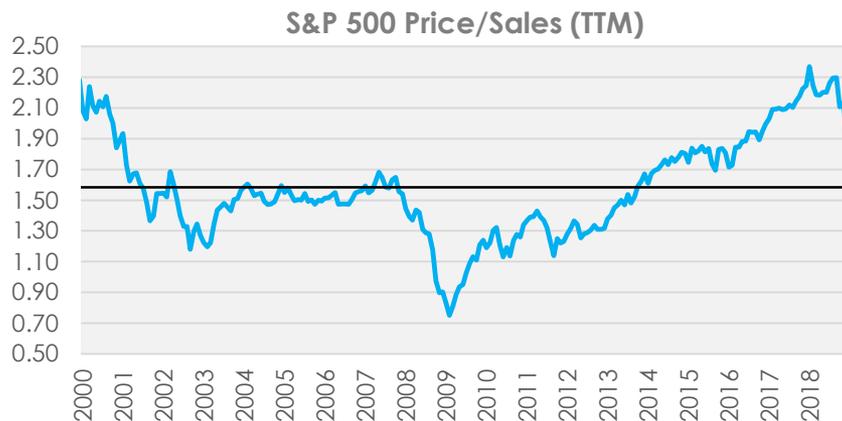
S&P 500 Calendar Year Bottom-Up EPS Actuals & Estimates



Source: FactSet

# Despite the sharp quarterly correction, U.S. stock markets remain overvalued and at risk of further declines

Investors abandoned stocks in the fourth quarter on concerns of a slowdown triggered by an escalating trade war, possible Fed missteps, and high stock valuations.



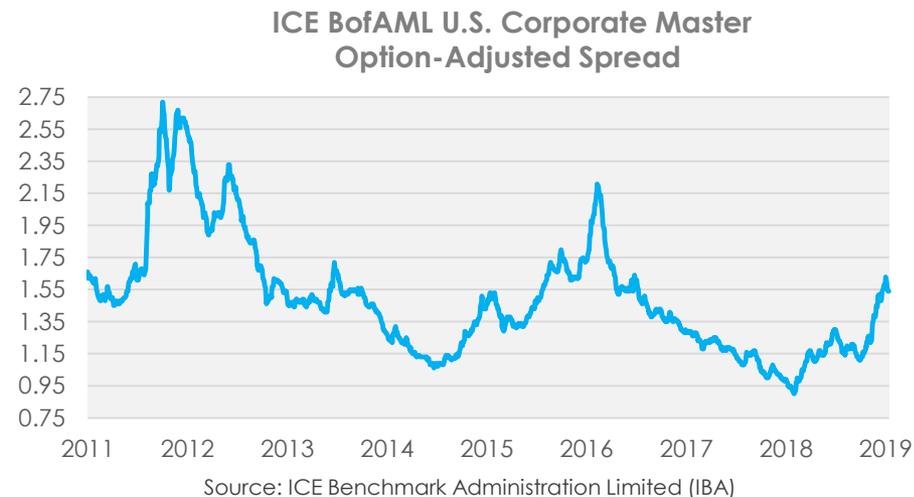
Source: Morningstar Direct

**S&P 500® Index stock valuations are 23% higher than their average since 2000.**

Interest rates uncertainty, historically high corporate profit margins, elevated corporate debt levels, political uncertainty and greater investor reliance on inflated non-GAAP earnings increase the risk of a stock market correction.

**U.S. corporate bond option-adjusted spreads have widened significantly, reflecting heightened concern over corporate debt levels.**

The option-adjusted spread measures the premium investors require to compensate for taking on the default risk of a corporate bond compared to a similar duration U.S. Treasury.



# Disclosures

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**Risk Disclosures for Certain Asset Categories – Please note that your plan may not offer all of the investment types discussed below.**

- Risks of investing in bond and debt securities investments include the risk that a bond issuer will default by failing to repay principal and interest in a timely manner (credit risk) and/or the risk that the value of these securities will decline when interest rates increase (interest rate risk).
- Risks of investing in inflation-protected bond investments include credit risk and interest rate risk. Neither the bond investment nor its yield is guaranteed by the U.S. government.
- High-yield bond investments are generally subject to greater market fluctuations and risk of loss of income and principal than lower-yielding debt securities investments.
- Investments that track a benchmark index are professionally managed. However, the benchmark index itself is unmanaged and does not incur fees or expenses and cannot be purchased directly for investment.
- Investments in value stocks may remain undervalued for extended periods of time, and the market may not recognize the intrinsic value of these securities.
- Investments in growth stocks may experience price volatility due to their sensitivity to market fluctuations and dependence on future earnings expectations.
- Investments in companies with small or mid market capitalization ("small caps" or "mid caps") may be subject to special risks given their characteristic narrow markets, limited financial resources, and less liquid stocks, all of which may cause price volatility.
- International/global investing can involve special risks, such as political changes and currency fluctuations. These risks are heightened in emerging market equities. Other trading restrictions may apply. Please see the investment's prospectus for more details.
- A significant percentage of the underlying investments in aggressive asset allocation portfolio investments have a higher than average risk exposure. Investors should consider their risk tolerance carefully before choosing such a strategy.
- An investment with multiple underlying investments may be subject to the expenses of those underlying investments in addition to those of the investment itself.
- Investments may reside in the specialty category due to 1) allowable investment flexibility that precludes classification in standard asset categories and/or 2) investment concentration in a limited group of securities or industry sectors. Investments in this category may be more volatile than less-flexible and/or less-concentrated investments and may be appropriate as only a minor component in an investor's overall portfolio.
- Participants with a large ownership interest in a company or employer stock investment may have the potential to manipulate the value of units of this investment option through their trading practices. As a result, special transfer restrictions may apply. This type of investment option presents a higher degree of risk than diversified investment options under the plan because it invests in the securities of a single company.
- Investments that invest more of their assets in a single issuer or industry sector (such as company stock or sector investments) involve additional risks, including unit price fluctuations, because of the increased concentration of investments.
- A participant will be prohibited from transferring into most mutual funds and similar investments if they have transferred into and out of the same investment within the previous 60 days. Certain stable value, guaranteed interest, fixed income and other investments are not subject to this rule. This rule does not prohibit participants from transferring out of any investment at any time.

***Please consider an investment option's objectives, risks, fees and expenses carefully before investing. This and other information can be found in the applicable prospectuses or summary prospectuses, if any, or investment profiles (fact sheets) for the investment options listed, which are available from your plan sponsor, on the plan participant website at [www.refliesmart.com](http://www.refliesmart.com) (login required), or by contacting our Participant Information Center at 1-800-743-5274 between 8:00 a.m. and 9:00 p.m. ET, Monday through Friday. Please read them carefully before investing.***

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