Market Review and Outlook
October 2018

October 31, 2018

Past performance in no guarantee of future results. The information contained in this document represents the views of the MML Investment Adviser. LLC portfolio management team. This material is provided for informational purposes only and is not intended to be investment advice or a recommendation to take any particular investment action.

The views contained herein are as of October 31, 2018 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 – Strong corporate earnings in the third quarter of 2018 pushed global stocks higher despite political tension related to global trade and upcoming U.S. mid-term elections. Global economic expansion and global fiscal and monetary policy appear supportive of markets. A neutral stance reflects these positive trends while recognizing downside risk given high stock prices, high debt, tighter global monetary policy, and global 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. mid-cap and negative on U.S. small cap – Small- and mid-cap stock prices have risen ahead of fundamental improvements. Mid-cap stocks have a somewhat stronger risk-to-reward profile.
Slight positive on international developed – We believe better valuations than U.S. stocks and more supportive monetary policy outside the U.S. are offset by signs of slowing economic growth.
Slight positive on emerging markets [downgrade] – Solid global growth and inexpensive valuations are positives, but we are monitoring global monetary policies and the escalating trade war.
Neutral on U.S. REITS – We believe valuations relative to equities are compelling. Expectations that the Federal Open Market Committee (FOMC) will raise interest rates puts pressure on prices.
Positive on commodities [downgrade] – Global demand growth remains positive, though it has slowed while prices have risen.

Fixed Income

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 [upgrade] – Yields and inflation expectations are modest. As corporate bond spreads have tightened, 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) [downgrade] – 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.
Negative on cash [upgrade] – Cash yields are becoming more compelling. Gradual Fed tightening means the extra yield of short-term bonds outweighs the defensive benefit of cash.

	Fixed Income*						Equity*
	–			Neutral			+
Overall Position				◆			

Equity*	–			Neutral			+
U.S. Large Cap			◆				
U.S. Mid Cap			◆				
U.S. Small Cap		◆					
International Developed					◆		
Emerging Markets					◆	◇	
U.S. REITS				◆			
Commodities						◆	◇

Fixed Income*	–			Neutral			+
Duration		◆					
Treasuries				◇	◆		
Investment Grade			◆				
High Yield		◆					
TIPS				◆	◇		
International				◆			
Cash	◇	◆					

Current Position ◆
Previous Quarter ◇

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

Global equity markets advanced in the third quarter as strong corporate earnings outweighed policy uncertainties

Q3 2018 Economic Review

- U.S. companies in the S&P 500® index reported second quarter 2018 earnings per share growth of 25.0%. Third quarter earnings growth is expected to be 19.3%.
- 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 20.5%. Emerging market stocks represented in the MSCI Emerging Markets index delivered earnings growth of 16.1%.
- Tensions around unfair trade practices and intellectual property theft continued to dominate market news. U.S. tariffs on Chinese imports and retaliatory Chinese tariffs on U.S. imports go into effect this quarter. A preliminary trade agreement between the United States, Mexico and Canada and progress on a trade agreement with the European Union helped temper investor concerns.
- The FOMC met during the last week of September and unanimously agreed to raise the federal funds rate 0.25%, to a range of 2% to 2.25%. Chairman Jerome Powell cited a strong economy and the need to gradually return rates to normal levels as rationale for a rate increase. The 10-year U.S. Treasury yield ended the quarter at 3.05%, up 0.20% from prior quarter. Expectations for another rate hike in 2018 increased as a majority of FOMC members indicated they were in favor of a December rate hike.
- Investor concerns regarding European Union stability remained top of mind. A Brexit agreement remained elusive and Italy's new populist government appeared to be following through with campaign promises to increase fiscal stimulus.

Q3 2018 Markets Review

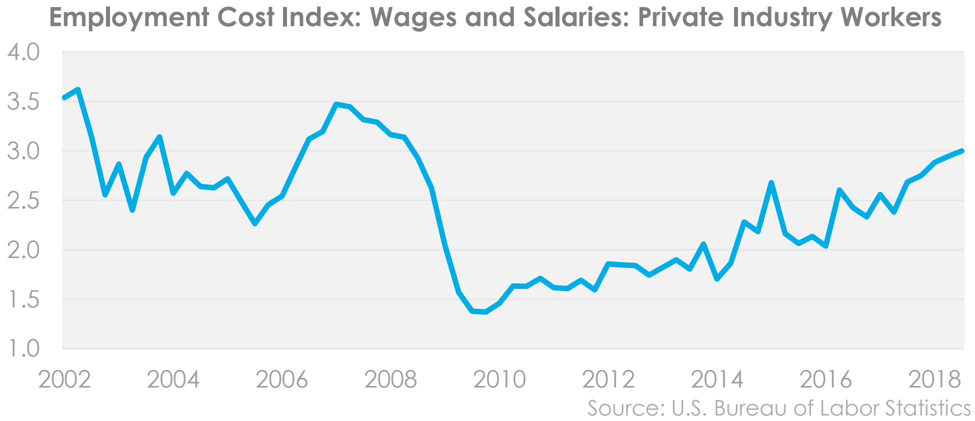
- The U.S. stock market continued to outperform the rest of the world aided by late-cycle fiscal stimulus, a reduction in business regulations, and increased import tariffs.
- Emerging markets stocks continued to face challenges. Crises in Turkey and Argentina, a Chinese bear market, and continued U.S. dollar strength all held back capital flows.
- U.S. bond prices had a weak quarter. U.S. economic strength and a higher federal funds rate led investor to sell off bonds which pushed interest rates higher.

Asset Class	QTD (%)	YTD (%)	1 Year (%)	Benchmark
U.S. Large Cap Stocks	7.71	10.56	17.91	*S&P 500 Composite*
U.S. Mid Cap Stocks	5.00	7.46	13.98	*Russell Mid Cap*
U.S. Small Cap Stocks	3.58	11.51	15.24	*Russell 2000*
U.S. Value Stocks	5.39	4.17	9.46	*Russell 3000 Value*
U.S. Growth Stocks	8.88	16.99	25.89	*Russell 3000 Growth*
Developed Market Stocks	1.35	-1.43	2.74	*MSCI EAFE (net)*
Emerging Market Stocks	-1.09	-7.68	-0.81	*MSCI EM (net)*
U.S. Bonds	0.02	-1.60	-1.22	*Barclays US Agg Bond*
Developed Market Bonds	-1.74	-3.03	-1.45	*Barclays Gbl Agg Ex US*
Emerging Market Bonds	1.87	-3.46	-2.94	*JPM EMBI Global*
U.S. High Yield Corporate Bonds	2.40	2.57	3.05	*Barclays US Corp High Yield*
U.S. Long Duration Treasuries	-3.00	-5.92	-3.52	*Barclays US Treasury 20+ Yr*

Source: Morningstar Direct℠ as of 9/30/18
Past performance does not guaranteed future results.

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

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

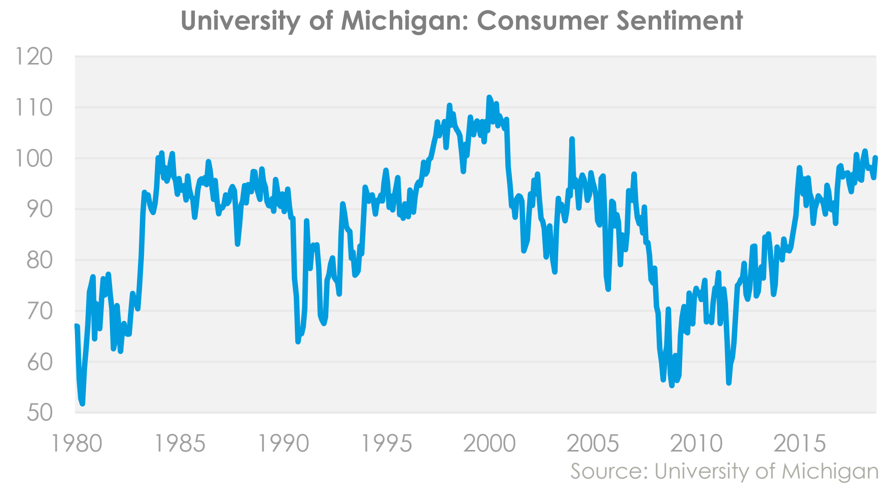


Wage growth is especially strong in the private sector.

Companies are paying more to attract and retain workers now that the unemployment rate has fallen to 3.7%, the lowest level since 1969.

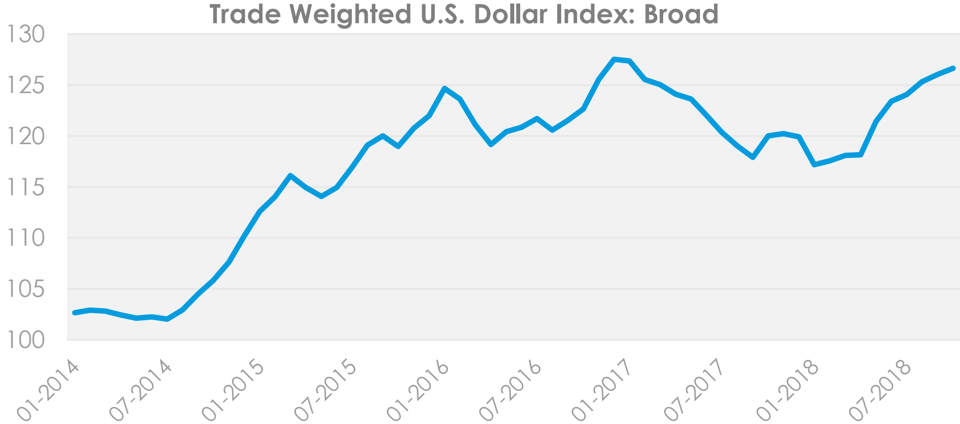
Consumer confidence is nearing a post-recession high.

Confident consumers tend to spend their hard-earned wages. This time is no different. Personal consumption expenditures grew at an annualized rate of 5.0% as of September 2018.



Strong corporate earnings and solid economic data outweighing concerns over Fed policy and tariffs.

U.S. tax reform continues to benefit the U.S. economy and U.S corporate earnings, though rising borrowing costs and rising global tariffs could mute some of the benefits.



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

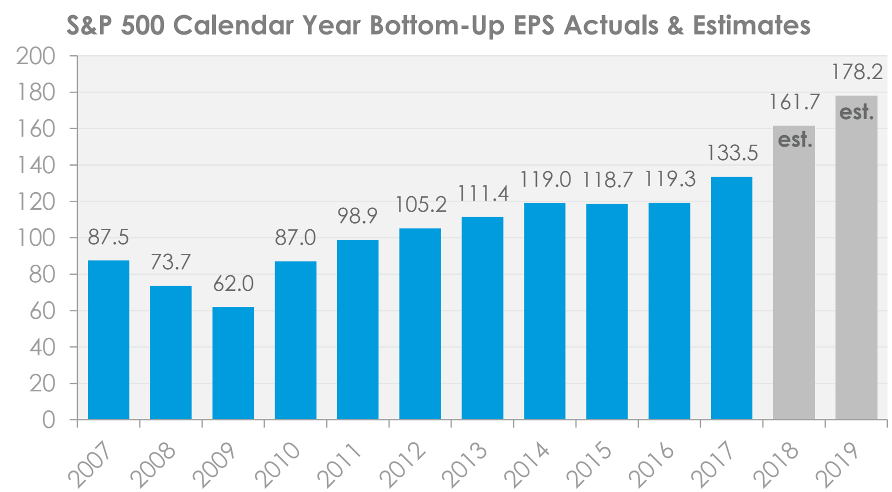
Positive U.S. economic data helps propel the U.S. dollar higher.

The Federal Reserve remains bullish on the U.S. economy and continued its efforts to normalize monetary policy by raising the Fed funds rate by 0.25% in September, helping to hold the 10-year U.S. Treasury yield above 3% at quarter end.

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

Strong sales growth, operating efficiencies, lower taxes, and share buybacks among companies in the S&P 500® Index are expected to result in third quarter earnings per share growth of 19.3 % and 10.3% earnings per share growth rate in 2019.

Source: Factset



Source: FactSet

The U.S. stock markets remains overvalued and at risk for a correction

Investors continued to bid up stocks in the third quarter despite elevated market volatility, tighter Fed policy, and high stock valuations.

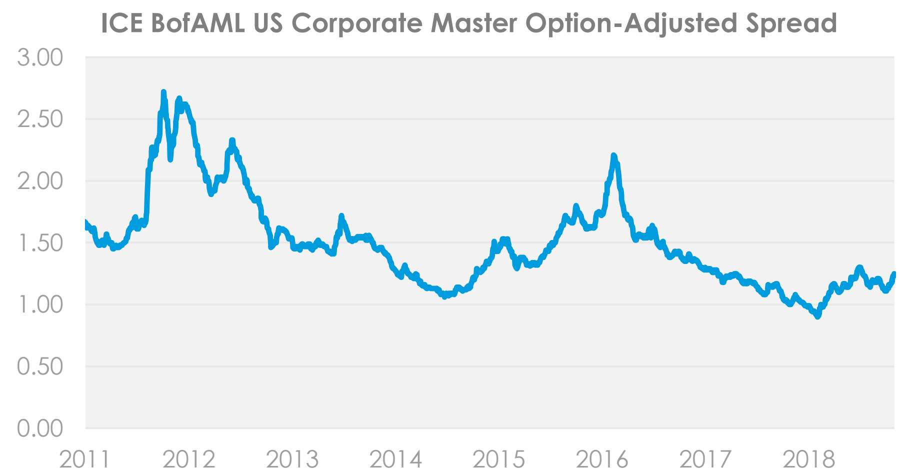
Source: Bloomberg

S&P 500® index stock valuations are currently 19% higher than their 10-year average.

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

U.S. corporate bond option-adjusted spreads are tight but widening, 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.



Source: ICE Benchmark Administration Limited (IBA)

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.retiresmart.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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