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Putnam INVESTMENTS

Q3 2015

Market trends

Asset allocation, fixed income, and global equity themes for the quarter

Contents

Slide No.

Macro trends

Capital Markets Outlook

Index name (returns in US$)	Q3 15	12 months ended 9/30/15
EQUITY INDEXES		
Dow Jones Industrial Average	-6.98%	-2.11%
MSCI EAFE (ND)	-10.23	-8.66
MSCI Emerging Markets (ND)	-17.90	-19.28
MSCI Europe (ND)	-8.69	-9.33
MSCI World (ND)	-8.45	-5.09
Nasdaq	-4.63	4.46
Russell 1000	-6.83	-0.61
Russell 2000	-11.92	1.25
Russell 3000 Growth	-5.93	3.21
Russell 3000 Value	-8.59	-4.22
S&P 500	-6.44	-0.61
Tokyo Topix	-8.46	-5.00
FIXED INCOME INDEXES		
Barclays Government Bond	1.71%	3.68%
Barclays MBS	1.30	3.43
Barclays Municipal Bond	1.65	3.16
Barclays U.S. Aggregate Bond	1.23	2.94
BofA ML U.S. 3-Month T-bill	0.01	0.02
CG World Government Bond ex-U.S.	1.71	-7.01
JPMorgan Developed High Yield	-4.75	-3.55
JPMorgan Emerging Markets Global Diversified	-1.71	-0.62
JPMorgan Global High Yield	-5.29	-4.23
S&P LSTA Loan	-1.35	0.92
COMMODITIES		
S&P GSCI	-19.30%	-41.74%

It is not possible to invest directly in an index. Past performance is not indicative of future results.

The views and opinions expressed are those of Putnam's Global Asset Allocation and Fixed Income teams, are subject to change with market conditions, and are not meant as investment advice.

Source: Putnam Investments, S&P Dow Jones Indices.

Slide 3. Global equities endured their most challenging quarter in years, and the market's extraordinary advance of previous quarters came to an end with significant volatility. For the first time since 2011, major U.S. equity indexes experienced a correction, defined as a decline of 10% or more from a recent high. Stocks recovered from their August lows and ended the quarter with a decline of 6.44%, as measured by the S&P 500 Index.

China's surprise currency devaluation sparked the recent selloff in equities, but market observers are still struggling to gauge the level of China's economic distress. Ominously, the Chinese government tried various policy tactics, including interest-rate cuts, stock market interventions, and more spending, but these efforts to restimulate growth and calm investors generally failed to halt the market rout. So it is difficult to say if the worst is over, but we do expect more volatility in global markets in the months ahead.

Market outlook

- Global indicators point toward continued growth.
- Risk assets appear attractive with caution for emerging markets.
- The economic deceleration in China and the emerging markets is unlikely to derail the global recovery.
- The Fed may begin raising rates sooner than the market currently expects, but the rate-raising campaign may be muted given U.S.-dollar strength.

The views and opinions expressed here combine the views of Putnam's Co-Heads of U.S. Equities, Co-Heads of International Equities, and Co-Heads of Fixed Income. These views are subject to change and are not meant as investment advice.

Slide 4. Recent stock market volatility has been in part a reflection of global uncertainties. But while market deterioration is unsettling, we don't believe the recent downturns portend a structural slowdown of growth in the United States.

We expect that economic data will slowly continue to improve in the United States, Europe, the United Kingdom, and Japan. In this context, and given attractive valuations, we remain open to adding new positions in our portfolios whenever our fundamental research uncovers compelling investment opportunities.

We also conclude that the eventual rate-hiking cycle is likely to be moderate and that policy will remain easy even after a hiking cycle has begun. In the near term, we see the Fed as highly likely to hike, unless risks to the Fed's outlook increase by far more than seems probable. We also believe the dollar's strength will effectively tighten financial conditions, which may mean the Fed will wind up being cautious in its rate-raising campaign.

Multi Asset

Markets are inherently unpredictable

Annual returns across fixed income, equity, and cash (2004–2014)

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
HIGHEST RETURN	Small Cap Value 22.25%	Intl Stocks 13.54%	Intl Stocks 26.34%	Large Cap Growth 11.81%	U.S. Bonds 5.24%	Mid Cap Stocks 40.48%	Small Cap Growth 29.09%	U.S. Bonds 7.84%	Small Cap Value 18.05%	Small Cap Growth 43.30%	Large Cap Stocks 13.69%
	Intl Stocks 20.25%	Mid Cap Stocks 12.65%	Small Cap Value 23.48%	Intl Stocks 11.17%	Cash 2.06%	Large Cap Growth 37.21%	Mid Cap Stocks 25.48%	Large Cap Growth 2.64%	Large Cap Value 17.51%	Mid Cap Stocks 34.76%	Large Cap Value 13.45%
	Mid Cap Stocks 20.22%	Large Cap Value 7.05%	Large Cap Value 22.25%	Small Cap Growth 7.05%	Small Cap Value -28.92%	Small Cap Growth 34.47%	Small Cap Value 24.50%	Large Cap Stocks 2.11%	Intl Stocks 17.32%	Small Cap Value 34.52%	Mid Cap Stocks 13.22%
	Large Cap Value 16.49%	Large Cap Growth 5.26%	Large Cap Stocks 15.79%	U.S. Bonds 6.97%	Large Cap Value -36.85%	Intl Stocks 31.78%	Large Cap Growth 16.71%	Large Cap Value 0.39%	Mid Cap Stocks 17.28%	Large Cap Growth 33.48%	Large Cap Growth 13.05%
	Small Cap Growth 14.31%	Large Cap Stocks 4.91%	Mid Cap Stocks 15.26%	Mid Cap Stocks 5.60%	Large Cap Stocks -37.00%	Large Cap Stocks 26.46%	Large Cap Value 15.51%	Cash 0.10%	Large Cap Stocks 16.00%	Large Cap Value 32.53%	U.S. Bonds 5.97%
	Large Cap Stocks 10.88%	Small Cap Value 4.71%	Small Cap Growth 13.35%	Large Cap Stocks 5.49%	Large Cap Growth -38.44%	Small Cap Value 20.58%	Large Cap Stocks 15.06%	Mid Cap Stocks -1.55%	Large Cap Growth 15.26%	Large Cap Stocks 32.39%	Small Cap Growth 5.60%
	Large Cap Growth 6.30%	Small Cap Growth 4.15%	Large Cap Growth 9.07%	Cash 5.00%	Small Cap Growth -38.54%	Large Cap Value 19.69%	Intl Stocks 7.75%	Small Cap Growth -2.91%	Small Cap Growth 14.59%	Intl Stocks 22.78%	Small Cap Value 4.22%
	U.S. Bonds 4.34%	Cash 3.07%	Cash 4.85%	Large Cap Value -0.17%	Mid Cap Stocks -41.46%	U.S. Bonds 5.93%	U.S. Bonds 6.54%	Small Cap Value -5.50%	U.S. Bonds 4.22%	Cash 0.07%	Cash 0.03%
LOWEST RETURN	Cash 1.33%	U.S. Bonds 2.43%	U.S. Bonds 4.33%	Small Cap Value -9.78%	Intl Stocks -43.38%	Cash 0.21%	Cash 0.13%	Intl Stocks -12.14%	Cash 0.11%	U.S. Bonds -2.02%	Intl Stocks -4.90%

- **Large-Cap Growth Stocks** are represented by the Russell 1000 Growth Index.
- **Small-Cap Growth Stocks** are represented by the Russell 2000 Growth Index.
- **Large-Cap Value Stocks** are represented by the Russell 1000 Value Index.
- **Small-Cap Value Stocks** are represented by the Russell 2000 Value Index.
- **Large-Cap Stocks** are represented by the S&P 500 Index.
- **Mid-Cap Stocks** are represented by the Russell Midcap Index.
- **International Stocks** are represented by the MSCI EAFE Index (ND), an unmanaged index of international stocks from Europe, Australasia, and the Far East.
- **U.S. Bonds** are represented by the Barclays U.S. Aggregate Bond Index, an unmanaged index used as a general measure of fixed-income securities.
- **Cash** is represented by the BofA Merrill Lynch U.S. 3-month T-Bill Index, an unmanaged index used as a general measure for money market or cash instruments.

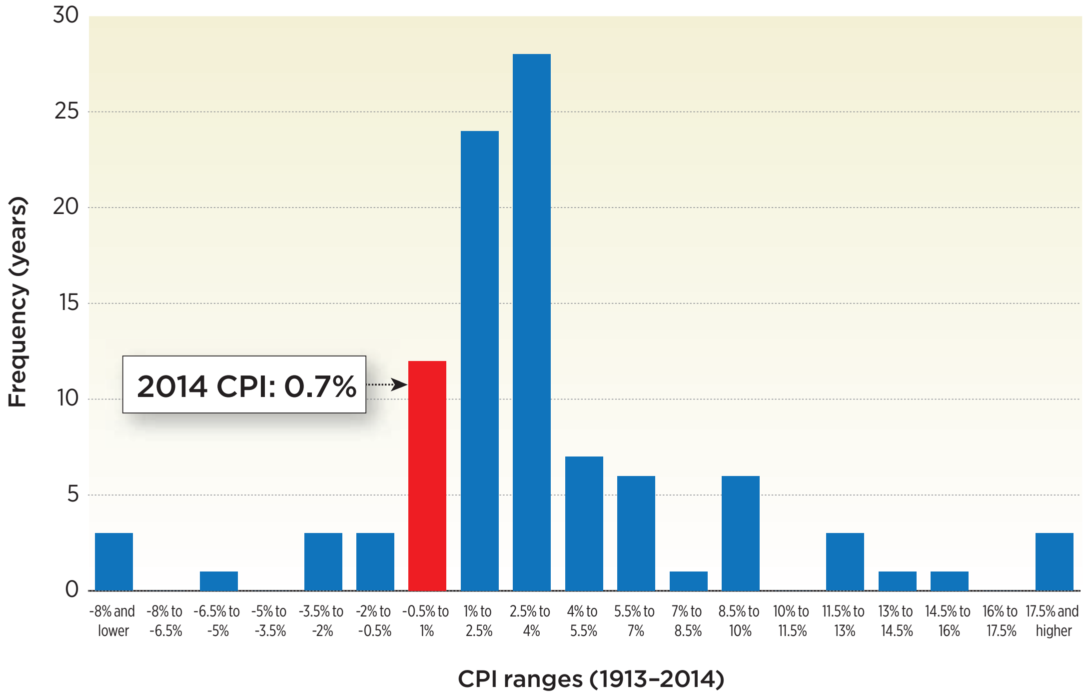
Past performance is not indicative of future success. Performance is not indicative of any Putnam fund or product.

See slide 14 for index definitions.

Slide 5. We like to remind investors that it's impossible to predict which asset class will lead — and which will lag — one year to the next. This chart shows the returns of nine asset classes arranged from highest return to lowest each year. Each asset class is a different color. So, for example, U.S. bonds are yellow, and international stocks are blue. You can see at a glance that the only pattern is that there is no pattern.

The reason why so many financial advisors recommend diversification is precisely because there is no telling what the market is going to do from one year to the next. Diversification doesn't guarantee a profit, but by owning more asset classes, you have a better chance of owning the top-performing investments — or at least not owning too many of the worst-performing investments. Diversification can be obtained by assembling a number of different kinds of funds, but it can also be achieved within funds that have flexible mandates.

Inflation is below its long-term average and could move higher

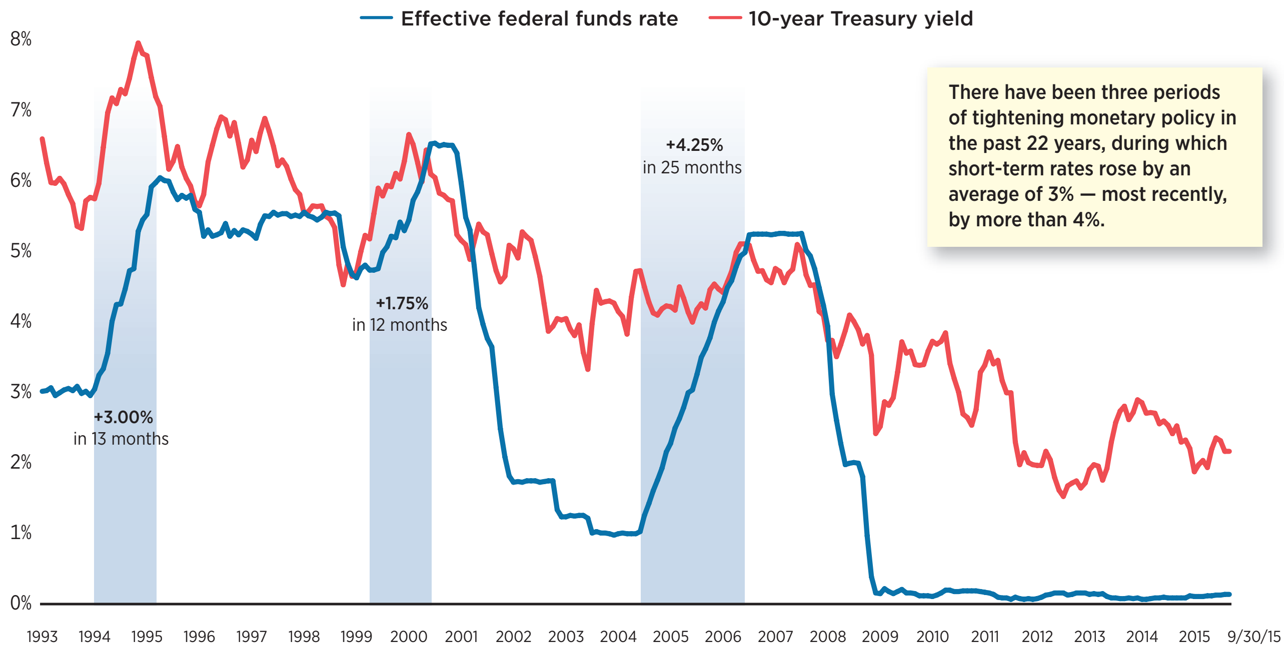


Source: Bureau of Labor Statistics, January 2015.

Slide 6. One of the perennial concerns of investors is inflation, and for good reason. Inflation erodes the purchasing power of investment returns. Recently, inflation has been low by historical standards, but it's worth watching for this reason: Since 1913, there have been nearly 50 years in which inflation was between 1% and 4%.

Higher rates pose a potential risk to fixed-income investments

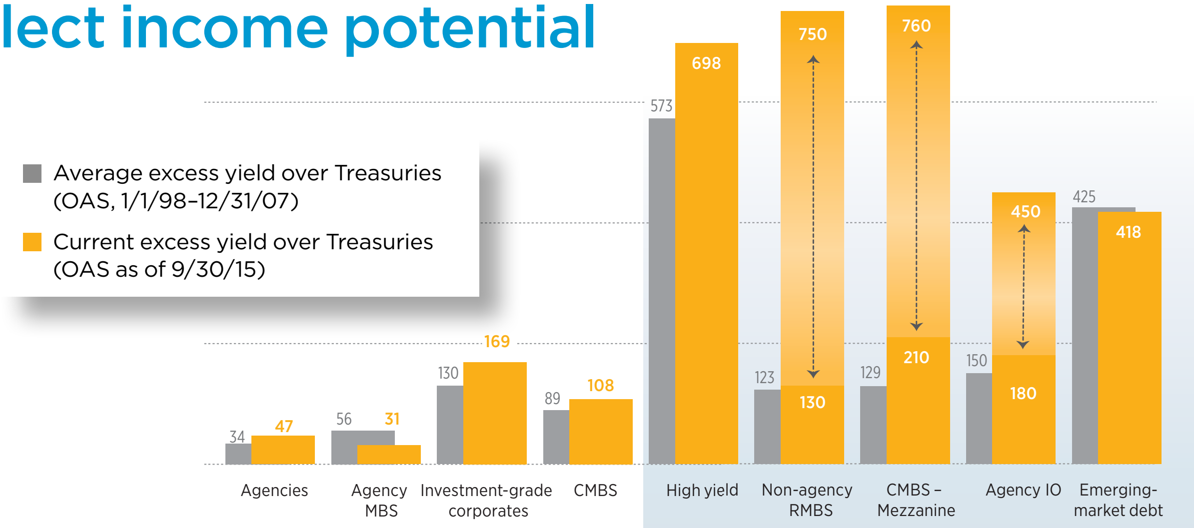
Interest rates remain low, but could move higher



Source: United States Federal Reserve, as of 9/30/15. Past performance is not indicative of future results.

Slide 7. We believe the Fed is likely to begin raising rates sooner rather than later. Once the central bank begins to raise the federal funds rate, we believe it will make every effort to do so in an orderly, well-communicated fashion in an effort to avoid major market disruption.

Yield spreads in a number of sectors reflect income potential



Sources: Barclays, Bloomberg, Putnam as of 9/30/15.

Data is provided for informational use only. Past performance is no guarantee of future results. All spreads are in basis points and measure option-adjusted yield spread relative to comparable maturity U.S. Treasuries with the exception of non-agency RMBS and mezzanine CMBS, which are loss-adjusted spreads to swaps calculated using Putnam's projected assumptions on defaults and severities, and agency IO, which is calculated using assumptions derived from Putnam's proprietary prepayment model. Agencies are represented by Barclays U.S. Agency Index. Agency MBS are represented by Barclays U.S. Mortgage Backed Securities Index. Investment-grade corporates are represented by Barclays U.S. Corporate Index. High yield is represented by JPMorgan Developed High Yield Index. CMBS is represented by both Agency and Non-Agency CMBS that are eligible for inclusion in the Barclays U.S. Aggregate Bond Index; mezzanine CMBS is represented by the same index using the AA, A and BBB components. Average OAS for Mezzanine CMBS is for the 2000–2007 time period. Emerging-market debt is represented by the Barclays EM Hard Currency Aggregate Index. Non-agency RMBS is estimated using average market level of a sample of below-investment-grade securities backed by various types of non-agency mortgage collateral (excluding prime securities). Mezzanine CMBS is estimated from an average spread among baskets of Putnam-monitored new issue and seasoned mezzanine securities, as well as a synthetic (CMBX) index. Agency IO is estimated from a basket of Putnam-monitored interest-only (IO) and inverse IO securities. Option-adjusted spread (OAS) measures the yield over duration equivalent Treasuries for securities with different embedded options.

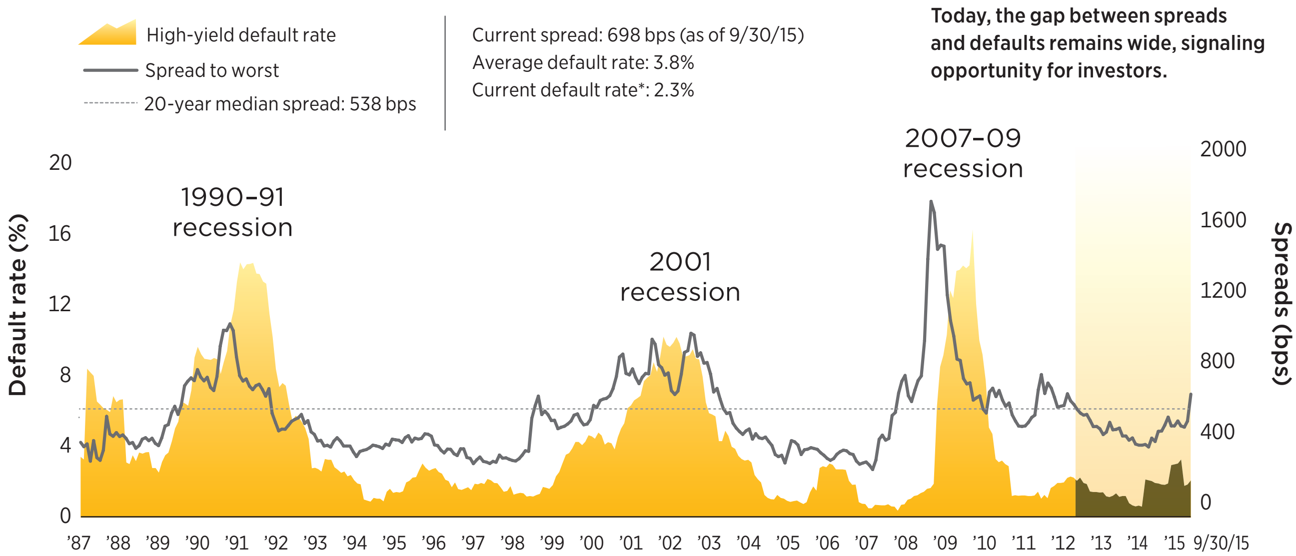
Slide 8. The previous slide showed the federal funds target rate, which is the target rate the Fed sets for overnight intrabank lending. This chart highlights some areas of potential opportunity, showing the difference in yield — also known as a "spread" — between different sectors of the bond market and U.S. Treasuries. When spreads are high, it means investors are demanding additional compensation for taking on the risk associated with that sector of the market. (Treasuries are backed by the full faith and credit of the federal government.)

The gray columns show the average spread for a variety of sectors during the 10 years before the financial crisis. Even with the recent narrowing, spreads today in some sectors are higher than they were before 2008. When spreads decrease, or "tighten," investors who already hold positions in spread sectors generally benefit, as the lower yields reflect higher prices. The difference in the yields is shown in the yellow columns and is measured in "basis points." One hundred basis points equals one percentage point, so the current high-yield spread of 698 is actually 6.98 percentage points above Treasury yields.

The largest spreads are highlighted in the shaded box. Those include certain types of mortgage-backed securities that delivered poor performance when the housing market declined, but that today offer high yields in an environment of slow but steady recovery.

High-yield market fundamentals remain sound

Spreads are close to their long-term average

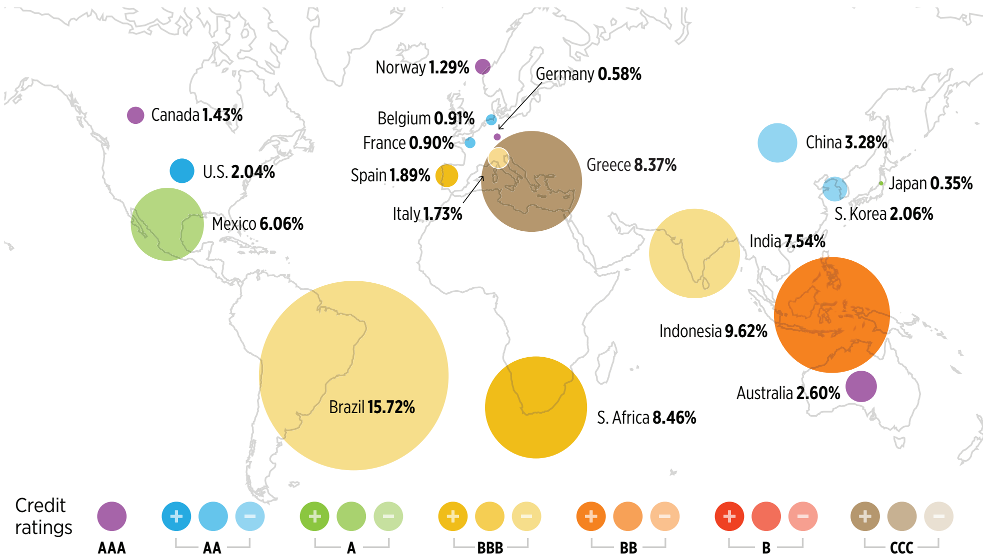


Source: JPMorgan, *High Yield Default Monitor* and *High Yield Market Monitor*, 9/30/15. The spread of the yield to worst above the interpolated U.S. Treasury curve is the spread to worst.

Slide 9. This slide drills down a bit into the higher yields we saw earlier in high-yield bonds. Historically, the "spread" in the high-yield bond market has tended to follow the default rate. (The spread is the difference in yield between the sector and Treasuries.) That makes a certain amount of sense, because investors in high-yield bonds are being paid more to compensate for the fact that these bonds have lower credit ratings and are more likely to experience defaults — a situation in which the company that issues the bond fails to make payments of interest or principal. The default rate remains low by historical standards. Investors who own high-yield bonds would benefit from a contraction in the spread, as the prices of bonds in the sector would rise as yields fell.

The world offers income opportunities for investors who can navigate risk

The circles show the differences in current 10-year government bond yields



Sources: Eikon, as of 9/30/15. Reflects most recent data available. Credit ratings by Standard & Poor's.

Credit rating is a current opinion of an obligor's overall financial capacity (its creditworthiness) to pay its financial obligations. Credit ratings range from AAA to C with the former being of highest credit worthiness and C being highly vulnerable to default. Credit ratings are subject to change.

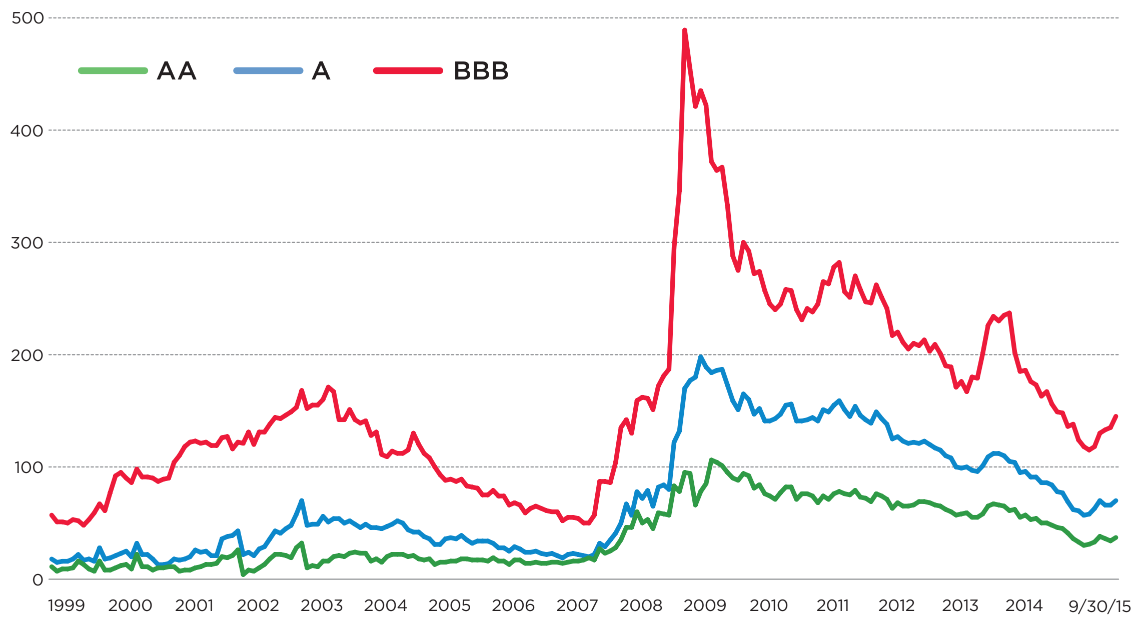
Not an offer of sale. For illustrative purposes only.

Slide 10. Outside the United States, we think emerging markets are likely to remain under pressure for some time. As the biggest buyer of commodities from many EM countries, China's economic slowdown is having a major impact on many other developing economies, such as Brazil, South Africa, and Malaysia. Capital has been flowing out of EM countries seeking better investment opportunities, primarily in the United States. This capital outflow is forcing some EM nations to devalue their currencies or dip into their foreign-currency reserves to defend their exchange rates.

Although capital outflows have moderated somewhat more recently, the authorities across EM are struggling with weak commodity prices, stressed financial asset markets, falling exchange rates, and weakening economies. In some, this unhappy economic configuration is interacting with difficult political circumstances. In our view, some countries are much better placed than others: Poland, for example, looks steady, and Mexico appears to us to be well positioned. But Brazil, Indonesia, and South Africa have to contend with far more difficult conditions.

Municipal bond credit spreads have narrowed, but still remain attractive

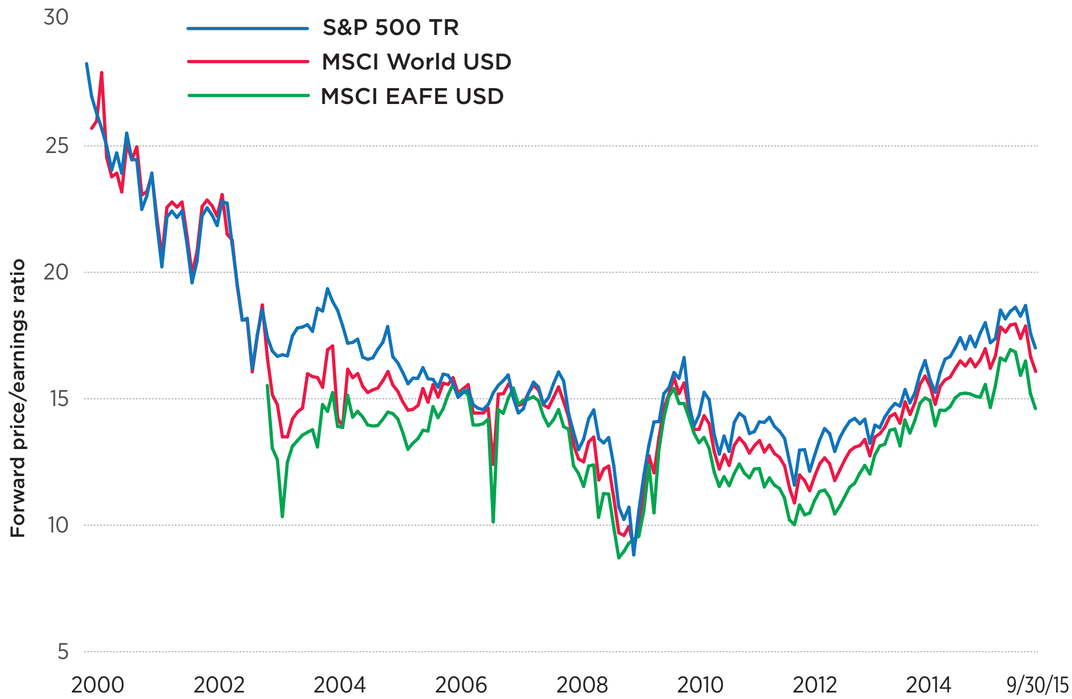
Municipal bond spreads by quality rating



Source: Putnam, as of 9/30/15. Credit ratings are as determined by Putnam.

Slide 11. During the 2008 credit crisis, the "spread" — or yield advantage — other segments of the municipal bond market offered over top-rated AAA securities increased dramatically, indicating that investors were demanding significantly more income for taking the risks they perceived in those parts of the market. While spreads have tightened significantly since then, in certain parts of the market they remain above normal, suggesting there may be compelling investment opportunities for active managers.

Global equity valuations remain attractive

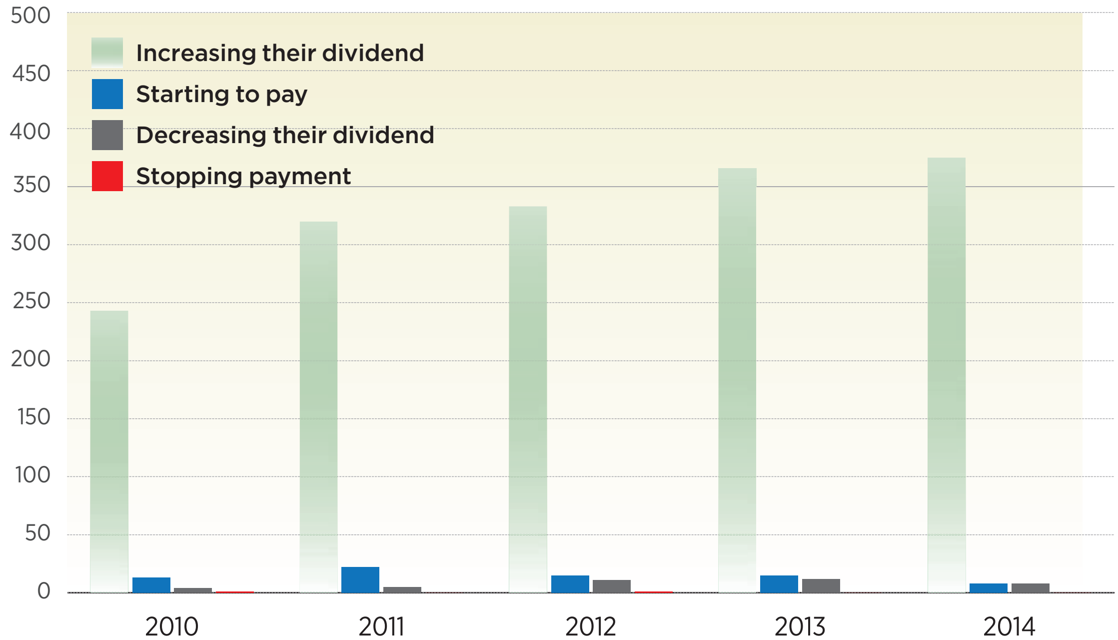


Source: Morningstar. Data as of 9/30/15. The price/earnings ratio of a firm's common stock is calculated as the current stock price divided by estimated earnings per share for the coming year.

Slide 12. For several quarters, we have observed that equity valuations were approaching the top quartile of their historical averages, and we believed that investors should be cognizant of the risk of a market correction. However, during bull markets it is not unusual to have downturns of the magnitude seen in the third quarter. The S&P 500 had gone 1,326 calendar days without an official correction, defined as a decline of 10% from a recent high. Not only was it overdue, the decline was likely a healthy development. We now see many investment opportunities that were nonexistent just a few months ago.

S&P 500 companies have been paying higher dividends

Number of S&P 500 companies:



Source: Standard & Poor's, 2014.

Past performance is no guarantee of future results. Dividends are not guaranteed, and a company's future ability to pay dividends may be limited.

Slide 13. In the United States, since the recession, companies have become more financially healthy, paring down their debt and expenses and growing earnings. U.S. companies also have begun to show more top-line, revenue-related profit growth. One way to measure that change is in the number of companies that have decided to initiate or increase the dividend they pay to stockholders.

This slide shows that since 2010, the number of S&P 500 companies that have decided to increase their dividend payments to shareholders has been steadily on the rise. Meanwhile, the number of companies ceasing payment has declined. Paying or raising dividends is one sign of positive corporate health and typically means that a company has excess capital that it can afford to distribute to shareholders.

Index definitions:

Barclays Global Aggregate Bond Index is an unmanaged index of global investment-grade fixed-income securities.

Barclays Government Bond Index is an unmanaged index of U.S. Treasury and government agency bonds.

Barclays Municipal Bond Index is an unmanaged index of long-term fixed-rate investment-grade tax-exempt bonds.

BofA Merrill Lynch U.S. 3-Month Treasury Bill Index is an unmanaged index that seeks to measure the performance of U.S. Treasury bills available in the marketplace.

Citigroup World Government Bond Index ex-U.S. is an unmanaged index generally considered to be representative of the world bond market excluding the United States.

JPMorgan Developed High Yield Index is an unmanaged index of high-yield fixed-income securities issued in developed countries.

JPMorgan Emerging Markets Global Diversified Index is composed of U.S. dollar-denominated Brady bonds, eurobonds, traded loans, and local market debt instruments issued by sovereign and quasi-sovereign entities.

MSCI EAFE Index (ND) is an unmanaged index of equity securities from developed countries in Western Europe, the Far East, and Australasia.

MSCI Emerging Markets Index (ND) is a float-weighted benchmark that tracks 26 country indexes from Asia, Latin American, Eastern Europe, and other emerging markets.

MSCI Europe Index (ND) is an unmanaged index of Western European equity securities.

MSCI World Index (ND) is an unmanaged index of equity securities from developed countries.

Russell 1000 Growth Index is an unmanaged index of those companies in the large-cap Russell 1000 Index chosen for their growth orientation.

Russell 1000 Value Index is an unmanaged index of those companies in the large-cap Russell 1000 Index chosen for their value orientation.

Russell 2000 Growth Index is an unmanaged index of those companies in the small-cap Russell 2000 Index chosen for their growth orientation.

Russell 2000 Index is an unmanaged index of the smallest 2,000 securities in the Russell 3000 Index.

Russell 2000 Value Index is an unmanaged index of those companies in the small-cap Russell 2000 Index chosen for their value orientation.

Russell 3000 Growth Index is an unmanaged index of those companies in the Russell 3000 Index chosen for their growth orientation.

Russell 3000 Value Index is an unmanaged index of those companies in the Russell 3000 Index chosen for their value orientation.

Russell Midcap Index is an unmanaged index that measures the performance of the 800 smallest companies in the Russell 1000 Index.

S&P GSCI is a composite index of commodity sector returns that represents a broadly diversified, unleveraged, long-only position i n commodity futures.

S&P/LSTA Leveraged Loan Index (LLI) is an unmanaged index of U.S. leveraged loans.

S&P 500 Index is an unmanaged index of common stock performance.

Tokyo Stock Exchange Index (TOPIX) is a market-capitalization-weighted index of over 1,100 stocks traded in the Japanese market.

U.S. Corporate Index is a broad-based benchmark that measures the investment-grade, fixed-rate, taxable, corporate bond market. It includes USD-denominated securities publicly issued by U.S. and non-U.S. industrial, utility, and financial issuers that meet specified maturity, liquidity, and quality requirements.

U.S. Mortgage-Backed Securities (MBS) Index covers agency mortgage-backed pass-through securities (both fixed-rate and hybrid ARM) issued by Ginnie Mae (GNMA), Fannie Mae (FNMA), and Freddie Mac (FHLMC).

You cannot invest directly in an index.

Consider these risks before investing: International investing involves certain risks, such as currency fluctuations, economic instability, and political developments. Additional risks may be associated with emerging-market securities, including illiquidity and volatility. Lower-rated bonds may offer higher yields in return for more risk. Funds that invest in government securities are not guaranteed. Mortgage-backed securities are subject to prepayment risk. The use of derivatives involves additional risks, such as the potential inability to terminate or sell derivatives positions and the potential failure of the other party to the instrument to meet its obligations.

Bond investments are subject to interest-rate risk, which means the prices of the funds' bond investments are likely to fall if interest rates rise. Bond investments also are subject to credit risk, which is the risk that the issuer of the bond may default on payment of interest or principal. Interest-rate risk is generally greater for longer-term bonds, and credit risk is generally greater for below-investment-grade bonds, which may be considered speculative. Unlike bonds, funds that invest in bonds have ongoing fees and expenses. The prices of bonds in the funds' portfolio may fall or fail to rise over extended periods of time for a variety of reasons, including both general financial market conditions and factors related to a specific issuer or industry.

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Putnam Retail Management

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