Western States Land Commissioners Association

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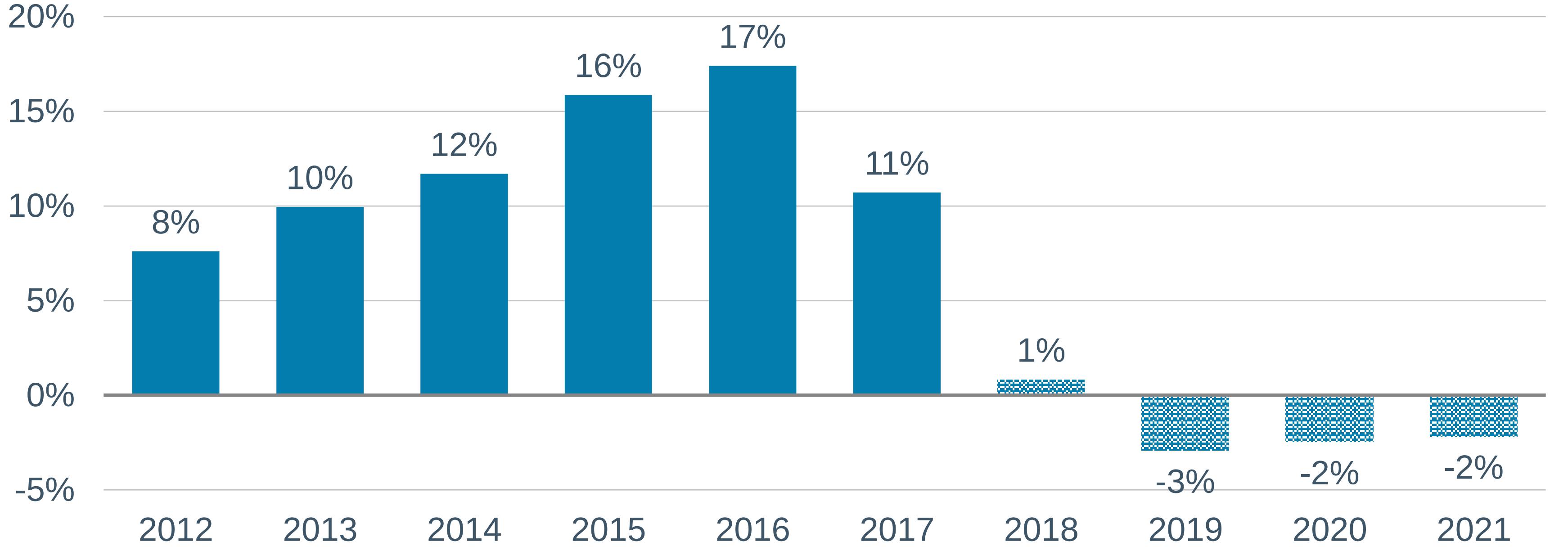
Summary of Topics

- Fed Policy
- Duration
- Munis
- Credit
- Currencies
- International

Fed policy

Major central banks’ balance sheets are projected to shrink

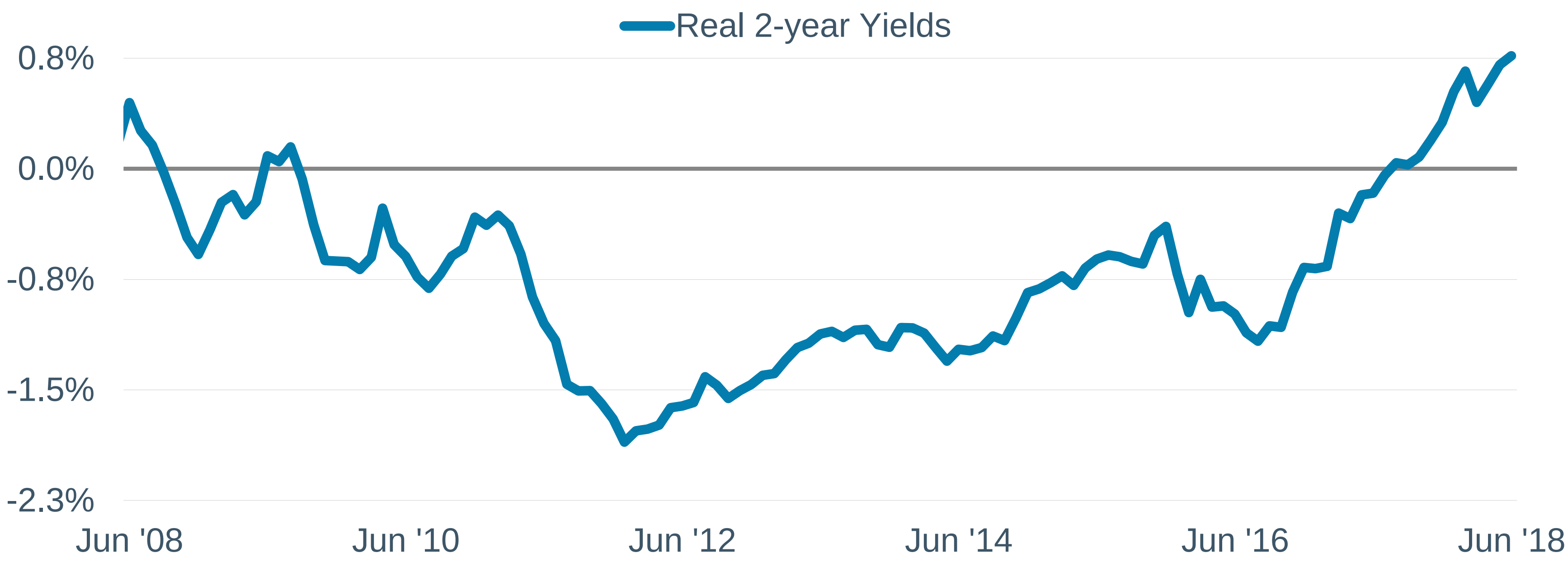
Year-over-Year Change of Fed, ECB, and BoJ Balance Sheets



Source: U.S. Federal Reserve (Fed), Bank of Japan (BOJ) and European Central Bank (ECB) Projections. Data as of 1/30/18.

- Global liquidity is set to decline for the first time in a decade as the major central banks pull back on quantitative easing.
- Asset prices that have been buoyed by the abundance of easy money are at risk of re-pricing.

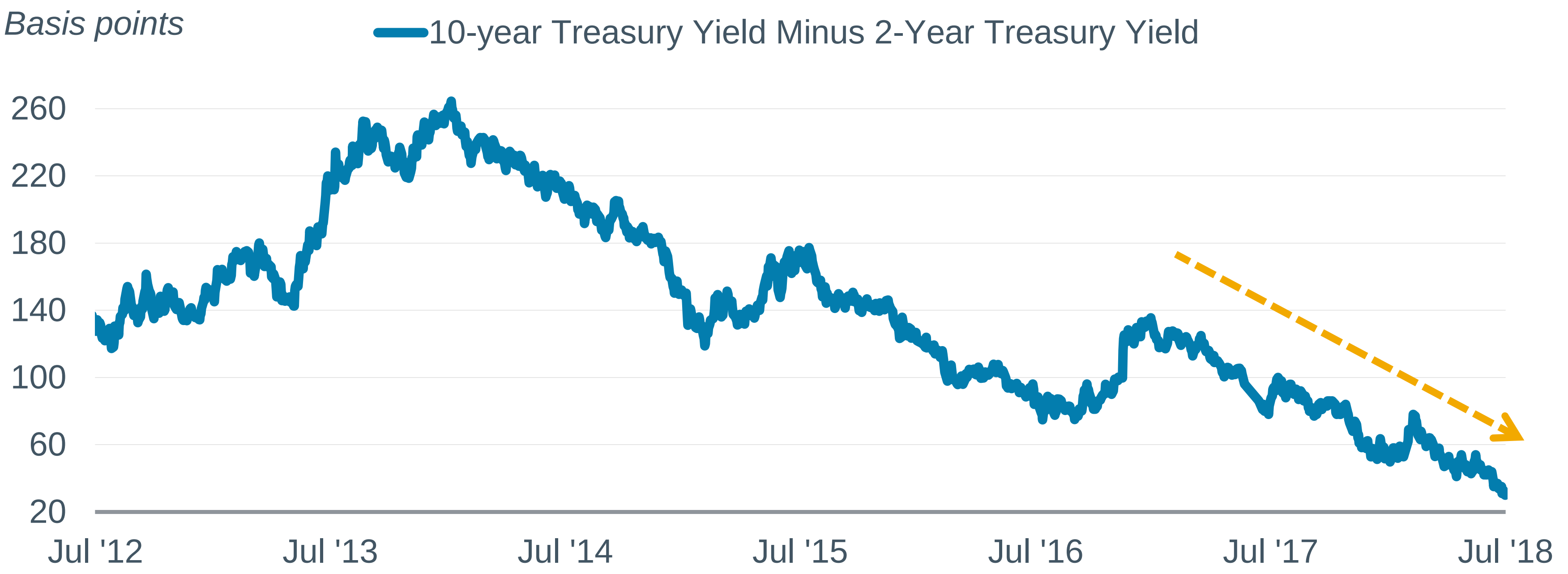
Real short-term rates are starting to turn positive



Source: 2-year Treasuries minus Personal Consumption Expenditures Excluding Food and Energy (Chain-Type Price Index), Percent Change from Year Ago, Seasonally Adjusted. Monthly data as of 6/29/2018

- The June Fed rate hike has pushed real short-term rates into positive territory for the first time in a decade.
- When combined with the balance sheet reduction, monetary policy is much tighter than it has been for years and much tighter than in other major countries.

Yield curve points to low inflation expectations

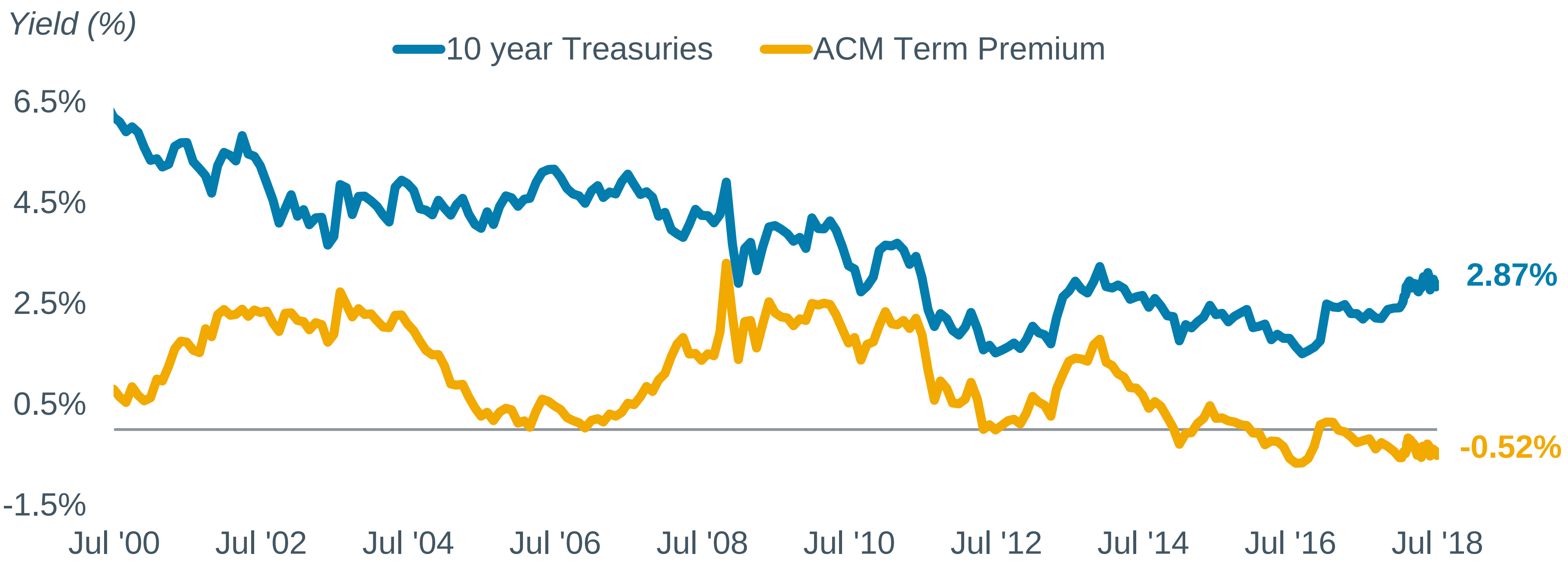


Note: The rates are comprised of Market Matrix U.S. Generic spread rates (USYC2Y10). This spread is a calculated Bloomberg yield spread that replicates selling the current 2 year U.S. Treasury Note and buying the current 10 year U.S. Treasury Note, then factoring the differences by 100.

Source: Bloomberg. Daily data as of 7/2/2018.

- Yield curve flattening signals diminishing expectations for inflation longer term.
- Some Fed officials have commented on the risks of an inverted curve leading to a recession, while others have dismissed the risk.

Not much risk premium for duration risk



Source: Federal Reserve Bank of New York. Monthly data as of 7/3/2018. The term premium is the compensation that investors require for bearing the risk that short-term Treasury yields do not evolve as they expected. The term premium is obtained from the model described in Adrian, Crump, and Moench (2013).

- The term premium remains negative despite stronger growth and rising inflation.
- The market does not agree with the Fed’s optimistic projections.

Duration debate

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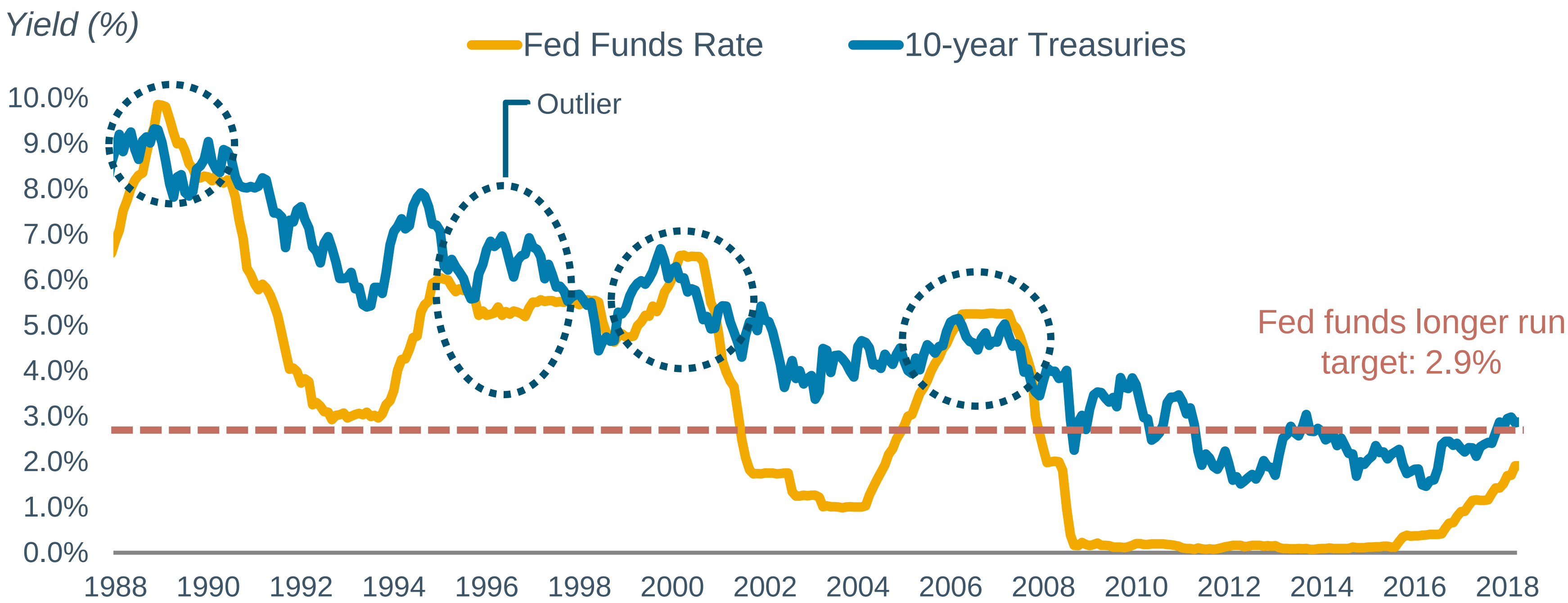
Nearing a Cyclical Peak?

In past cycles, 10-year bond yields and the Fed funds rate have peaked around the same level

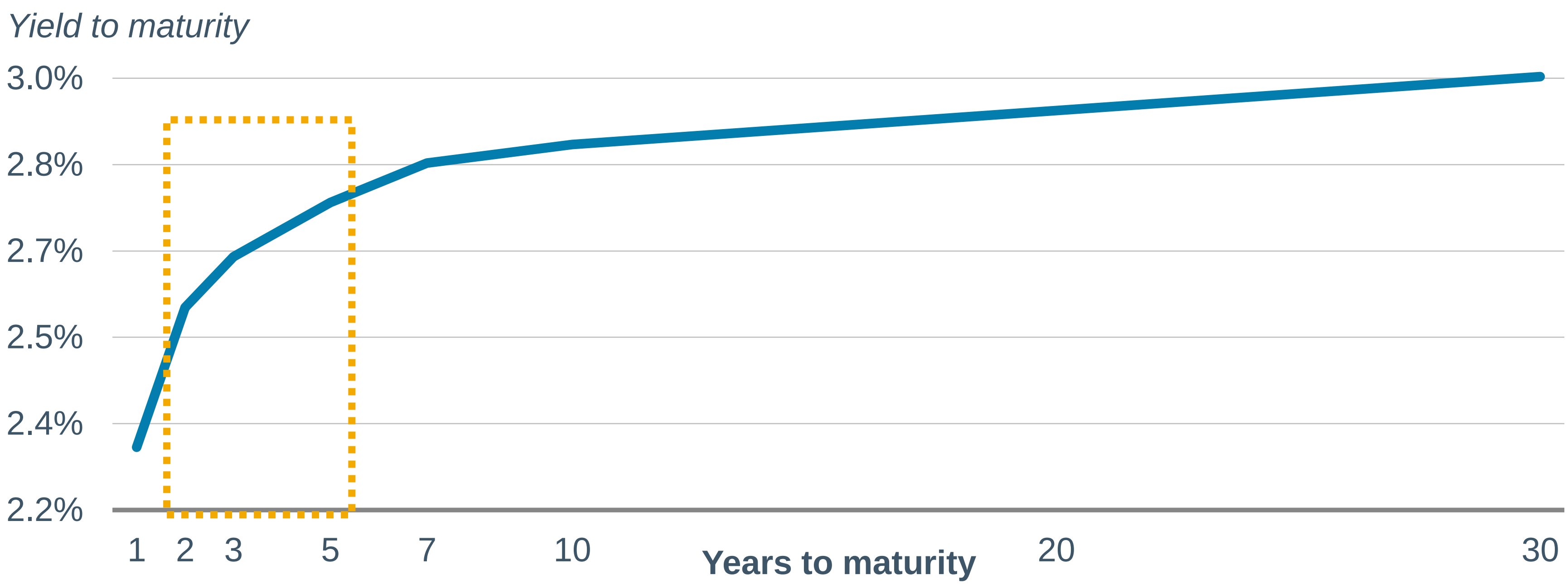


Source: Effective Federal Funds Rate, (FEDFUNDS) and 10-Year Treasury Constant Maturity Rate, Percent, Monthly, Not Seasonally Adjusted (DGS10).
Data as of 7/3/2018.

- In past cycles, ten-year treasury yields have tended to peak near the same level as the peak in the fed funds rate.
- Based on the longer run projections in the dot plot, 10-year yields may have already peaked at 3.12%.

Duration doesn't pay – yet

2-5 years tend to capture the steepest part of the yield curve



Source: Bloomberg as of 7/5/2018.

- Although yields may have peaked, we continue to see better risk/reward in the short-term intermediate term part of the yield curve.
- The incremental reward in yield for added duration is best in 2-5 year maturities.

Municipals

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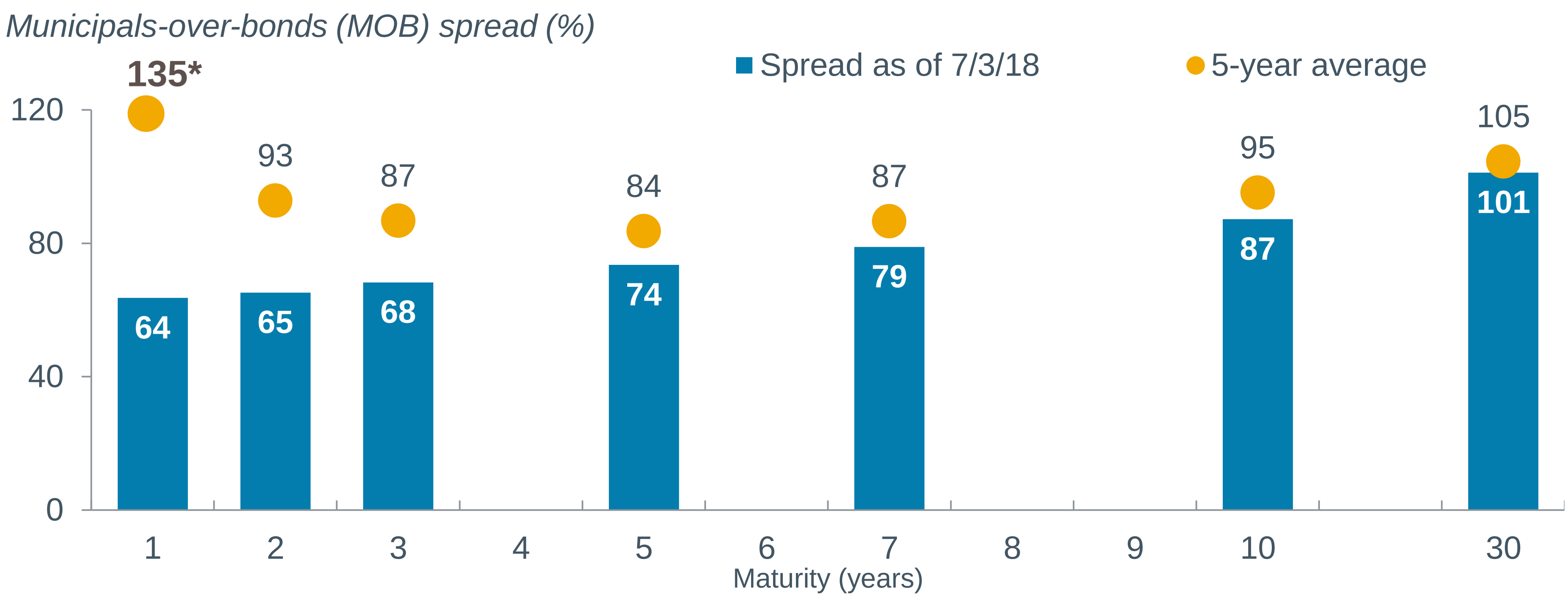
Relative valuations are low compared to historical averages



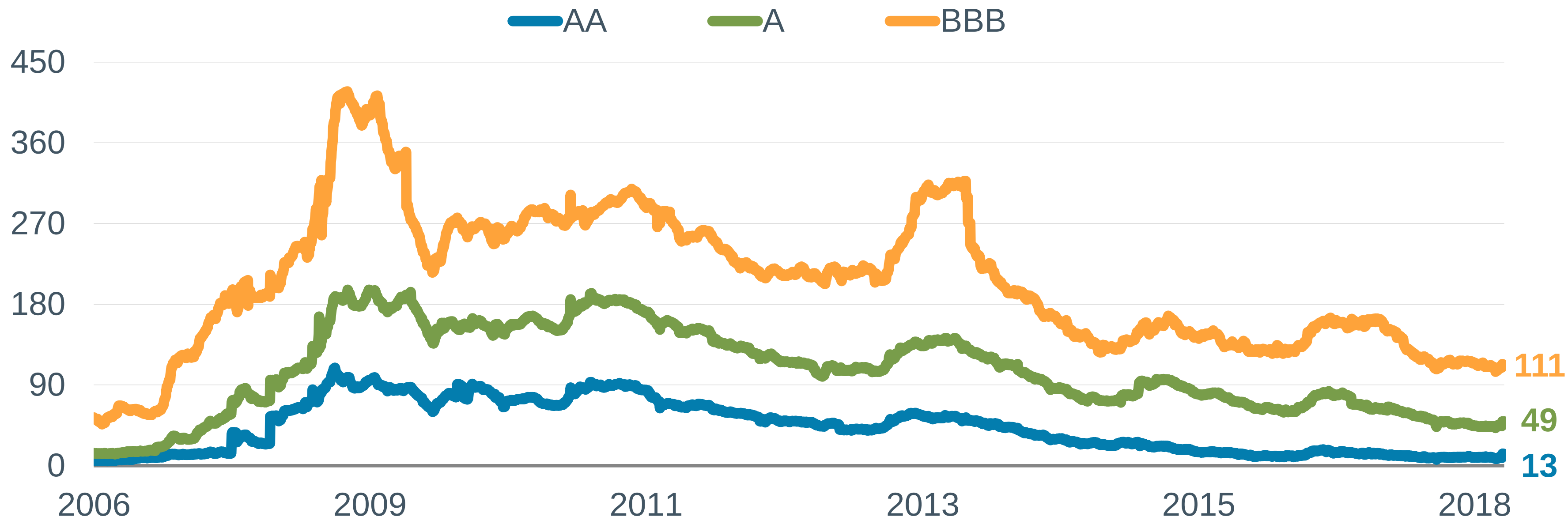
Source: Bloomberg, as of July 3, 2018

*Note: 1-year maturity is not to scale

- Valuations are high at the short end of the muni curve.
- We suggest average duration in the 5 to 8 year range.

Spreads have been falling since the 2008 credit crises

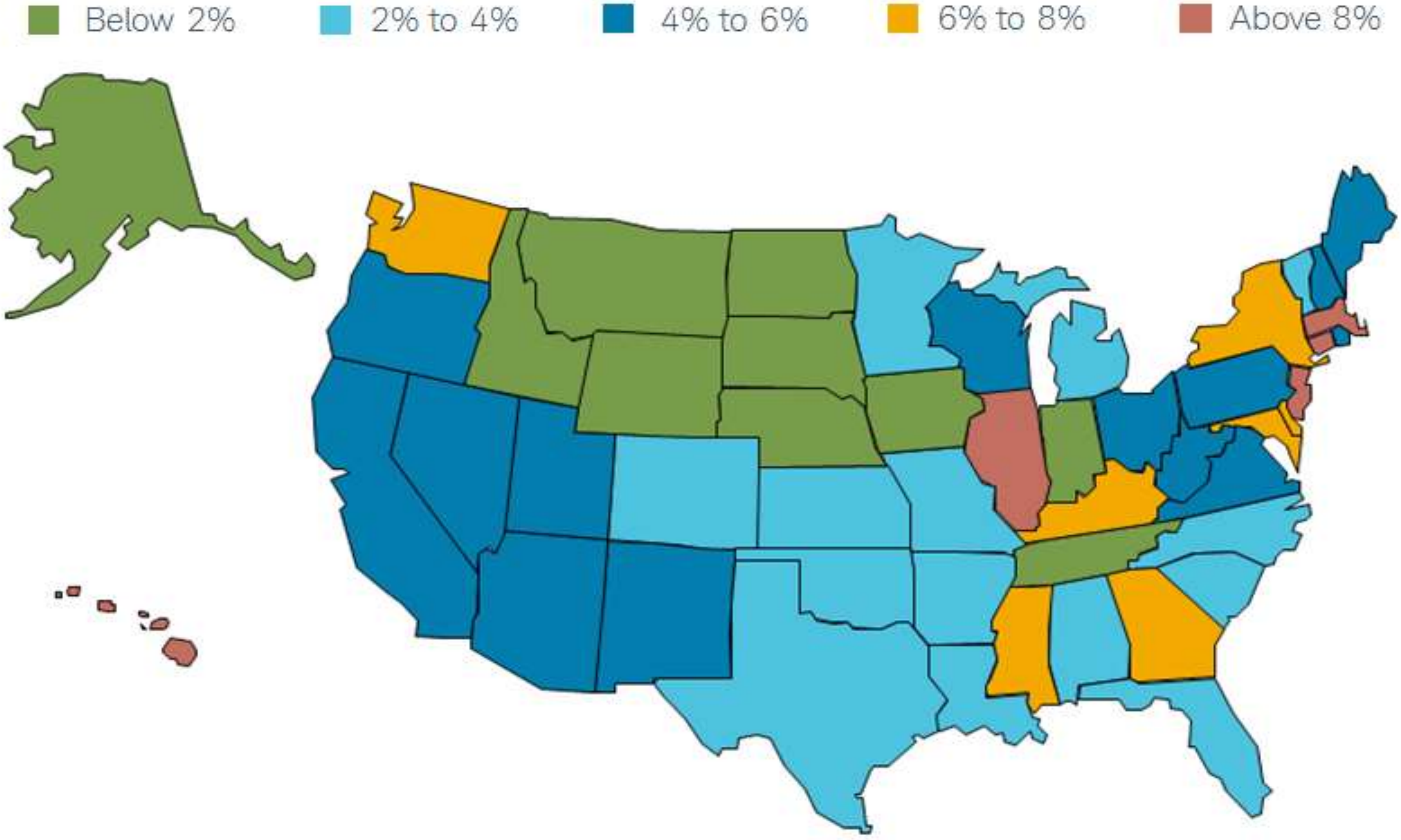
Difference in yield between AAA muni index and AA, A, or BBB muni index (basis points)



Source: Bloomberg Barclays Municipal Bond Indices, as of 6/25/18.

Debt service accounts for a low portion of governmental revenues for many states

Fiscal year 2016 debt service ratio

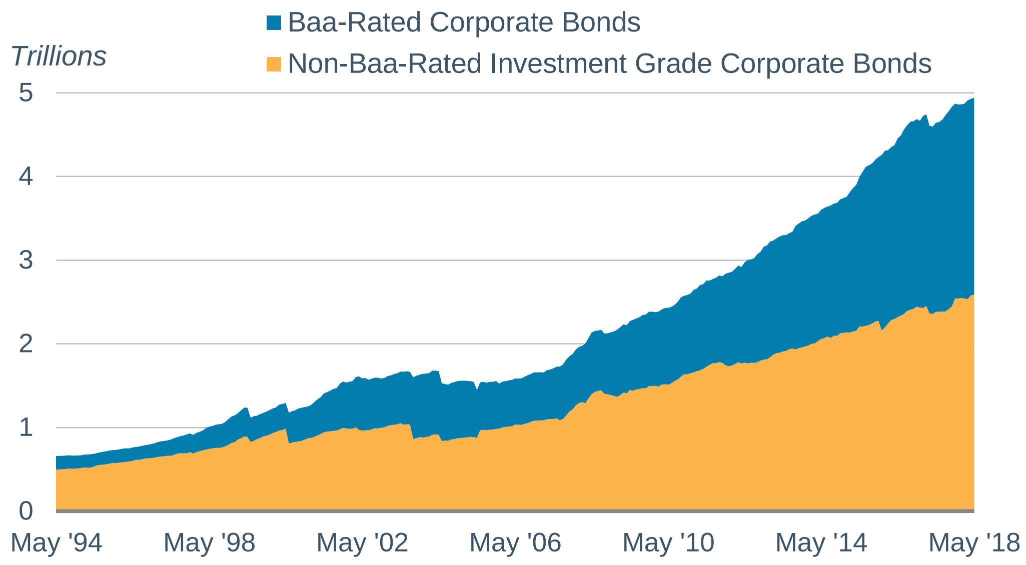


Source: Moody's Investor Services, as of 5/3/2017.

"Debt service" is debt services costs (usually interest and principal) as a percent of own-source governmental revenues

Credit

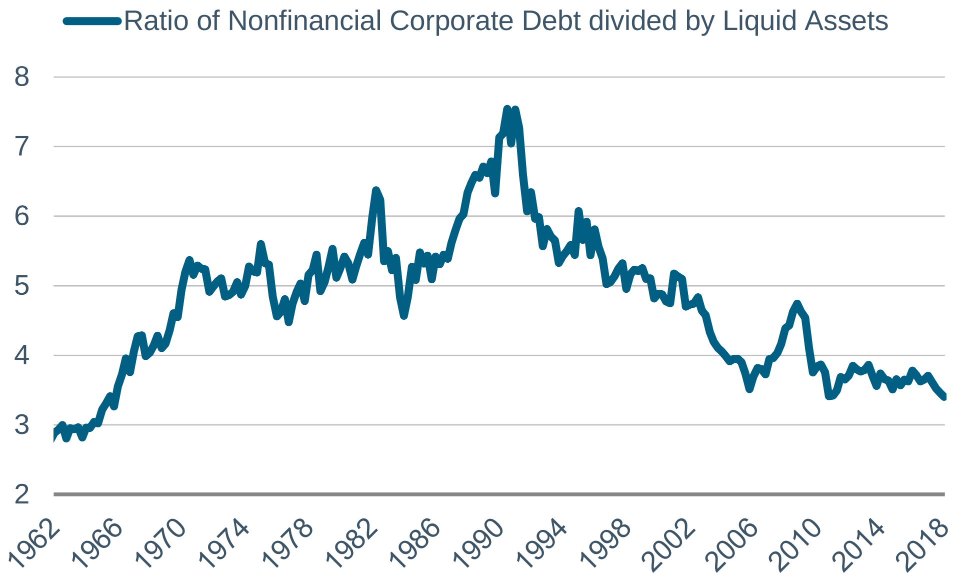
The Credit Bubble Debate

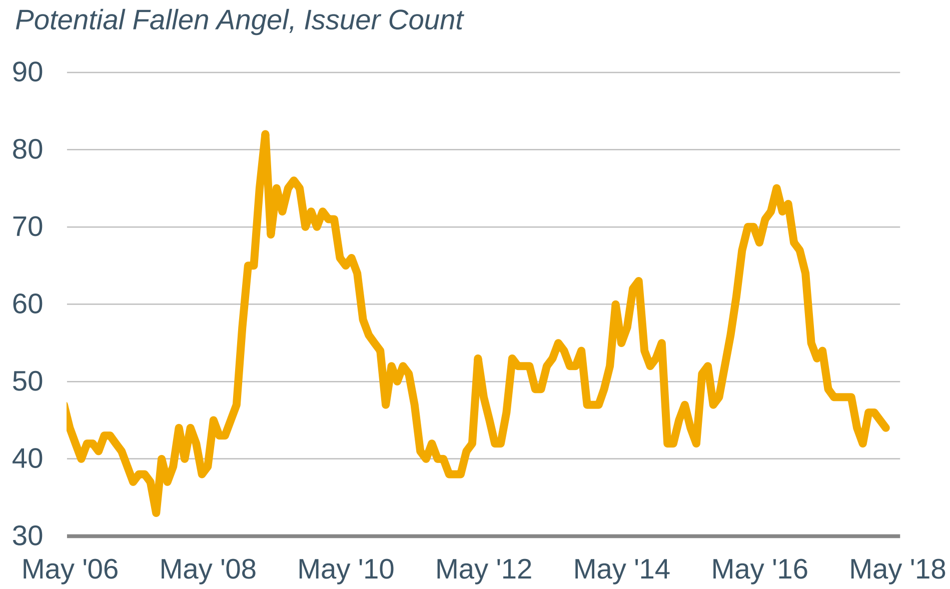


Source: Bloomberg Barclays, monthly data as of 5/31/2018.

- As a percent of real GDP, the amount of nonfinancial corporate business debt (both bonds and loans) has surpassed the previous pre-crisis peak and continues to rise.
- Investment grade corporate bonds outstanding have more than doubled over the past decade, with the size of the Bloomberg Barclays U.S. Corporate Bond Index just under $5 trillion now.
- Baa-rated bonds make up a growing share of the market, meaning a wave of downgrades at the next downturn could lead to more fallen angels.

We don’t expect the bubble to burst just yet

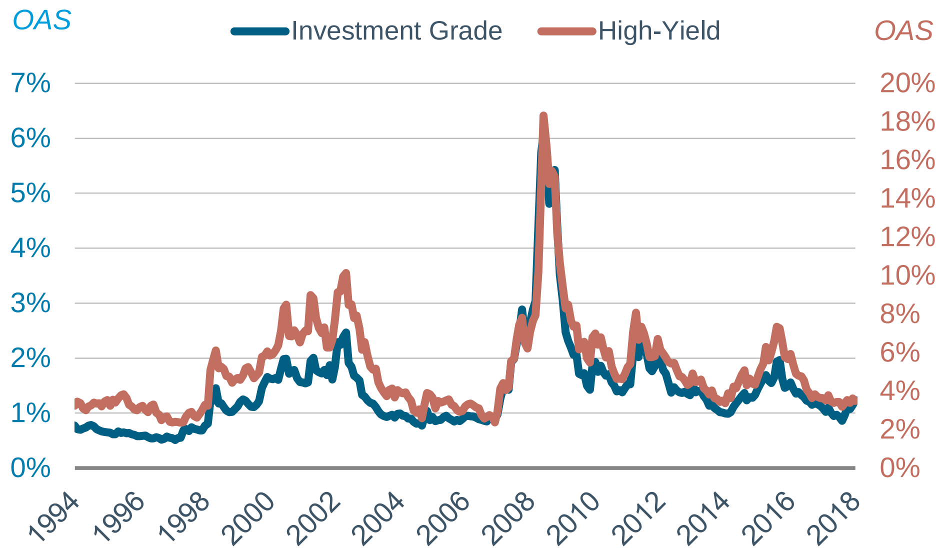




Source: U.S. Federal Reserve, using quarterly data as of 1Q 2018. Nonfinancial Corporate Business; Liquid Assets (broad measure) and Nonfinancial Corporate Business; Credit Market Instruments; Liability, Billions of Dollars, Quarterly, Seasonally Adjusted.

- Cash balances remain high and earnings have been positive. Total debt (bonds and loans) as a percent of liquid assets remains near the 50-year low.
- Potential fallen angels (issues rated BBB- and on negative creditwatch) has been declining, meaning there may not be a wave of investment grade companies downgraded to junk immediately. But it’s still possible that issues that aren’t considered potential fallen angels could be downgraded to junk.

IG closer to fair value, HY still rich



Investment Grade (Current OAS: 1.24%)

Average12-Month Excess Return (basis points)	
OAS Less than 0.88%	-5
OAS Between 0.88% and 1.11%	-69
OAS Between 1.11% and 1.56%	26
OAS Above 1.56%	316

High-Yield (Current OAS: 3.48%)

Average 12-Month Excess Return (basis points)	
OAS Less than 3.4%	-31
OAS Between 3.4% and 4.58%	98
OAS Between 4.58% and 6.21%	220
OAS Above 6.21%	880

Source: Bloomberg Barclays Indices. Monthly data as of 6/27/2018.

- Investment grade spreads (up 31bps YTD) have risen more than HY spreads (up 5 bps) this year, likely due to technical factors like greater supply.
- At 1.24%, the IG OAS is not too far from its since inception average of ~1.33%
- The HY OAS is currently 3.48%, well below its since inception average of 5.11%

Currencies and International bonds

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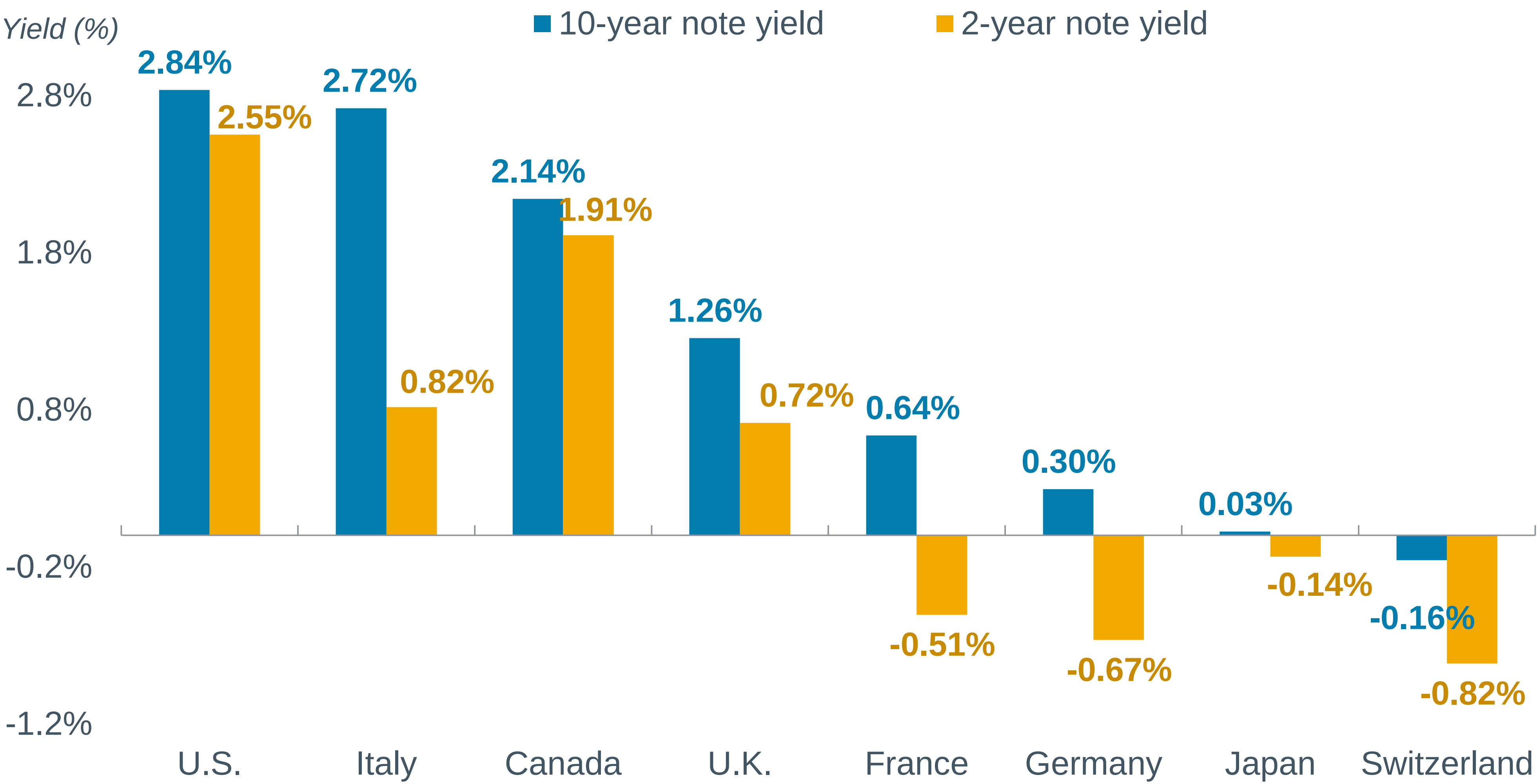
Tighter Fed policy has helped buoy the dollar

Source: Bloomberg. Bloomberg U.S. Dollar Index (BBDXY). Monthly data as of 7/5/2018.

- The dollar has resumed its uptrend as economic data outside the U.S. softened early this year.
- Fed tightening has returned as the main driver of the dollar.
- Trade tensions and weakness in emerging markets are adding to the dollar's gains. Strength may continue.

U.S. Yields Above Other G-8 Yields



Source: Bloomberg. Data as of 7/5/2018. **Past performance is no guarantee of future results.**

MSCI Emerging Market Currency Index

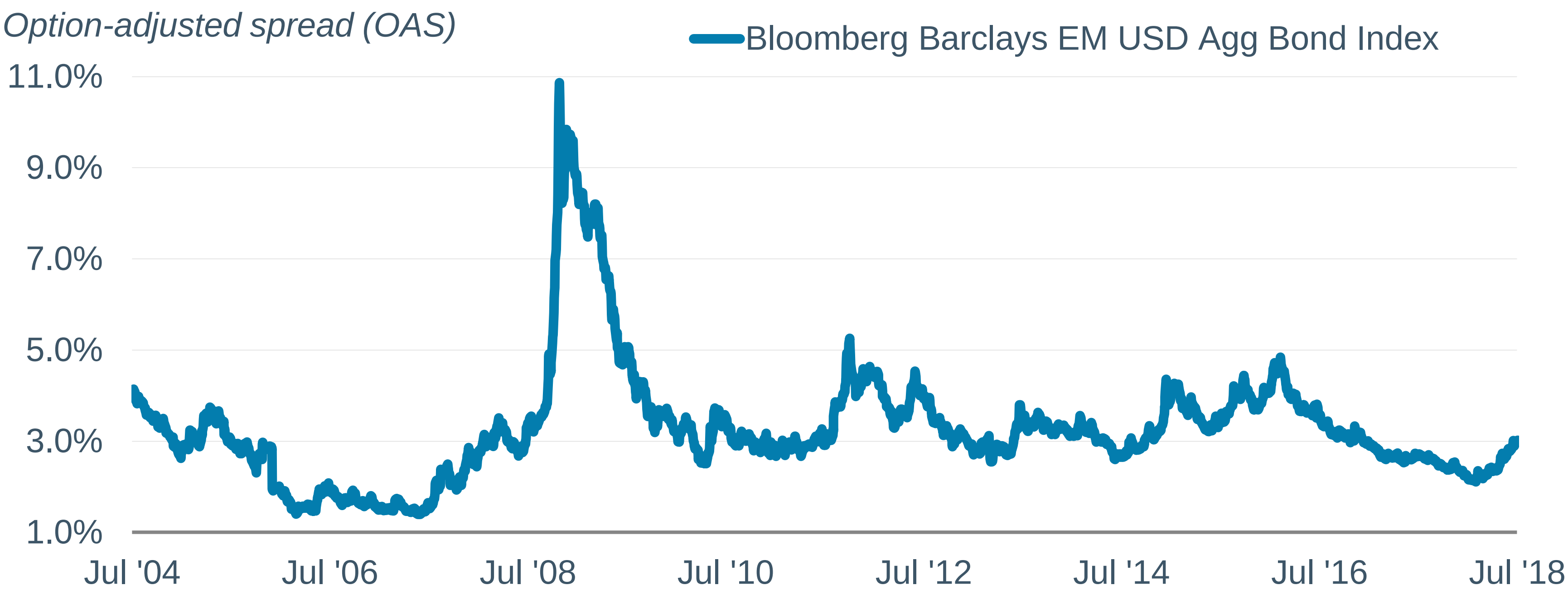
EM currencies continue to fall, weighed down by Fed tightening and fear of trade disputes slowing global growth

Source: Bloomberg. Daily data as of 7/4/18.

Note: MSCI Emerging Market Currency Index (MXEF0CX0) sets the weights of each currency equal to the relevant country weight in the MSCI EM Index.

- Fed tightening and declining global liquidity have caused money to flow out of emerging market assets.
- Trade tensions between the U.S. and China have worsened the trend since China is a major trading partner of other EM countries.

Emerging Market bonds don't offer much value to USD-based investors



Source: Bloomberg Barclays Emerging Markets USD Aggregate Bond Index, daily data as of 7/5/2018.

Note: Option-adjusted spreads (OAS) are quoted as a fixed spread, or differential, over U.S. Treasury issues. OAS is a method used in calculating the relative value of a fixed income security containing an embedded option, such as a borrower's option to prepay a loan.

- Despite the recent rise, EM yield spreads remain well below the highs of the past few years.
- We believe spreads could rise another 100 basis points without a crisis in EM.
- Local currency bonds aren't a good option for USD-based investors due to currency depreciation.

Thank you

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Speaker Biography

Kathy Jones, Senior Vice President
Chief Fixed Income Strategist
Schwab Center For Financial Research

Kathy Jones heads up the Fixed Income and Currency strategy group at the Schwab Center for Financial Research, where she is responsible for Schwab's point of view on the markets and investor education. Jones has covered global bond, foreign currency and commodity markets extensively throughout her career as an investment analyst and strategist, working with both institutional and retail clients.

Prior to joining Schwab in 2011, Jones was a Fixed Income strategist at Morgan Stanley where she specialized in global-macro strategy covering domestic and international bonds and foreign exchange. She has also been a consultant in the alternative investment area and was previously Executive Vice President of the Debt Capital Markets division of Prudential Securities.

Jones received her undergraduate degree with honors in English literature from Northwestern University and her MBA in finance from Northwestern University's Kellogg Graduate School of Management.

She makes regular broadcast appearances on CNBC, Fox Business News and NPR. She is often quoted in the financial news media including The Wall Street Journal, The New York Times, Bloomberg, Reuters and USA Today.

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