



NEPC, LLC

YOU DEMAND MORE. *So do we.*<sup>SM</sup>



## Oklahoma State Pension Commission

---

### Return Expectations

November 12, 2014

Don Stracke, CFA, CAIA, Senior Consultant  
Tony Ferrara, CAIA, Senior Analyst

255 State Street, Boston, MA 02109 | TEL: 617.374.1300 | FAX: 617.374.1313 | [www.nepc.com](http://www.nepc.com)

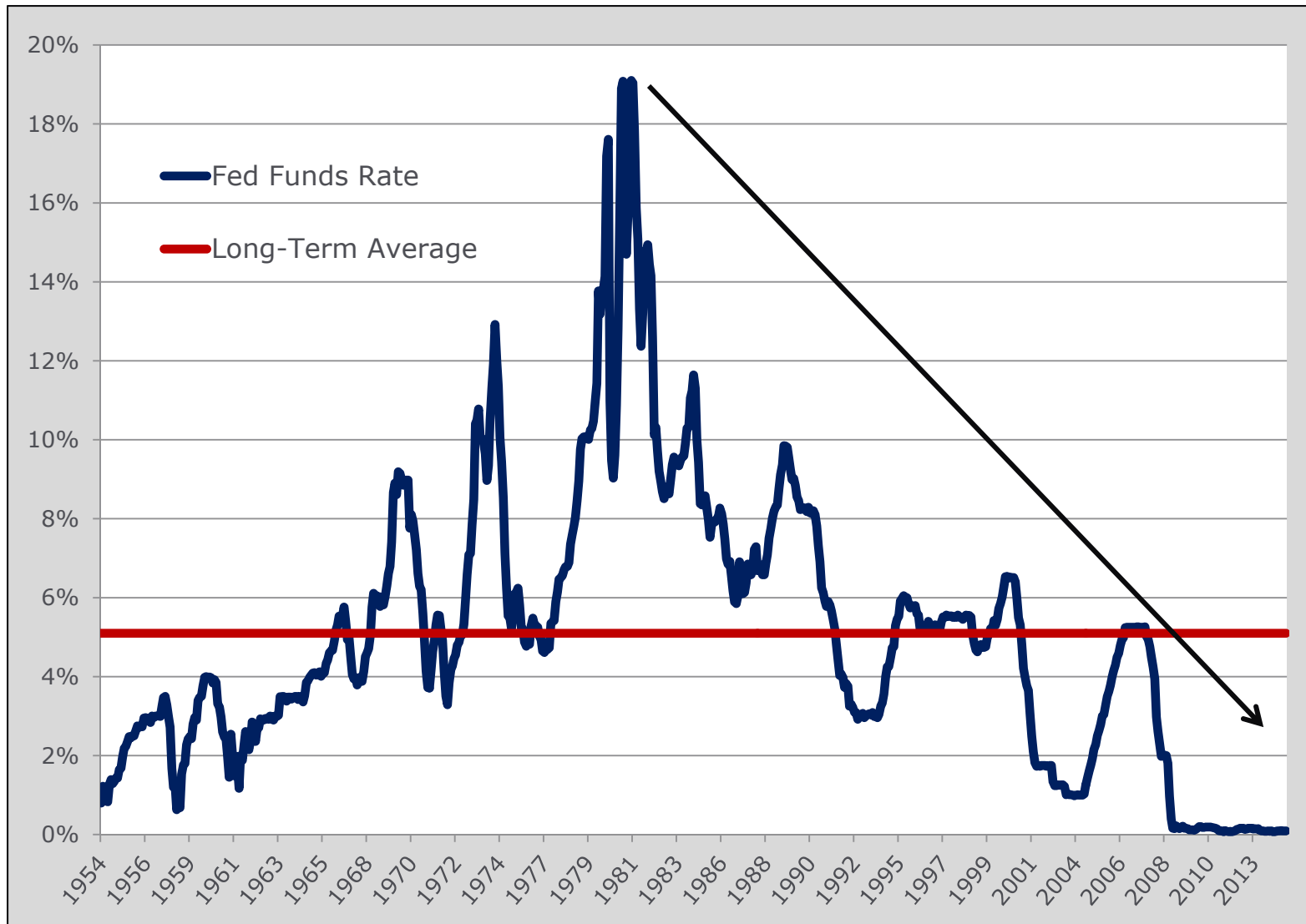
BOSTON | ATLANTA | CHARLOTTE | CHICAGO | DETROIT | LAS VEGAS | SAN FRANCISCO

# How Did We Get Here?



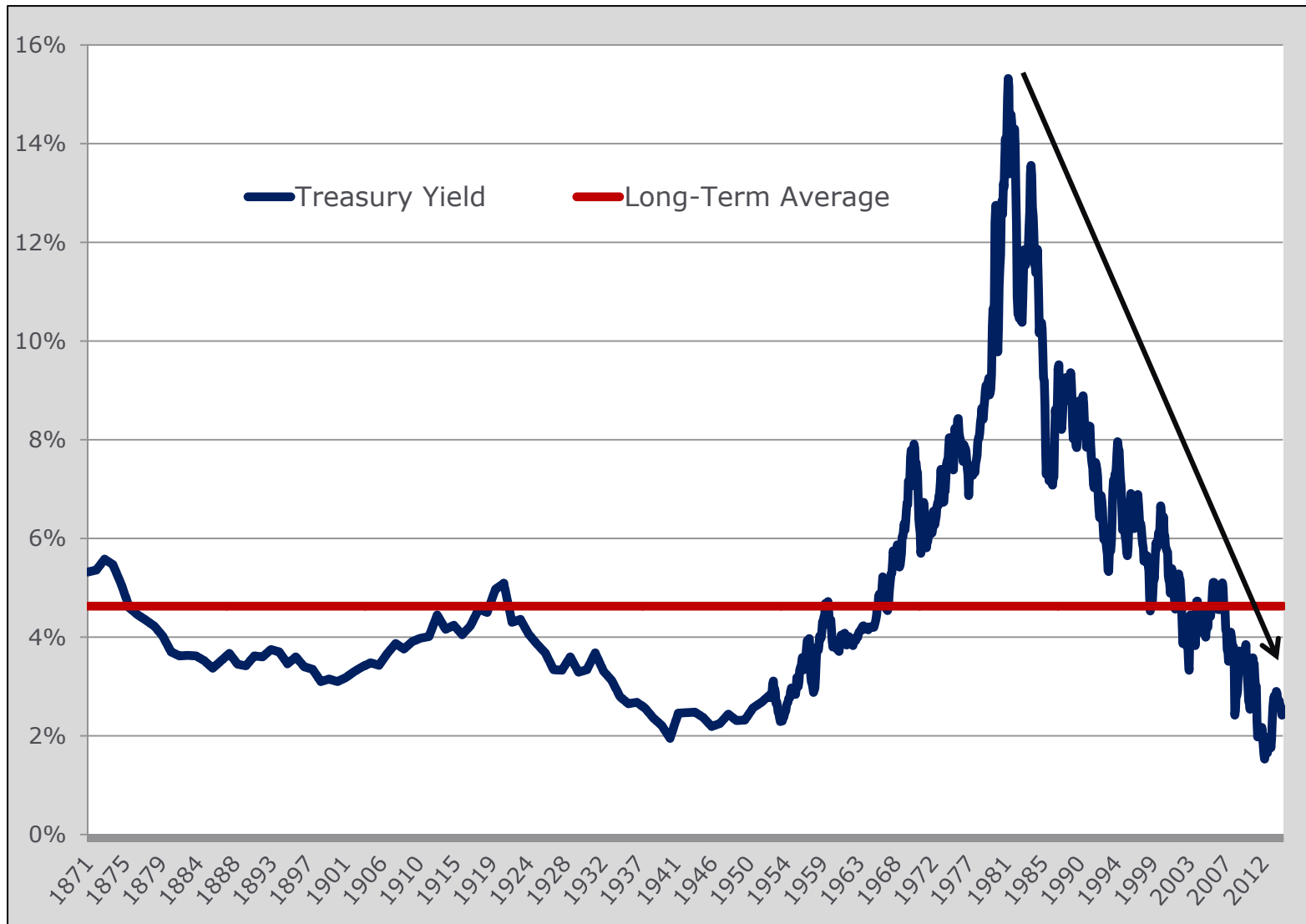
- **Despite episodes of volatility and market corrections, investors have experienced an incredible multi-decade run of robust returns across capital markets**
- **There were many tailwinds providing support for these gains**
  - Falling interest rates/Central bank stimulation
  - Expanding debt levels
  - Globalization of markets
  - Technology/Productivity
- **These tailwinds are unlikely to provide similar support in the future**
- **Lower returns create many challenges for all investors that must be addressed over time**

# Fed Funds Rate

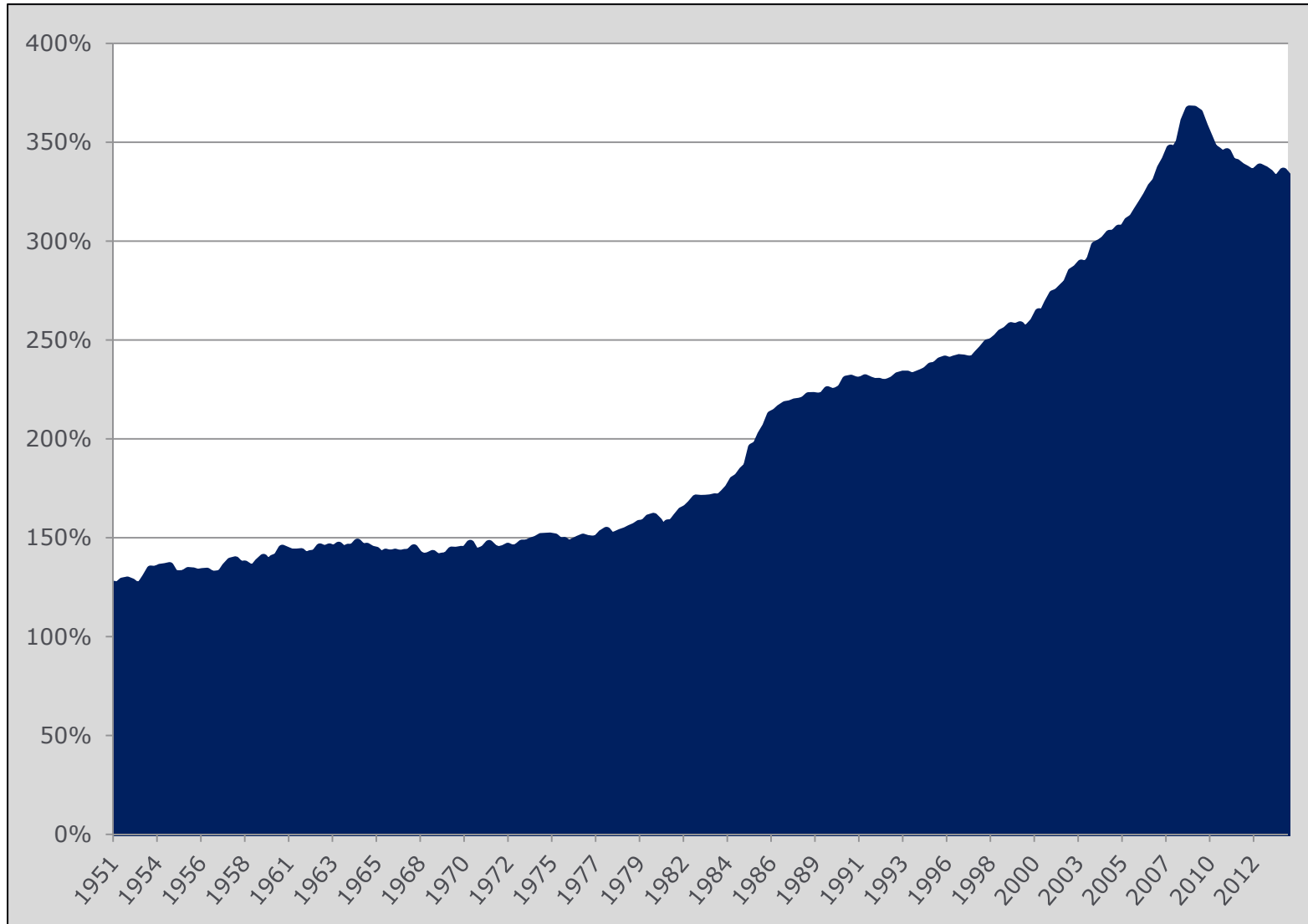


Source: Federal Reserve Bank of St. Louis, September 2014

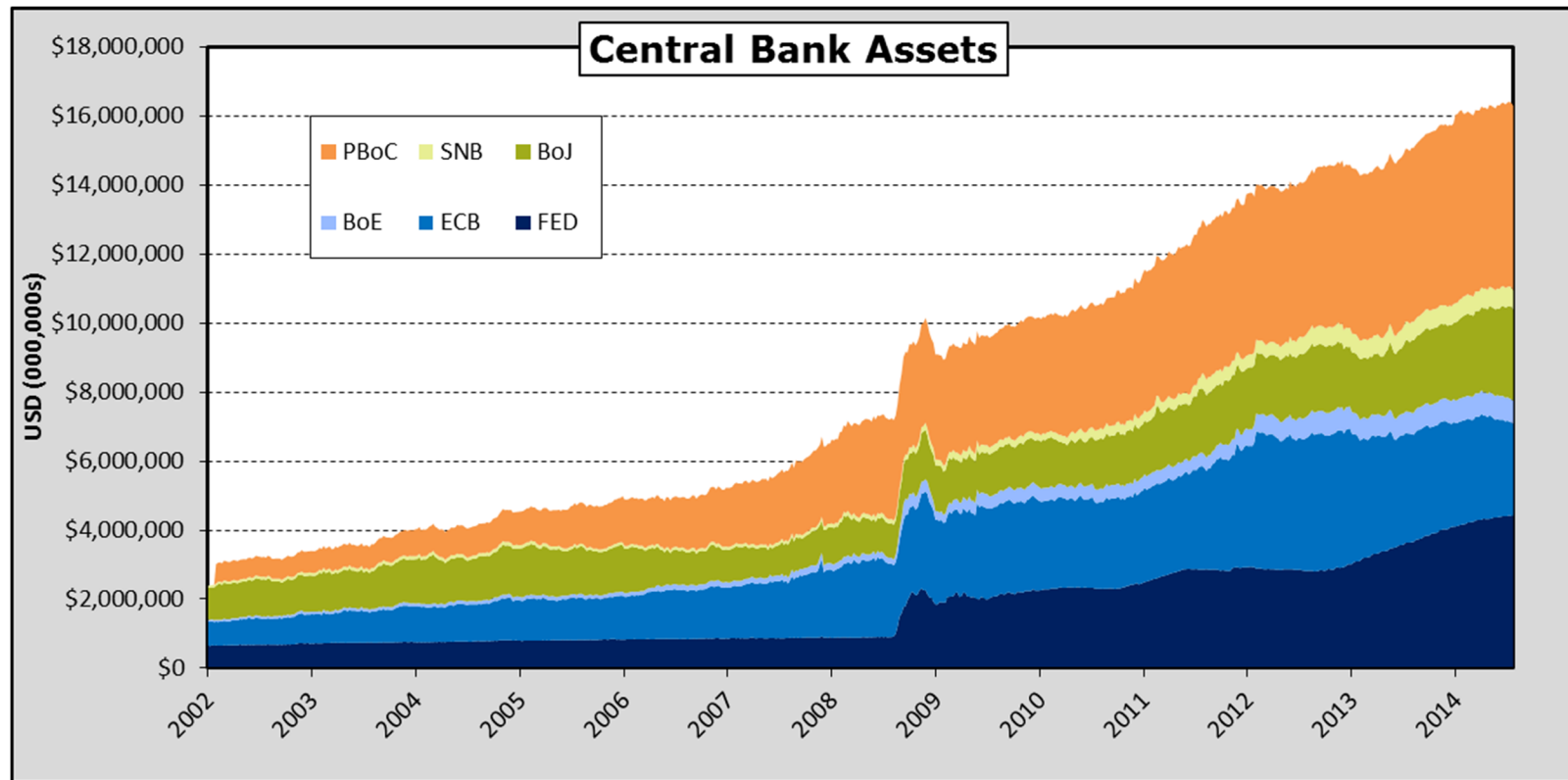
# 10 Year Treasury Yield



Source: Federal Reserve, Robert Shiller "Market Volatility", Sidney Homer "A History of Interest Rates"



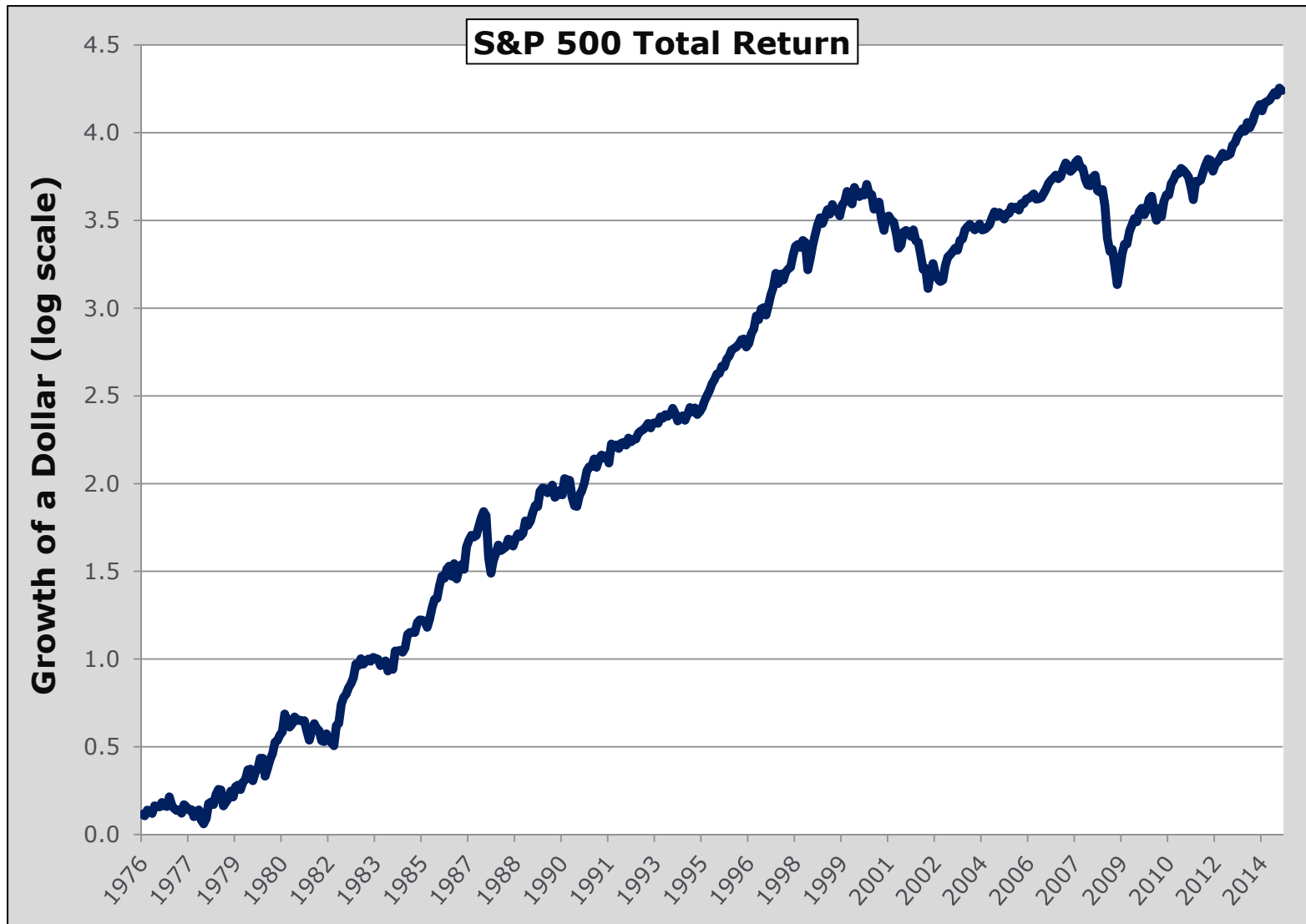
Source: Federal Reserve Bank of St. Louis, August 2014



Source: Bloomberg

- **Major central bank balance sheets have grown by a 5x factor since February 2002 (when PBoC data begins)**
- **Much of the increases come from the end of 2007 to the present, with very little inflation pressures**
  - ECB and BoJ balance sheets are likely to continue their expansion in 2015

Equities Have Rebounded Strongly from 2009 Lows

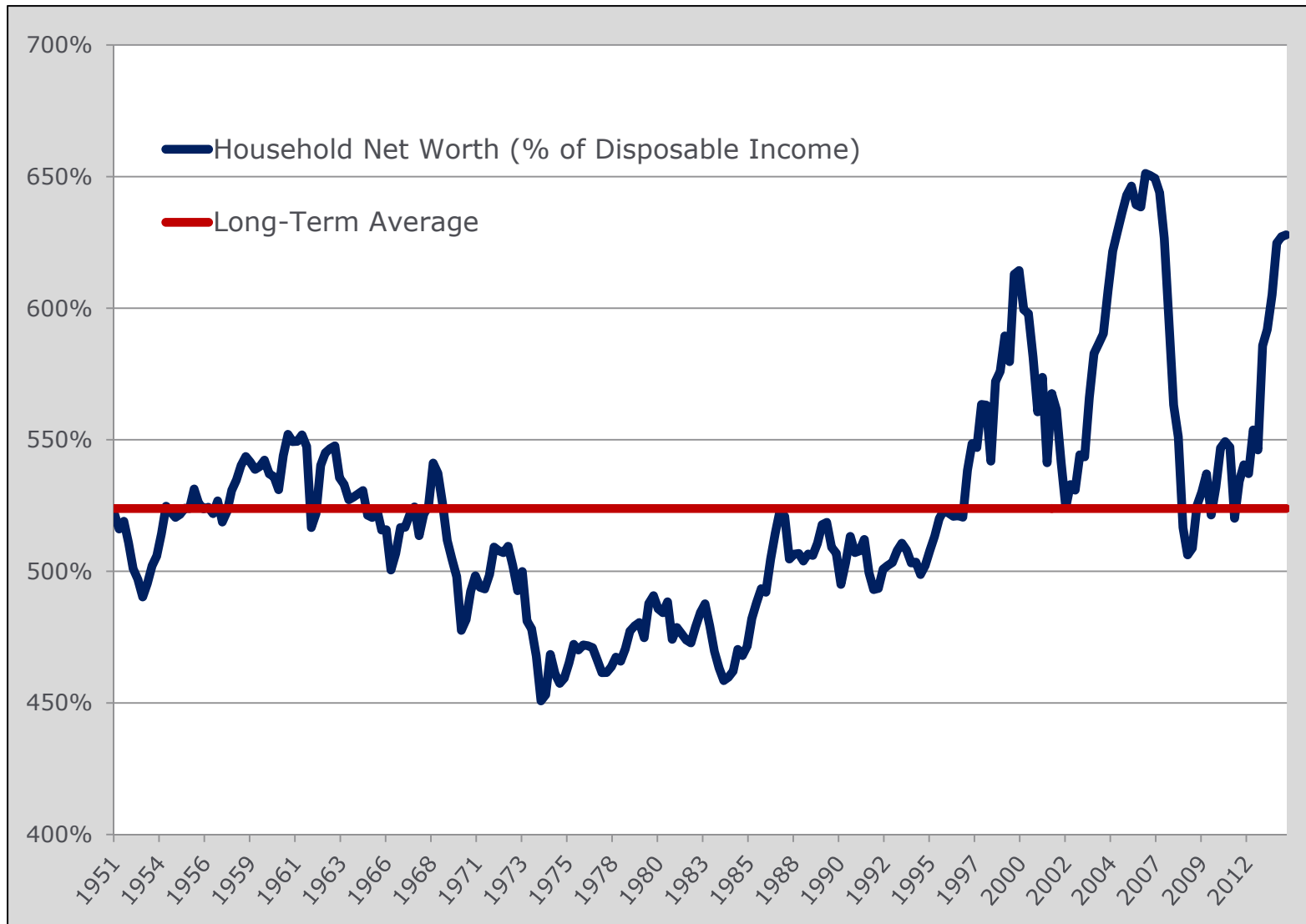


Source: Bloomberg





Wealth Effect from Quantitative Easing Having Positive Impact...

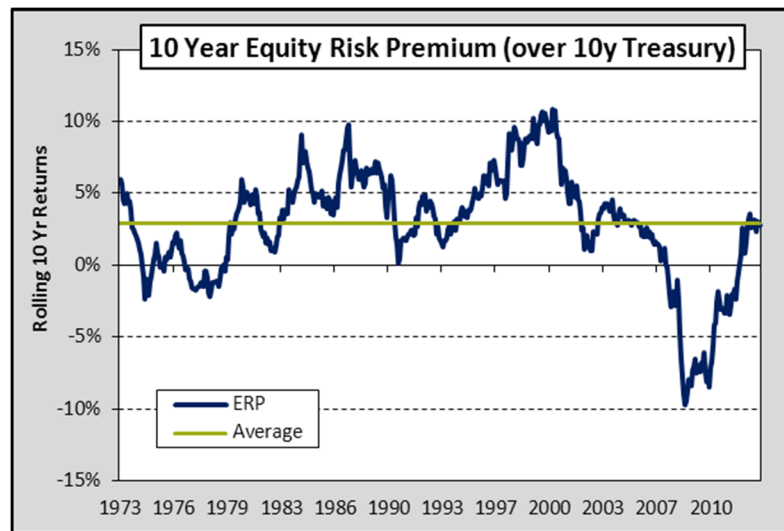


Source: Federal Reserve Bank of St. Louis, August 2014

• **Sources of Return**

- Valuation
- Earnings growth
  - Adjusted for changes in margin
- Dividend yield
- Inflation

Return Source	Starting Value	Expected Forecast Values	Return Contribution
Real Earnings Growth	2.5%	2.5%	--
<i>Profit Margin Adjustment</i>		-1.0%	1.5%
Dividend Yield	2.0%	2.0%	2.0%
Inflation	3.0%	3.0%	3.0%
Valuation & Other*	16.3	16	-0.25%
		Total Expected Return	6.25%



Source: Ibbotson as of 11/30

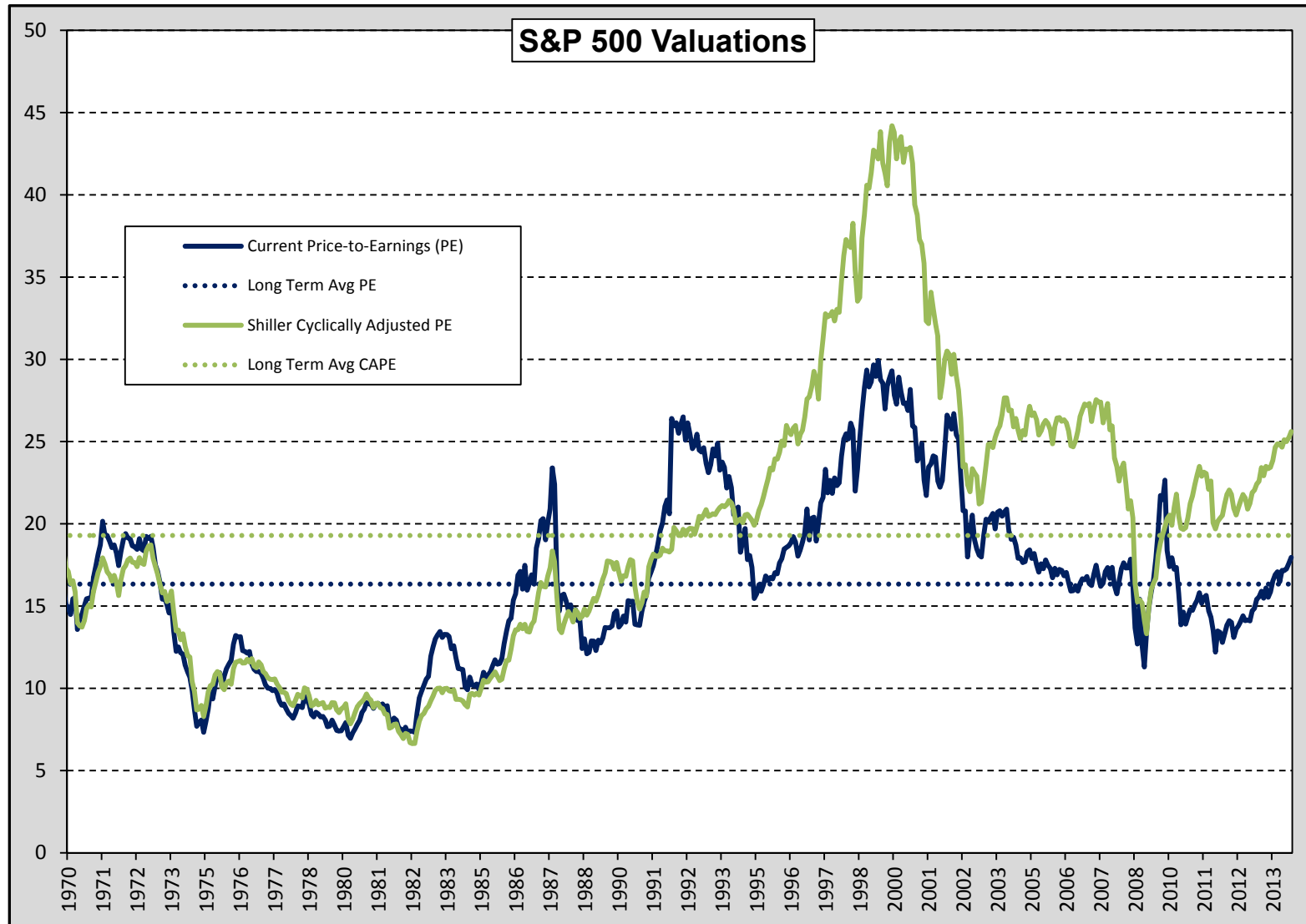
• **Equity Risk Premium over 10 year Treasury is volatile**

- Long-term average of 2.9%
- Stock and bond forecasts imply an Equity Risk Premium of 4.25%
- While high relative to the long-term average, almost 40% of observations exceed this level over the last 50 years

• **Downward adjustment reflects higher but still low interest rates supportive of an elevated equity risk premium**

\* - Valuation & Other incorporates adjustment for P-E ratios as well as other factors such as rounding, geometric compounding, etc.

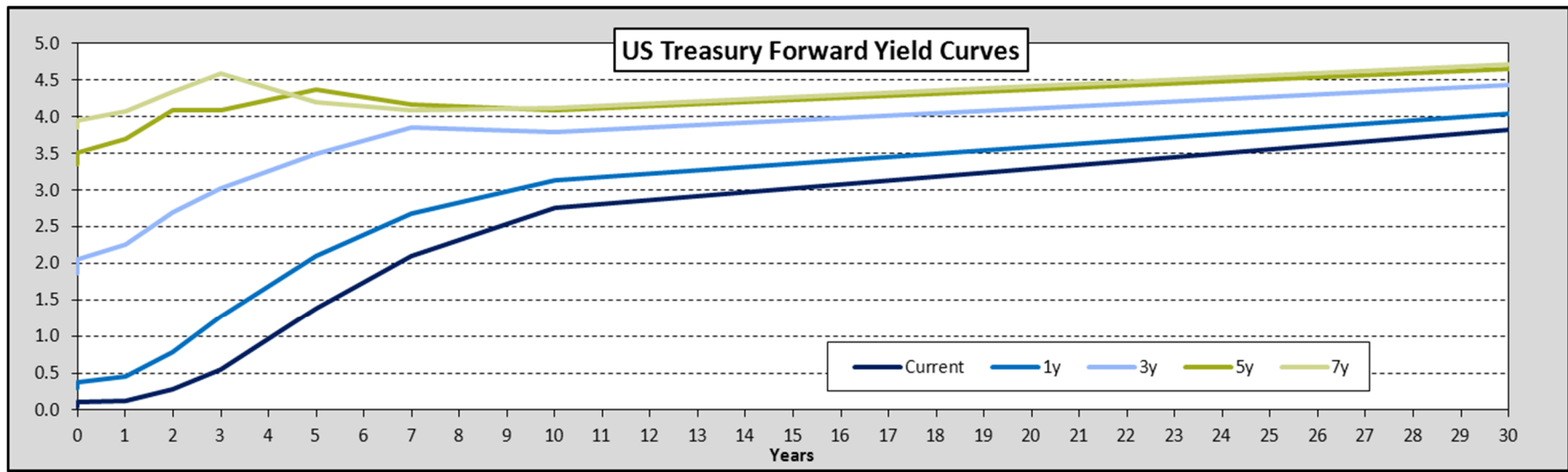
Equity Valuations are Trending above Long-Term Averages



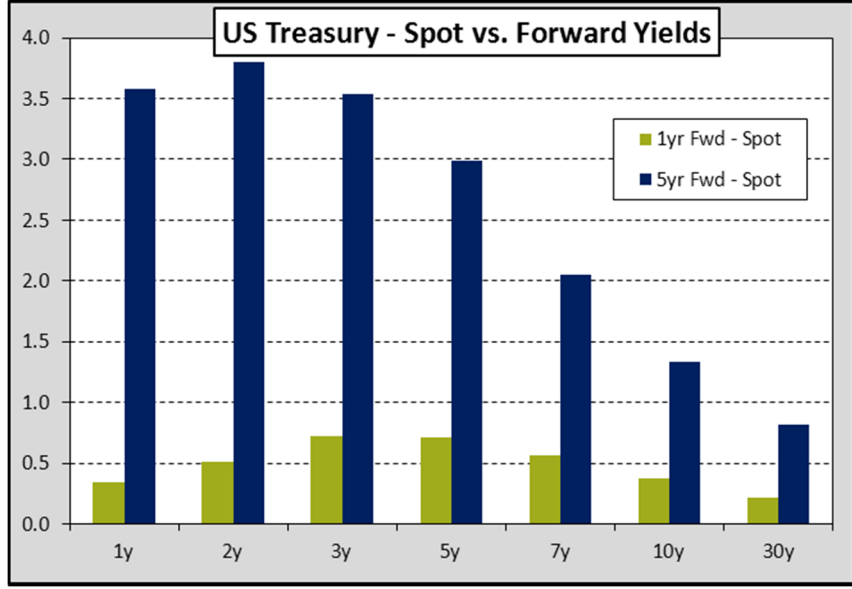
Source: Bloomberg, Long-term averages since 1954



2014 NEPC Assumption Development – US Spot and Forward Rates – Current



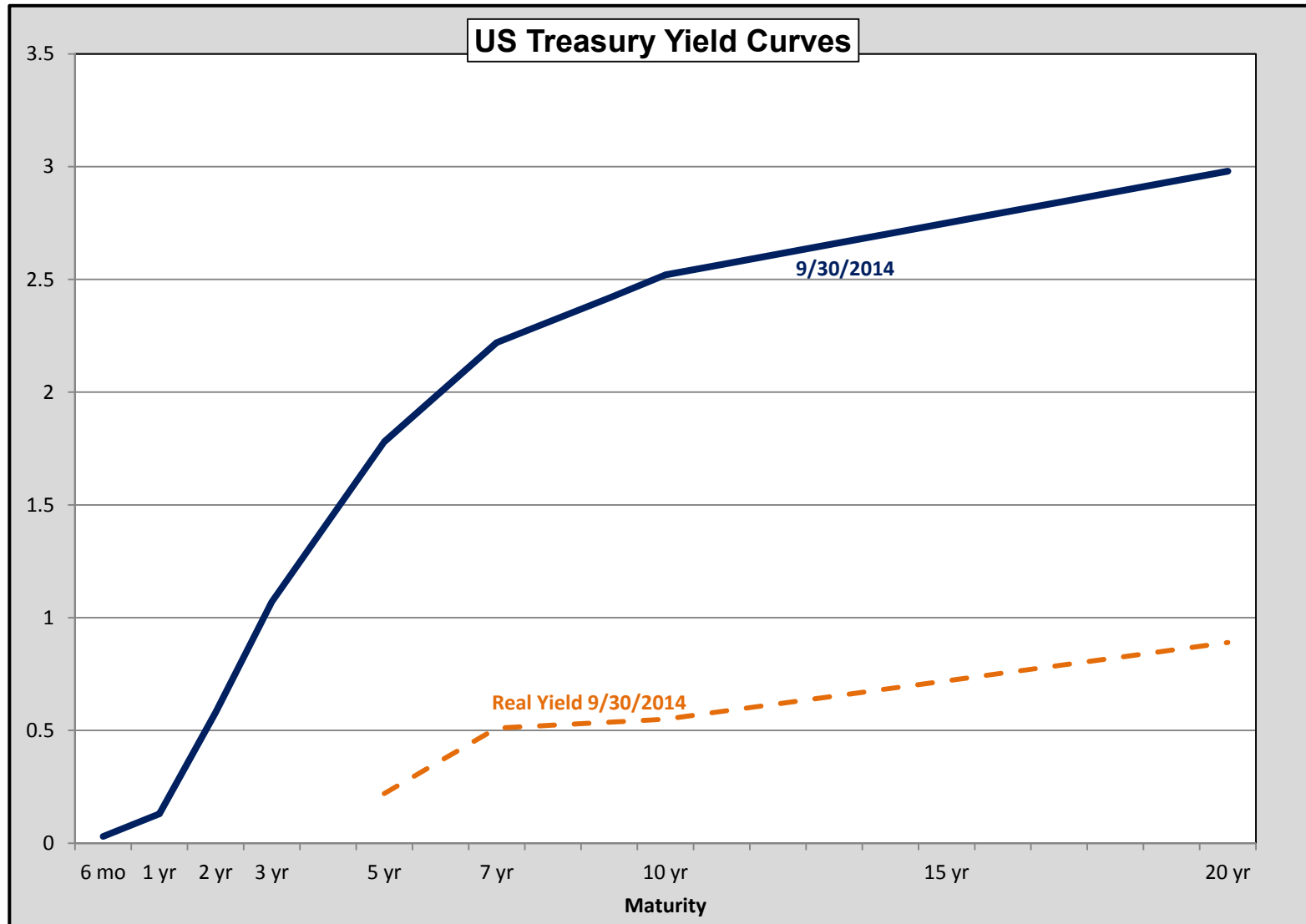
Source: Bloomberg as of 11/30



Source: Bloomberg as of 11/30

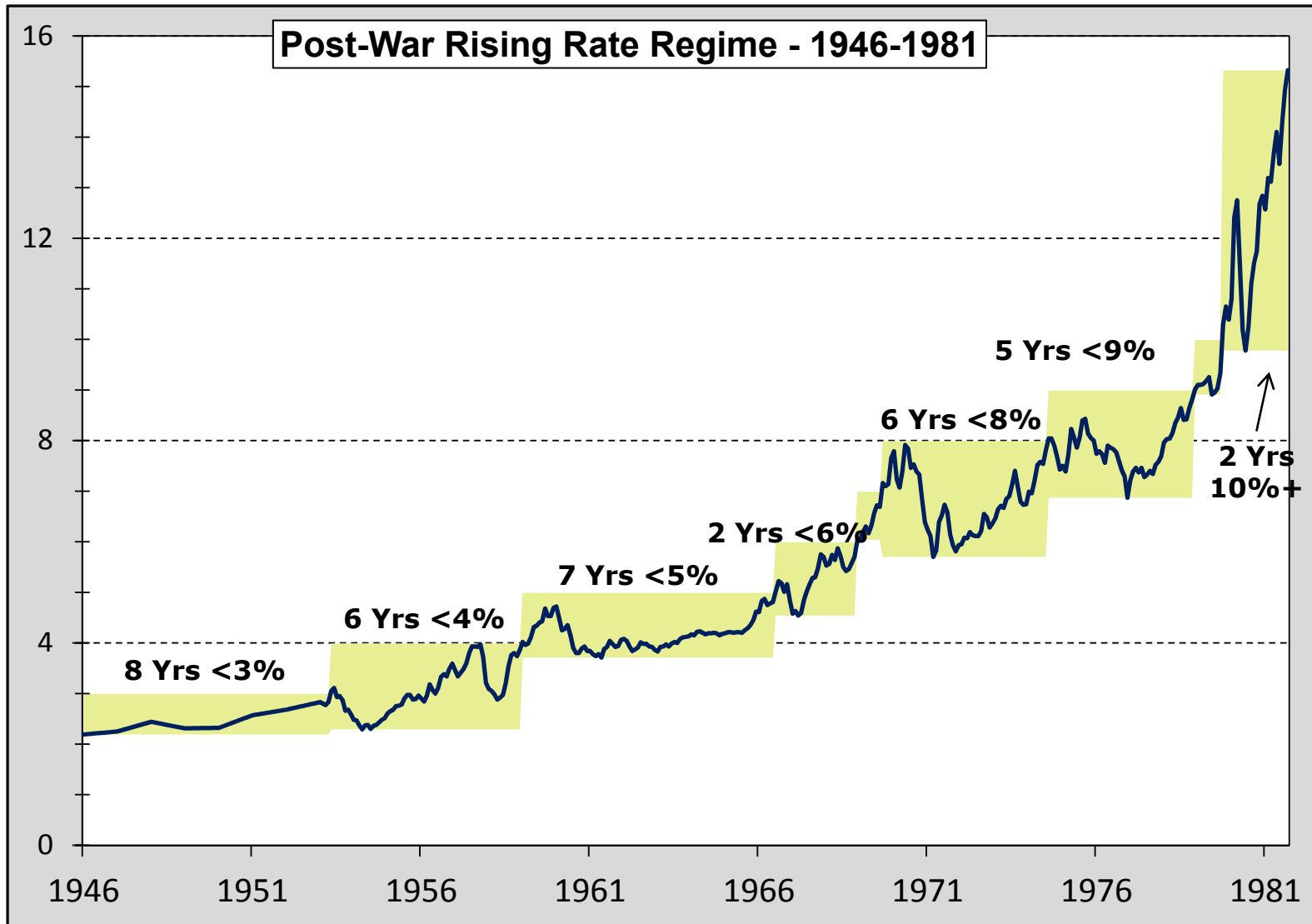
- **US Treasury expectations reflect higher spot and forward rates relative to prior year**
- **Yields in US Treasury market are expected to move higher based on forward curve**
  - Principal losses but higher reinvestment rates results in a return in line with current yields
- **Long-term history of rates show periods of very high realized volatility when rates rise unexpectedly**

Current Yields Reflect Future Returns



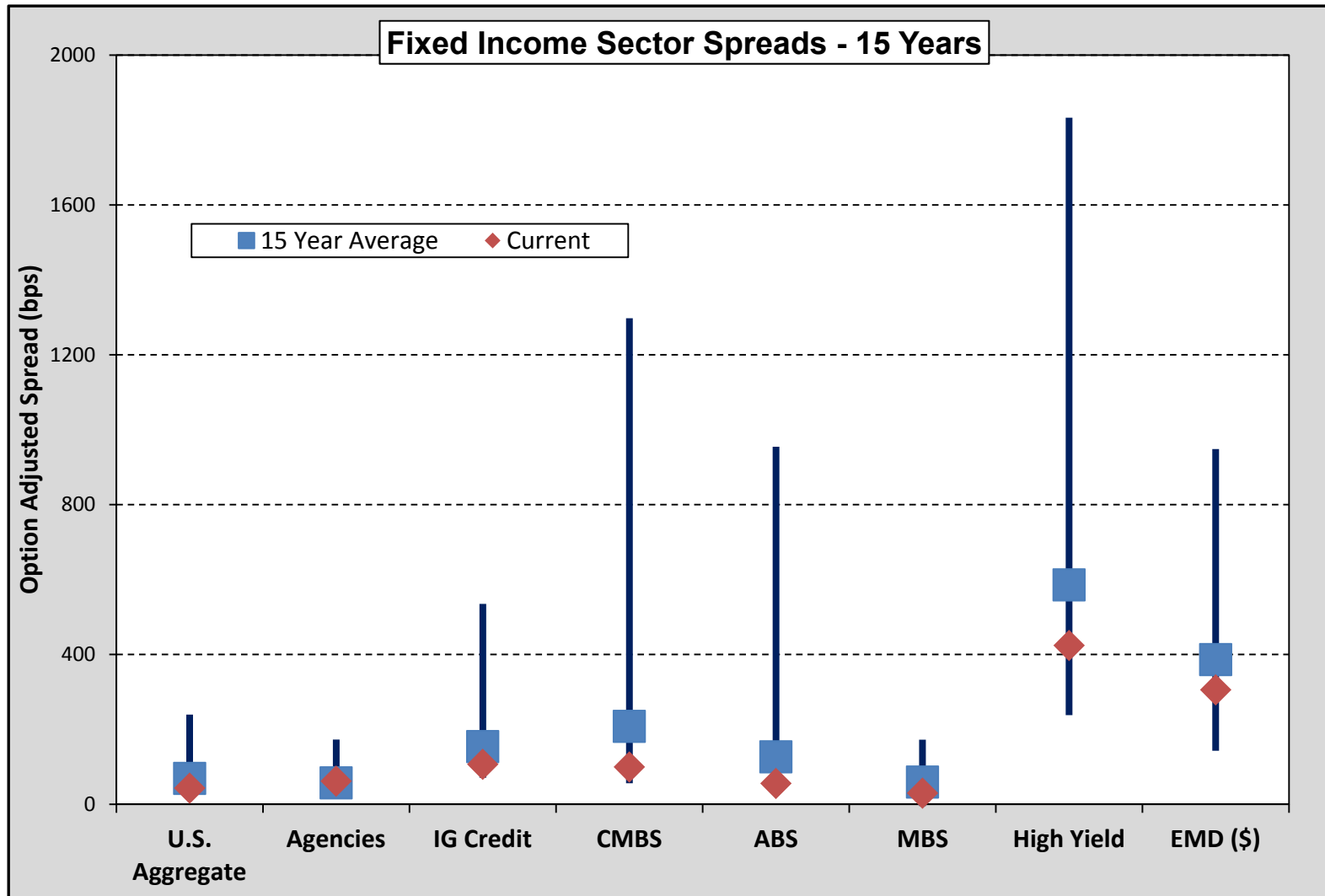
Source: Bloomberg

Economic Conditions Determine How Far Rates Can Increase – It Can Take A While!



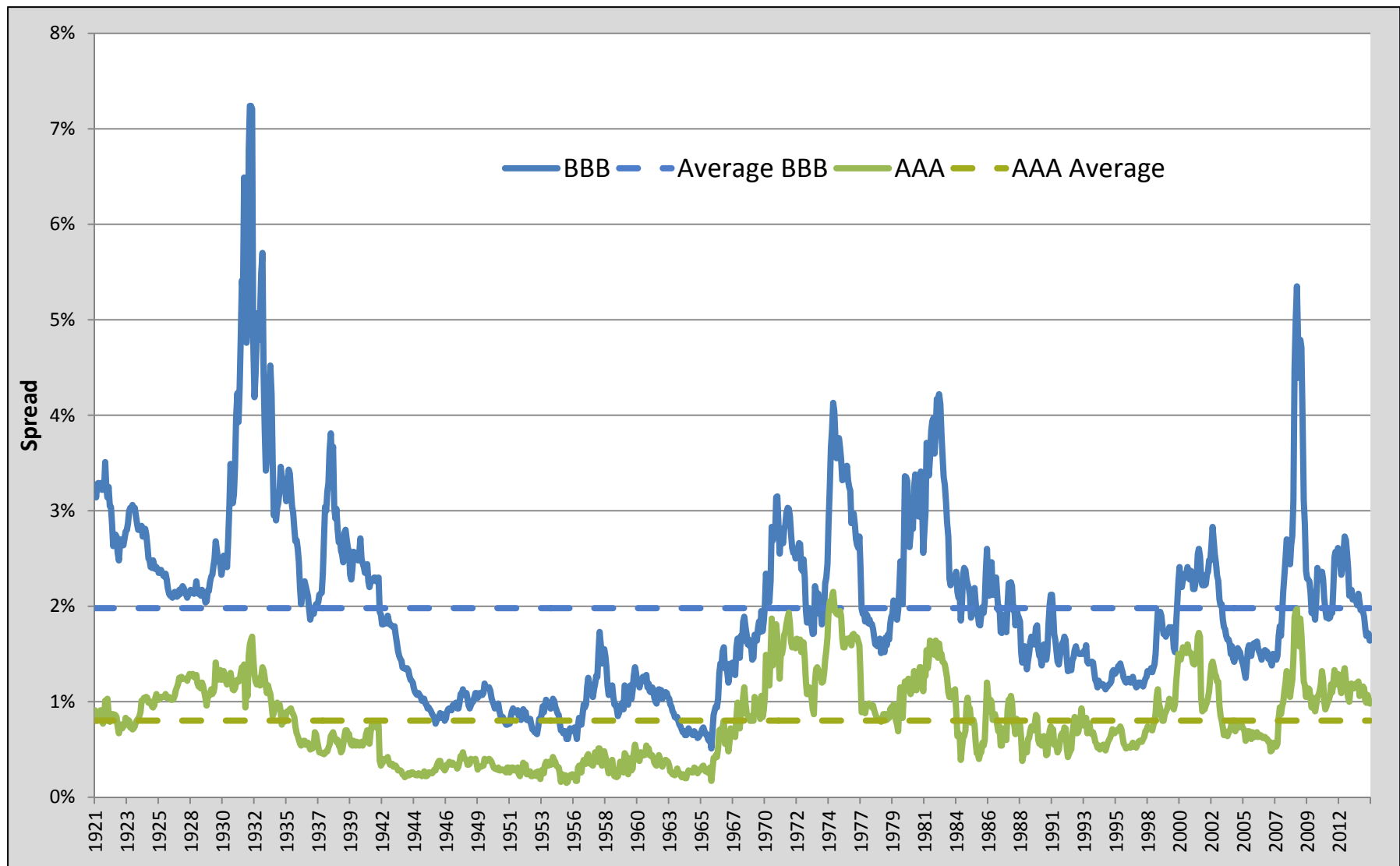
Source: St. Louis Fed

# Fixed Income Sector Spreads Reflect Demand for Yield



Source: Barclays, as of 9/30/2014

# Credit Spreads can remain low for extended periods of time

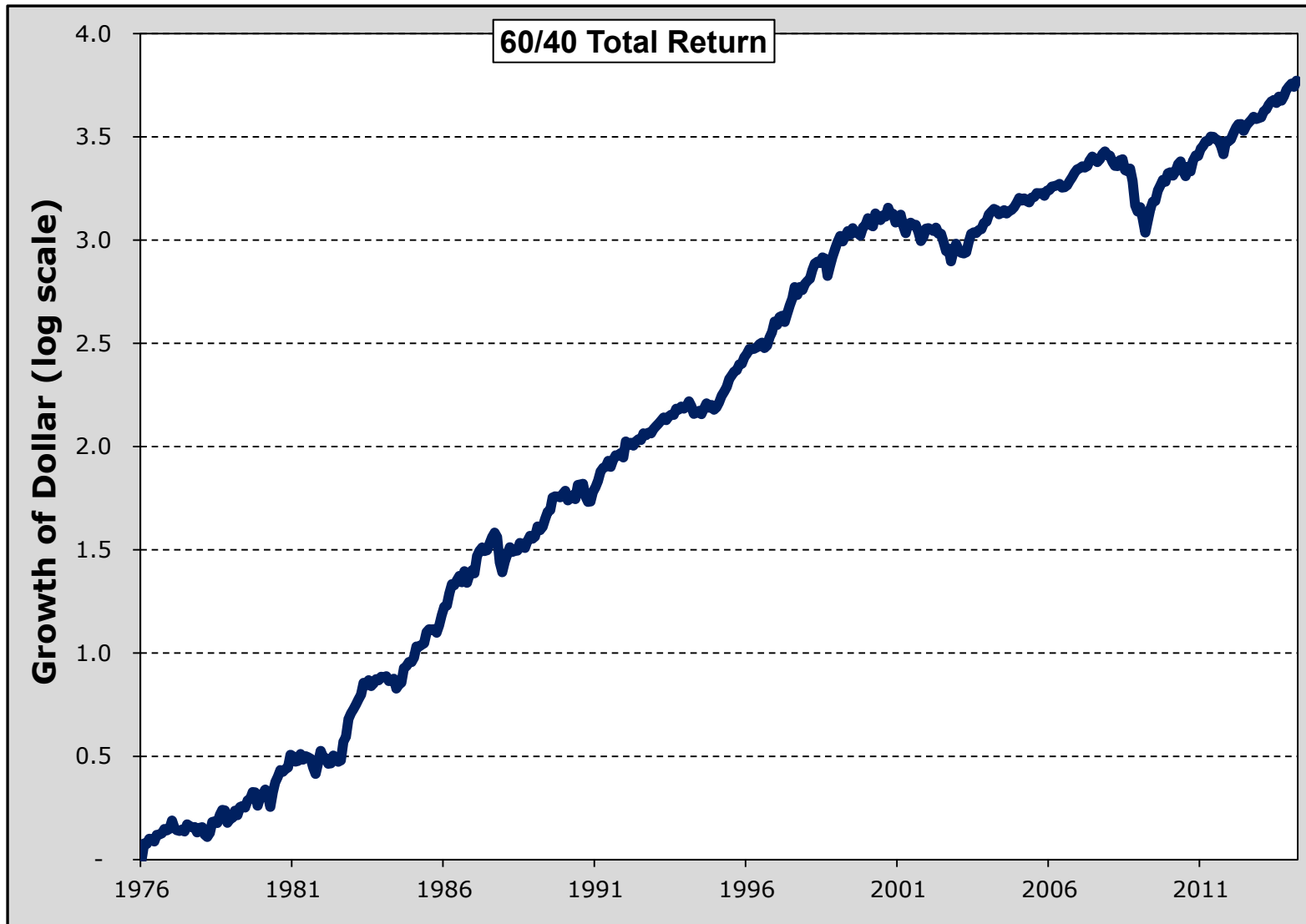


Source: Moody's





What Worked in the Past is Unlikely to Work in the Future

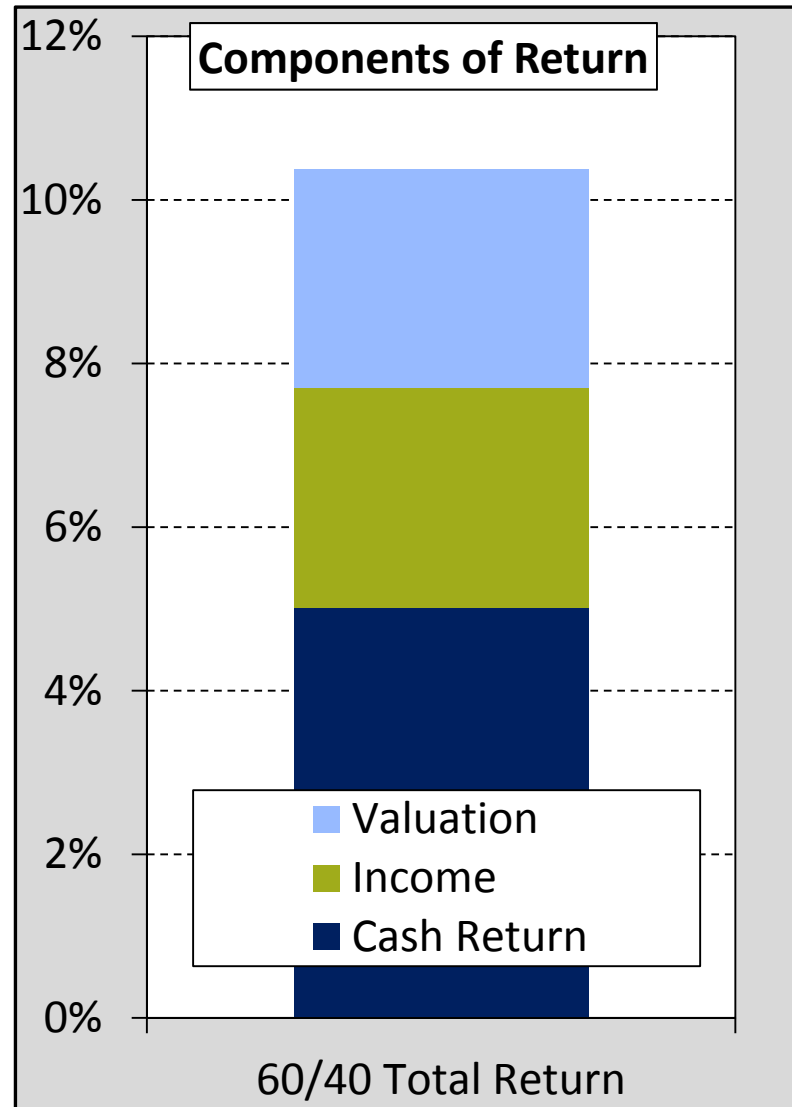


Sources: Bloomberg



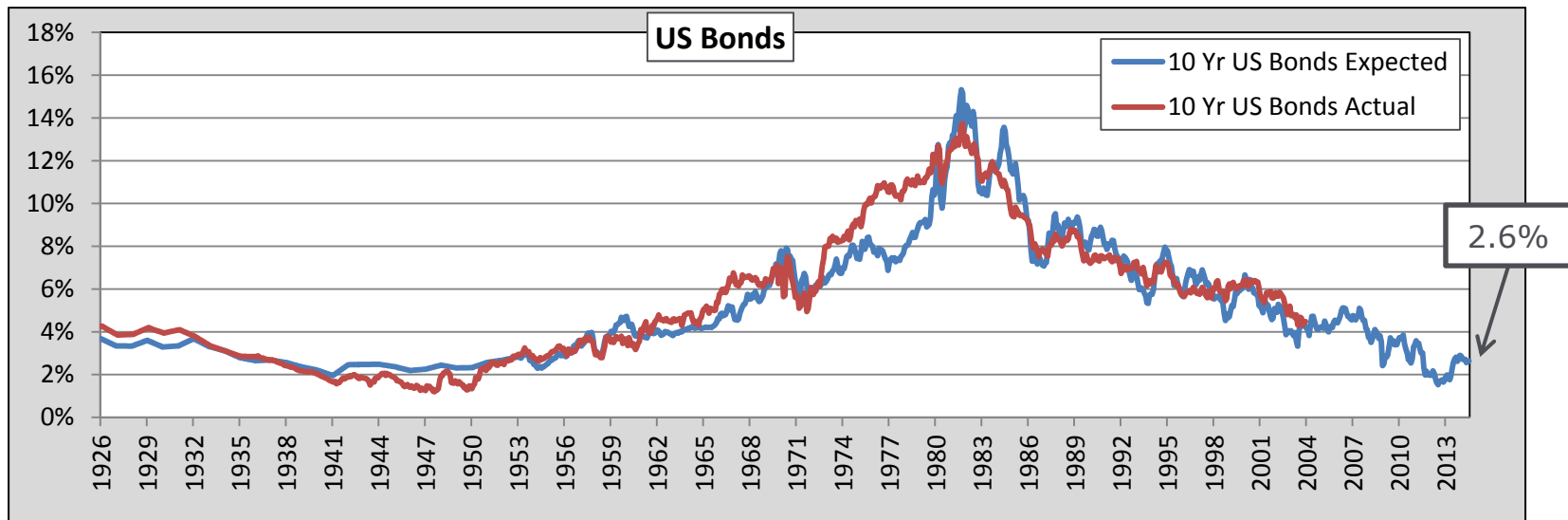
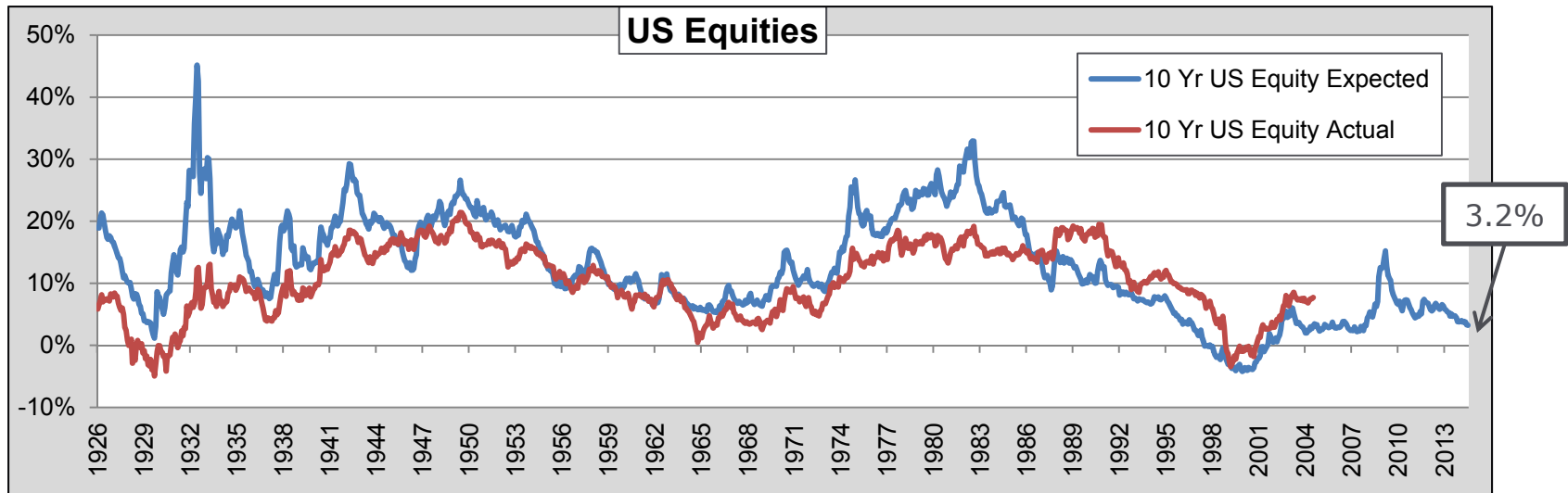
What Worked in the Past is Unlikely to Work in the Future

<b>60/40 Portfolio (1976-2014)</b>	
Return	10.4%
Volatility	9.8%
Sharpe Ratio	0.55



Sources: Bloomberg, Morningstar, NEPC

# Yield and Valuation Drive Returns Over the Long Term



5-7 Year Returns			
Asset Class	2013	2014	Change
Cash	0.75%	1.50%	0.75%
Treasuries	1.00%	2.00%	1.00%
IG Corp Credit	3.00%	3.50%	0.50%
MBS	2.50%	2.25%	-0.25%
<i>Core Bonds*</i>	<i>2.04%</i>	<i>2.53%</i>	<i>0.49%</i>
TIPS	1.50%	2.50%	1.00%
High-Yield Bonds	5.00%	4.50%	-0.50%
Bank Loans	5.00%	5.00%	
Global Bonds (Unhedged)	0.75%	1.25%	0.50%
Global Bonds (Hedged)	0.93%	1.38%	0.45%
EMD External	4.00%	5.00%	1.00%
EMD Local Currency	5.00%	5.75%	0.75%
Large Cap Equities	6.75%	6.25%	-0.50%
Small/Mid Cap Equities	7.00%	6.25%	-0.75%
Int'l Equities (Unhedged)	7.75%	7.25%	-0.50%
Int'l Equities (Hedged)	8.00%	7.50%	-0.50%
Emerging Int'l Equities	9.75%	9.50%	-0.25%
Private Equity	9.00%	8.75%	-0.25%
Private Debt	8.50%	8.00%	-0.50%
Private Real Assets	8.00%	7.75%	-0.25%
Real Estate (Core)	6.00%	6.25%	0.25%
Commodities	5.00%	5.00%	
Hedge Funds	n/a	5.50%	

30 Year Returns			
Asset Class	2013	2014	Change
Cash	3.00%	3.75%	0.75%
Treasuries	3.00%	4.00%	1.00%
Credit	4.25%	5.25%	1.00%
MBS	4.50%	4.25%	-0.25%
<i>Core Bonds*</i>	<i>3.84%</i>	<i>4.46%</i>	<i>0.62%</i>
TIPS	3.25%	4.50%	1.25%
High-Yield Bonds	5.25%	6.00%	0.75%
Bank Loans	5.50%	6.25%	0.75%
Global Bonds (Unhedged)	2.50%	3.00%	0.50%
Global Bonds (Hedged)	2.67%	3.13%	0.46%
EMD External	6.00%	7.00%	1.00%
EMD Local Currency	6.25%	7.25%	1.00%
Large Cap Equities	8.00%	7.75%	-0.25%
Small/Mid Cap Equities	8.25%	8.00%	-0.25%
Int'l Equities (Unhedged)	8.25%	8.25%	
Int'l Equities (Hedged)	8.50%	8.48%	-0.02%
Emerging Int'l Equities	9.50%	9.50%	
Private Equity	10.00%	9.75%	-0.25%
Private Debt	8.00%	8.25%	0.25%
Private Real Assets	8.00%	7.75%	-0.25%
Real Estate (Core)	6.00%	6.50%	0.50%
Commodities	5.50%	6.00%	0.50%
Hedge Funds	n/a	7.00%	

Return assumptions are geometric.

\* Core Bonds assumption based on market weighted blend of components of Aggregate Index (Treasuries, IG Corp Credit, and MBS).

<b>Volatility</b>			
<b>Asset Class</b>	<b>2013</b>	<b>2014</b>	<b>Change</b>
Cash	1.00%	1.00%	
Treasuries	6.00%	6.00%	
IG Corp Credit	7.50%	7.50%	
MBS	7.00%	7.00%	
<i>Core Bonds*</i>	<i>6.31%</i>	<i>6.32%</i>	<i>0.01%</i>
TIPS	7.50%	7.50%	
High-Yield Bonds	13.00%	13.00%	
Bank Loans	6.50%	8.00%	1.50%
Global Bonds (Unhedged)	9.00%	8.50%	-0.50%
Global Bonds (Hedged)	5.00%	5.00%	
EMD External	12.00%	12.00%	
EMD Local Currency	14.00%	15.00%	1.00%
Large Cap Equities	18.00%	17.50%	-0.50%
Small/Mid Cap Equities	21.00%	21.00%	
Int'l Equities (Unhedged)	21.00%	20.50%	-0.50%
Int'l Equities (Hedged)	19.00%	18.50%	-0.50%
Emerging Int'l Equities	26.00%	26.00%	
Private Equity	27.00%	27.00%	
Private Debt	19.00%	19.00%	
Private Real Assets	24.00%	23.00%	-1.00%
Real Estate (Core)	17.00%	17.00%	
Commodities	18.00%	18.00%	
Hedge Funds	n/a	9.00%	

Volatility defined as standard deviation of investment returns.

\* Core Bonds assumption based on market weighted blend of components of Aggregate Index (Treasuries, IG Corp Credit, and MBS).