

The Past Is Not Prologue

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The Past



US Mainstream Assets Have Historically Provided Solid Returns

US Market Returns, 1871-Jun 2019

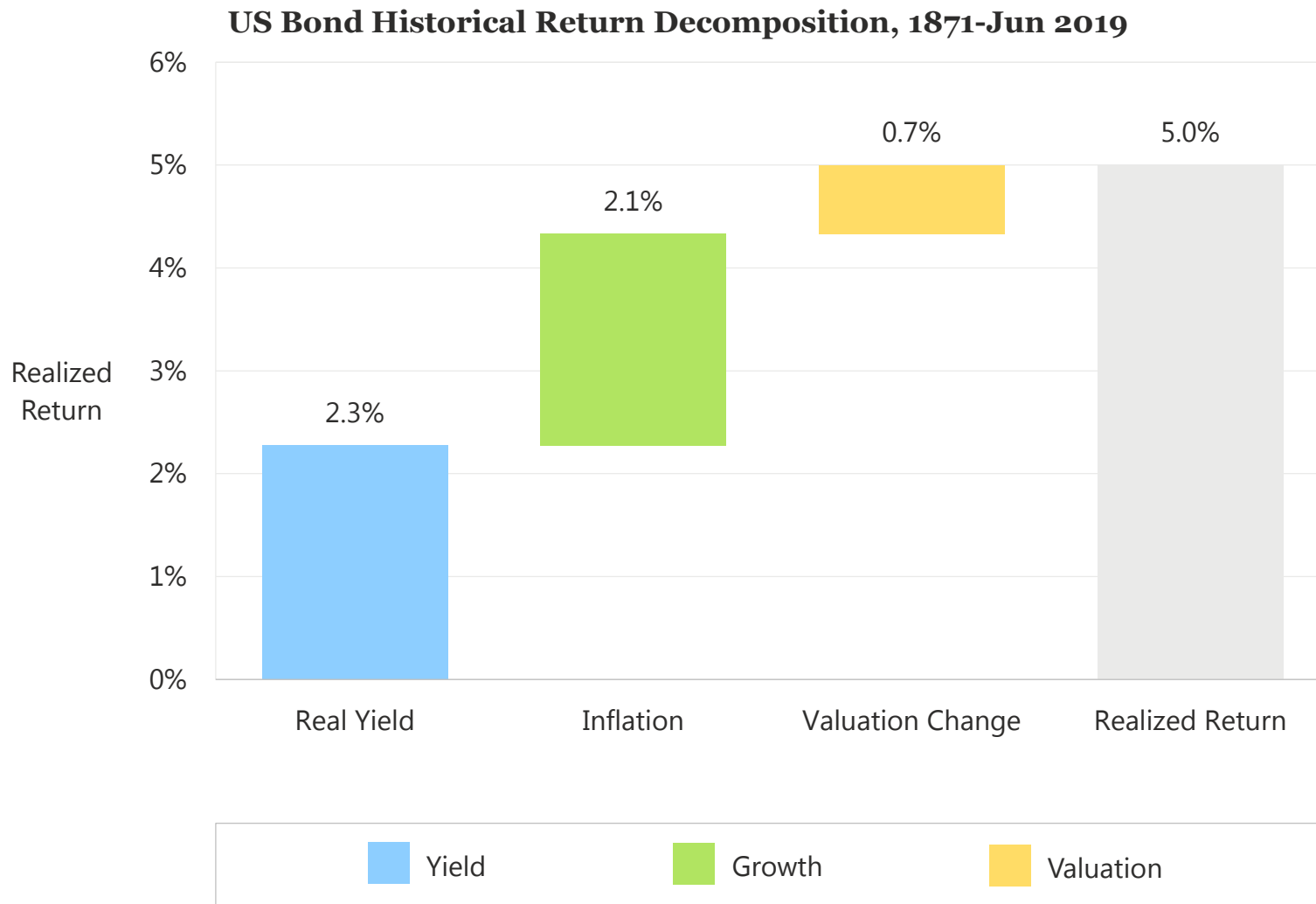
Annualized Nominal Return				Inflation	Annualized Real Return			
Equity	60/40	Bonds	Cash	CPI	Equity	60/40	Bonds	Cash
9.07%	7.70%	5.00%	3.52%	2.06%	6.87%	5.53%	2.89%	1.43%

Can we expect these high returns to persist in the future?

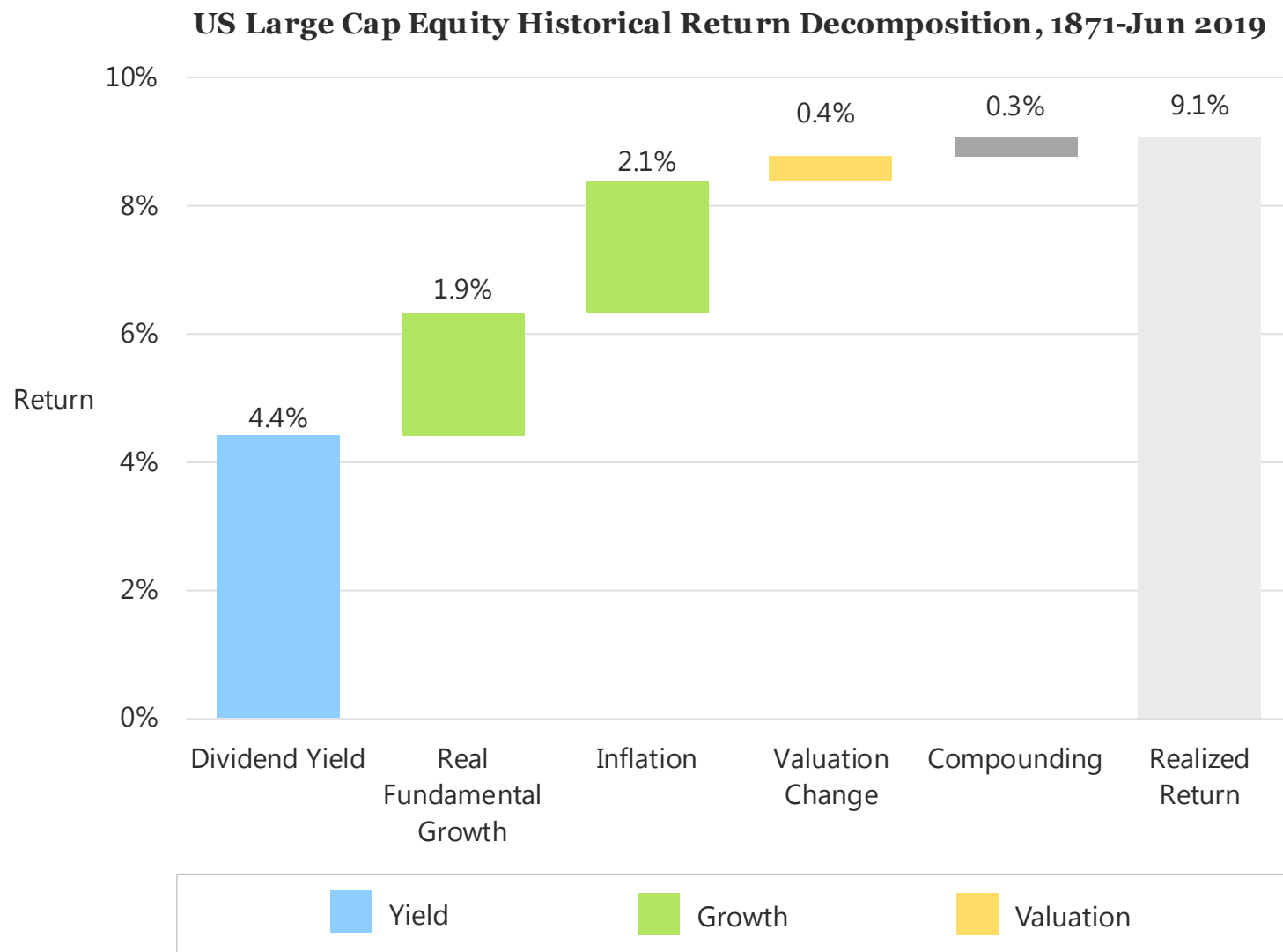


Source: Research Affiliates, LLC, based on data from the Robert Shiller Database.

Let's Decompose Historical Bond Returns



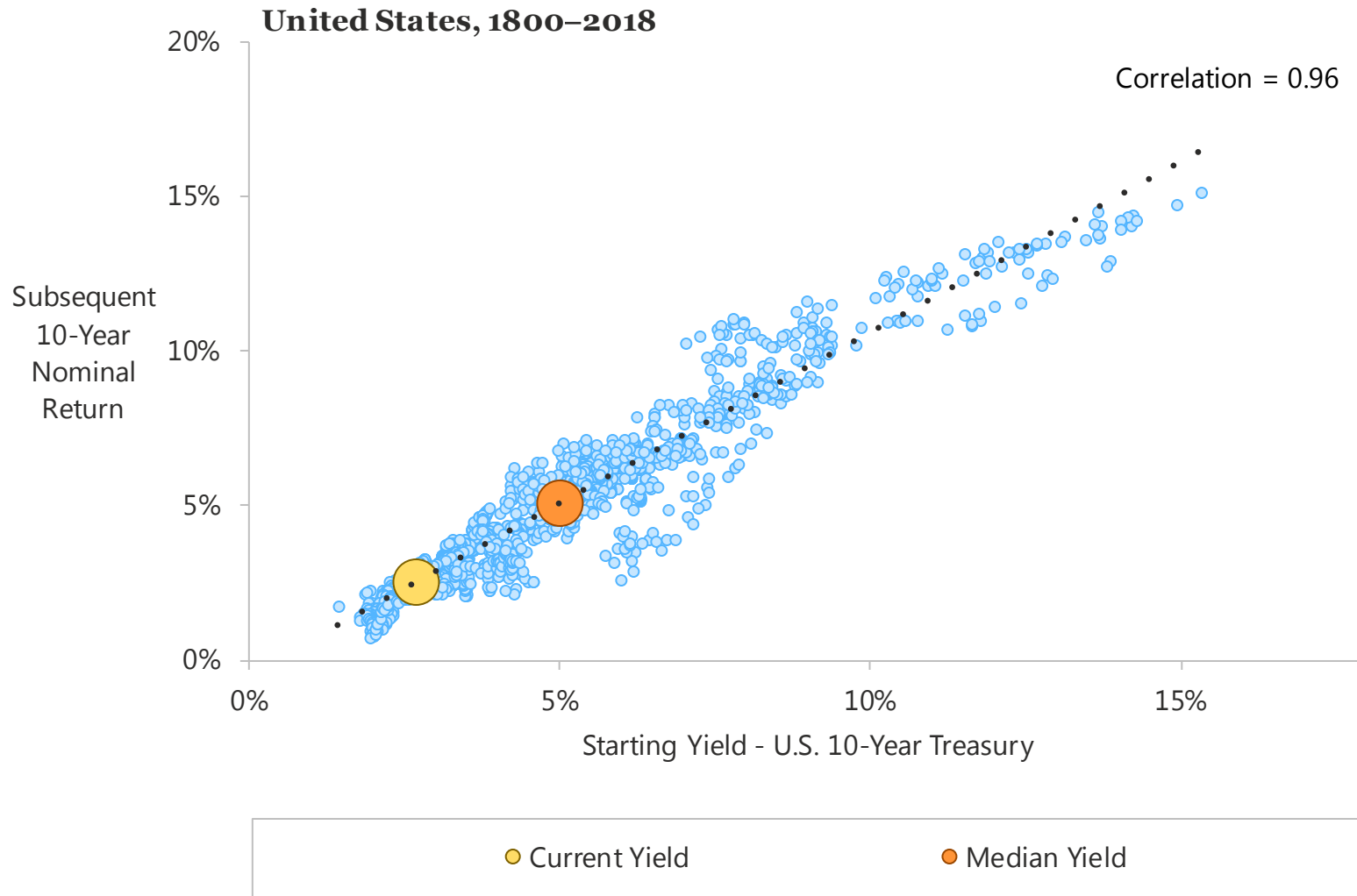
Let's Decompose Historical Stock Returns



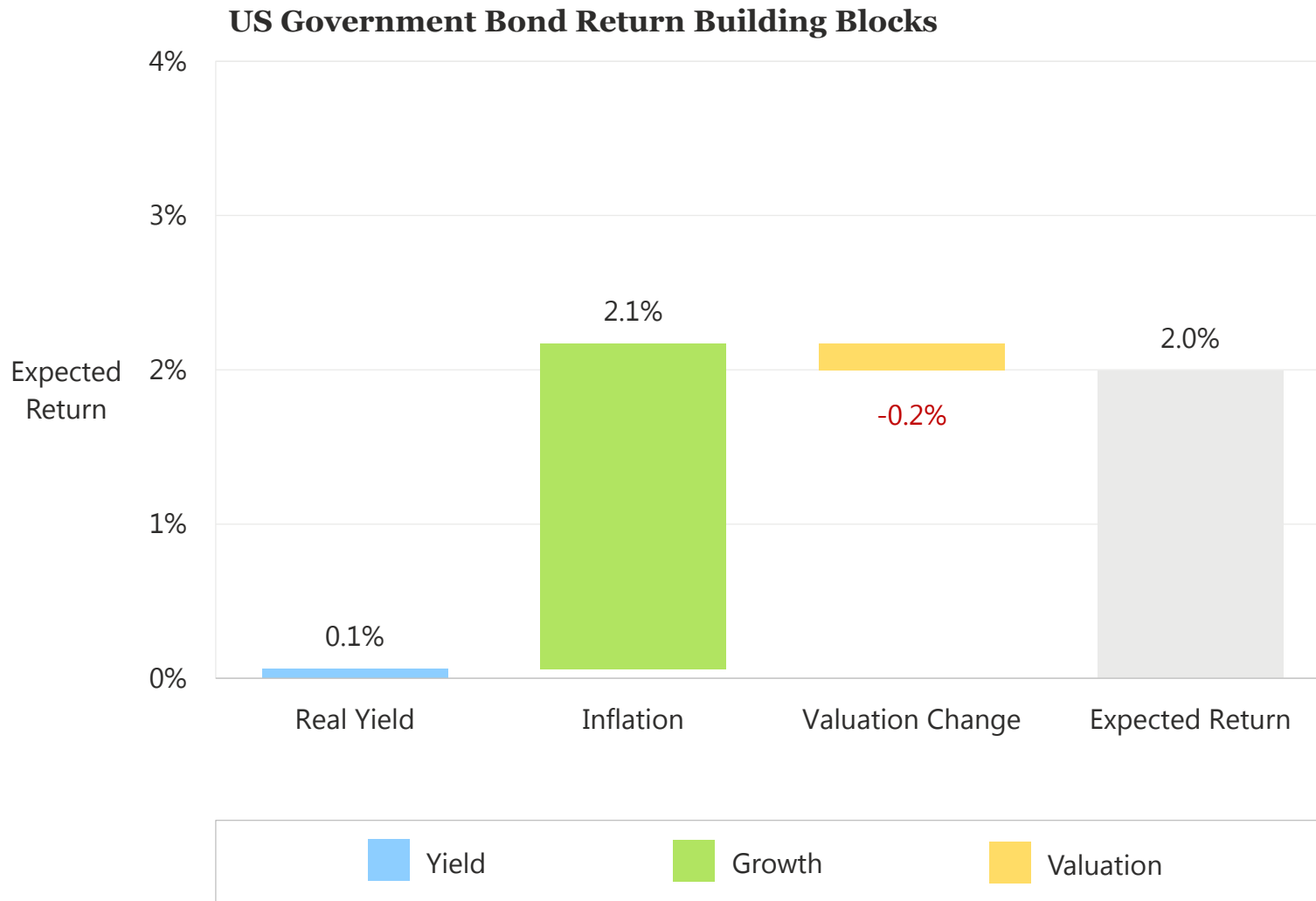
Forecasting Bond Market Returns



Bonds: Future Returns Follow Starting Yields

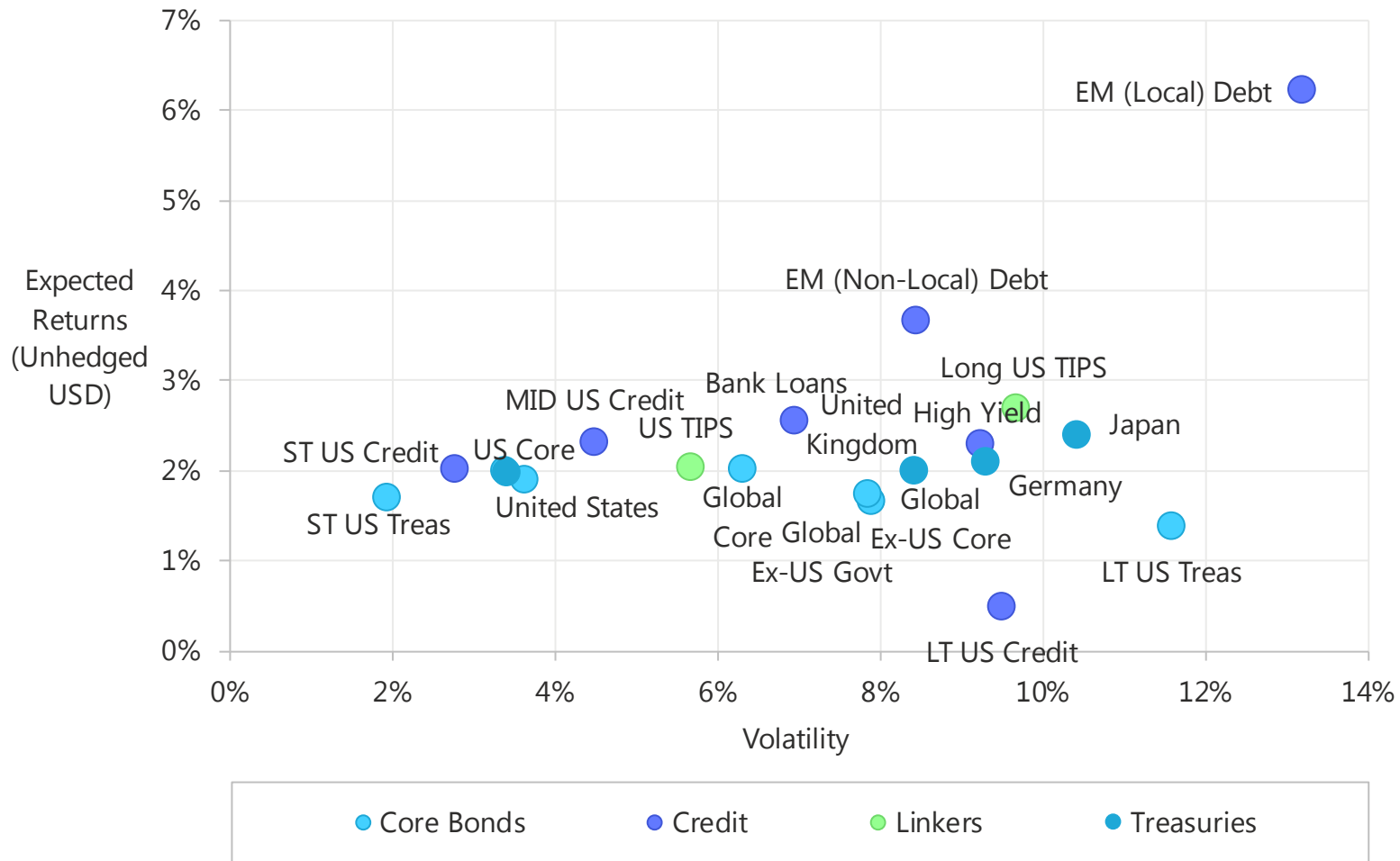


Bond Forecasts: A Function of Yield, Yield Changes, and Valuation Changes



Source: Research Affiliates, LLC, based on data from MSCI Inc., Bloomberg, and Barclays. Forecast shown for the Bloomberg Barclays US Treasury Intermediate Index. Please see important information at the end of this presentation regarding simulated data. The 10-year return expectations are as of June 30, 2019.

Bonds: Long-Term Return Expectations



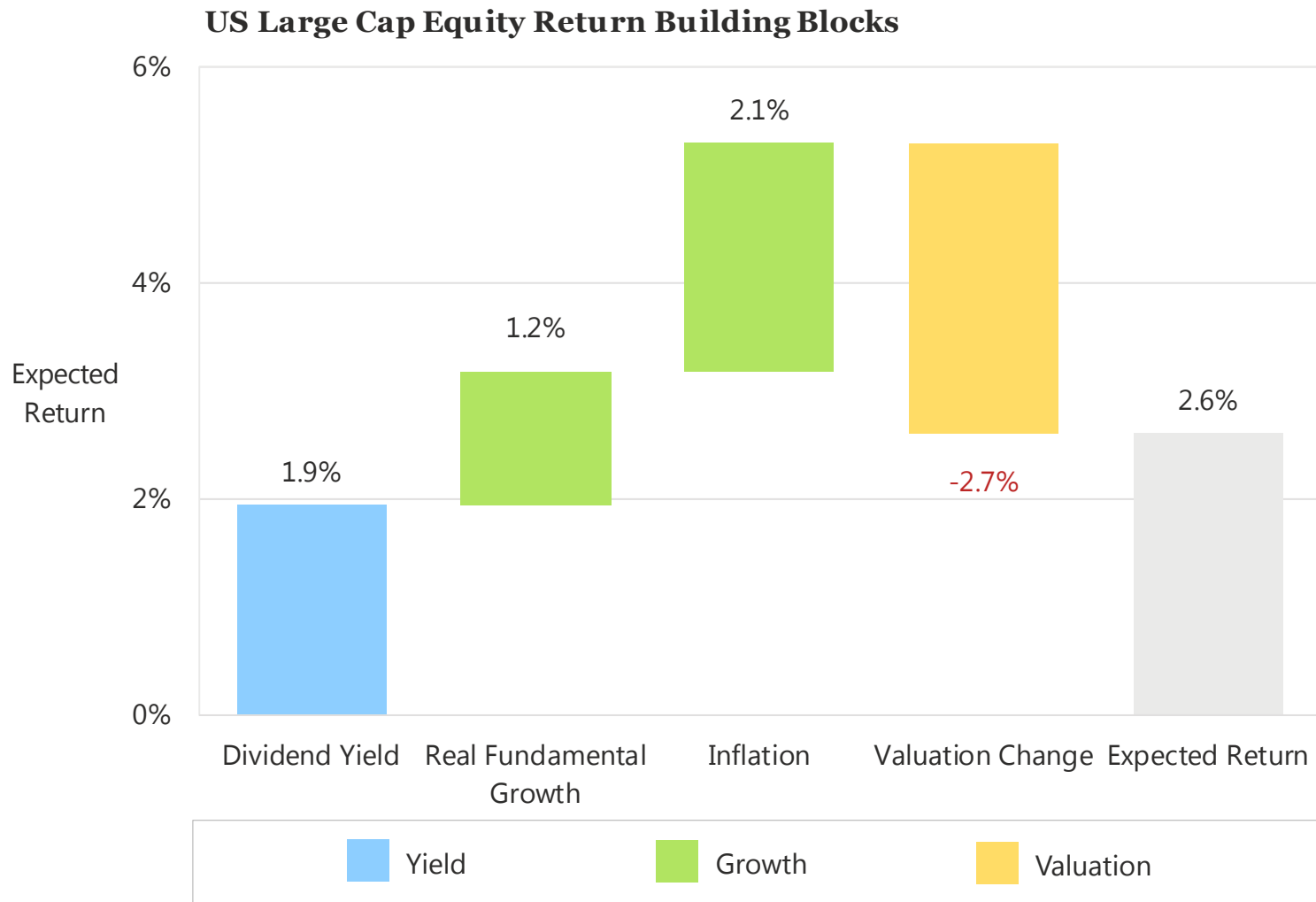
Source: Research Affiliates, LLC, based on data from MSCI Inc., Bloomberg, and Barclays. The country-specific Treasury indices are represented by the Barclays US Treasury 5-7 Year, Barclays Germany Treasury 5-7 Year, Barclays Japan Treasury 5-7 Year, and Barclays UK Treasury 5-7 Year. For more information, please visit http://www.researchaffiliates.com/en_us/asset-allocation.html. Please see important information at the end of this presentation regarding simulated data. The 10-year return expectations are as of June 30, 2019.



Forecasting Equity Market Returns

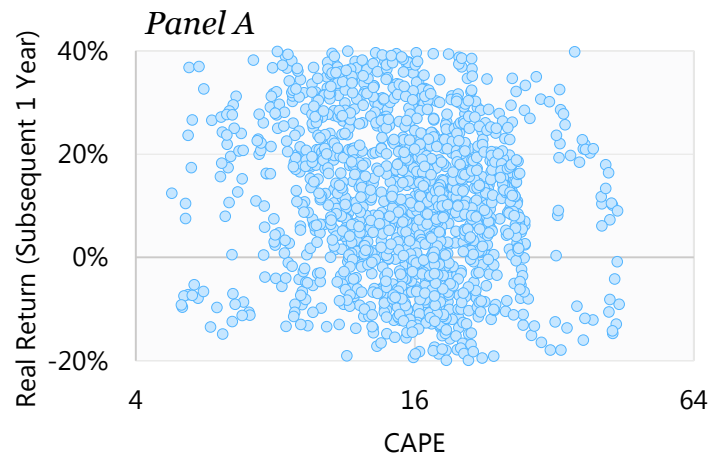


Equity Forecasts: A Function of Dividend Yield, Earnings Growth, and Valuation Changes



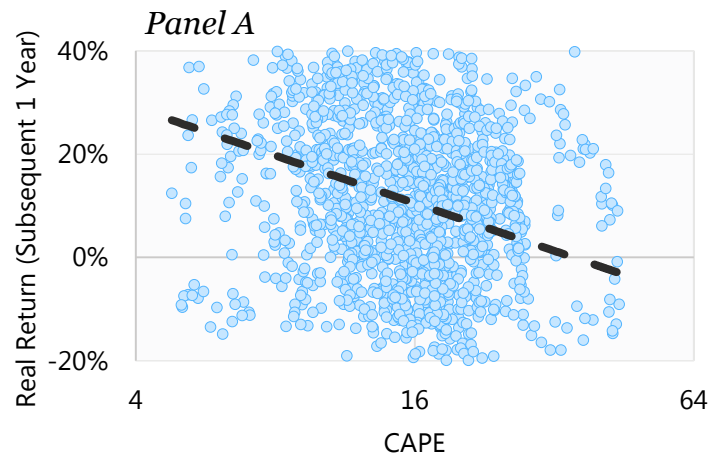
CAPE Is Powerful at Forecasting Long-Horizon Returns, but Almost Useless for Market Timing

**Correlation of CAPE Ratio with S&P 500 Index
Real Return at 1-Year Horizons, 1881–Oct 2017**



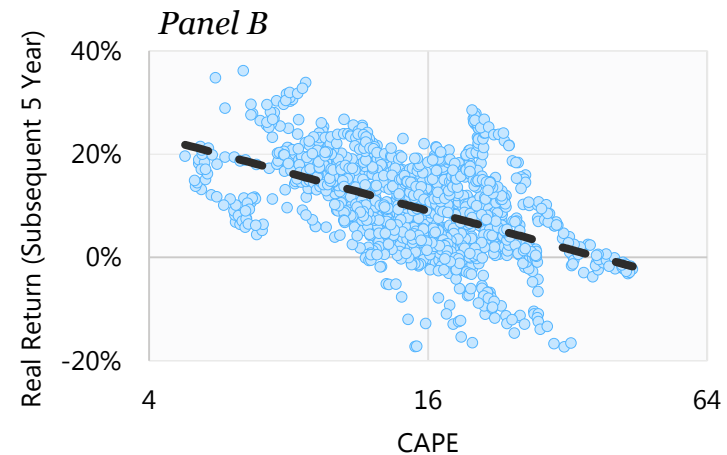
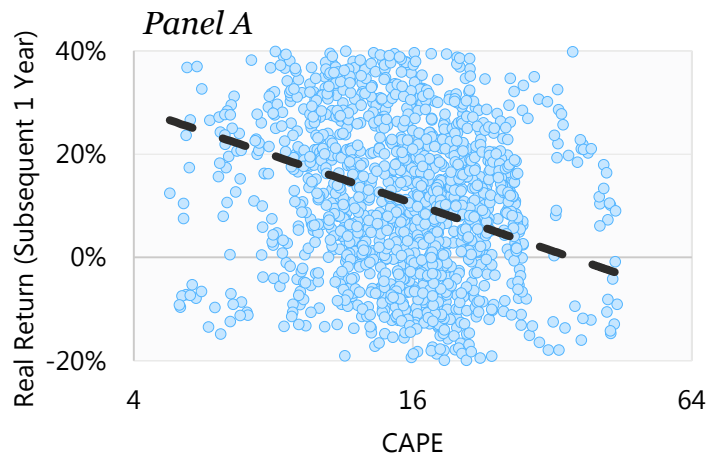
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**Correlation of CAPE Ratio with S&P 500 Index
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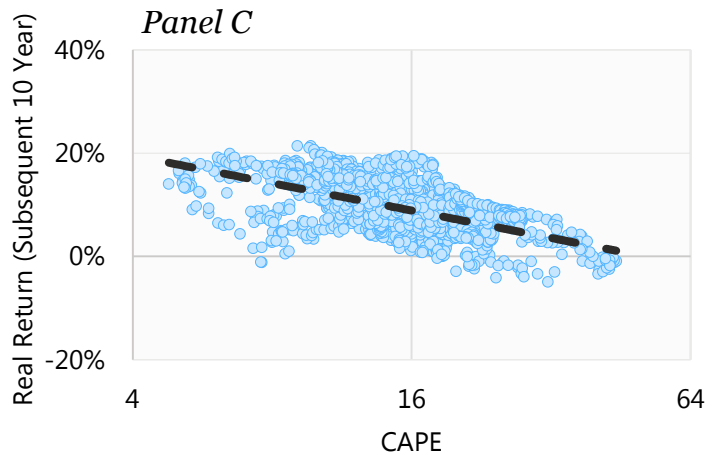
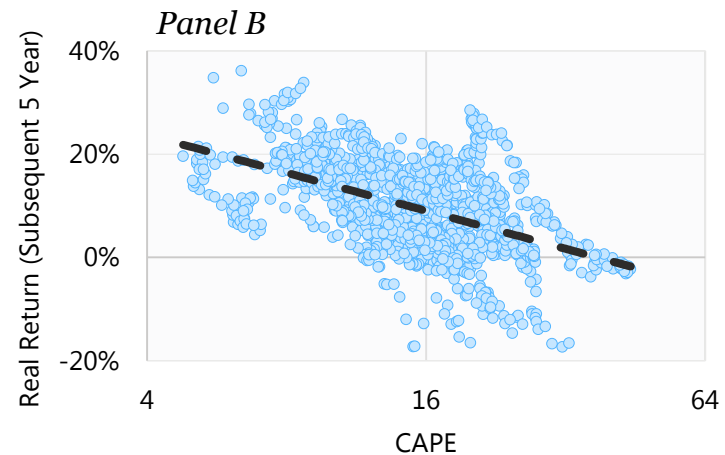
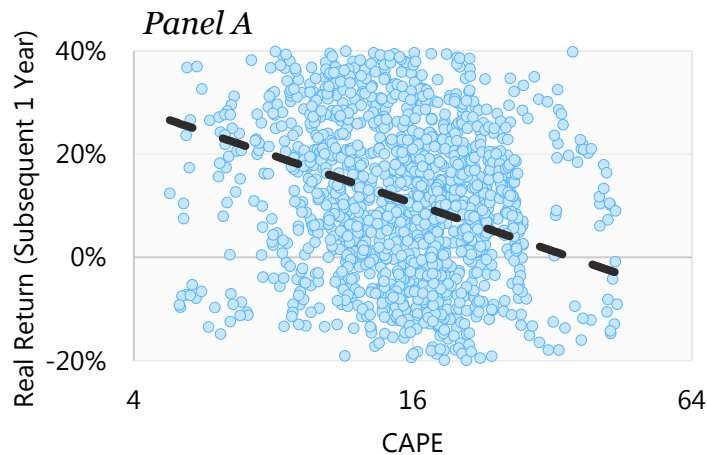
CAPE Is Powerful at Forecasting Long-Horizon Returns, but Almost Useless for Market Timing

Correlation of CAPE Ratio with S&P 500 Index Real Return at 1- and 5-Year Horizons, 1881–Oct 2017



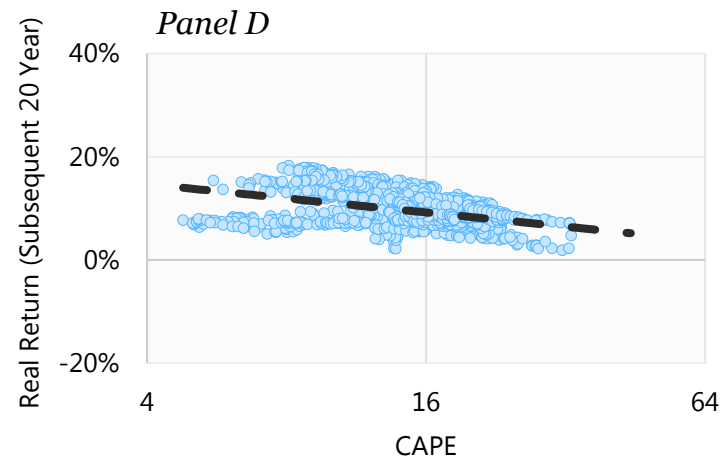
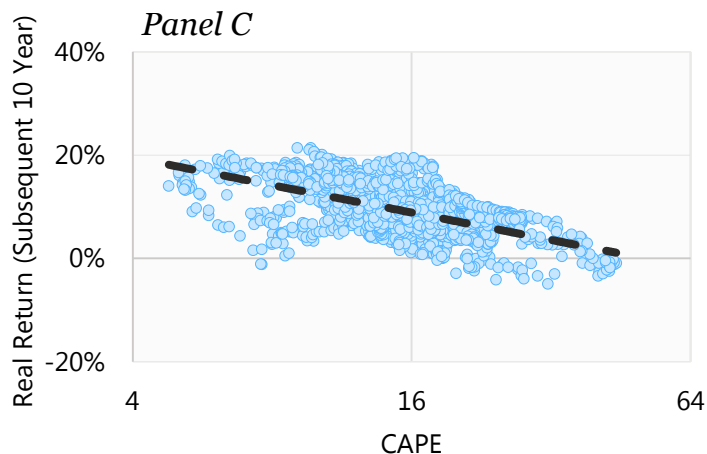
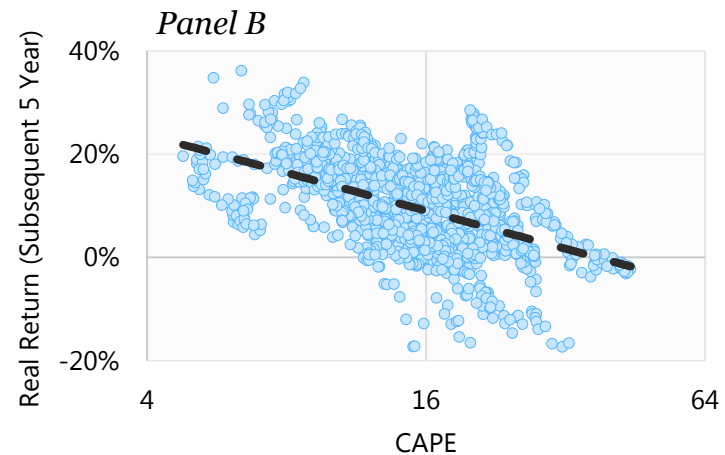
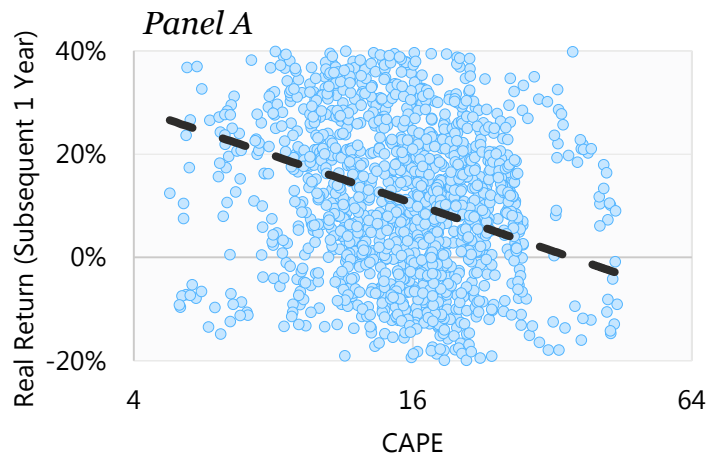
CAPE Is Powerful at Forecasting Long-Horizon Returns, but Almost Useless for Market Timing

Correlation of CAPE Ratio with S&P 500 Index Real Return at 1-, 5-, and 10-Year Horizons, 1881–Oct 2017



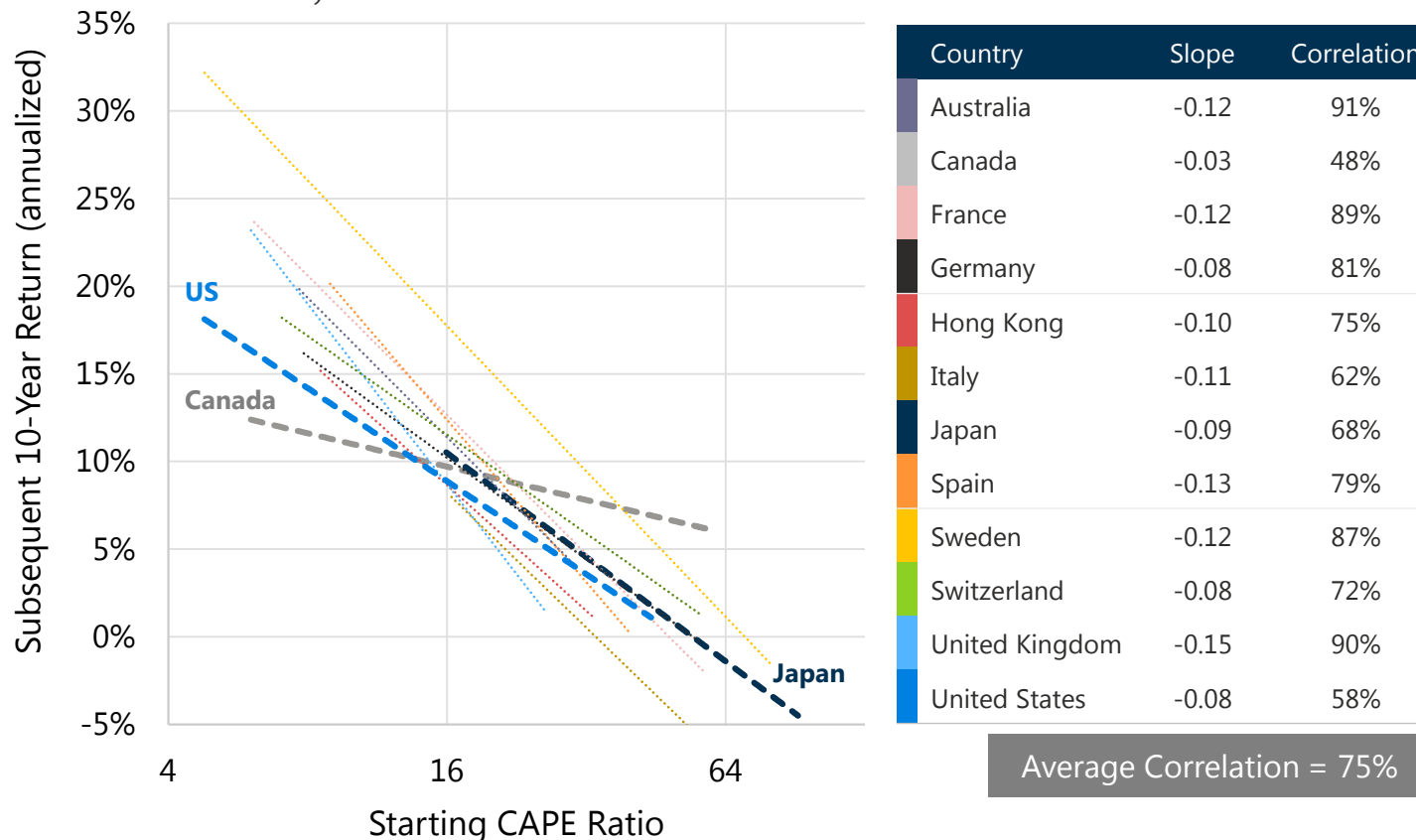
CAPE Is Powerful at Forecasting Long-Horizon Returns, but Almost Useless for Market Timing

Correlation of CAPE Ratio with S&P 500 Index Real Return at 1-, 5-, 10-, and 20-Year Horizons, 1881–Oct 2017



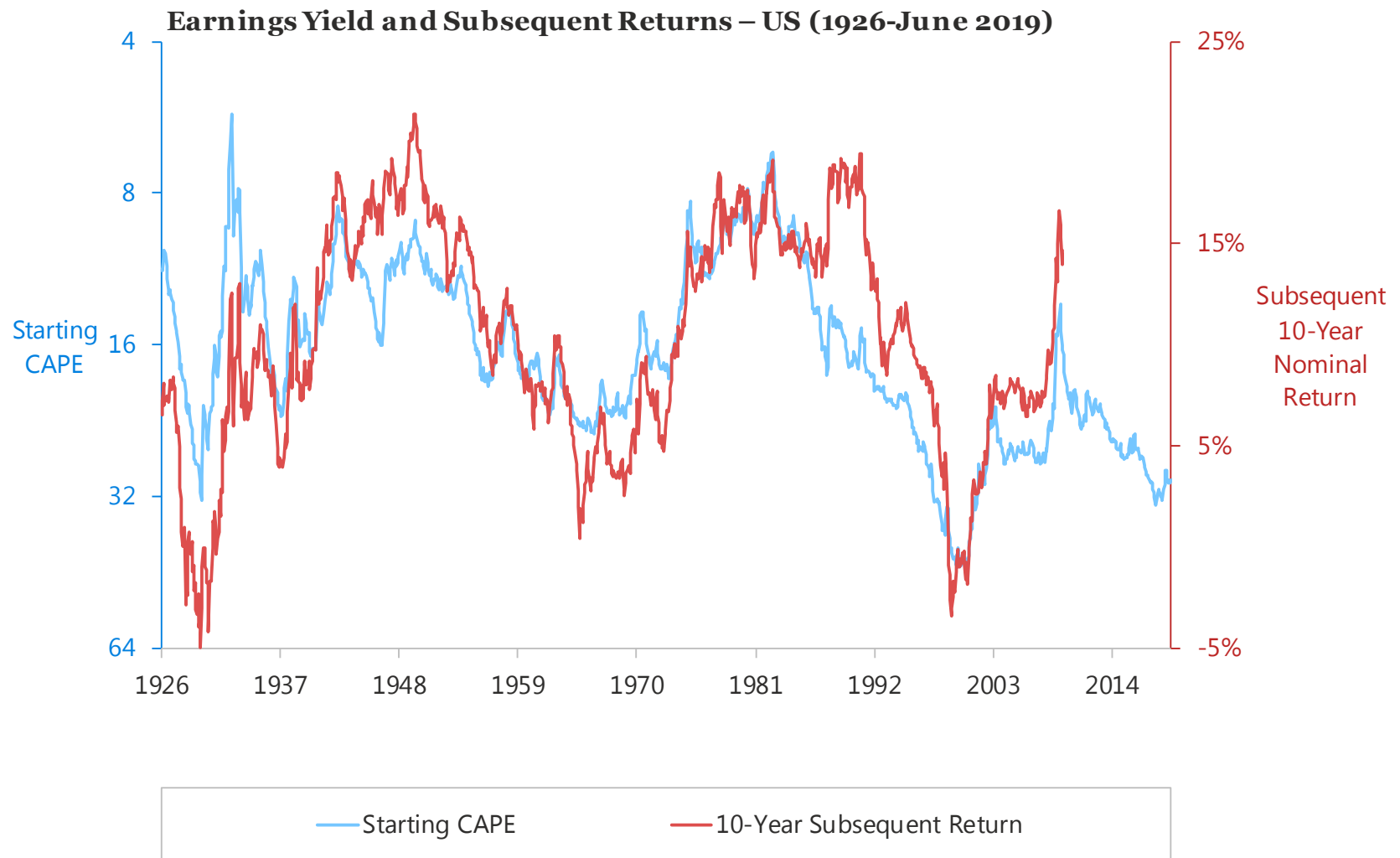
The Link Between Starting Valuations and Subsequent Returns Is Robust Across Equity Markets

Regression of $\ln(\text{CAPE})$ vs. Subsequent 10-Year Stock Market Returns, 12 Countries



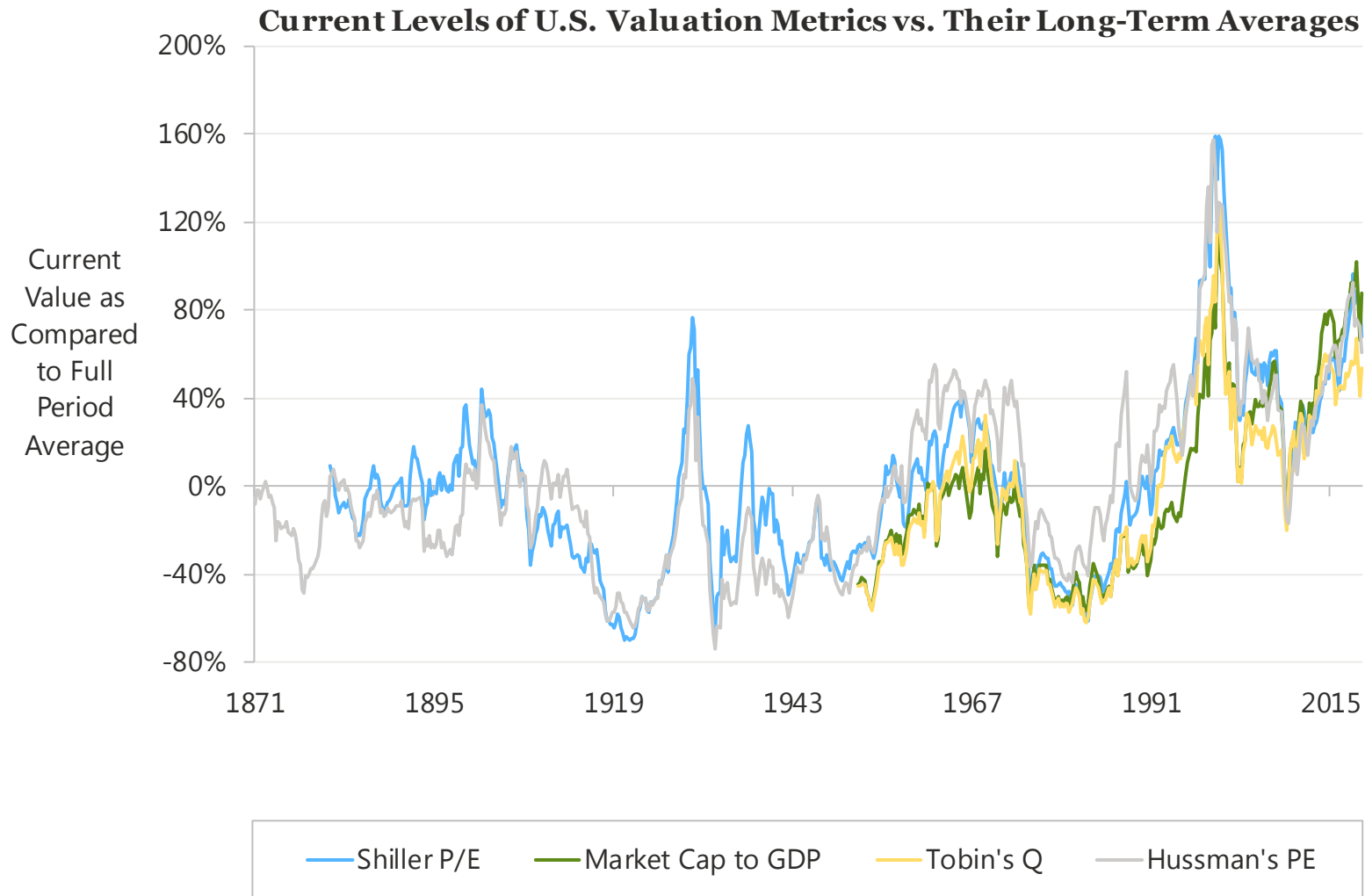
Source: Research Affiliates, LLC, using data from Robert Shiller database, Bloomberg, and MSCI. Note: Each country is measured over the time span for which earnings data are available through October 2007 in order to calculate 10-year returns ending in 2017. The start date for earnings data in the United States is 1871; in Australia, Canada, Germany, Sweden, Switzerland, and the United Kingdom is 1969; in France is 1971; in Hong Kong and Spain is 1980; and in Italy is 1984. Using a beginning date of 1969 in the United States yields results consistent with the results when the start date is 1871.

US Equities Are Poised for Lackluster Future Returns

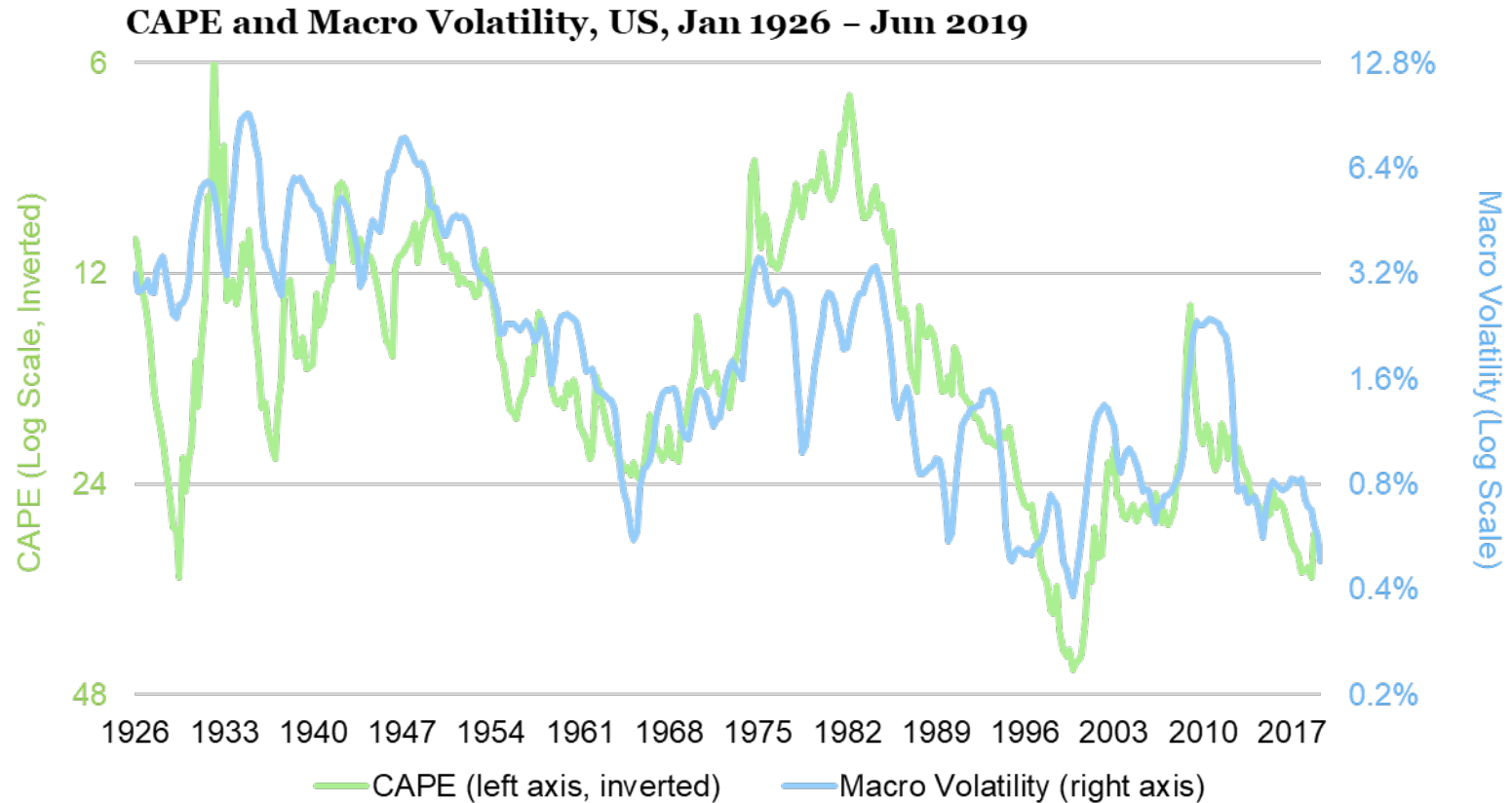


Source: Research Affiliates, LLC, based on data from Bloomberg and Robert Shiller database. The index and inception date is the S&P 500 (January 1926). Earnings yield is computed as the inverse of the CAPE ratio. For more information, please visit http://www.researchaffiliates.com/en_us/asset-allocation.html. As of June 30, 2019.

Other Useful Metrics Corroborate High US Valuations



Low Macro Volatility Helps Explain High CAPE Ratios



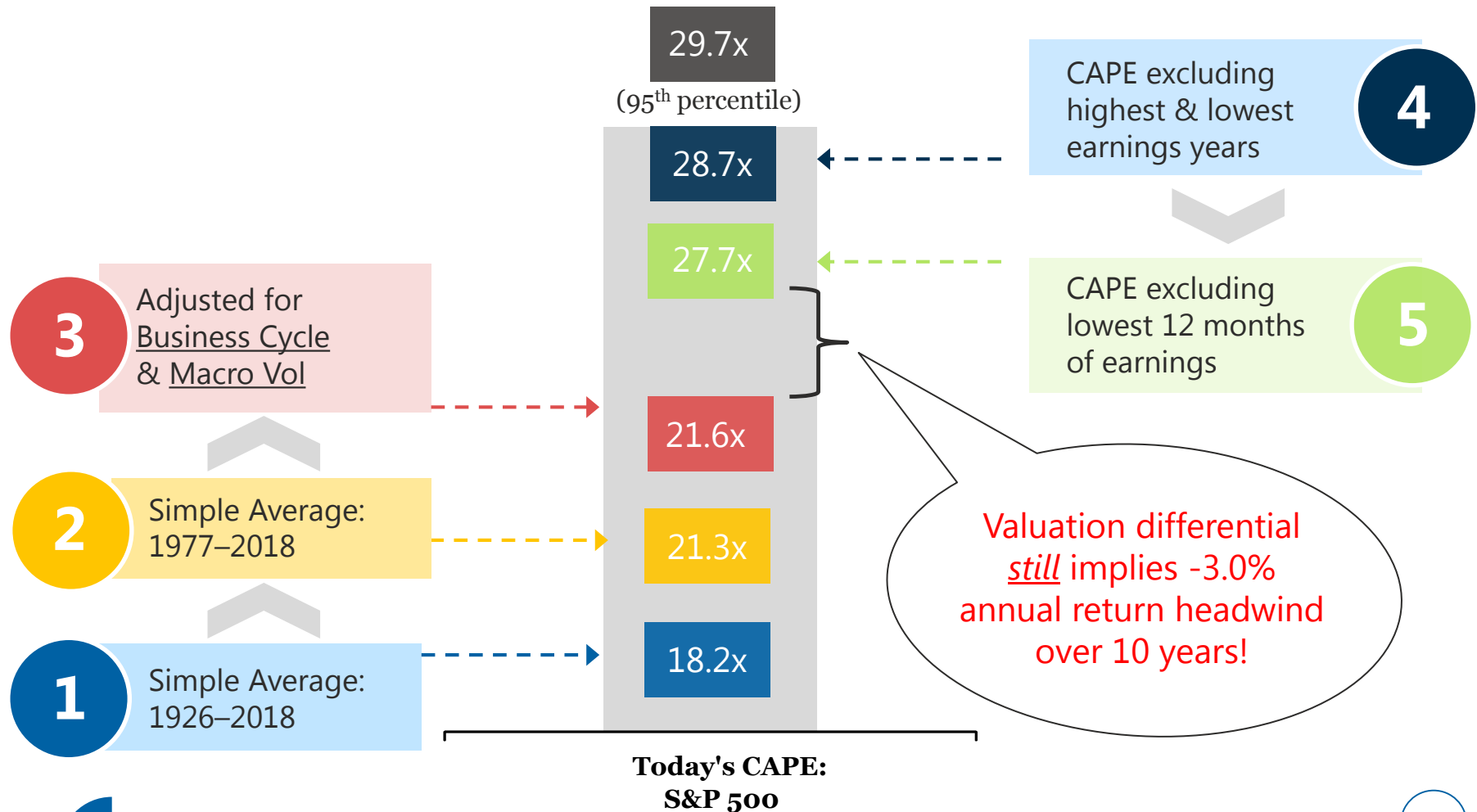
Aked, Mazzoleni, and Shakernia (2017) find that today's low volatility levels support a higher equilibrium CAPE.

Source: Research Affiliates, LLC, using data from FRED at the Federal Reserve Bank of St. Louis, Robert Shiller's database, and Ray C. Fair's quarterly historical GDP Data (<https://fairmodel.econ.yale.edu/rayfair/pdf/2002dtbl.htm>). For quarterly real GDP growth, we use FRED data from 1947 to present, backfilled with data from Ray Fair's website. Macro volatility is defined as the arithmetic average of the rolling three-year volatility of real GDP growth and the rolling three-year volatility of inflation.

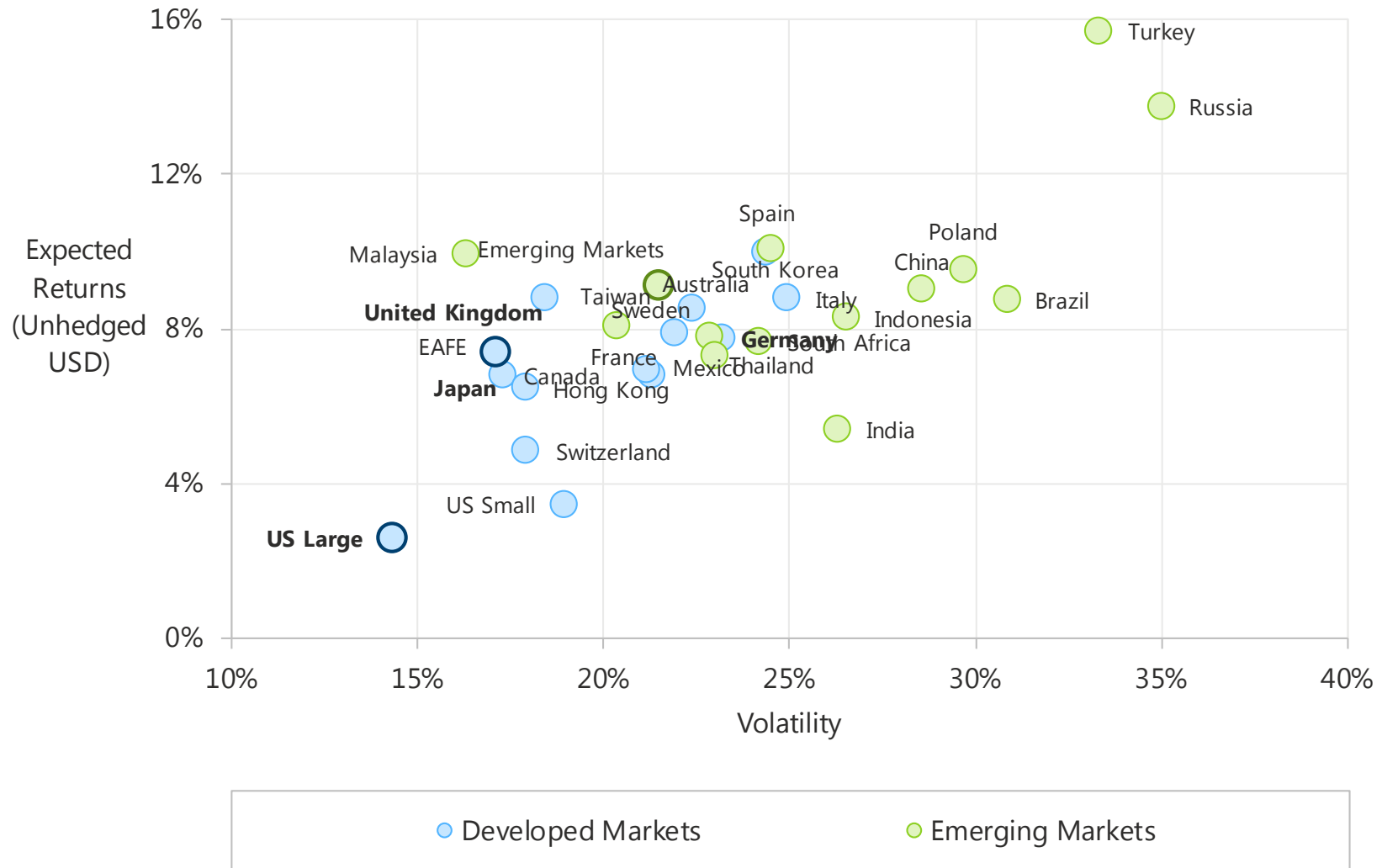
Even After Making Multiple Adjustments, US Equities Face Headwinds from Valuation Contraction

What's "Fair" Value?

What's Today's "Actual" Value?



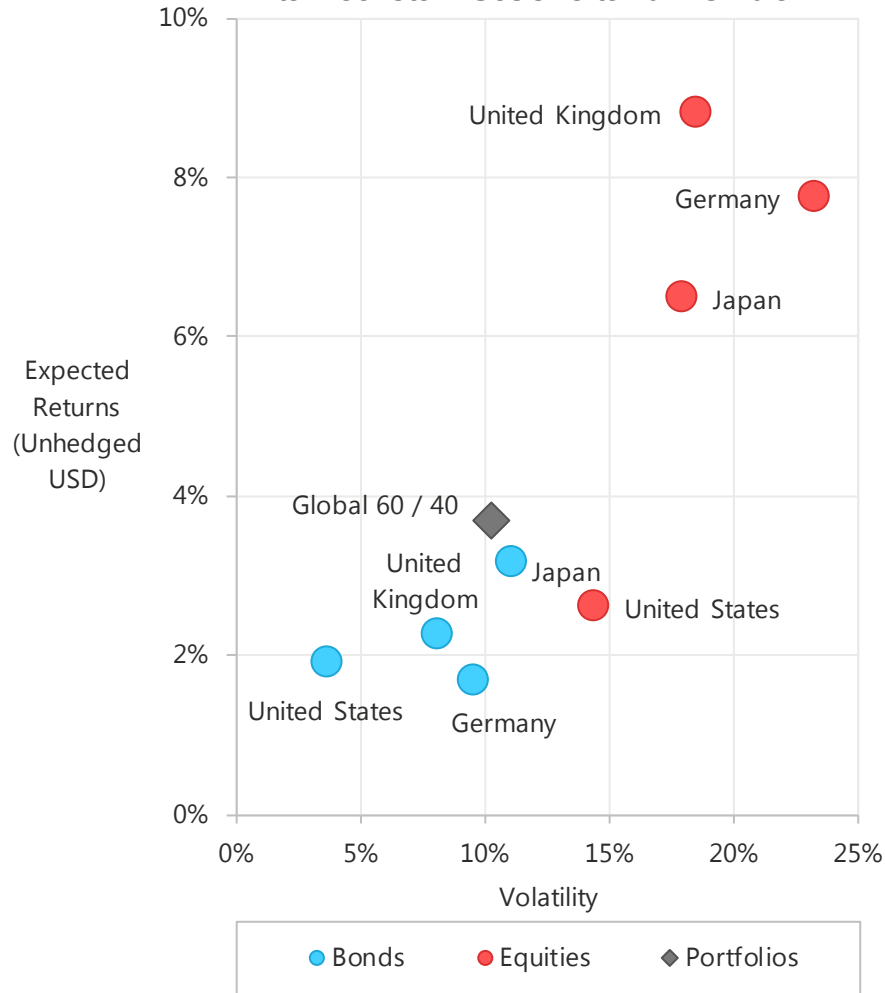
Equities: Long-Term Return Expectations



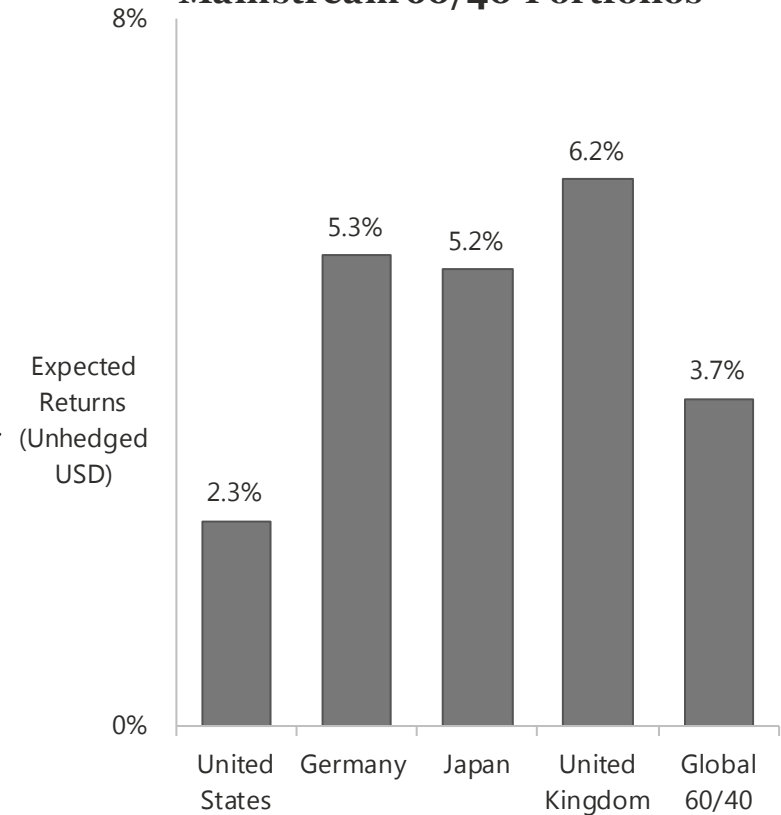
Source: Research Affiliates, LLC, based on data from Ibbotson, Shiller, Bloomberg, MSCI, and FactSet. The bolded country indices are represented by the S&P 500, MSCI Germany, MSCI Japan, and MSCI UK. For more information, please visit http://www.researchaffiliates.com/en_us/asset-allocation.html. Please see important information at the end of this presentation regarding simulated data. The 10-year return expectations are as of June 30, 2019.

Mainstream Asset Classes Offer Less Than Most Investors Expect

Mainstream Stocks and Bonds

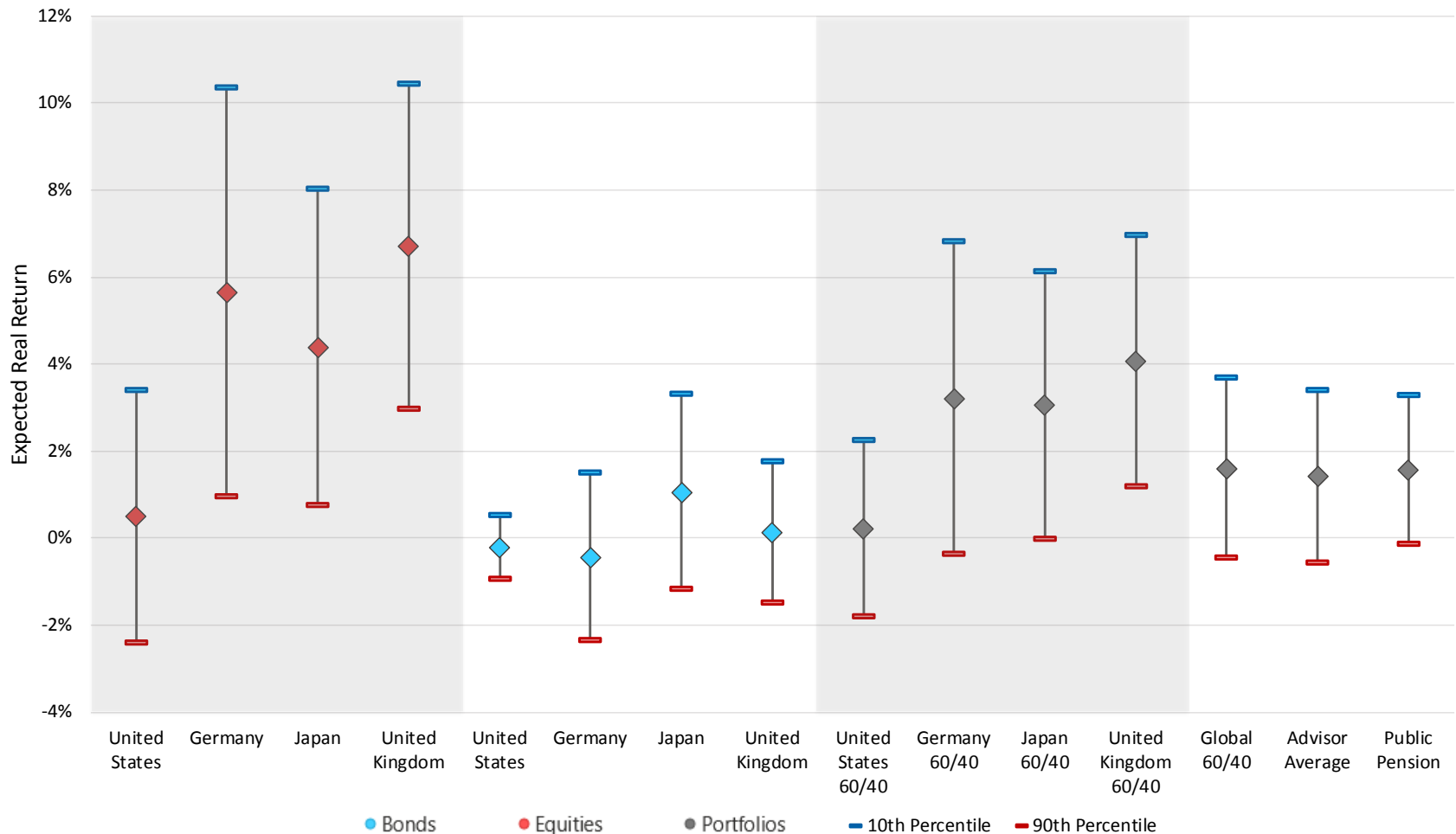


Mainstream 60/40 Portfolios*



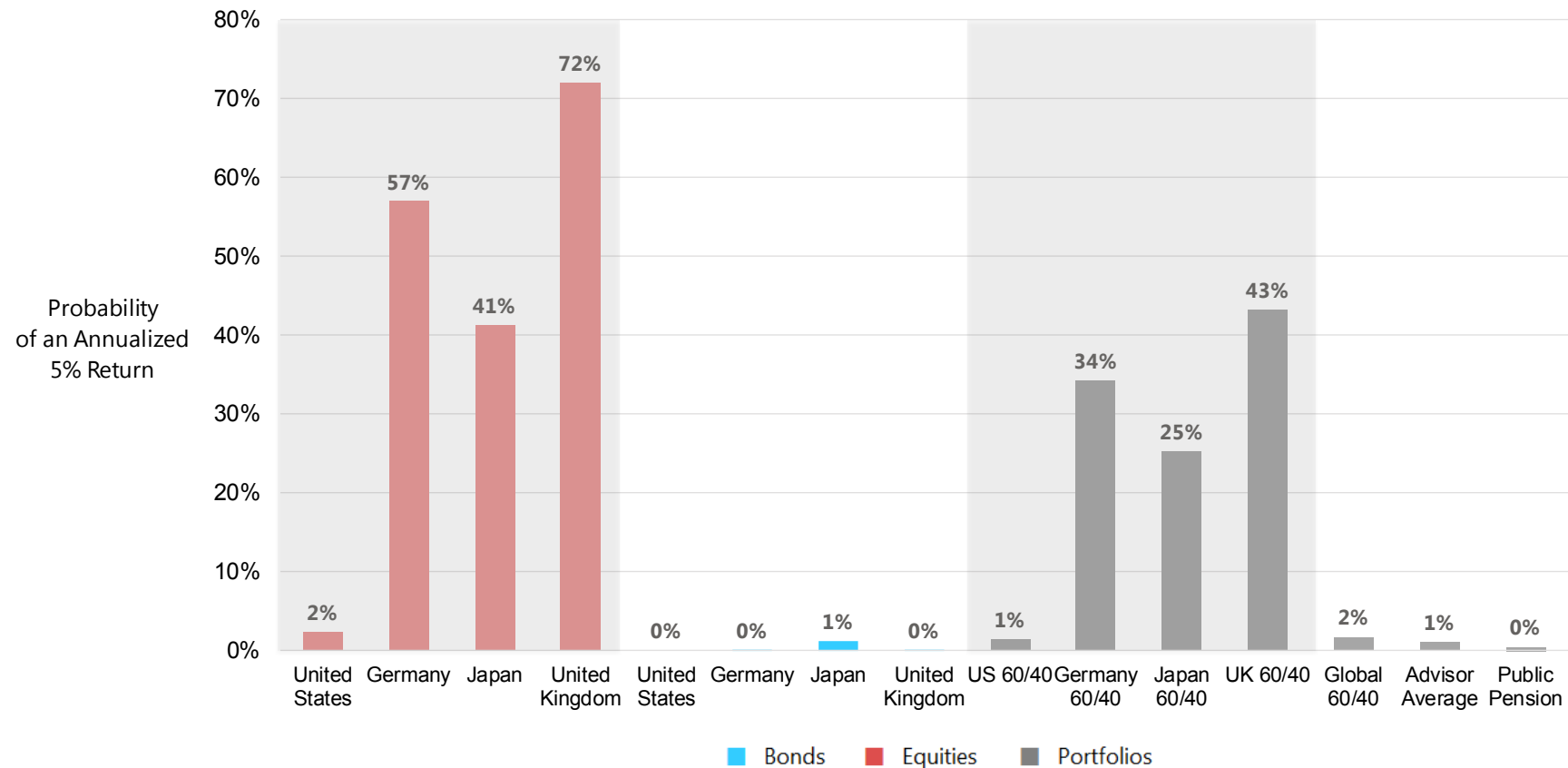
*60/40 portfolios are represented as 60% core equity index and 40% Treasury 5-7 Year bond index for each specific country. For the US, the Barclays Aggregate is used in lieu of the 5-7 Year Treasury. Source: Research Affiliates, LLC, based on data from Ibbotson, Shiller, Bloomberg, FactSet, MSCI Inc., and Barclays. Please see important information at the end of this presentation regarding simulated data. The 10-year return expectations are as of June 30, 2019.

Real Return Expectations & Confidence Intervals



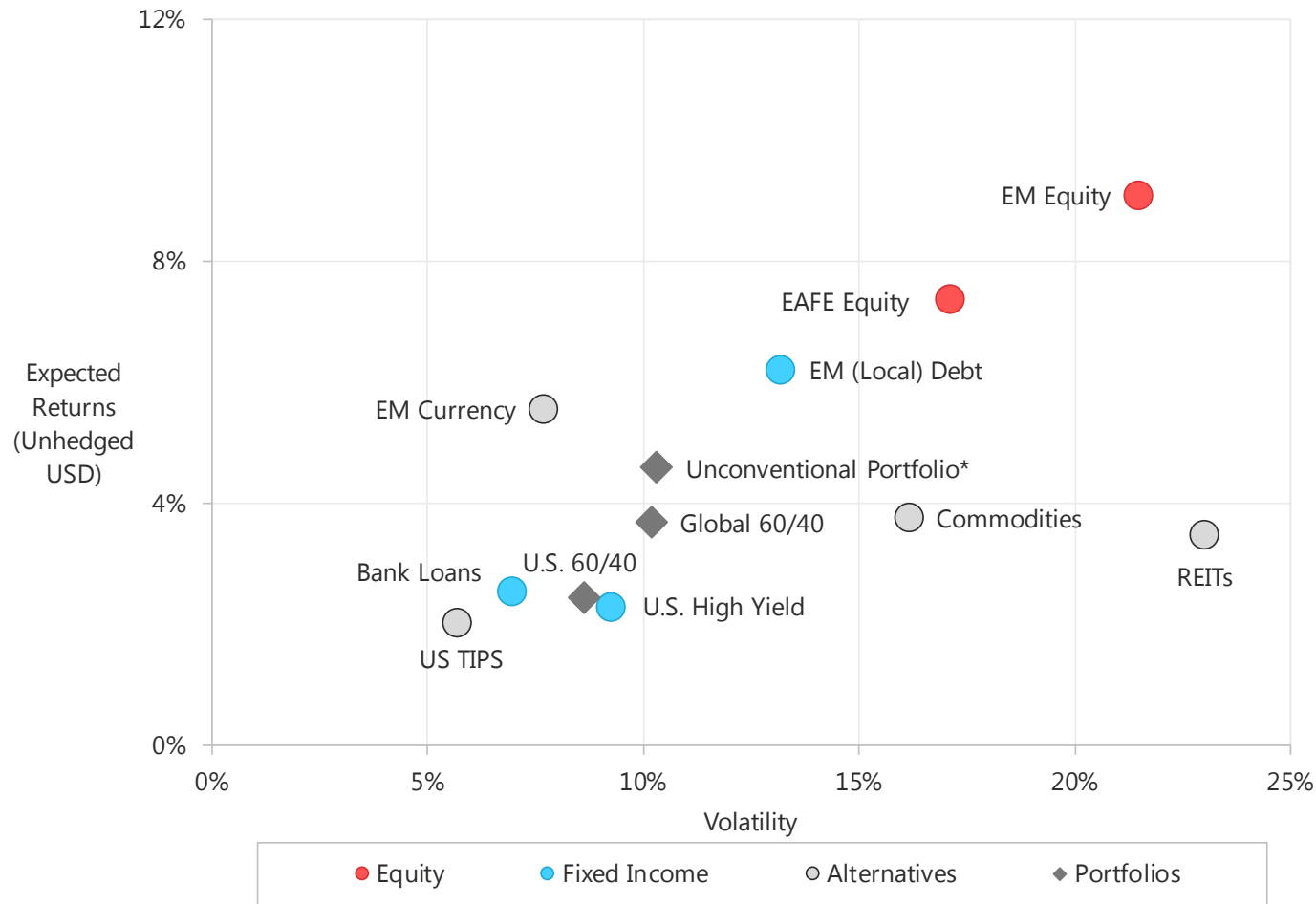
*60/40 portfolios are represented as 60% core equity index and 40% Treasury 5-7 Year bond index for each specific country. For the US, the Barclays Aggregate is used in lieu of the 5-7 Year Treasury. Source: Research Affiliates, LLC, based on data from Ibbotson, Shiller, Bloomberg, FactSet, MSCI Inc., and Barclays. Please see important information at the end of this presentation regarding simulated data. The 10-year return expectations are as of June 30, 2019.

Translated Into Probabilities of 5% Annualized Real Returns



*60/40 portfolios are represented as 60% core equity index and 40% Treasury 5-7 Year bond index for each specific country. For the US, the Barclays Aggregate is used in lieu of the 5-7 Year Treasury. Source: Research Affiliates, LLC, based on data from Ibbotson, Shiller, Bloomberg, FactSet, MSCI Inc., and Barclays. Please see important information at the end of this presentation regarding simulated data. The 10-year return expectations are as of June 30, 2019.

Unconventional Assets Are Priced for Better Returns

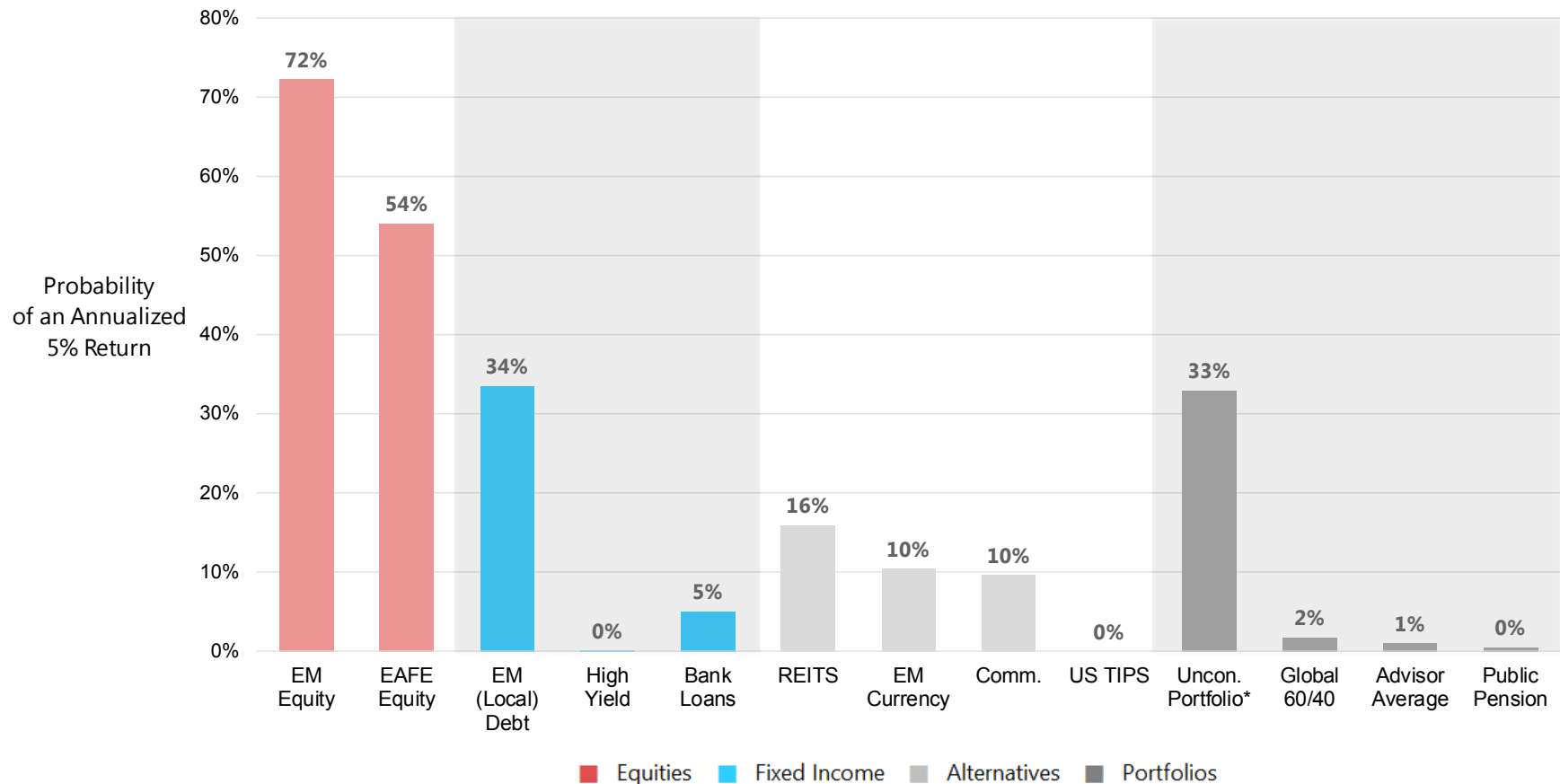


*Unconventional Portfolio is an equal-weighted portfolio of the following asset classes: EM Equity, EM Currency, EAFE Equity, and US High Yield. US 60/40 is represented as 60% in S&P 500 and 40% in Barclays U.S. Aggregate. Global 60/40 is represented as 60% in MSCI World and 40% in Citigroup WGBI.

Source: Research Affiliates, LLC, based on data from Shiller, Bloomberg, and FactSet. Please see important information at the end of this presentation regarding simulated data. The 10-year return expectations are as of June 30, 2019.



Translated into Probabilities of Achieving Annualized Real Returns of 5%



*Unconventional Portfolio is an equal-weighted portfolio of the following asset classes: EM Equity, EM Currency, EAFE, and U.S. High Yield.

Global 60/40 is represented as 60% in MSCI World and 40% in Citigroup WGBI.

Source: Research Affiliates, LLC, based on data from Shiller, Bloomberg, and FactSet. Please see important information at the end of this presentation regarding simulated data. The 10-year return expectations are as of June 30, 2019.



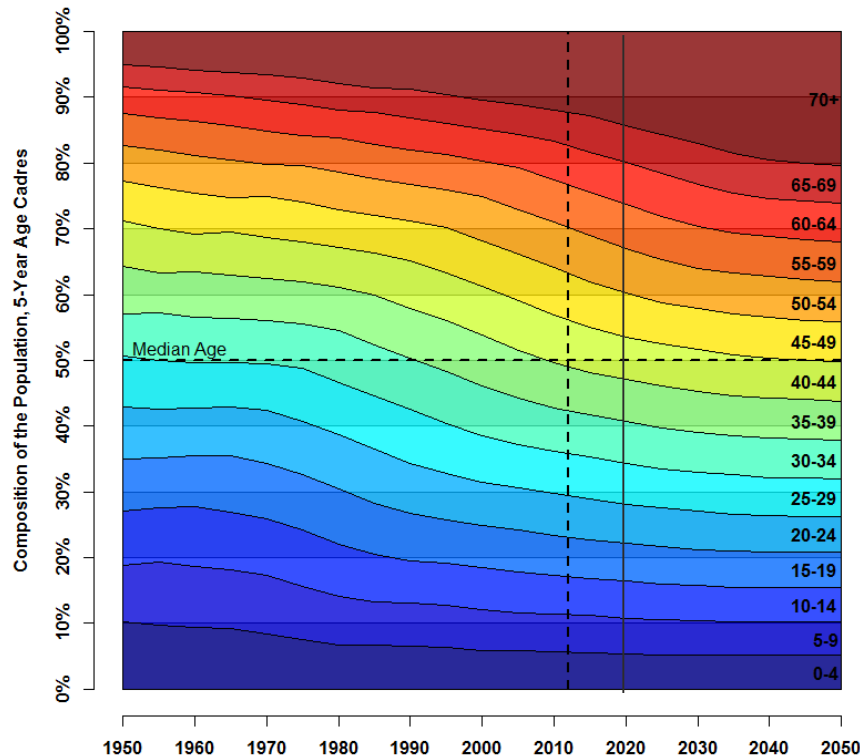
Demographic Considerations



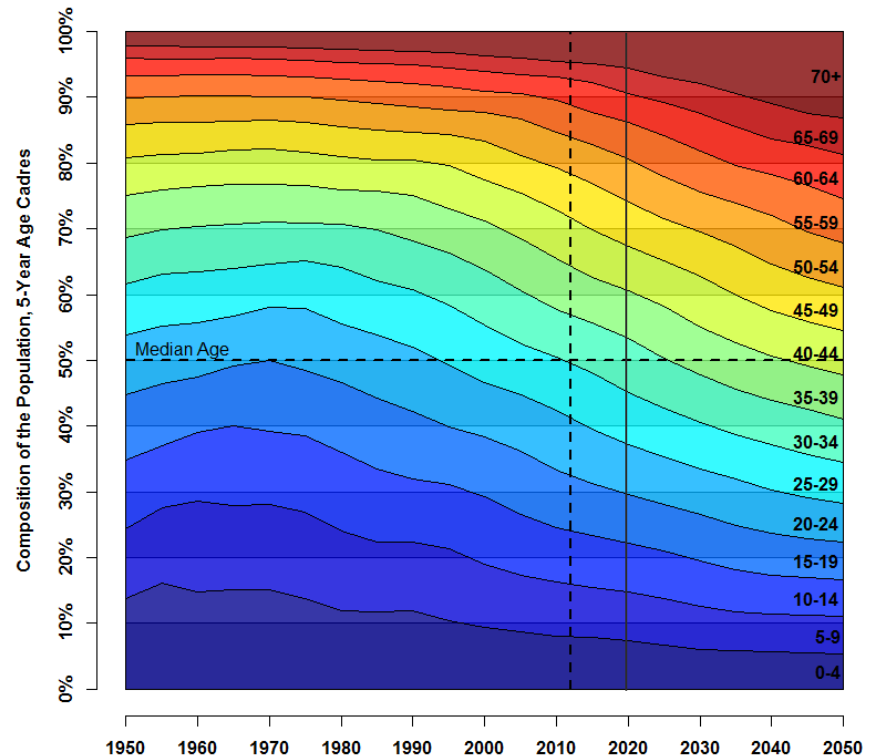
Demographics May Act as Additional Headwinds to Mainstream Equity & Bond Returns

G8 versus BRIC Economies

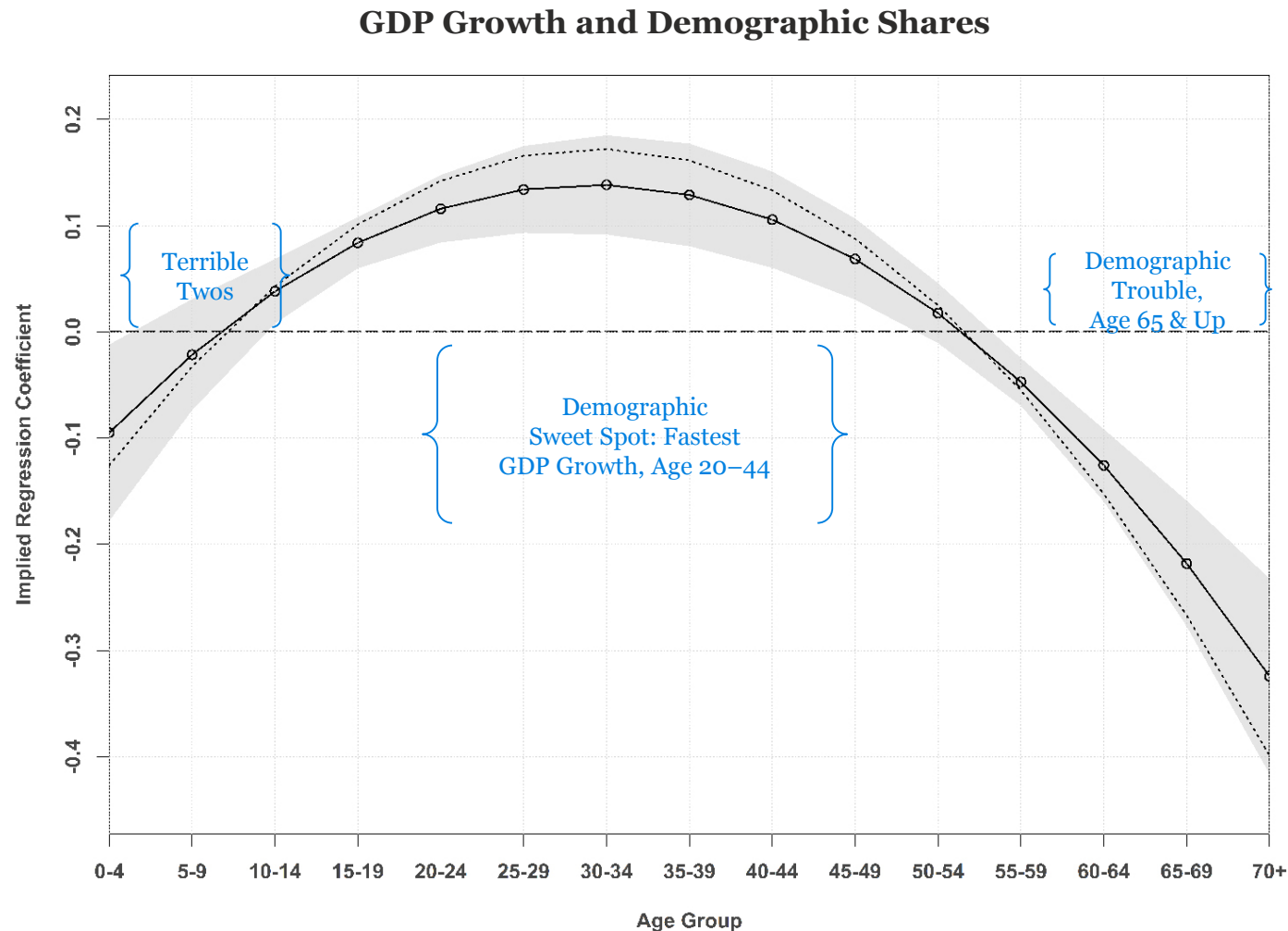
G8 - Distribution of the Population, 1950-2050



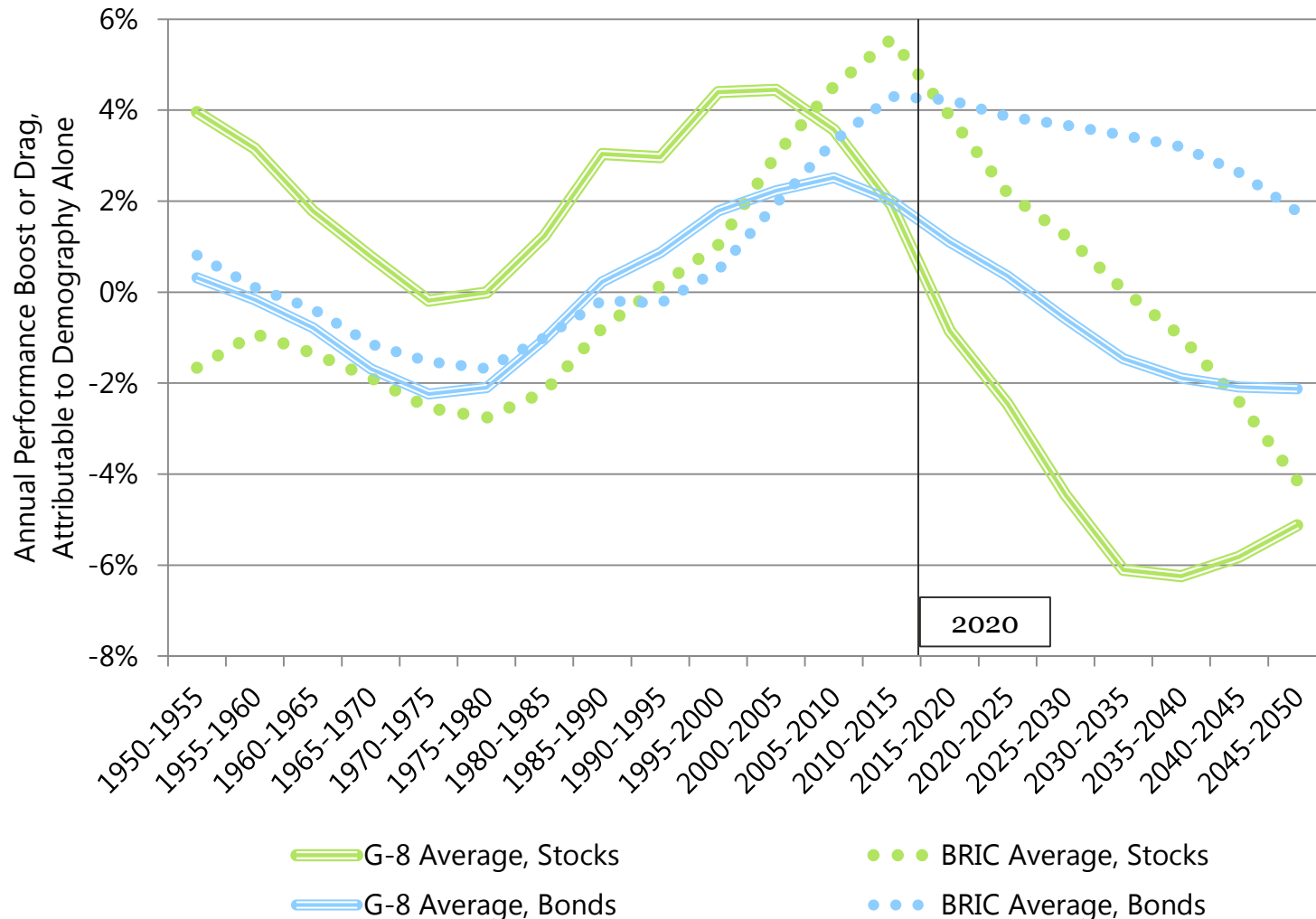
BRIC - Distribution of the Population, 1950-2050



Relationship Between GDP Growth and Demographic Composition ($R^2 = 0.30$), Net of Valuation Effects



Annual Performance Boost or Drag, Attributable to Demography Alone

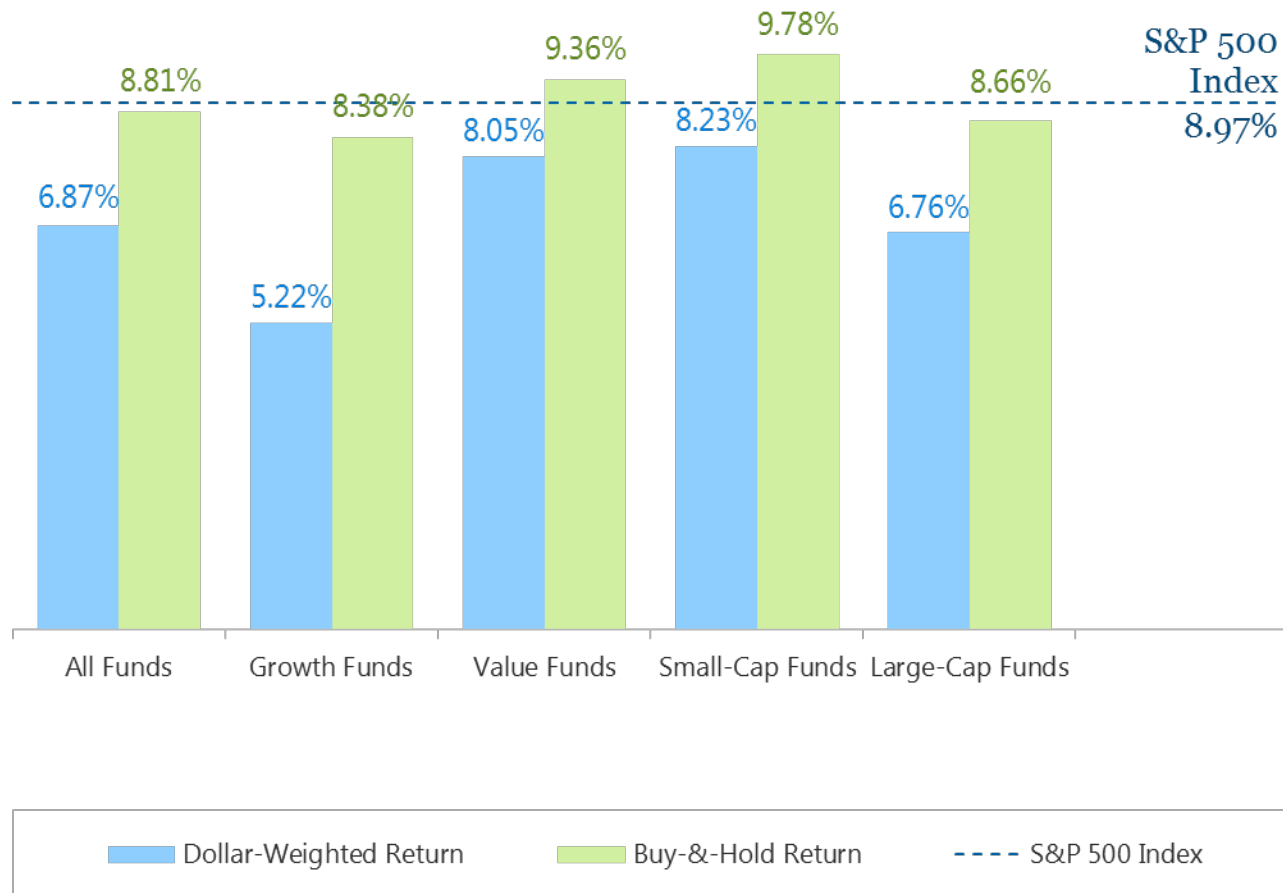


Source: Research Affiliates, LLC, based on data from United Nations, Penn World Table, and Global Financial Data.

Forecasting Equity Factor Returns



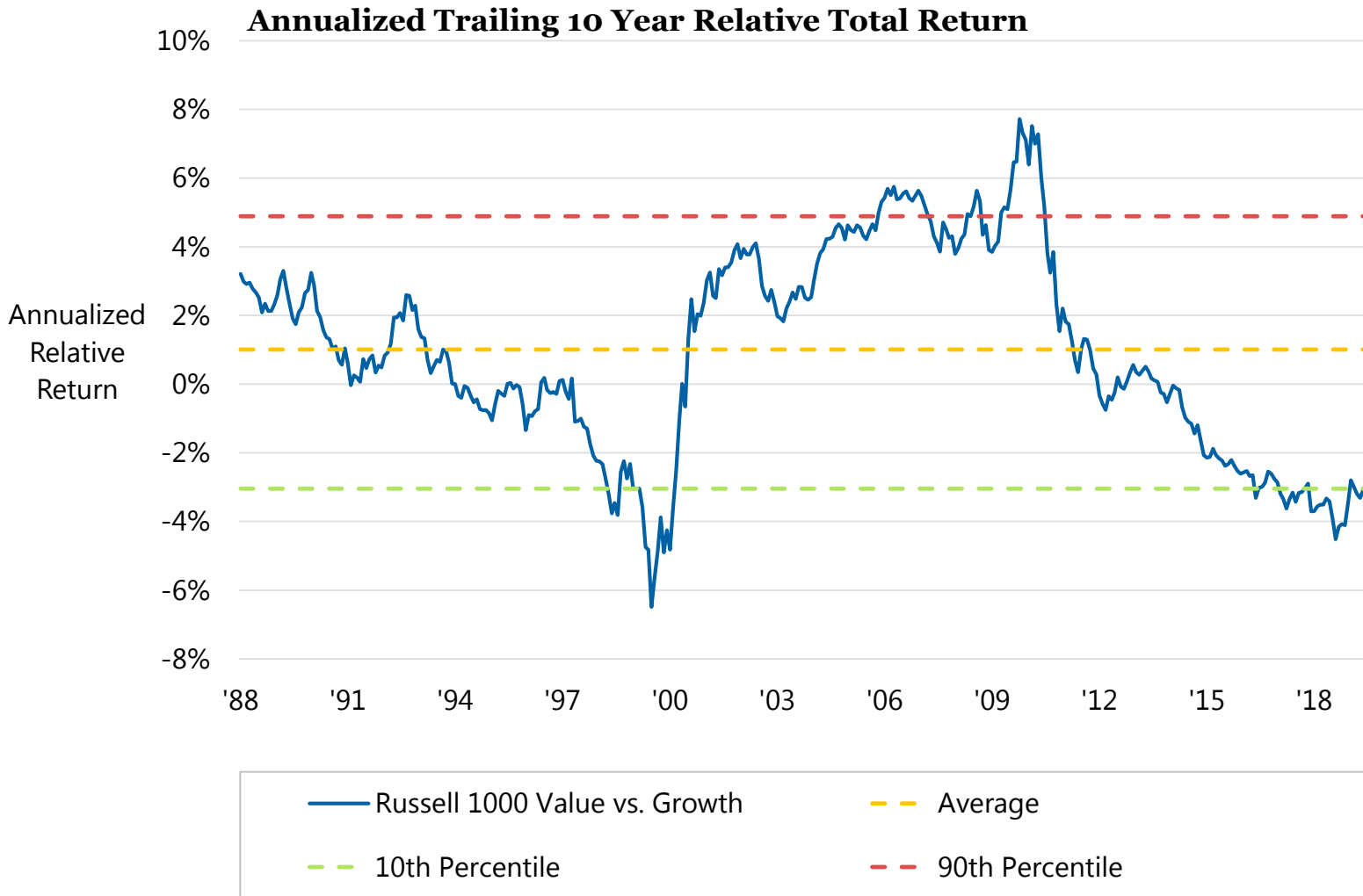
Most Investors Are Trend Chasers!



Source: Research Affiliates, using data from the CRSP Mutual Funds Database and Morningstar Direct, 1/1991 – 6/2013. The buy-and-hold return is the geometric average return over the sample period. The dollar-weighted return is the category IRR (inclusive of all category mutual funds weighted by their total assets).

Hsu, Myers, and Whitby, "Timing Poorly: A Guide to Generating Poor Returns While Investing in Successful Strategies," *Journal of Portfolio Management* (Winter 2016).

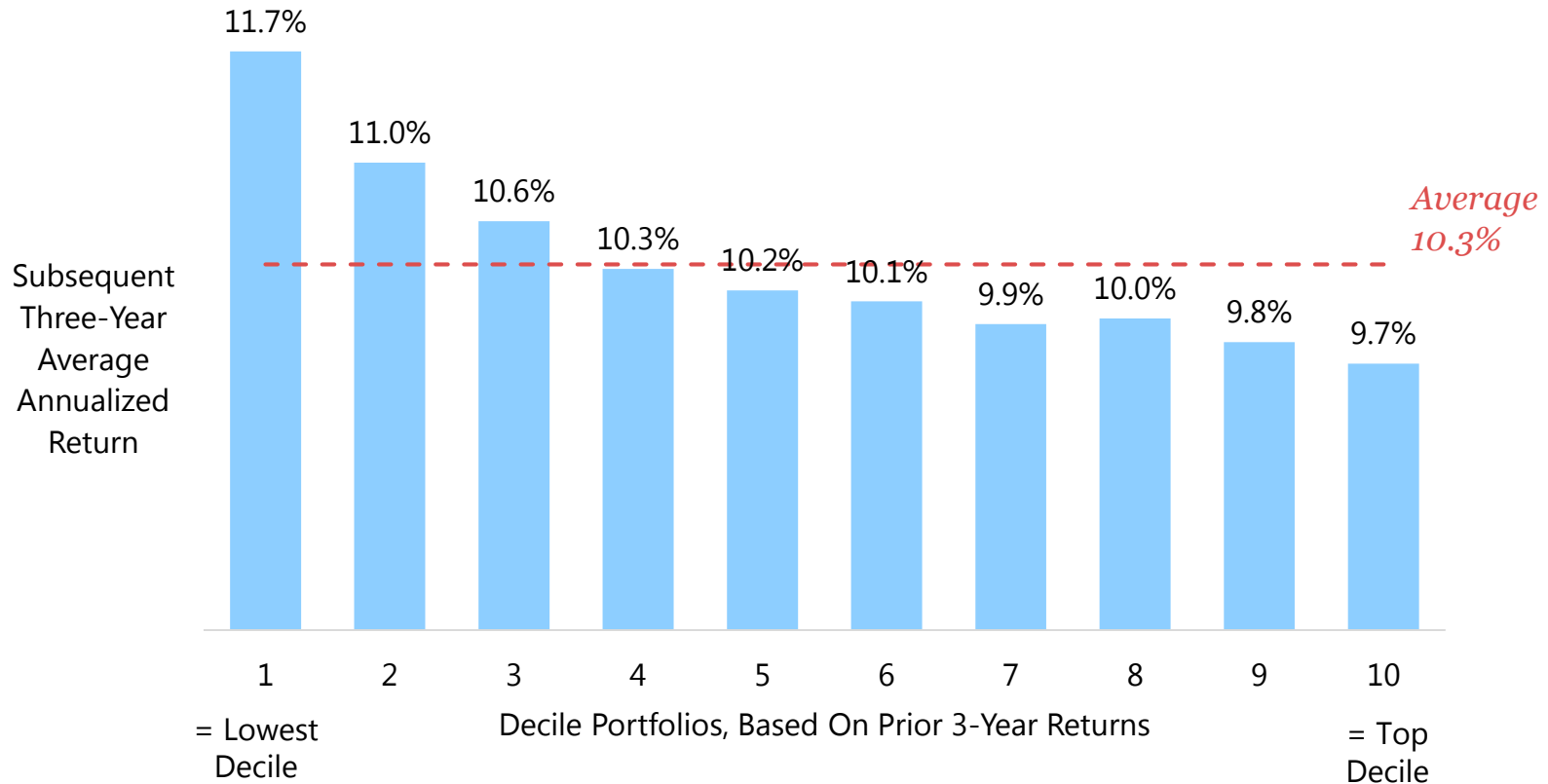
What Style Are Investors Chasing Today? Growth!



Actively Managed Mutual Funds

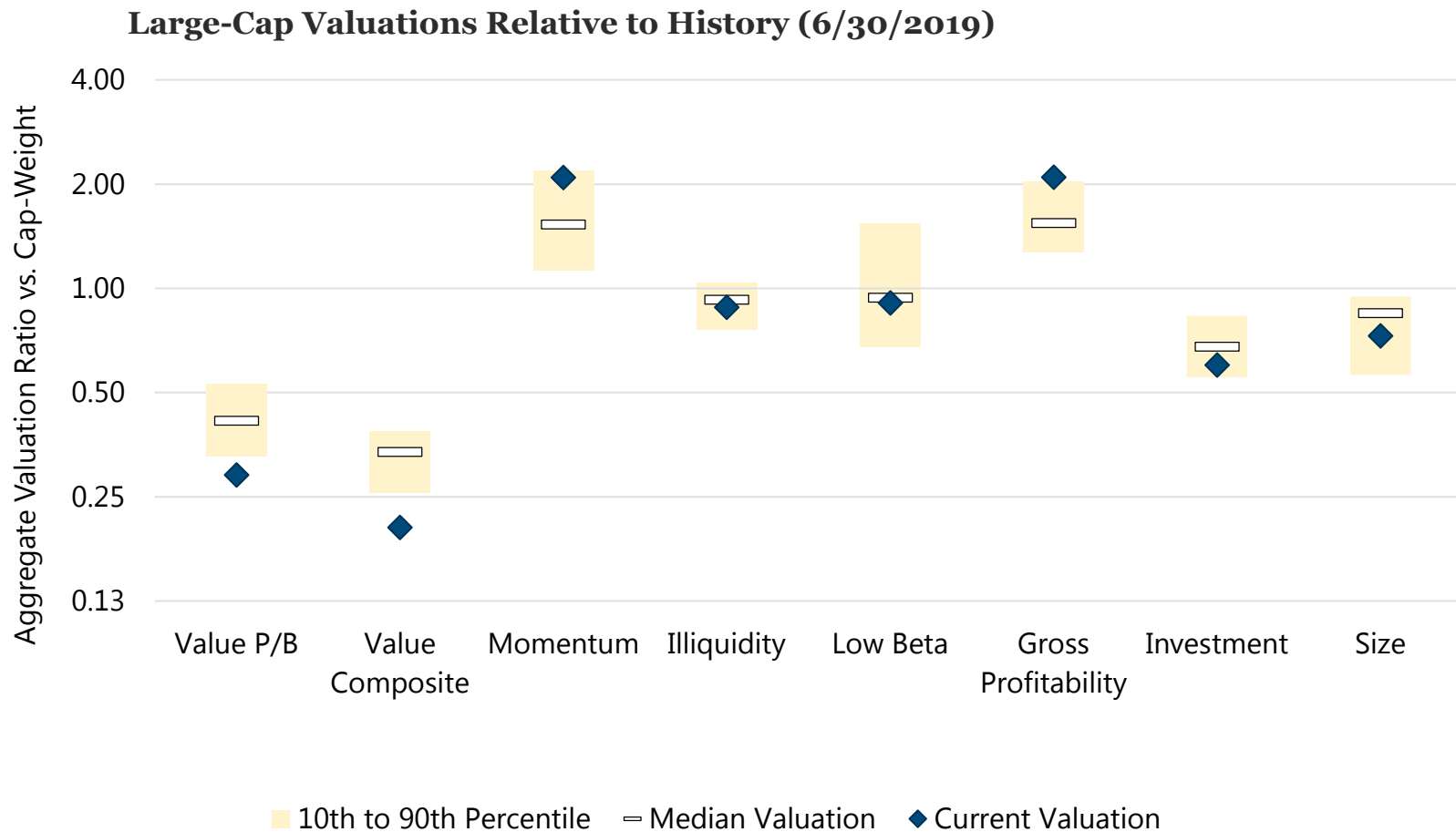
A Naïve Contrarian Strategy Can Work

Average Mutual Fund Subsequent Three-Year Performance, Sorted by Prior Three-Year Returns, US Long-Only Equity Funds (Jan 1990–Dec 2016)

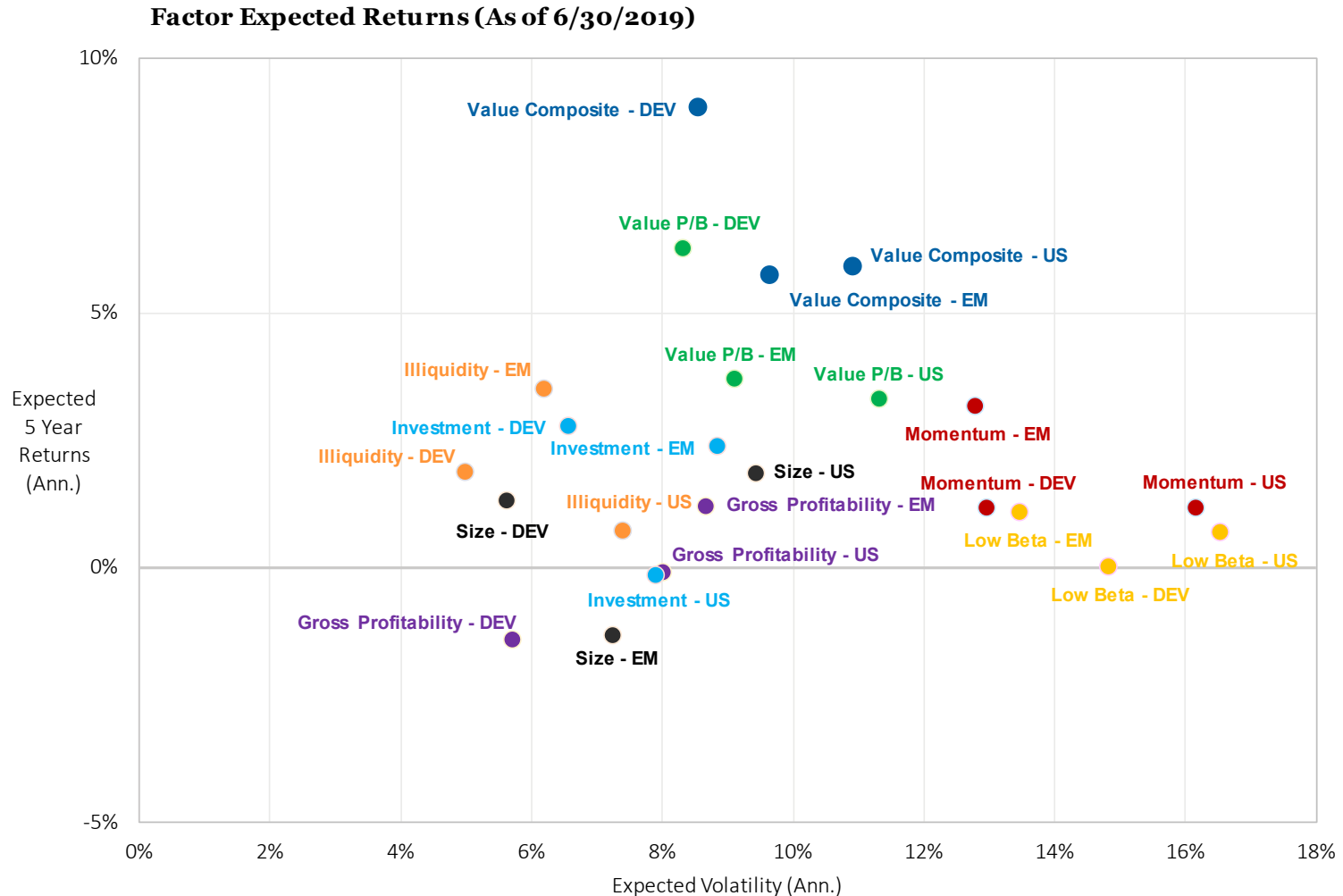


**This result is arguably created by our industry's favorite decision rule:
Three bad years and out!**

Factor Valuations Today – Developed



Current Equity Factor Return Forecasts: The Highest Return Potential Is Available from the Value Factor



Source: Research Affiliates, LLC, using data from CRSP/Compustat and Datascope/Worldstream. Please see important information at the end of this presentation regarding simulated data. Return expectations as of June 30, 2019.

Key Takeaways

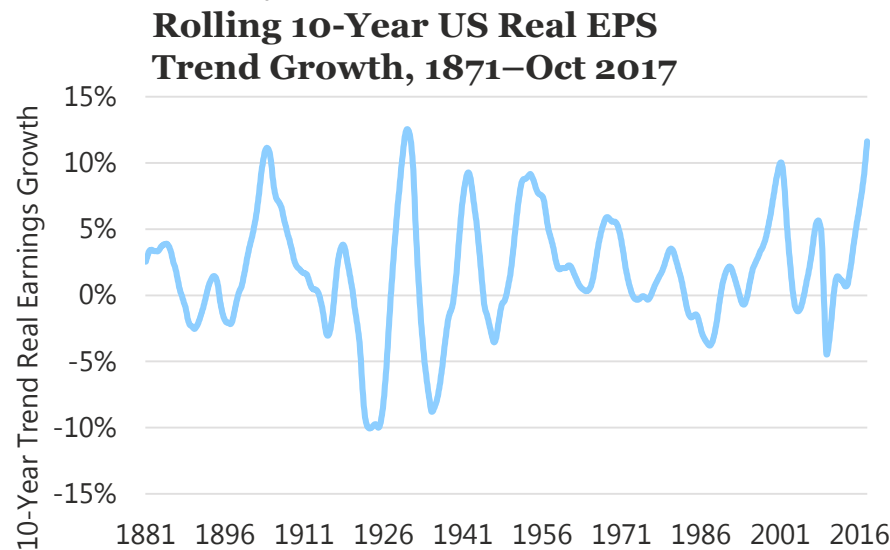
- » The link between starting valuations and subsequent returns is powerful
- » Across asset classes, higher return potential exists in international and diversifying markets
- » Demographic considerations may add to return headwinds for mainstream stocks and bonds while increasing return tailwinds for emerging markets stocks and bonds
- » Within equities, the value factor offers the highest forward looking excess return potential across all regions today

Appendix



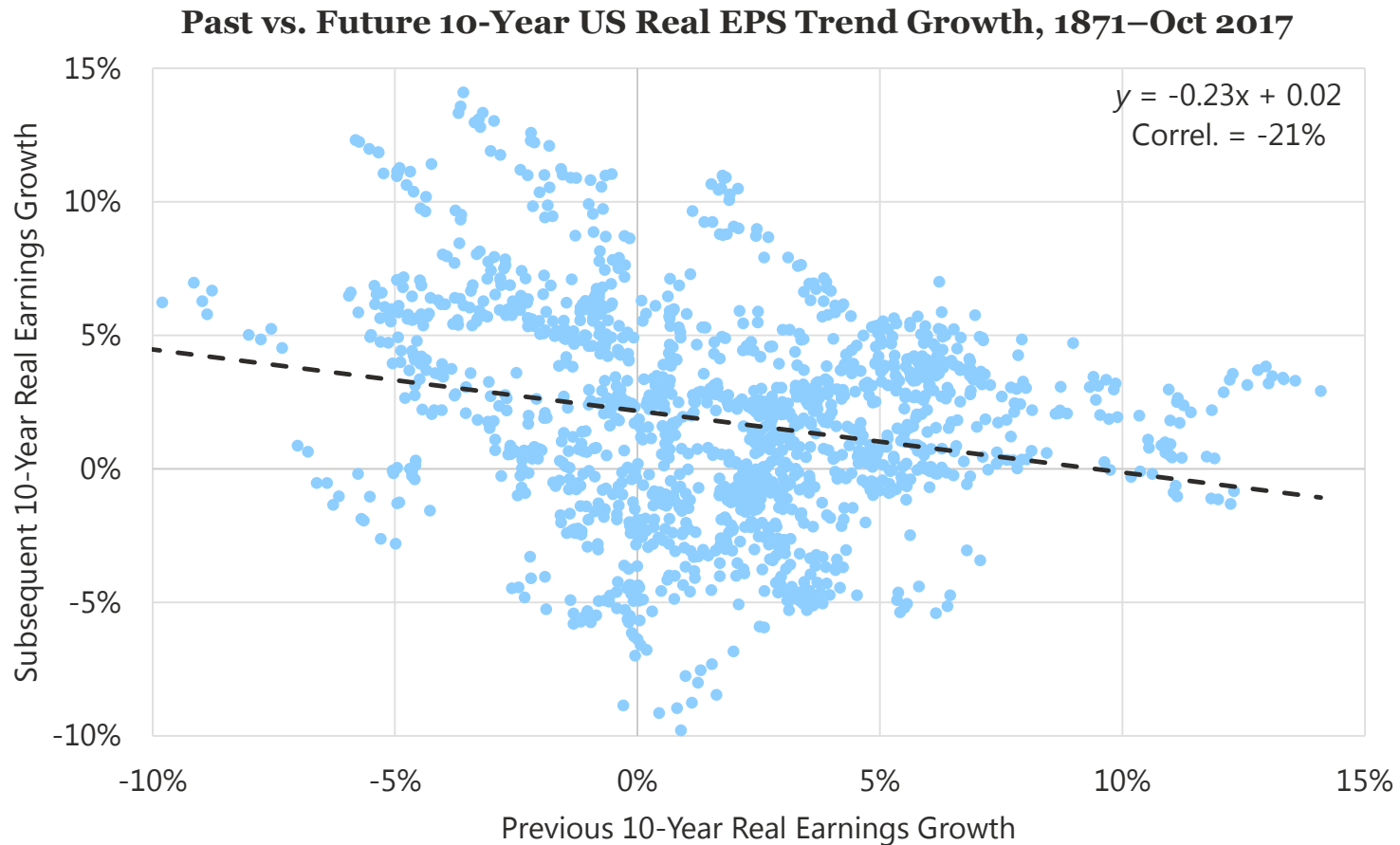
High Earnings Are Not Enough to Portend a High CAPE Ratio!

- » For returns to remain elevated with a high CAPE, EPS growth must be high as well
 - » EPS growth arguments¹ for elevated CAPE explain high **past** EPS growth, not high future EPS growth.
 - » EPS growth rates are cyclical.



- » Indeed, real earnings of the S&P 500 crested in 2014. We are skeptical that earnings can grow much, relative to GDP, in the years ahead.

High EPS Growth Often Precedes Low EPS Growth



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