Verus

PERSPECTIVES THAT DRIVE ENTERPRISE SUCCESS

FEBRUARY 2019

Capital Market Assumptions Call

Call instructions

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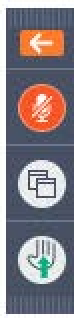

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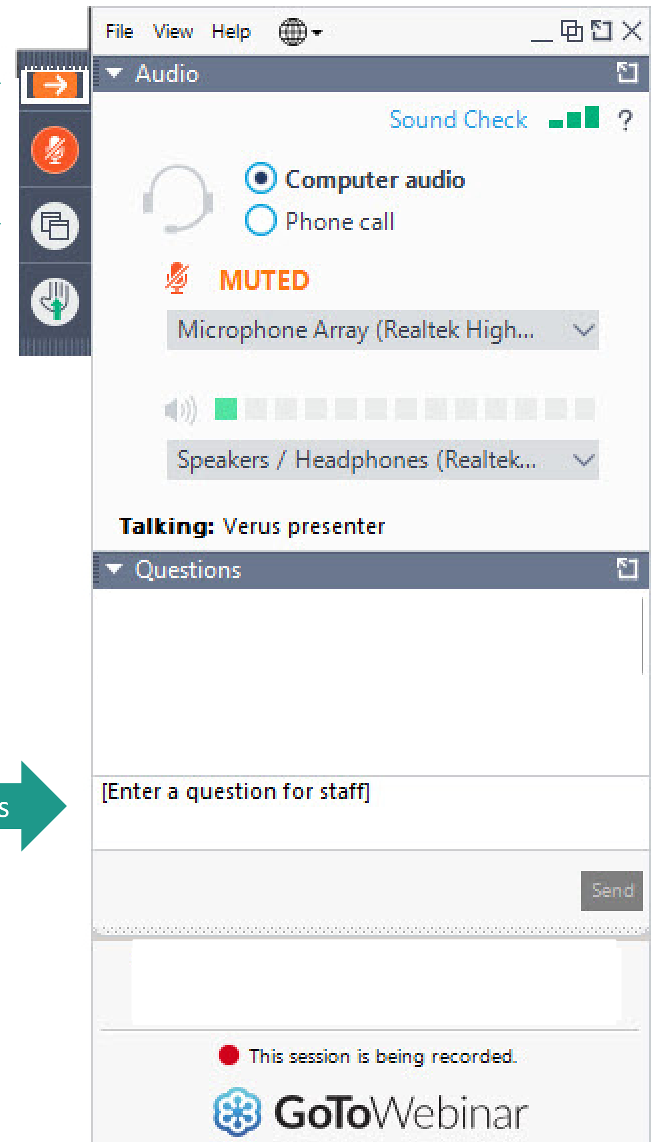
Ask questions here

Questions



February 2019 conference call

VERUSINVESTMENTS.COM

SEATTLE 206-622-3700
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IMPORTANT INFORMATION

Dial in:	1 (877) 309-2074 U.S. & Canada
Access code:	338-330-624
Audio options:	You may choose to listen through the webcast on your computer ***or*** dial in.
Presented by:	

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Chief Investment Officer

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Sr. Associate Director | Strategic Research

Andrew Akers, CFA
Sr. Strategic Research Analyst

Key takeaways

— Lower equity valuations, higher credit spreads, and higher interest rates indicate a moderate improvement in 10-year capital market return forecasts

— However, an environment of continued low inflation and low interest rates would suggest more muted asset class performance relative to the historical average

— It is important to note the different nature of shorter and longer-term expectations

Verus Capital Market Assumptions

High-Level Methodology

— How does Verus forecast asset class and portfolio behavior?

2019 Capital Market Assumptions

— What do our forecasts look like for the next 10 years?

— How do these forecasts compare to last year?

— How do they compare to history?

Investor Takeaways

— What do capital market assumptions mean for building portfolios?

Building block methodology

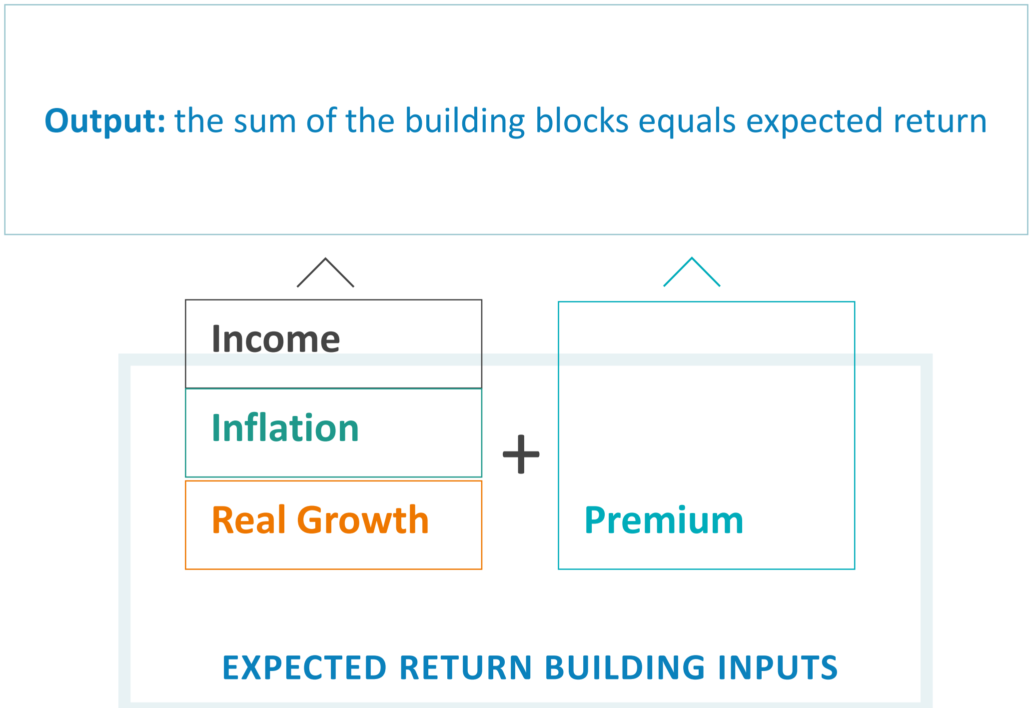
Output: the sum of the building blocks equals expected return

Income + Inflation + Real Growth

EXPECTED RETURN BUILDING BLOCKS

For illustrative purposes only

Build-up/spread



For illustrative purposes only

Expected return methodology

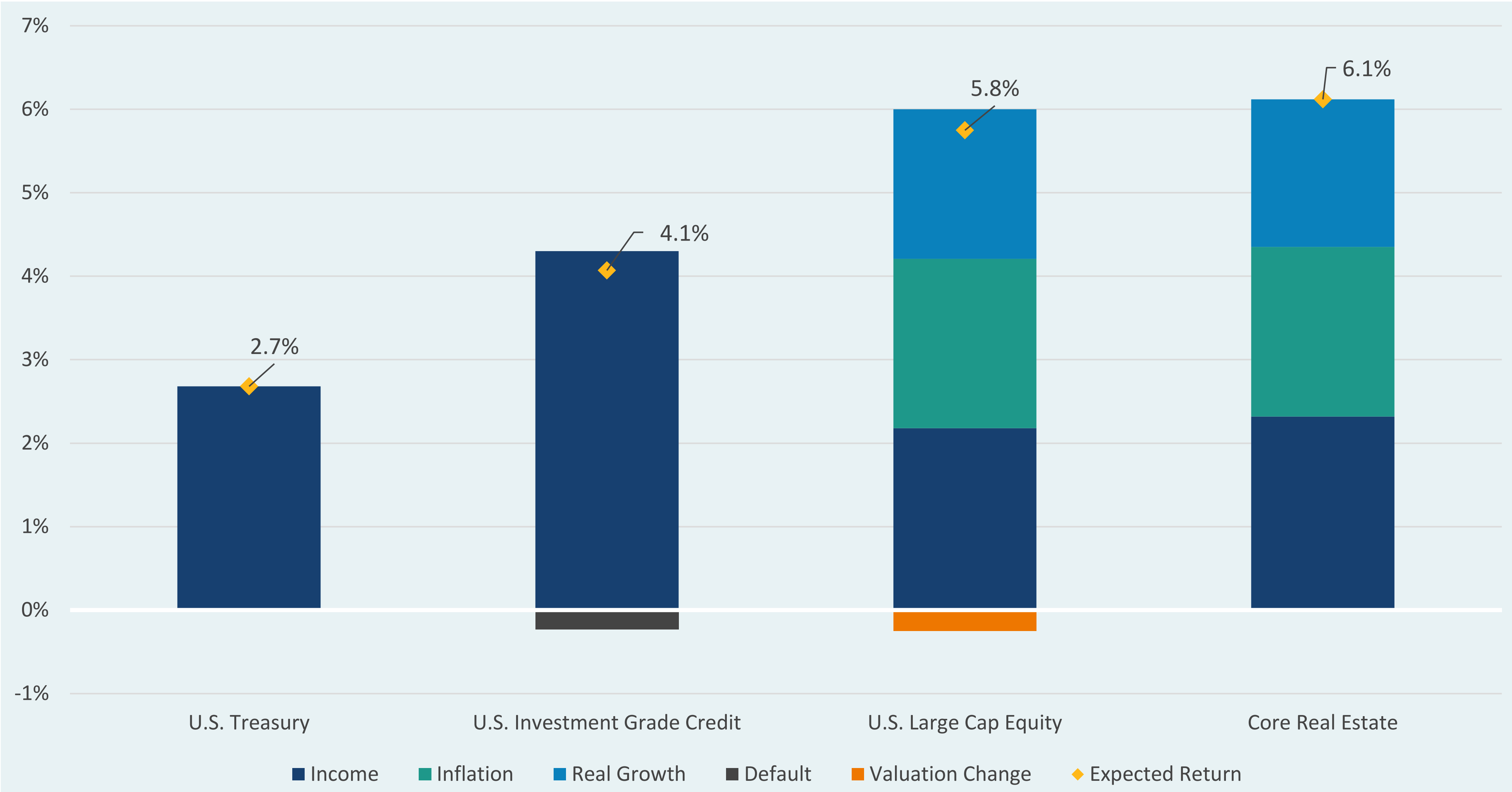
BUILDING BLOCK METHODOLOGY

Cash	Real yield estimate + inflation forecast
Bonds	Nominal bonds: current yield; Real bonds: real yield + inflation forecast
Credit	Current option-adjusted spread + U.S. 10-year Treasury – effective default rate
International Credit	Current option-adjusted spread + foreign 10-year Treasury – effective default rate
Equity	Current yield + real earnings growth (historical average) + inflation on earnings (inflation forecast) + expected P/E change
Commodities	Collateral return (cash) + spot return (inflation forecast) + roll return (assumed to be zero)
Core Real Estate	Cap rate + real income growth – capex + inflation forecast
Infrastructure	Current yield + real income growth + inflation on earnings (inflation forecast)

BUILD-UP/SPREAD METHODOLOGY

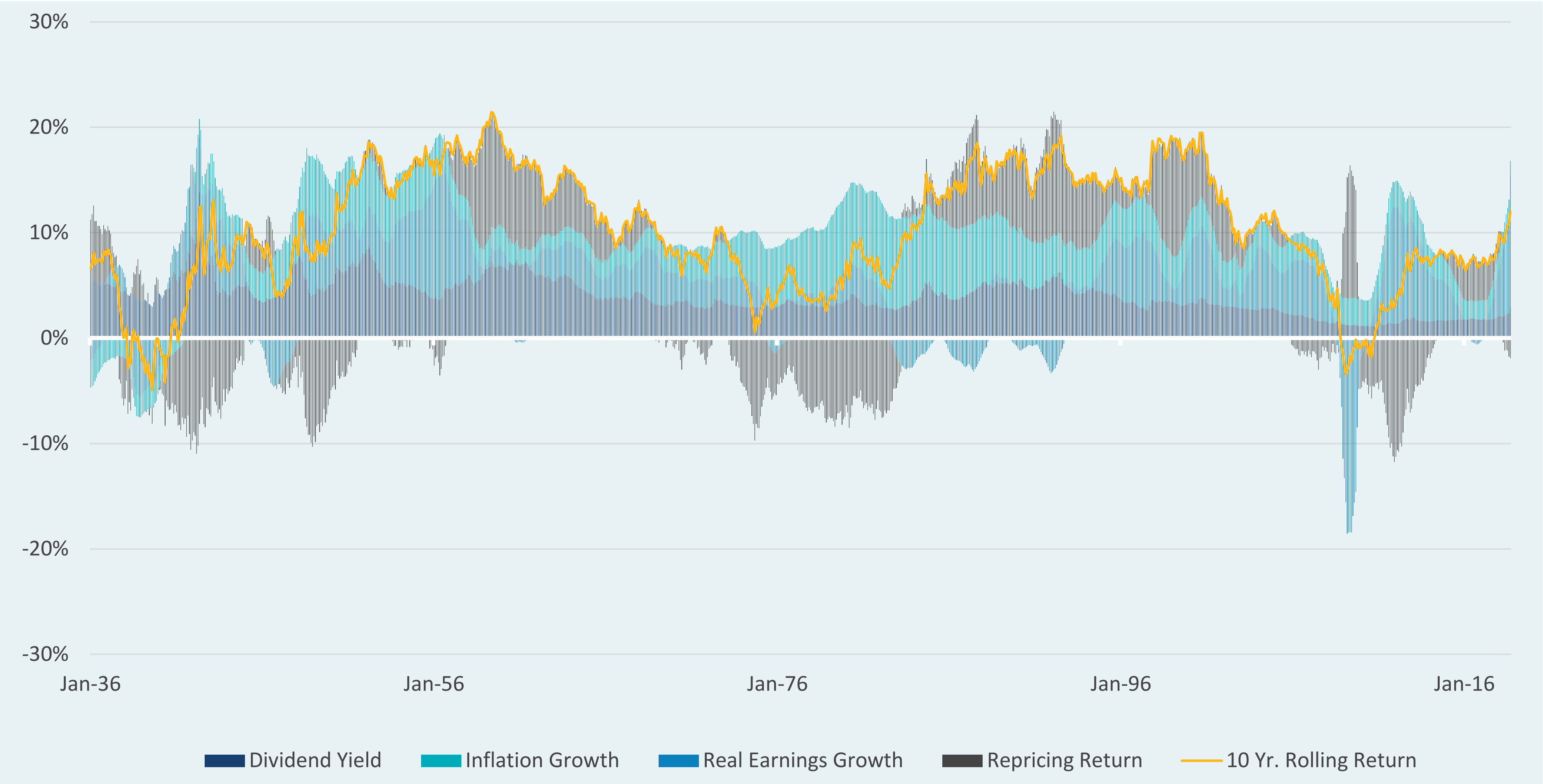
Private Equity	U.S. large cap domestic equity forecast * 1.85 beta adjustment
Private Credit	Bank loan forecast + 1.75% private credit premium

Expected return methodology



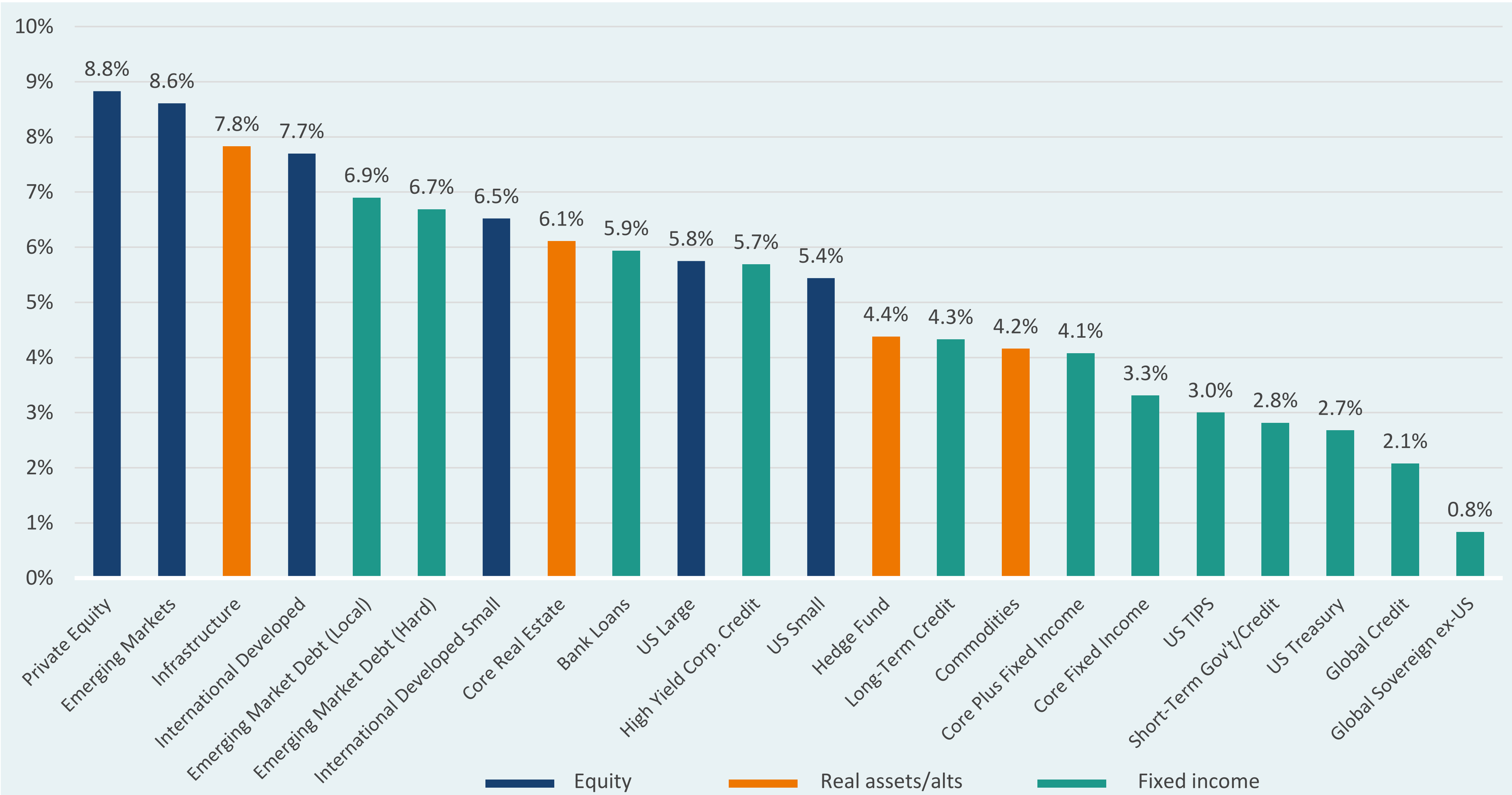
Source: Verus

U.S. equity – historical return building blocks



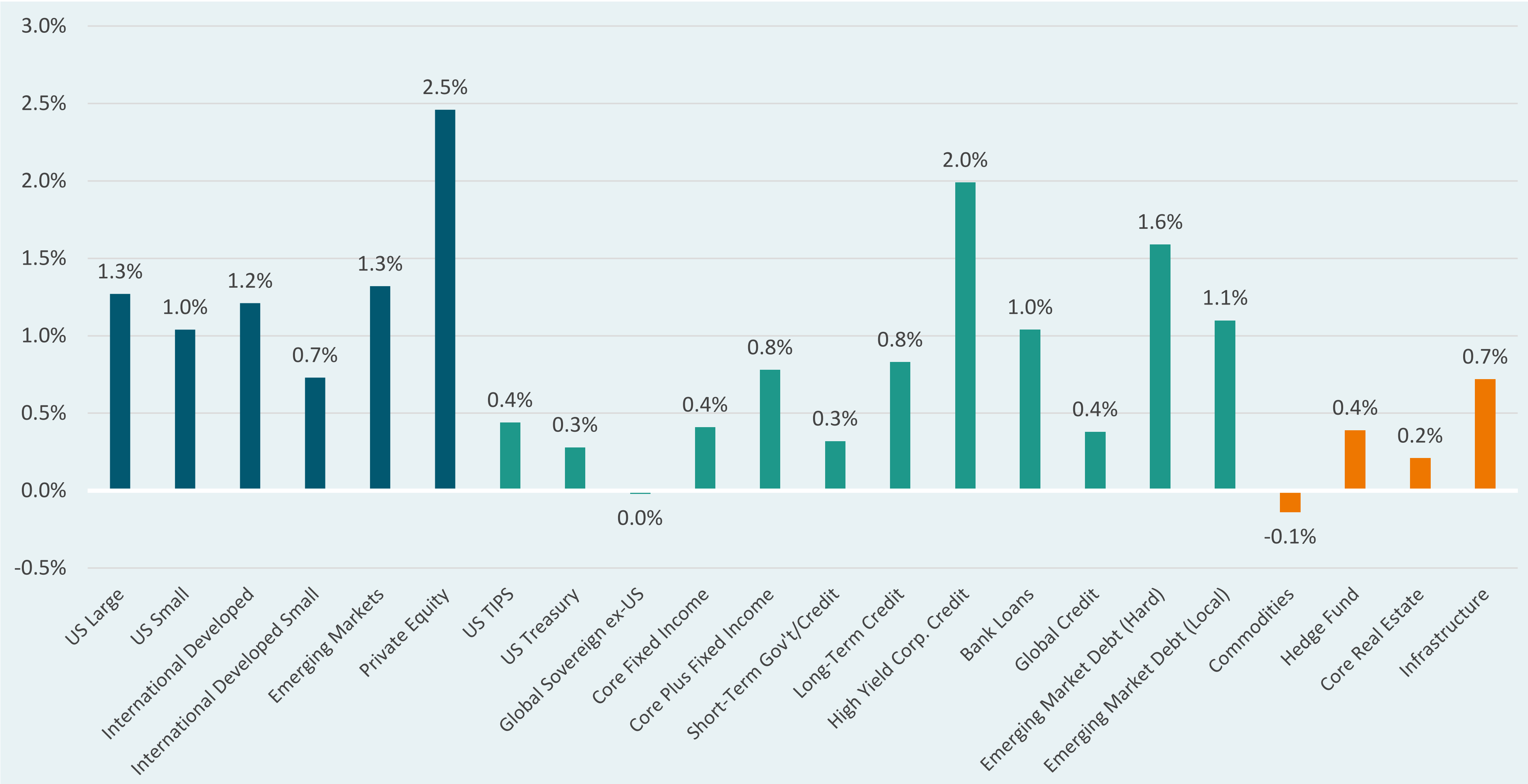
Source: S&P, Shiller, as of 9/30/18

10-year expected returns



Source: Verus

2019 vs. 2018 return forecast



Note: the year-over-year change is based on the 2019 methodology

Required forecasting inputs

Output: Expected future behavior of asset classes and portfolios

Expected return

Expected volatility

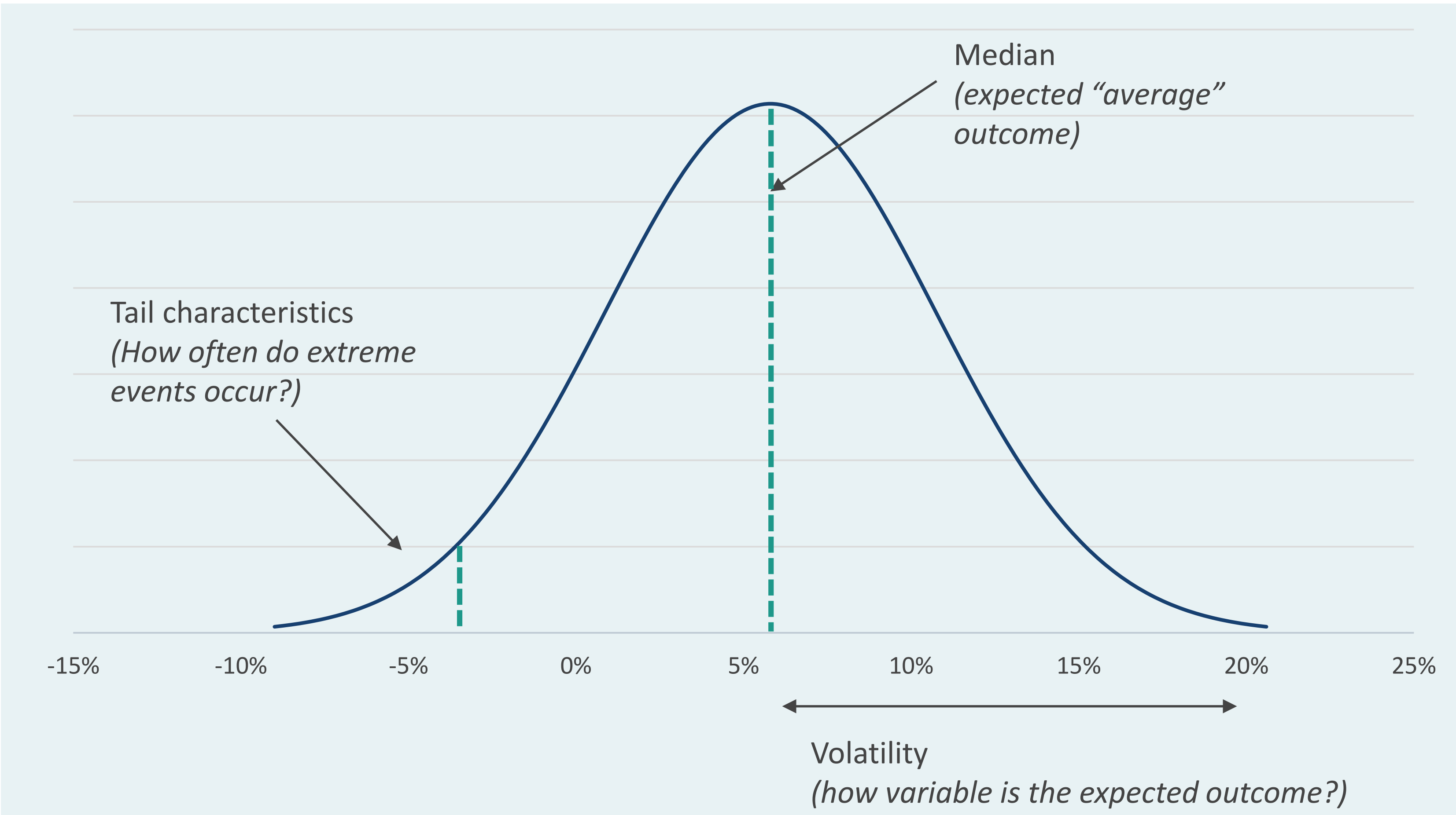
Correlation matrix

Return distribution assumption

CAPITAL MARKET ASSUMPTION INPUTS

What is in a forecast?

Expected return: 5.8%, standard deviation: 15.6%



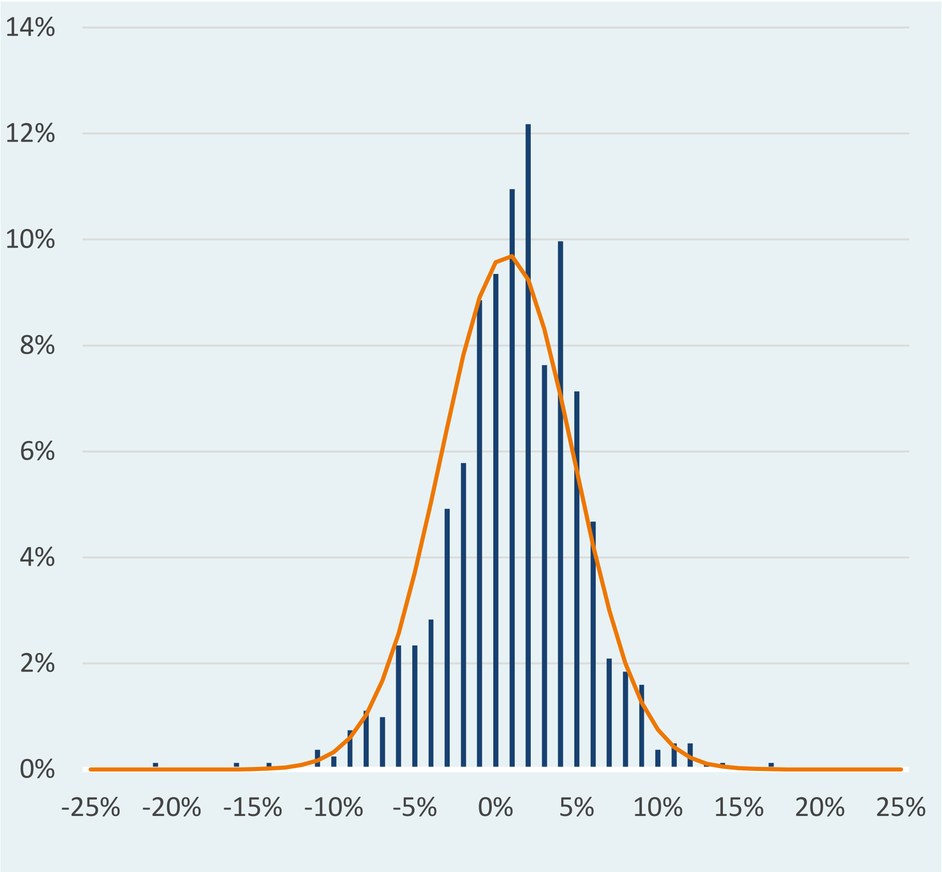
A return forecast is simply the "average" expected return

A volatility forecast tells us how different the return might actually be

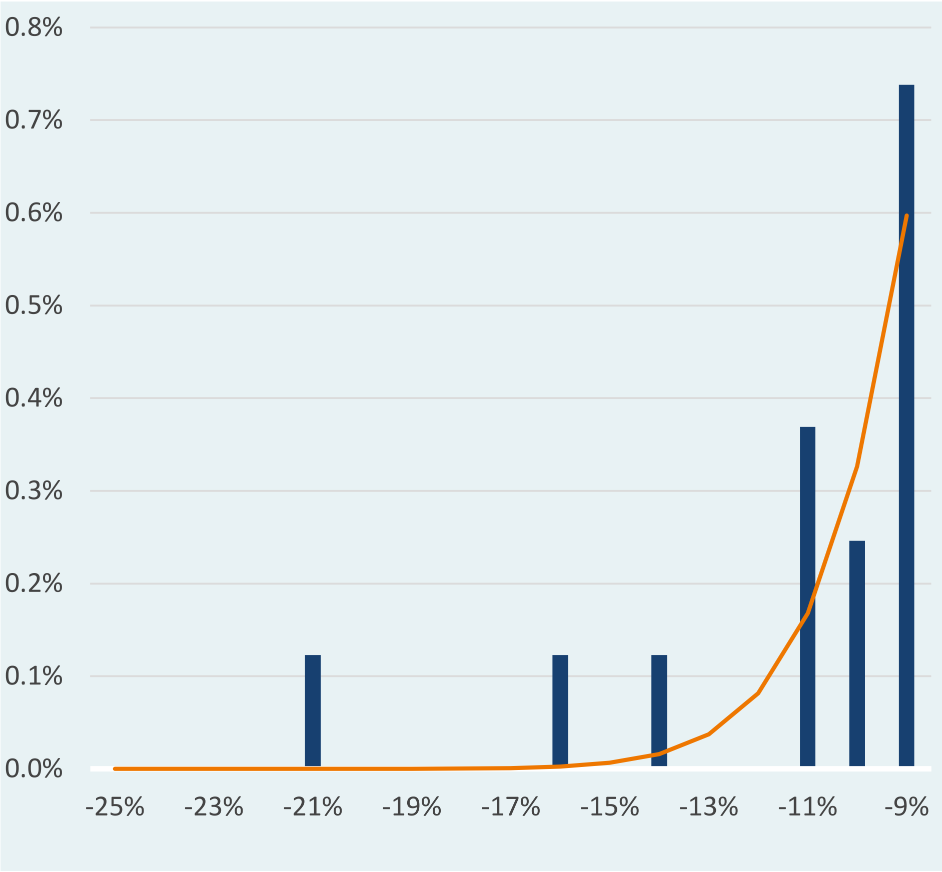
Returns are not normally distributed

Empirical analysis: U.S. equity monthly returns since 1950

FULL DISTRIBUTION OF RETURNS VS. NORMAL

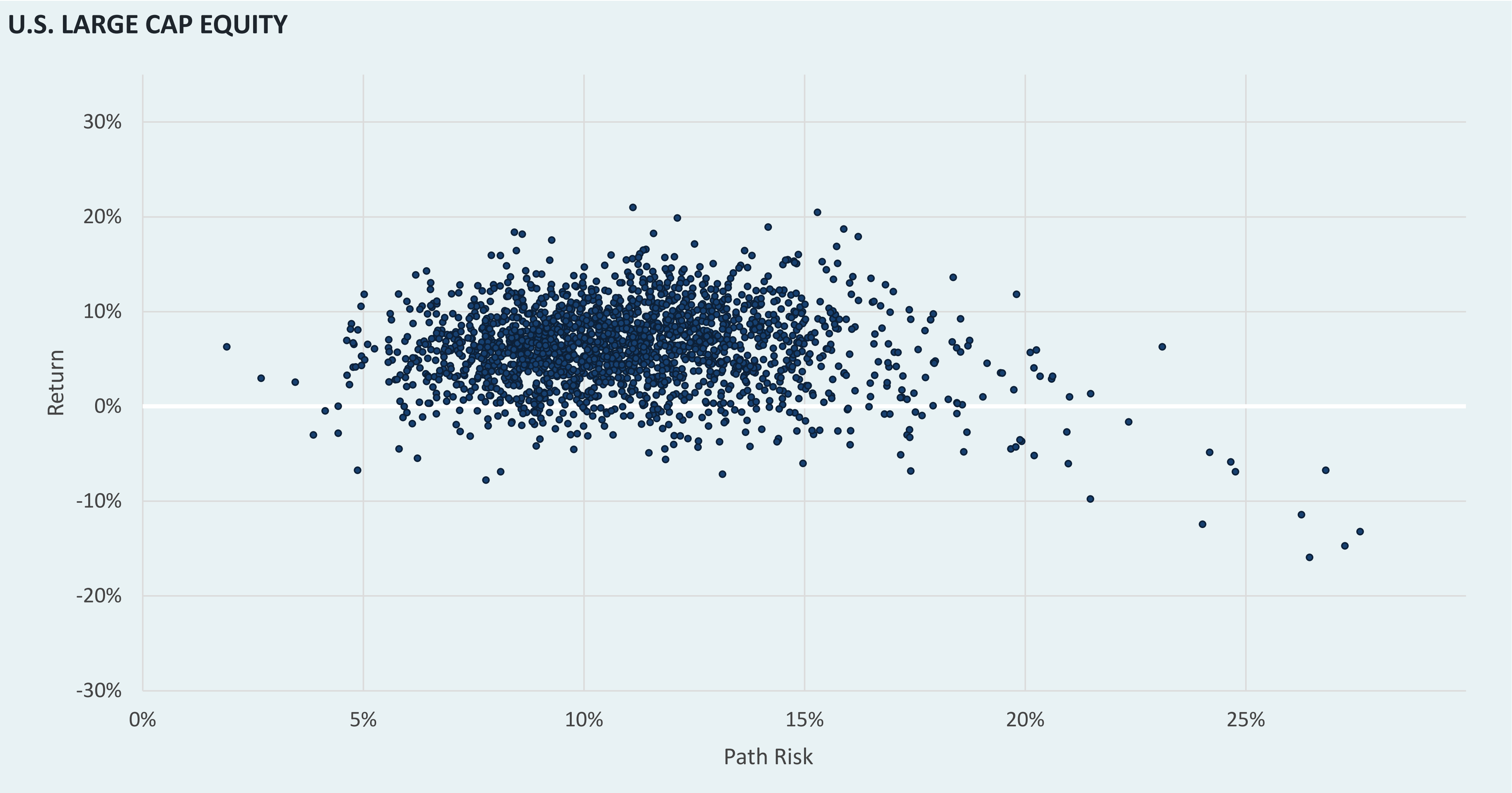


LEFT-TAIL RETURNS VS. NORMAL



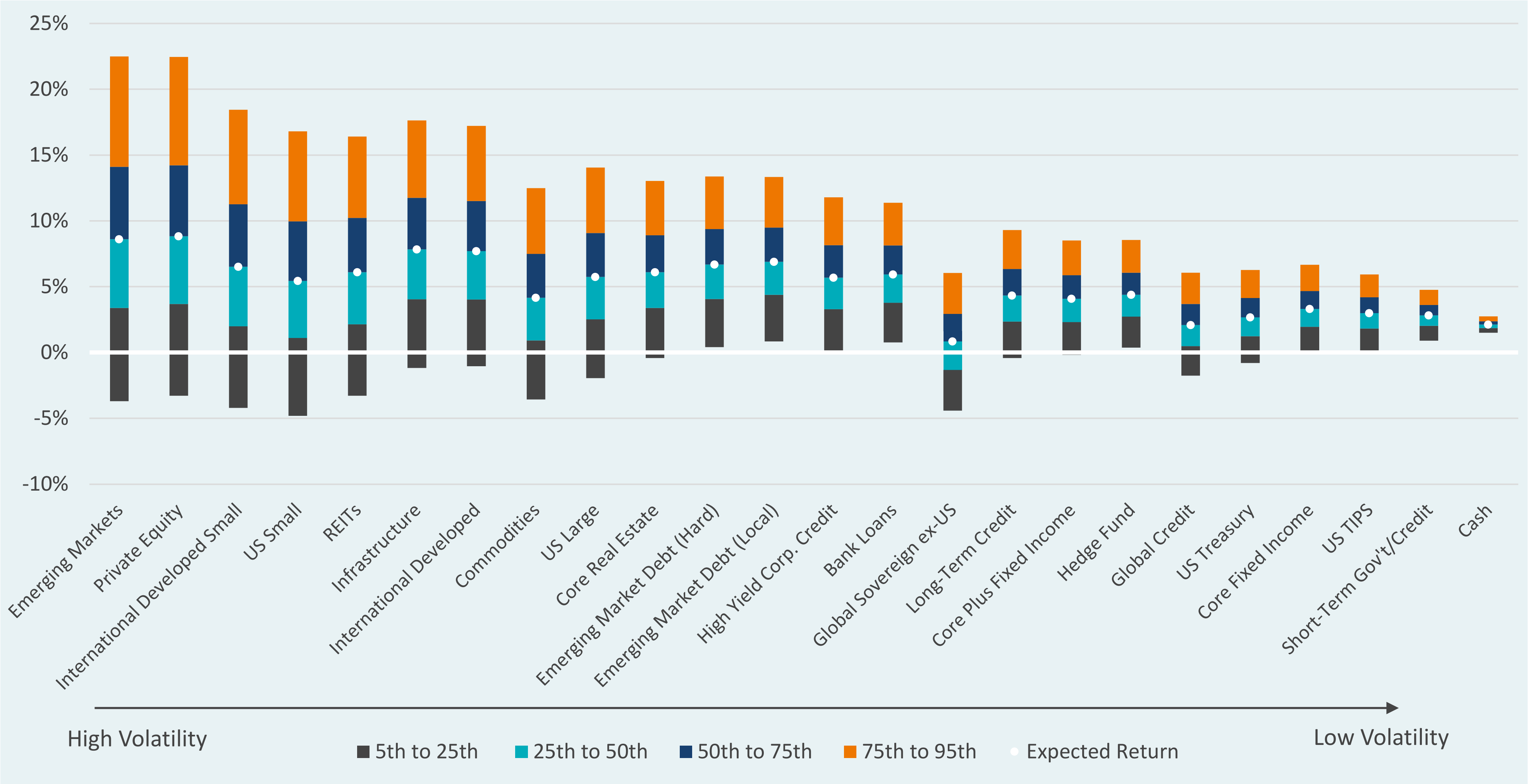
Source: Verus, Standard & Poor's

Range of likely 10 year outcomes



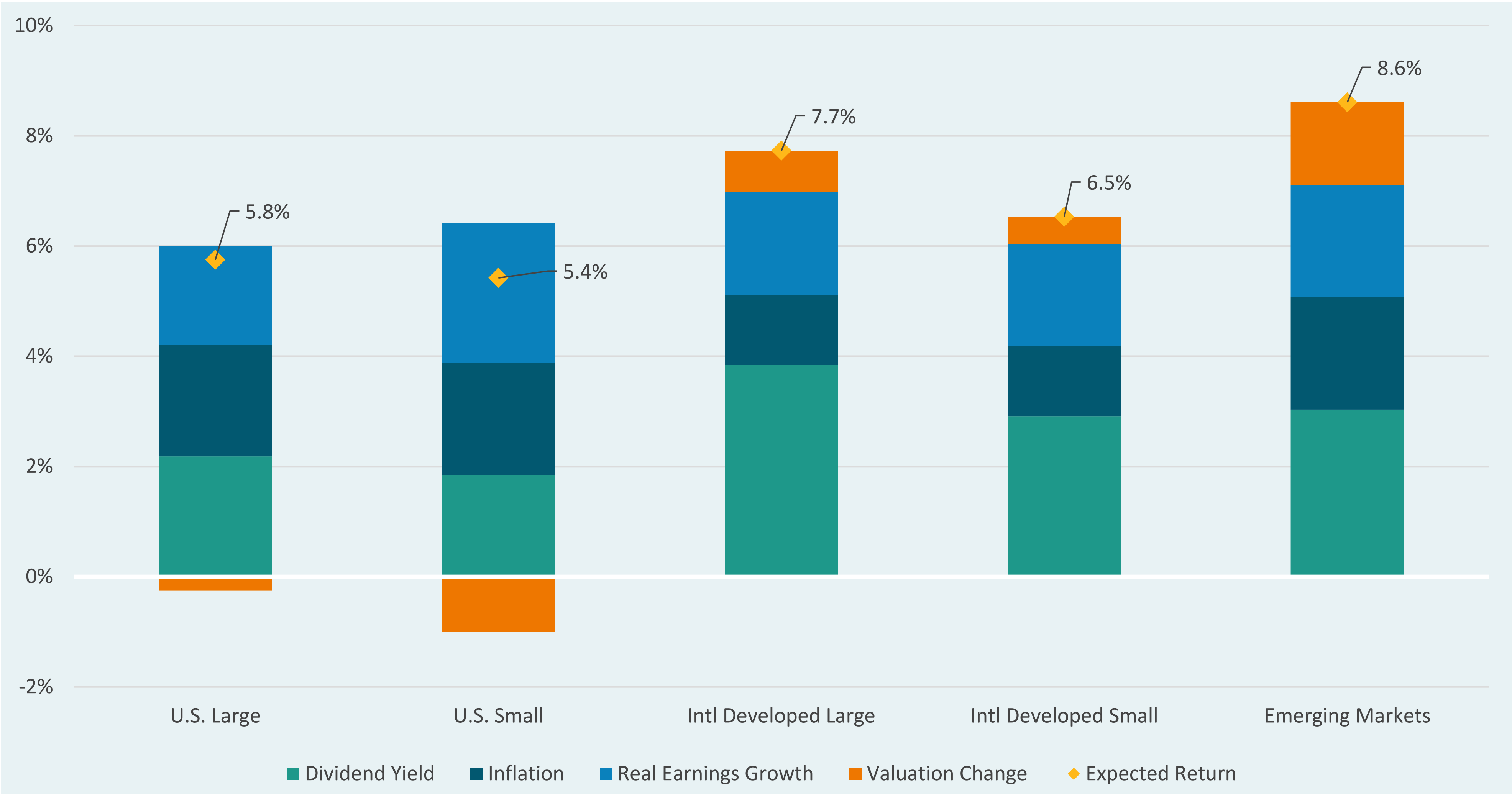
Range of likely 10 year outcomes

10-YEAR RETURN 90% CONFIDENCE INTERVAL



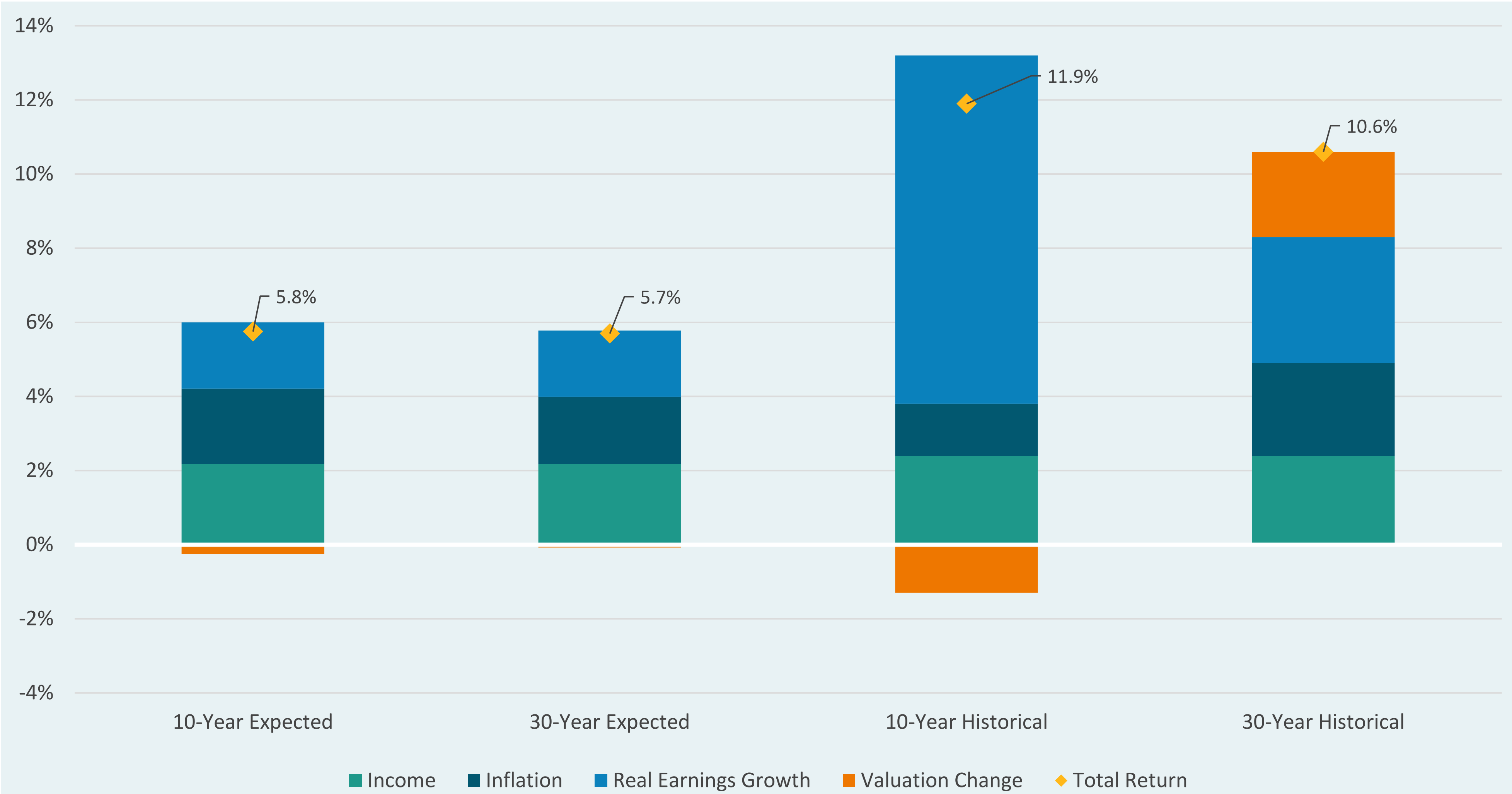
Equity

Equity return forecasts



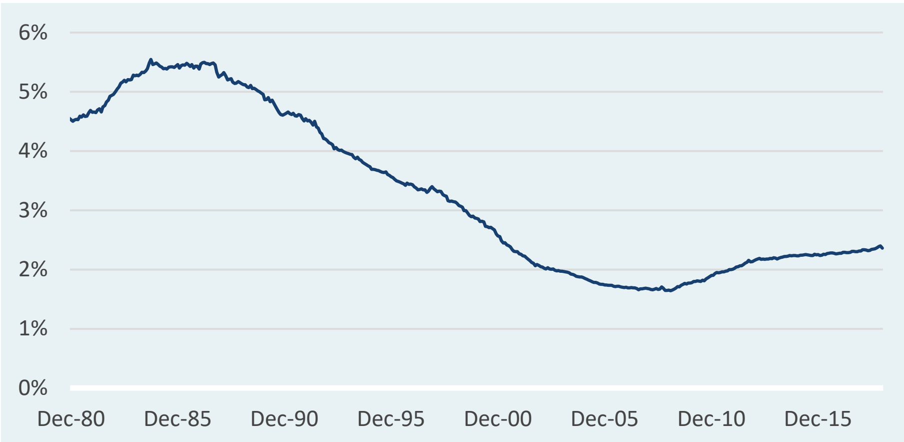
Source: Verus

U.S. equity – expected vs. history

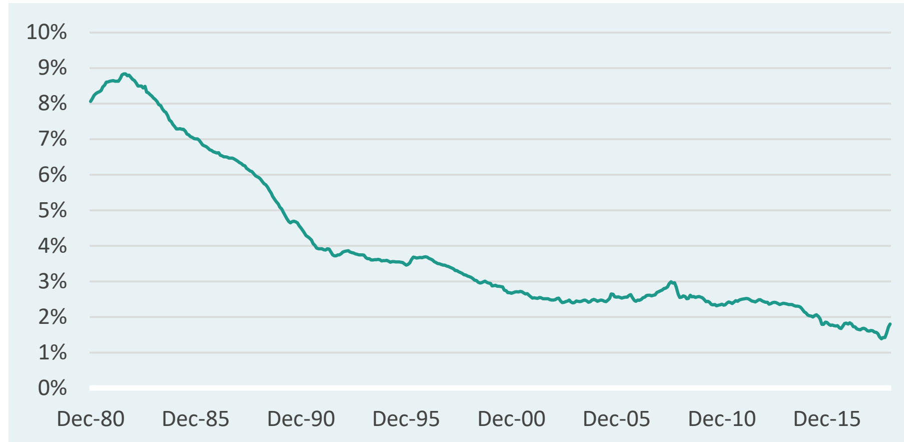


U.S. equity return building blocks

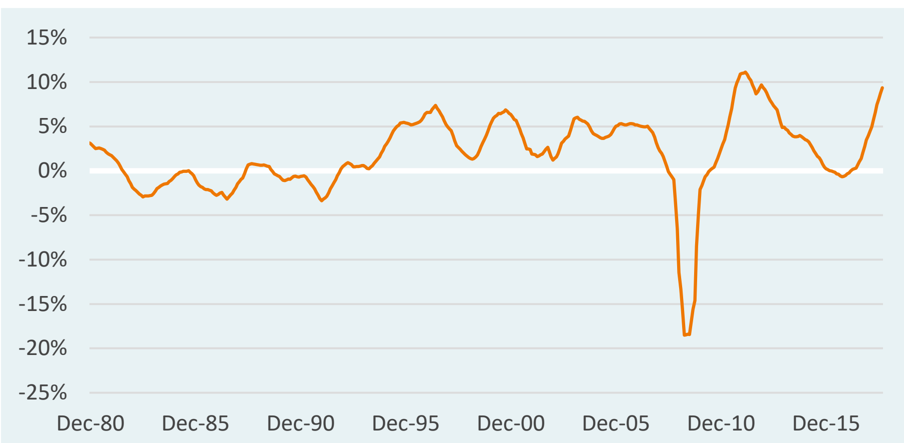
10-YEAR ROLLING INCOME RETURN



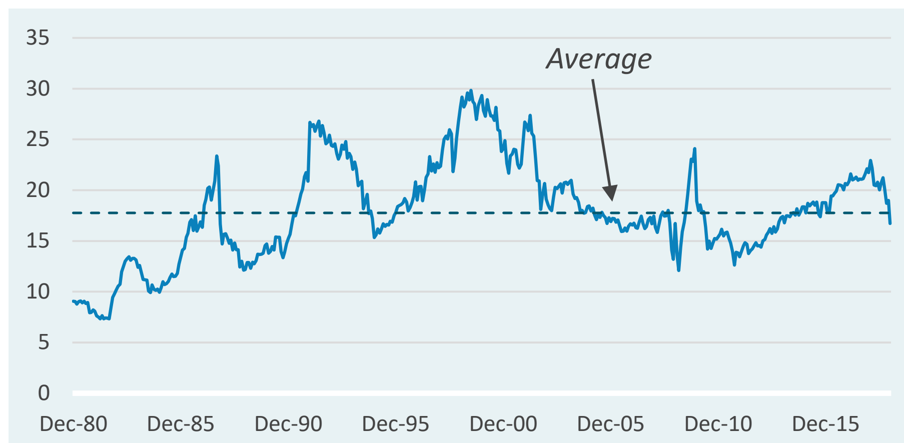
10-YEAR ROLLING INFLATION (CPI)



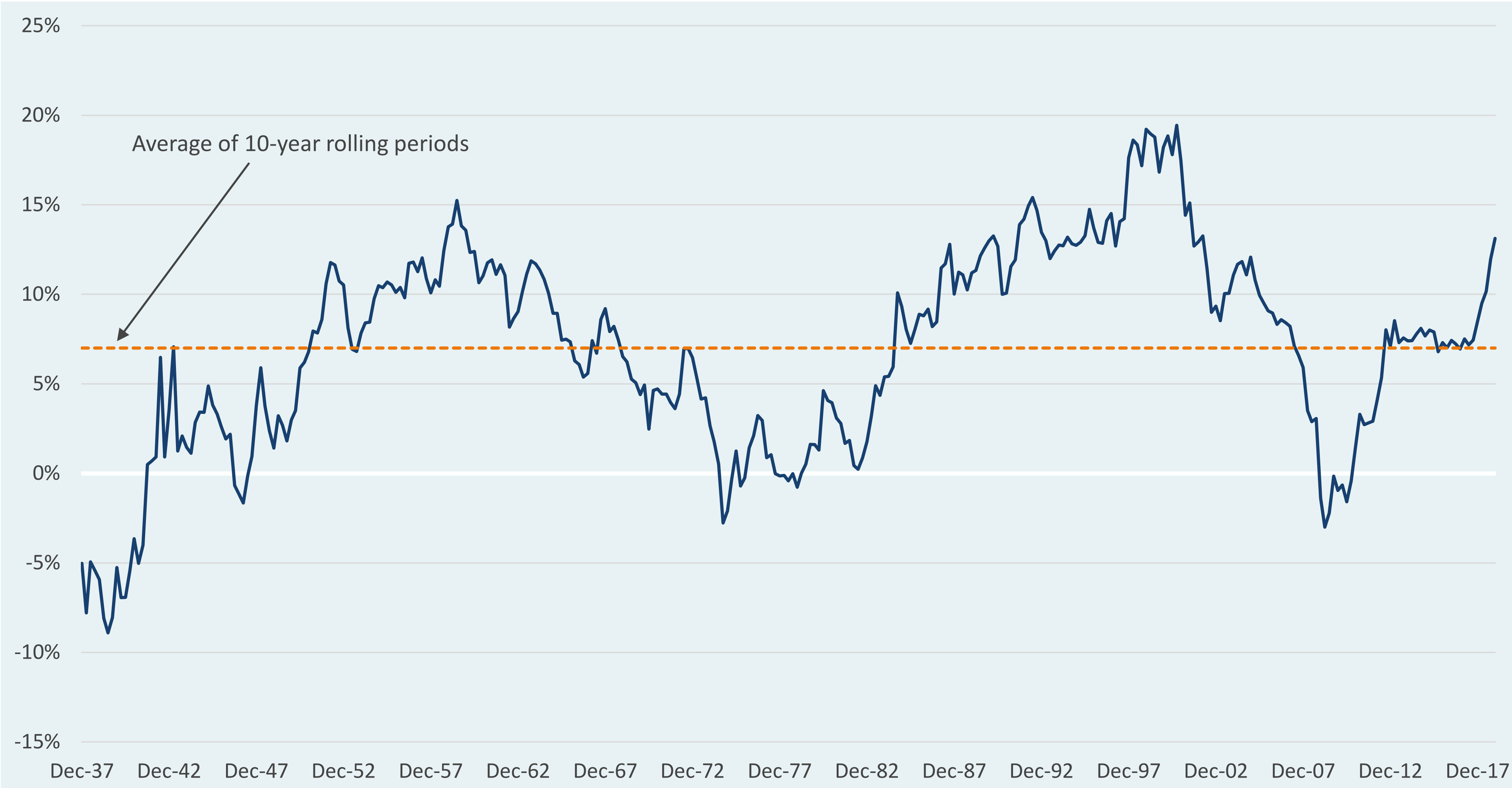
10-YEAR ROLLING REAL EARNINGS GROWTH



TRAILING 12-MONTH P/E RATIO



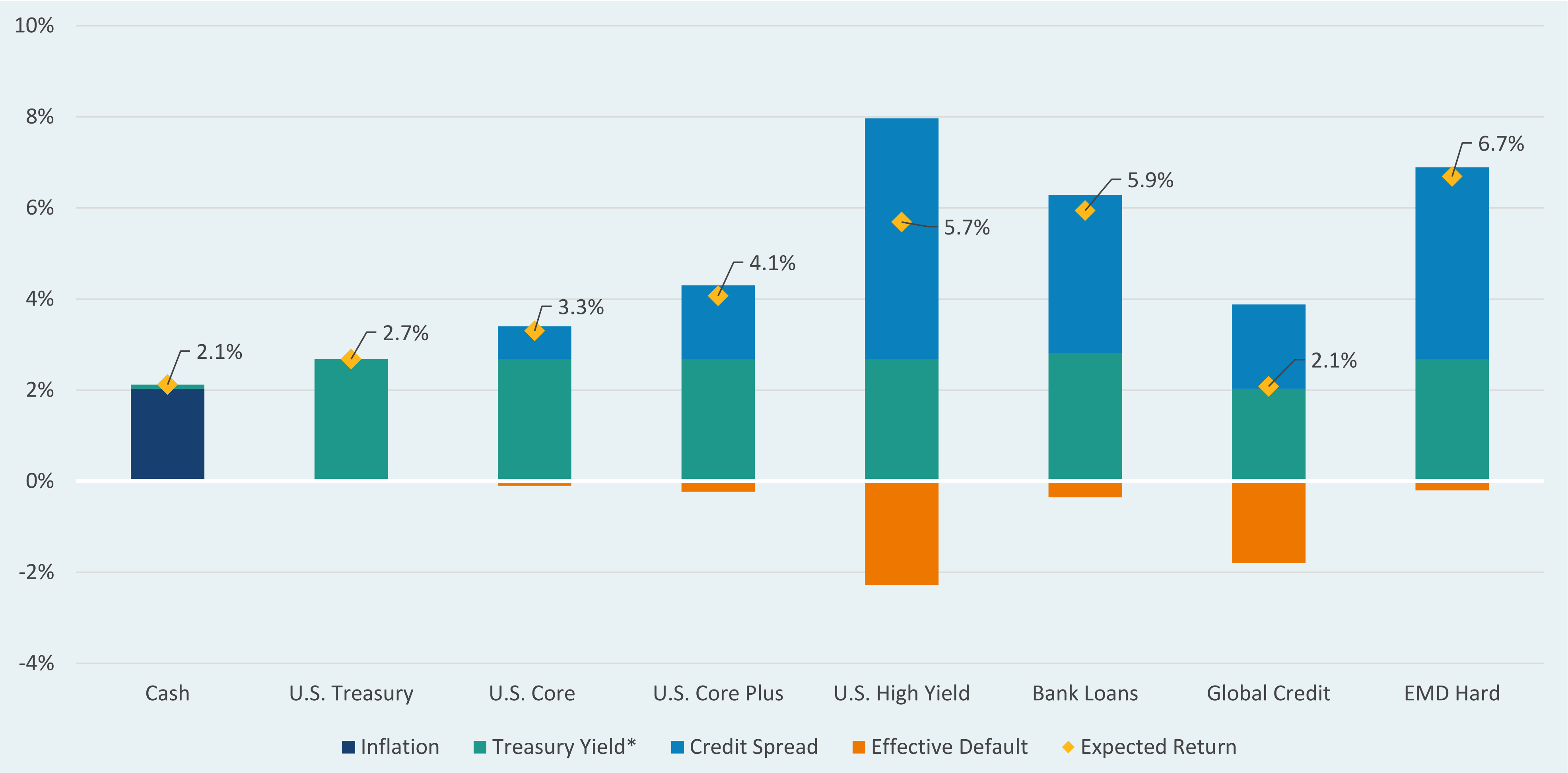
U.S. equity – 10-year rolling returns



Source: Bloomberg, S&P 500 Index, as of 12/31/18

Fixed income

Fixed income return forecasts

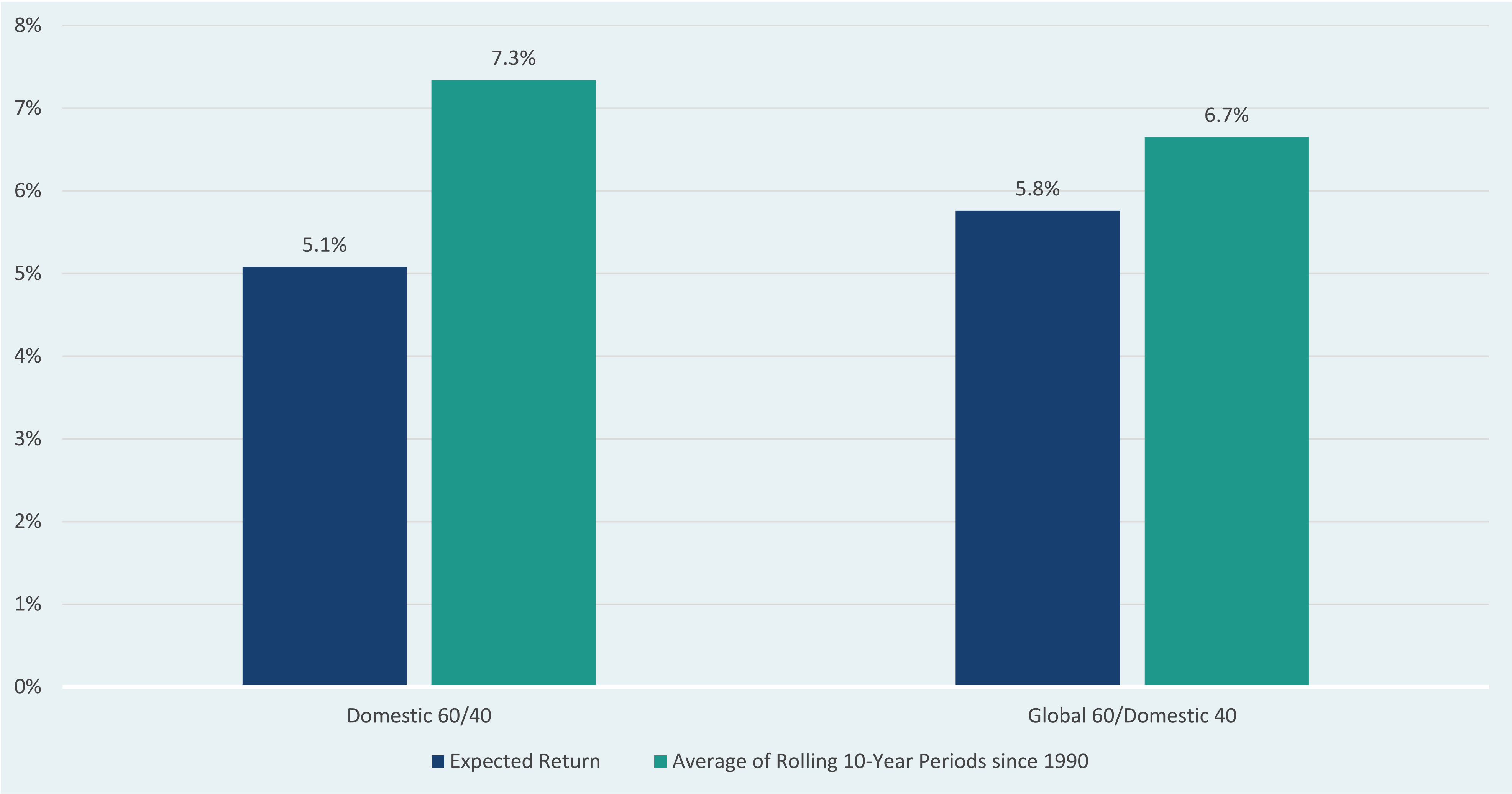


Source: Verus

**Bank loans uses 3-month USD Libor instead of the Treasury yield*

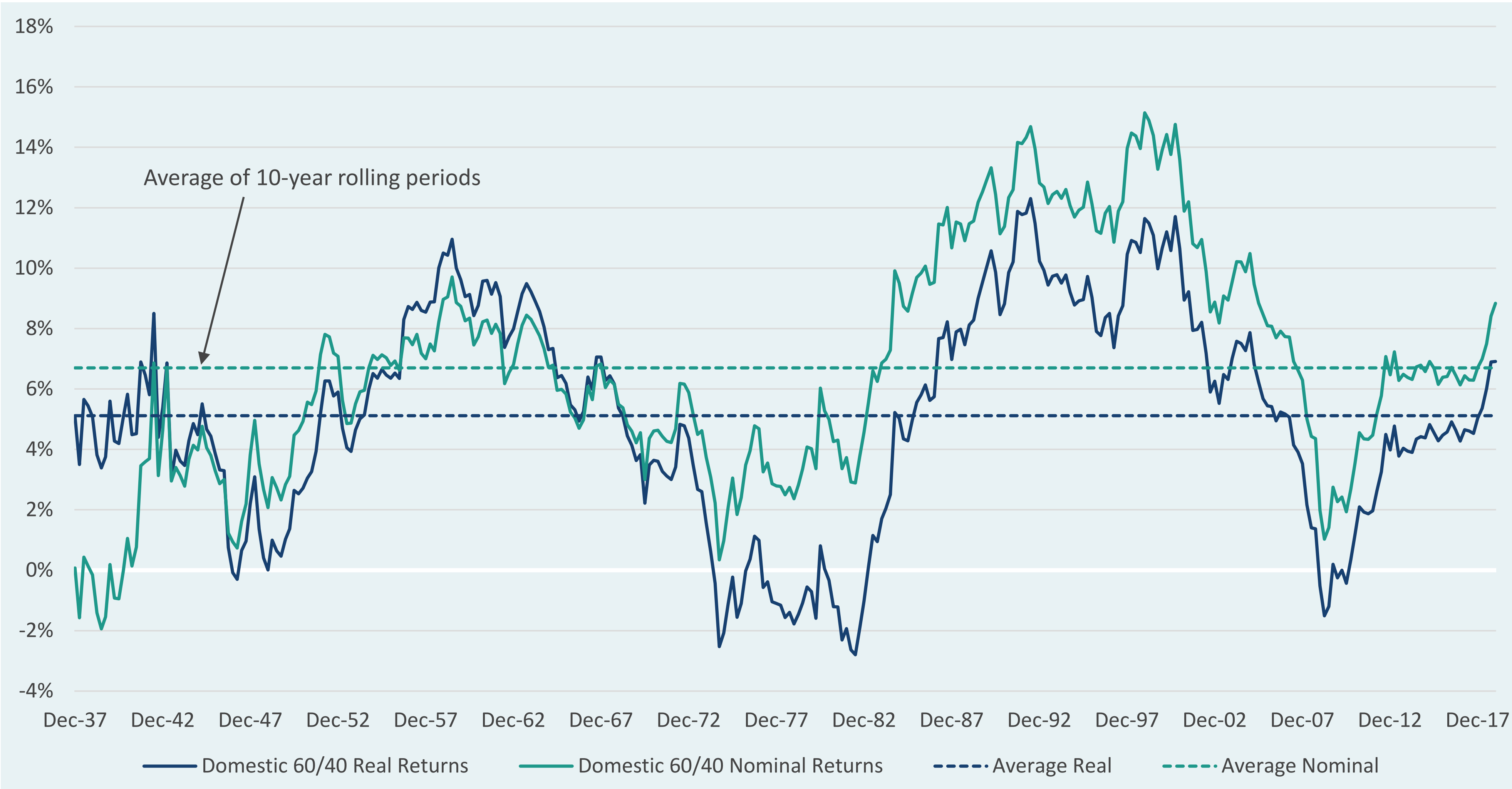
Portfolio expectations

Portfolio expected returns



Source: Verus, Morningstar, as of 12/31/18, indices used include the S&P 500 Index, MSCI ACWI Index, and BBgBarc U.S. Aggregate Index

10-year rolling returns



Source: IA SBBI, as of 12/31/18

Longer vs. shorter-term expectations

10-year forecasts should typically not be used for shorter-term positioning

Longer-term return drivers

— Level of inflation

— Level of interest rates

— Level of growth

— Level of asset prices

Shorter-term return drivers

— Changes in inflation level & expectations

— Changes in interest rate level & expectations

— Changes in growth level & expectations

— Changes in asset prices

Shorter-term investment strategy should be focused on identifying *changes* in the environment

An investor's longer-term & shorter-term expectations will often be different

Q&A

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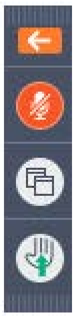

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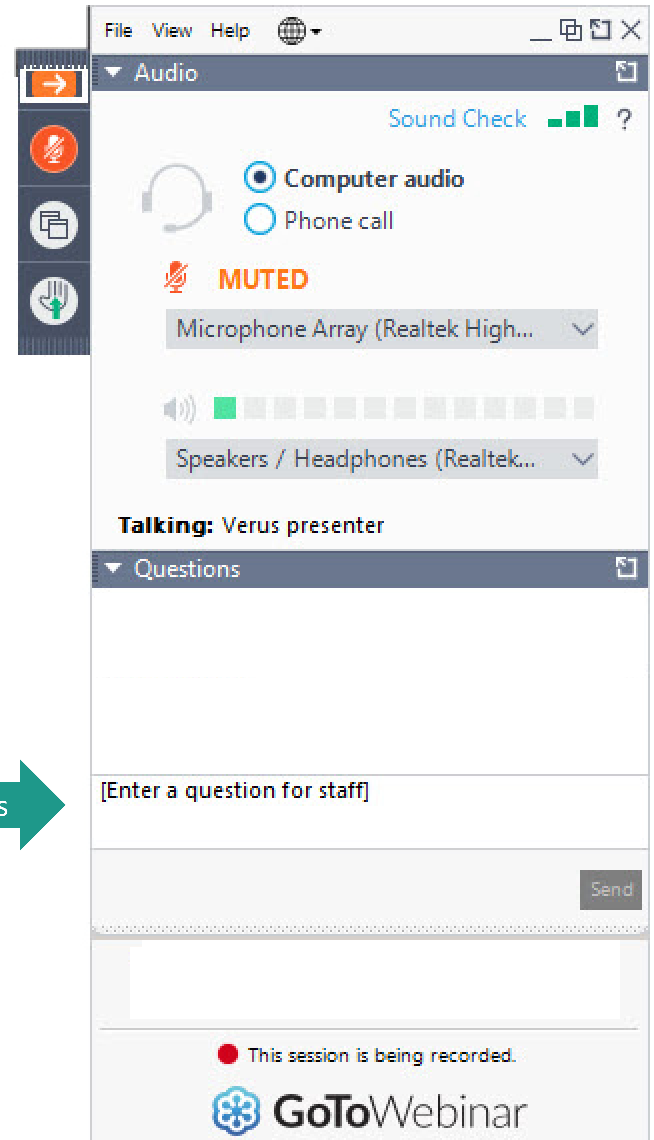

Ask questions here

Questions

Thank you