



# Capital Market Assumptions Review

## Santa Barbara County Employees' Retirement System

March 22, 2023



# Capital Markets Assumptions

## Philosophy

- Each year, RVK's general consulting and research teams collaborate to review the capital markets environment and update long-term, forward-looking capital markets assumptions (CMAs) for each asset class utilized by our clients.
- The forecast horizon is for long-term periods, typically 10 years or more.
- The components we estimate include:
  - Return
  - Risk (volatility of returns)
  - Correlation (relationship of asset class returns with all other asset classes)
- Return assumptions are generally index-based, net of fees, and assume no investment manager alpha.
- Annual updates are typically gradual and incorporate historical performance, current valuations, as well as the overall economic environment.

# What does it mean to get CM Assumptions “right”?

## *Relative accuracy is most important...*

- **Relative Accuracy:** Assumptions capture the relative relationships between asset classes, which are key to making trade-off decisions when modeling.
  - Having some assumptions that are spot on, and others that are far off, will produce unbalanced and poorly diversified portfolios.

## *But “absolute” accuracy matters too – just not as much.*

- **Absolute Accuracy:** Assumptions reflect the absolute values actually experienced in future long-term market environments.
  - Having assumptions that are too high or too low across the board can cause a Fund to believe it can distribute more than it can afford or restrict spending more than necessary.

# Themes for 2022 Capital Markets Assumptions

- Past and future inflation levels are studied and considered given market conditions, break-even indications, sovereign intervention, and inflation component pricing behavior.
  - *RVK's 2023 inflation assumption remained constant compared to 2022. This reflects short-to medium-term inflationary pressures stemming from ongoing supply chain bottlenecks, declining stimulus driven demand, and continued wage growth pressures while also accounting for longer-term deflationary factors such as deficits, debt, demographics, automation and globalization.*
- Return decomposition models are run and examined in light of current and possible future market conditions.
  - *Equity return assumptions were increased, given improved valuation levels – although still elevated domestically – following negative returns in 2022. Dividend yields also improved.*
- Yield history, current environment, and prospective environments are considered.
  - *Most fixed income return assumptions were increased, reflecting elevated current yields – but with the expectation that the inverted yield curve will not persist indefinitely.*

Asset Class	Return Expectation	Rationale
US Equity	↑	Improved Valuations & Yields
Non-US Equity	↑	Improved Valuations, Yields & Currency Expectations
Fixed Income	↑	Higher Yields

# Building Block Methodology

**Approach:** The sum of the building blocks equals expected return

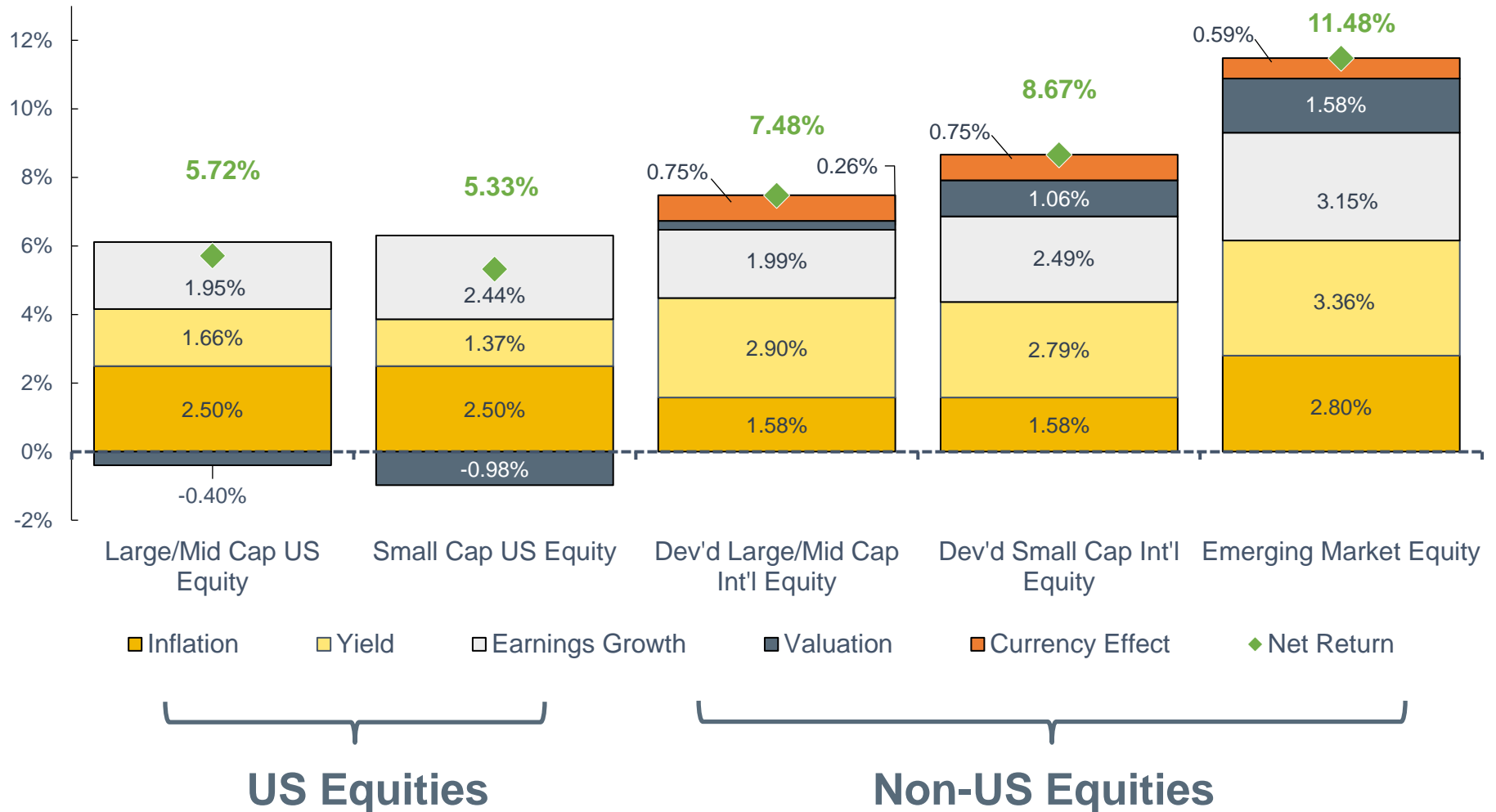


**Expected Return Building Blocks**

For illustrative purposes only. While the above factors generally inform the direction and magnitude of the capital market assumptions, RVK also considers qualitative, triangulation, and other factors as needed, when arriving at final assumption values. Real Growth includes GDP and profit margin growth.

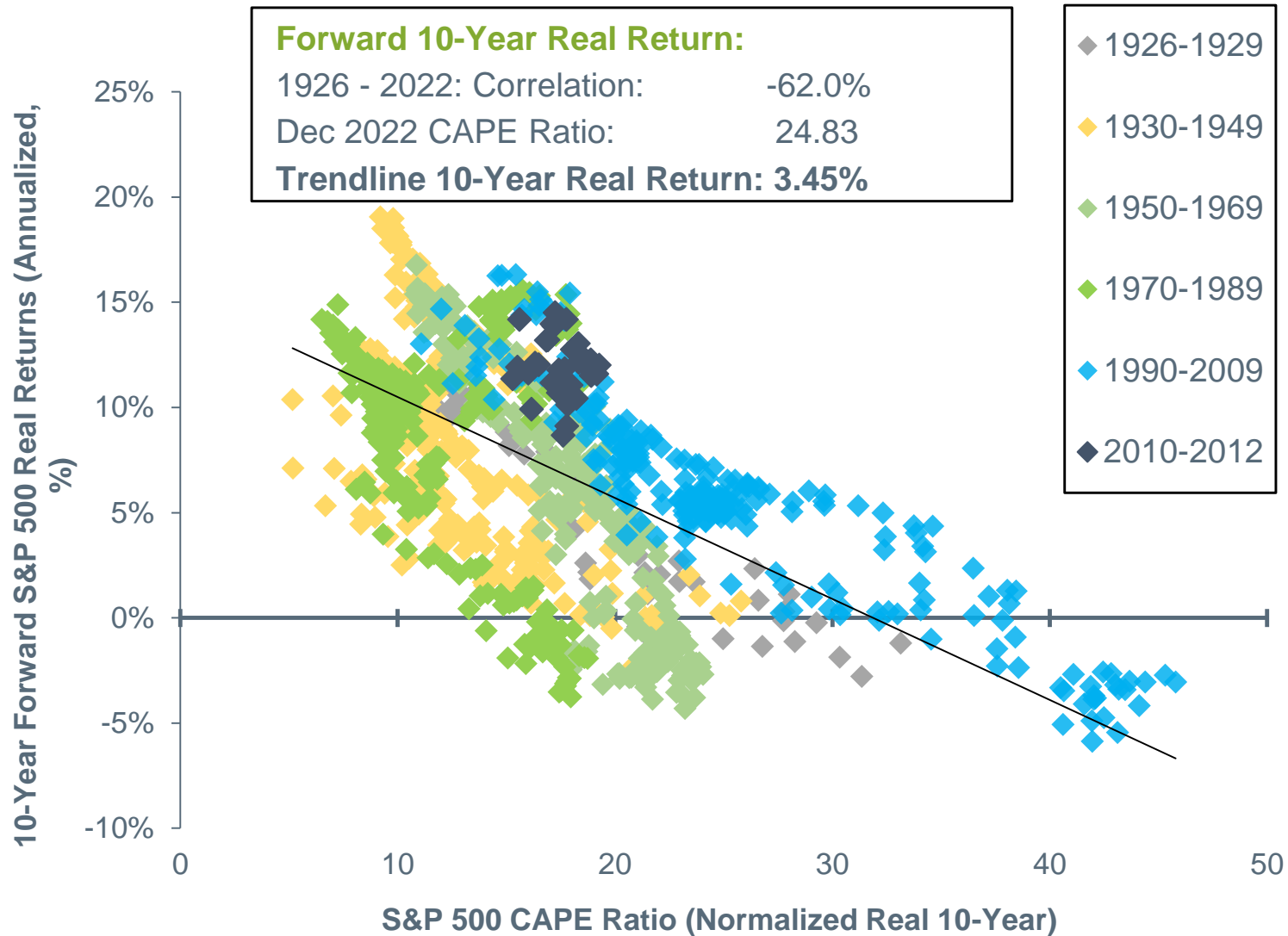
# RVK Return Methodology for Public Equities

## 2023 Decomposition of the Building Blocks for Public Equity Asset Classes



# US Equity Valuations

## Relationship between Shiller P/E and Forward 10-Year Returns

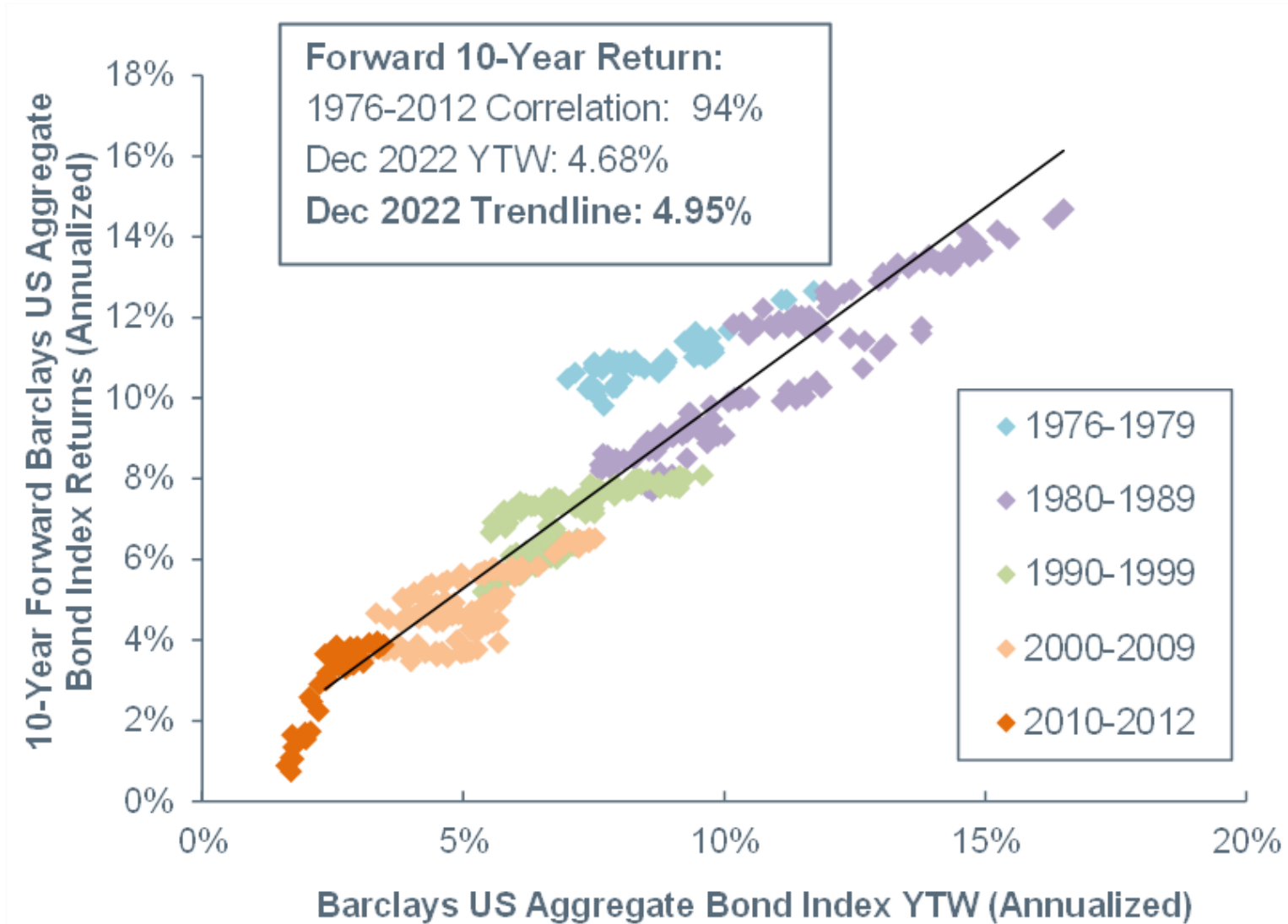


RVK Broad US Equity assumption is a combination of 94.0% Large/Mid Cap US Equity and 6.0% Small Cap US Equity.

Source: RVK, based on data from the Robert Shiller Database (2023). December 2022 CAPE ratio uses the S&P 500 earnings estimate for the Q4 2022.

# US Fixed Income Valuations

## Relationship between YTW and Forward 10-Year Returns

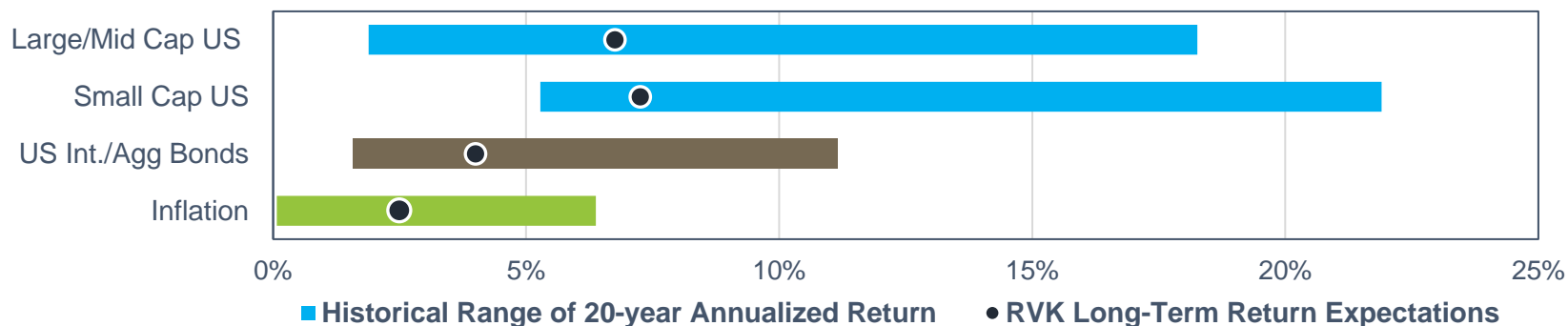


Source: FactSet (2023)

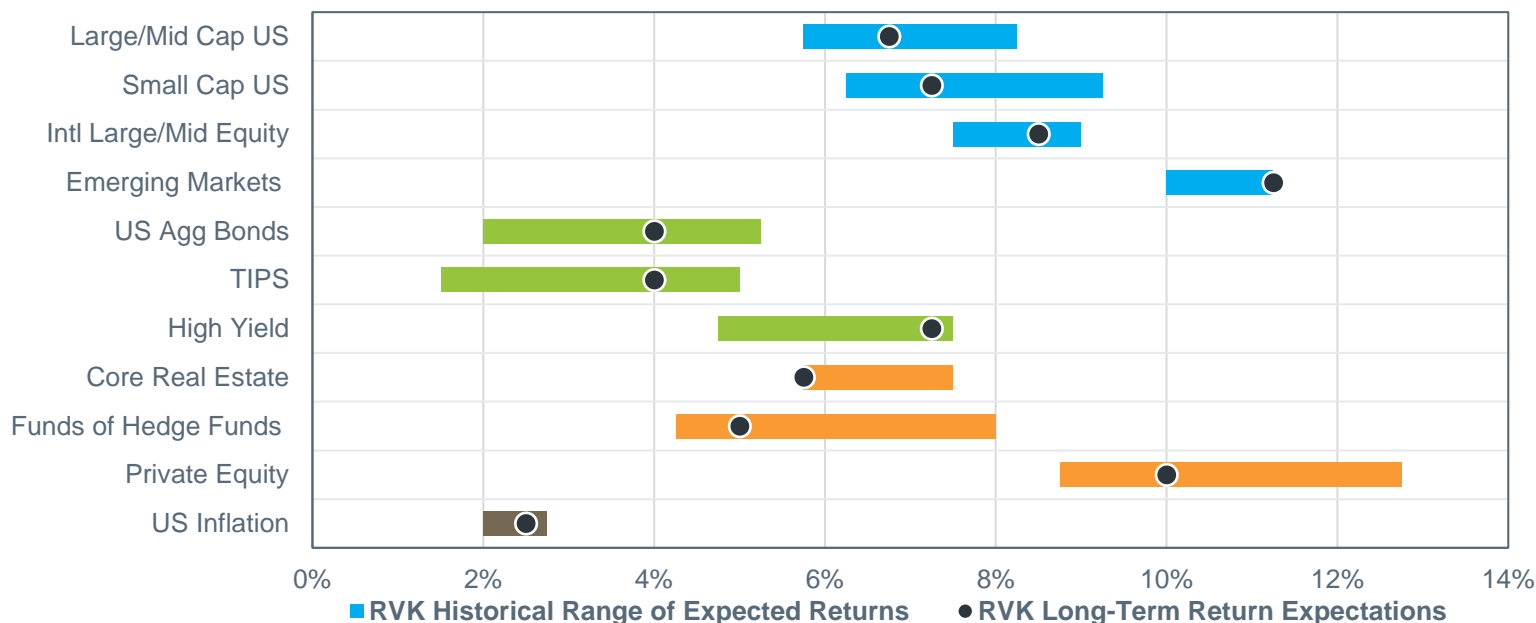


# Historical Perspective of Expected Returns

## RVK Long-Term Expected Returns vs. Historical Range of Returns<sup>1</sup>



## 2023 Expected Returns vs. RVK Historical Range of Expected Returns<sup>2</sup>

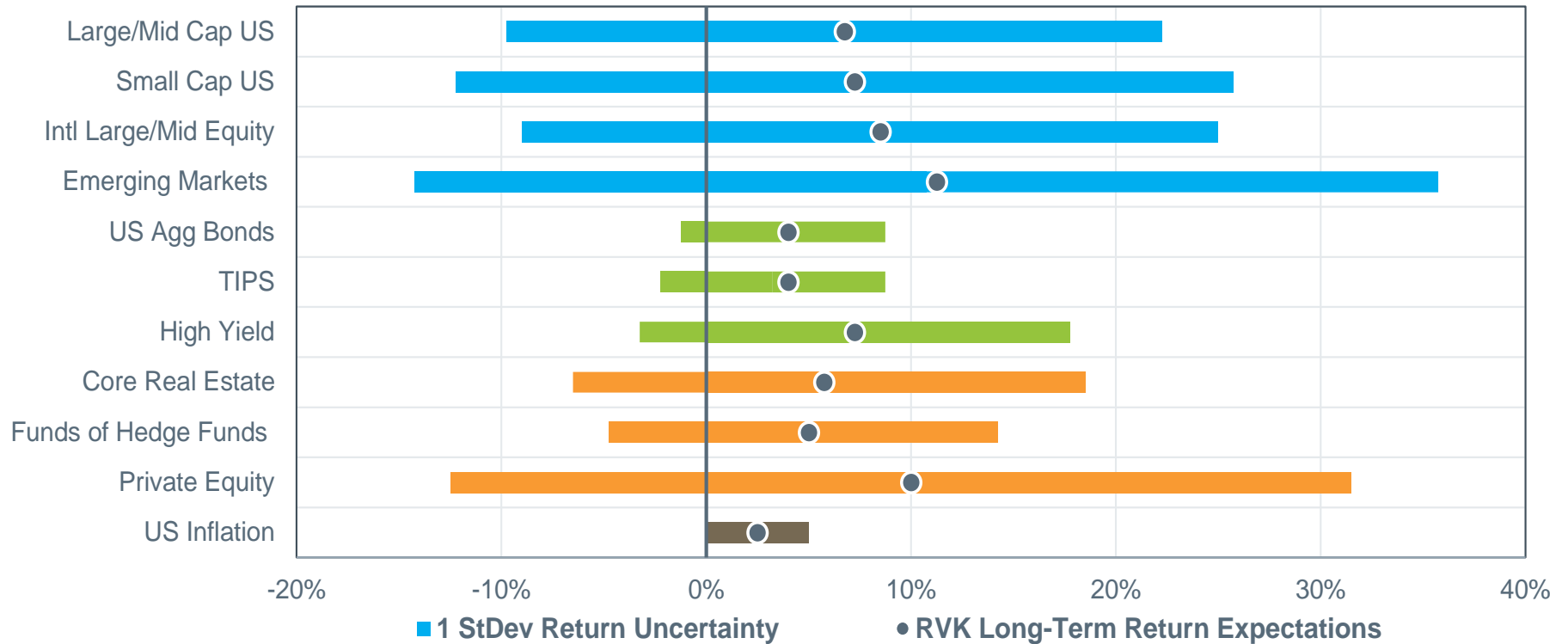


<sup>1</sup> Historical range shows the minimum and maximum 20-year annualized return for a given asset class based on monthly rolling 20-year annualized return series starting from Jan 1926. Large/Mid Cap US is represented by SBBI US Large Stock; Small Cap US by SBBI US Small Stock; US Int./Agg Bonds by SBBI US Intermediate Government Jan 1926 – December 1999 and Bloomberg US Aggregate Bond Index thereafter; US Inflation by SBBI US Inflation.

<sup>2</sup> Data shown includes 2006 through 2023 Capital Market Assumptions for selected asset classes.

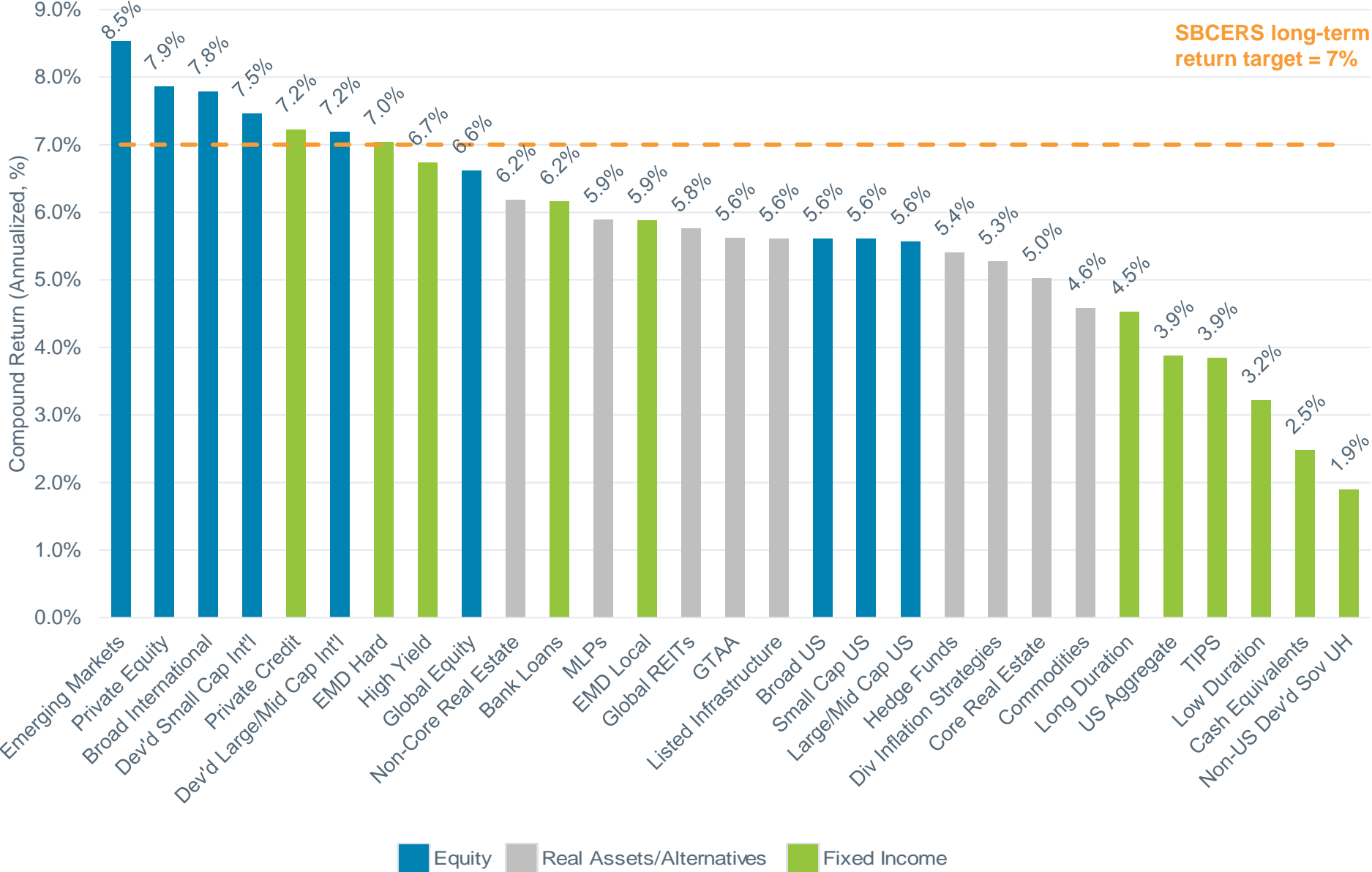
# Asset Return Expectations and Uncertainty

## RVK 2023 Long-Term Return Expectations and Uncertainty of Returns Distribution

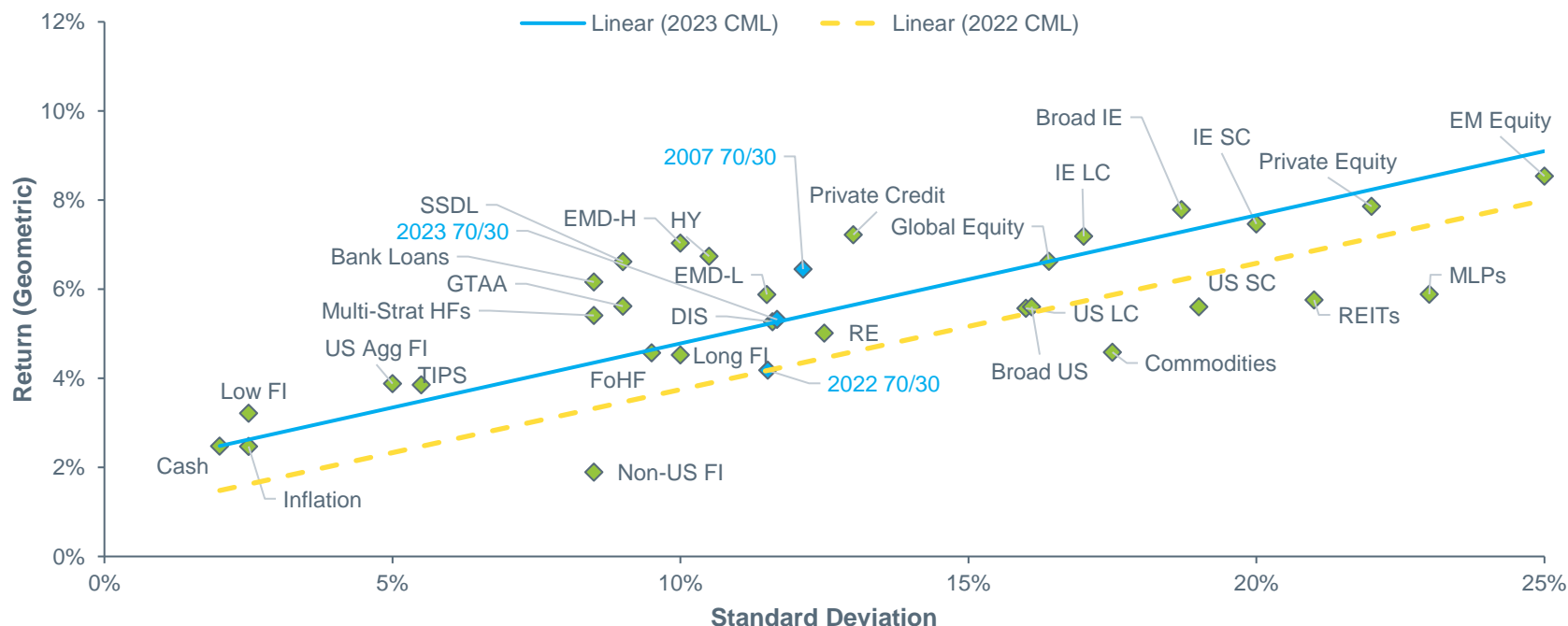


<sup>1</sup> StDev return uncertainty is based on RVK 2023 CMA risk assumption for each asset class.

# Expected Geometric Returns



# Capital Markets Line



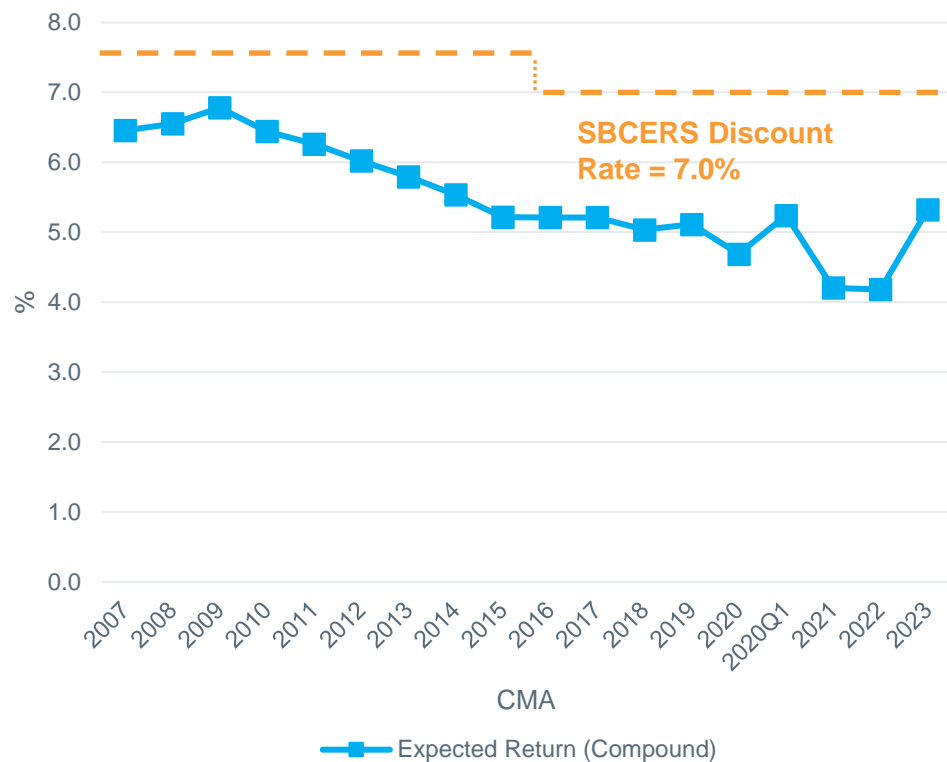
Data Labels	Asset Class
US LC	Large/Mid Cap US Equity
US SC	Small Cap US Equity
Broad US	Broad US Equity
IE LC	Dev'd Large/Mid Cap Int'l Equity
IE SC	Dev'd Small Cap Int'l Equity
EM Equity	Emerging Markets Equity
Broad IE	Broad International Equity
Global Equity	Global Equity
2023 70/30	2023 Assumption 70/30 US Equity/FI
2022 70/30	2022 Assumption 70/30 US Equity/FI
2007 70/30	2007 Assumption 70/30 US Equity/FI
US Agg FI	US Aggregate Fixed Income
Non-US FI	Non-US Dev'd Sovereign Fixed Income UH
EMD-H	Emerging Markets Debt Hard Currency
EMD-L	Emerging Markets Debt Local Currency
TIPS	TIPS

Data Labels	Asset Class
Low FI	Low Duration Fixed Income
Long FI	Long Duration Fixed Income
HY	High Yield
Private Credit	Private Credit
SSDL	Senior Secured Direct Lending
Bank Loans	Bank Loans
RE	Core Real Estate
REITs	Global REITs
MLPs	MLPs
FoHF	Funds of Hedge Funds
Multi-Strat HFs	Multi-Strategy Hedge Funds
GTAA	GTAA
Private Equity	Private Equity
Commodities	Commodities
DIS	Diversified Inflation Strategies
Inflation	US Inflation
Cash	Cash Equivalents

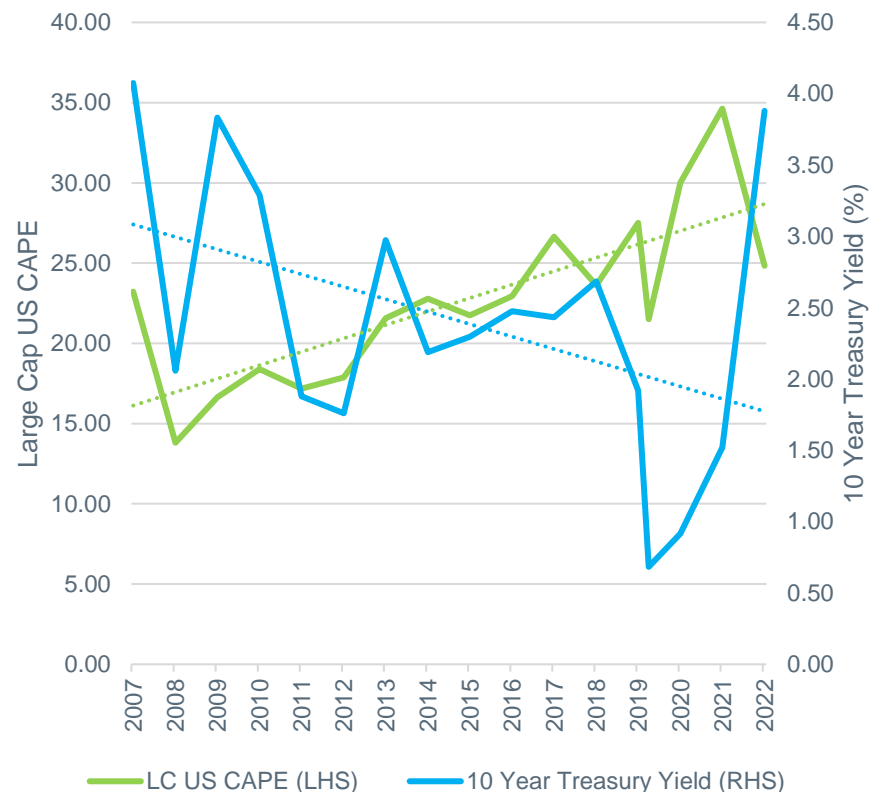
Capital Markets Line is based on risk and return assumptions for Cash and Global Equity.

# Traditional 70/30 Return Expectations over Time

## Historical US 70/30 Expected Risk-Adjusted Return Assumption



## US Equity Valuations and 10 Year Treasury Yields



	2012	2022	10 Year Difference
10 Year Treasury Yield (%)	1.76	3.88	+2.12
Large/Mid Cap US Equity Valuations (CAPE Ratio)	17.88	24.83	+6.95

Historical US 70/30 assumptions consist of 70% Broad US Equity and 30% US Aggregate Fixed Income. SBCERS reduced its Discount Rate from 7.5% to 7.0% in 2016.

The CAPE (Cyclically Adjusted Price-to-Earnings) Ratio is a valuation measure defined as :

$$CAPE\ Ratio = (Share\ Price) / (10\ Year\ Average,\ Inflation-Adjusted\ Earnings)$$

# Factors to keep in mind when evaluating assumptions

- While excessively high capital market assumptions provide the hope of higher rates of expected return, this prospect may not actually materialize if the market environment does not support them and can often lead to suboptimal portfolio structures.
- A well-structured and executed investment program will be best positioned to benefit from the available market returns ***regardless of the forecasts for total return.***
- Well-structured asset allocations (and the resulting outcomes) are largely produced by the relative accuracy of assumptions, not simply by forecasting higher absolute returns.

# SBCERS 2023 Capital Market Assumptions

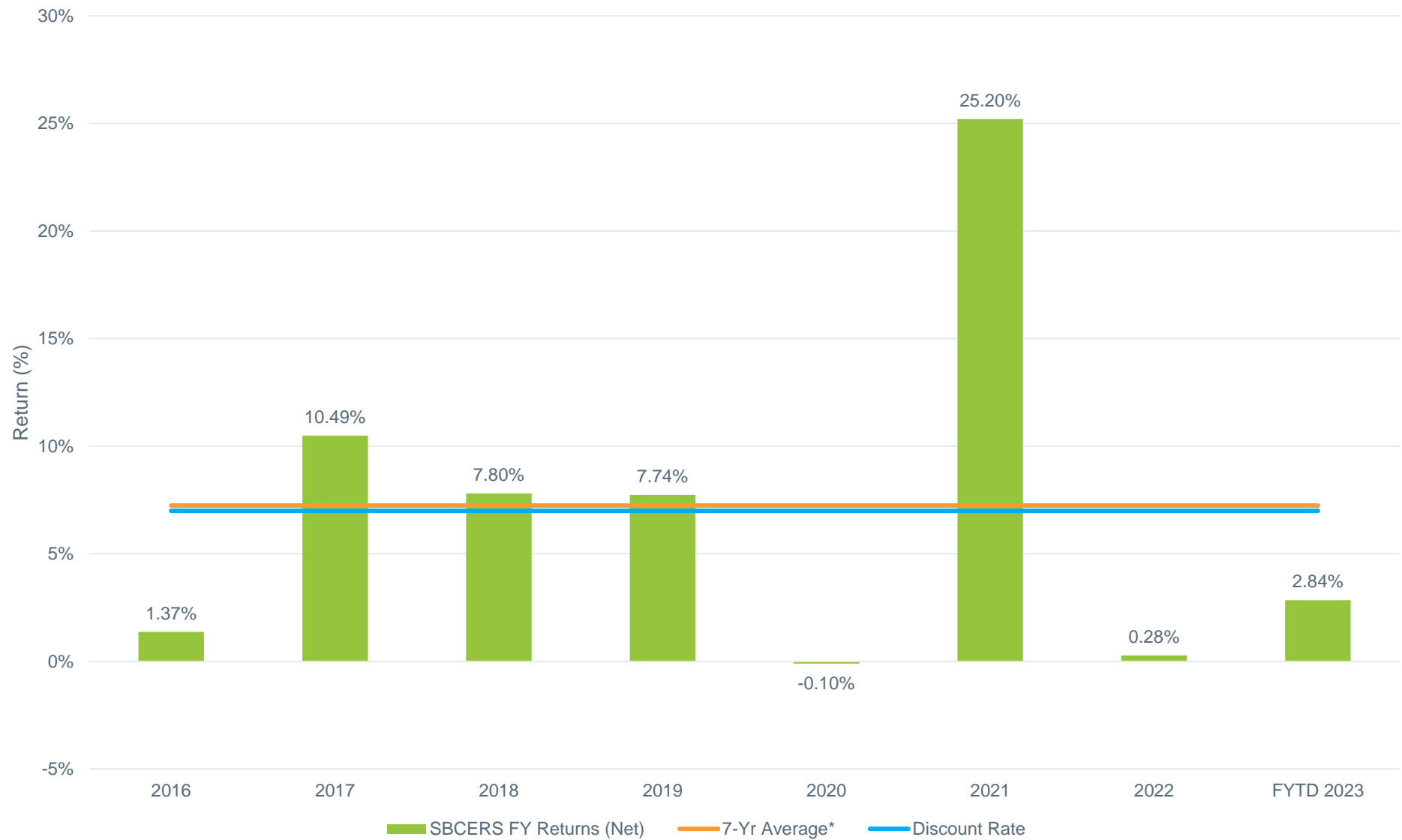
## Assumption Changes Since Reducing Discount Rate from 7.5% to 7.0%

Asset Class	2016				2023				Change (2023 – 2016)			
	Nominal Return (Geo.)	Risk (St. Dev)	Nominal Return (Arith.)	Return/Risk Ratio (Geo.)	Nominal Return (Geo.)	Risk (St. Dev)	Nominal Return (Arith.)	Return/Risk Ratio (Geo.)	Nominal Return (Geo.)	Risk (St. Dev)	Nominal Return (Arith.)	Return/Risk Ratio (Geo.)
Broad US Equity	5.60	17.80	7.05	0.31	5.61	16.10	6.80	0.35	0.01	-1.70	-0.25	0.04
Developed Int'l Equity	6.62	19.00	8.25	0.35	7.19	17.00	8.50	0.42	0.57	-2.00	0.25	0.07
EM Equity	7.40	29.00	11.00	0.26	8.54	25.00	11.25	0.34	1.14	-4.00	-0.25	0.08
Core FI	3.28	5.82	3.44	0.56	3.88	5.00	4.00	0.78	0.60	-0.82	0.56	0.22
Non-Core FI	5.43	11.08	6.00	0.49	6.61	7.24	6.85	0.91	1.18	-3.84	0.85	0.42
Real Return	6.22	13.22	7.03	0.47	6.33	8.70	6.68	0.73	0.11	-4.52	-0.35	0.26
Real Estate	6.60	15.29	7.67	0.43	5.58	14.39	6.54	0.39	-1.02	-0.90	-1.13	-0.04
Private Equity	7.41	25.50	10.25	0.29	7.86	22.00	10.00	0.36	0.45	-3.50	-0.25	0.07
<b>Total Fund</b>	<b>6.42</b>	<b>12.23</b>	<b>7.11</b>	<b>0.52</b>	<b>6.59</b>	<b>10.52</b>	<b>7.10</b>	<b>0.63</b>	<b>0.17</b>	<b>-1.72</b>	<b>-0.01</b>	<b>0.11</b>

In 2020, RVK modified the risk assumption methodology to incorporate a broader evaluation of the distribution of returns. Capital market assumptions prior to 2020 do not include the new risk methodology.

# SBCERS' FY Returns Since Discount Rate Revision

SBCERS Fiscal Year Returns Relative to RVK Assumptions and Assumed Actuarial Rate



\*7-Yr Average represents the annualized return for FY2016-FY2022.  
 FYTD 2023 return is as of 2/28/2023.



# Appendix



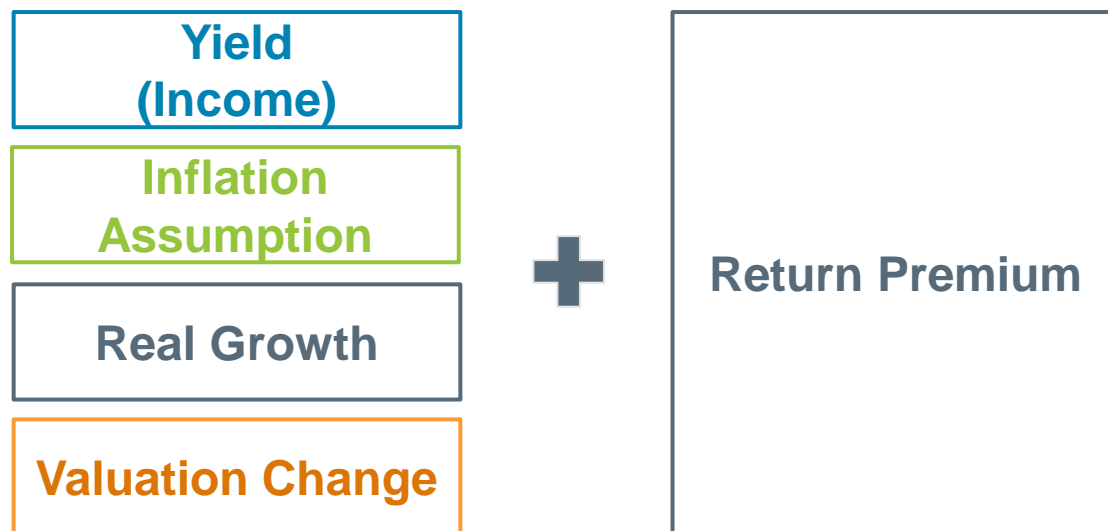
# Summary of Expected Return Methodology

Building Block Methodology	Yield	+	Inflation	+	Real Growth	±	Valuation Change
Cash Equivalents	Income						
Fixed Income	Income + OAS change + Expected interest rate changes (and duration impact)						
TIPS	Real Income + Inflation						
Public Equity	Income + Inflation + Real GDP/earnings growth + / - Valuation						
Core Real Estate	Income + Inflation + / - Valuation – Investment fees						
Hedge Funds	Income (collateral return, cash) + Beta return + Alpha return						
Commodities	Collateral return (cash assumption) + Spot return (inflation assumption) + Roll return						
Build-Up/Spread Methodology	Beta assumption	+	Illiquidity premium				
Private Credit	Bank loan assumption + Return premium						
Private Equity	US large/mid cap equity assumption + Return premium						
Asset Blend Methodology							
GTAA	30% global equity + 25% US Agg fixed income + 5% int'l developed fixed income + 10% EMD (local) + 10% TIPS + 10% high yield + 10% commodities						
Diversified Inflation Strategies	1/3 TIPS + 1/3 commodities + 1/3 global REITs						

While the above factors generally inform the direction and magnitude of the capital market assumptions, RVK also considers qualitative, triangulation, and other factors as needed, when arriving at final assumption values.

# Build-Up/Spread Methodology

**Output:** The sum of the building blocks equals expected return



**Expected Return Inputs**

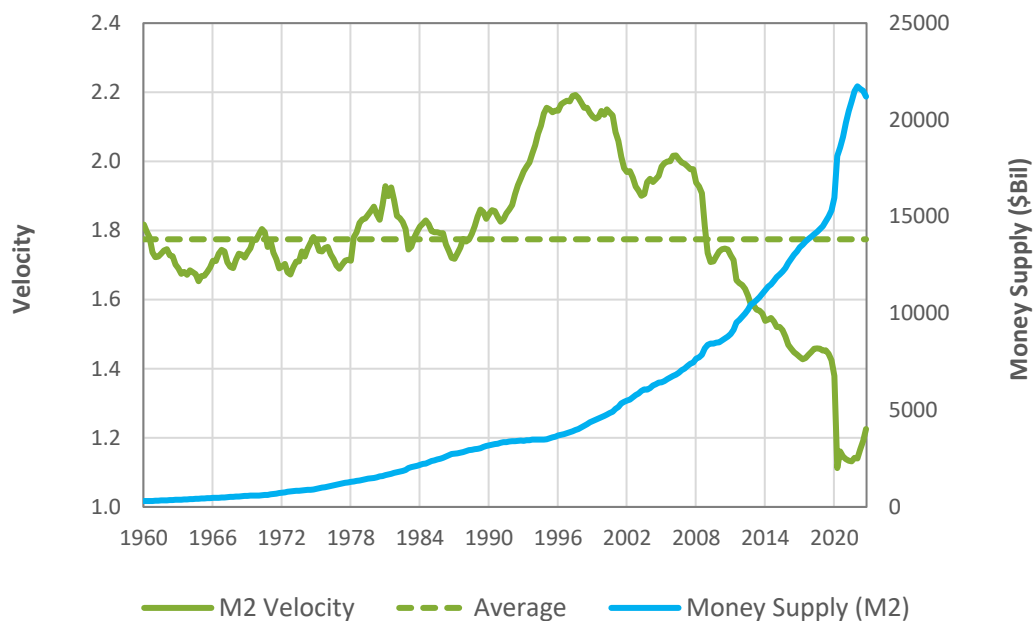
For illustrative purposes only. While the above factors generally inform the direction and magnitude of the capital market assumptions, RVK also considers qualitative, triangulation, and other factors as needed, when arriving at final assumption values. Real Growth includes GDP and profit margin growth.

# US Inflation & Cash Equivalents

US Inflation & Cash Equivalents									
Asset Class	2022			2023			One Year Adjustment		
	Nominal Return	Risk (StDev)	Nominal Return (Geo.)	Nominal Return	Risk (StDev)	Nominal Return (Geo.)	Nominal Return	Risk (StDev)	Nominal Return (Geo.)
US Inflation	2.50%	2.50%	2.47%	2.50%	2.50%	2.47%	--	--	--
Cash Equivalents	1.50%	2.00%	1.48%	2.50%	2.00%	2.48%	+1.00%	--	+1.00%

As of December 30, 2022	5-Year	7-Year	10-Year	20-Year	30-Year
Treasury Yield	3.99%	3.96%	3.88%	4.14%	3.97%
TIPS Yield	1.66%	1.61%	1.58%	1.62%	1.67%
Implied Expected Inflation	2.33%	2.35%	2.30%	2.52%	2.30%

Supply and Velocity of Money



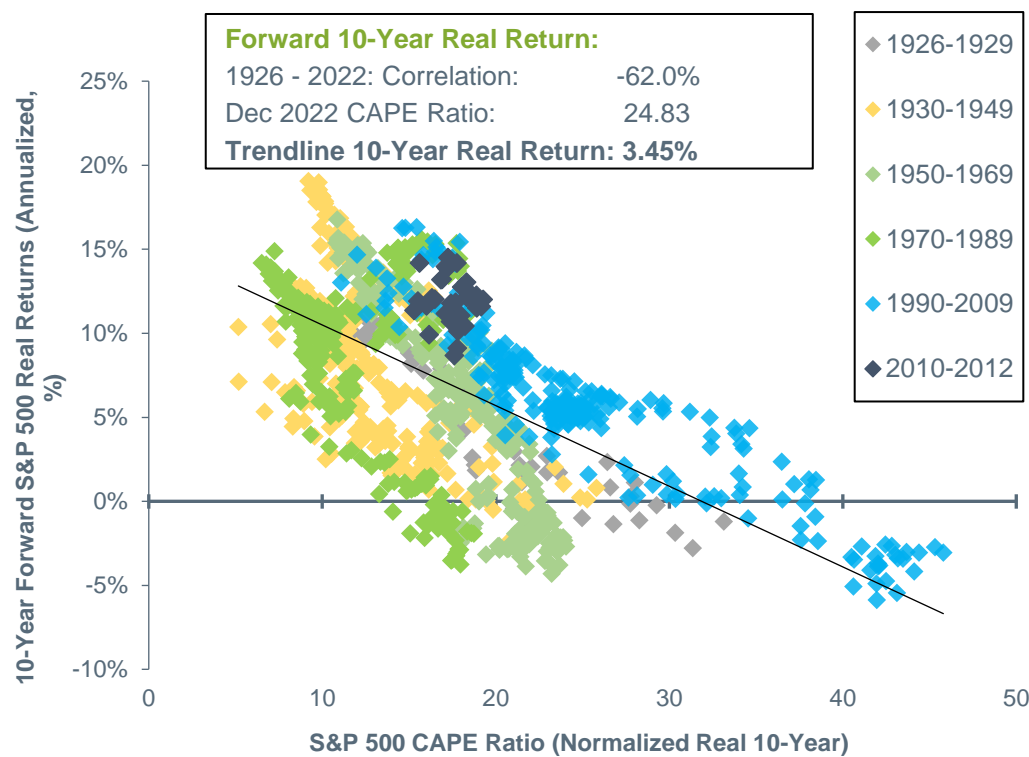
- The inflation assumption remained constant, to align with break-even inflation rates (as shown below), as well as to balance between near-term inflationary pressures and long-term deflationary factors.
- The cash assumption was increased to reflect increased yields.

Source: FactSet (2023).

# Public Equity – United States

Public Equity: US									
Asset Class	2022			2023			One Year Adjustment		
	Nominal Return	Risk (StDev)	Nominal Return (Geo.)	Nominal Return	Risk (StDev)	Nominal Return (Geo.)	Nominal Return	Risk (StDev)	Nominal Return (Geo.)
Large/Mid Cap US	5.75%	16.00%	4.56%	6.75%	16.00%	5.57%	+1.00%	--	+1.01%
Small Cap US	6.25%	19.00%	4.59%	7.25%	19.00%	5.61%	+1.00%	--	+1.01%
Broad US Equity	5.80%	16.00%	4.61%	6.80%	16.10%	5.61%	+1.00%	+0.10%	+1.00%

## Relationship between Valuations and Forward 10 Year Returns



- US equity return forecasts all increased relative to 2022.
- The increase was yield and valuation driven, as domestic equity returns dropped in 2022 with the Fed raising interest rates to combat inflation.
- Despite the drop in returns, the LC US valuation, as represented by the Shiller CAPE, stilled ranked in the 89<sup>th</sup> percentile of historical values.
- Thus, return assumptions remain lower than historical averages.

RVK Broad US Equity assumption is a combination of 94.0% Large/Mid Cap US Equity and 6.0% Small Cap US Equity.

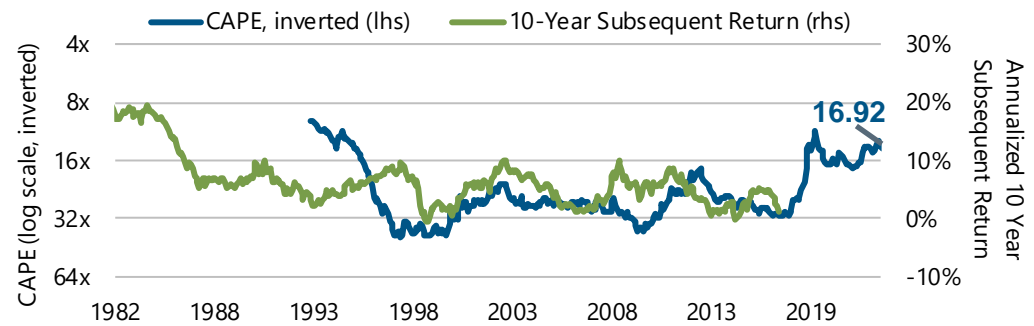
Source: RVK, based on data from FactSet (2023). December 2022 CAPE ratio uses the S&P 500 earnings estimate for the Q4 2022.

# Public Equity – International

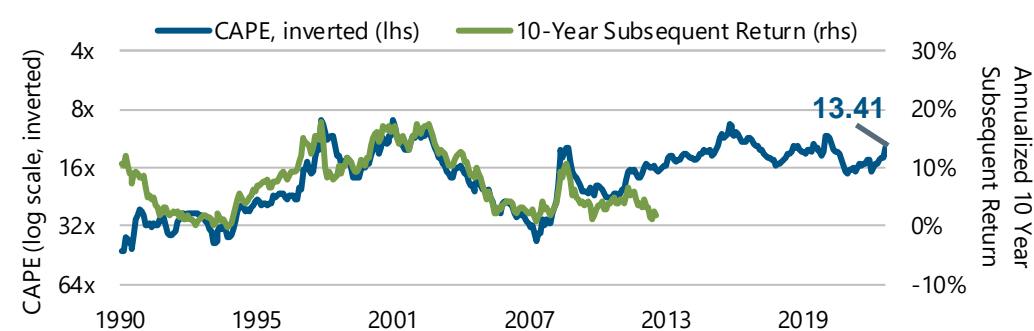
Public Equity: International									
Asset Class	2022			2023			One Year Adjustment		
	Nominal Return	Risk (StDev)	Nominal Return (Geo.)	Nominal Return	Risk (StDev)	Nominal Return (Geo.)	Nominal Return	Risk (StDev)	Nominal Return (Geo.)
Intl Large/Mid Equity	7.50%	17.00%	6.18%	8.50%	17.00%	7.19%	+1.00%	--	+1.01%
Dev'd Small Cap	8.00%	20.00%	6.19%	9.25%	20.00%	7.46%	+1.25%	--	+1.27%
Emerging Markets	10.25%	25.00%	7.52%	11.25%	25.00%	8.54%	+1.00%	--	+1.02%
Broad International	8.35%	18.65%	6.78%	9.35%	18.70%	7.79%	+1.00%	+0.05%	+1.01%

## Valuations: Cyclically-adjusted P/E

### EAFE valuations



### Emerging markets valuations



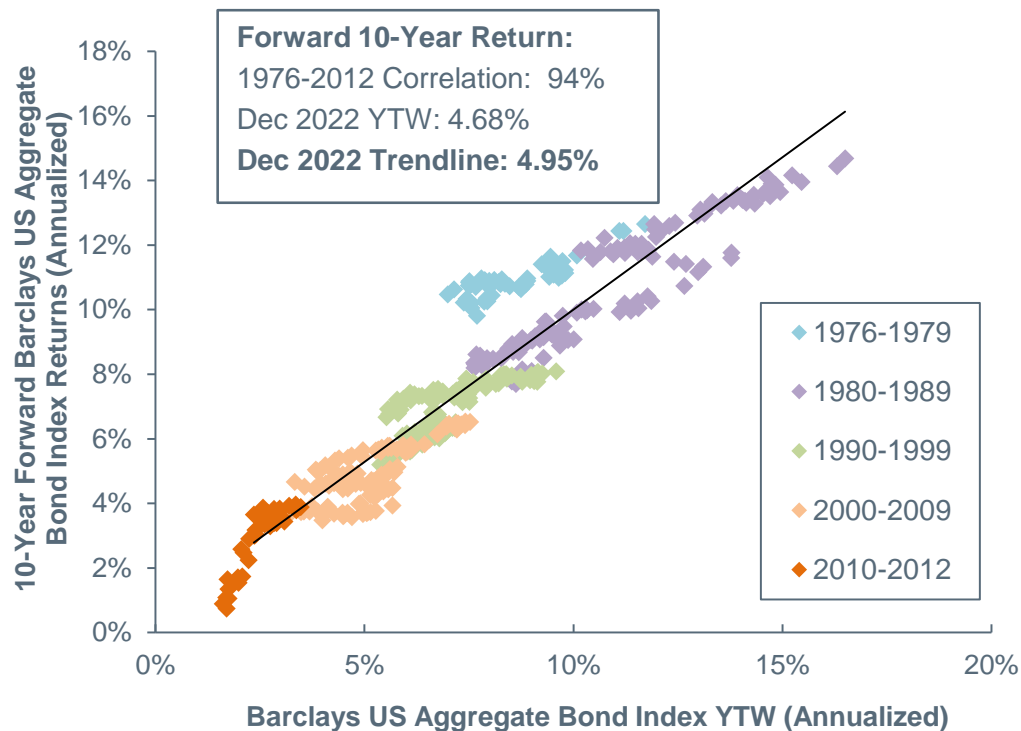
- International equity assumptions all increase due to higher dividend yields, improved valuations and currency expectations; but these were offset by lower inflation and real growth/earnings expectations.
- International developed inflation expectations remain below US expectations. However, all non-US valuations remain better than their US counterparts.

RVK Broad International Equity is a mix of 61.6% Dev'd Large/Mid Cap Int'l Equity, 10.3% Dev'd Small Cap Int'l Equity, and 28.1% Emerging Markets Equity. Source: Research Affiliates (RA); EAFE valuations represented by MSCI EAFE CAPE calculations by RA since December 1982; EM represented by MSCI EM CAPE calculations by RA since Jan 1990. Data as of December 31, 2022.

# Fixed Income

Fixed Income									
Asset Class	2022			2023			One Year Adjustment		
	Nominal Return	Risk (StDev)	Nominal Return (Geo.)	Nominal Return	Risk (StDev)	Nominal Return (Geo.)	Nominal Return	Risk (StDev)	Nominal Return (Geo.)
US Aggregate	2.50%	5.00%	2.38%	4.00%	5.00%	3.88%	+1.50%	--	+1.50%
Non-US Dev. Sovereign	1.25%	8.50%	0.90%	2.25%	8.50%	1.90%	+1.00%	--	+1.00%
Low Duration	2.00%	2.50%	1.97%	3.25%	2.50%	3.22%	+1.25%	--	+1.25%
Long Duration	2.75%	10.00%	2.27%	5.00%	10.00%	4.53%	+2.25%	--	+2.26%
TIPS	2.00%	5.50%	1.85%	4.00%	5.50%	3.85%	+2.00%	--	+2.00%

Relationship between YTW and Forward 10 Year Returns

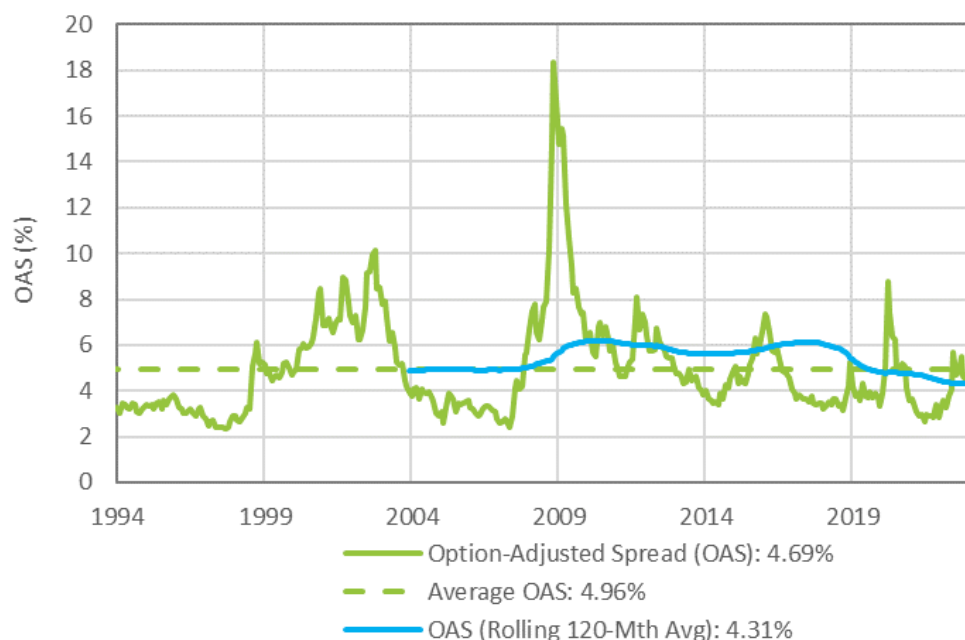


- Starting yields have historically been a reasonable starting point when forecasting future bond returns.
- Therefore, most bond return assumptions increased based on higher starting yields, and an expectation that the yield curve inversion corrects over time.
- Changes in spreads and durations were mostly nominal and thus did not generally have material impacts on the return forecasts.

# Fixed Income – Spread Assets

Fixed Income: Spread Sectors									
Asset Class	2022			2023			One Year Adjustment		
	Nominal Return	Risk (StDev)	Nominal Return (Geo.)	Nominal Return	Risk (StDev)	Nominal Return (Geo.)	Nominal Return	Risk (StDev)	Nominal Return (Geo.)
High Yield	5.50%	10.00%	5.03%	7.25%	10.50%	6.74%	+1.75%	+0.50%	+1.71%
Emerging Markets Debt (HC)	6.00%	10.00%	5.53%	7.50%	10.00%	7.04%	+1.50%	--	+1.51%
Emerging Markets Debt (LC)	5.75%	11.50%	5.13%	6.50%	11.50%	5.88%	+0.75%	--	+0.75%
Bank Loans	5.00%	8.00%	4.70%	6.50%	8.50%	6.16%	+1.50%	+0.50%	+1.47%

BB US Corporate High Yield Index Option-Adjusted Spread (OAS)



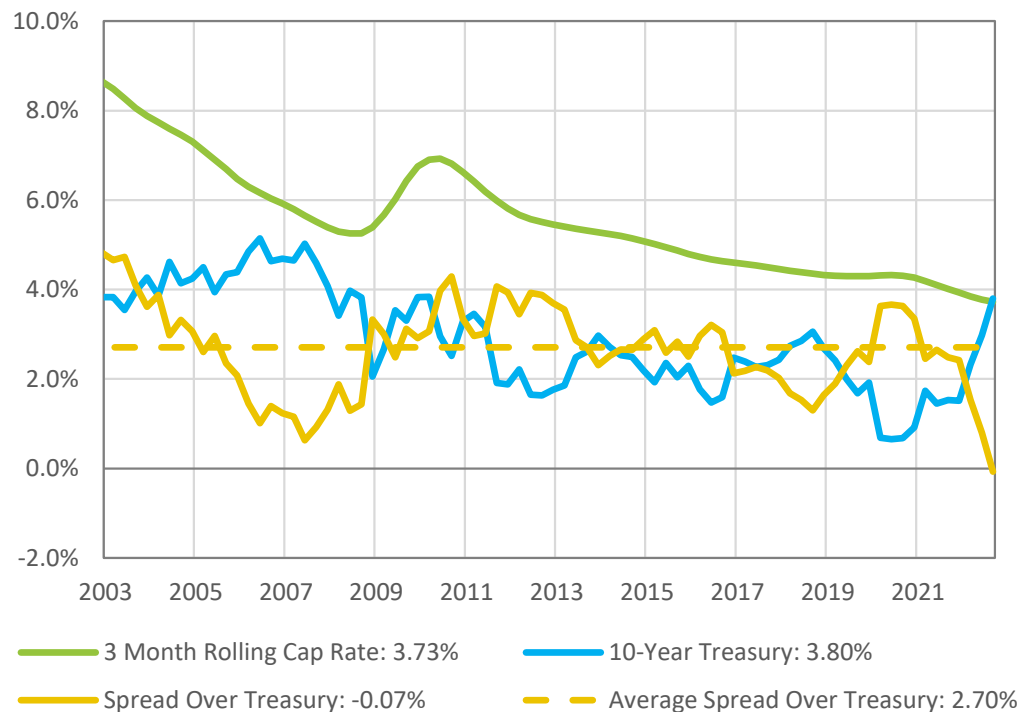
- Significantly increased our long-term return expectations for all fixed income spread sectors.
- Higher starting yields for the emerging market debt (both hard and local currency) led to higher expected long-term returns.
- Rising rates and widening spreads will—over the long run—help returns for low duration assets such as bank loans and high yield bonds.



# Real Estate

Real Estate									
Asset Class	2022			2023			One Year Adjustment		
	Nominal Return	Risk (StDev)	Nominal Return (Geo.)	Nominal Return	Risk (StDev)	Nominal Return (Geo.)	Nominal Return	Risk (StDev)	Nominal Return (Geo.)
Core Real Estate	6.00%	12.50%	5.27%	5.75%	12.50%	5.02%	-0.25%	--	-0.25%
Global REITs	6.50%	21.00%	4.49%	7.75%	21.00%	5.76%	+1.25%	--	+1.27%

Cap Rates and Spread to Treasuries

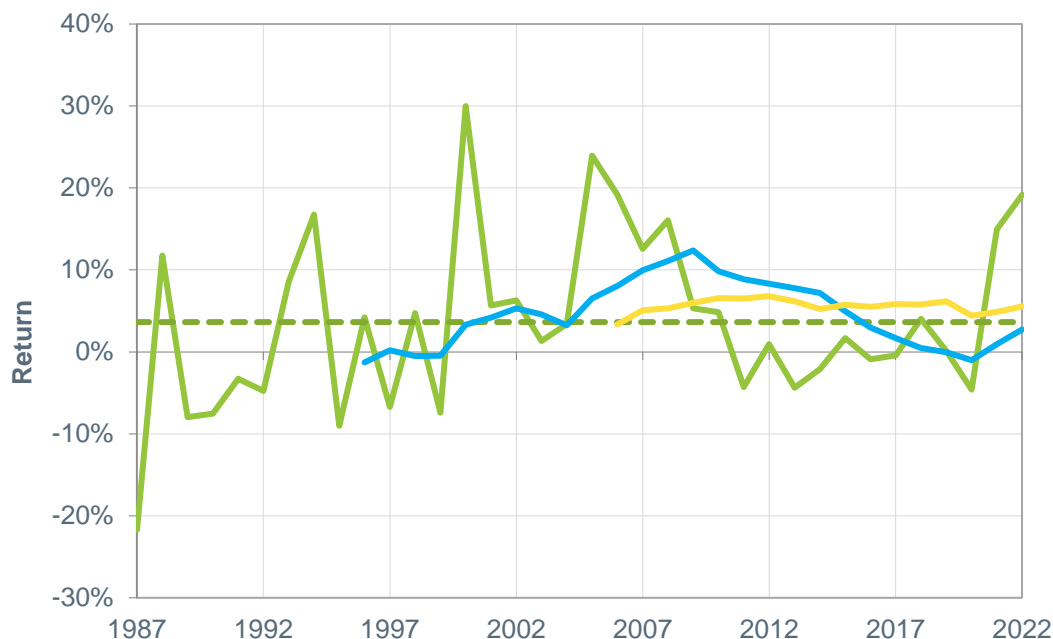


- Cap rates dropped to historic lows real estate performed well in 2022.
- However, on a relative basis – with Treasury rates materially increased – income yields for core real estate assets are relatively less attractive than in the recent past.
- RVK decreased our long-term core real estate assumption given falling net income yields.
- Global REITs assumption increased due to a significant increase in yield, as well as improved valuations.

# Private Equity

Private Equity									
Asset Class	2022			2023			One Year Adjustment		
	Nominal Return	Risk (StDev)	Nominal Return (Geo.)	Nominal Return	Risk (StDev)	Nominal Return (Geo.)	Nominal Return	Risk (StDev)	Nominal Return (Geo.)
Private Equity	9.00%	22.00%	6.85%	10.00%	22.00%	7.86%	+1.00%	--	+1.02%

**Annual Return Differential:  
Cambridge US Private Equity Index vs. S&P 500 Index**



- Annual Return Differential: 19.15%
- - - Average Annual Return Differential: 3.62%
- Annual Return Differential (Rolling 10-Yr Avg): 2.75%
- Annual Return Differential (Rolling 20-Yr Avg): 5.54%

- Our spread assumption increased to 225 basis points (geometric) above Large/Mid Cap US Equities.
- This spread differential is similar to the historical spread differential.
- The PE return increase was due to the increase in the underlying public market returns forecast. The Large/Mid Cap US Equity assumption was decreased by 1.00% due to reduced dividend yields and improved valuations.

# Custom Assumption Definitions

Custom Non-Core Fixed Income		
SBCERS Target Structure		RVK Assumption Index
45.0%	Private Credit (Senior Secured Direct Lending)	Cambridge Private Credit Index
25.0%	EMD Blend	50% JPM GBI EM Global Div./50% JPM EMBI Global Div.
30.0%	Bank Loans	CS Leveraged Loan
<b>100.0%</b>		

Custom Real Return		
SBCERS Target Structure		RVK Assumption Index
32.0%	Diversified Inflation Strategies	33.3% Bloomberg US TIPS/33.3% Bloomberg Comdty/33.3% MSCI Gbl Real Estate (Gross)
8.0%	TIPS	Bloomberg US Treasury: US TIPS
34.8%	Private Infrastructure	S&P Global Infrastructure
25.2%	Private Natural Resources	45% Alerian MLP/39% NCREIF Farmland/16% S&P Global NR
<b>100.0%</b>		

Custom Real Estate		
SBCERS Target Structure		RVK Assumption Index
65.0%	Core Real Estate	NCREIF ODCE (Gross) (AWA)
35.0%	Non-Core Real Estate	Preqin Non-Core Real Estate
<b>100.0%</b>		

# RVK 2023 Assumptions vs 2022

Asset Class	Benchmark	2022			2023			Change		
		Nominal Return (Arith.)	Risk (St. Dev.)	Nominal Return (Geo.)	Nominal Return (Arith.)	Risk (St. Dev.)	Nominal Return (Geo.)	Nominal Return (Arith.)	Risk (St. Dev.)	Nominal Return (Geo.)
Large/Mid Cap US Equity	S&P 500 (Cap Weighted)	5.75%	16.00%	4.56%	6.75%	16.00%	5.57%	1.00%	0.00%	1.01%
Small Cap US Equity	Russell 2000	6.25%	19.00%	4.59%	7.25%	19.00%	5.61%	1.00%	0.00%	1.01%
Broad US Equity	Russell 3000	5.80%	16.00%	4.61%	6.80%	16.10%	5.61%	1.00%	0.10%	1.00%
Dev'd Large/Mid Cap Int'l Equity	MSCI EAFE (Gross)	7.50%	17.00%	6.18%	8.50%	17.00%	7.19%	1.00%	0.00%	1.01%
Dev'd Small Cap Int'l Equity	MSCI EAFE Small Cap (Gross)	8.00%	20.00%	6.19%	9.25%	20.00%	7.46%	1.25%	0.00%	1.27%
Emerging Markets Equity	MSCI Emerging Markets (Gross)	10.25%	25.00%	7.52%	11.25%	25.00%	8.54%	1.00%	0.00%	1.02%
Broad International Equity	MSCI ACW Ex US IMI (Gross)	8.35%	18.65%	6.78%	9.35%	18.70%	7.79%	1.00%	0.05%	1.01%
Global Equity	MSCI ACW IMI (Gross)	6.80%	16.40%	5.56%	7.85%	16.40%	6.62%	1.05%	0.00%	1.06%
US Aggregate Fixed Income	Bloomberg US Aggregate Bond	2.50%	5.00%	2.38%	4.00%	5.00%	3.88%	1.50%	0.00%	1.50%
Non-US Dev'd Sov'n Fixed Income UH	Citi Non-US World Gov't Bond	1.25%	8.50%	0.90%	2.25%	8.50%	1.90%	1.00%	0.00%	1.00%
Emerging Markets Debt Hard Currency	JPM EMBI Global Diversified	6.00%	10.00%	5.53%	7.50%	10.00%	7.04%	1.50%	0.00%	1.51%
Emerging Markets Debt Local Currency	JPM GBI EM Global Diversified	5.75%	11.50%	5.13%	6.50%	11.50%	5.88%	0.75%	0.00%	0.75%
TIPS	Bloomberg US Treasury: US TIPS	2.00%	5.50%	1.85%	4.00%	5.50%	3.85%	2.00%	0.00%	2.00%
Low Duration Fixed Income	Bloomberg US Gov't/Cred: 1-3 Year	2.00%	2.50%	1.97%	3.25%	2.50%	3.22%	1.25%	0.00%	1.25%
Long Duration Fixed Income	Bloomberg US Gov't/Cred: LT Bond	2.75%	10.00%	2.27%	5.00%	10.00%	4.53%	2.25%	0.00%	2.26%
High Yield	Bloomberg US Corp: High Yield	5.50%	10.00%	5.03%	7.25%	10.50%	6.74%	1.75%	0.50%	1.71%
Bank Loans	CS Leveraged Loan	5.00%	8.00%	4.70%	6.50%	8.50%	6.16%	1.50%	0.50%	1.47%
Core Real Estate	NCREIF ODCE (Gross) (AWA)	6.00%	12.50%	5.27%	5.75%	12.50%	5.02%	-0.25%	0.00%	-0.25%
Global REITs	MSCI World Real Estate (Gross)	6.50%	21.00%	4.49%	7.75%	21.00%	5.76%	1.25%	0.00%	1.27%
MLPs	Alerian MLP	8.75%	23.00%	6.40%	8.25%	23.00%	5.89%	-0.50%	0.00%	-0.51%
Funds of Hedge Funds	HFRI Fund of Funds Composite	4.25%	9.50%	3.82%	5.00%	9.50%	4.57%	0.75%	0.00%	0.75%
Multi-Strategy Hedge Funds	HFRI RV Multi-Strat	5.00%	8.50%	4.66%	5.75%	8.50%	5.41%	0.75%	0.00%	0.75%
GTAA	Custom GTAA Index	5.00%	9.00%	4.62%	6.00%	9.00%	5.62%	1.00%	0.00%	1.00%
Private Credit	Cambridge Private Credit Index	7.25%	13.00%	6.47%	8.00%	13.00%	7.23%	0.75%	0.00%	0.76%
Senior Secured Direct Lending	--	6.00%	9.00%	5.62%	7.00%	9.00%	6.62%	1.00%	0.00%	1.00%
Private Equity	Cambridge US Private Equity	9.00%	22.00%	6.85%	10.00%	22.00%	7.86%	1.00%	0.00%	1.02%
Commodities	Bloomberg Commodity	5.50%	17.50%	4.08%	6.00%	17.50%	4.58%	0.50%	0.00%	0.51%
Diversified Inflation Strategies	Custom DIS Index	4.70%	11.55%	4.07%	5.90%	11.60%	5.27%	1.20%	0.05%	1.20%
US Inflation	Consumer Price Index	2.50%	2.50%	2.47%	2.50%	2.50%	2.47%	0.00%	0.00%	0.00%
Cash Equivalents	BofA ML 3 Mo US T-Bill	1.50%	2.00%	1.48%	2.50%	2.00%	2.48%	1.00%	0.00%	1.00%

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