

## **2023 Capital Market Assumptions**

Every calendar year RVK produces long-term forward-looking capital market assumptions through a rigorous multi-step process which draws on both quantitative economic and financial inputs as well as qualitative comparisons and analysis. Our return estimates are generally based on return decomposition models, which consider factors such as income, future growth, valuation measures, inflation prospects and economic conditions. The volatility and correlation assumptions are generally driven by an analysis of historical trends, adjusting for changes in volatility regimes, as well as triangulation considerations.

**Summary:** Our long-term (20 year) return expectations have increased significantly for the vast majority of asset classes reflecting tremendous moves in interest rates — translating to higher yields and incomes — as well as lower starting valuations. Following the tumultuous markets in 2022, there is improvement in the return forecasts for the core 60/40 portfolio after many years of fairly muted long-term forecasts. Fundamentals for many alternative investments have improved as well making them attractive options for portfolio diversification, alpha generation and inflation protection.

**Inflation:** We maintained our long-term inflation expectation at 2.50%. 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. Market expectations for inflation have slightly lowered as compared to expectations at the end of 2021 (as outlined in **Figure 1**).

5.0% 4.0% 3.0% 2.0% 1.0% 0.0% 5-Year 7-Year 10-Year 20-Year 30-Year Treasury Yield -TIPS Yield Implied Expected Inflation **Treasury Yield** 3.99% 3.96% 3.88% 4.14% 3.97% **TIPS Yield** 1.66% 1.61% 1.58% 1.67% 1.62% 2.33% 2.30% 2.52% 2.30% Implied Expected Inflation 2.35%

**Figure 1: Market Expectations for Inflation** 

Source: FactSet and US Department of the Treasury. Data as of December 31, 2022.

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**Fixed Income:** We increased our return forecast for most fixed income asset classes based on significantly higher starting yields, spread improvements and an expectation that the year-end yield curve inversion corrects over time (**Figures 2** and **3**). Starting yields have historically been a reasonable starting point when forecasting future bond returns.

Figure 2: Bloomberg US Aggregate Bond Index Yield



Figure 3: Bloomberg US Aggregate Bond Index
Option-Adjusted Spread



**Equities:** Equity return forecasts increased for all equity assumptions relative to 2022. The increase was yield and valuation driven (as shown below in **Figures 4** and **5**), as stocks fell significantly in 2022 due to rising rates and inflation, as well as geopolitical concerns. The year-end valuation for large-cap domestic equities, as represented by the Shiller CAPE, ranked in the 89th percentile of historical values.

Figure 4: S&P 500 CAPE Ratio



Figure 5: S&P 500 Dividend Index



Source: FactSet . Data as of December 31, 2022.

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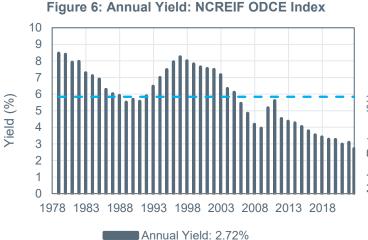
### March 2023



**Real Estate:** Our core real estate return expectation decreased by 25 bps given falling net yields (**Figure 6**). On a relative basis – with Treasury rates rebounding off historic lows – income yields for core real estate assets are less attractive than in the recent past.

**Hedge Funds:** Hedge fund return assumptions improved commensurate with beta returns and collateral yields. And while alpha levels remain fairly robust since inception, post-GFC alpha levels are more muted (**Figure 7**).

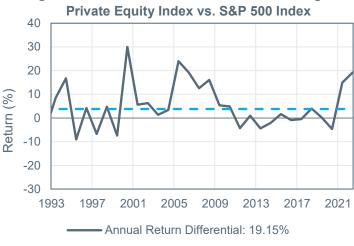
**Private Equity:** The private equity return forecast was positively impacted by the improvement in the underlying public market return forecast. The Large/Mid Cap US Equity assumption was increased by 1.00% due to higher dividend yields and improved valuations. Our spread assumption remained constant at 225 basis points (geometric) above Large/Mid Cap US Equities, similar to the historical spread differential.



Average Annual Yield: 5.84%

Average 1-Year Alpha vs. Global: 2.07%

Figure 8: Annual Return Differential: Cambridge US



Real estate source: NCREIF. Data as of September 30, 2022. Hedge funds source: FactSet. Data as of December 31, 2022. Private equity source: Cambridge Associates LLC and FactSet. Data as of June 30, 2022. Cambridge index is pooled horizon internal rates of return net of fees, expenses, and carried interest.

Average Annual Return Differential: 3.76%

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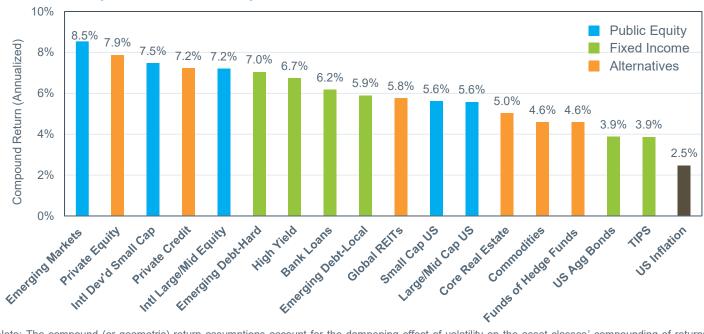
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#### 2022 vs. 2023 Capital Market Assumptions

	2022		2023		Change (2023 - 2022)	
Asset Class	Nominal Return	Risk (St. Dev.)	Nominal Return	Risk (St. Dev.)	Nominal Return	Risk (St. Dev.)
Large/Mid Cap US	5.75%	16.00%	6.75%	16.00%	1.00%	0.00%
Small Cap US	6.25%	19.00%	7.25%	19.00%	1.00%	0.00%
Intl Large/Mid Equity	7.50%	17.00%	8.50%	17.00%	1.00%	0.00%
Intl DeVd Small Cap	8.00%	20.00%	9.25%	20.00%	1.25%	0.00%
Emerging Markets	10.25%	25.00%	11.25%	25.00%	1.00%	0.00%
US Agg Bonds	2.50%	5.00%	4.00%	5.00%	1.50%	0.00%
Emerging Debt-Hard	6.00%	10.00%	7.50%	10.00%	1.50%	0.00%
Emerging Debt-Local	5.75%	11.50%	6.50%	11.50%	0.75%	0.00%
TIPS	2.00%	5.50%	4.00%	5.50%	2.00%	0.00%
High Yield	5.50%	10.00%	7.25%	10.50%	1.75%	0.50%
Bank Loans	5.00%	8.00%	6.50%	8.50%	1.50%	0.50%
Core Real Estate	6.00%	12.50%	5.75%	12.50%	-0.25%	0.00%
Global REITs	6.50%	21.00%	7.75%	21.00%	1.25%	0.00%
Funds of Hedge Funds	4.25%	9.50%	5.00%	9.50%	0.75%	0.00%
GTAA	5.00%	9.00%	6.00%	9.00%	1.00%	0.00%
Private Credit	7.25%	13.00%	8.00%	13.00%	0.75%	0.00%
Private Equity	9.00%	22.00%	10.00%	22.00%	1.00%	0.00%
Commodities	5.50%	17.50%	6.00%	17.50%	0.50%	0.00%
US Inflation	2.50%	2.50%	2.50%	2.50%	0.00%	0.00%

#### **RVK 2023 Compound Return Assumptions**



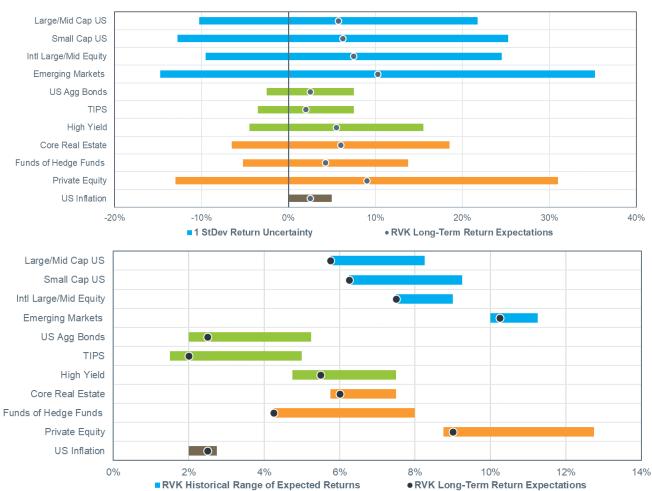
Note: The compound (or geometric) return assumptions account for the dampening effect of volatility on the asset classes' compounding of returns over time, and thus are less than their arithmetic counterparts over time.

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#### 2023 Long-Term Return Expectations and Uncertainty of Returns<sup>1</sup>



#### Historical Return Premium of Stocks vs. Bonds<sup>2</sup>



1StDev return uncertainty is based on the RVK 2023 CMA risk assumption for each asset class. Historical range of expected returns include 2006 through 2023 Capital Market Assumptions for selected asset classes.

<sup>2</sup>Stocks are represented by the S&P 500 Index, while fixed income is represented by the Bloomberg US Aggregate Bond Index and US Intermediate bonds prior to 1976.

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## March 2023



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