



# Capital Markets Update

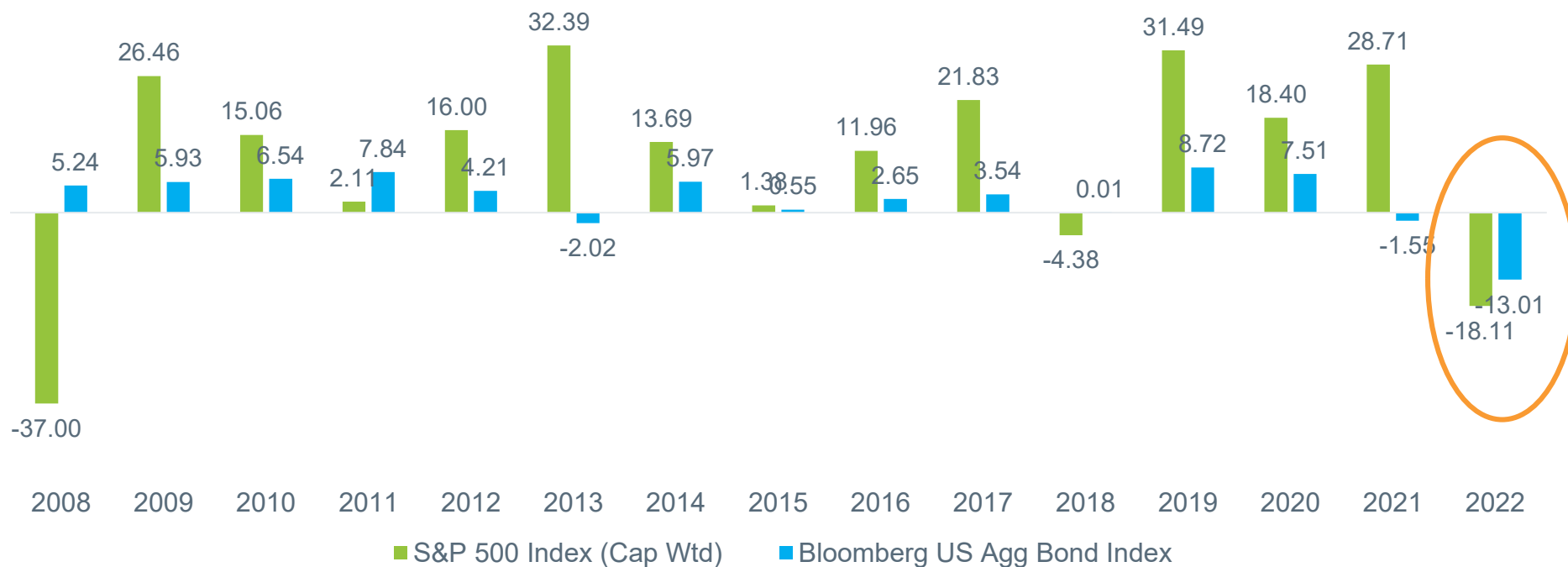
Ohio Retirement Study Council



# Annual Returns – S&P 500 vs. BB US AGG

Since 1976 (the first year on record for the BB US Aggregate Bond Index), 2022 is the first year in which both indexes experienced losses.

Calendar Year Returns - S&P 500 Index & BB US Aggregate Bond Index

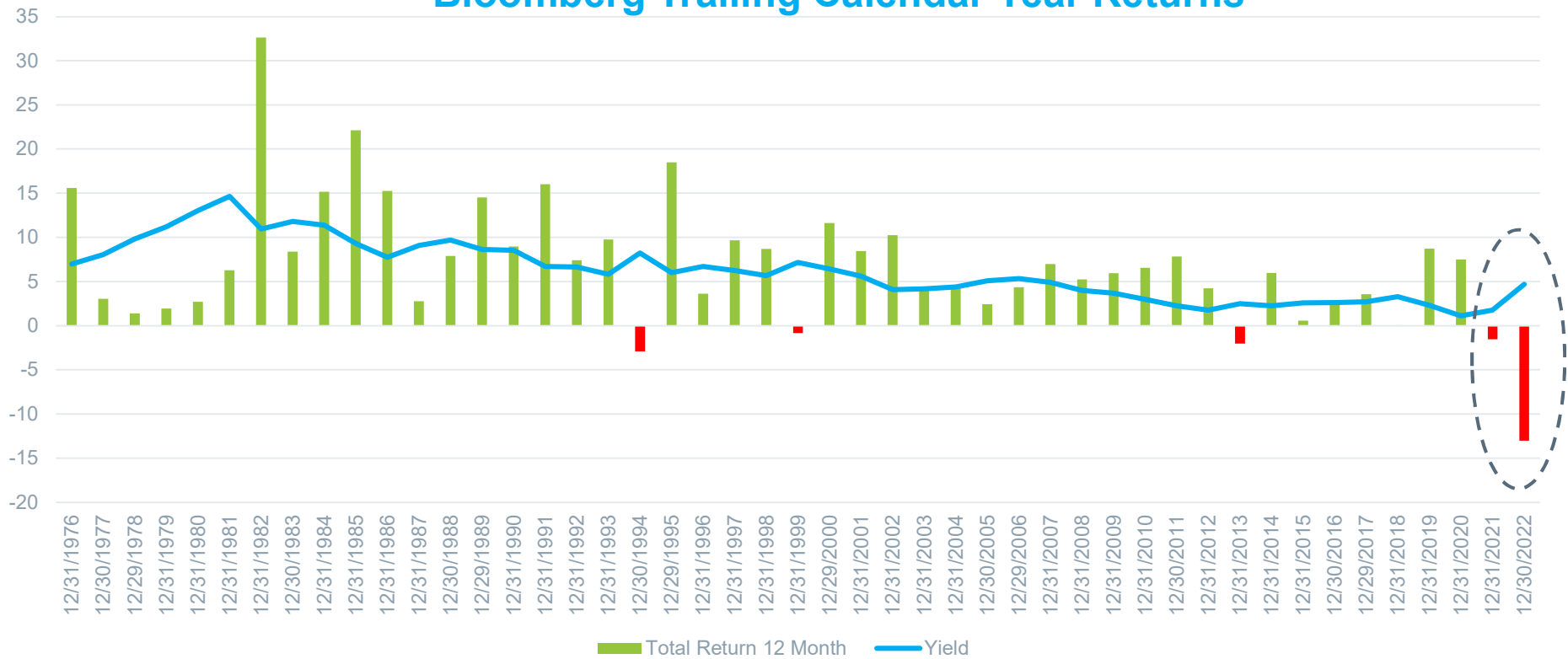


# Food For Thought

## Manager Positioning

- Worst year ever for FI (by factor of 4)
- First time bond markets experienced consecutive years of negative returns
- Rates more than doubled over the year
- Returns were aligned with quality over the year

### Bloomberg Trailing Calendar Year Returns



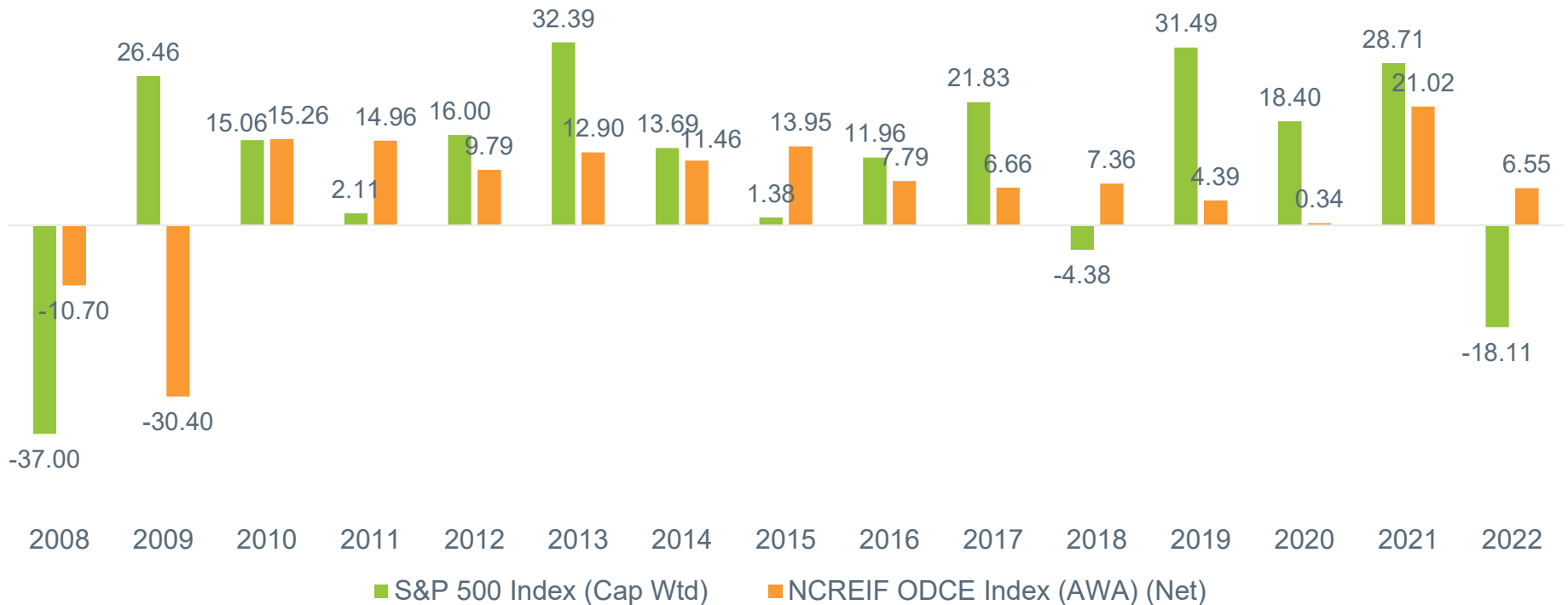
Note: Data as of 12/31/2022. Source: ICE BOFAML, JP Morgan Markets, Barclays Live.



# Annual Returns – S&P 500 vs. NCREIF ODCE

Since 2010, the core real estate index has delivered consistent, positive returns each calendar year, and were one the few asset classes generating positive results in 2022.

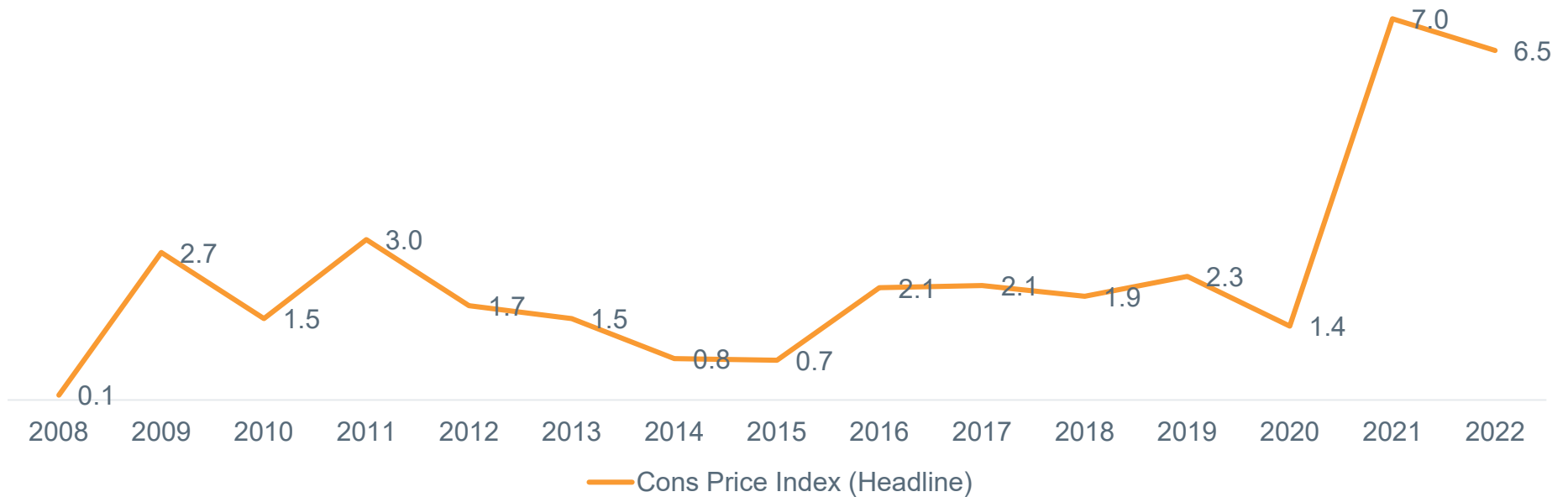
**Calendar Year Returns - S&P 500 Index & NCREIF ODCE Index (Net)**



# Annual Trendline – Consumer Price Index

Shown below is the annual (YoY as of December 31) trendline of the consumer price index since 2008. In 2022, the CPI peaked at 9.1% at June 30.

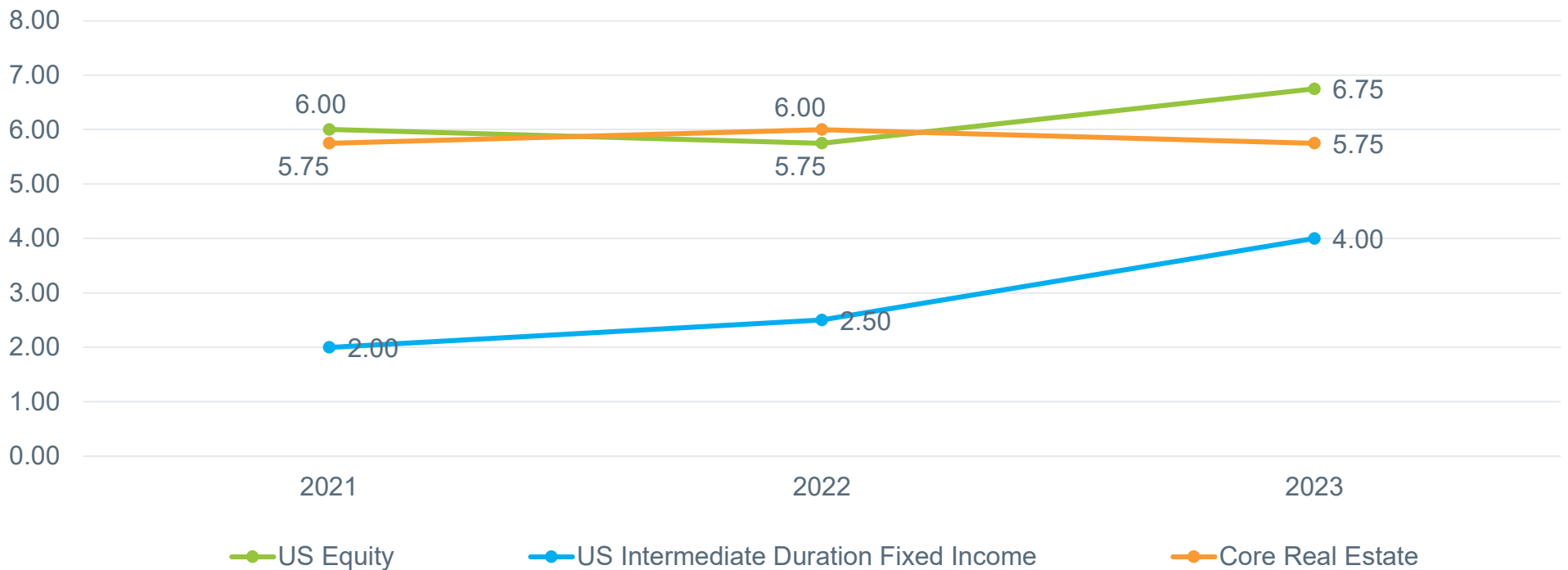
Consumer Price Index (YoY %)



# RVK Capital Markets Assumptions

Shown below are RVK's long-term capital markets return assumptions for US equities, fixed income, and core real estate. Expected returns for equities and fixed income have increased over the last three years, while expectations for real estate have modestly declined.

RVK Return Assumptions (%)



# Hypothetical Portfolio Returns

Shown below are hypothetical portfolio returns for the 2022 calendar year. In general, portfolios with diversifying exposures to less liquid alternative assets fared better than portfolios with only public market exposures.

## Portfolio Returns – 2022 Calendar Year

60% Equity / 40% Fixed Income	-15.79%
50% Equity / 30% Fixed Income / 20% Real Estate	-11.53%
50% Equity / 20% Fixed Income / 15% Real Estate / 15% Private Equity	-11.08%

Equity = S&P 500 Index

Fixed Income = Bloomberg US Aggregate Bond Index

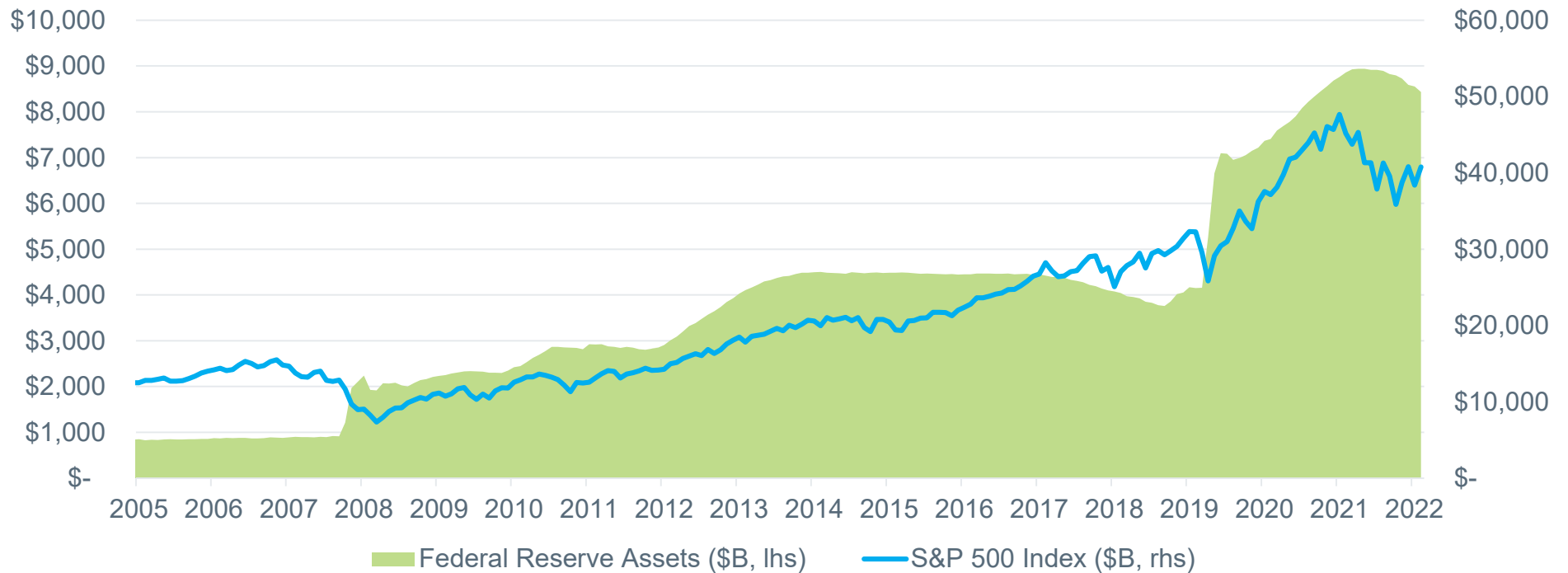
Real Estate = NCREIF ODCE Index (Net)

Private Equity = Cambridge US PE Index

# Growth of Federal Reserve Balance Sheet

Shown below is the value of the Federal Reserve balance sheet versus the S&P 500 Index since 2005. Balance sheet expansion throughout 2020 aligned with record levels for the S&P 500 Index.

Federal Reserve Balance Sheet vs. S&P 500

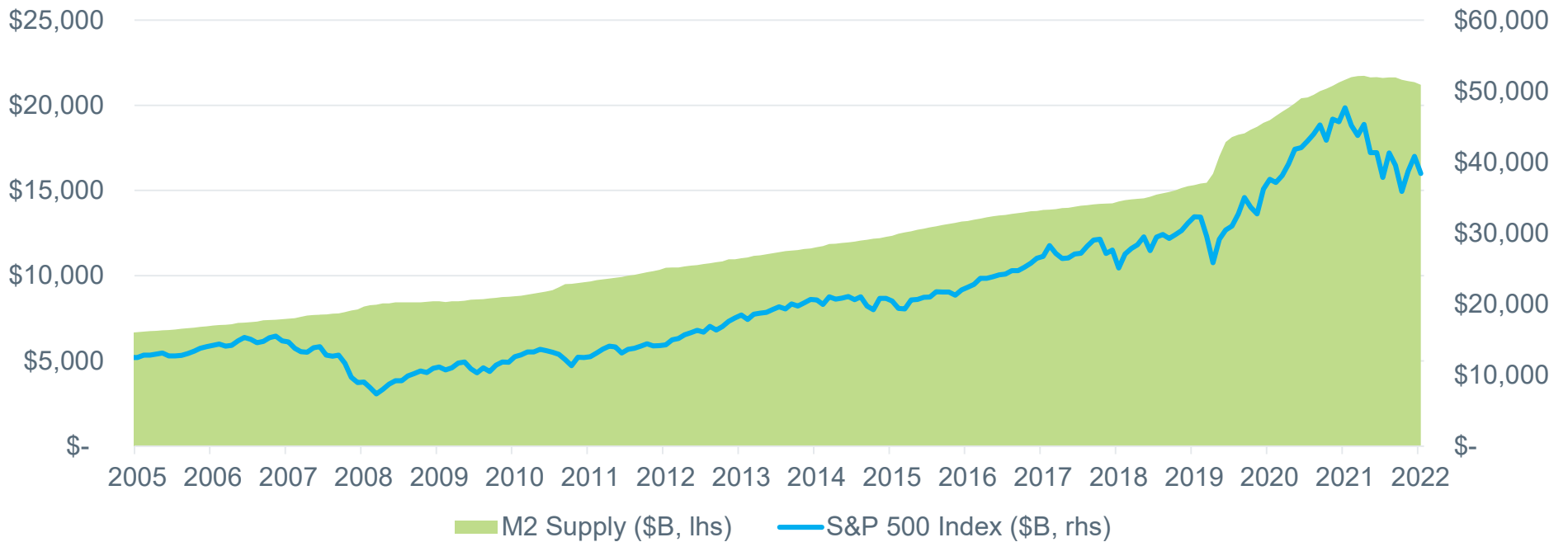




# Growth of M2

Shown below is the growth of the M2 money supply versus the S&P 500 Index since 2005.

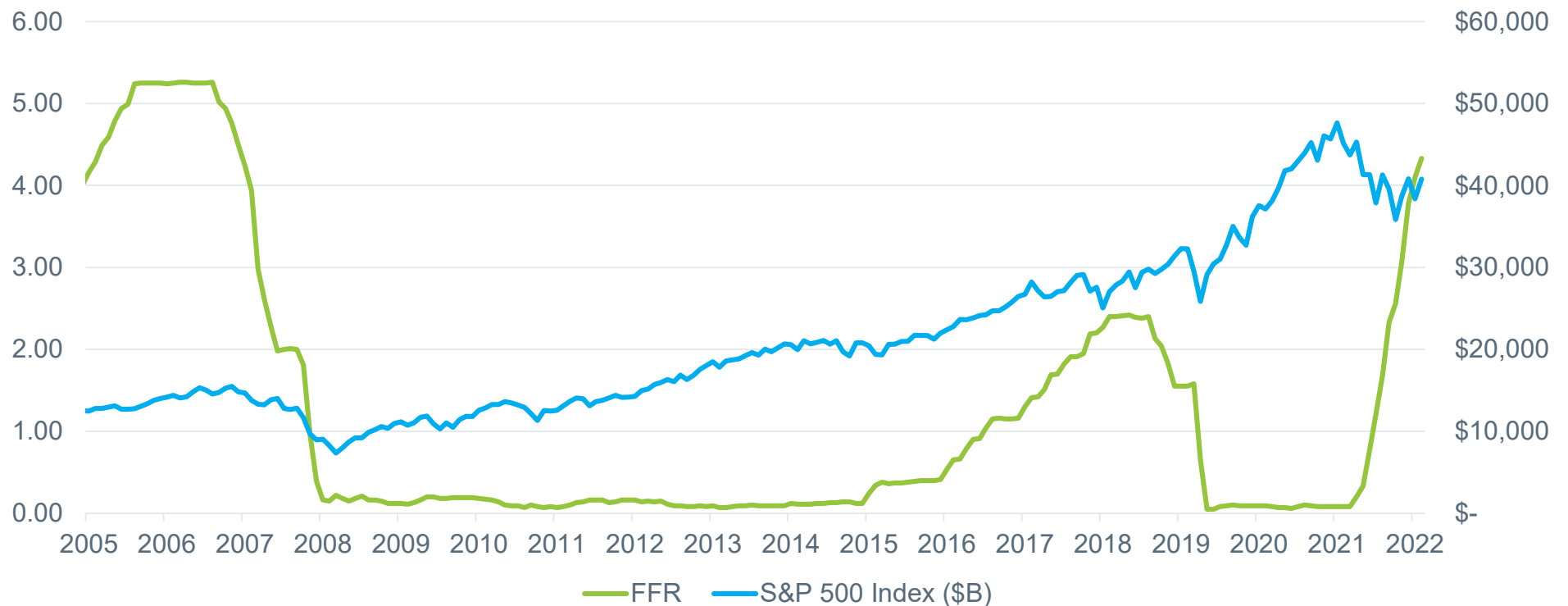
**M2 vs. S&P 500**



# Federal Funds Rate

Shown below is the Federal Funds Rate versus the S&P 500 Index since 2005. In general, periods of low and declining interest rates have been associated with stock market expansion.

Federal Funds Rate vs. S&P 500



PORTLAND

BOISE

CHICAGO

NEW YORK

**Disclaimer of Warranties and Limitation of Liability** - This document was prepared by RVK, Inc. (RVK) and may include information and data from some or all of the following sources: client staff; custodian banks; investment managers; specialty investment consultants; actuaries; plan administrators/record-keepers; index providers; as well as other third-party sources as directed by the client or as we believe necessary or appropriate. RVK has taken reasonable care to ensure the accuracy of the information or data, but makes no warranties and disclaims responsibility for the accuracy or completeness of information or data provided or methodologies employed by any external source. This document is provided for the client's internal use only and does not constitute a recommendation by RVK or an offer of, or a solicitation for, any particular security and it is not intended to convey any guarantees as to the future performance of the investment products, asset classes, or capital markets.

