

nuveen

A TIAA Company

Macro Pulse

Economy

Markets

Portfolio Strategy

December 2023

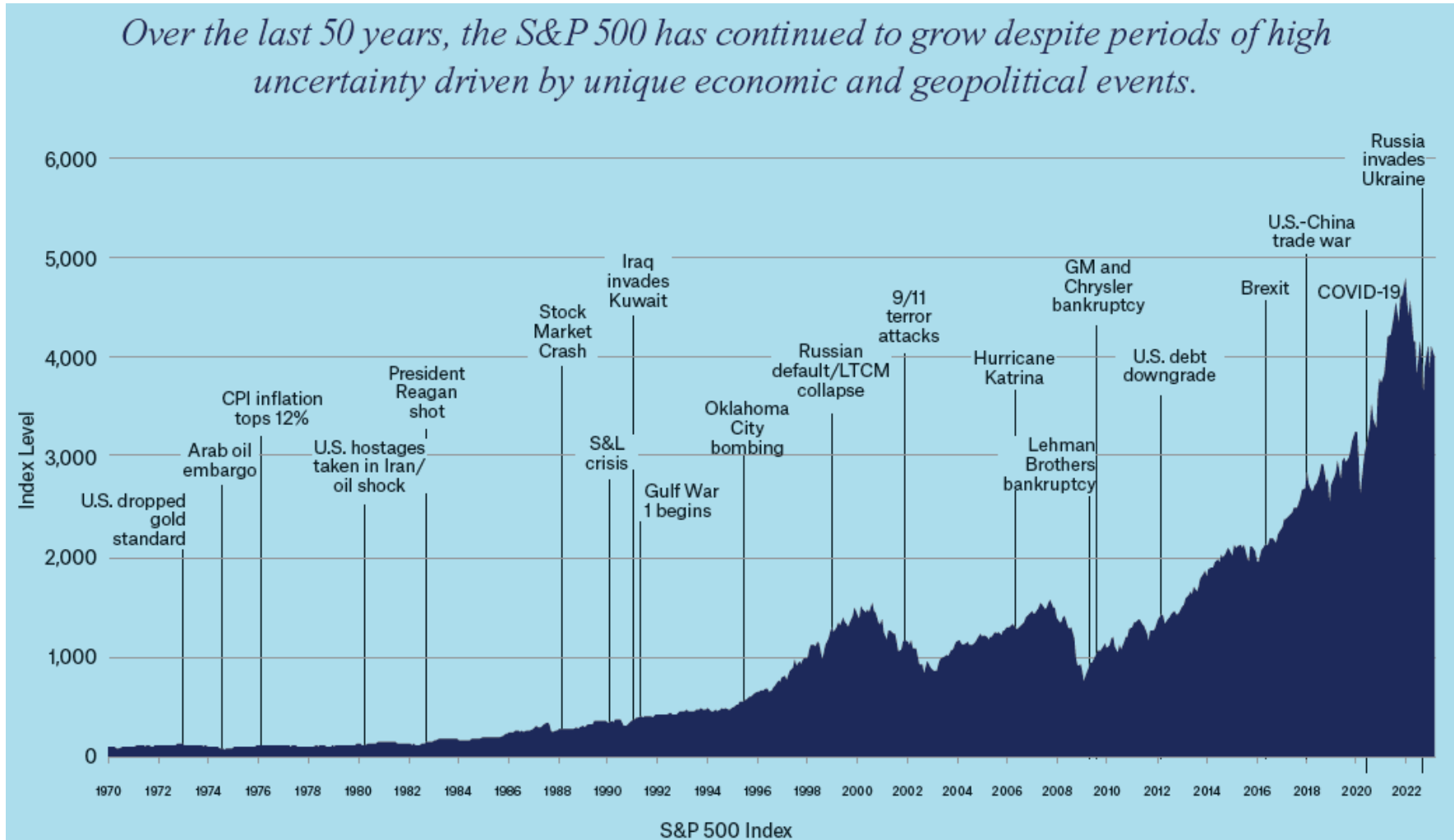
Portfolio Strategy Group

NOT FDIC INSURED | NO BANK GUARANTEE | MAY LOSE VALUE
OPINION PIECE. PLEASE SEE IMPORTANT DISCLOSURES IN THE ENDNOTES.

What *doesn't* change?

OPINION PIECE. PLEASE SEE IMPORTANT DISCLOSURES IN THE ENDNOTES.

Stocks have historically gone up in the long-run...

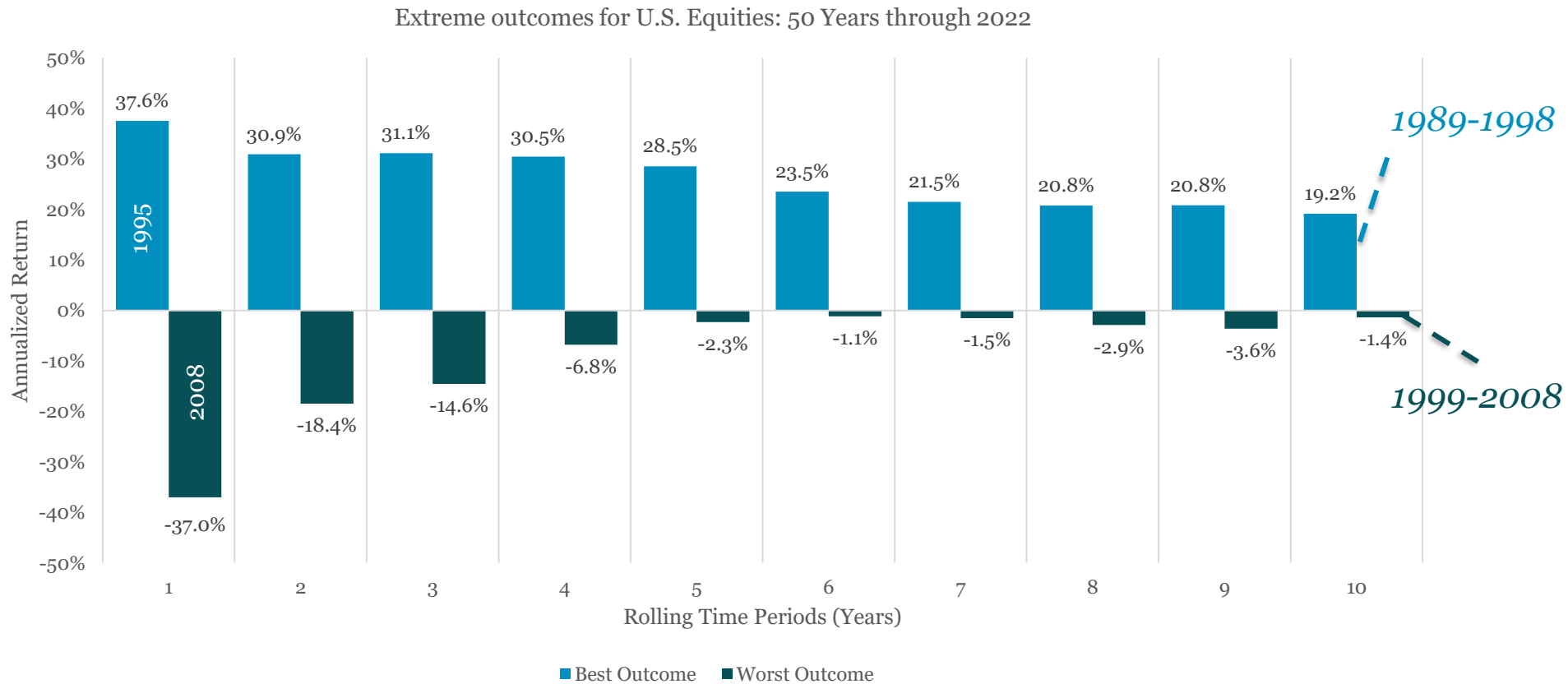


Past performance is no guarantee of future results. It is not possible to invest directly in an index.

Source: TIAA CIO Perspectives, Nov 2023

OPINION PIECE. PLEASE SEE IMPORTANT DISCLOSURES IN THE ENDNOTES.

...but can be unpredictable in the short-run

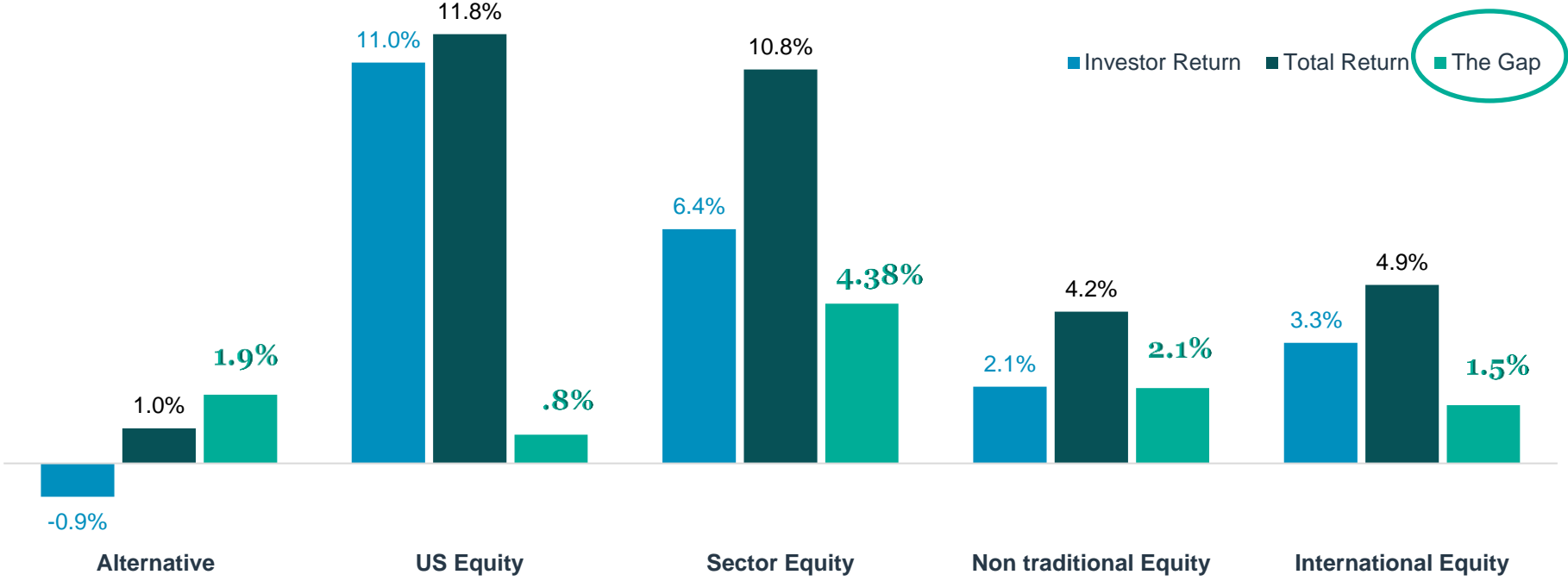


Source: Bloomberg, S&P 500 TR Index, January 1 1972 – December 31 2022. Each bar represents the max return and minimum return, annualized, for the given rolling time period.

OPINION PIECE. PLEASE SEE IMPORTANT DISCLOSURES IN THE ENDNOTES.

Leading some investors to (emotionally) sell at the wrong time

The Gap by U.S. Category (10-year Annual Returns)



Source: Morningstar: "Mind the Gap" updated study. Data as of Dec 31, 2022.

OPINION PIECE. PLEASE SEE IMPORTANT DISCLOSURES IN THE ENDNOTES.

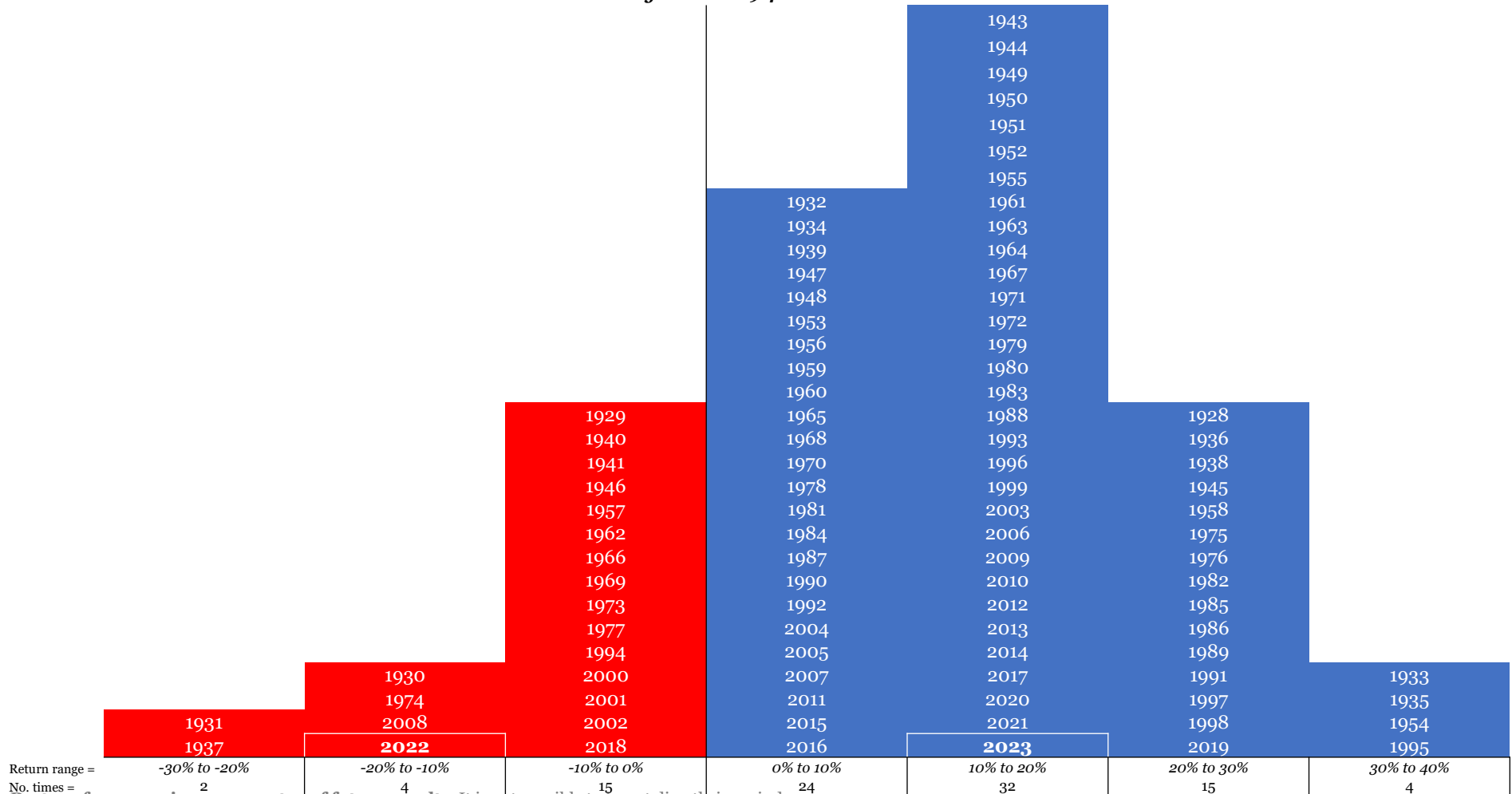
Bonds help to narrow potential return outcomes

History of the basic U.S. 60-40 Stock-Bond Portfolio:

% of Years Negative = 22%

% of Years Positive = 78%

Avg. Return = 9.4%



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Source: NYU Asset Class Return Database, annual total returns shown are from 1929 to 2023 60% S&P 500 Total Return Index, 20% U.S. Treasuries, 20% U.S. Investment Grade Corporate Bonds

OPINION PIECE. PLEASE SEE IMPORTANT DISCLOSURES IN THE ENDNOTES.

Broad diversification can offer even more stability

No asset class consistently outperforms (or underperforms) the diversified portfolio

2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
HY Bonds, 58.2%	U.S. LC Growth, 16.7%	Private RE, 16%	U.S. LC Value, 17.5%	U.S. LC Growth, 33.5%	U.S. LC Value, 13.5%	Private RE, 15%	U.S. LC Value, 17.3%	U.S. LC Growth, 30.2%	Private RE, 8.4%	U.S. LC Growth, 36.4%	U.S. LC Growth, 38.5%	U.S. LC Growth, 27.6%	Private RE, 7.5%	U.S. LC Growth, 42.7%
Non-U.S. Stocks, 41.4%	Private RE, 16.4%	Munis, 10.7%	Non-U.S. Stocks, 16.8%	U.S. LC Value, 32.5%	U.S. LC Growth, 13.1%	U.S. LC Growth, 5.7%	HY Bonds, 17.1%	Non-U.S. Stocks, 27.2%	Private Credit, 8.1%	U.S. LC Value, 26.5%	Diversified Portfolio, 11.8%	U.S. LC Value, 25.2%	Private Credit, 6.3%	Non-U.S. Stocks, 15.6%
U.S. LC Growth, 37.2%	Private Credit, 15.8%	Private Credit, 9.8%	HY Bonds, 15.8%	Diversified Portfolio, 17.1%	Private RE, 12.5%	Private Credit, 5.5%	Private Credit, 11.2%	Diversified Portfolio, 14.6%	Cash, 1.8%	Non-U.S. Stocks, 21.5%	Non-U.S. Stocks, 10.7%	Private RE, 22.2%	Cash, 1.5%	Diversified Portfolio, 14.2%
U.S. LC Value, 19.7%	U.S. LC Value, 15.5%	Core Bonds, 7.8%	U.S. LC Growth, 15.3%	Non-U.S. Stocks, 15.3%	Private Credit, 9.6%	Munis, 3.3%	Private RE, 8.8%	U.S. LC Value, 13.7%	Munis, 1.3%	Diversified Portfolio, 18.7%	Core Bonds, 7.5%	Diversified Portfolio, 15.1%	U.S. LC Value, -7.5%	HY Bonds, 13.5%
Diversified Portfolio, 18.6%	HY Bonds, 15.1%	HY Bonds, 5%	Private Credit, 14%	Private RE, 13.9%	Diversified Portfolio, 9.1%	Diversified Portfolio, 2.2%	Diversified Portfolio, 8.3%	Private Credit, 8.6%	Core Bonds, 0%	HY Bonds, 14.3%	HY Bonds, 7.1%	Private Credit, 12.8%	Munis, -8.5%	U.S. LC Value, 11.5%
Private Credit, 13.2%	Diversified Portfolio, 12.4%	Diversified Portfolio, 4.3%	Diversified Portfolio, 12.7%	Private Credit, 12.7%	Munis, 9.1%	Core Bonds, 0.6%	U.S. LC Growth, 7.1%	Private RE, 7.6%	U.S. LC Growth, -1.5%	Private Credit, 9%	Private Credit, 5.5%	Non-U.S. Stocks, 7.8%	Diversified Portfolio, -10.5%	Private Credit, 8.9%
Munis, 12.9%	Non-U.S. Stocks, 11.2%	U.S. LC Growth, 2.6%	Private RE, 10.9%	HY Bonds, 7.4%	Core Bonds, 6%	Cash, 0%	Non-U.S. Stocks, 4.5%	HY Bonds, 7.5%	Diversified Portfolio, -1.6%	Core Bonds, 8.7%	Munis, 5.2%	HY Bonds, 5.3%	HY Bonds, -11.2%	Munis, 6.4%
Core Bonds, 5.9%	Core Bonds, 6.5%	U.S. LC Value, 0.4%	Munis, 6.8%	Cash, 0.1%	HY Bonds, 2.5%	U.S. LC Value, -3.8%	Core Bonds, 2.7%	Munis, 5.4%	HY Bonds, -2.1%	Munis, 7.5%	U.S. LC Value, 2.8%	Munis, 1.5%	Core Bonds, -13%	Core Bonds, 5.5%
Cash, 0.2%	Munis, 2.4%	Cash, 0.1%	Core Bonds, 4.2%	Core Bonds, -2%	Cash, 0%	HY Bonds, -4.5%	Cash, 0.3%	Core Bonds, 3.5%	U.S. LC Value, -8.3%	Private RE, 5.3%	Private RE, 1.2%	Cash, 0%	Non-U.S. Stocks, -16%	Cash, 5.1%
Private RE, -29.8%	Cash, 0.1%	Non-U.S. Stocks, -13.7%	Cash, 0.1%	Munis, -2.6%	Non-U.S. Stocks, -3.9%	Non-U.S. Stocks, -5.7%	Munis, 0.2%	Cash, 0.8%	Non-U.S. Stocks, -14.2%	Cash, 2.2%	Cash, 0.5%	Core Bonds, -1.5%	U.S. LC Growth, -29.1%	Private RE, -12.1%

Source: Bloomberg, as of 31 December 2023. Representative Indexes: U.S. LC Growth (Russell 1000 Growth Index), U.S. LC Value (Russell 1000 Value Index), Non-U.S. Stocks (MSCI ACWI Index), Private Credit (Cliffwater Direct Lending Index), Private RE (NCREIF ODCE Index), Cash (Bloomberg U.S. Treasury Bill 1-3 Months Index), Core Bonds (Bloomberg U.S. Agg Index), HY Bonds (Bloomberg U.S. Corporate High Yield Index), Munis (Bloomberg Municipal Bond Index), Diversified Portfolio (20% U.S. LC Growth, 20% U.S. LC Value, 10% Non-U.S. Stocks, 10% Private Credit, 10% Private RE, 2% Cash, 10% Core Bonds, 4% HY Bonds, 14% Munis). Private as of 30 September 2023.

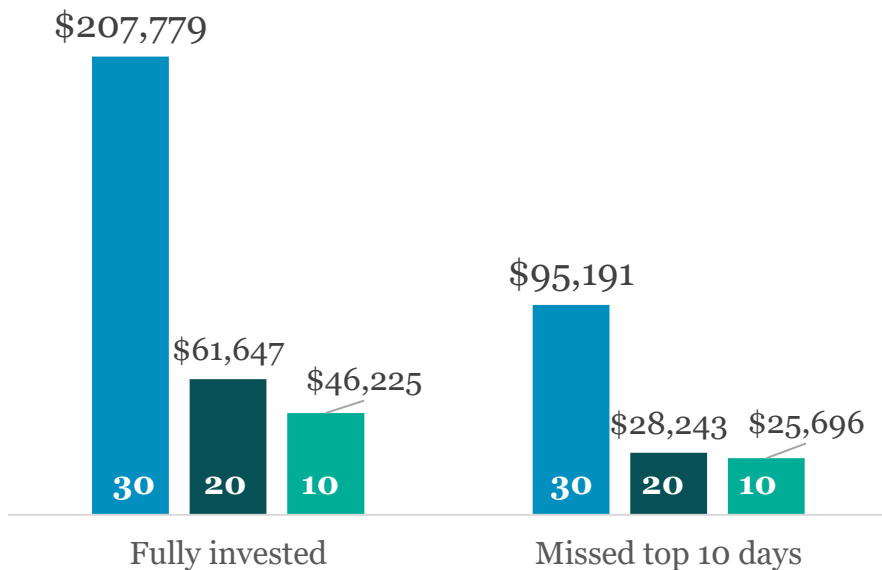
OPINION PIECE. PLEASE SEE IMPORTANT DISCLOSURES IN THE ENDNOTES.

While we can't control the market, we can control

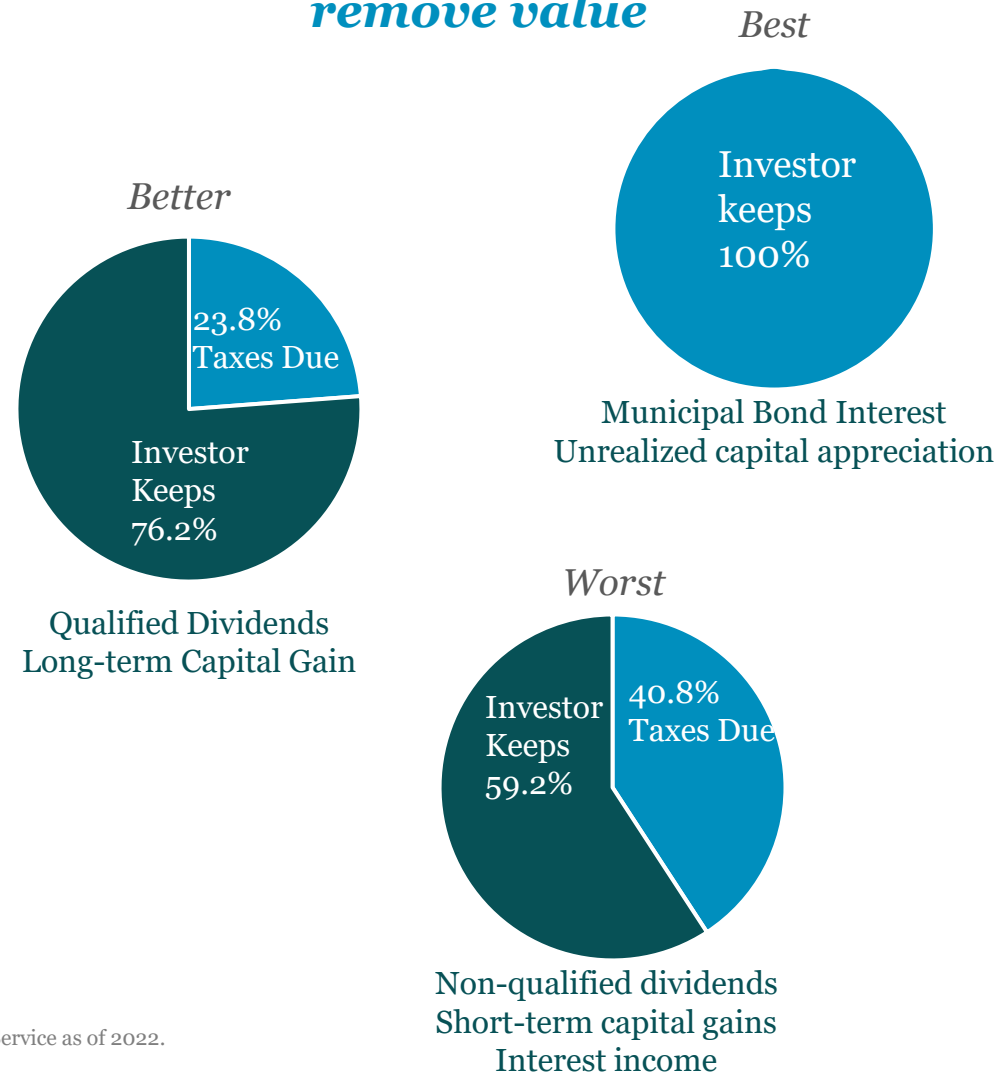
1) a plan that keeps us in the game and 2) taxes

Staying Invested *adds value*

Growth of \$10,000 in the S&P 500® Index over 10-, 20- and 30-year time periods



Taxes and fees *remove value*



Source: Factset, As of 31 Dec 2021.

Applies to federal taxes only. Source: Internal Revenue Service. Tax rates as reported by Internal Revenue Service as of 2022.

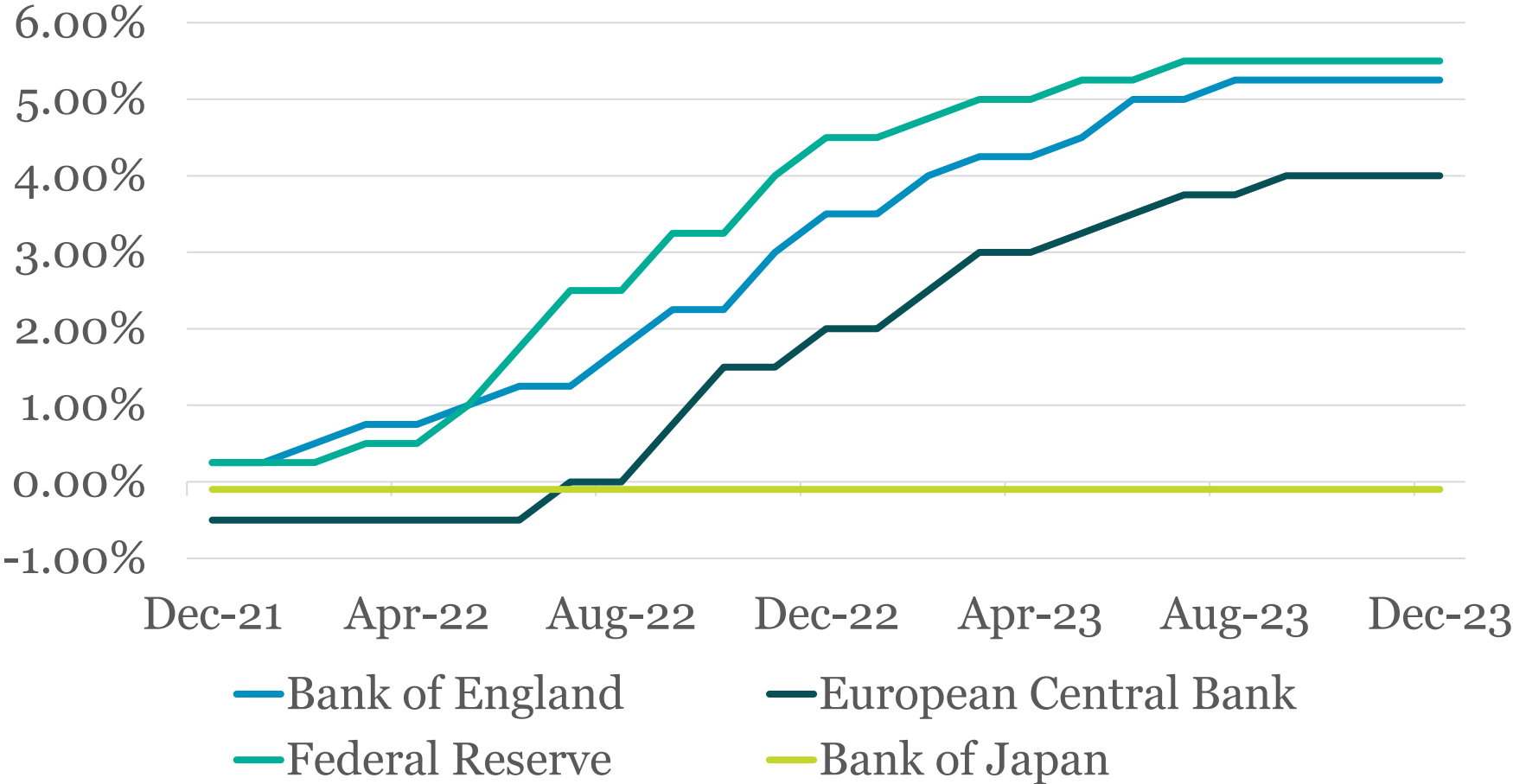
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Today's macro environment

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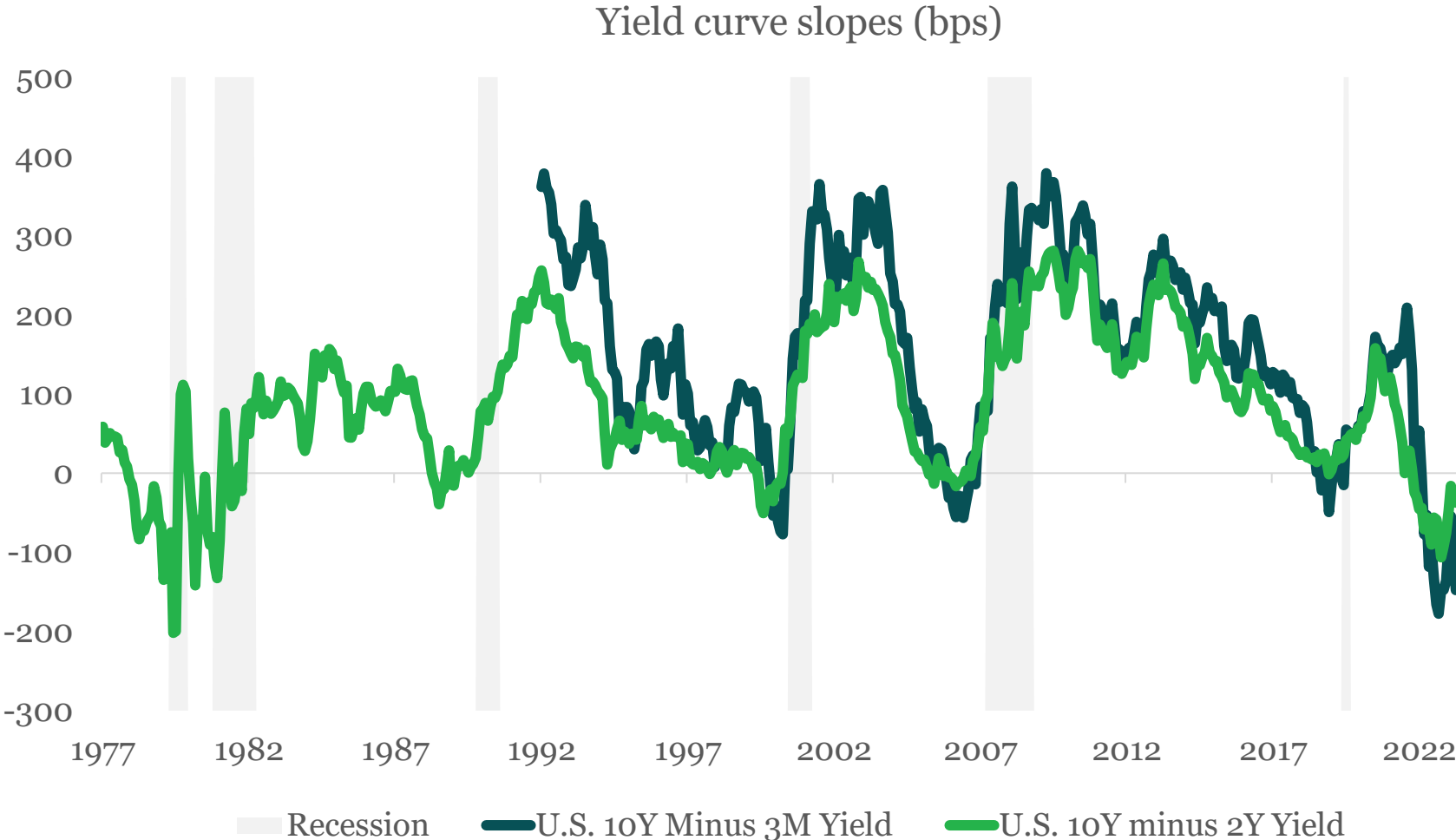
Most major central banks have taken a step off the pedal after an aggressive rate hike cycle

Global central bank policy rates



Source: Nuveen Portfolio Strategy Group, Bloomberg, Start Date = 12/2021, End Date = 12/2023
OPINION PIECE. PLEASE SEE IMPORTANT DISCLOSURES IN THE ENDNOTES.

Inverted yield curve – signaling a slowdown ahead



Past performance is no guarantee of future results. It is not possible to invest directly in an index.

Source: Nuveen Portfolio Strategy Group, Bloomberg, Start Date = January 1977, End Date = December 2023.

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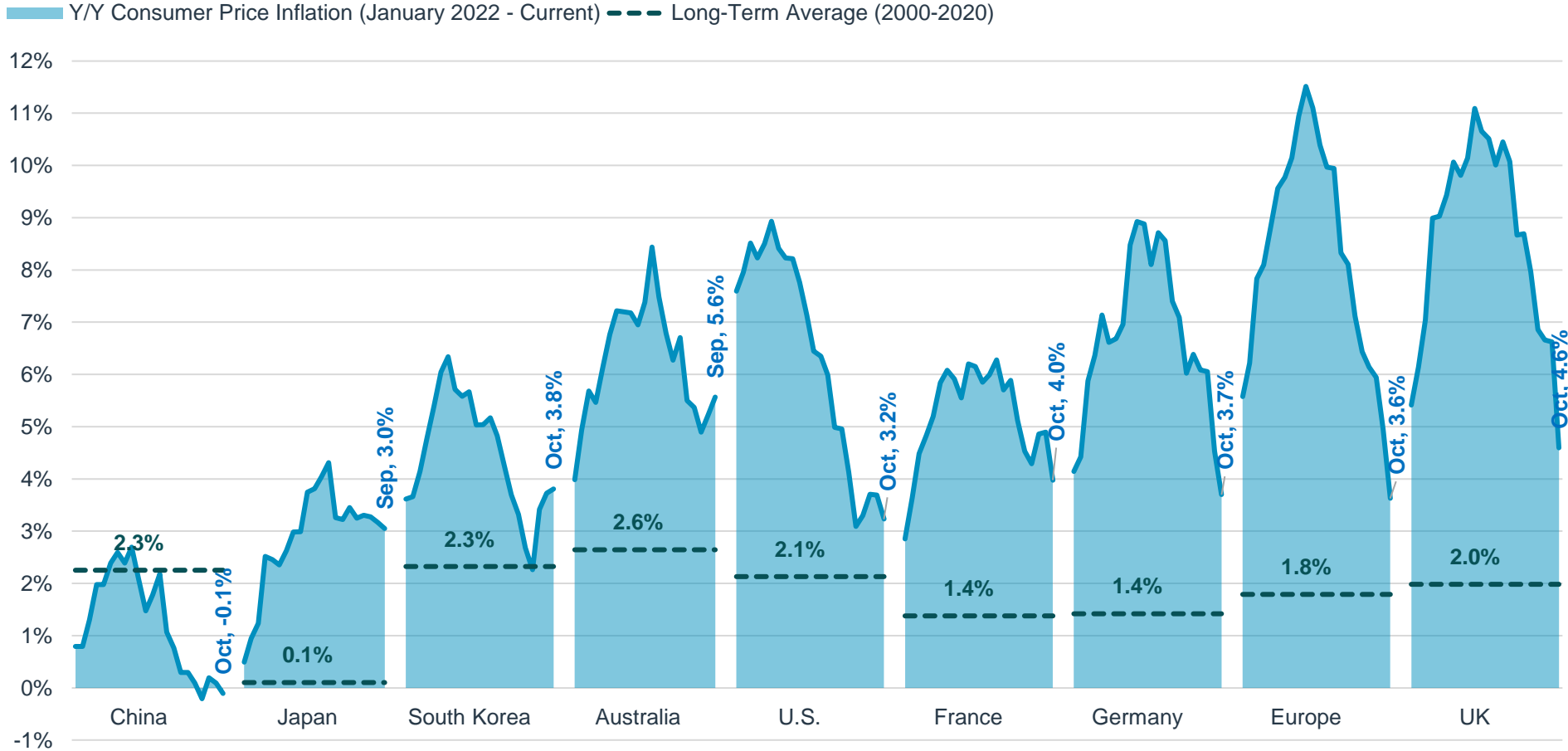
Inflation continues to trend lower



Source: Nuveen Portfolio Strategy Group, Bloomberg, Consumer Price Index from the Bureau of Labor Statistics, Start Date = January 2003, End Date = December 2023
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Inflation is still above targets, but significant progress is being made globally

Annualized inflation since January 2022 vs. long-term average

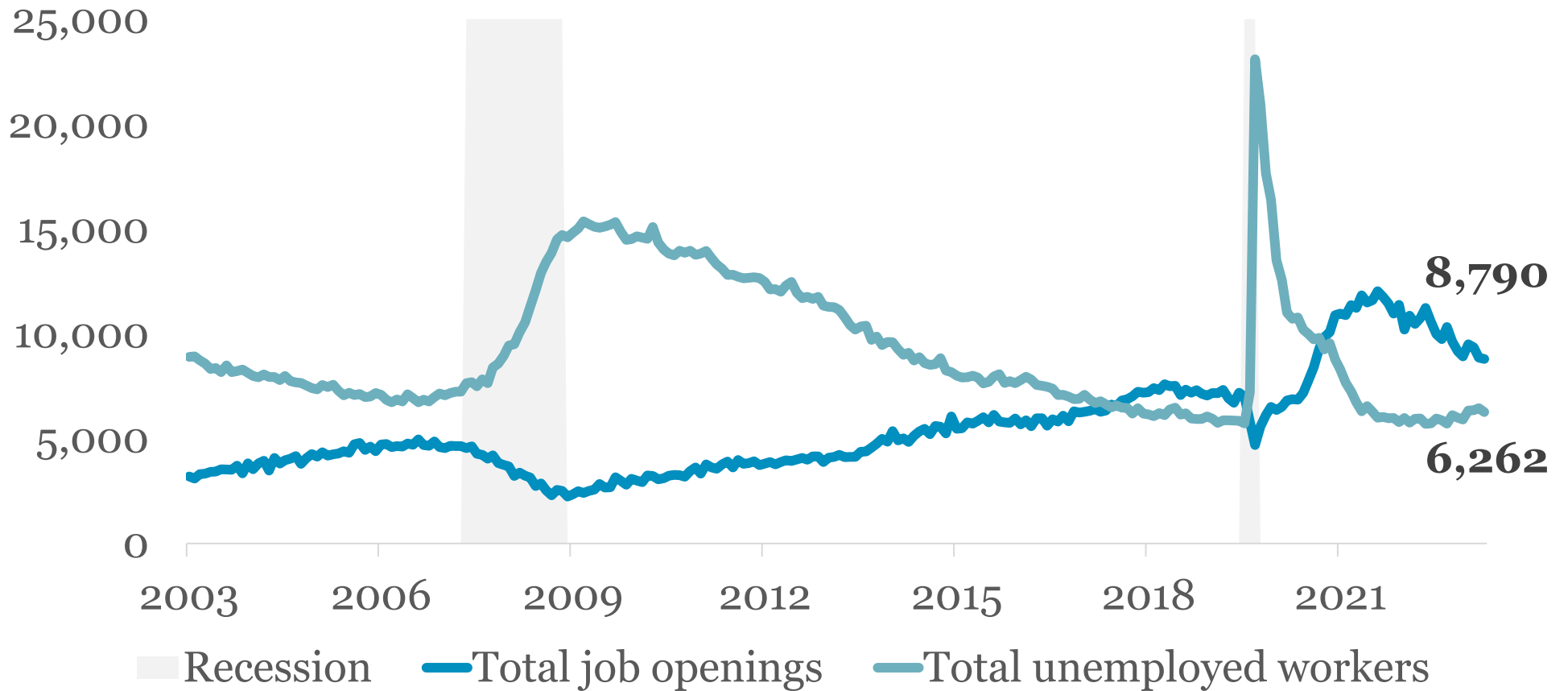


Source: Macrobond (Most current data as of 22 Nov 2023 – September or October data depending on country); Nuveen Real Estate Research.

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Mix employment reports, however still 1.4x job openings per unemployed worker in the U.S.

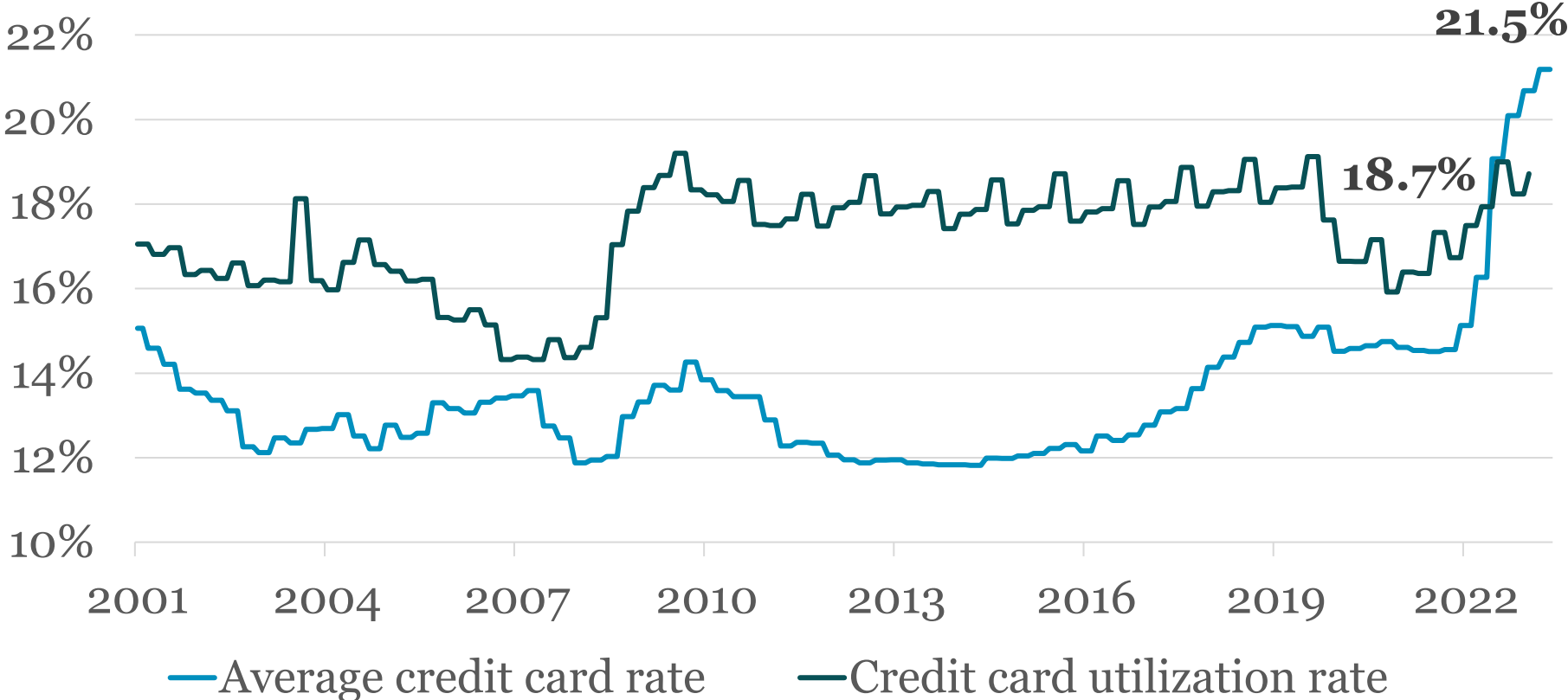
Total job openings and unemployed workers in the U.S., thousands



Source: Nuveen Portfolio Strategy Group, Bloomberg, Bureau of Labor Statistics, Start Date = January 2003 , End Date = December 2023
OPINION PIECE. PLEASE SEE IMPORTANT DISCLOSURES IN THE ENDNOTES.

Consumer continues to spend – credit card utilization back to pre-pandemic levels

Credit card interest rates have spiked to record levels



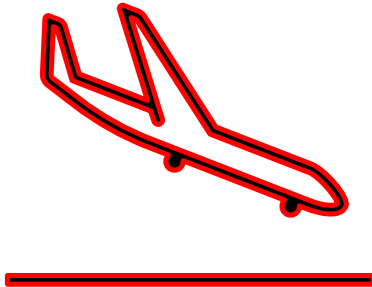
Source: Bloomberg, Average credit card rate is as of 30 November 2023 and represents the Federal Reserve Consumer Credit Commercial Bank Credit Card Rate. Credit card utilization rate is as of 30 June 2023 and represents total industry credit card loans outstanding as a percentage of total industry credit card lines available.

OPINION PIECE. PLEASE SEE IMPORTANT DISCLOSURES IN THE ENDNOTES.

“Landing” scenarios

Hard landing

- Economy contracts quickly
- Unemployment rises
- Inflation comes down quickly
- **Possible market outcome:** rates fall, credit spreads widen, equities fall



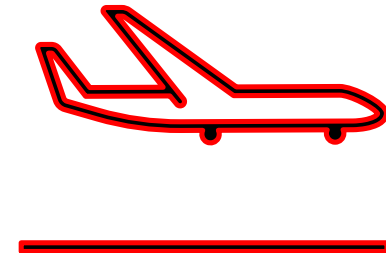
Soft landing

- Economic growth slows
- Unemployment ticks up
- Inflation comes down slowly
- **Possible market outcomes:** Rates rangebound, credit spreads tighten, equities rise



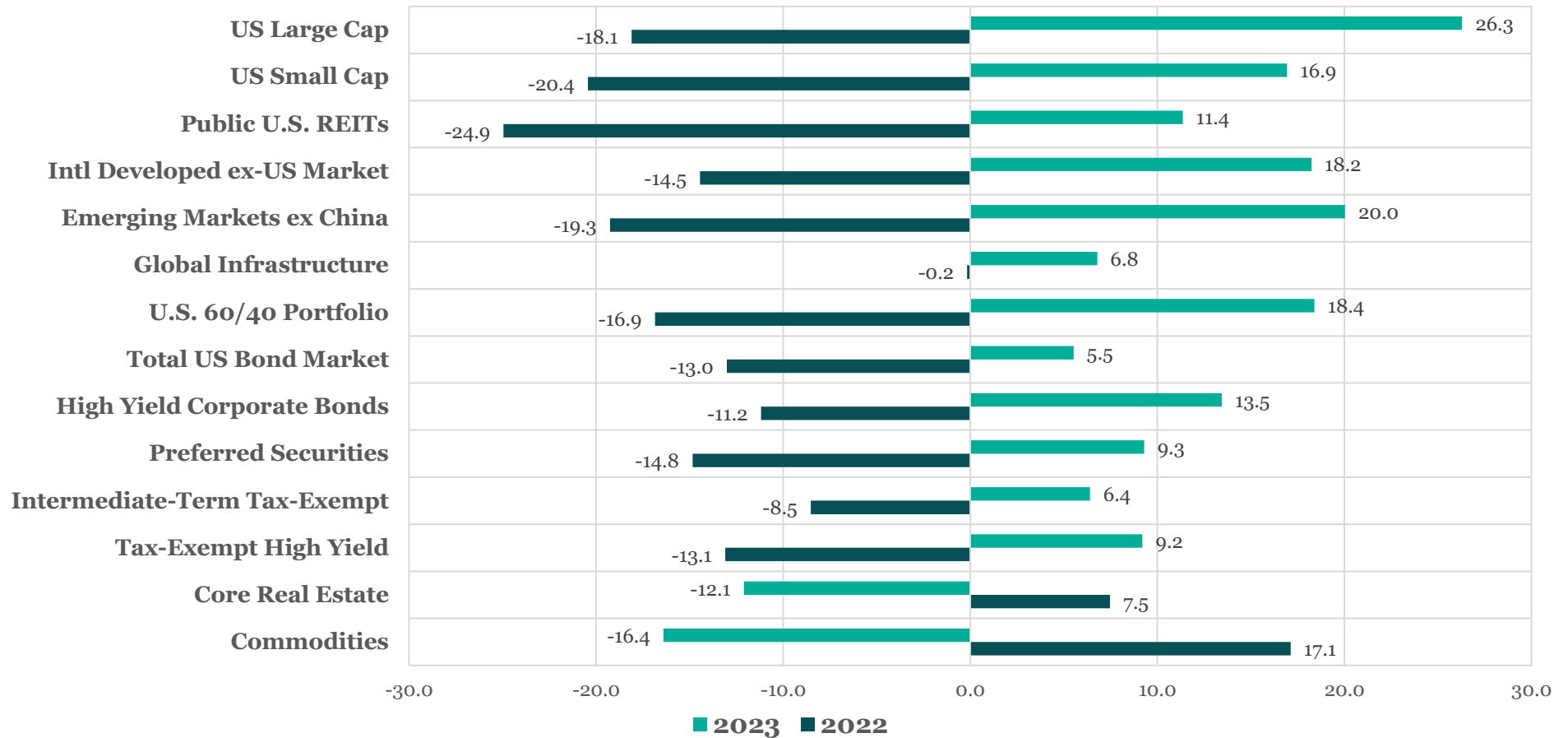
Delayed landing

- Economy remains hot
- Unemployment low
- Inflation remains high
- **Possible market outcomes:** Rates higher, credit spreads widen, equities rangebound (but fall in real terms)



Rebalancing for the most part was rewarded in 2023

Total Return %, as of December 29th, 2023



Past performance is no guarantee of future results. It is not possible to invest directly in an index. Different benchmarks and economic periods will produce different results. Other methods and market conditions may result in significantly different outcomes.

US Large Cap = S&P 500 Total Return Index; Intl Developed ex-US Market = MSCI EAFE Net Total Return USD Index; U.S. 60/40 Portfolio = Bloomberg US EQ:FI 60:40 Index; Global 60/40 Portfolio = Bloomberg Global EQ:FI 60:40 Index; High Yield Corporate Bonds = Bloomberg US Corporate High Yield Total Return Index Value Unhedged USD; U.S. Leveraged Loans = Morningstar LSTA US Leveraged Loan TR USD; Emerging Markets = MSCI Emerging Net Total Return USD Index; Tax-Exempt High Yield = Bloomberg Municipal Bond: High Yield (non-Investment Grade) TR Unhedged; US Small Cap = Russell 2000 Total Return Index; Preferred Securities = ICE BofA US All Capital Securities Index; Emerging Market Debt = J.P. Morgan EMBI Global Diversified Composite; Short Duration Tax-Exempt High Yield = Bloomberg Municipal High Yield Short Duration Index TR Index; Global Infrastructure = S&P Global Infrastructure Total Return Index; Total US Bond Market = Bloomberg US Agg Total Return Value Unhedged USD; Intermediate-Term Tax-Exempt = Bloomberg Municipal Bond Index Total Return Index Value Unhedged USD; Short-term bond = Bloomberg US Treasury Bellwethers 2 Year TR Index Value Unhedged USD; Public U.S. REITs = FTSE NAREIT All Equity REITs Total Return Index; Core Real Estate* = NCREIF Fund Index Open End Diversified Core (ODCE) Total Index Value; Commodities = Bloomberg Commodity Index Total Return; Source: Bloomberg, Nuveen.

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GIC Highest Conviction Views



Downgrade from last quarter

Upgrade from last quarter

The views above are for informational purposes only and convey the relative merits of each asset class based on the collective assessment of Nuveen's Global Investment Committee. They do not reflect the experience or performance of any Nuveen product, strategy or service. Upgrade and downgrades reflect quarterly shifts in these views.

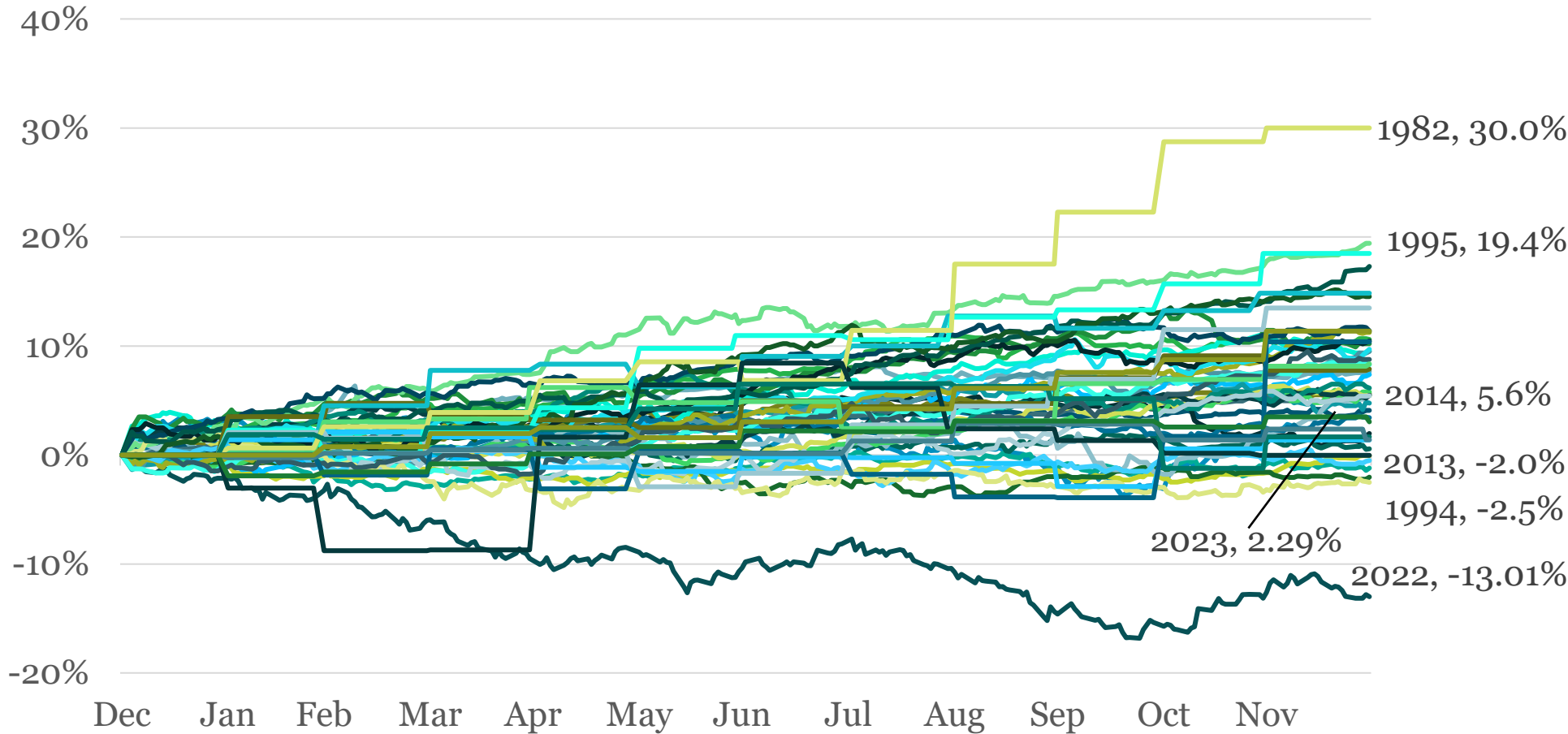
OPINION PIECE. PLEASE SEE IMPORTANT DISCLOSURES IN THE ENDNOTES.

Fixed income

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The last battle: 2022's historic fixed income pain

Bloomberg U.S. Aggregate Bond Index, calendar year path



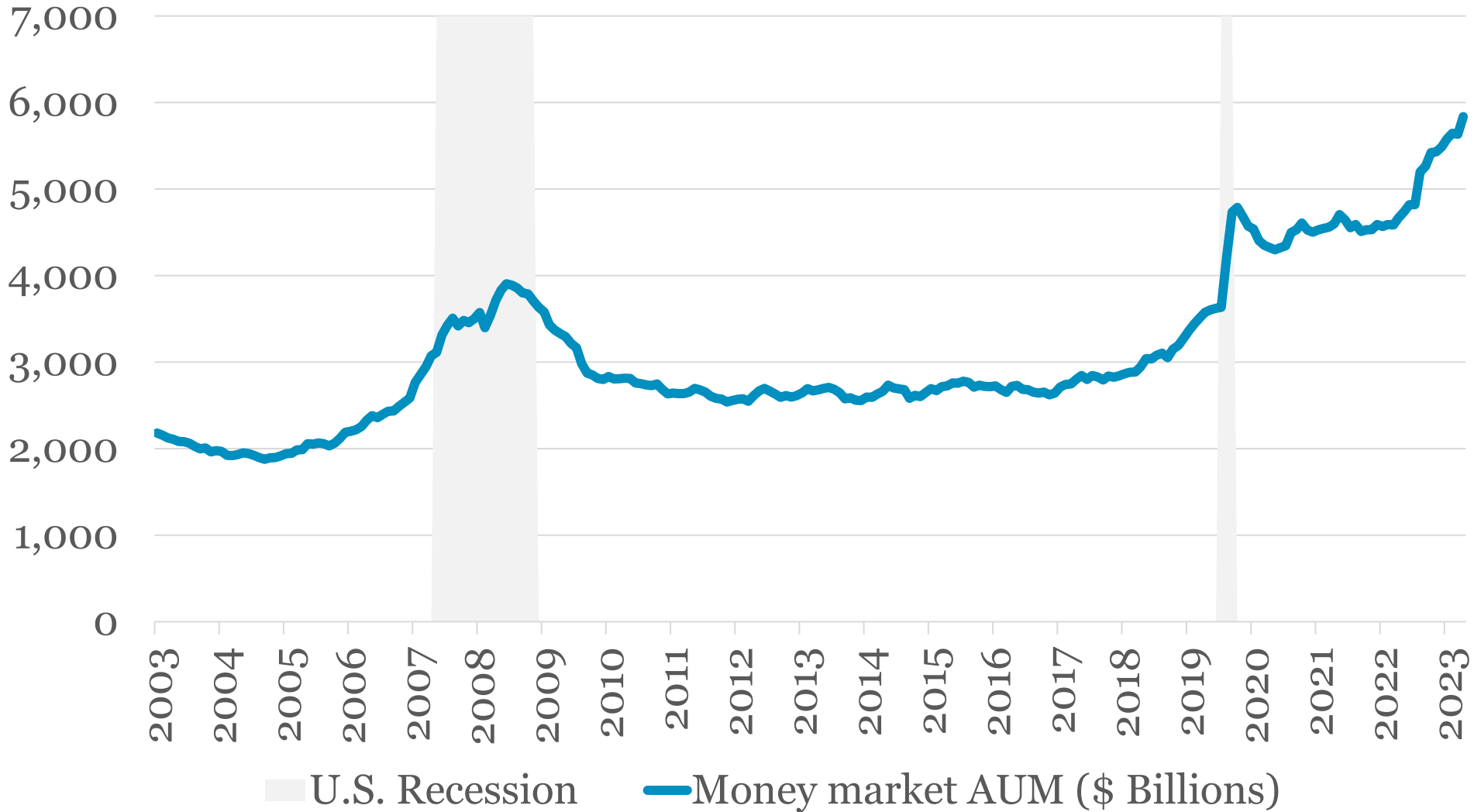
Past performance is no guarantee of future results. It is not possible to invest directly in an index.

Data source: Nuveen Portfolio Strategy & Solutions. Bloomberg, L.P., 08 December 2023.

OPINION PIECE. PLEASE SEE IMPORTANT DISCLOSURES IN THE ENDNOTES.

If markets are strong, why the dash for cash?

Money market Assets Under Management (AUM)

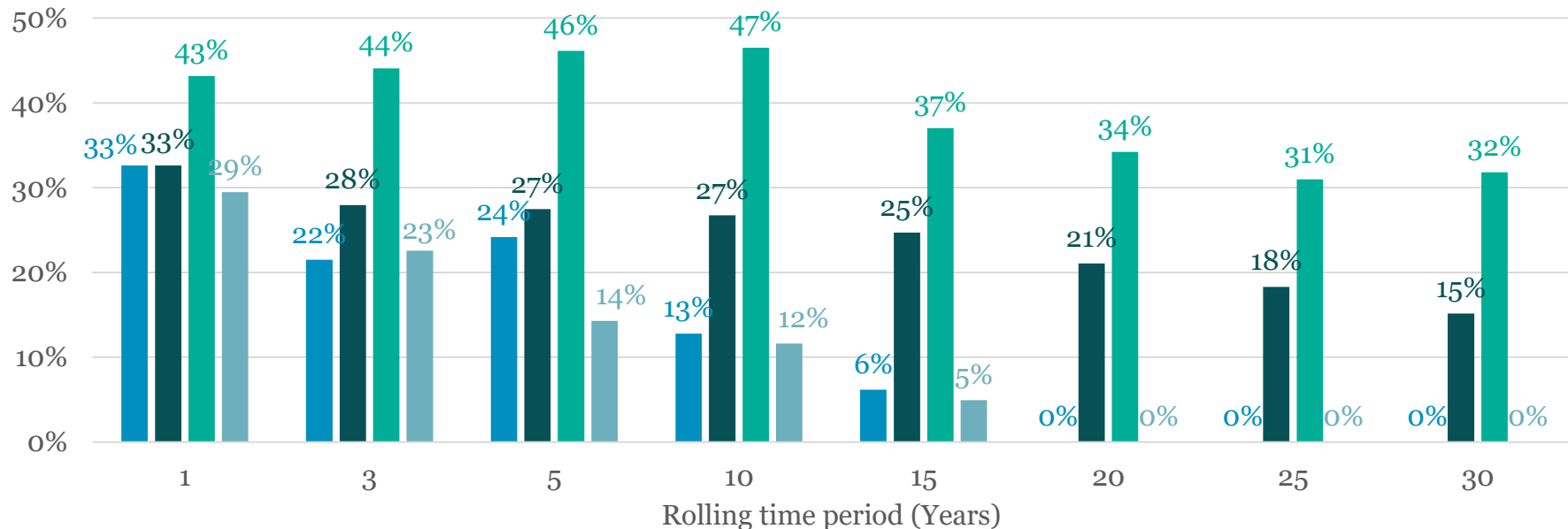


Source: Nuveen Portfolio Strategy Group, Bloomberg, ICI Investment Company Institute, Start Date = January 2003 , End Date = 11/2023
OPINION PIECE. PLEASE SEE IMPORTANT DISCLOSURES IN THE ENDNOTES.

“Every rose has its thorn”

Cash risks losing after inflation the longer you hold it

% of times losing money after inflation



■ Stocks (S&P 500 Index incl dividends)

■ Bonds (50% 10Y Treasury/50% IG Corp Bonds)

■ T-Bills

■ 60% Stocks, 40% Bonds

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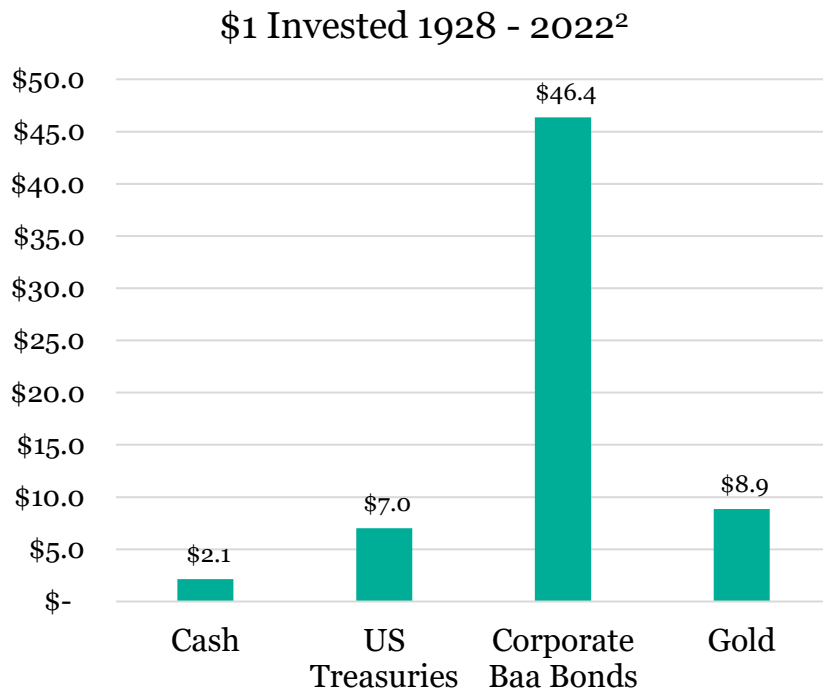
Source: Bloomberg, annual total returns shown are from 1928 to 2022. Representative Indexes: Stocks (S&P 500 Index), Bonds (10Y Treasury Index & Bloomberg Baa Corporate Index), T-Bills (3 Month Government Bill).

OPINION PIECE. PLEASE SEE IMPORTANT DISCLOSURES IN THE ENDNOTES.

Cash is a long-run drag. Timing is very difficult.

Real investment returns very low

Forecaster accuracy: rates up or down?



45%¹

Accuracy of a coin flip:

50%

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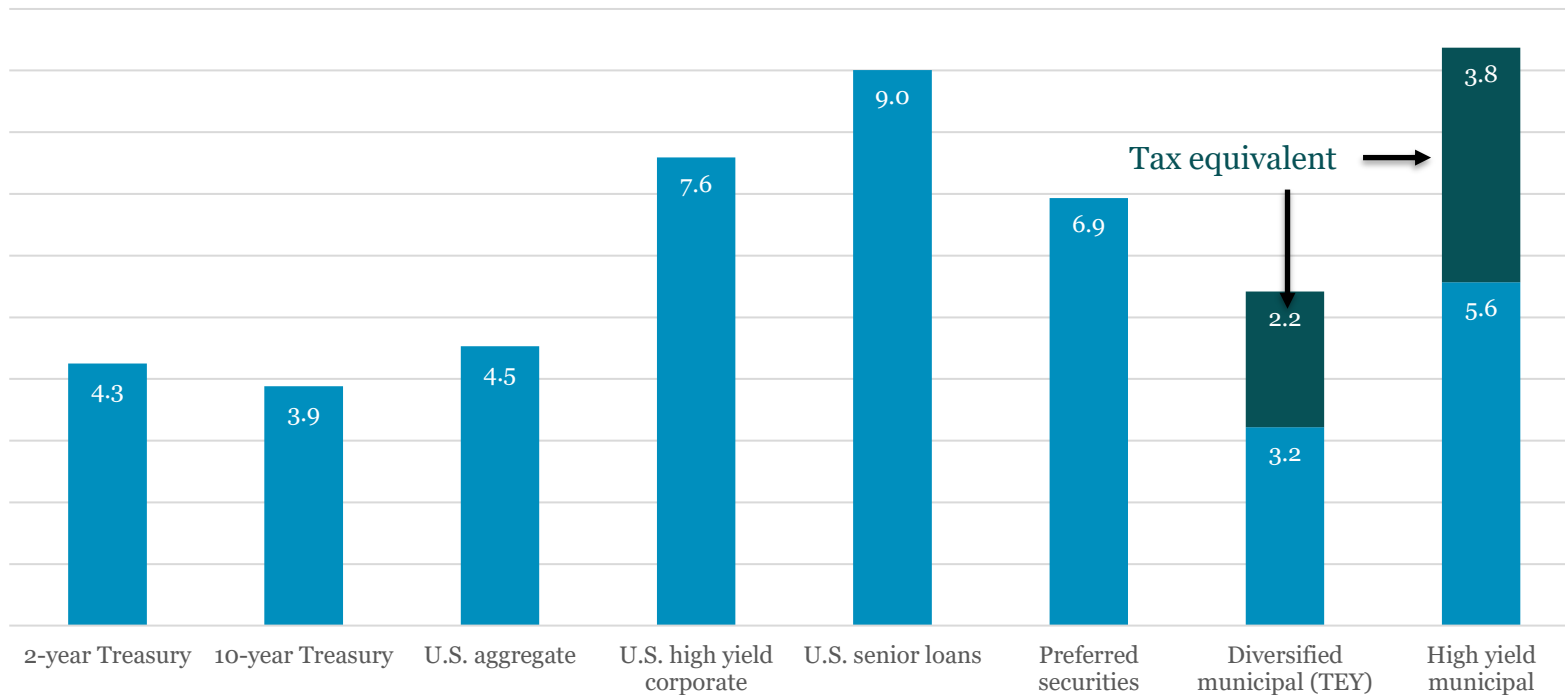
Data source: Nuveen Portfolio Strategy Group; 1- Bloomberg Survey of Economic Forecasts 2002 – 2022. 2 – NYU Prof. Aswath Damodaran; https://pages.stern.nyu.edu/~adamodar/New_Home_Page/datafile/histretSP.html

OPINION PIECE. PLEASE SEE IMPORTANT DISCLOSURES IN THE ENDNOTES.

Bright spot is higher yields

Fixed income offers attractive starting yields

Current yields (%)



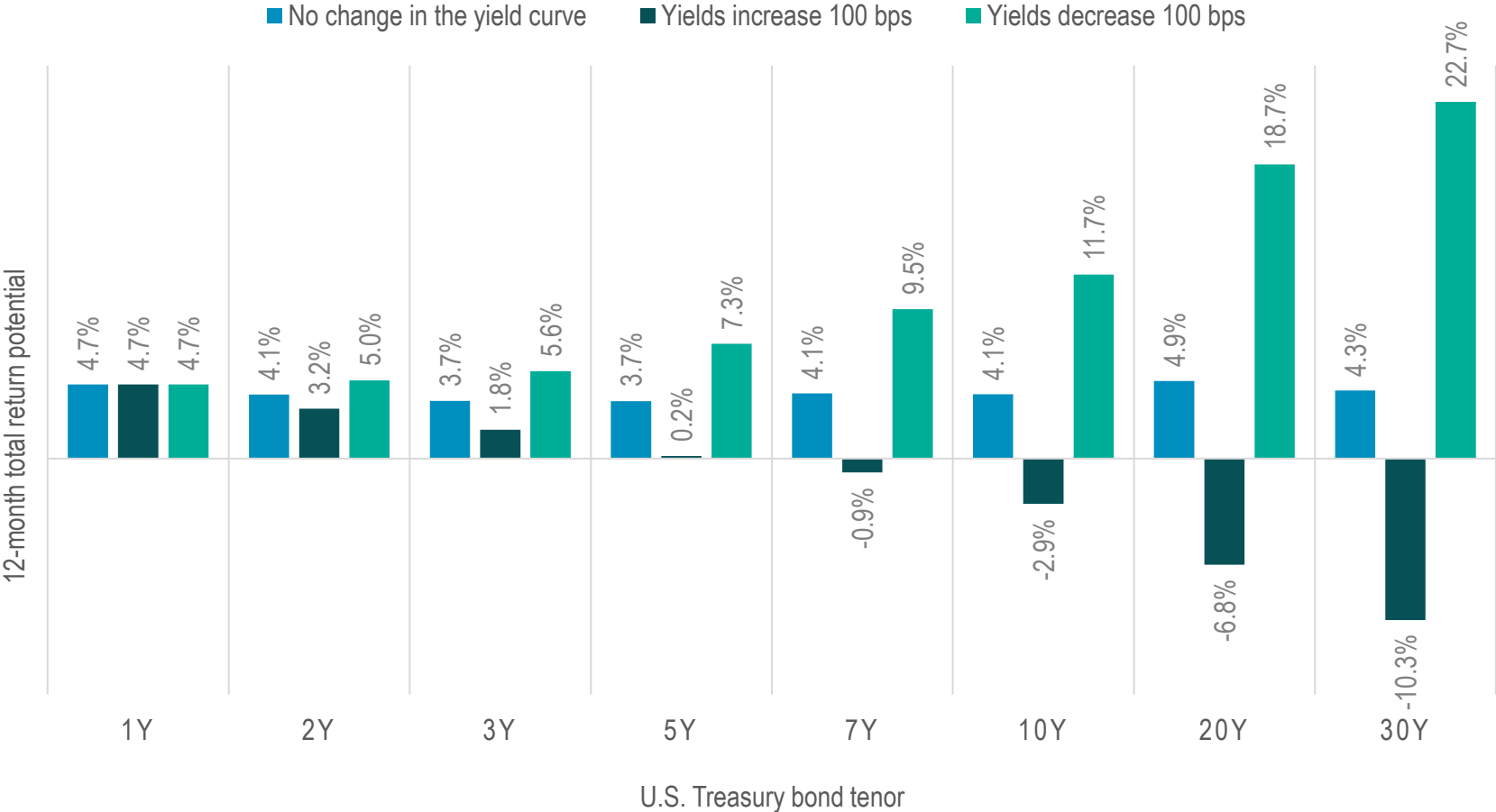
Data source: Bloomberg, L.P., 29 Dec 2023. **Performance data shown represents past performance and does not predict or guarantee future results.** Taxable-equivalent yield is the yield a taxable investment needs to possess (before taxes) for its yield to be equal to that of a tax-free municipal investment. The yields shown are based on the highest individual marginal federal tax rate of 37%, plus the 3.8% Medicare tax on investment income. Individual tax rates may vary. They do not take into account the effects of the federal alternative minimum tax (AMT) or capital gains taxes.

Representative indexes: **U.S. Treasuries:** U.S. Treasury 2-year and 10-year yield; **U.S. aggregate:** Bloomberg U.S. Aggregate Bond Index; **U.S. high yield corporates:** Bloomberg U.S. High Yield 2% Issuer Capped Index; **U.S. senior loans:** Credit Suisse Leveraged Loan Index; **Preferred securities:** ICE BofA U.S. All Capital Securities Index; **Diversified municipal:** Bloomberg Municipal Index; **High yield municipal:** Bloomberg High Yield Municipal Index.

OPINION PIECE. PLEASE SEE IMPORTANT DISCLOSURES IN THE ENDNOTES.

With Treasury yields likely to decline, bond math favors owning duration

Potential investment returns for treasury tenors over the next year



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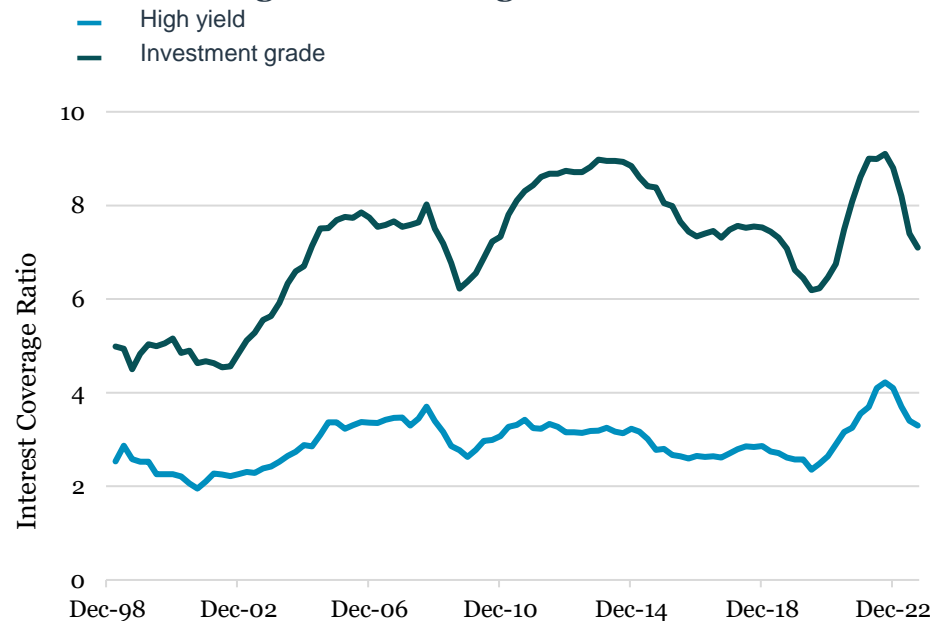
Source: Nuveen, Bloomberg, LP., 18 December 2023. Total return includes roll, price change and coupon return.

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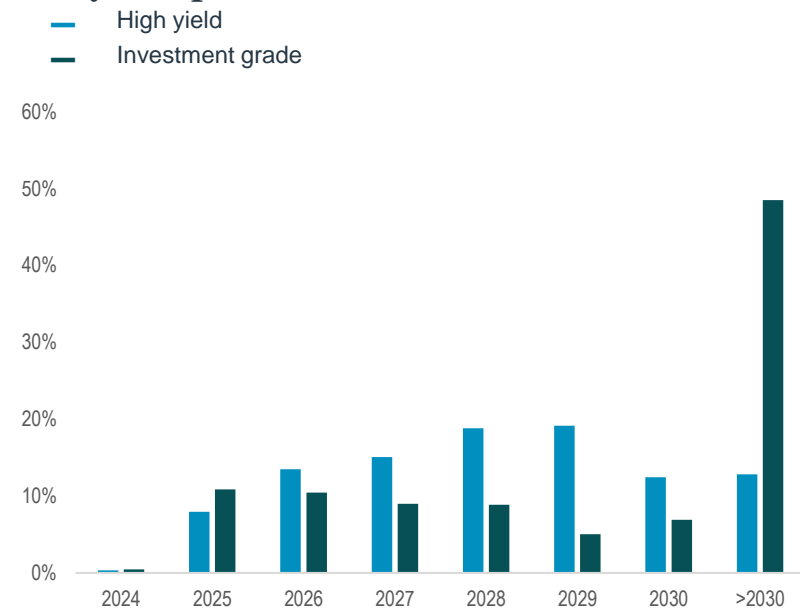
Fundamentals are relatively strong, maturity wall dynamics support corporate credit

Companies used the last two years to improve their capital structures and reduce refinancing needs.

Interest coverage ratios are high



Maturity wall pushed out



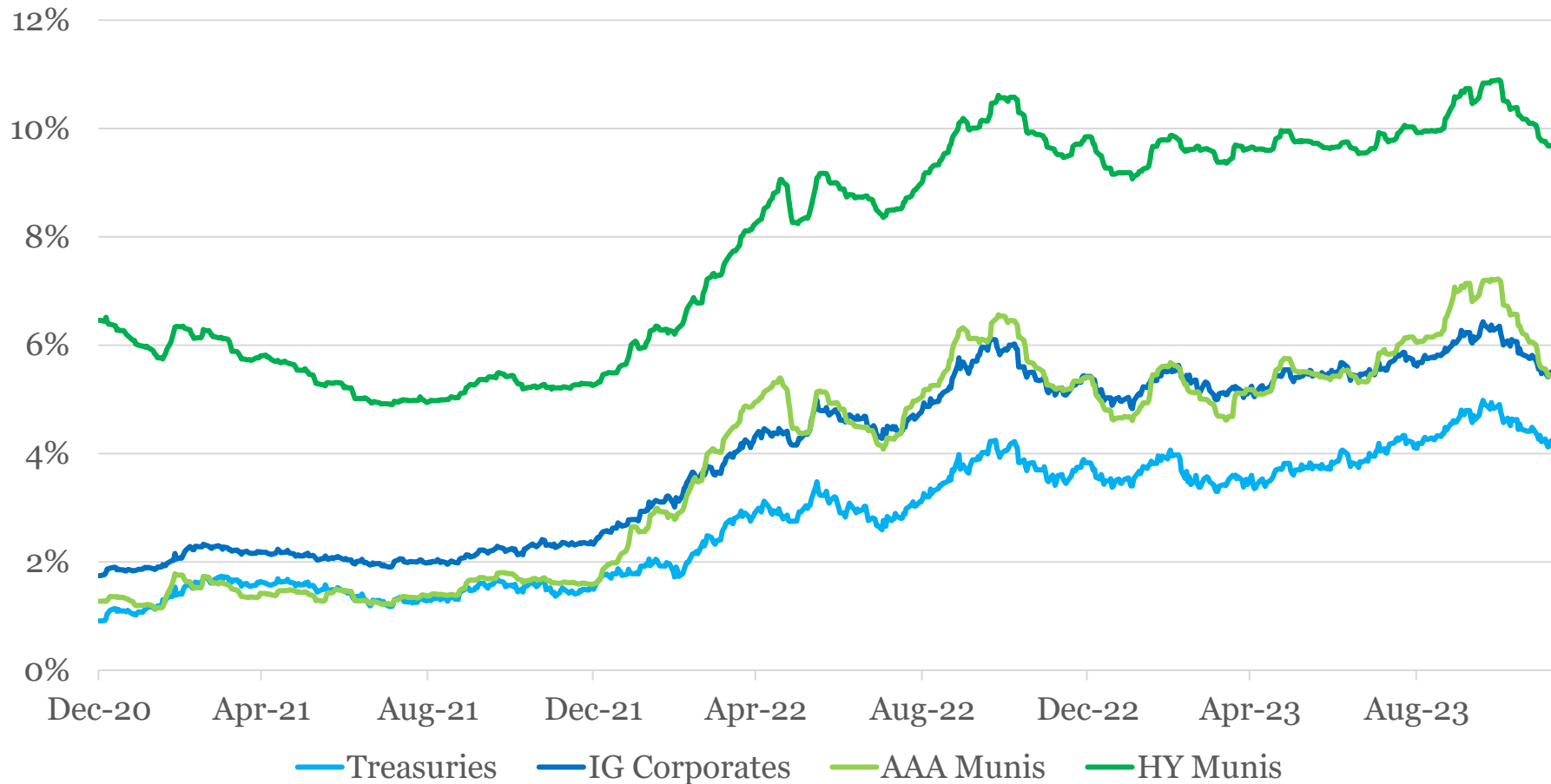
Source: Nuveen Portfolio Strategy & Solutions, Bloomberg.

Interest coverage ratio is from 31 Dec 1998 to 30 Sep 2023. Data depicts the ratio of interest expense covered by the annual operating profits of the Bloomberg Corporate High Yield Index. The maturity wall is as 08 Dec 2023.

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Tax Equivalent Yield of Fixed Income Sectors

For client seeking to enhance the yield of their portfolio and diversify their risk exposures can do so by blending investment grade (IG) and high yield (HY) municipals into their fixed income allocation



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Source: Bloomberg, Nuveen Portfolio Strategy & Solutions, as of 08 December 2023. Tax-equivalent yield assumes a 40.8% maximum tax rate. Representative Indexes: Treasuries (Bloomberg US Treasury Bellwethers 10 Year TR Index), IG Corporates (Bloomberg US Corporate Investment Grade Credit Index), AAA Municipals (Bloomberg Municipal AAA TR Index), HY Munis (Bloomberg Muni High Yield TR Index).

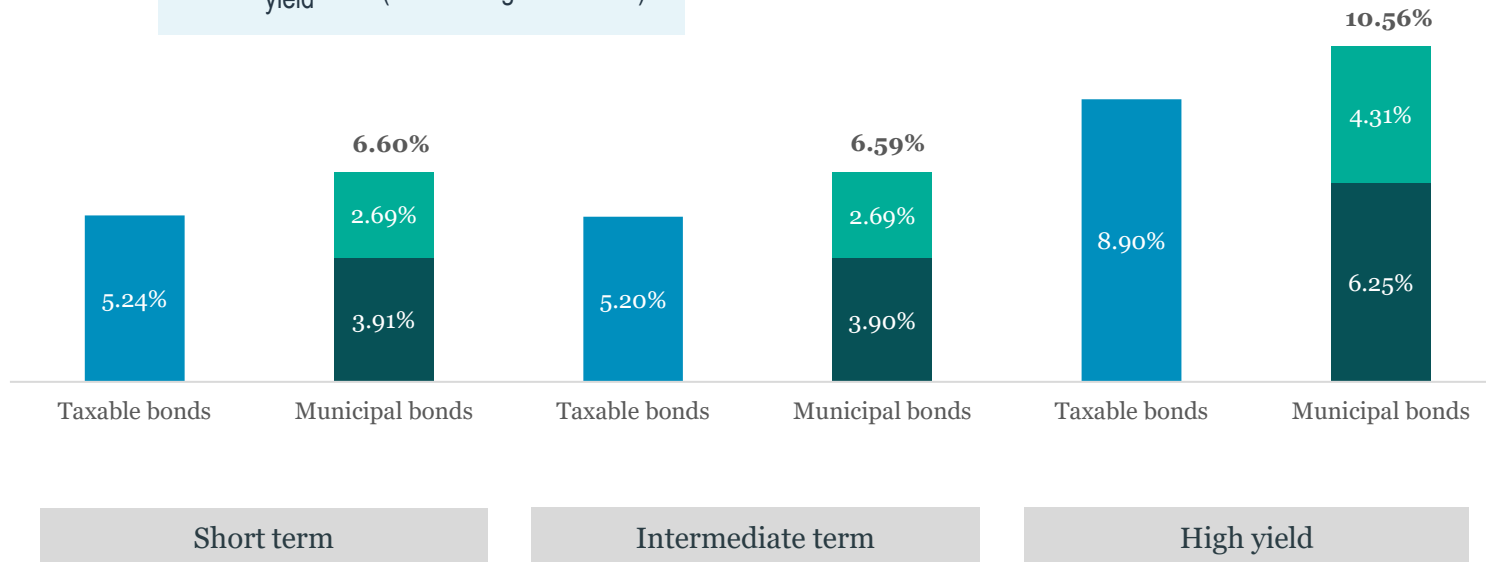
OPINION PIECE. PLEASE SEE IMPORTANT DISCLOSURES IN THE ENDNOTES.

Municipals are attractive on an after-tax basis

Yield comparison

$$\text{Taxable equivalent yield} = \frac{\text{Tax-exempt yield}}{(100\% - \text{marginal tax rate})}$$

- Taxable yield
- Taxable-equivalent yield¹
- Tax-exempt yield²



The intermediate taxable-equivalent yield is 6.59% today vs. 1.52% at the start of 2022.

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¹ The taxable-equivalent yield is based on the highest individual marginal federal tax rate of 37%, plus the 3.8% Medicare tax on investment income (the Net Investment Income Tax). Individual tax rates may vary.

² Some income may be subject to state and local taxes and the federal alternative minimum tax.

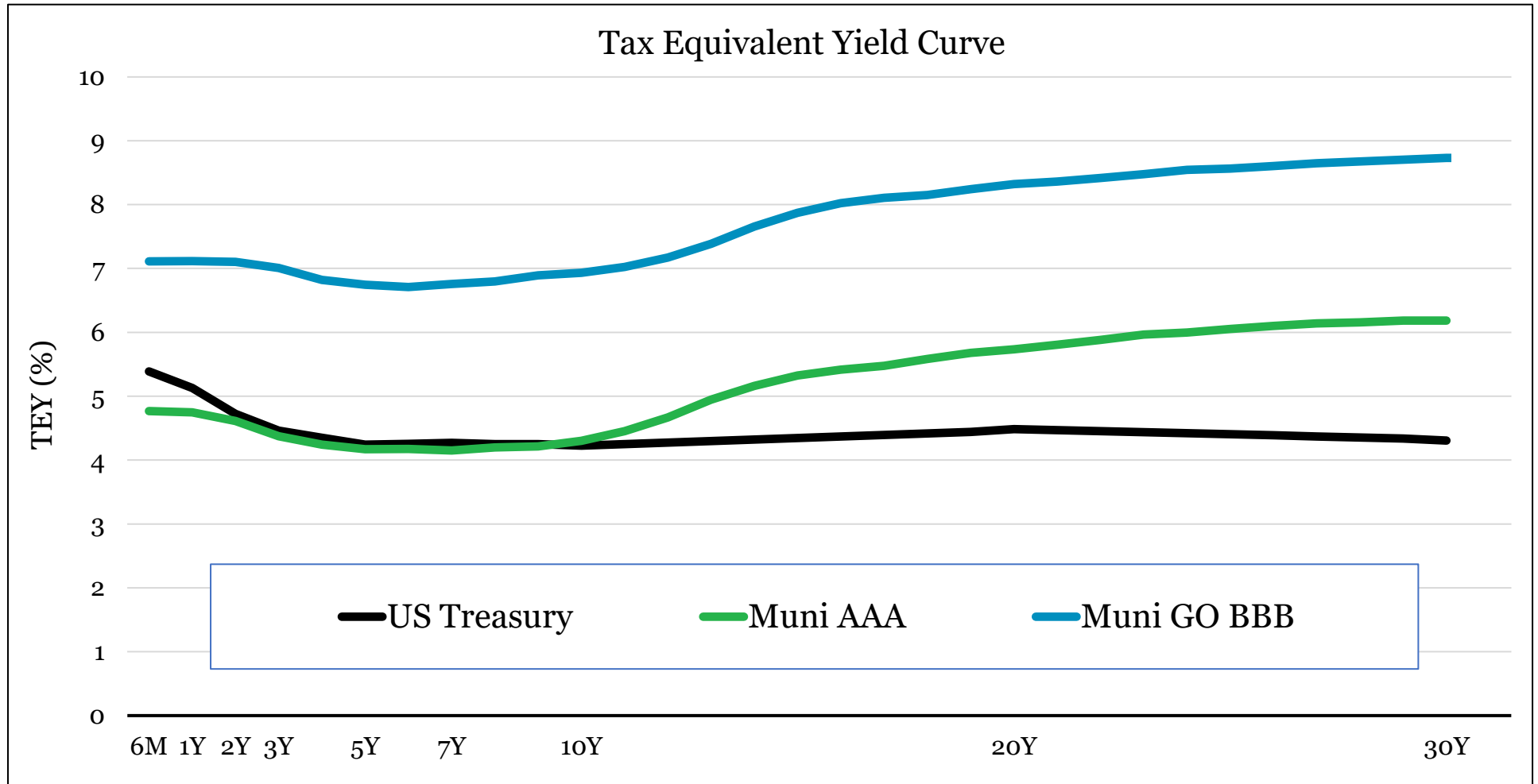
Data source: Bloomberg L.P., 30 Sep 2023. **Performance data shown represents past performance and does not predict or guarantee future results.** Yields are yield to worst. **Yield to worst** is the lowest potential yield that can be received on a bond without the issuer defaulting. **Taxable-equivalent yield** is the yield a taxable investment needs to possess (before taxes) for its yield to be equal to that of a tax-free municipal investment. The yields shown are based on the highest individual marginal federal tax rate of 37%, plus the 3.8% Medicare tax on investment income. Individual tax rates may vary. They do not take into account the effects of the federal alternative minimum tax (AMT) or capital gains taxes.

Representative indexes: **Short term taxable bonds:** Bloomberg U.S. Government/Credit 1-5 Year Index; **Short term municipal bonds:** Bloomberg Municipal Short Index; **Intermediate term taxable bonds:** Bloomberg U.S. Government/Credit 5-10 Year Index; **Intermediate term municipal bonds:** Bloomberg Municipal Intermediate Index; **High yield taxable bonds:** Bloomberg Corporate High Yield 2% Issuer Capped Index; **High yield municipal bonds:** Bloomberg High Yield Municipal Bond Index. Different benchmarks, economic periods, methodologies and market conditions will produce different results.

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Muni out-yielding treasuries across maturities

For client seeking to enhance the yield of their portfolio, municipals into their fixed income allocation



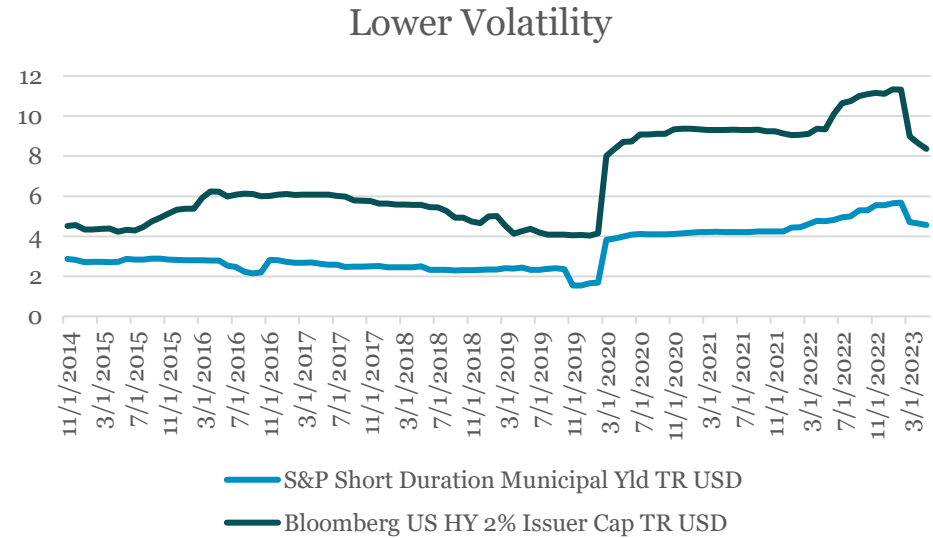
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Source: Bloomberg, Nuveen Portfolio Strategy & Solutions, as of 08 December 2023. Tax-equivalent yield assumes a 40.8% maximum tax rate. Representative Indexes: Treasuries (Bloomberg US Treasury Bellwethers 10 Year TR Index), IG Corporates (Bloomberg US Corporate Investment Grade Credit Index), AAA Municipals (Bloomberg Municipal AAA TR Index), HY Munis (Bloomberg Muni High Yield TR Index).

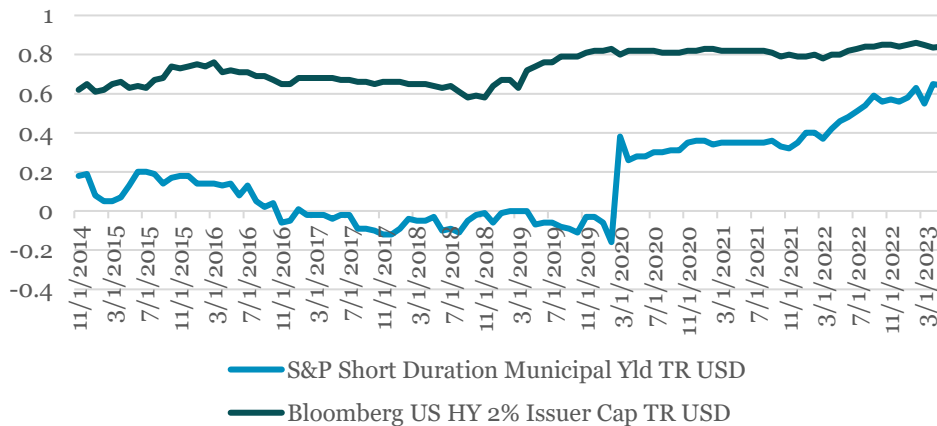
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Short Duration (SD) HY Munis vs. Corporate Credit - *Differences*

- *SD HY Municipals have been less volatile than high yield corporate bonds*



Lower Correlation to Equities



- *SD HY Municipals have had lower correlation to equities than high yield corporate bonds*

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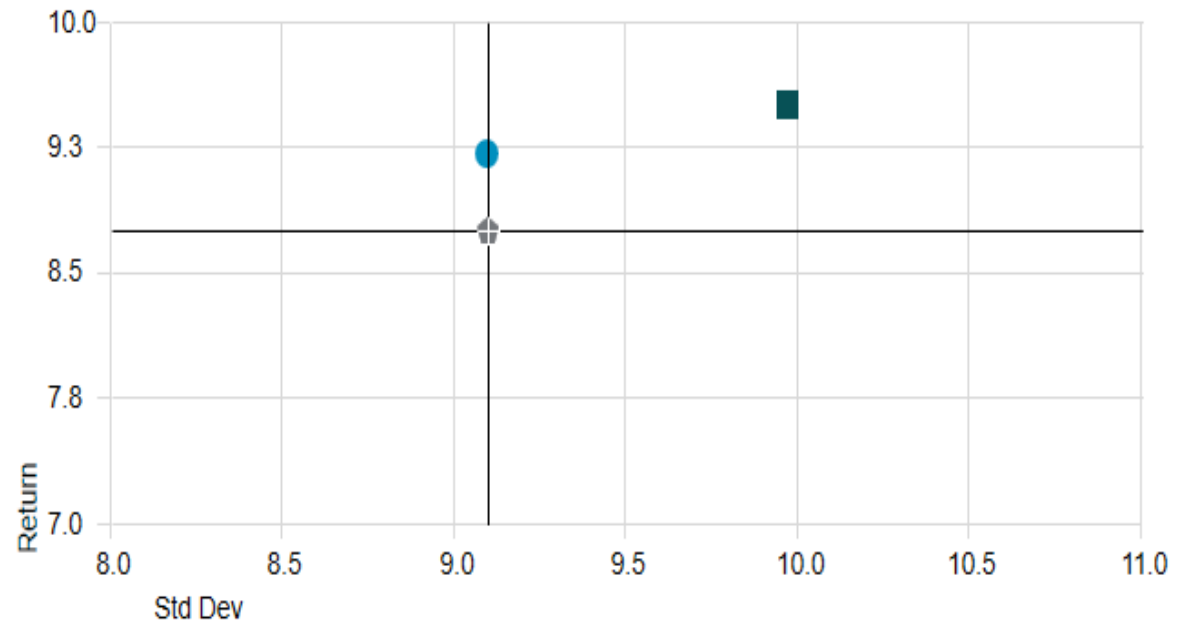
Source: Morningstar Direct. Lower volatility: Rolling 3 year annualized standard deviation of monthly returns. Since common inception. Source: Morningstar Direct Lower correlation to equities: Rolling 36-month correlation to S&P 500. Since common inception.

OPINION PIECE. PLEASE SEE IMPORTANT DISCLOSURES IN THE ENDNOTES.

Including SD HY Munis in a 60/40 portfolio has historically increased risk-adjusted returns – *even without accounting for tax benefits.*

- *Similar volatility and higher returns than a traditional 60/40*
- *Lower volatility and similar returns as a 60/40 utilizing corporate high yield bonds*

Time Period: 12/1/2011 to 5/31/2023



- 60% S&P 500 + 20% Bloomberg Agg + 20% SD HY Munis
- 60% S&P 500 + 20% Bloomberg Agg + 20% HY Corporate
- ◆ 60% S&P 500 + 40% Bloomberg Agg

Past performance is no guarantee of future results. It is not possible to invest directly i

Source: Morningstar Direct

OPINION PIECE. PLEASE SEE IMPORTANT DISCLOSURES IN THE ENDNOTES.

Relative value across income sectors

A dashboard of the yield and spread of various income sectors, as well as how these spreads compare to their historical averages.

Based on standardized spread levels vs trailing 3, 5 and 10-year averages

As of November 30th, 2023

	U.S. agg bond ¹	IG corp ²	CLO (AA) ³	Pfd ⁴	EMD (\$) ⁵	HY corp ⁶	Lev loans ⁷	CLO (BB) ⁸	Taxable muni ⁹	AA muni ¹⁰	A muni ¹⁰	BBB muni ¹⁰	HY muni ¹¹	Real estate ¹²
Yield to Worst / Cap Rate	5.05	5.58	6.30	7.49	7.62	8.43	9.78	12.91	5.37	3.63	3.86	4.37	5.81	6.60
Spreads*	0.45	1.08	2.26	2.34	3.07	3.71	5.58	8.75	0.85	0.19	0.42	0.93	2.30	2.27
Net chg 1M	-0.11	-0.29	-0.18	-0.45	-0.29	-0.63	-0.20	-0.80	-0.02	-0.10	-0.11	-0.11	0.25	0.81
Net chg 1Y	-0.08	-0.36	-0.40	-0.31	-0.56	-0.96	-0.78	-1.24	-0.40	-0.15	-0.13	-0.06	-0.19	-0.05
3Y Avg Spread	0.45	1.24	2.14	2.18	3.31	3.84	5.29	8.44	0.95	0.26	0.45	0.86	2.14	2.77
5Y Avg Spread	0.48	1.32	2.11	2.11	3.45	4.18	5.39	8.46	1.06	0.24	0.43	0.89	2.30	3.18
10Y Avg Spread	0.47	1.32	2.06	1.96	3.31	4.27	5.13	7.54	1.18	0.23	0.47	0.95	2.77	3.09
3Y Z-Score	0.06	-0.63	0.27	0.36	-0.52	-0.17	0.36	0.25	-0.55	-0.88	-0.27	0.39	0.48	-0.57
5Y Z-Score	-0.24	-0.76	0.32	0.37	-0.48	-0.43	0.18	0.16	-0.73	-0.62	-0.15	0.16	0.00	-0.95
10Y Z-Score	-0.17	-0.84	0.48	0.56	-0.34	-0.51	0.47	0.67	-1.17	-0.74	-0.52	-0.09	-0.61	-1.12
Duration	6.11	8.19		4.84	5.84	3.32	0.25						7.41	

Z-score = Number of standard deviations between the current spread level and the historic average spread

Spreads **tighter** than historic average  Spreads **wider** than historic average

Source Bloomberg, Thompson Reuters MMD as of 30 November 2023. *Spreads for municipals are YTW vs. AAA 20-yr municipal yield; for CLO AA JPM CLO Total AA discount margin; for CLO BB JPM CLO Total BB discount margin; for leveraged loans and middle mkt loans discount margin (3-yr life); and OAS to U.S. Treasury for all other fixed income sectors. **Option adjusted duration is shown, except for Leveraged Loans (effective duration is shown here). Representative indexes: 1 **U.S. Agg Bond**: Bloomberg Barclays U.S. Aggregate Total Return Value Unhedged USD Index; 2 **Investment Grade Corp**: Bloomberg Barclays Liquid Investment Grade Corp Total Return Unhedged USD Index; 3 **CLO AA**: JPM CLO Total AA Yield Index; Index inception 12.30.11; 4 **Preferred securities**: ICE BofA US ALL Capital Securities Index (3/2012-4/2021), CE BofA Fixed Rate Preferred Securities Index (4/2011-2/2012); 5 **Emerging markets debt**: JPM EMBI Global Diversified Index; 6 **High yield corporates**: Bloomberg Barclays U.S. Corporate High Yield 2% Issuer Capped Total Return Value Unhedged Index; 7 **Leveraged loans**: Credit Suisse Leveraged Loan Index; 8 **CLO BB**: JPM CLO Total BB Yield Index; Index inception 12.30.11; 9 **Taxable municipals**: Bloomberg Barclays Municipal Index Taxable Bonds Total Return Index Value; 10 **AA, A, and BBB Municipal**: Thompson Reuters MMD Scale; 11 **High yield municipals**: Bloomberg Barclays High Yield Municipal Index; 12 **Real estate**: Green street advisors. Nominal Cap Rate of Major Sectors, Spread = difference between Nominal Cap Rate and the U.S.10Y Treasury Yield. **Past performance is no guarantee of future results.** It is not possible to invest directly in an index.

Private markets

OPINION PIECE. PLEASE SEE IMPORTANT DISCLOSURES IN THE ENDNOTES.

Do you need daily liquidity?

Investors overestimate liquidity needs while underestimating longevity risk

#1 Reason advisors do not use alternatives¹:

Illiquidity

Average mutual fund holding period²:

4.4 years

Joint life expectancy of 65-year-old retiring couple³:

26.2 years

Source: Nuveen Portfolio Strategy & Solutions.

1 Cerulli Associates, The Cerulli Edge October 2022.

2 Dalbar Quantitative Analysis of Investor Behavior Report 2021. Average Retention Rate of equity mutual fund investors in 2021.

3 2020 Joint Life Expectancy tables, irahelp.com. <https://www.ira-help.com/printable/2020-joint-life-expectancy-table>.

OPINION PIECE. PLEASE SEE IMPORTANT DISCLOSURES IN THE ENDNOTES.

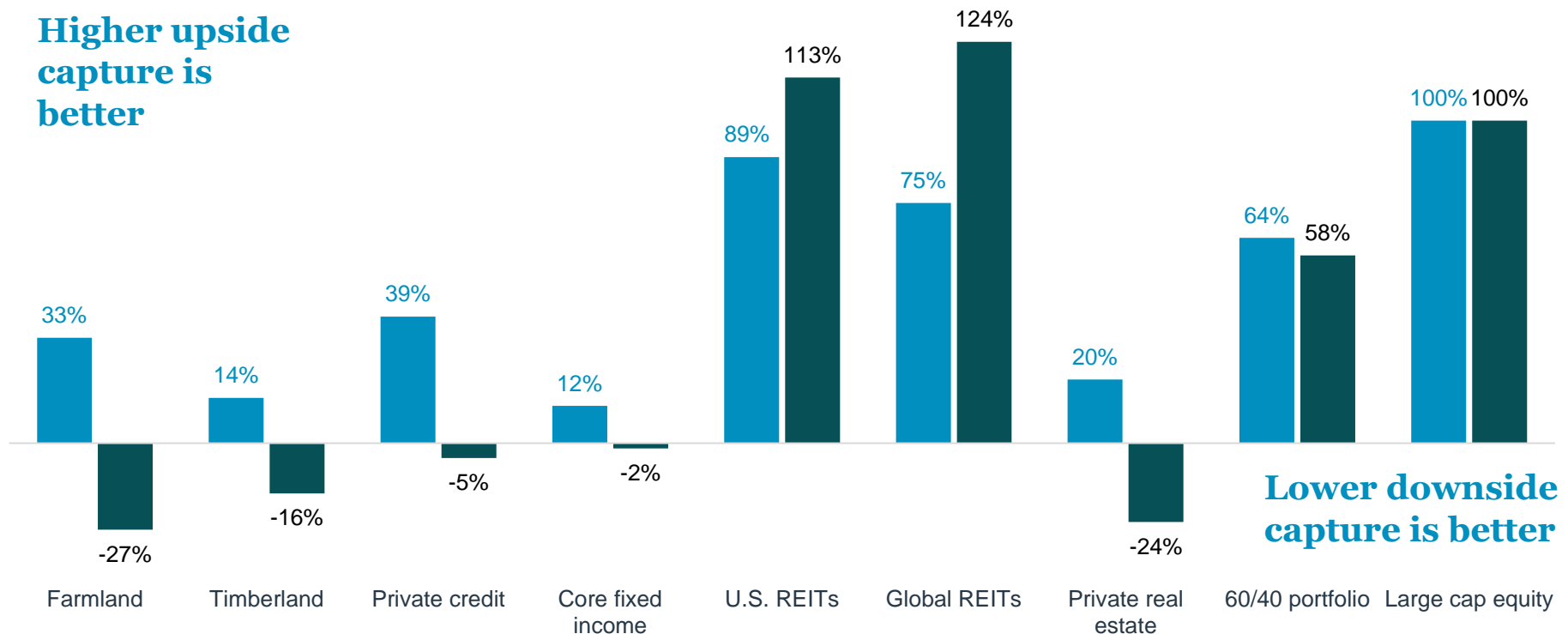
Private markets for stability

Private markets offer less upside (but also less downside + portfolio benefits)

Return capture vs the S&P 500 Index (15 years)

■ Upside capture ■ Downside capture

Higher upside capture is better



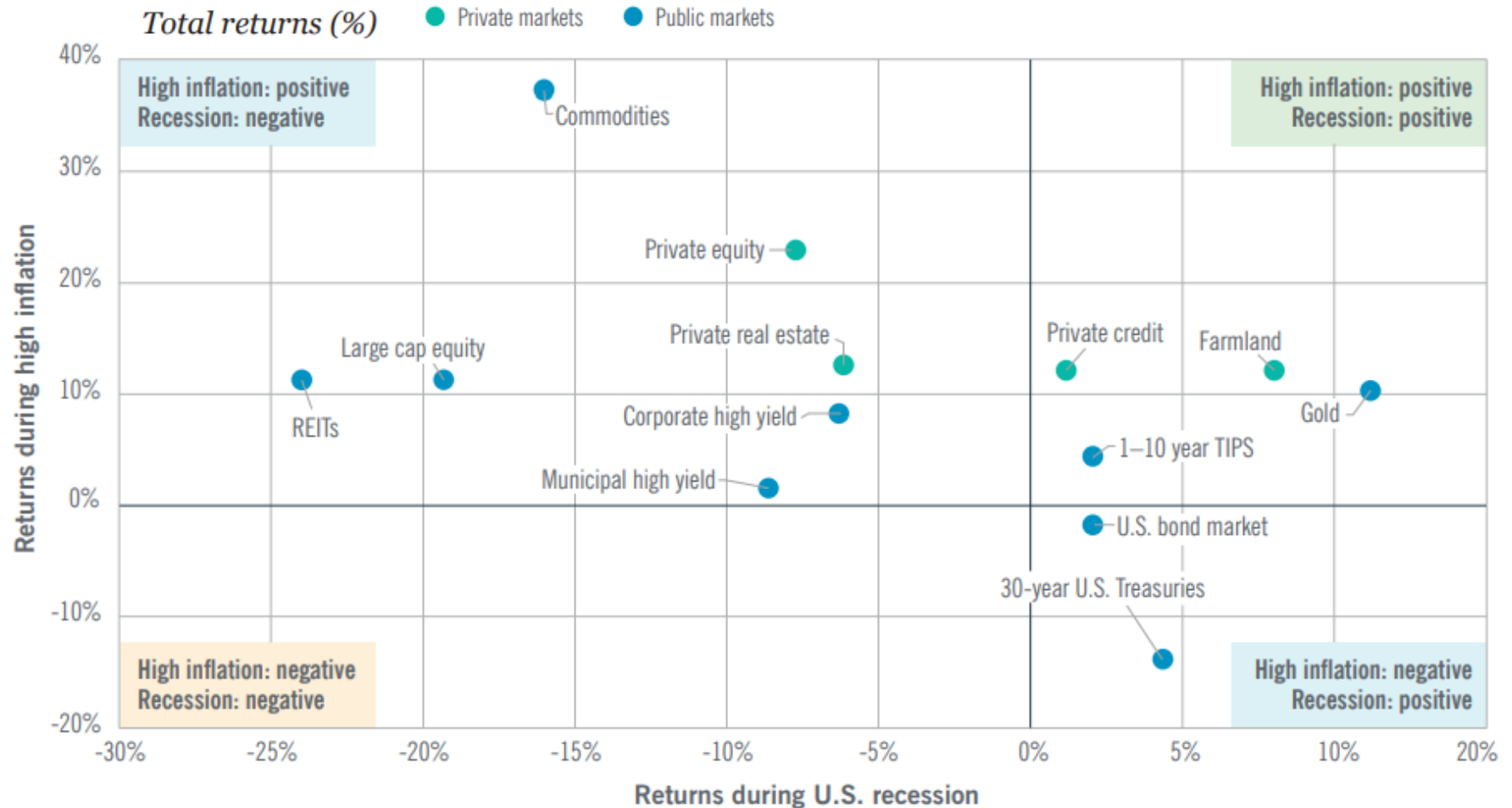
Lower downside capture is better

Source: Bloomberg, 30 June 2023. Past performance is no guarantee of future results. Representative indexes: Farmland: NCREIF Total Return (%) Farmland Index; Timberland: NCREIF Total Return (%) Timberland Index; Private credit: Cliffwater Direct Lending Index - Total Return; Core fixed income: Bloomberg U.S. Aggregate Total Return Value Unhedged USD; U.S. REITs: FTSE NAREIT All Equity REITs Total Return Index; Global REITs: FTSE EPRA NAREIT Developed Total Return Index USD; Private real estate: NCREIF Fund Index Open End Diversified Core (ODCE) Total Returns; 60/40 portfolio: 60% S&P 500 TR Index 40% Bloomberg U.S. Aggregate Bond Index; Large cap equity: S&P 500 Total Return Index.

OPINION PIECE. PLEASE SEE IMPORTANT DISCLOSURES IN THE ENDNOTES.

Private markets for extreme macro environments

Private real assets and private credit may offer inflation protection while being defensive. Commodities and REITs meanwhile often decline during US recessions.

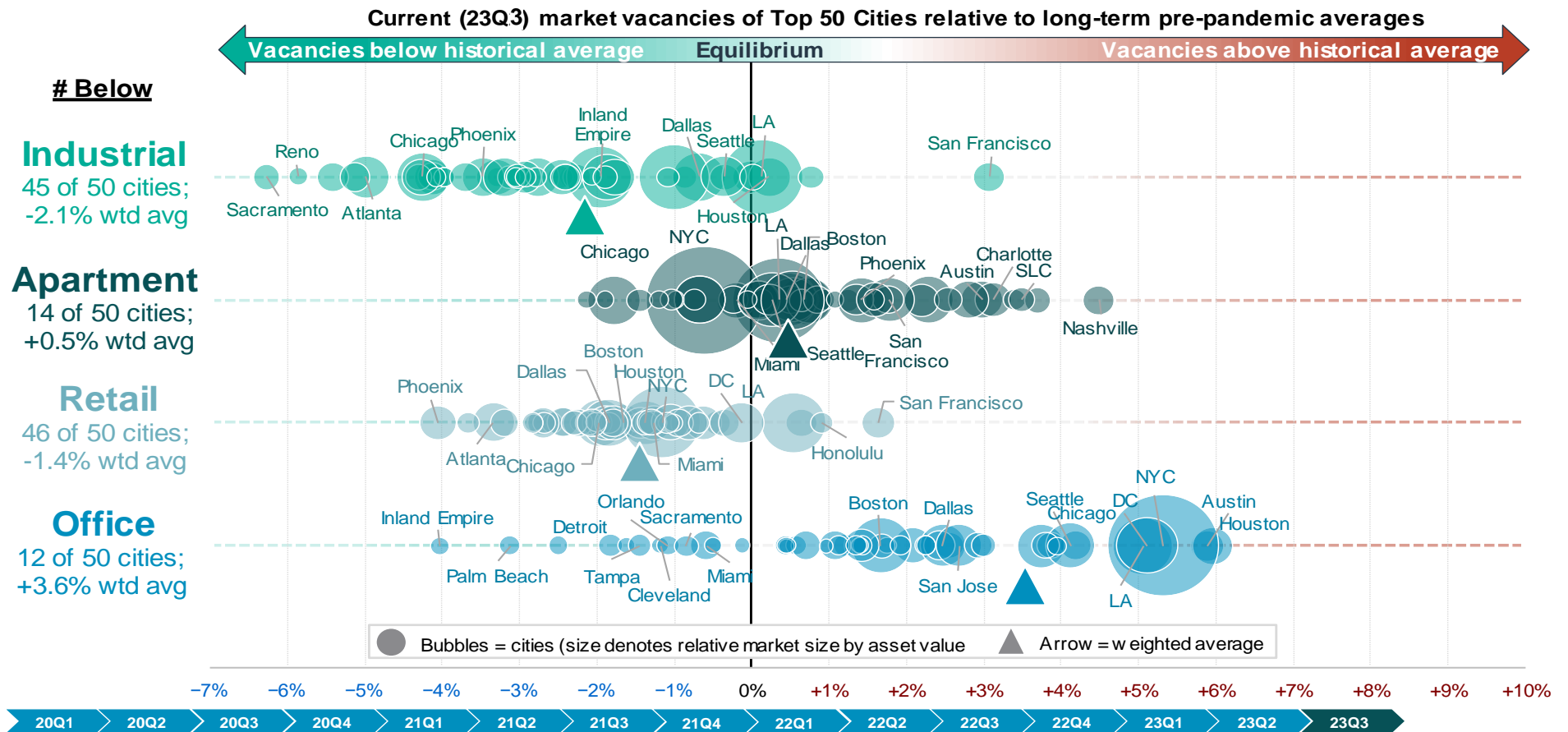


Past performance is no guarantee of future results. It is not possible to invest directly in an index.

Source: Bloomberg, Cambridge, Cliffwater. Farmland represented by the NCREIF Farmland Index, Commodities ex-precious metals by the Bloomberg Commodity ex-Precious Metals Total Return Index, Private Infrastructure by the Cambridge Private Infrastructure Index, Global Infrastructure by the S&P Global Infrastructure Total Return Index, Core Real Estate by the NCREIF Fund Open End Diversified Core (ODCE) Index, U.S. REITs by the FTSE NAREIT All Equity REITS Total Return Index, Middle Market Direct Lending by the Cliffwater Direct Lending Index, U.S. Corporate High Yield by the Bloomberg U.S. Corporate High Yield Total Return Index, Leveraged Loans by the Credit Suisse Leveraged Loan Total Return Index, Private Equity by the Cambridge Private Equity Index, and U.S. Small Cap Equity is represented by the Russell 2000 Total Return Index.

OPINION PIECE. PLEASE SEE IMPORTANT DISCLOSURES IN THE ENDNOTES.

Fundamentals shifting, but industrial/retail still healthy

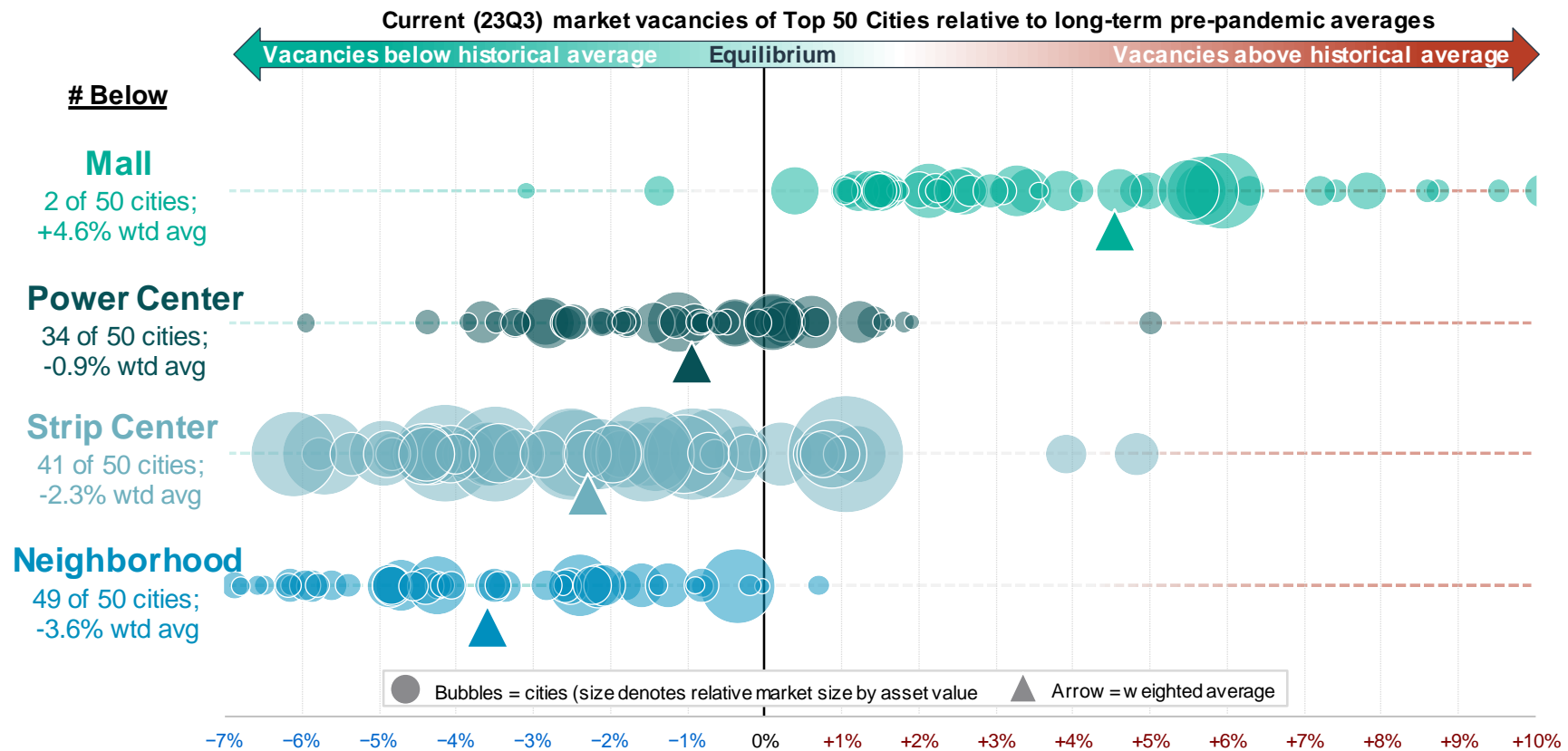


Source: CoStar; Nuveen Real Estate Research (Q2 2023); Note: Pre-pandemic average = 2000-2019 in most cases but varies by length of market data history.

OPINION PIECE. PLEASE SEE IMPORTANT DISCLOSURES IN THE ENDNOTES.

Not all retail is the same: Strength in local retail but malls remain challenged

Vacancy rates for neighborhood, community, lifestyle, power, and strip centers are below long-term averages

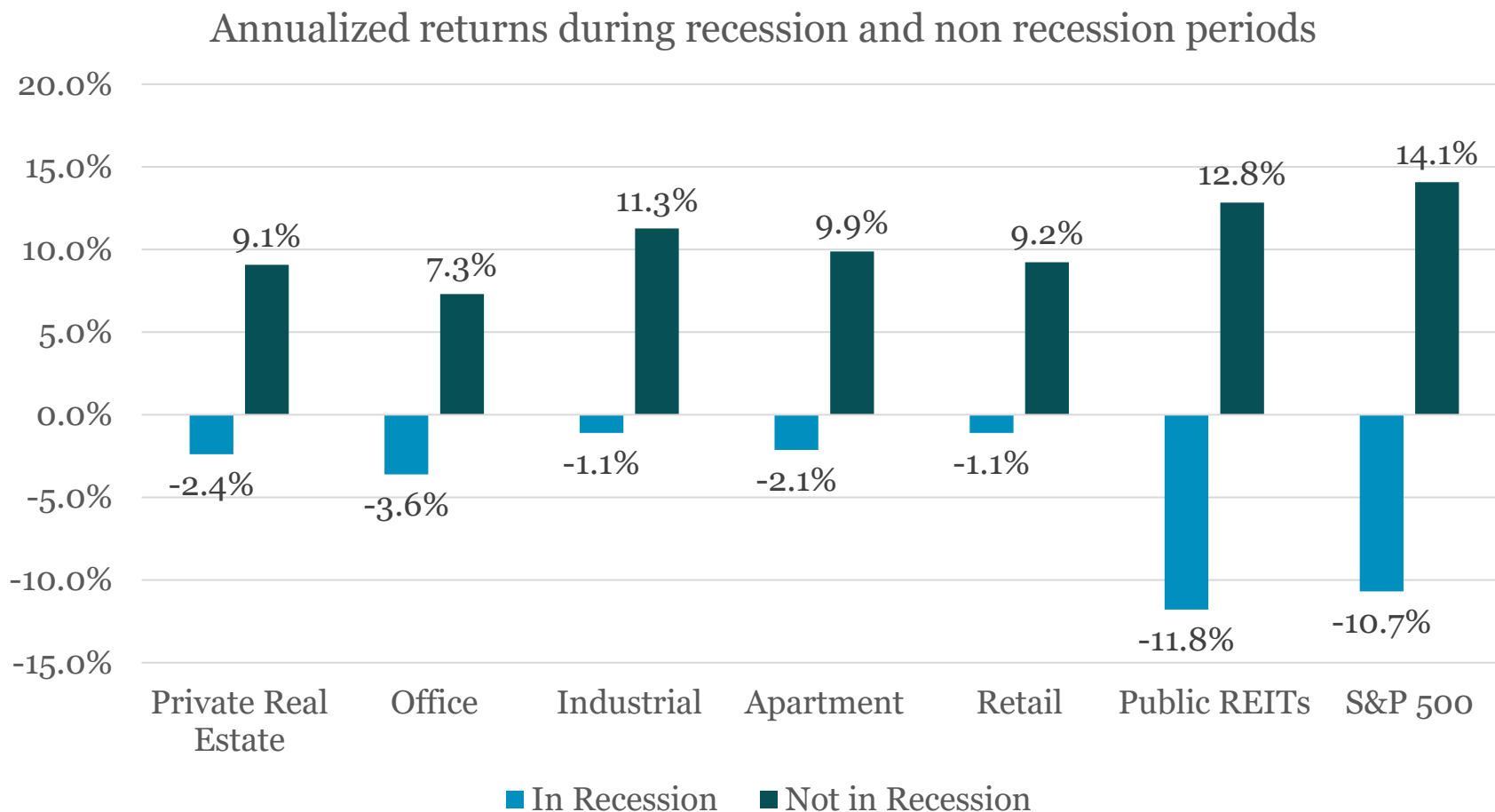


Source: CoStar; Nuveen Real Estate Research (Q3 2023); Note: Pre-pandemic average = 2006-2019 in most cases but varies by length of market data history.

Note: Malls are typically 400k sq ft+ with general merchandise and fashion-oriented offerings, typically enclosed with inward-facing stores connected by a common walkway with parking surrounding the exterior. Power centers are 250k-600k sq ft with category-dominant anchors. Strip centers are less than 30k sq ft and are an attached row of stores or service outlets managed as a coherent retail entity. Neighborhood centers are convenience-oriented, often anchored by a supermarket, and are 30k-125k sq ft.

OPINION PIECE. PLEASE SEE IMPORTANT DISCLOSURES IN THE ENDNOTES.

Private real estate has experienced less downside capture during past recessions



Past performance is no guarantee of future results. It is not possible to invest directly in an index.

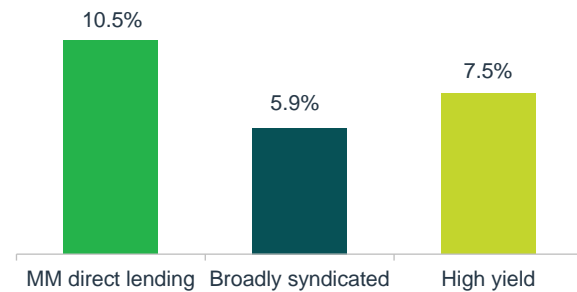
Source: Bloomberg, Nuveen Portfolio Strategy. Period is from 30 September 1984 to 31 March 2023. Asset classes represented are Private Real Estate (NCREIF ODCE Total Return Index); Office (NCREIF Property Office Index), Industrial (NCREIF Property Industrial Index), Apartment (NCREIF Property Apartment Index), Retail (NCREIF Property Retail Index), Public REITs (FTSE NAREIT All Equity REITs TR Index), S&P 500 (S&P 500 TR Index). Recessions are determined by the National Bureau of Economic Research.

OPINION PIECE. PLEASE SEE IMPORTANT DISCLOSURES IN THE ENDNOTES.

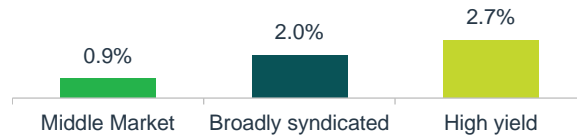
Income & risk adjusted returns

Highly selective, diversified private capital portfolios with low losses can provide durable income & attractive-risk adjusted returns

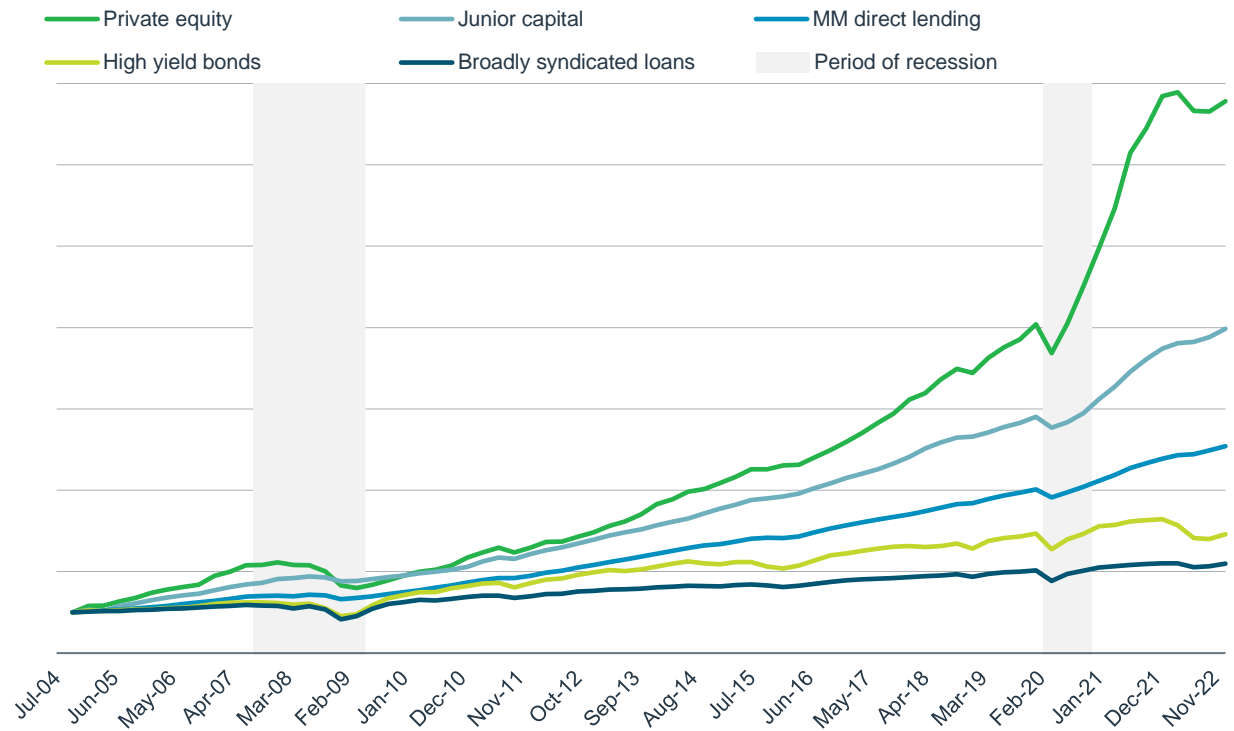
Average yields over 15-years¹



Average annual loss rates²



Indexed returns³



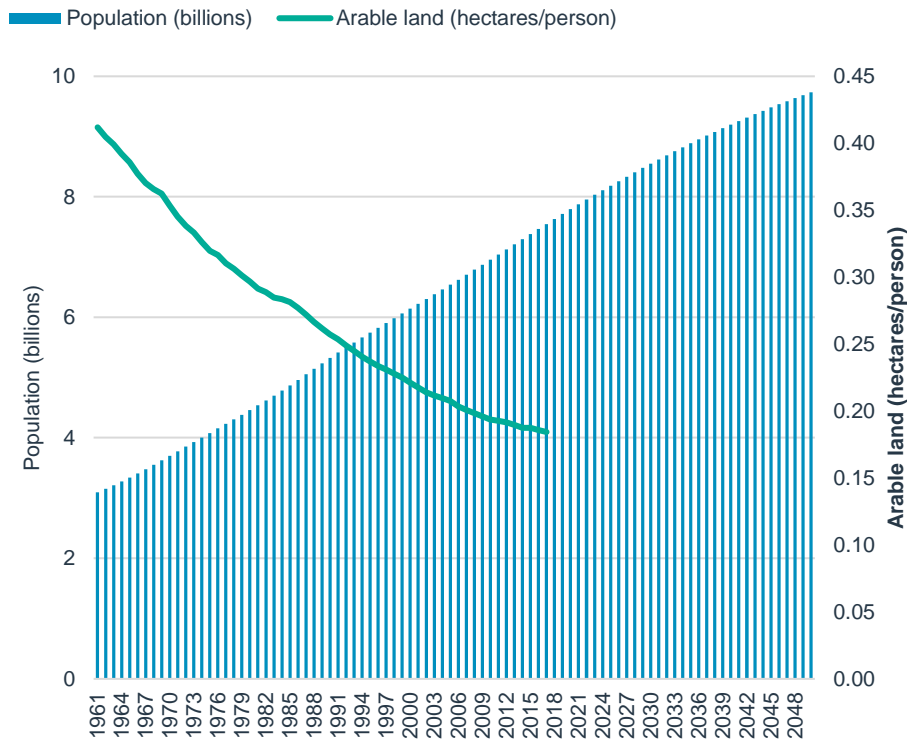
1 Sources: MM direct lending - Cliffwater CDLI, High yield - ICE BofA US High Yield Index, Broadly syndicated - S&P/LSTA LL 100. As of 1Q 2023. 2 Source: Moody's, 1995-1Q 2022; Middle market loans include total facility sizes of less than \$500 million and broadly syndicated loans denote total facility sizes of greater than or equal to \$500 million; 3 Source: Private equity & junior capital - Cambridge Associates, MM direct lending - Cliffwater CDLI, High yield - ICE BofA US High Yield Index, Broadly syndicated - S&P/LSTA LL, 4Q 2022.

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Long-term farmland value drivers

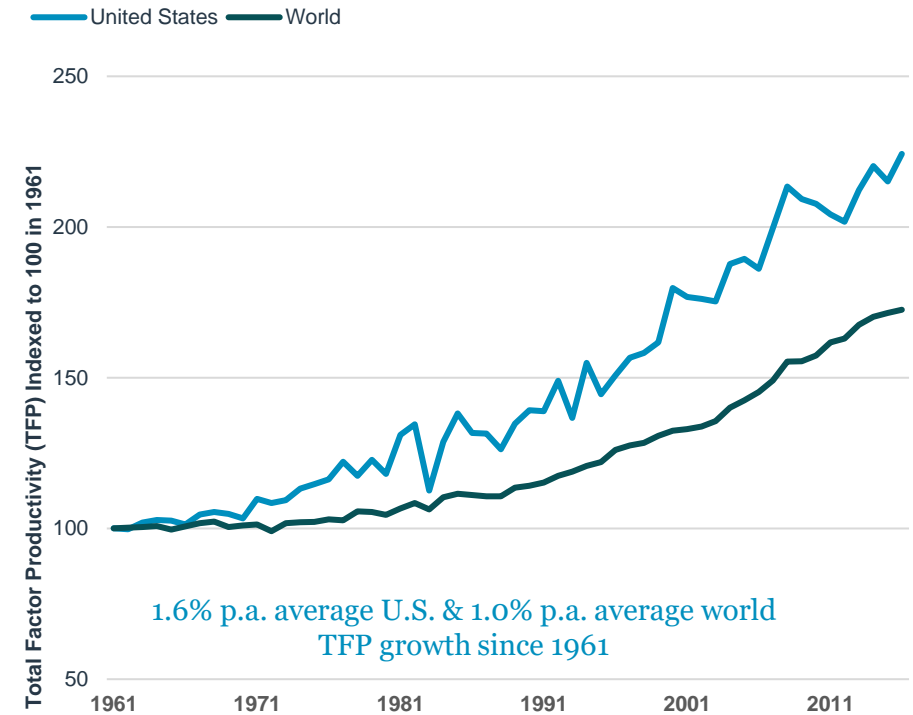
Rising global population and limited supply of farmland...

Population growth and land availability¹



...requires increased farmland productivity

Farmland returns are driven by rising productivity²

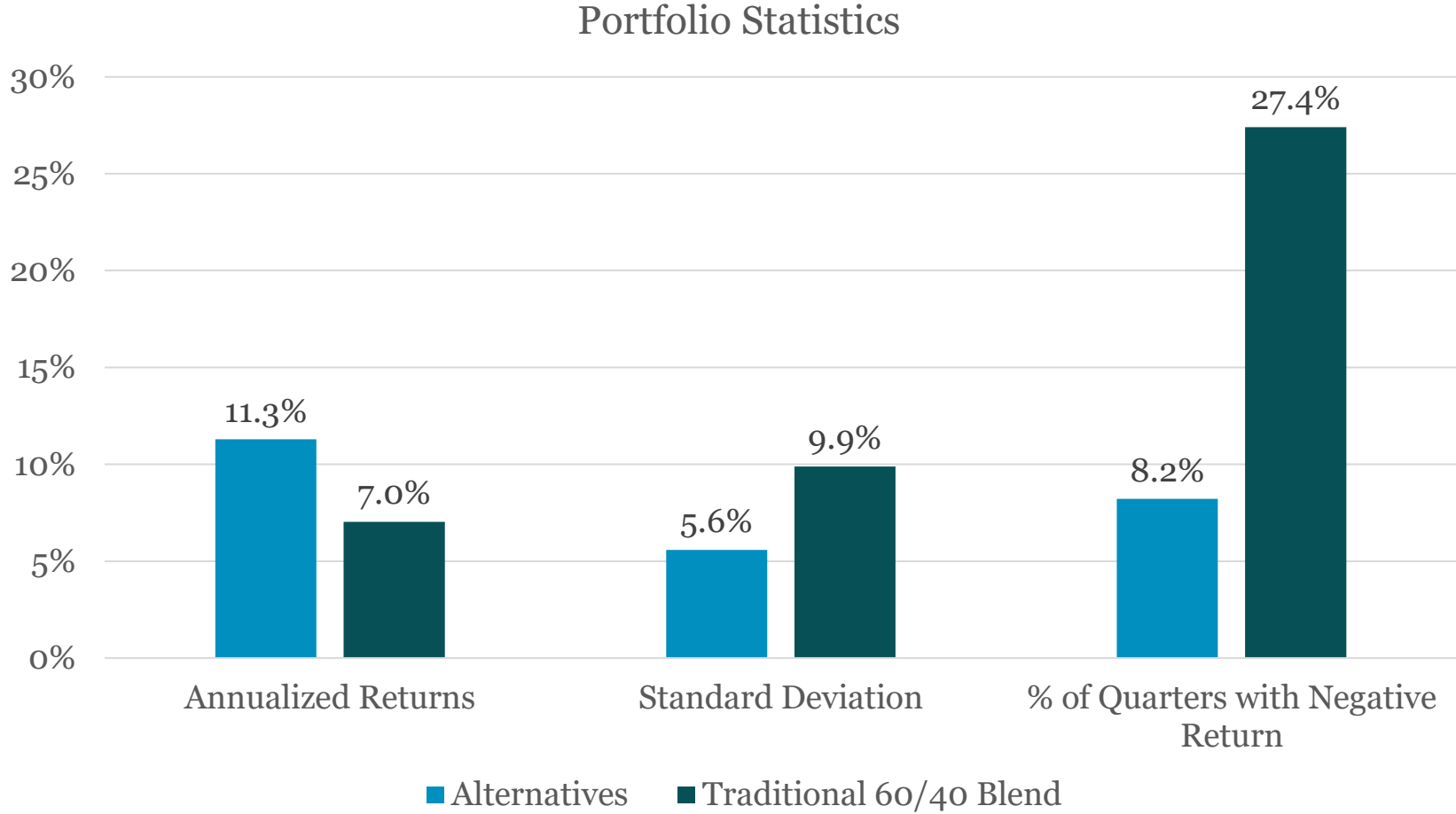


1 Sources: United Nations World Population Forecast 2017 and Food and Agriculture Organization of the United Nations (FAOSTAT).

2 US Department of Agriculture Economic Research Service, 1961-2019.

OPINION PIECE. PLEASE SEE IMPORTANT DISCLOSURES IN THE ENDNOTES.

A blend of alternative assets has historically had higher returns and lower volatility than a traditional 60/40 portfolio.



Source: Bloomberg, as of 31 December 2022. Alts Blend reflects 40% in private credit, 35% in private equity and 25% in private real estate.

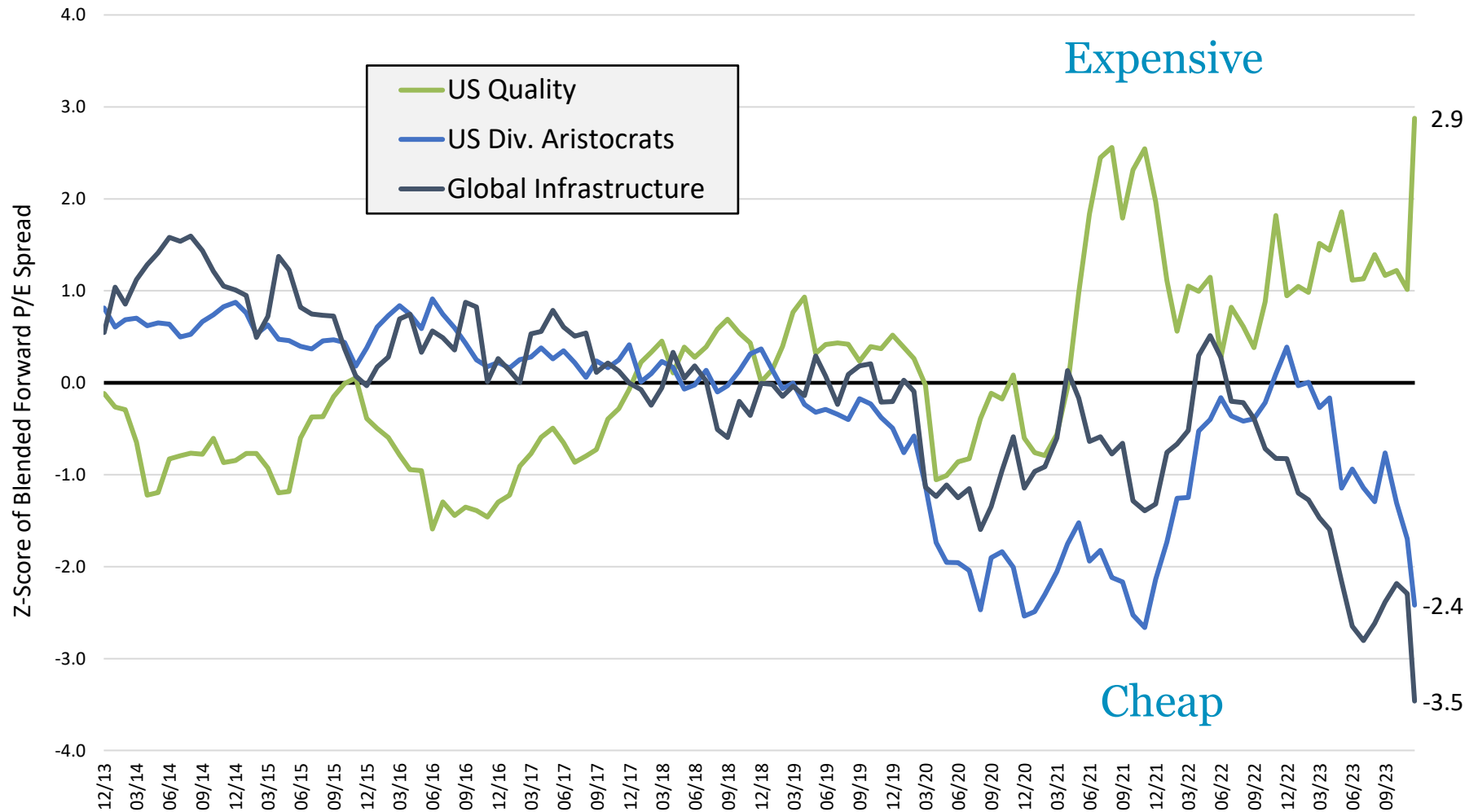
OPINION PIECE. PLEASE SEE IMPORTANT DISCLOSURES IN THE ENDNOTES.

Equities

OPINION PIECE. PLEASE SEE IMPORTANT DISCLOSURES IN THE ENDNOTES.

Dividend growth & infrastructure attractively valued among defensive styles

Defensive Style Relative Valuation

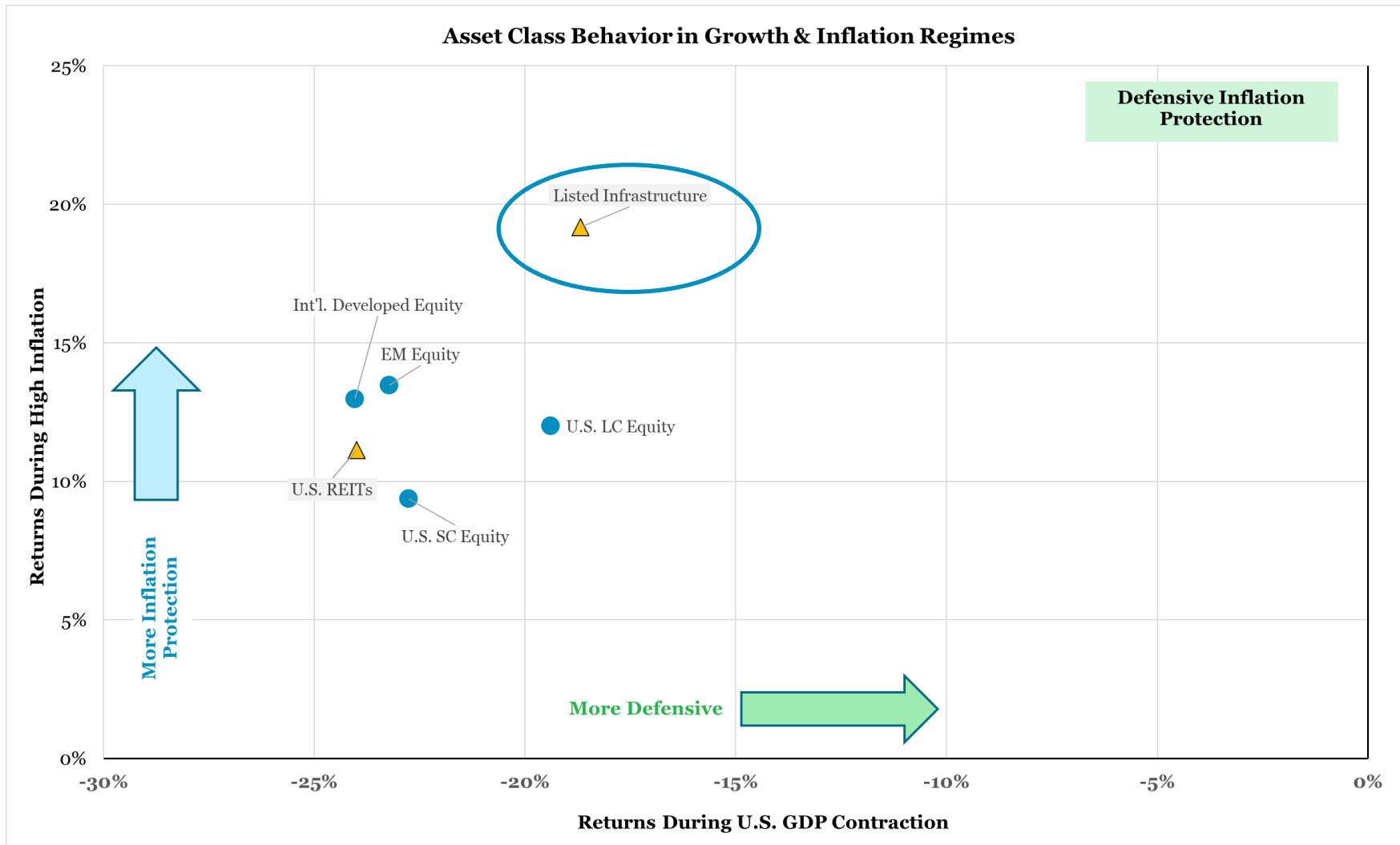


Past performance is no guarantee of future results. It is not possible to invest directly in an index.

Source: Nuveen Portfolio Strategy Group; Bloomberg, L.P. Data is computed by applying a z-score transformation to the difference in blended forward Price-to-Earnings Ratios for each style index and that for the S&P 500. US Quality is represented by the MSCI USA Quality Index. US Dividend Growth is represented by the S&P 500 Dividend Aristocrats Index. As of 29 Sept. 2023. 1 – Trailing returns analysis represents 20 years ending 20 December 2023.

OPINION PIECE. PLEASE SEE IMPORTANT DISCLOSURES IN THE ENDNOTES.

Infrastructure – defensive & inflation sensitive



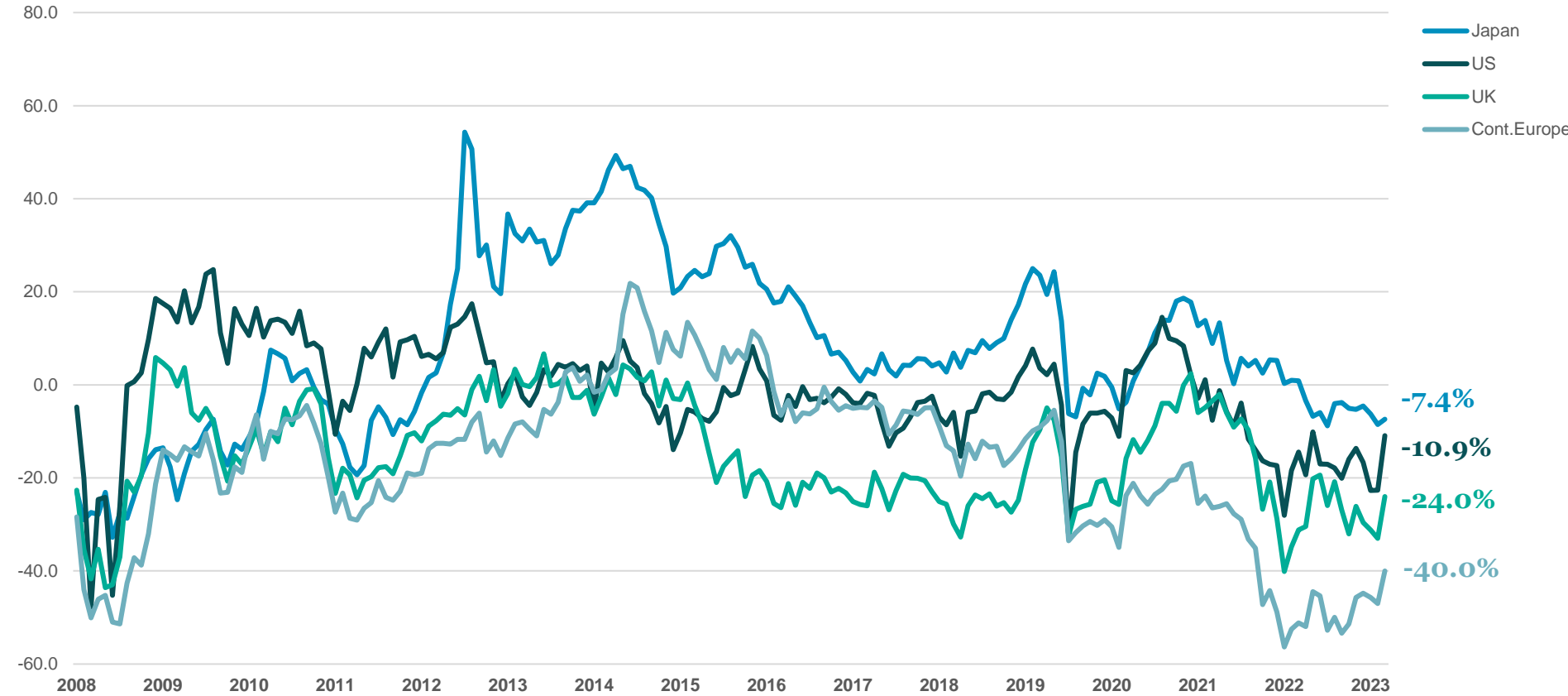
Past performance is no guarantee of future results. It is not possible to invest directly in an index.

Source: Bloomberg, Cambridge, Cliffwater. From 12/31/2004 to 12/31/2022. Returns During US GDP Contraction represent returns during quarters where US GDP was negative. Returns During High Inflation represents returns during the top quartile of US CPI increases over the time period. Farmland represented by the NCREIF Farmland Index, Commodities by the Bloomberg Commodity Total Return Index, Private Infrastructure by the Cambridge Private Infrastructure Index, Global Infrastructure by the S&P Global Infrastructure Total Return Index, Core Real Estate by the NCREIF Fund Open End Diversified Core (ODCE) Index, U.S. REITs by the FTSE NAREIT All Equity REITS Total Return Index, Middle Market Direct Lending by the Cliffwater Direct Lending Index, U.S. Corporate High Yield by the Bloomberg U.S. Corporate High Yield Total Return Index, Leveraged Loans by the Credit Suisse Leveraged Loan Total Return Index, Private Equity by the Cambridge Private Equity Index, U.S. Small Cap Equity is represented by the Russell 2000 Total Return Index, Preferreds by the S&P Preferred Stock Index, HY Muni by the Bloomberg Municipal High Yield Index, SD HY Muni by the Bloomberg Municipal High Yield Short Duration Index, IG Muni by the Bloomberg Municipal Bond Index, EM Debt by the Bloomberg EM USD Aggregate Index, Gold by the Bloomberg Gold Subindex, 1 – 10 Yr. TIPS by the Bloomberg Treasury Inflation Notes 1-10 Yr. Index, EM Equity by the MSCI Emerging Markets Index, Int'l. Developed by the MSCI World ex USA Index, 30 Yr. Treasury by the Bloomberg Bellwether 30 Yr. Treasury Index, and the US Aggregate Bond by the Bloomberg US Aggregate Bond Index.

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Deep NAV discounts offer a cyclical opportunity to invest in global real estate

Premium/(Discount) to NAV



Past performance is no guarantee of future results.

31 Aug 2008 – 30 Nov 2023

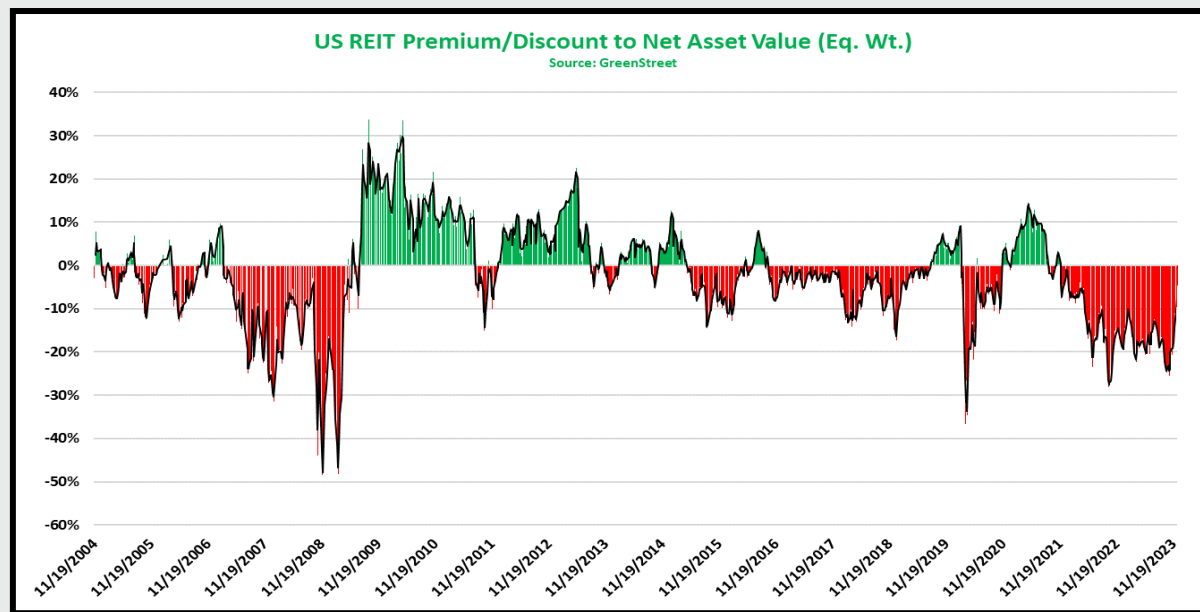
Source: Green Street, Morgan Stanley, Refinitiv Datastream

Chart represents premium (discount) to net asset value (NAV) over time

OPINION PIECE. PLEASE SEE IMPORTANT DISCLOSURES IN THE ENDNOTES.

Focus on US REIT valuation: pervasive discounts across core real estate sectors

- REITs trade in-line with their net asset value and below their long-term averages.
 - 3%/+3% discount(/premium) to NAV on an equal/market weighted basis versus long-term average of -1% discount/+6% premium.



GreenStreet	12/20/2023
SECTOR	P/D to NAV
Health Care---Big 3	25.6%
Data Centers	18.5%
Health Care---Skilled Nursing/Mixed	16.8%
Net Lease	13.1%
Gaming	9.3%
A Malls	7.9%
Industrial	5.0%
Tower	4.9%
Mftg. Homes	0.6%
Self-Storage	0.1%
Strip Center	-2.6%
Apartment---Coastal	-4.8%
Apartment---Sun Belt	-12.5%
Apartment---National/Other	-15.1%
Single Family	-19.5%
Lodging	-19.9%
CBD Office	-19.9%
Sub Office	-26.9%
Health Care---MOB/Life Science	-35.8%
US REIT simple avg	-2.9%
US REIT mkt. wt. avg	3.2%

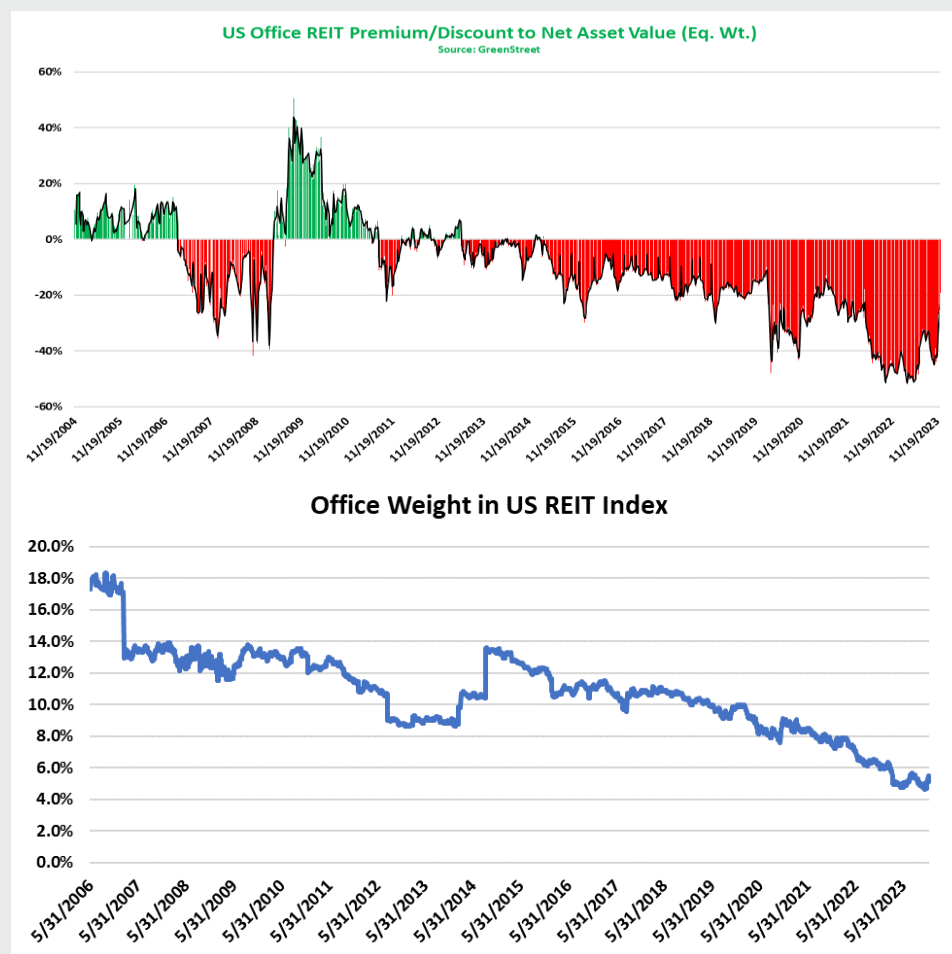
Past performance is no guarantee of future results.

Source: Bloomberg, GreenStreet, S&P Capital IQ. Net asset value chart as of 20 Dec 2023. Net asset value table as of 15 Dec 2023.

OPINION PIECE. PLEASE SEE IMPORTANT DISCLOSURES IN THE ENDNOTES.

Offices aren't a major part of the listed REIT universe

- CRE risks are mostly concentrated in the office real estate sector today.
- US REIT index office weight has fallen dramatically.
- Office REITs comprise approximately 4-6% of the major REIT indices, down from 10-12% pre-pandemic and 12-18% pre-GFC (see chart bottom right)
- Office REITs trade at a record discount to net asset value.
- NAV discount is -19.1% today versus long-term average discount of -10%.



Past performance is no guarantee of future results.

Source: Bloomberg, GreenStreet. GreenStreet NAV data is as of 20 Dec 2023. The data presented here is for informational purposes only.

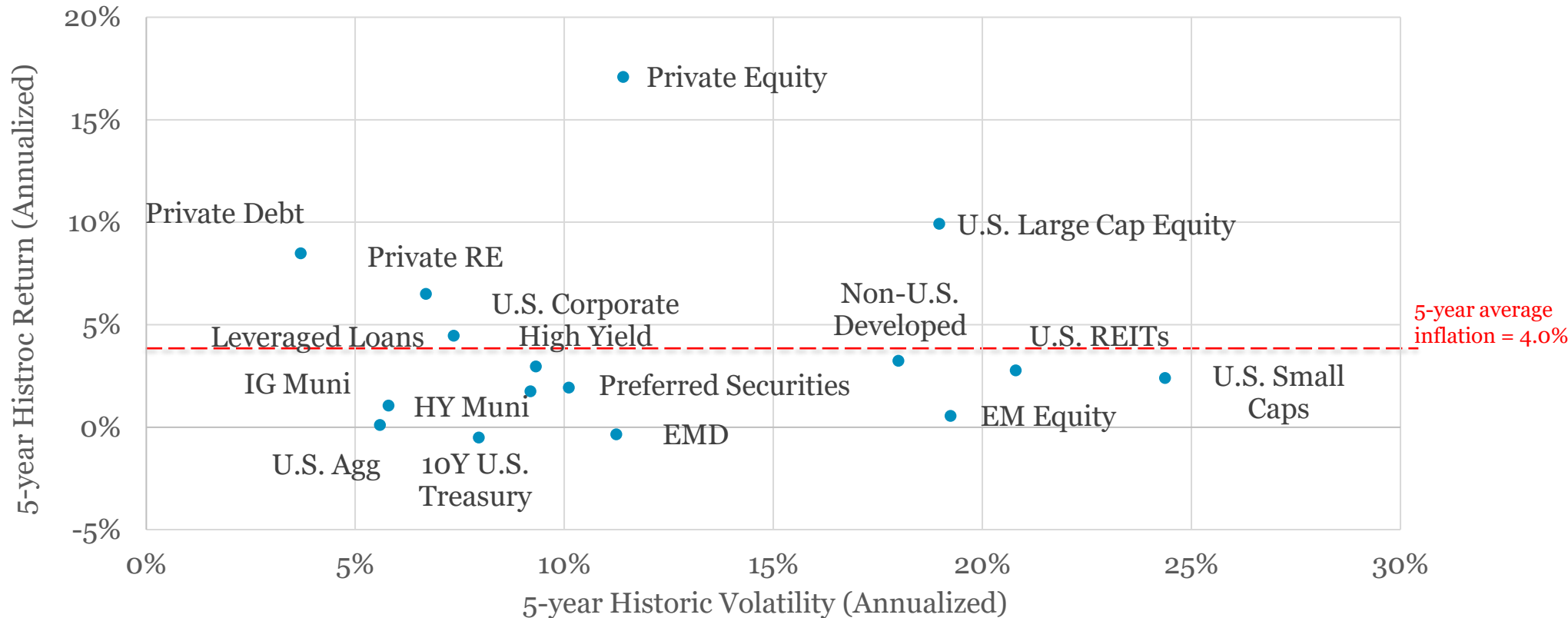
OPINION PIECE. PLEASE SEE IMPORTANT DISCLOSURES IN THE ENDNOTES.

Portfolio construction

OPINION PIECE. PLEASE SEE IMPORTANT DISCLOSURES IN THE ENDNOTES.

Historic returns and volatility

5-year historic return vs. 5-year historic volatility



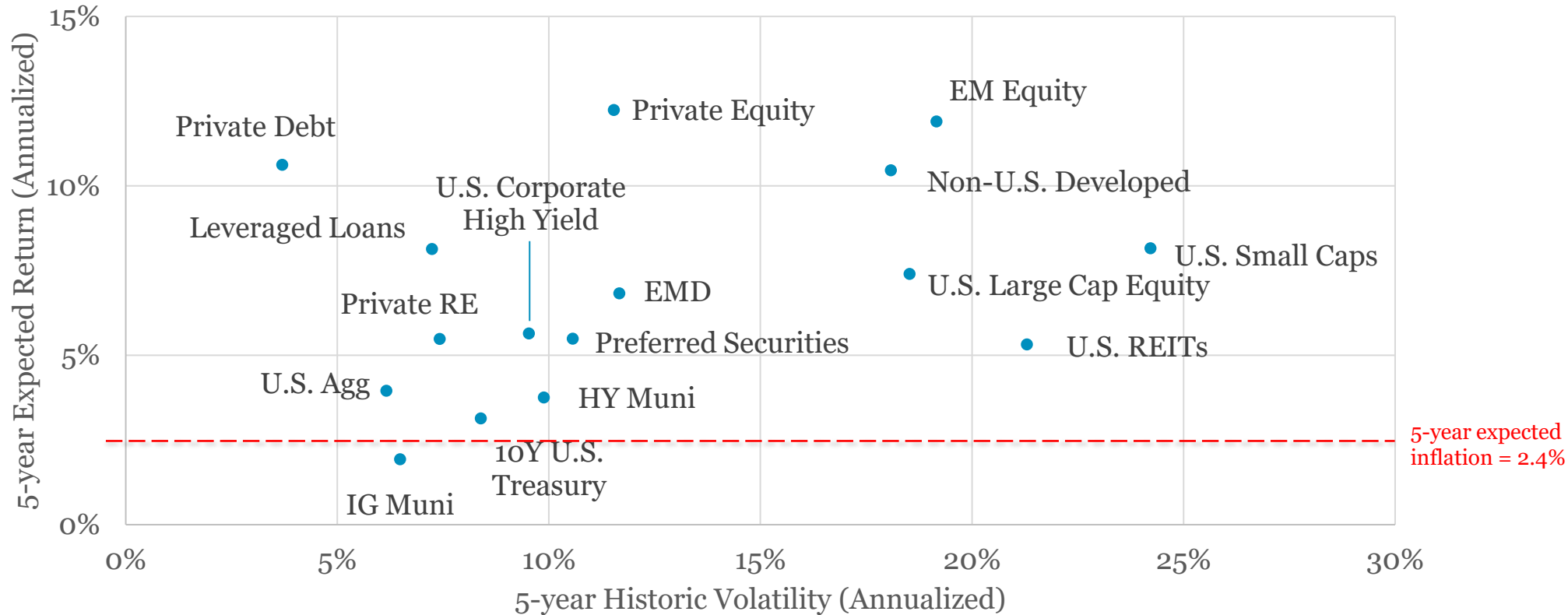
Past performance is no guarantee of future results. It is not possible to invest directly in an index.

Data as of September 29th, 2023. Volatility data sourced from Bloomberg; Expected returns from the Nuveen Multi-Asset Team. Index definitions: U.S. Large Cap Equity: S&P 500 Total Return Index; Non-U.S. Developed: MSCI EAFE Net Total Return USD Index; Emerging Markets: MSCI Emerging Net Total Return USD Index; Private Equity: Bloomberg Buyout Private Equity Index; U.S. Small Caps: Russell 2000 Total Return Index; U.S. Aggregate Bond: Bloomberg US Agg Total Return Value Unhedged USD; U.S. Corporate High Yield: Bloomberg US Corporate High Yield Total Return Index Value Unhedged USD; Emerging Market Debt (\$): J.P. Morgan EMBI Global Diversified Composite; Leveraged Loans: S&P/LSTA Leveraged Loan Total Return Index; IG Municipals: Bloomberg Municipal Bond Index Total Return Index Value Unhedged USD; HY Municipals: Bloomberg Municipal Bond: High Yield (non-Investment Grade) TR Unhedged; U.S. REITs: FTSE NAREIT All Equity REITS Total Return Index; Private Real Estate: NCREIF Fund Index Open End Diversified Core (ODCE) Total Returns; Private Debt: Cliffwater Direct Lending Index - Total Return; 10Y U.S. Treasury: Bloomberg US Treasury Bellwethers 10 Year TR Index Value Unhedged USD; Preferred Securities: ICE BofA US All Capital Securities Index.

OPINION PIECE. PLEASE SEE IMPORTANT DISCLOSURES IN THE ENDNOTES.

Nuveen's capital market assumptions

5-year expected return vs. 5-year historic volatility



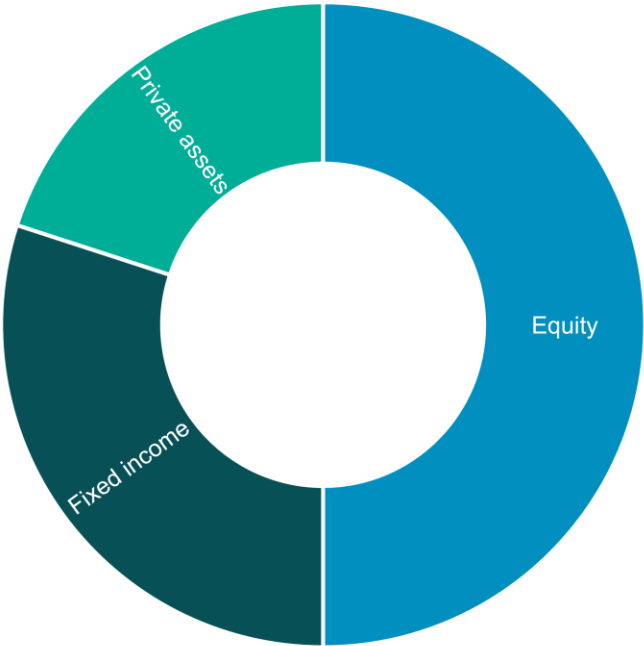
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Data as of December 29th, 2023. Volatility data sourced from Bloomberg; Expected returns from the Nuveen Multi-Asset Team. Index definitions: U.S. Large Cap Equity: S&P 500 Total Return Index; Non-U.S. Developed: MSCI EAFE Net Total Return USD Index; Emerging Markets: MSCI Emerging Net Total Return USD Index; Private Equity: Bloomberg Buyout Private Equity Index; U.S. Small Caps: Russell 2000 Total Return Index; U.S. Aggregate Bond: Bloomberg US Agg Total Return Value Unhedged USD; U.S. Corporate High Yield: Bloomberg US Corporate High Yield Total Return Index Value Unhedged USD; Emerging Market Debt (\$): J.P. Morgan EMBI Global Diversified Composite; Leveraged Loans: S&P/LSTA Leveraged Loan Total Return Index; IG Municipals: Bloomberg Municipal Bond Index Total Return Index Value Unhedged USD; HY Municipals: Bloomberg Municipal Bond: High Yield (non-Investment Grade) TR Unhedged; U.S. REITs: FTSE NAREIT All Equity REITS Total Return Index; Private Real Estate: NCREIF Fund Index Open End Diversified Core (ODCE) Total Returns; Private Debt: Cliffwater Direct Lending Index - Total Return; 10Y U.S. Treasury: Bloomberg US Treasury Bellwethers 10 Year TR Index Value Unhedged USD; Preferred Securities: ICE BofA US All Capital Securities Index.

OPINION PIECE. PLEASE SEE IMPORTANT DISCLOSURES IN THE ENDNOTES.

Portfolio views for a moderate risk tolerance, high-net-worth investor

Target allocation model



Asset class	Strategic
US Large Cap	24.0%
US Small Cap	5.0%
Intl Developed ex-US Market	10.0%
Emerging Markets	5.0%
Global Infrastructure	3.0%
REIT	3.0%
Total Equity	50%
Total US Bond Market	9.0%
High Yield Corporate Bonds	3.0%
Preferred Securities	3.0%
U.S. Leveraged Loans	3.0%
Intermediate-Term Tax-Exempt	9.0%
Tax-Exempt High Yield	3.0%
Total Fixed Income	30%
Core Real Estate	5.0%
U.S. Private Credit	8.0%
U.S. Private Equity	7.0%
Total Private Markets	20%
Tracking Error vs U.S. 60/40	~3.0%

Source: Nuveen Portfolio Strategy & Solutions.

OPINION PIECE. PLEASE SEE IMPORTANT DISCLOSURES IN THE ENDNOTES.

How would private market allocations benefit your portfolio construction?

Nuveen's Portfolio Strategy Group can be your partner, delivering personalized insights for your client portfolios through robust portfolio reviews.



Curious how your portfolio might handle:

- Persistent inflation?
- Rising rates?
- A weakening dollar?
- A recession?

Nuveen's Portfolio Strategy Group can be your partner, delivering personalized insights for your client portfolios through robust portfolio reviews.

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Risks and important disclosures

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All information has been obtained from sources believed to be reliable, but its accuracy is not guaranteed. There is no representation or warranty as to the current accuracy, reliability or completeness of, nor liability for, decisions based on such information and it should not be relied on as such. For term definitions and index descriptions, please access the glossary on nuveen.com. **Please note, it is not possible to invest directly in an index.**

IMPORTANT INFORMATION ON RISK

Investing involves risk; principal loss is possible. All investments carry a certain degree of risk and there is no assurance that an investment will provide positive performance over any period of time. Investing in municipal bonds involves risks such as interest rate risk, credit risk and market risk. The value of the portfolio will fluctuate based on the value of the underlying securities. There are special risks associated with investments in high yield bonds, hedging activities and the potential use of leverage. Portfolios that include lower rated municipal bonds, commonly referred to as "high yield" or "junk" bonds, which are considered to be speculative, the credit and investment risk is heightened for the portfolio. Bond insurance guarantees only the payment of principal and interest on the bond when due, and not the value of the bonds themselves, which will fluctuate with the bond market and the financial success of the issuer and the insurer. No representation is made as to an insurer's ability to meet their commitments. This information

should not replace an investor's consultation with a financial professional regarding their tax situation. Nuveen is not a tax professional. Investors should contact a tax professional regarding the appropriateness of tax-exempt investments in their portfolio. If sold prior to maturity, municipal securities are subject to gain/losses based on the level of interest rates, market conditions and the credit quality of the issuer. Income may be subject to the alternative minimum tax (AMT) and/or state and local taxes, based on the state of residence. Income from municipal bonds held by a portfolio could be declared taxable because of unfavorable changes in tax laws, adverse interpretations by the Internal Revenue Service or state tax authorities, or noncompliant conduct of a bond issuer. It is important to review your investment objectives, risk tolerance and liquidity needs before choosing an investment style or manager.

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OPINION PIECE. PLEASE SEE IMPORTANT DISCLOSURES IN THE ENDNOTES.