



3CHOPT

INVESTMENT PARTNERS

Quarterly Considerations

Q1 2024

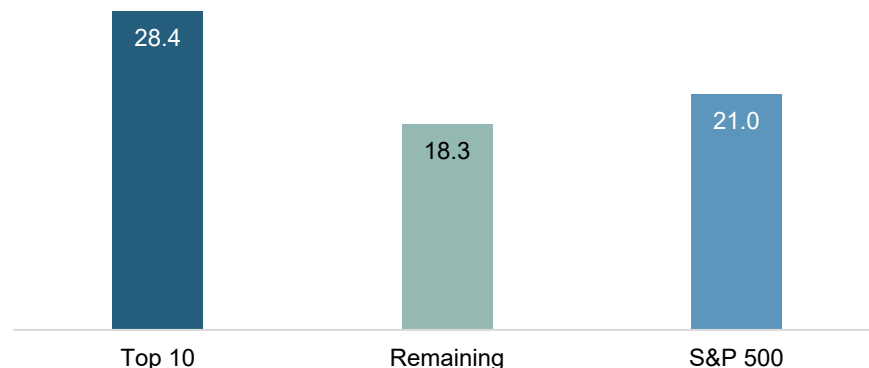
Market Themes



1. The S&P 500 Index reached new highs in the first quarter and valuations moved higher. Strong price movement accounted for the valuation jump as earnings growth remains muted, and much of the valuation move can be attributed to the concentrated top constituents.
2. Profit margins have been trending lower as input costs (higher rates and higher wages) have moved higher. This implies companies will need to exceed revenue expectations, cut costs, or both to meet expectations and justify multiples.
3. Fixed income valuations look favorable relative to equities and with expected rate cuts on the horizon, the expected return prospects for fixed income look attractive.

Forward P/E Ratio – Top 10 Constituents vs. S&P 500

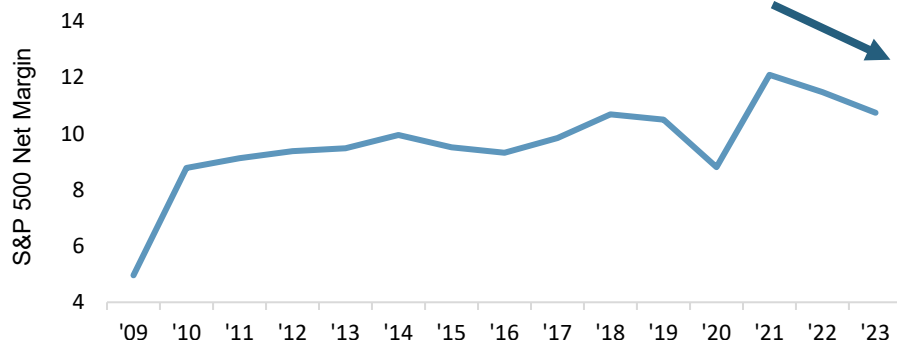
Concentrated leadership in the S&P 500 has driven valuations higher. The top ten constituents trade at a significant premium to the remaining stocks in the index creating potential opportunities outside of these expensive large cap names.



Sources: FactSet, S&P, JPMorgan. As of March 31, 2024.

S&P 500 Net Margins Trending Off Recent Highs

Corporate profitability remains favorable compared to the last 15 years but has trended lower from highs in 2021. Higher wages and rising cost of capital (higher interest rates) have all contributed to the shrinking. Expectations are for positive earnings growth in Q1 (3.6%) and for CY 2024 (11%), but slimming margins may be a headwind.



Sources: FactSet. As of March 31, 2024.

Performance Following the Fed's First Cut – Next 12 Months

Expectations for interest rate cuts have shifted to later in the year. Over the last three cut cycles, fixed income has performed well relative to both cash and equities. Additionally, core fixed income has a positive asymmetric return profile at current duration and yield levels.

Date of First Fed Rate Cut	Forward 12-M Return from Date of First Rate Cut		
	Bbg Agg	1-3M T-Bill	S&P 500
8/1/2019	10.1	1.3	12.0
9/18/2007	6.0	2.8	-20.0
1/3/2001	7.0	4.0	-8.8
9/29/1998	0.3	4.6	23.9
7/6/1995	3.3	5.5	23.0

Averages 5.4 3.7 6.0

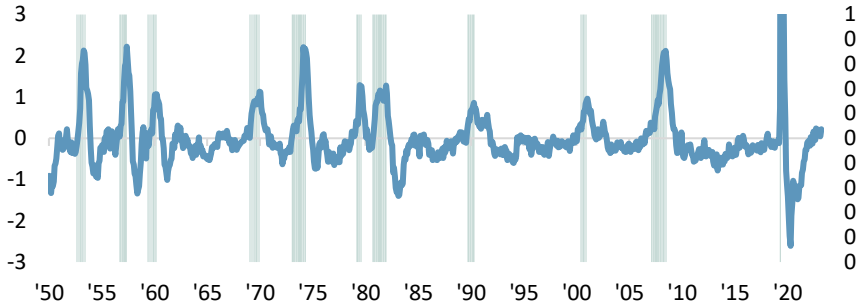
Sources: Federal Reserve, FactSet, Morningstar Direct. As of March 31, 2024. Indexes used are Bloomberg U.S. Aggregate Bond Index, Bloomberg 1-3m TBill Index, and S&P 500 Index.

Economic Review



U.S. Unemployment vs. 12-Month Moving Average

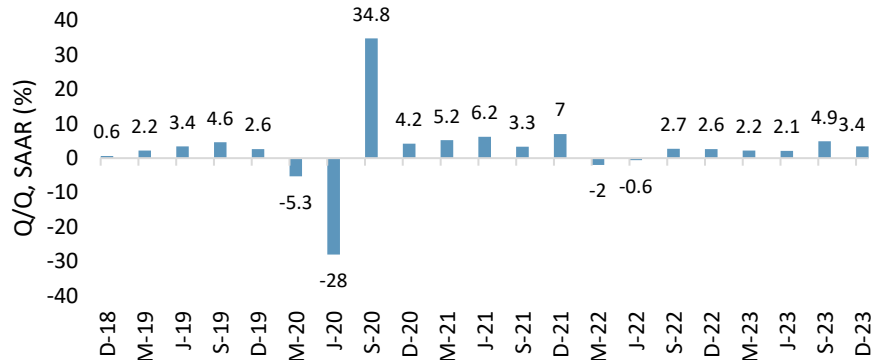
The U.S. labor market remains strong, and unemployment has remained below 4% for the longest time since the 1960s. However, despite the strength, the unemployment rate has moved above its 12-month moving average which has been a warning signal historically.



Sources: FactSet, BLS. As of February 29, 2023. Data is the monthly U.S. unemployment rate less the 12 month moving average of the U.S. unemployment rate. Note, axis scale cuts off the extreme values in April and May of 2020, 10.3 and 7.9 respectively. Grey bars indicate U.S. recession.

U.S. Real GDP Growth

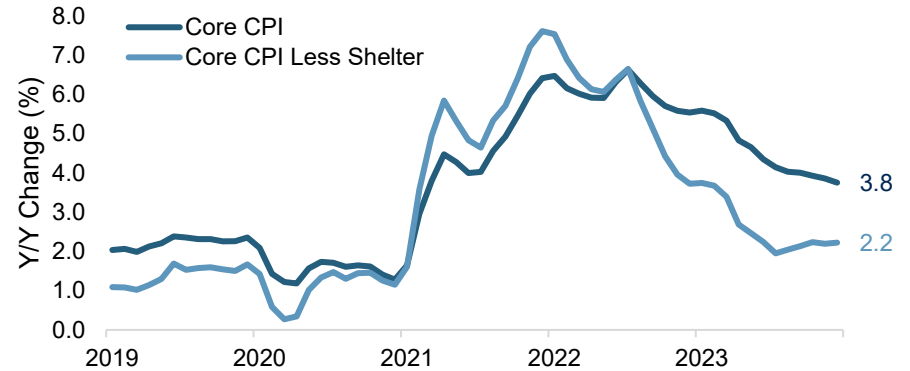
The U.S. economy remains resilient, and the anticipated recession of 2023 never came to fruition. In fact, we have experienced six quarters of consecutive growth and witnessed an upward revision to the most recent Q4 2023 report.



Sources: FactSet, BEA. As of March 29, 2024.

U.S. Core Inflation

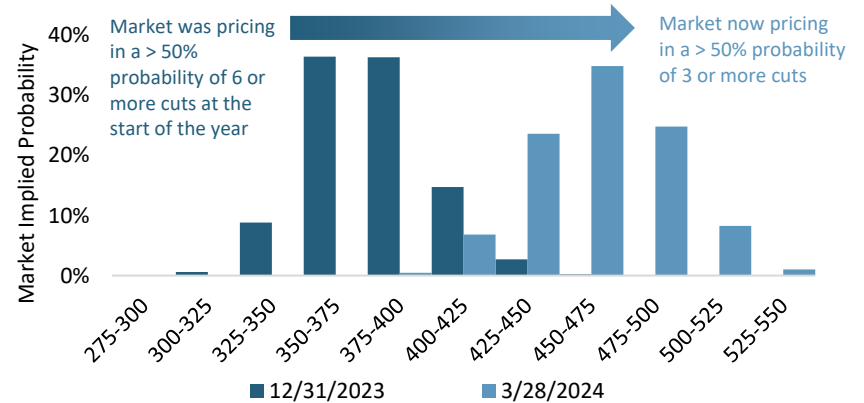
U.S. inflation continues to trend lower, but overall remains above the Fed's 2% target. However, if we remove the sticky and lagged shelter component, inflation is much closer to target and has remained relatively stable since fall 2023, providing support for interest rate cuts later in the year.



Sources: FactSet, BLS. As of February 29, 2024

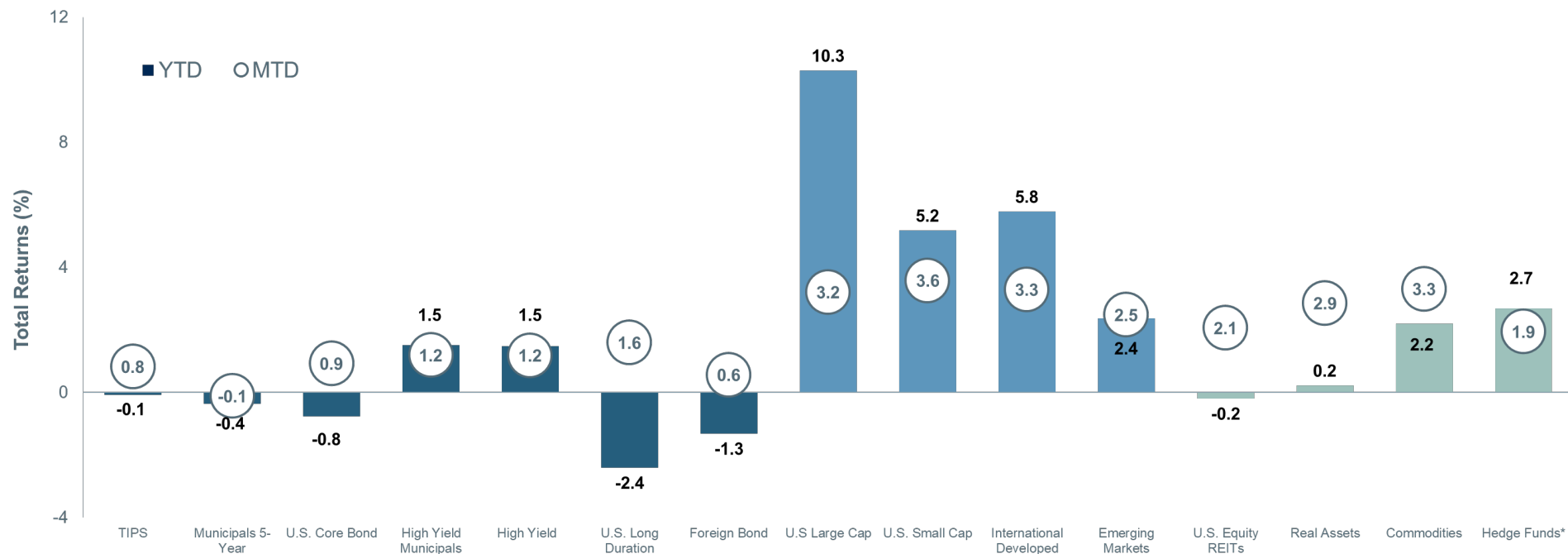
Fed Fund Rate Probabilities for December 2024 Meeting

Market expectations finally "caught up" with the Federal Reserve's outlook and we witnessed a significant shift in expectations from the start of the year. This was a large driver of the move higher in interest rates over the quarter.



Source: CME FedWatch Tool. As of March 31, 2024

Asset Class Returns



Source: Morningstar Direct. As of March 31, 2024. *Hedge fund returns are as of February 29, 2024.

Fixed Income (1Q 2024)

- The broader fixed income market came under pressure in the quarter as interest rates moved higher. Markets repriced expectations from six rate cuts to three by the end of the year.

+ High yield outperformed within fixed income during the quarter. A resilient economic backdrop and reasonable corporate fundamentals have supported the sector.

- A stronger U.S. dollar was a large driver of non-USD fixed income weakness.

Equity (1Q 2024)

+ U.S. equities posted strong returns in the first quarter with U.S. large cap hitting new highs and outpacing small cap. A small number of large index constituents continue to be a material driver of returns.

+ Developed non-U.S. had a nice quarter. Japan had a notable quarter amid corporate reform and a lower yen price, while moderating inflation in Europe buoyed the region despite anemic growth.

+ Emerging markets was positive as well, with India posting a strong gain while Brazil and China detracted

Real Asset / Alternatives (1Q 2024)

- Rising interest rates were a headwind for REITs in the quarter. Diversified and self storage detracted while data centers and specialty outperformed.

+ Commodities generated a positive return, driven by price strength within the energy and precious metal sub-sectors.

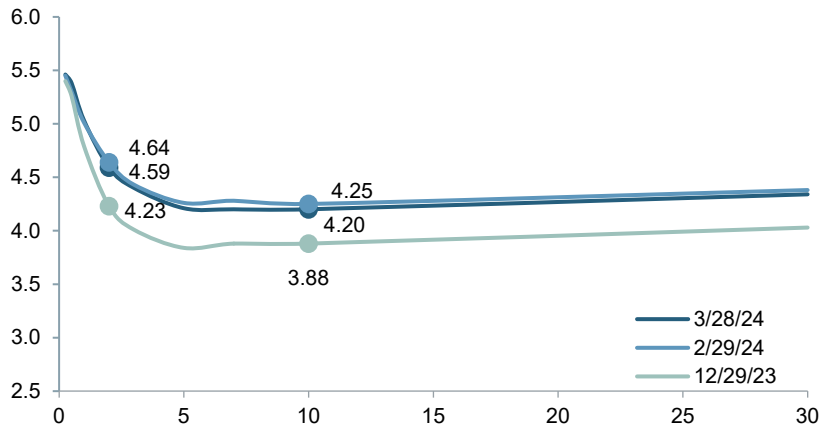
+ Hedge funds (reported on a month lag) posted a positive return for the first two months of the year. Long short equity and technology & healthcare strategies performed well.

Fixed Income Market Update



U.S. Treasury Yield Curve

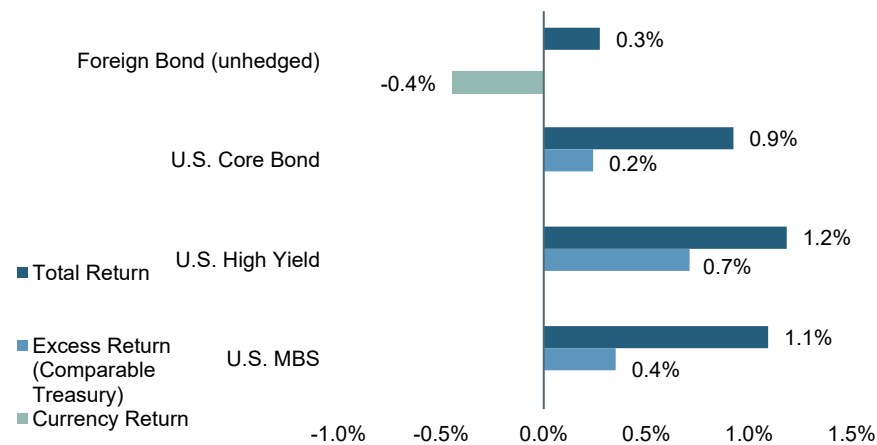
The U.S. yield curve shifted higher during the first quarter as expectations in the market for a first Fed rate cut in March subsided and shifted to later in the year. The curve has steepened (10s-2s spread) over the past 12 months but remains inverted.



Source: FactSet. As of March 31, 2024.

Index Performance Attribution (1Q 2024)

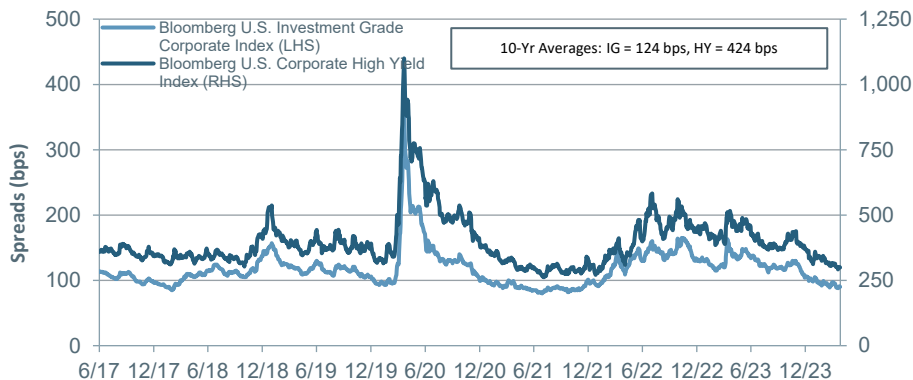
Spread sectors generally outpaced Treasuries in the first quarter. Corporates had another strong quarter while mortgages lagged as interest rate volatility early in the quarter put negative pressure on the space.



Source: FactSet. As of March 31, 2024.

Corporate Market Spreads – Trailing 5 Years

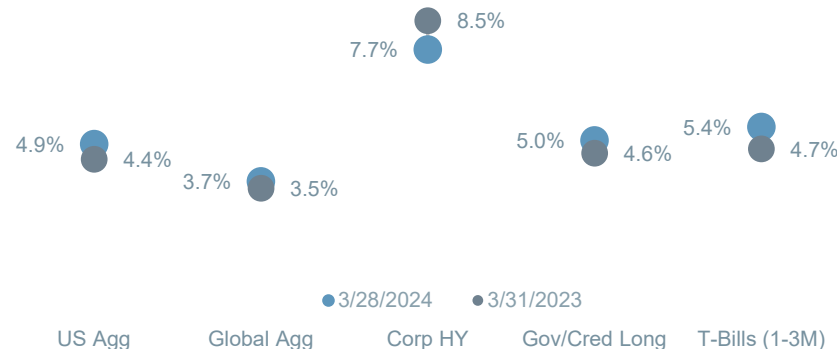
The corporate bond market continues to perform well, and credit spreads have moved below longer-term averages. A resilient economy, favorable corporate fundamentals and strong demand have been supportive of the sector.



Source: FactSet. As of March 31, 2024.

Current Yield-to-Worst vs. 1 Year Ago

All-in yields remain attractive across fixed income sectors with many sitting higher than the prior year. However, significant spread compression and strong performance from high yield over the last twelve months have pushed yields lower.



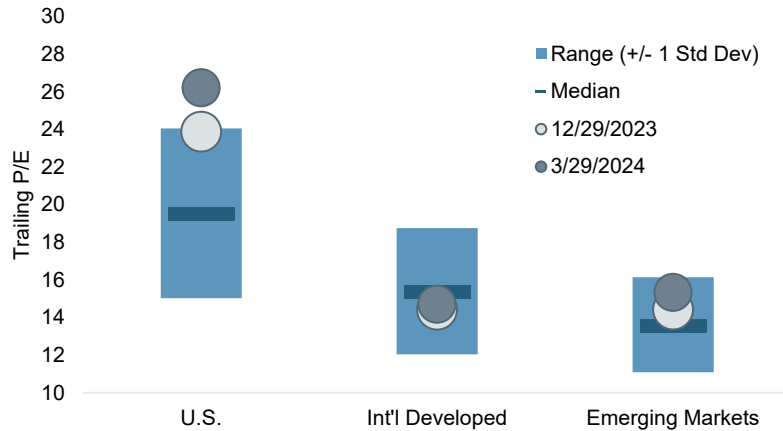
Source: FactSet. As of March 28, 2024. Based on respective Bloomberg Index.

Equity Market Update



Equity Valuations (Trailing PE – Last 15 Years)

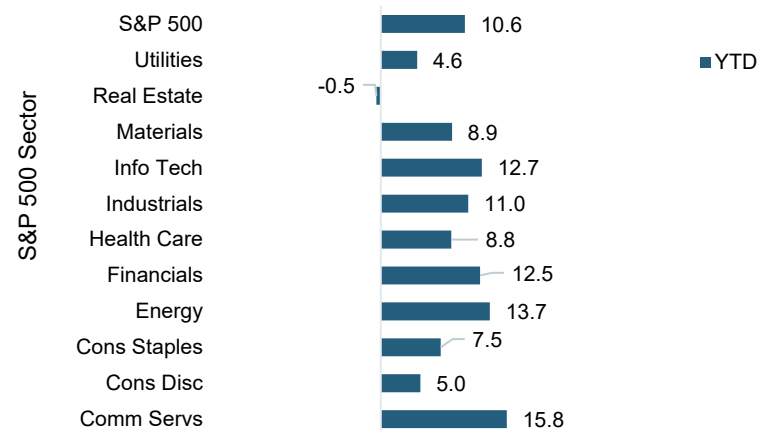
While earnings growth has been positive, price movement was the main driver of equity multiple expansion in the quarter. The relative valuation of non-U.S. continues to look attractive compared to U.S. markets.



Source: FactSet. As of March 29, 2024.

U.S. Equities – Return by Sector (1Q 2024)

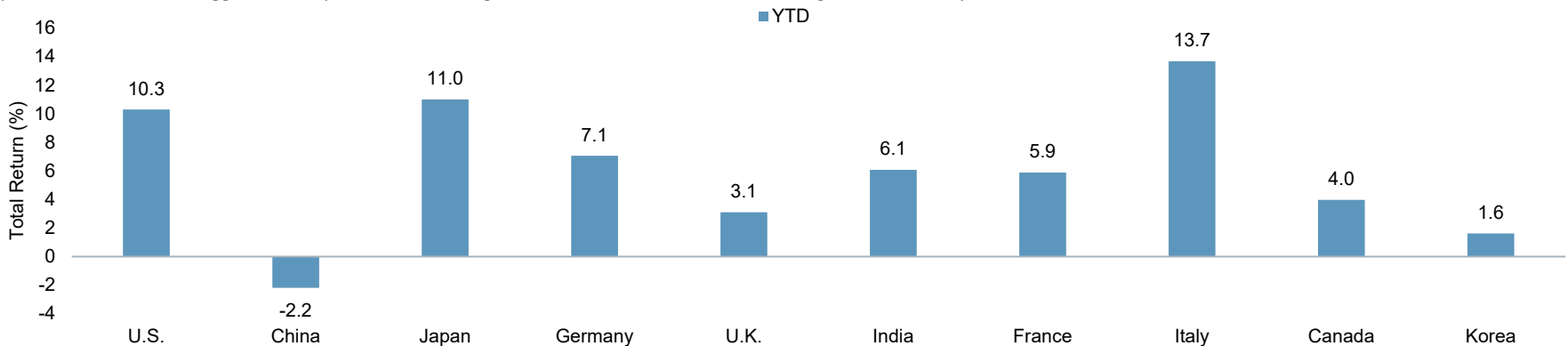
The S&P 500 had its best start to the year since 2019, touching new all-time highs. All sectors, excluding real estate, saw positive returns. Concentrated leadership remains as Nvidia, Meta, Microsoft, and Amazon accounted for 45% of the gain.



Source: Morningstar Direct. As of March 31, 2024. Total Returns.

Country Total Returns (%) – Top 10 Largest Economies

Major economies around the globe saw positive results during the first quarter. Japan had a strong quarter as the BOJ ended yield curve control, inflation and economic growth began to show signs of stabilizing, and corporate governance reforms continued to provide a positive outlook. Inflation in Europe moved lower, supporting the region's performance. China struggled in the quarter; economic growth continues to be underwhelming and uncertainty around the real estate market remains.



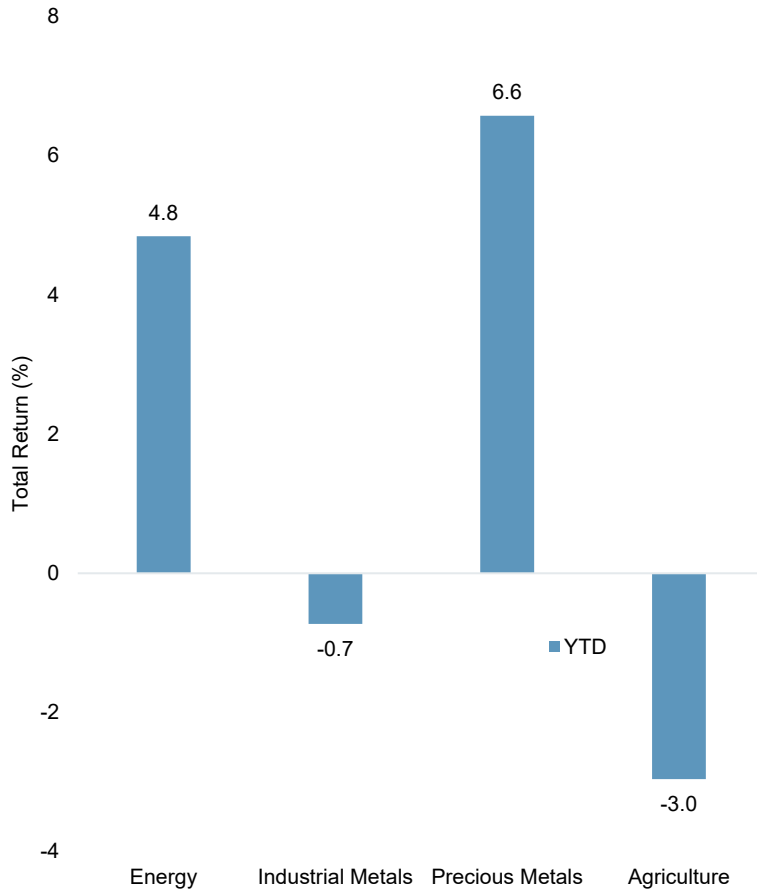
Source: Morningstar Direct. As of March 31, 2024.

Real Assets Market Update



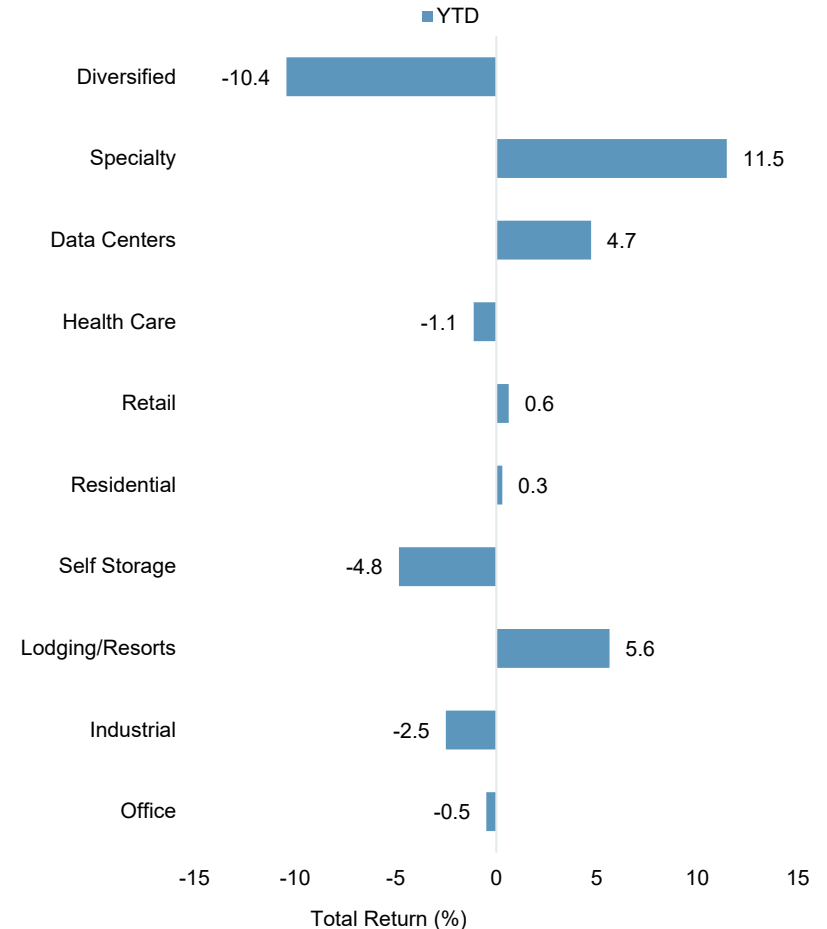
Commodity Performance (1Q 2024)

Commodities, overall, were positive in the first quarter, but underlying results were mixed. Precious metals and energy led the way, as geopolitical unrest and supply disruption put upward pressure on prices.



REIT Sector Performance (1Q 2024)

The move higher in interest rates was a broad headwind for the REIT sector. Underlying components experienced varied returns. Data centers benefited from the AI driven rally, and advertising related within specialty had a positive impact. The more interest rate sensitive diversified subsector lagged.



Source: Morningstar Direct. As of March 31, 2024.

Source: Morningstar Direct. As of March 31, 2024.

The Case for Diversification



2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	YTD 2024	10 Years (Ann)
TIPS 13.6	Emerging Markets 18.2	U.S. Small Cap 38.8	U.S. Equity REITs 30.1	U.S. Equity REITs 3.2	U.S. Small Cap 21.3	Emerging Markets 37.3	High Yield Munis 4.8	U.S. Large Cap 31.5	U.S. Small Cap 20.0	U.S. Equity REITs 43.2	Commodities 16.1	U.S. Large Cap 26.5	U.S. Large Cap 10.3	U.S. Large Cap 12.7
High Yield Munis 9.3	High Yield Munis 18.1	U.S. Large Cap 32.4	High Yield Munis 13.8	Municipals 5-Year 2.4	High Yield 17.1	International Dev. 25.0	Municipals 5-Year 1.7	U.S. Equity REITs 26.0	U.S. Large Cap 18.4	Commodities 27.1	Municipals 5-Year -5.3	International Developed 18.2	International Developed 5.8	U.S. Small Cap 7.6
U.S. Equity REITs 8.3	U.S. Equity REITs 18.1	International Dev. 22.8	U.S. Large Cap 13.7	High Yield Munis 1.8	U.S. Large Cap 12.0	U.S. Large Cap 21.8	Foreign Bond 0.5	U.S. Small Cap 25.5	Emerging Markets 18.3	US Large Cap 26.5	Hedge Funds -5.6	U.S. Small Cap 16.9	U.S. Small Cap 5.2	U.S. Equity REITs 6.6
Core Bond 7.8	International Dev. 17.3	Balanced 12.2	Core Bond 6.0	U.S. Large Cap 1.4	Commodities 11.7	EM Debt (unhedged) 15.2	Core Bond 0.0	International Dev. 22.5	TIPS 11.0	US Small Cap 14.8	High Yield -11.2	U.S. Equity REITs 13.7	Balanced 3.1	Balanced 4.8
Municipals 5-Year 6.9	EM Debt (unhedged) 16.9	Hedge Funds 9.0	Balanced 5.1	Core Bond 0.6	Emerging Markets 11.2	U.S. Small Cap 14.6	TIPS -1.3	Emerging Markets 18.4	Balanced 8.8	International Dev. 11.3	EM Debt (unhedged) -11.7	High Yield 13.4	Hedge Funds 2.7	International Developed 4.8
High Yield 5.0	U.S. Small Cap 16.3	High Yield 7.4	U.S. Small Cap 4.9	Hedge Funds -0.3	EM Debt (unhedged) 9.9	Balanced 13.6	High Yield -2.1	Balanced 17.5	International Dev. 7.8	Balanced 9.8	TIPS -11.8	Balanced 12.8	Emerging Markets 2.4	High Yield Municipals 4.6
Foreign Bond 4.2	U.S. Large Cap 16.0	U.S. Equity REITs 2.5	TIPS 3.6	International Dev. -0.6	U.S. Equity REITs 6.5	High Yield Munis 9.7	Hedge Funds -4.0	High Yield 14.3	Core Bond 7.5	High Yield Munis 7.8	U.S. Core Bond -13.0	EM Debt (unhedged) 12.7	Commodities 2.2	High Yield 4.4
U.S. Large Cap 2.1	High Yield 15.8	Municipals 5-Year 0.8	Hedge Funds 3.4	TIPS -1.4	Balanced 7.6	Hedge Funds 7.8	U.S. Large Cap -4.4	EM Debt (unhedged) 13.5	Hedge Funds 7.1	TIPS 6.0	High Yield Municipals -13.1	Emerging Markets 9.8	High Yield Municipals 1.5	Hedge Funds 3.4
Balanced 0.9	Balanced 11.5	Foreign Bond -1.0	Municipals 5-Year 3.2	Foreign Bond -2.3	TIPS 4.7	High Yield 7.5	U.S. Equity REITs -4.6	High Yield Munis 10.7	High Yield 7.1	Hedge Funds 5.7	Foreign Bond -14.2	High Yield Municipals 9.2	High Yield 1.5	Emerging Markets 2.9
EM Debt (unhedged) -1.8	TIPS 7.0	Core Bond -2.0	Foreign Bond 2.9	Balanced -3.3	Foreign Bond 3.2	Foreign Bond 6.5	Balanced -5.8	Core Bond 8.7	Foreign Bond 7.0	High Yield 5.3	International Dev. -14.5	Foreign Bond 7.0	TIPS -0.1	TIPS 2.2
U.S. Small Cap -4.2	Foreign Bond 5.3	Emerging Markets -2.6	High Yield 2.5	U.S. Small Cap -4.4	High Yield Munis 3.0	U.S. Equity REITs 5.2	EM Debt (unhedged) -6.2	TIPS 8.4	High Yield Munis 4.9	Municipals 5-Year 0.3	Balanced -14.9	U.S. Core Bond 5.5	U.S. Equity REITs -0.2	Municipals 5-Year 1.7
Hedge Funds -5.7	Hedge Funds 4.8	High Yield Munis -5.5	Emerging Markets -2.2	High Yield -4.5	Core Bond 2.6	Core Bond 3.5	U.S. Small Cap -11.0	Hedge Funds 7.8	Municipals 5-Year 4.3	Core Bond -1.5	U.S. Large Cap -19.1	Hedge Funds 4.4	Municipals 5-Year -0.4	U.S. Core Bond 1.5
Commodities -13.3	Core Bond 4.2	TIPS -8.6	International Dev. -4.9	Emerging Markets -14.9	International Dev. 1.0	Municipals 5-Year 3.1	Commodities -11.2	Commodities 7.7	EM Debt (unhedged) 2.7	Emerging Markets -2.5	Emerging Markets -20.1	Municipals 5-Year 4.3	U.S. Core Bond -0.8	Foreign Bond 0.5
International Dev. -12.1	Municipals 5-Year 3.0	EM Debt (unhedged) -9.0	EM Debt (unhedged) -5.7	EM Debt (unhedged) -14.9	Hedge Funds 0.5	TIPS 3.0	International Dev. -13.8	Foreign Bond 6.3	Commodities -3.1	Foreign Bond -4.2	U.S. Small Cap -20.4	TIPS 3.9	Foreign Bond -1.3	EM Debt (unhedged) -0.3
Emerging Markets -18.4	Commodities -1.1	Commodities -9.5	Commodities -17.0	Commodities -24.7	Municipals 5-Year -0.4	Commodities 1.7	Emerging Markets -14.6	Municipals 5-Year 5.4	U.S. Equity REITs -8.0	EM Debt (unhedged) -8.7	U.S. Equity REITs -24.4	Commodities -7.9	EM Debt (unhedged) -2.1	Commodities -1.6

Sources: Morningstar, FactSet. As of March 31, 2024. *Periods greater than one year are annualized. Total returns in U.S. dollars. Hedge Funds as of February 29, 2024. See disclosures for list of indices representing each asset class. Past performance does not indicate future performance and there is a possibility of a loss.

Financial Markets Performance



Financial Markets Performance
Total Return as of March 31, 2024
Periods greater than one year are annualized
All returns are in U.S. dollar terms

Global Fixed Income Markets	QTD	YTD	1YR	3YR	5YR	7YR	10YR	15YR
Bloomberg 1-3-Month T-Bill	1.3%	1.3%	5.4%	2.7%	2.0%	1.9%	1.4%	0.9%
Bloomberg U.S. TIPS	-0.1%	-0.1%	0.5%	-0.5%	2.5%	2.3%	2.2%	3.1%
Bloomberg Municipal Bond (5 Year)	-0.4%	-0.4%	2.0%	-0.3%	1.2%	1.6%	1.7%	2.5%
Bloomberg High Yield Municipal Bond	1.5%	1.5%	7.9%	0.6%	3.0%	4.2%	4.6%	6.8%
Bloomberg U.S. Aggregate	-0.8%	-0.8%	1.7%	-2.5%	0.4%	1.1%	1.5%	2.6%
Bloomberg U.S. Corporate High Yield	1.5%	1.5%	11.2%	2.2%	4.2%	4.4%	4.4%	8.9%
Bloomberg Global Aggregate ex-U.S. Hedged	0.6%	0.6%	5.9%	-0.4%	1.0%	2.0%	2.6%	3.2%
Bloomberg Global Aggregate ex-U.S. Unhedged	-3.2%	-3.2%	-0.7%	-6.5%	-2.5%	-0.8%	-1.4%	0.8%
Bloomberg U.S. Long Gov / Credit	-2.4%	-2.4%	-1.1%	-6.0%	-0.6%	1.0%	2.3%	4.5%
Global Equity Markets	QTD	YTD	1YR	3YR	5YR	7YR	10YR	15YR
S&P 500	10.6%	10.6%	29.9%	11.5%	15.0%	14.1%	13.0%	15.6%
Dow Jones Industrial Average	6.1%	6.1%	22.2%	8.7%	11.3%	12.3%	11.8%	14.4%
NASDAQ Composite	9.3%	9.3%	35.1%	8.2%	17.2%	16.7%	15.7%	18.3%
Russell 3000	10.0%	10.0%	29.3%	9.8%	14.3%	13.4%	12.3%	15.4%
Russell 1000	10.3%	10.3%	29.9%	10.5%	14.8%	13.8%	12.7%	15.6%
Russell 1000 Growth	11.4%	11.4%	39.0%	12.5%	18.5%	18.1%	16.0%	17.8%
Russell 1000 Value	9.0%	9.0%	20.3%	8.1%	10.3%	9.2%	9.0%	13.1%
Russell Mid Cap	8.6%	8.6%	22.3%	6.1%	11.1%	10.6%	9.9%	14.9%
Russell Mid Cap Growth	9.5%	9.5%	26.3%	4.6%	11.8%	12.9%	11.4%	15.6%
Russell Mid Cap Value	8.2%	8.2%	20.4%	6.8%	9.9%	8.4%	8.6%	14.2%
Russell 2000	5.2%	5.2%	19.7%	-0.1%	8.1%	7.7%	7.6%	12.9%
Russell 2000 Growth	7.6%	7.6%	20.3%	-2.7%	7.4%	8.4%	7.9%	13.4%
Russell 2000 Value	2.9%	2.9%	18.8%	2.2%	8.2%	6.6%	6.9%	12.1%
MSCI ACWI	8.2%	8.2%	23.2%	7.0%	10.9%	10.2%	8.7%	11.6%
MSCI ACWI ex. U.S.	4.7%	4.7%	13.3%	1.9%	6.0%	5.9%	4.3%	7.9%
MSCI EAFE	5.8%	5.8%	15.3%	4.8%	7.3%	6.7%	4.8%	8.4%
MSCI EAFE Growth	7.0%	7.0%	13.3%	2.8%	7.8%	7.8%	5.9%	9.1%
MSCI EAFE Value	4.5%	4.5%	17.3%	6.6%	6.4%	5.3%	3.5%	7.5%
MSCI EAFE Small Cap	2.4%	2.4%	10.4%	-1.4%	4.9%	5.2%	4.7%	10.1%
MSCI Emerging Markets	2.4%	2.4%	8.2%	-5.0%	2.2%	3.7%	2.9%	6.7%
Alternatives	QTD	YTD	1YR	3YR	5YR	7YR	10YR	15YR
Consumer Price Index*	0.7%	0.7%	3.2%	5.7%	4.2%	3.5%	2.8%	2.6%
FTSE NAREIT Equity REITs	-0.2%	-0.2%	10.5%	4.1%	4.1%	5.1%	6.6%	13.4%
S&P Real Assets	0.2%	0.2%	6.0%	2.8%	3.9%	4.5%	3.5%	7.3%
FTSE EPRA NAREIT Developed	-1.0%	-1.0%	8.6%	-0.2%	0.7%	3.1%	4.0%	10.0%
FTSE EPRA NAREIT Developed ex U.S.	-1.9%	-1.9%	6.6%	-5.2%	-2.7%	1.0%	1.5%	7.2%
Bloomberg Commodity Total Return	2.2%	2.2%	-0.6%	9.1%	6.4%	4.3%	-1.6%	0.3%
HFRI Fund of Funds Composite*	2.7%	2.7%	7.5%	2.4%	4.9%	4.2%	3.4%	3.9%
HFRI Asset Weighted Composite*	2.9%	2.9%	5.7%	4.3%	4.5%	4.1%	3.6%	5.2%

Sources: Morningstar, FactSet. As of March 31, 2024. *Consumer Price Index and HFRI indexes as of February 29, 2024.

See disclosures for list of indices representing each asset class. Past performance does not indicate future performance and there is a possibility of a loss.



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When referencing asset class returns or statistics, the following indices are used to represent those asset classes, unless otherwise noted. Each index is unmanaged, and investors can not actually invest directly into an index:

TIPS: Bloomberg US Treasury US TIPS TR USD

Municipals 5-Year: Bloomberg Municipal Bond 5 Year (4-6) TR USD

U.S. Core Bond: Bloomberg US Aggregate Bond TR USD

High Yield Municipals: Bloomberg HY Muni TR USD

High Yield: Bloomberg US Corporate High Yield TR USD

U.S. Long Duration: Bloomberg U.S. Long Government/Credit TR USD

Foreign Bond: Bloomberg Global Aggregate ex-USD TR USD (50/50 blend of hedged and unhedged)

EM Debt (unhedged): J.P. Morgan GBI-EM Global Diversified Composite Unhedged TR USD

U.S. Large Cap: Russell 1000 TR USD

U.S. Small Cap : Russell 2000 TR USD

International Developed: MSCI EAFE NR USD

Emerging Markets: MSCI Emerging Markets NR USD

U.S. Equity REITs: FTSE Nareit Equity REITs TR USD

Real Assets: S&P Real Assets TR USD

Commodities: Bloomberg Commodity TR USD

Hedge Funds: Hedge Fund Research HFRI Fund of Funds Composite USD

Foreign Bond Unhedged: Bloomberg Global Aggregate ex USD TR USD unhedged

U.S. MBS: Bloomberg US MBS (30Y) TR USD

Balanced: 18% U.S. Large Cap, 6% U.S. Small Cap, 5% U.S. Equity REITs, 16% International Developed, 4% High Yield, 8% Emerging Markets, 3% TIPS, 33% U.S. Core Bond, 2% Foreign Bond, 3% Commodities, 2% EM Debt (unhedged).

Equity valuations are based on trailing 12-month P/E ratios for S&P 500 Index (U.S.), MSCI EAFE Index (Int'l Developed), and MSCI EM Index (Emerging Markets)

S&P 500 sector performance based on the following indices: S&P 500 Sec/Commun Services TR USD, S&P 500 Sec/Financials TR USD, S&P 500 Sec/Energy TR USD, S&P 500 Sec/Industrials TR USD, S&P 500 TR USD, S&P 500 Sec/Health Care TR USD, S&P 500 Sec/Cons Disc TR USD, S&P 500 Sec/Utilities TR USD, S&P 500 Sec/Cons Staples TR USD, S&P 500 Sec/Materials TR USD, S&P 500 Sec/Information Technology TR USD, S&P 500 Sec/Real Estate TR USD

Equity country returns based on the following indices: U.S.: MSCI USA NR USD, China: MSCI CHINA NR USD, Japan: MSCI Japan NR USD, Germany: MSCI Germany NR USD, United Kingdom: MSCI NR USD, India: MSCI India NR USD, France: MSCI France NR USD, Italy: MSCI Italy NR USD, Canada: MSCI Canada NR USD, Korea: MSCI Korea NR USD, Energy:

Commodity Performance based on the following indices: Energy: Bloomberg Sub Energy TR USD, Industrial Metals: Bloomberg Sub Industrial Metals TR USD, Precious Metals: Bloomberg Sub Precious Metals TR USD, Agriculture: Bloomberg Sub Agriculture TR USD

REIT sector performance is based on the following indices: FTSE Nareit Equity Health Care TR, FTSE Nareit Equity Lodging/Resorts TR, FTSE Nareit Equity Office TR, FTSE Nareit Equity Data Centers TR, FTSE Nareit Equity Diversified TR, FTSE Nareit Equity Specialty TR, FTSE Nareit Equity Retail TR, FTSE Nareit Equity Residential TR, FTSE Nareit Equity Industrial TR, FTSE Nareit Equity Self Storage TR

Marketable Alternatives indices used include HFRI Fund of Funds Composite Index, HFRI Asset Weighted Composite Index, HFRI Equity Hedge (Total) Index – Asset Weighted, HFRI Event Driven (Total) Index – Asset Weighted, HFRI Macro (Total) Index – Asset Weighted, HFRI Relative Value (Total) Index – Asset Weighted. HFRI Fund of Funds Composite Index is not asset weighted.

Material Risks & Limitations



Fixed Income securities are subject to interest rate risks, the risk of default and liquidity risk. U.S. investors exposed to non-U.S. fixed income may also be subject to currency risk and fluctuations.

Cash may be subject to the loss of principal and over longer period of time may lose purchasing power due to inflation.

Domestic Equity can be volatile. The rise or fall in prices take place for a number of reasons including, but not limited to changes to underlying company conditions, sector or industry factors, or other macro events. These may happen quickly and unpredictably.

International Equity can be volatile. The rise or fall in prices take place for a number of reasons including, but not limited to changes to underlying company conditions, sector or industry impacts, or other macro events. These may happen quickly and unpredictably. International equity allocations may also be impact by currency and/or country specific risks which may result in lower liquidity in some markets.

Real Assets can be volatile and may include asset segments that may have greater volatility than investment in traditional equity securities. Such volatility could be influenced by a myriad of factors including, but not limited to overall market volatility, changes in interest rates, political and regulatory developments, or other exogenous events like weather or natural disaster.

Private Equity involves higher risk and is suitable only for sophisticated investors. Along with traditional equity market risks, private equity investments are also subject to higher fees, lower liquidity and the potential for leverage that may amplify volatility and/or the potential loss of capital.

Private Credit involves higher risk and is suitable only for sophisticated investors. These assets are subject to interest rate risks, the risk of default and limited liquidity. U.S. investors exposed to non-U.S. private credit may also be subject to currency risk and fluctuations.

Private Real Estate involves higher risk and is suitable only for sophisticated investors. Real estate assets can be volatile and may include unique risks to the asset class like leverage and/or industry, sector or geographical concentration. Declines in real estate value may take place for a number of reasons including, but are not limited to economic conditions, change in condition of the underlying property or defaults by the borrow.

Marketable Alternatives involves higher risk and is suitable only for sophisticated investors. Along with traditional market risks, marketable alternatives are also subject to higher fees, lower liquidity and the potential for leverage that may amplify volatility or the potential for loss of capital. Additionally, short selling involved certain risks including, but not limited to additional costs, and the potential for unlimited loss on certain short sale positions.

Disclosures – Index & Benchmark Definitions



Index & Benchmark Definitions

Fixed Income

- **Bloomberg 1-3 Month U.S. Treasury Bill Index** is designed to measure the performance of public obligations of the U.S. Treasury that have a remaining maturity of greater than or equal to 1 month and less than 3 months.
- **Bloomberg U.S. Aggregate Index** covers the U.S. investment grade fixed rate bond market, with index components for government and corporate securities, mortgage pass-through securities, and asset-backed securities.
- **Bloomberg Global Aggregate ex. USD Indices** represent a broad-based measure of the global investment-grade fixed income markets. The two major components of this index are the Pan-European Aggregate and the Asian-Pacific Aggregate Indices. The index also includes Eurodollar and Euro-Yen corporate bonds and Canadian government, agency and corporate securities.
- **Bloomberg U.S. Corporate High Yield Index** covers the universe of fixed rate, non-investment grade debt. Eurobonds and debt issues from countries designated as emerging markets (sovereign rating of Baa1/BBB+/BBB+ and below using the middle of Moody's, S&P, and Fitch) are excluded, but Canadian and global bonds (SEC registered) of issuers in non-EMG countries are included.
- **Bloomberg US Government/Credit 1-3 Year Index** is the 1-3 year component of the U.S. Government/Credit Index, which includes securities in the Government and Credit Indices. The Government Index includes treasuries and agencies, while the credit index includes publicly issued U.S. corporate and foreign debentures and secured notes that meet specified maturity, liquidity, and quality requirements.
- **Bloomberg US Government/Credit Long Index** is the Long component of the U.S. Government/Credit Index, which includes securities in the Government and Credit Indices. The Government Index includes treasuries and agencies, while the credit index includes publicly issued U.S. corporate and foreign debentures and secured notes that meet specified maturity, liquidity and quality requirements.
- **Bloomberg US Treasury Inflation Protected Securities Index** consists of Inflation-Protection securities issued by the U.S. Treasury.
- **Bloomberg Muni Index** is a rules-based, market-value-weighted index engineered for the long-term tax-exempt bond market. Bonds must be rated investment-grade by at least two ratings agencies.
- **Bloomberg High Yield Municipal Bond Index** covers the universe of fixed rate, non-investment grade debt.
- **Bloomberg Intermediate U.S. Gov't/Credit** is the Intermediate component of the U.S. Government/Credit index, which includes securities in the Government and Credit Indices. The Government Index includes treasuries and agencies, while the credit index includes publicly issued U.S. corporate and foreign debentures and secured notes that meet specified maturity, liquidity, and quality requirements.
- **JPMorgan GBI-EM Global Diversified** tracks the performance of local currency debt issued by emerging market governments, whose debt is accessible by most of the international investor base.

Equity

- **The S&P 500 Index** is a capitalization-weighted index designed to measure performance of the broad domestic economy through changes in the aggregate market value of 500 stocks representing all major industries.
- **Russell 3000 Value Index** measures the performance of those Russell 3000 companies with lower P/B ratios and lower forecasted growth values.
- **Russell 3000 Index** is a market-cap-weighted index which consists of roughly 3,000 of the largest companies in the U.S. as determined by market capitalization. It represents nearly 98% of the investable U.S. equity market.
- **Russell 3000 Growth Index** measures the performance of those Russell 3000 companies with higher P/B ratios and higher forecasted growth values.
- **Russell 1000 Value Index** measures the performance of those Russell 1000 companies with lower P/B ratios and lower forecasted growth values.
- **Russell 1000 Index** consists of the largest 1000 companies in the Russell 3000 Index.
- **Russell 1000 Growth Index** measures the performance of those Russell 1000 companies with higher P/B ratios and higher forecasted growth values.
- **Russell Mid Cap Value Index** measures the performance of those Russell Mid Cap companies with lower P/B ratios and lower forecasted growth values.
- **Russell Mid Cap Index** measures the performance of the 800 smallest companies in the Russell 1000 Index.
- **Russell Mid Cap Growth Index** measures the performance of those Russell Mid Cap companies with higher P/B ratios and higher forecasted growth values.
- **Russell 2000 Value Index** measures the performance of those Russell 2000 companies with lower P/B ratios and lower forecasted growth values.
- **Russell 2000** consists of the 2,000 smallest U.S. companies in the Russell 3000 index.
- **Russell 2000 Growth Index** measures the performance of the Russell 2000 companies with higher P/B ratios and higher forecasted growth values.
- **MSCI ACWI (All Country World Index) ex. U.S. Index** captures large and mid-cap representation across Developed Markets countries (excluding the United States) and Emerging Markets countries. The index covers approximately 85% of the global equity opportunity set outside the U.S.
- **MSCI ACWI Index** captures large and mid cap representation across Developed Markets and Emerging Markets countries. The index covers approximately 85% of the global investable opportunity set.
- **MSCI EAFE IMI Index** is an equity index which captures large, mid and small cap representation across Developed Markets countries around the world, excluding the U.S. and Canada. The index covers approximately 99% of the free float-adjusted market capitalization in each country.
- **MSCI EAFE Value Index** captures large and mid cap securities exhibiting overall value style characteristics across Developed Markets countries around the world, excluding the US and Canada. The value investment style characteristics for index construction are defined using three variables: book value to price, 12-month forward earnings to price and dividend yield.
- **MSCI EAFE Index** is an equity index which captures large and mid-cap representation across Developed Markets countries around the world, excluding the U.S. and Canada. The index covers approximately 85% of the free float-adjusted market capitalization in each country.

Disclosures – Index & Benchmark Definitions



- **MSCI EAFE Growth Index** captures large and mid cap securities exhibiting overall growth style characteristics across Developed Markets countries around the world, excluding the US and Canada. The growth investment style characteristics for index construction are defined using five variables: long-term forward EPS growth rate, short-term forward EPS growth rate, current internal growth rate and long-term historical EPS growth trend and long-term historical sales per share growth trend.
- **MSCI EAFE Large Cap Index** is an equity index which captures large cap representation across Developed Markets countries around the world, excluding the US and Canada. The index covers approximately 70% of the free-float adjusted market capitalization in each country.
- **MSCI EAFE Small Cap Index** is an equity index which captures small cap representation across Developed Markets countries around the world, excluding the US and Canada. The index covers approximately 14% of the free float adjusted market in each country.
- **MSCI ACWI (All Country World Index) ex. U.S. Index** captures large and mid-cap representation across Developed Markets countries (excluding the United States) and Emerging Markets countries. The index covers approximately 85% of the global equity opportunity set outside the U.S.
- **MSCI Emerging Markets IMI Index** captures large, mid and small cap representation across 24 Emerging Markets countries. The index covers approximately 99% of the free-float adjusted market capitalization in each country.
- **MSCI Emerging Markets Value Index** captures large and mid-cap securities exhibiting overall value style characteristics across Emerging Markets countries. The value investment style characteristics for index construction are defined using three variables: book value to price, 12-month forward earnings to price and dividend yield.
- **MSCI Emerging Markets Index** captures large and mid-cap representation across Emerging Markets countries. The index covers approximately 85% of the free-float adjusted market capitalization in each country.
- **MSCI Emerging Markets Growth Index** captures large and mid-cap representation across Emerging Markets countries. The growth investment style characteristics for index construction are defined using five variables: long-term forward EPS growth rate, short-term forward EPS growth rate, current internal growth rate and long-term historical EPS growth trend and long-term historical sales per share growth trend.
- **MSCI Emerging Markets Index** captures large and mid-cap representation across Emerging Markets countries. The index covers approximately 85% of the free-float adjusted market capitalization in each country.
- **MSCI Emerging Markets (EM) Small Cap Index** includes small cap representation across Emerging Markets countries. The index covers approximately 14% of the free float-adjusted market capitalization in each country. The small cap segment tends to capture more local economic and sector characteristics relative to larger Emerging Markets capitalization segments.

Alternatives & Miscellaneous

- **S&P Real Asset Index** is designed to measure global property, infrastructure, commodities, and inflation-linked bonds using liquid and investable component indices that track public equities, fixed income, and futures. In the index, equity holds 50% weight, commodities 10%, and fixed income 40%.
- **FTSE Nareit Equity REITs Index** contains all Equity REITs not designed as Timber REITs or Infrastructure REITs.
- **FTSE EPRA Nareit Developed Index** is designed to track the performance of listed real estate companies and REITs worldwide.
- **FTSE EPRA Nareit Developed ex US Index** is a subset of the FTSE EPRA Nareit Developed Index and is designed to track the performance of listed real estate companies and REITs in developed markets excluding the US.
- **Bloomberg Commodity Index** is calculated on an excess return basis and reflects commodity futures price movements. The index rebalances annually weighted 2/3 by trading volume and 1/3 by world production and weight-caps are applied at the commodity, sector and group level for diversification.
- **The Alerian MLP Index** is a float adjusted, capitalization-weighted index, whose constituents represent approximately 85% of total float-adjusted market capitalization, is disseminated real-time on a price-return basis (AMZ) and on a total-return basis.
- **HFRi Asset Weighted Composite Index** is a global, asset-weighted index comprised of single-manager funds that report to HFR Database. Constituent funds report monthly net of all fees performance in US Dollar and have a minimum of \$50 Million under management or \$10 Million under management and a twelve (12) month track record of active performance. The HFRi Asset Weighted Composite Index does not include Funds of Hedge Funds. The constituent funds of the HFRi Asset Weighted Composite Index are weighted according to the AUM reported by each fund for the prior month.
- **HFRi Fund of Funds Composite Index** is a global, equal-weighted index of all fund of hedge funds that report to the HFR Database. Constituent funds report monthly net of all fees performance in U.S. Dollars and have a minimum of \$50 million under management or a twelve (12) month track record of active performance.
- **HFRi Equity Hedge Index** is an index of Investment Managers who maintain positions both long and short in primarily equity and equity derivative securities. Strategies can be broadly diversified or narrowly focused on specific sectors and can range broadly in terms of levels of net exposure, leverage employed, holding period, concentrations of market capitalizations and valuation ranges of typical portfolios. EH managers would typically maintain at least 50% exposure to, and may in some cases be entirely invested in, equities, both long and short. Constituent funds report monthly net of all fees performance in US Dollar and have a minimum of \$50 Million under management or \$10 Million under management and a twelve (12) month track record of active performance.
- **HFRi Event Driven Index** is an index of Investment Managers who maintain positions in companies currently or prospectively involved in corporate transactions of a wide variety including but not limited to mergers, restructurings, financial distress, tender offers, shareholder buybacks, debt exchanges, security issuance or other capital structure adjustments. Constituent funds report monthly net of all fees performance in US Dollar and have a minimum of \$50 Million under management or \$10 Million under management and a twelve (12) month track record of active performance

Disclosures – Index & Benchmark Definitions



- **HFRI Macro Index** is an index of investment Managers which trade a broad range of strategies in which the investment process is predicated on movements in underlying economic variables and the impact these have on equity, fixed income, hard currency and commodity markets. Managers employ a variety of techniques, both discretionary and systematic analysis, combinations of top down and bottom-up theses, quantitative and fundamental approaches and long and short-term holding periods. Constituent funds report monthly net of all fees performance in US Dollar and have a minimum of \$50 Million under management or \$10 Million under management and a twelve (12) month track record of active performance.
- **HFRI Relative Value Index** is an index of Investment Managers who maintain positions in which the investment thesis is predicated on realization of a valuation discrepancy in the relationship between multiple securities. Managers employ a variety of fundamental and quantitative techniques to establish investment theses, and security types range broadly across equity, fixed income, derivative or other security types. Constituent funds report monthly net of all fees performance in US Dollar and have a minimum of \$50 Million under management or \$10 Million under management and a twelve (12) month track record of active performance.
- **US Private Equity Index** is a horizon calculation based on data compiled from 1,482 US private equity funds, including fully liquidated partnerships, formed between 1986 and 2022.
- **US Buyout Index** is a horizon calculation based on data compiled from 1,070 US buyout funds, including fully liquidated partnerships, formed between 1986 and 2022.
- **US Growth Equity Index** is a horizon calculation based on data compiled from 412 US growth equity funds, including fully liquidated partnerships, formed between 1986 and 2022.
- **US Venture Capital Index** is a horizon calculation based on data compiled from 2,322 US venture capital funds, including fully liquidated partnerships, formed between 1981 and 2022.
- **Real Estate Index** is a horizon calculation based on data compiled from 1,305 real estate funds, including fully liquidated partnerships, formed between 1986 and 2022.

Additional Information

- Equity sector returns are calculated by S&P, Russell, and MSCI for domestic and international markets, respectively. S&P and MSCI sector definitions correspond to the GICS® classification (Global Industry Classification System); Russell uses its own sector and industry classifications.
- MSCI country indices are free float-adjusted market capitalization indices that are designed to measure equity market performance of approximately 85% of the market capitalization in each specific country.
- Currency returns are calculated using FactSet's historical spot rates and are calculated using the U.S. dollar as the base currency.