

# Quarterly Considerations

## Q3 2023

## Market Themes

1. We are likely at or near the peak cycle Federal Funds rate as the Fed evaluates a lagged impact from its monetary policy actions. Although markets consolidated a bit in the quarter on an evolving Fed narrative, a Fed “pause” and a higher for longer environment has historically resulted in favorable capital market returns.
2. Rising interest rates have increased the return outlook for fixed income and valuations look attractive relative to equities. Evaluating the new environment and the role fixed income plays in meeting investment objectives is top of mind for investors.
3. Inflation has improved significantly since peaking above nine percent in 2022 and is approaching the Fed’s two percent target. However, the final steps will likely be the hardest to overcome and the path may not be linear.

### Performance Following the Fed’s Last Hike – Next 12 Months

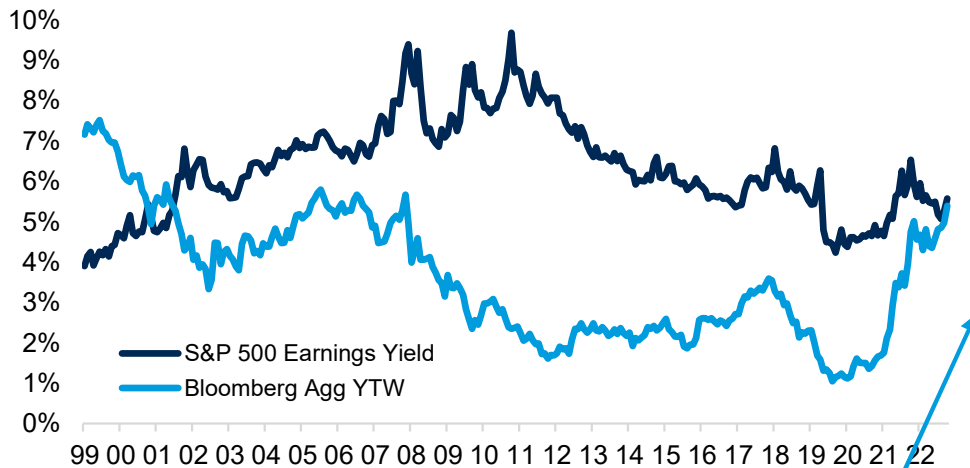
Financial markets have performed well following the Federal Reserve’s last rate hike, historically re-pricing ahead of the Fed. For example, the 10-year U.S. Treasury yield typically peaks prior to a Fed pause.

Date of Last Fed Rate Hike	“Pause” (Months to Next Cut)	Forward 3-Year Return from Date of Last Rate Hike (%)		
		Bbg Agg	1-3m Tbill	S&P 500
12/20/2018	7.5	5.0	0.9	25.0
6/29/2006	14.9	6.6	3.1	-8.0
5/16/2000	7.7	11.1	3.4	-12.4
3/25/1997	18.4	6.3	5.2	26.5
2/1/1995	5.2	10.2	5.5	30.5
<b>Averages</b>		<b>7.8</b>	<b>3.6</b>	<b>12.3</b>

Sources: Federal Reserve, FactSet, Morningstar Direct. As of September 30, 2023. Indexes used are Bloomberg U.S. Aggregate Bond Index, Bloomberg 1-3m TBill Index, and S&P 500 Index.

### Relative Valuations Between Equity and Fixed Income

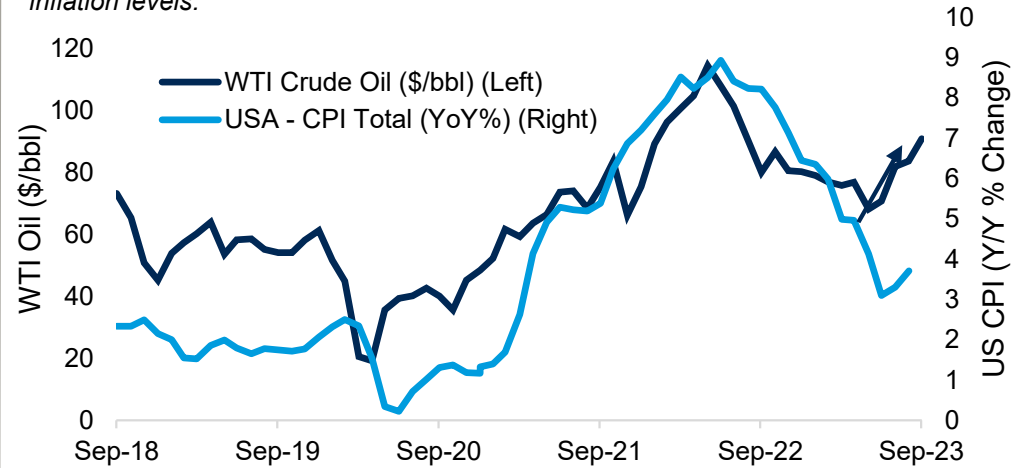
Bond yields have risen and the relative valuation gap between U.S. equity and fixed income has converged to nearly equal levels, the closest valuations have been in over 20 years.



Source: FactSet. As of September 30, 2023.

### Oil Prices Ticked Higher in the Quarter

Oil prices moved higher during the third quarter on the back of continued supply constraints from OPEC. Commodity prices are a large component of inflation and are one of the many factors that may contribute to the volatile path toward target inflation levels.



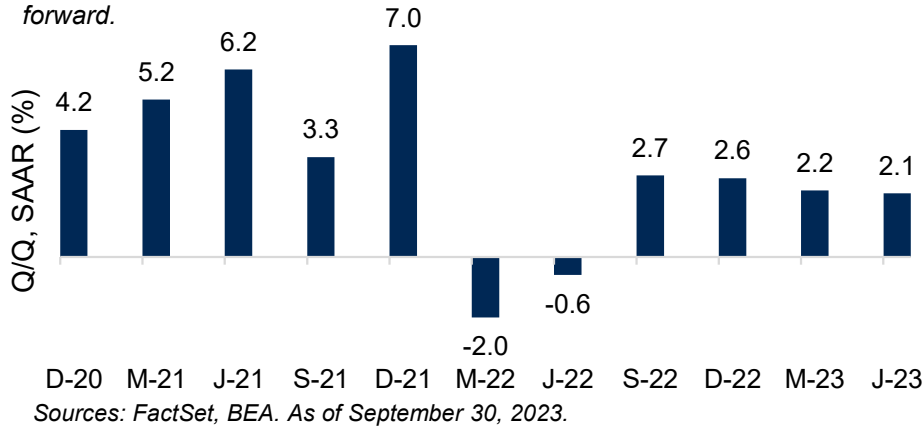
Source: FactSet. Oil as of September 30, 2023; CPI as of August 31, 2023.

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. Indices cannot be invested in directly. This report is intended for the exclusive use of clients or prospective clients of MPS LORIA. The information contained herein is intended for the recipient, is confidential and may not be disseminated or distributed to any other person without the prior approval of MPS LORIA. Any dissemination or distribution is strictly prohibited. Information has been obtained from a variety of sources believed to be reliable though not independently verified. Any forecasts represent future expectations and actual returns; volatilities and correlations will differ from forecasts. This report does not represent a specific investment recommendation. Please consult with your advisor, attorney and accountant, as appropriate, regarding specific advice. Past performance does not indicate future performance and there is a possibility of a loss.

## Economic Review

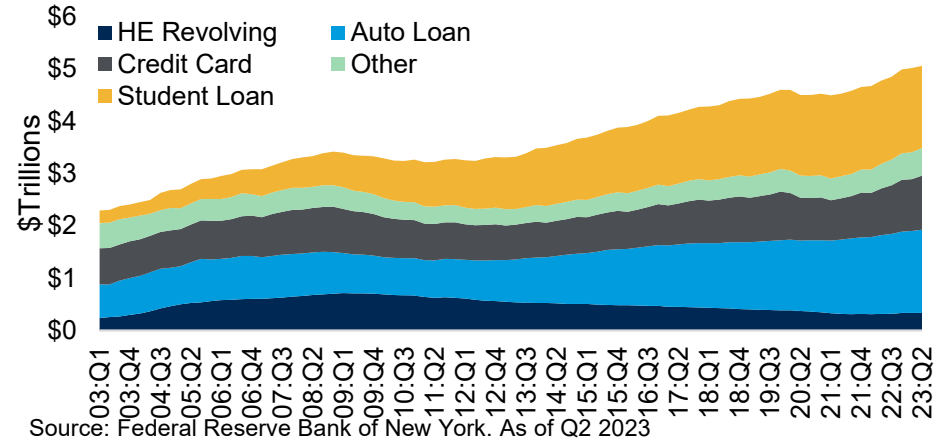
### U.S. Real GDP Growth

The U.S. economy remains resilient despite tightening monetary conditions. Favorable consumer spending and business investment helped propel growth in Q2 2023. Market expectations of recession have shifted significantly lower since the start of the year, but there are cautionary signs that may impact growth going forward.



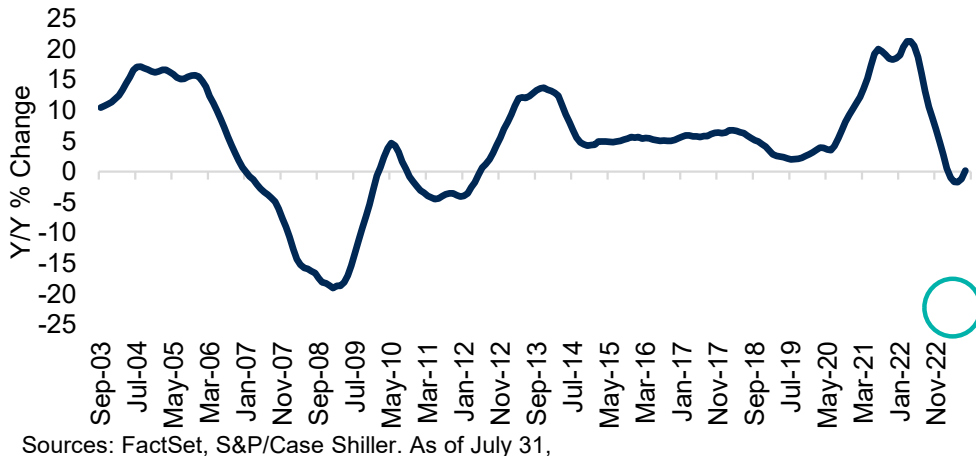
### Rising Consumer Debt – Ex Mortgages

The U.S. consumer has been strong over the past few years but growing debt levels, rising delinquencies, increased cost of financing, declining savings, and the resumption of student loan payments, may test consumer resilience going forward.



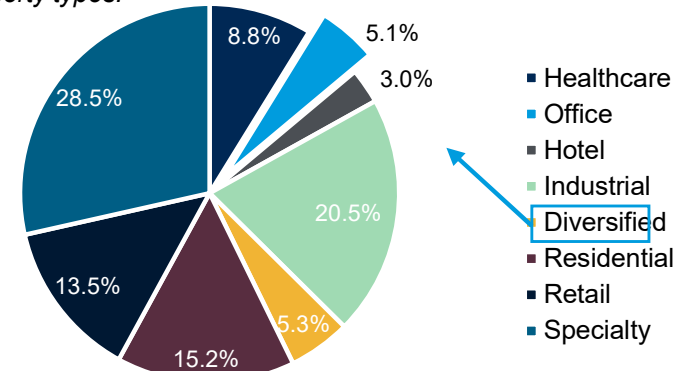
### S&P Case Shiller 20 City Home Price Index

The index fell on a year over year basis for the first time in over ten years. Home prices, which have been a stubbornly sticky portion of inflation, have moderated and may help ease inflation levels in the future.



### Office Only a Small Portion of REIT Market

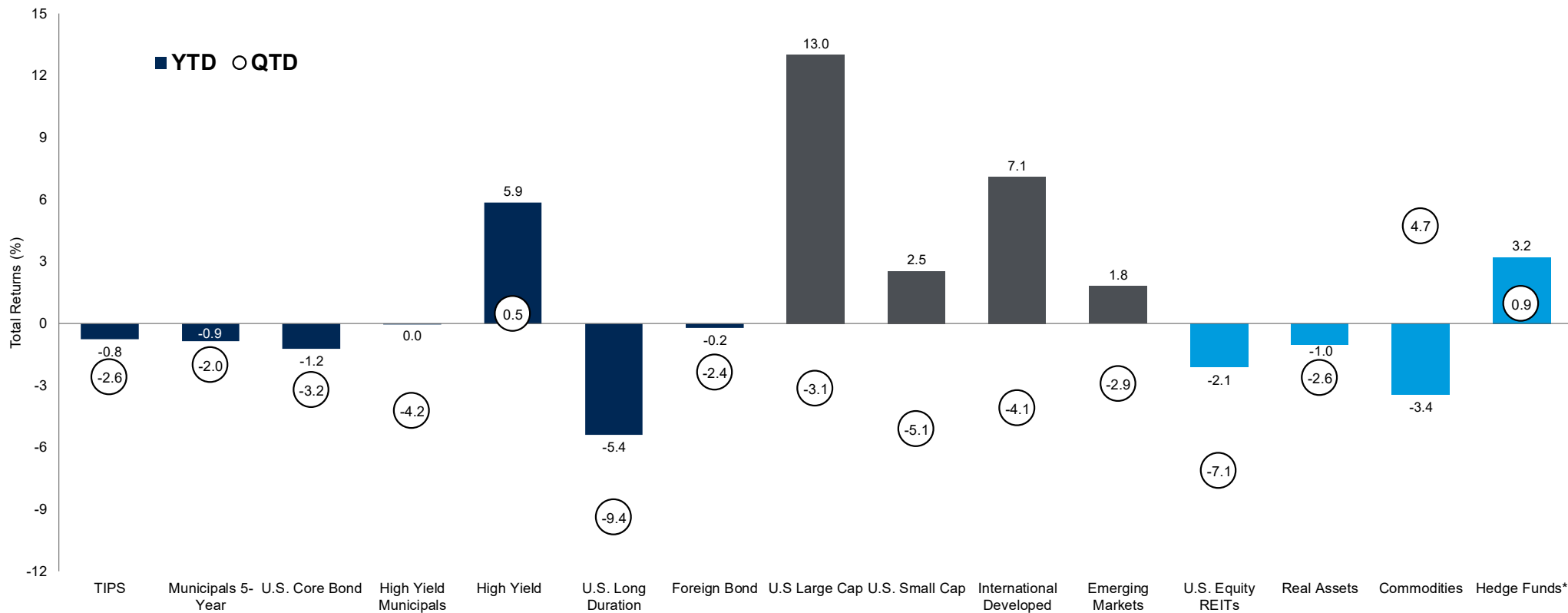
Commercial real estate continues to garner headlines, driven by weakness in the office market. While the office space certainly deserves attention, it only accounts for a small portion of the REIT market and fundamentals remain healthy across other property types.



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. Indices cannot be invested in directly.

This report is intended for the exclusive use of clients or prospective clients of MPS LORIA. The information contained herein is intended for the recipient, is confidential and may not be disseminated or distributed to any other person without the prior approval of MPS LORIA. Any dissemination or distribution is strictly prohibited. Information has been obtained from a variety of sources believed to be reliable though not independently verified. Any forecasts represent future expectations and actual returns; volatilities and correlations will differ from forecasts. This report does not represent a specific investment recommendation. Please consult with your advisor, attorney and accountant, as appropriate, regarding specific advice. Past performance does not indicate future performance and there is a possibility of a loss.

# Asset Class Returns



Source: Morningstar Direct. As of September 30, 2023. \*Hedge fund returns as of August 31, 2023.

## Fixed Income (3Q)

- Volatility continued in fixed income markets and most segments posted negative returns. Interest rates rose as markets digested the possibility of a higher-for-longer regime from the Federal Reserve as the central bank continues to tackle bringing inflation to target levels.
- + High yield fared best as the segment, which has a lower duration profile than core fixed income, is less sensitive to interest rate changes.
- Long duration assets saw large declines in the quarter as longer dated rates experienced a sharp jump higher in the quarter.

## Equity (3Q)

- Equities were broadly lower in the period as higher interest rates led to a re-pricing of valuations. U.S. large cap outperformed small cap.
- Developed non-U.S. struggled in the quarter. The Eurozone continues to have weak economic activity and central banks remain in tightening stances.
- Emerging markets outperformed in the quarter but were still negative on an absolute basis. Positive momentum in the Indian economy provided a tailwind for the emerging region.

## Real Asset / Alternatives (3Q)

- REITs took a step back during the period. Self-storage, Diversified and Residential were among the worst performing sub-sectors.
- + Commodities were a standout in the third quarter. Strong results stemmed from a jump in oil prices.
- + Hedge funds (reported on a month lag) posted a positive return for the first two months of the quarter. Event Driven and Relative Value strategies were among the top performing components.

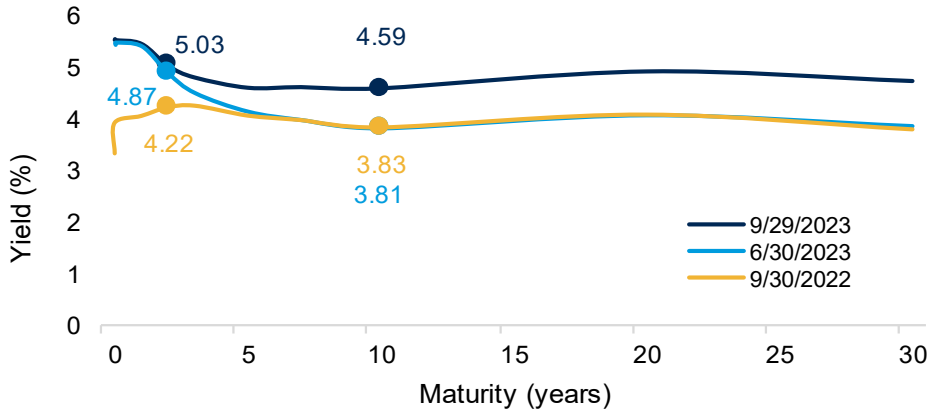
See disclosures for list of indices representing each asset class. Past performance does not indicate future performance and there is a possibility of a loss. Indices cannot be invested in directly.

This report is intended for the exclusive use of clients or prospective clients of MPS LORIA. The information contained herein is intended for the recipient, is confidential and may not be disseminated or distributed to any other person without the prior approval of MPS LORIA. Any dissemination or distribution is strictly prohibited. Information has been obtained from a variety of sources believed to be reliable though not independently verified. Any forecasts represent future expectations and actual returns; volatilities and correlations will differ from forecasts. This report does not represent a specific investment recommendation. Please consult with your advisor, attorney and accountant, as appropriate, regarding specific advice. Past performance does not indicate future performance and there is a possibility of a loss.

# Fixed Income Market Update

## U.S. Treasury Yield Curve

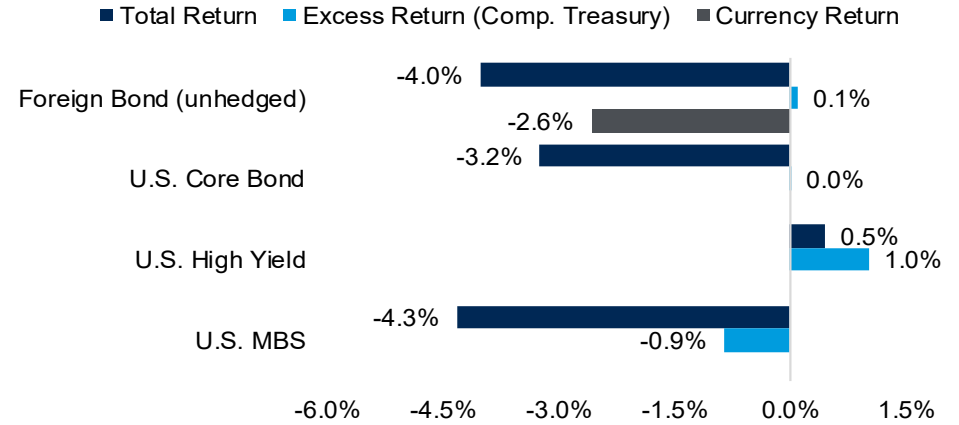
Interest rates rose across the yield curve during the quarter. The Fed paused in September following July's 25 basis point hike. The prospect of a higher-for-longer environment as inflation moves closer to the 2% target was a main driver of the move higher.



Source: FactSet. As of September 29, 2023.

## Index Performance Attribution (3Q 2023)

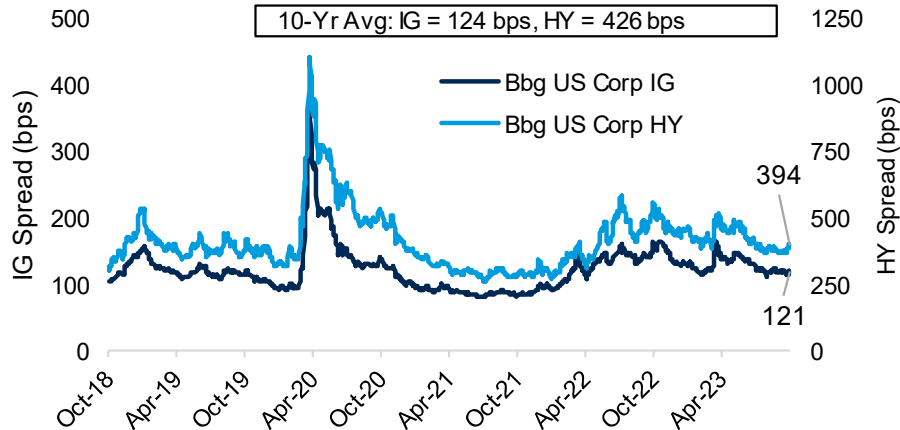
"Risk-on" sentiment early in the quarter fueled the corporate high yield market as fundamentals remain favorable and supply has been constrained. The MBS market continues to struggle amid the volatile and rising interest rate environment.



Source: FactSet. As of September 29, 2023.

## Corporate Market Spreads – Trailing 5 Years

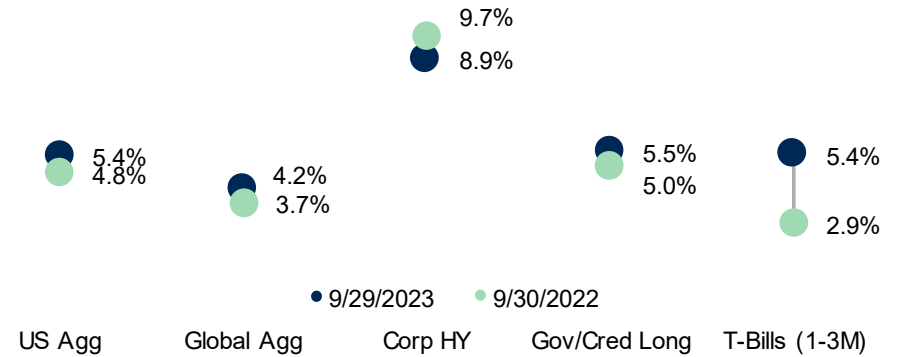
Corporate credit spreads ended the quarter essentially where they began. After a strong rally in July, spreads widened to end the quarter. Issuance ticked up in September but remains low relative to previous years.



Source: FactSet. As of September 29, 2023.

## Current Yield-to-Worst vs. 1 Year Ago

Yields continue to rise, fueled primarily by increasing interest rates as credit spreads have remained subdued. The return outlook for fixed income looks more attractive compared to this time last year.



Source: FactSet. As of September 29, 2023. Based on respective Bloomberg Index.

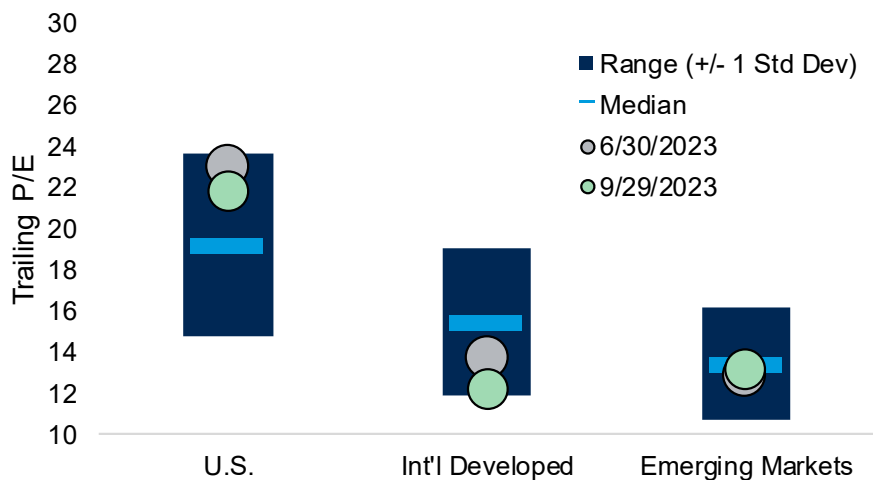
See disclosures for list of indices representing each asset class. Past performance does not indicate future performance and there is a possibility of a loss. Indices cannot be invested in directly.

This report is intended for the exclusive use of clients or prospective clients of MPS LORIA. The information contained herein is intended for the recipient, is confidential and may not be disseminated or distributed to any other person without the prior approval of MPS LORIA. Any dissemination or distribution is strictly prohibited. Information has been obtained from a variety of sources believed to be reliable though not independently verified. Any forecasts represent future expectations and actual returns; volatilities and correlations will differ from forecasts. This report does not represent a specific investment recommendation. Please consult with your advisor, attorney and accountant, as appropriate, regarding specific advice. Past performance does not indicate future performance and there is a possibility of a loss.

# Equity Market Update

## Equity Valuations (Trailing PE – Last 15 Years)

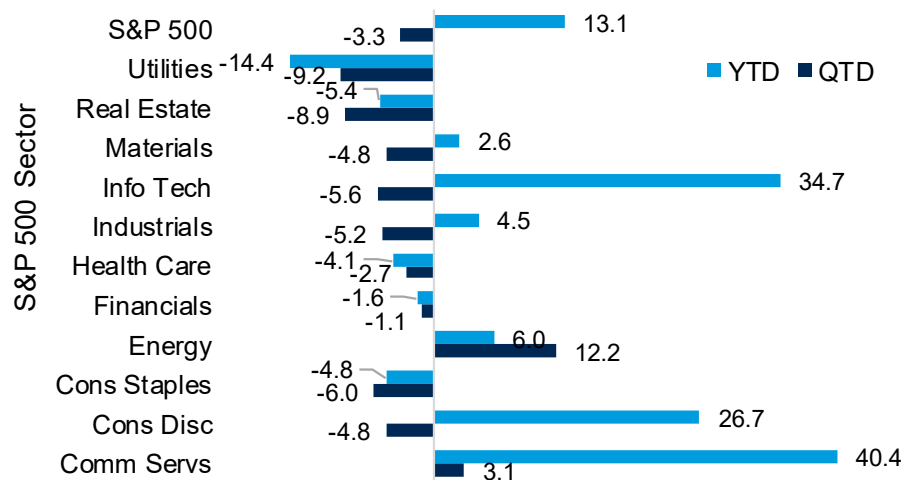
Equity valuations compressed in the third quarter as prices fell. Higher rates were the main culprit of the repricing. Non-U.S. markets continue to look favorably valued relative to the U.S.



Source: FactSet. As of September 29, 2023.

## U.S. Equities – Return by Sector (3Q 2023)

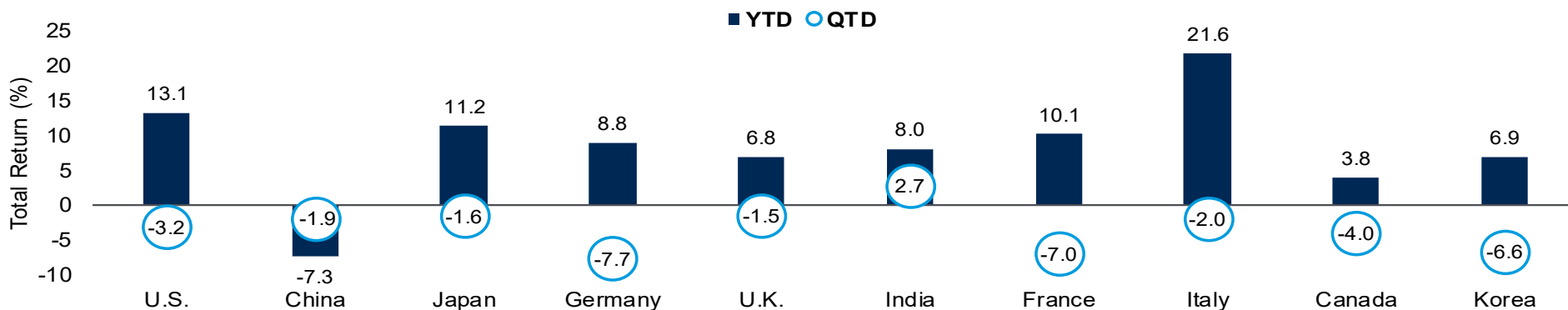
Energy and communication services were the lone positive sectors in the quarter. Energy benefited from a spike in oil prices, while Alphabet and Meta were top contributors within the communication sector.



Source: Morningstar Direct. As of September 30, 2023. Total Returns.

## Country Total Returns (%) – Top 10 Largest Economies

Most global equity markets saw declining returns during the third quarter, but still remain positive year to date. A higher-for-longer interest rate environment prompted much of the sell-off for developed markets as investors weighed the potential impact to future economic growth and the effect on corporate earnings. Much of Europe struggled, with key countries such as Germany reporting negative GDP growth. On the other hand, India was a bright spot on the back of favorable economic data.



Source: Morningstar Direct. As of September 30, 2023.

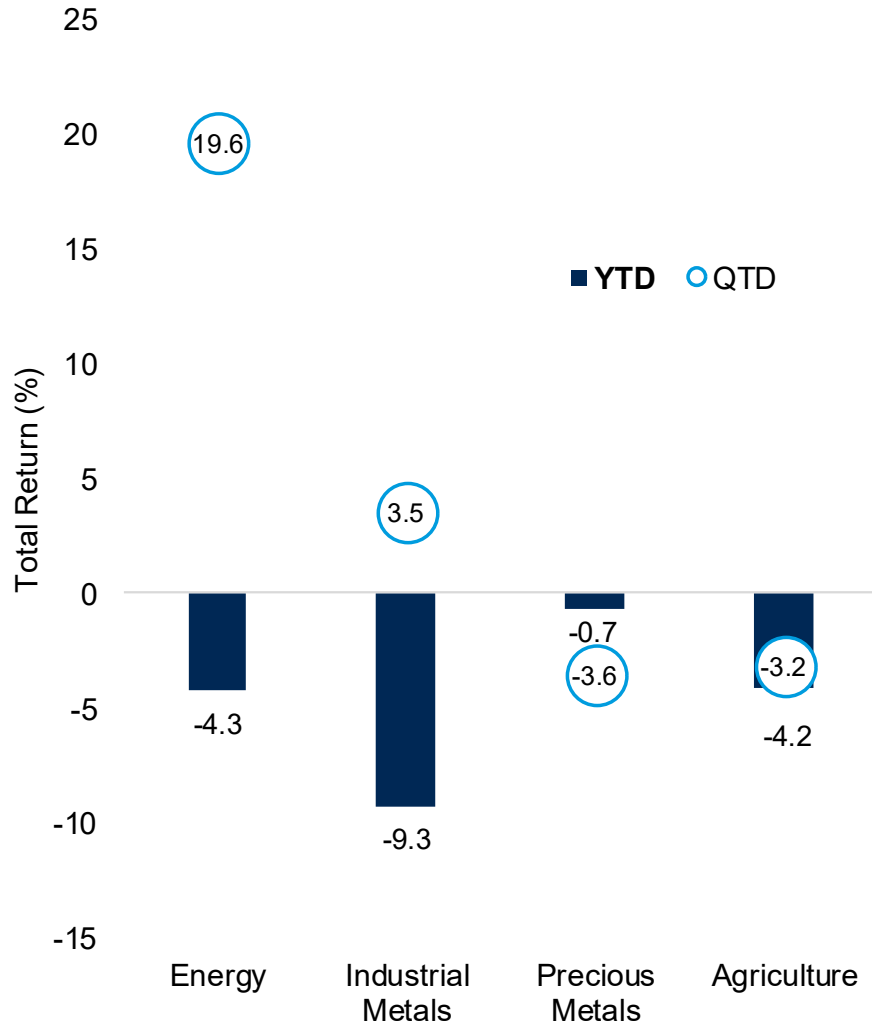
See disclosures for list of indices representing each asset class. Past performance does not indicate future performance and there is a possibility of a loss. Indices cannot be invested in directly.

This report is intended for the exclusive use of clients or prospective clients of MPS LORIA. The information contained herein is intended for the recipient, is confidential and may not be disseminated or distributed to any other person without the prior approval of MPS LORIA. Any dissemination or distribution is strictly prohibited. Information has been obtained from a variety of sources believed to be reliable though not independently verified. Any forecasts represent future expectations and actual returns; volatilities and correlations will differ from forecasts. This report does not represent a specific investment recommendation. Please consult with your advisor, attorney and accountant, as appropriate, regarding specific advice. Past performance does not indicate future performance and there is a possibility of a loss.

# Real Assets Market Update

## Commodity Performance

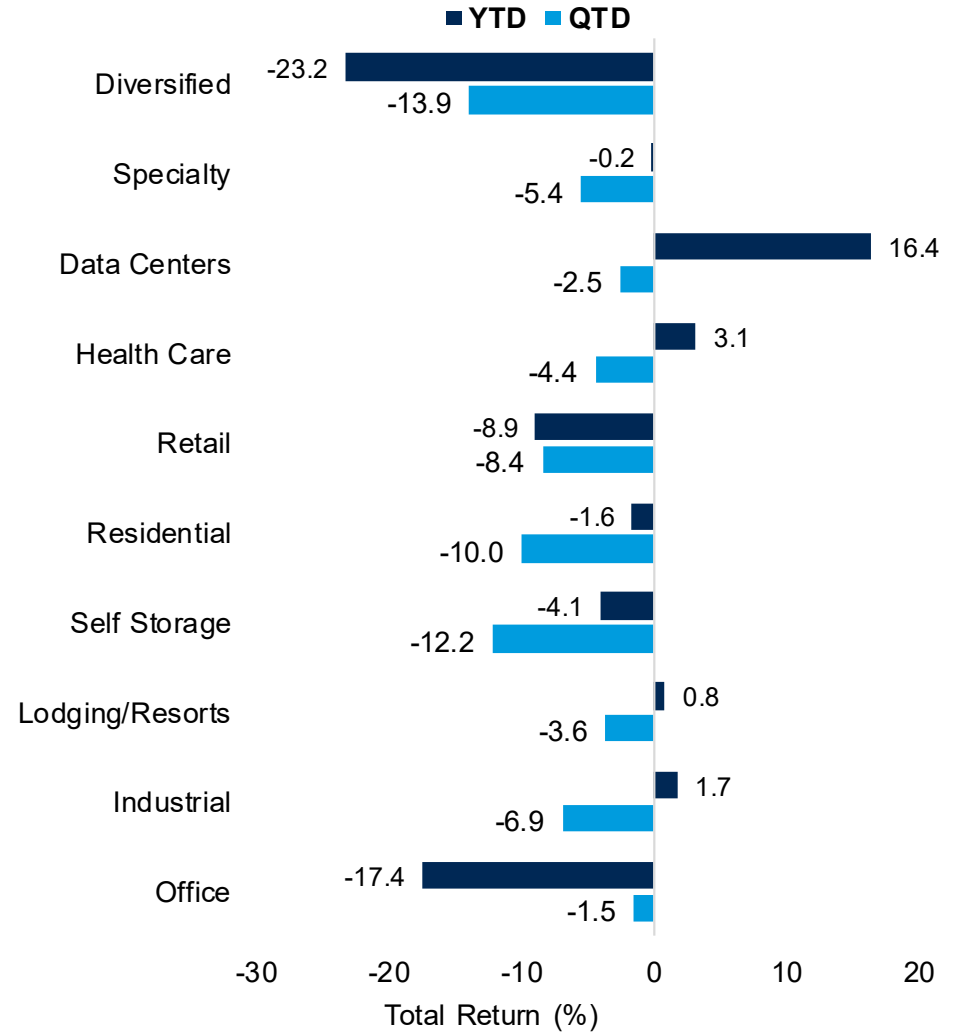
Commodities overall posted a positive return, but underlying results were mixed. Energy was the clear leader in the quarter, driven by constrained supply from OPEC, with oil prices approaching \$100 a barrel.



Source: Morningstar Direct. As of September 30, 2023.

## REIT Sector Performance

The general equity selloff and greater interest rate sensitivity of REITs pushed the segment lower. The Diversified sub-sector was among the worst in the quarter as Towers, which are a large component, came under pressure amid concerns surrounding cable lines polluting rivers.



Source: Morningstar Direct. As of September 30, 2023.

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. Indices cannot be invested in directly. This report is intended for the exclusive use of clients or prospective clients of MPS LORIA. The information contained herein is intended for the recipient, is confidential and may not be disseminated or distributed to any other person without the prior approval of MPS LORIA. Any dissemination or distribution is strictly prohibited. Information has been obtained from a variety of sources believed to be reliable though not independently verified. Any forecasts represent future expectations and actual returns; volatilities and correlations will differ from forecasts. This report does not represent a specific investment recommendation. Please consult with your advisor, attorney and accountant, as appropriate, regarding specific advice. Past performance does not indicate future performance and there is a possibility of a loss.

# The Case for Diversification

2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	YTD	10 Years (Ann)
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 13.0	U.S. Large Cap 11.6
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 7.1	U.S. Small Cap 6.6
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	High Yield 5.9	U.S. Equity REITs 6.0
Balanced 12.2	Core Bond 6.0	U.S. Large Cap 1.4	Commodities 11.7	U.S. Small Cap 14.6	Core Bond 0.0	International Dev. 22.5	TIPS 11.0	US Small Cap 14.8	High Yield -11.2	Balanced 3.4	High Yield 4.2
Hedge Funds 9.0	Balanced 5.1	Core Bond 0.6	Emerging Markets 11.2	Balanced 13.6	TIPS -1.3	Emerging Markets 18.4	Balanced 8.8	International Dev. 11.3	TIPS -11.8	Hedge Funds 3.2	Balanced 4.1
High Yield 7.4	U.S. Small Cap 4.9	Hedge Funds -0.3	U.S. Equity REITs 8.5	High Yield Munis 9.7	High Yield -2.1	Balanced 17.5	International Dev. 7.8	Balanced 9.8	U.S. Core Bond -13.0	U.S. Small Cap 2.5	High Yield Municipals 4.0
U.S. Equity REITs 2.5	TIPS 3.6	International Dev. -0.8	Balanced 7.6	Hedge Funds 7.8	Hedge Funds -4.0	High Yield 14.3	Core Bond 7.5	High Yield Munis 7.8	High Yield Municipals -13.1	Emerging Markets 1.8	International Developed 3.8
Municipals 5-Year 0.8	Hedge Funds 3.4	TIPS -1.4	TIPS 4.7	High Yield 7.5	U.S. Large Cap -4.4	High Yield Munis 10.7	Hedge Funds 7.1	TIPS 6.0	Foreign Bond -14.2	High Yield Municipals 0.0	Hedge Funds 3.5
Foreign Bond -1.0	Municipals 5-Year 3.2	Foreign Bond -2.3	Foreign Bond 3.2	Foreign Bond 6.5	U.S. Equity REITs -4.6	Core Bond 8.7	High Yield 7.1	Hedge Funds 5.7	International Dev. -14.5	Foreign Bond -0.2	Emerging Markets 2.1
Core Bond -2.0	Foreign Bond 2.9	Balanced -3.3	High Yield Munis 3.0	U.S. Equity REITs 5.2	Balanced -5.8	TIPS 8.4	Foreign Bond 7.0	High Yield 5.3	Balanced -14.9	TIPS -0.8	TIPS 1.7
Emerging Markets -2.6	High Yield 2.5	U.S. Small Cap -4.4	Core Bond 2.6	Core Bond 3.5	U.S. Small Cap -11.0	Hedge Funds 7.8	High Yield Munis 4.9	Municipals 5-Year 0.3	U.S. Large Cap -19.1	Municipals 5-Year -0.9	Municipals 5-Year 1.4
High Yield Munis -5.5	Emerging Markets -2.2	High Yield -4.5	International Dev. 1.0	Municipals 5-Year 3.1	Commodities -11.2	Commodities 7.7	Municipals 5-Year 4.3	Core Bond -1.5	Emerging Markets -20.1	U.S. Core Bond -1.2	U.S. Core Bond 1.1
TIPS -8.6	International Dev. -4.9	Emerging Markets -14.9	Hedge Funds 0.5	TIPS 3.0	International Dev. -13.8	Foreign Bond 6.3	Commodities -3.1	Emerging Markets -2.5	U.S. Small Cap -20.4	U.S. Equity REITs -2.1	Foreign Bond 0.3
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	Foreign Bond -4.2	U.S. Equity REITs -24.4	Commodities -3.4	Commodities -0.7

Sources: Morningstar, FactSet. As of September 30, 2023. \*Periods greater than one year are annualized. Total returns in U.S. dollars. Hedge Funds as of August 31, 2023.

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. Indices cannot be invested in directly.

This report is intended for the exclusive use of clients or prospective clients of MPS LORIA. The information contained herein is intended for the recipient, is confidential and may not be disseminated or distributed to any other person without the prior approval of MPS LORIA. Any dissemination or distribution is strictly prohibited. Information has been obtained from a variety of sources believed to be reliable though not independently verified. Any forecasts represent future expectations and actual returns; volatilities and correlations will differ from forecasts. This report does not represent a specific investment recommendation. Please consult with your advisor, attorney and accountant, as appropriate, regarding specific advice. Past performance does not indicate future performance and there is a possibility of a loss.



# Financial Markets Performance

**Total Return as of September 30, 2023**  
Periods greater than one year are annualized  
All returns are in U.S. dollar terms

	QTD	YTD	1YR	3YR	5YR	7YR	10YR	15YR
<b>Global Fixed Income Markets</b>								
Bloomberg 1-3-Month T-Bill	1.3%	3.7%	4.6%	1.8%	1.7%	1.5%	1.1%	0.8%
Bloomberg U.S. TIPS	-2.6%	-0.8%	1.2%	-2.0%	2.1%	1.5%	1.7%	2.9%
Bloomberg Municipal Bond (5 Year)	-2.0%	-0.9%	2.2%	-1.7%	1.0%	0.8%	1.4%	2.6%
Bloomberg High Yield Municipal Bond	-4.2%	0.0%	3.5%	-0.7%	1.7%	2.3%	4.0%	4.9%
Bloomberg U.S. Aggregate	-3.2%	-1.2%	0.6%	-5.2%	0.1%	-0.1%	1.1%	2.5%
Bloomberg U.S. Corporate High Yield	0.5%	5.9%	10.3%	1.8%	3.0%	3.8%	4.2%	7.3%
Bloomberg Global Aggregate ex-U.S. Hedged	-0.8%	2.8%	3.0%	-2.6%	0.8%	0.9%	2.3%	3.1%
Bloomberg Global Aggregate ex-U.S. Unhedged	-4.0%	-3.2%	3.4%	-8.4%	-3.1%	-2.8%	-1.7%	0.4%
Bloomberg U.S. Long Gov / Credit	-9.4%	-5.4%	-2.9%	-11.9%	-1.2%	-1.4%	1.9%	4.3%
<b>Global Equity Markets</b>								
S&P 500	-3.3%	13.1%	21.6%	10.2%	9.9%	12.2%	11.9%	11.3%
Dow Jones Industrial Average	-2.1%	2.7%	19.2%	8.6%	7.1%	11.5%	10.8%	10.5%
NASDAQ Composite	-3.9%	27.1%	26.1%	6.6%	11.4%	15.0%	14.5%	14.3%
Russell 3000	-3.3%	12.4%	20.5%	9.4%	9.1%	11.6%	11.3%	11.0%
Russell 1000	-3.1%	13.0%	21.2%	9.5%	9.6%	12.0%	11.6%	11.3%
Russell 1000 Growth	-3.1%	25.0%	27.7%	8.0%	12.4%	15.6%	14.5%	13.7%
Russell 1000 Value	-3.2%	1.8%	14.4%	11.1%	6.2%	7.9%	8.5%	8.6%
Russell Mid Cap	-4.7%	3.9%	13.4%	8.1%	6.4%	8.7%	9.0%	10.3%
Russell Mid Cap Growth	-5.2%	9.9%	17.5%	2.6%	7.0%	10.4%	9.9%	11.3%
Russell Mid Cap Value	-4.5%	0.5%	11.0%	11.0%	5.2%	6.8%	7.9%	9.2%
Russell 2000	-5.1%	2.5%	8.9%	7.2%	2.4%	6.6%	6.6%	8.1%
Russell 2000 Growth	-7.3%	5.2%	9.6%	1.1%	1.6%	6.8%	6.7%	8.8%
Russell 2000 Value	-3.0%	-0.5%	7.8%	13.3%	2.6%	5.9%	6.2%	7.2%
MSCI ACWI	-3.4%	10.1%	20.8%	6.9%	6.5%	8.6%	7.6%	7.6%
MSCI ACWI ex. U.S.	-3.8%	5.3%	20.4%	3.7%	2.6%	4.7%	3.3%	4.3%
MSCI EAFE	-4.1%	7.1%	25.6%	5.8%	3.2%	5.3%	3.8%	4.7%
MSCI EAFE Growth	-8.6%	4.3%	20.0%	0.4%	3.2%	5.3%	4.4%	5.2%
MSCI EAFE Value	0.6%	9.9%	31.5%	11.1%	2.8%	5.0%	3.0%	3.9%
MSCI EAFE Small Cap	-3.5%	1.8%	17.9%	1.1%	0.8%	4.0%	4.3%	6.6%
MSCI Emerging Markets	-2.9%	1.8%	11.7%	-1.7%	0.6%	3.2%	2.1%	3.8%
<b>Alternatives</b>								
Consumer Price Index*	0.8%	2.4%	3.7%	5.7%	4.0%	3.5%	2.8%	2.3%
FTSE NAREIT Equity REITs	-7.1%	-2.1%	3.0%	5.8%	2.8%	2.6%	6.0%	5.9%
S&P Real Assets	-2.6%	-1.0%	6.2%	4.3%	2.9%	3.2%	3.2%	4.8%
FTSE EPRA NAREIT Developed	-5.6%	-4.1%	2.7%	1.5%	-0.3%	0.7%	3.0%	4.4%
FTSE EPRA NAREIT Developed ex U.S.	-2.8%	-6.9%	2.8%	-4.2%	-3.5%	-1.1%	0.1%	3.0%
Bloomberg Commodity Total Return	4.7%	-3.4%	-1.3%	16.2%	6.1%	4.7%	-0.7%	-2.3%
HFRI Fund of Funds Composite*	0.9%	3.2%	3.3%	3.8%	3.4%	3.9%	3.5%	2.4%
HFRI Asset Weighted Composite*	1.0%	2.4%	0.4%	5.5%	3.5%	4.0%	3.8%	3.9%

Sources: Morningstar, FactSet. As of September 30, 2023. \*Consumer Price Index and HFRI indexes as of August 31, 2023.

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. Indices cannot be invested in directly. This report is intended for the exclusive use of clients or prospective clients of MPS LORIA. The information contained herein is intended for the recipient, is confidential and may not be disseminated or distributed to any other person without the prior approval of MPS LORIA. Any dissemination or distribution is strictly prohibited. Information has been obtained from a variety of sources believed to be reliable though not independently verified. Any forecasts represent future expectations and actual returns; volatilities and correlations will differ from forecasts. This report does not represent a specific investment recommendation. Please consult with your advisor, attorney and accountant, as appropriate, regarding specific advice. Past performance does not indicate future performance and there is a possibility of a loss.

This report is intended for the exclusive use of clients or prospective clients (the “recipient”) of Fiduciant Advisors and the information contained herein is confidential and the dissemination or distribution to any other person without the prior approval of Fiduciant Advisors is strictly prohibited. Information has been obtained from sources believed to be reliable, though not independently verified. Any forecasts are hypothetical and represent future expectations and not actual return volatilities and correlations will differ from forecasts. This report does not represent a specific investment recommendation. The opinions and analysis expressed herein are based on Fiduciant Advisor research and professional experience and are expressed as of the date of this report. Please consult with your advisor, attorney and accountant, as appropriate, regarding specific advice. Past performance does not indicate future performance and there is risk of loss.

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, 4% Foreign Bond, 3% Commodities, 0% 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.

*This report is intended for the exclusive use of clients or prospective clients of MPS LORIA. The information contained herein is intended for the recipient, is confidential and may not be disseminated or distributed to any other person without the prior approval of MPS LORIA. Any dissemination or distribution is strictly prohibited. Information has been obtained from a variety of sources believed to be reliable though not independently verified. Any forecasts represent future expectations and actual returns; volatilities and correlations will differ from forecasts. This report does not represent a specific investment recommendation. Please consult with your advisor, attorney and accountant, as appropriate, regarding specific advice. Past performance does not indicate future performance and there is a possibility of a loss.*

## 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.

*This report is intended for the exclusive use of clients or prospective clients of MPS LORIA. The information contained herein is intended for the recipient, is confidential and may not be disseminated or distributed to any other person without the prior approval of MPS LORIA. Any dissemination or distribution is strictly prohibited. Information has been obtained from a variety of sources believed to be reliable though not independently verified. Any forecasts represent future expectations and actual returns; volatilities and correlations will differ from forecasts. This report does not represent a specific investment recommendation. Please consult with your advisor, attorney and accountant, as appropriate, regarding specific advice. Past performance does not indicate future performance and there is a possibility of a loss.*

## 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

*This report is intended for the exclusive use of clients or prospective clients of MPS LORIA. The information contained herein is intended for the recipient, is confidential and may not be disseminated or distributed to any other person without the prior approval of MPS LORIA. Any dissemination or distribution is strictly prohibited. Information has been obtained from a variety of sources believed to be reliable though not independently verified. Any forecasts represent future expectations and actual returns; volatilities and correlations will differ from forecasts. This report does not represent a specific investment recommendation. Please consult with your advisor, attorney and accountant, as appropriate, regarding specific advice. Past performance does not indicate future performance and there is a possibility of a loss.*

## 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.

*This report is intended for the exclusive use of clients or prospective clients of MPS LORIA. The information contained herein is intended for the recipient, is confidential and may not be disseminated or distributed to any other person without the prior approval of MPS LORIA. Any dissemination or distribution is strictly prohibited. Information has been obtained from a variety of sources believed to be reliable though not independently verified. Any forecasts represent future expectations and actual returns; volatilities and correlations will differ from forecasts. This report does not represent a specific investment recommendation. Please consult with your advisor, attorney and accountant, as appropriate, regarding specific advice. Past performance does not indicate future performance and there is a possibility of a loss.*