Milliman Financial Risk Management

2023 YTD MARKET COMMENTARY – SEPTEMBER 2023

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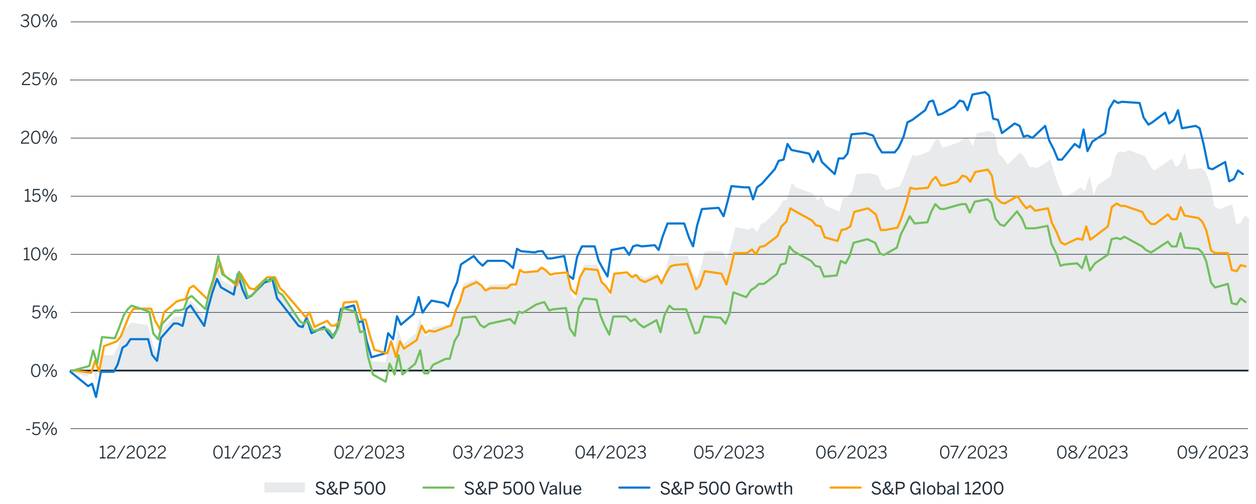
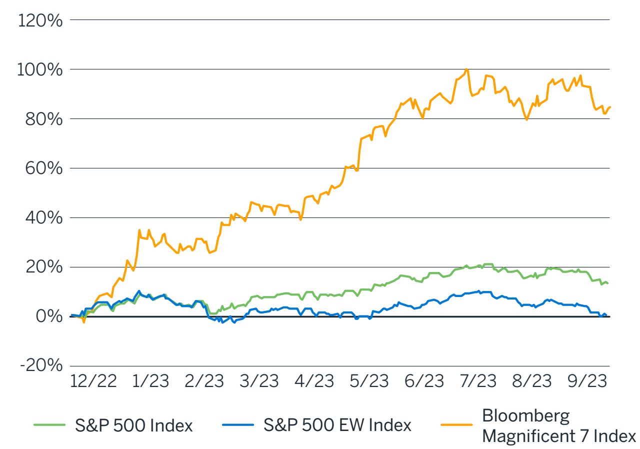
- At the close of the third quarter, the Fed Funds target rate has settled at 5.25-5.50%. Despite the pause in June, the Fed raised its target rate in July before pausing again in September after the August inflation reading measured 3.7% year over year, down sharply from the June 2022 high of 9%.
- The momentum in equity markets cooled in the third quarter compared to the strong returns posted in the first 6 months of the year. The S&P 500 closed -3.3% in the third quarter but remains up 13.1% this year. Growth stocks continued to outperform their value counterparts by a considerable margin.
  - Growth companies, particularly those in the technology and artificial intelligence space, have accounted for the vast majority of returns this year in the equity market. The Bloomberg Magnificent 7 Index, an equal weighted index that tracks the total returns of just 7 companies (NVDIA, MSFT, AAPL, META, GOOGL, AMZN, TSLA), is up close to 84% this year. In contrast, the Equal Weighted S&P 500 Index is nearly flat on the year, closing September up only 0.27%.
  - The technology heavy NAQDAQ was up over 35% year-to-date at the end of September.
- The yield curve remains inverted with short term yields higher than those with longer maturities. However, the curve started to flatten with large rate shifts up at the tail of the curve.
  - 10-year yields moved up by over 73 basis points since June 2023. 20-year yields jumped over 82 basis points in the same time frame. The iShares 20+ Year Treasury Bond ETF (ticker: TLT), finished the third quarter down over -13.1% from the second quarter and remains near its lowest price since 2011.
- The Bloomberg US Aggregate is down -1.2% from the beginning of the year and moved down sharply in the third quarter, closing -3.2%.

Equity Markets: 2023 YTD Total Return

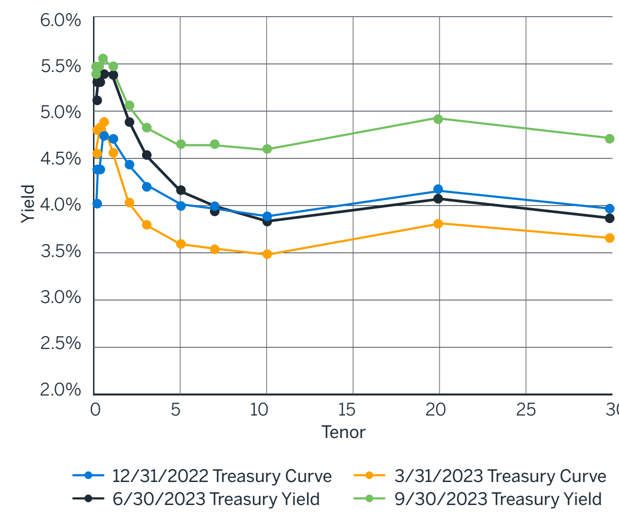


2023 YTD Returns

S&P 500 vs Equal Weighted S&P 500 vs BBG Mag 7



Treasury Yield Curves YTD 2023



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STRATEGY PERFORMANCE

Managed Risk Investments

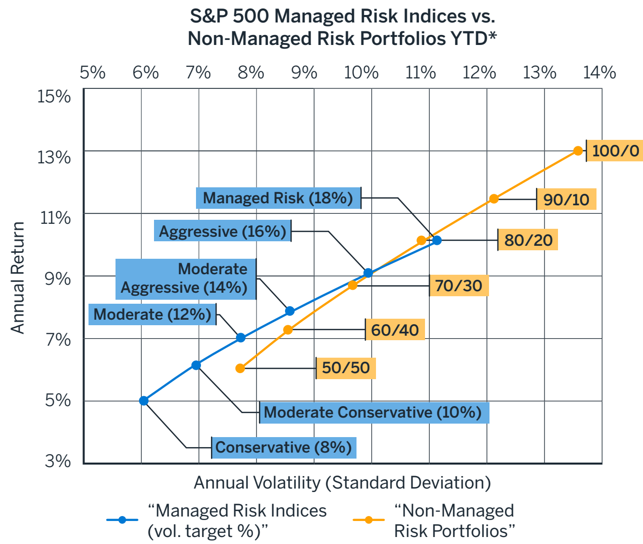
- The volatility of the S&P 500 remained below the 18% volatility threshold of the S&P 500 Managed Risk Index for almost the entirety of the third quarter. Accordingly, the index maintained a 100% equity allocation for the quarter.
  - Year-to-date, the S&P 500 Managed Risk Index posted stronger absolute returns than non-managed blends of the S&P 500 and Bloomberg U.S. Aggregate Bond Indices with equal or better risk adjusted returns.

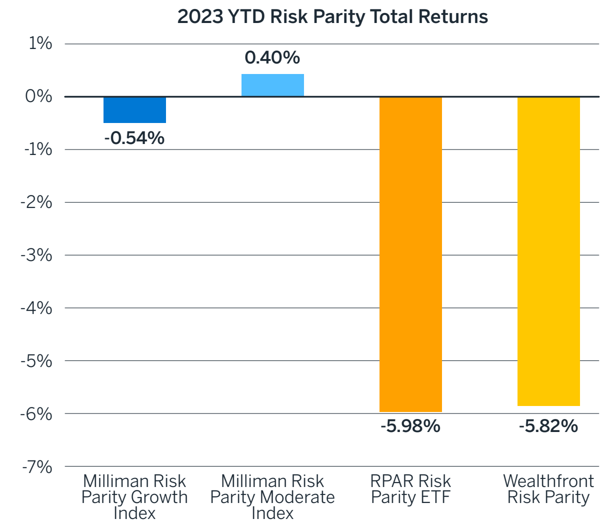
Defined Outcome

- In the defined outcome space, the January CBOE S&P 500 15% Buffer protect index was able to capture over 84% of the S&P 500 returns to date.
  - The risk-adjusted return of the Buffered index has outperformed that of the S&P 500 this year.

Risk Parity

- Risk Parity strategies cleared their allocations to cash and modestly reduced their global equity exposures. The funds reallocated to gold and REITS.
- Correlations between asset classes has continued to remain elevated and all ETFs held by the strategies were down this quarter with exception of cash.
- The risk parity indices continued to outperform popular market players this year such as the RPAR ETF and Wealthfront Risk Parity fund.





Total Returns as of September 29, 2023

	S&P 500	70/30 Stock/ Bond Blend*	60/40 Stock/ Bond Blend*	S&P 500 Managed Risk Index (18% Vol. Target)	CBOE S&P 500 15% Buffer Protect Index - January Series	Milliman Risk Parity Growth Index	Milliman Risk Parity Moderate Index
YTD	13.1%	8.8%	7.3%	10.1%	11.1%	-0.5%	0.4%
1 Year	21.6%	15.2%	13.1%	14.8%	18.5%	3.9%	4.4%
5 Year	9.9%	7.4%	6.5%	6.8%	5.8%	2.2%	1.9%
10 Year	11.9%	9.0%	7.9%	9.3%	5.8%	3.6%	2.7%
YTD Vol	13.4%	9.7%	8.6%	11.1%	7.0%	8.8%	7.3%
1YR Vol	17.1%	12.7%	11.3%	11.6%	10.1%	9.2%	7.5%
5YR Vol	21.9%	15.4%	13.3%	12.9%	11.5%	8.6%	6.9%
10YR Vol	17.8%	12.4%	10.7%	12.0%	9.0%	7.8%	5.9%
YTD Risk Adjusted	0.98	0.91	0.85	0.91	1.57	-0.06	0.06
1YR Risk Adjusted	1.26	1.20	1.16	1.28	1.83	0.43	0.59
5YR Risk Adjusted	0.45	0.48	0.49	0.53	0.50	0.26	0.27
10YR Risk Adjusted	0.67	0.72	0.74	0.78	0.64	0.46	0.46
1YR Max Drawdown	-7.5%	-5.9%	-5.4%	-6.6%	-3.7%	-8.6%	-6.6%
5YR Max Drawdown	-33.8%	-24.7%	-21.5%	-18.3%	-20.0%	-21.5%	-18.0%
10YR Max Drawdown	-33.8%	-24.7%	-21.5%	-18.3%	-20.0%	-21.5%	-18.0%

**Portfolio represented by the S&P 500 Index and the Bloomberg US Agg Index*

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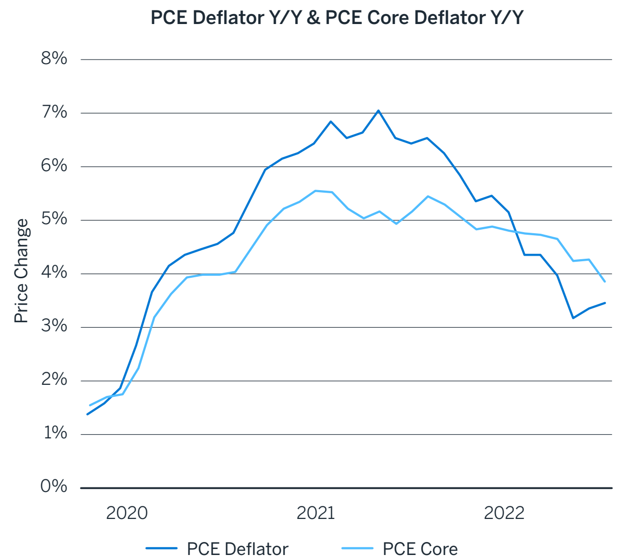
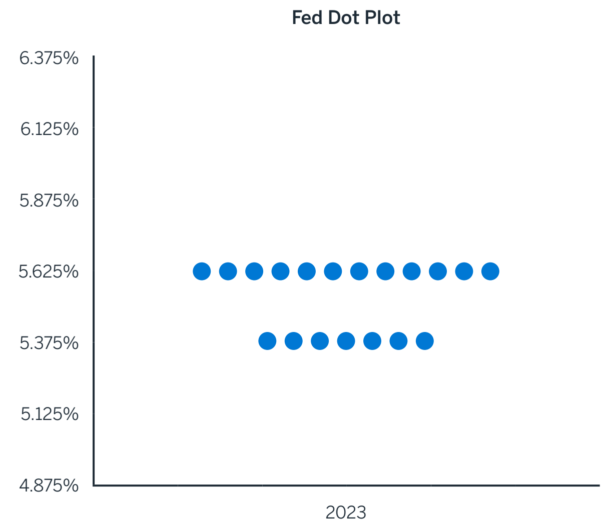
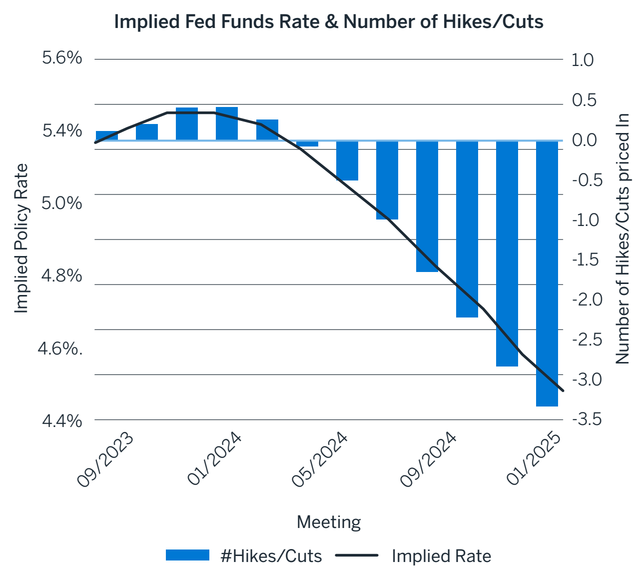
OUTLOOK

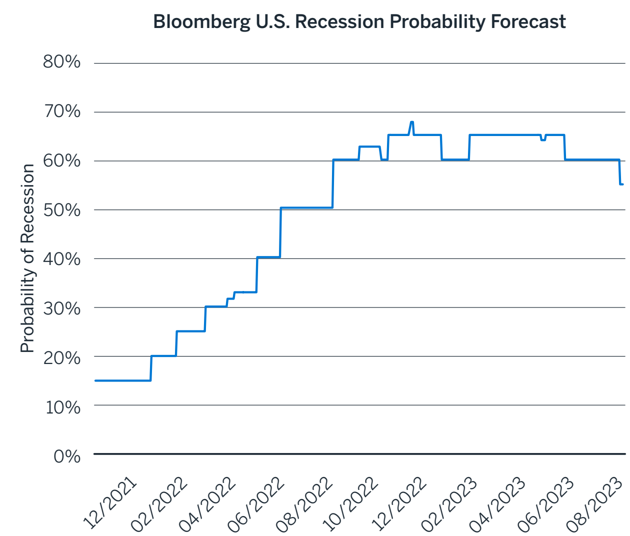
The Fed and Inflation

- With yields continuing to rise and stocks starting to lose momentum heading into the end of the year, all eyes continue to be focused on The Fed.
- The Fed's favored inflation gauge, the PCE deflator, which tracks the overall price for goods and services purchased by consumers, read 3.5% in August, with a small uptick from the June reading of 3.2%, signaling more caution is needed ahead of policy makers mission to cull inflation. Core PCE, which excludes food and energy prices, continued to soften down to 3.9% in August.
  - Even with softening of Y/Y inflation, Fed Chair Jerome Powell noted to the House Financial Services Committee that getting inflation back down to 2% "has a long way to go" as inflation pressures continue to run high.
  - Given that the Fed doesn't expect core inflation converging to their 2% target by even 2025, rates may rise even higher than what markets are currently pricing in, especially if labor markets continue to be as robust as they are now. At the last Fed meeting, policy makers suggested that another rate hike may be warranted.
    - As of September, interest rate traders are pricing in another rate hike before year end, which is in line with the Fed dot plot. Traders are expecting the Fed to cut rates aggressively in 2024, where there is much to be seen with the Fed's efforts to get inflation under control.
- The market continues to show optimism in the hopes of a soft landing. According to the Bloomberg U.S. Recession Probability Forecast, surveyed banks have lowered their estimates of the U.S. slipping into a recession within the next 12 months to 55% from 65% at the beginning of the year.









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Definitions:

Standard Deviation: measures volatility in the market or the average amount by which individual data points differ from the mean. **Bloomberg US Aggregate Index:** a broad-based flagship benchmark that measures the investment grade, US dollar-denominated, fixed-rate taxable bond market. **NASDAQ 100 Index:** a modified capitalization-weighed index of the 100 largest and most active non-financial domestic and international issues listed on the NASDAQ. **S&P 500:** widely regarded as the best single gauge of large-cap U.S. equities and serves as the foundation for a wide range of investment products. The index includes 500 leading companies and captures approximately 80% coverage of available market capitalization. **S&P Oil:** S&P GSCI Crude Oil Total Return CME Index. The index is weighted based on world production and it uses spot prices to calculate price. **S&P US REIT:** defines and measures the investable universe of publicly traded real estate investment trusts domiciled in the United States. **S&P 500 Value:** measures the performance of the large-capitalization value segment in the U.S. equity market. The Index consists of those stocks in the S&P 500 Index exhibiting the strongest value characteristics based on: (i) book value to price ratio; (ii) earnings to price ratio; and (iii) sales to price ratio. **S&P 500 Growth:** measures the performance of the large-capitalization growth segment in the U.S. equity market. The Index consists of those stocks in the S&P 500 Index exhibiting the strongest growth characteristics based on: (i) momentum; (ii) earnings to price ratio; and (iii) sales to price ratio. **S&P Global 1200:** global equity index, captures approximately 70% of the world's market capitalization. It is a composite of seven headline regional indices: S&P 500®, S&P Europe 350®, S&P TOPIX 150, S&P/TSX 60, S&P/ASX All Australian 50, S&P Asia 50, and S&P Latin America 40. **CPI:** a measure of the average change over time in the prices paid by urban consumers for a market basket of consumer goods and services. **Correlation:** describes the relationship that exists between two indices or securities and their respective price movements. **Basis Points (bps):** Standard measure of percentages in finance. One basis point is one hundredth of one percent. **Drawdown:** How much the price of an index or security is down from the peak before it recovers back to the peak.

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