

**City of Marlborough
Contributory Retirement System**

**Meeting Materials
March 26, 2023**

Fund Evaluation Report

Agenda

1. Economic and Market Update as of February 29, 2024
2. Performance Update as of December 31, 2023
3. Current Issues
 - Asset Allocation Update
 - Manager Due Diligence Agenda
4. Appendix

Economic and Market Update

Data as of February 29, 2024

Commentary

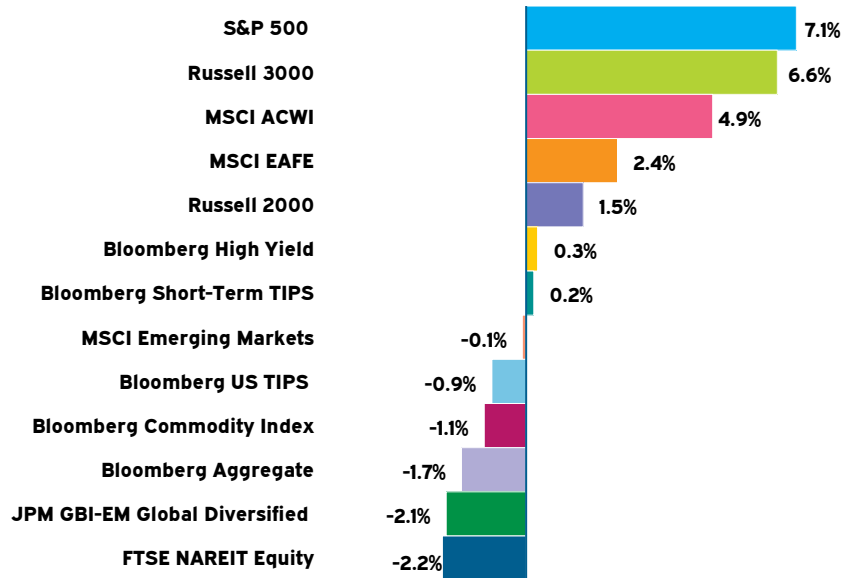
→ Markets were mixed in February. Resilient economic data drove global equities higher and pushed out the timing of expected first rate cut, weighing on bonds.

- Major central banks have largely paused interest rate hikes with expectations that many will cut rates this year. The timing and pace of interest rate cuts has been downgraded for many economies given the continued strength of economic data and stubborn inflation.
- In general, inflation pressures have eased in most countries, but some uncertainty remains and levels are still above central bank targets. Headline inflation in the US unexpectedly rose in February (3.1% to 3.2%), while core inflation fell (3.9% to 3.8%) but came in above expectations. Notably, China moved out of deflationary territory in February (0.7%) after four months of declining prices.
- US equity markets (Russell 3000 index) rose 5.4% in February after a very strong 2023 (+26.0%). The technology and consumer discretionary sectors continued to perform well.
- Non-US developed equity markets gained 1.8% in February, helped by Japanese equities which hit multi-decade highs during the month. A strengthening US dollar contributed to the weaker relative results for US investors in foreign markets.
- Policy efforts to support mainland stock prices saw Chinese equities return 8.4%, driving emerging market equities higher (4.8%). The stronger dollar also weighed on emerging market equities with returns in local currency terms 0.3% higher.
- Rising interest rates weighed on bonds with the broad US bond market declining 1.4% for the month.

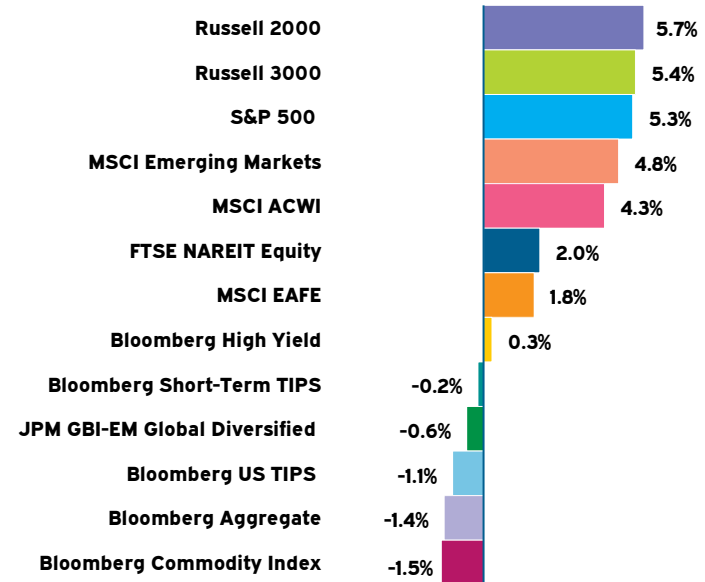
→ Looking to the rest of this year, the paths of inflation and monetary policy, China's economic disorder and slowing economic growth, the many looming elections, and the wars in Ukraine and Israel, will be key.

Index Returns¹

YTD



February



→ In February global equity markets produced strong results with the US leading the way.

→ Resilient economic data weighed on bond markets domestically and dashed any hopes of a near-term cut in interest rates.

¹ Source: Bloomberg. Data is as of February 29, 2024.

Domestic Equity Returns¹

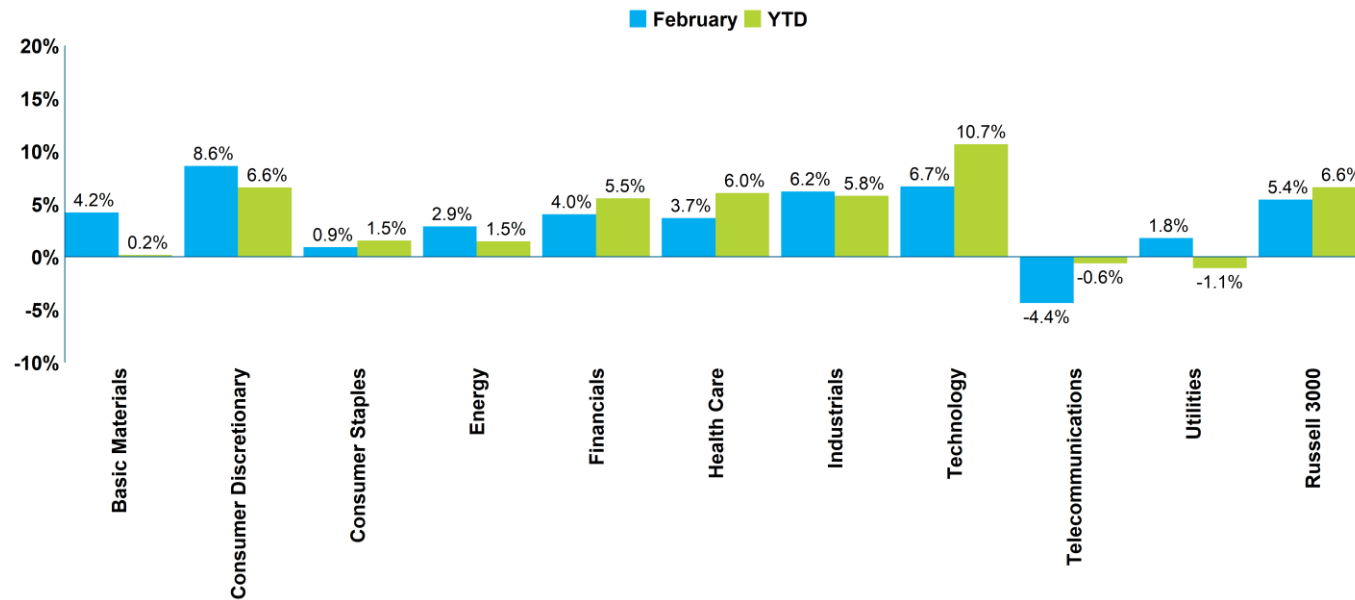
Domestic Equity	February (%)	YTD (%)	1 YR (%)	3 YR (%)	5 YR (%)	10 YR (%)
S&P 500	5.3	7.1	30.5	11.9	14.8	12.7
Russell 3000	5.4	6.6	28.6	9.9	13.9	12.0
Russell 1000	5.4	6.9	29.8	10.6	14.4	12.4
Russell 1000 Growth	6.8	9.5	45.9	12.5	18.8	15.6
Russell 1000 Value	3.7	3.8	14.0	8.4	9.4	8.7
Russell MidCap	5.6	4.1	15.5	5.5	10.3	9.4
Russell MidCap Growth	7.5	6.9	25.0	3.1	11.6	10.9
Russell MidCap Value	4.8	2.9	10.9	6.8	8.9	8.2
Russell 2000	5.7	1.5	10.0	-0.9	6.9	7.1
Russell 2000 Growth	8.1	4.7	14.2	-4.6	6.5	7.3
Russell 2000 Value	3.3	-1.4	5.6	2.5	6.6	6.5

US Equities: The Russell 3000 increased 5.4% in February bringing the year-to-date gain to 6.6%.

- US equities rose further during February, fueled by continued optimism over artificial intelligence related stocks and strong economic data. The highest quintile price-to-earnings stocks outperformed all other groups and accounted for half of the return of the Russell 3000 index.
- Small cap stocks slightly outperformed mid cap and large cap stocks.
- Growth outperformed value across the market cap spectrum, particularly in small cap.

¹ Source: Bloomberg. Data is as of February 29, 2024.

Russell 3000 Sector Returns¹



→ So far in 2024, the sectors that drove results last year continue to lead the way. Technology led by the so-called “Magnificent Seven” gained 10.7% through February, with the continued strength of the US consumer putting consumer discretionary second at 6.6%.

→ In February, all sectors except for telecommunications posted positive returns with consumer discretionary (+8.6%), technology (+6.7%), and industrials (+6.2%) leading the way. Traditionally defensive sectors like utilities (+1.8%) and consumer staples (+0.9%) trailed for the month.

¹ Source: Bloomberg. Data is as of February 29, 2024.

Foreign Equity Returns¹

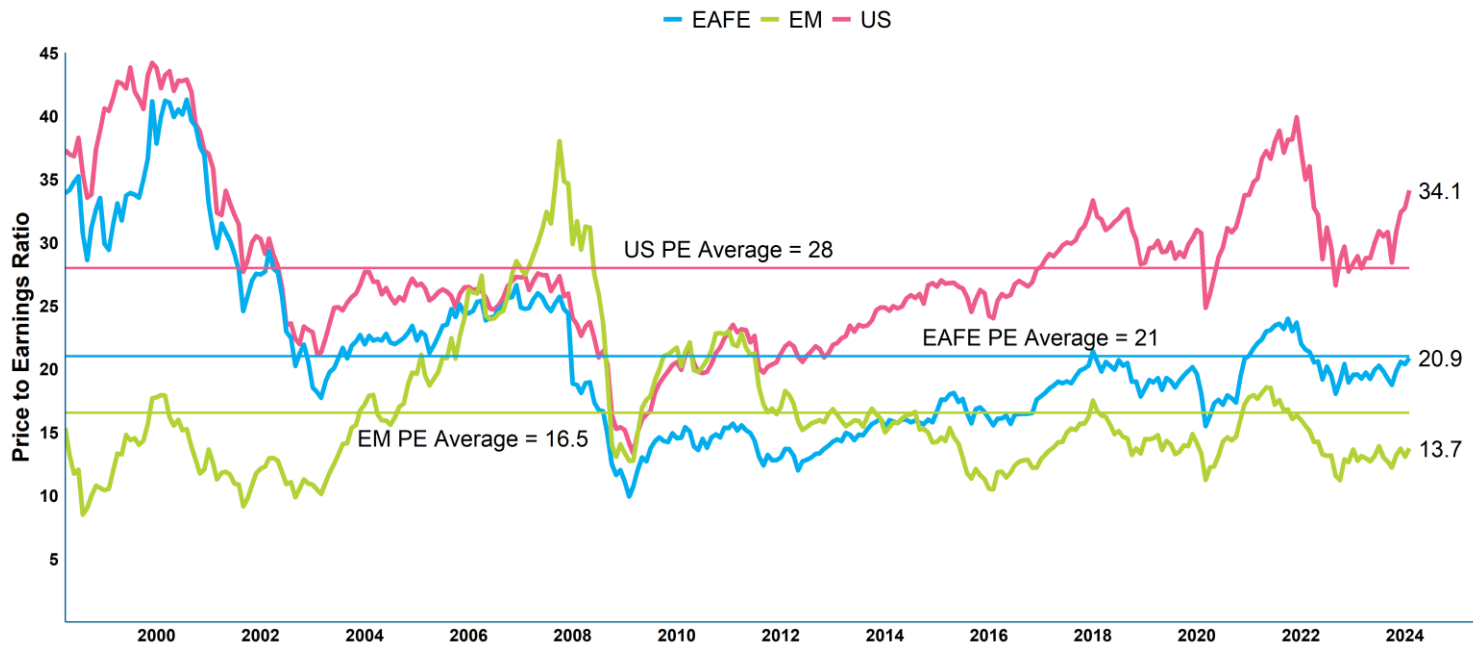
Foreign Equity	February (%)	YTD (%)	1 YR (%)	3 YR (%)	5 YR (%)	10 YR (%)
MSCI ACWI ex. US	2.5	1.5	12.5	1.3	5.4	4.0
MSCI EAFE	1.8	2.4	14.4	4.4	6.8	4.4
MSCI EAFE (Local Currency)	3.0	5.7	14.8	9.8	8.8	7.2
MSCI EAFE Small Cap	0.4	-1.3	6.3	-1.8	4.2	4.3
MSCI Emerging Markets	4.8	-0.1	8.7	-6.3	1.9	3.0
MSCI Emerging Markets (Local Currency)	5.1	1.4	9.7	-3.6	4.0	5.6
MSCI China	8.4	-3.1	-14.1	-20.9	-6.1	1.0

Foreign Equity: Developed international equities (MSCI EAFE) gained 1.8% in February and had a year-to-date return of 2.4%. Emerging market equities (MSCI EM) rose 4.8% in February and are down slightly year-to-date (-0.1%).

- February saw solid positive performance in foreign developed markets, while emerging markets experienced stronger relative results driven by large gains in China.
- Eurozone equities underperformed in February relative to other developed markets, and the UK saw slightly negative returns. Hawkish statements from the ECB and BoE earlier in the month weighed on returns. Japan continued to perform strongly, with the Nikkei 225 surpassing its 1989 peak. A strong US dollar also hurt overall results for US investors with local currency returns 1.2% higher for the month.
- Emerging market equities benefitted from a strong rebound in China (the highest-performing country for the month at 8.4%). The Chinese recovery was driven by government buying programs, a cut on the five-year loan prime rate, new regulations on short-selling, and the Lunar New Year holiday's boost to consumer spending.

¹ Source: Bloomberg. Data is as of February 29, 2024.

Equity Cyclically Adjusted P/E Ratios¹



- In February, the US equity price-to-earnings ratio increased further above its 21st century average due to strong price appreciation.
- International market valuations rose slightly in February and remain well below the US. In the case of developed markets, valuations are now close to the long-term average, while emerging market valuations remain well below its long-term average.

¹ US Equity Cyclically Adjusted P/E on S&P 500 Index. Source: Robert Shiller, Yale University, and Meketa Investment Group. Developed and Emerging Market Equity (MSCI EAFE and EM Index) Cyclically Adjusted P/E – Source: Bloomberg. Earnings figures represent the average of monthly “as reported” earnings over the previous ten years. Data is as of February 2024. The average line is the long-term average of the US, EM, and EAFE PE values from April 1998 to the recent month-end respectively.

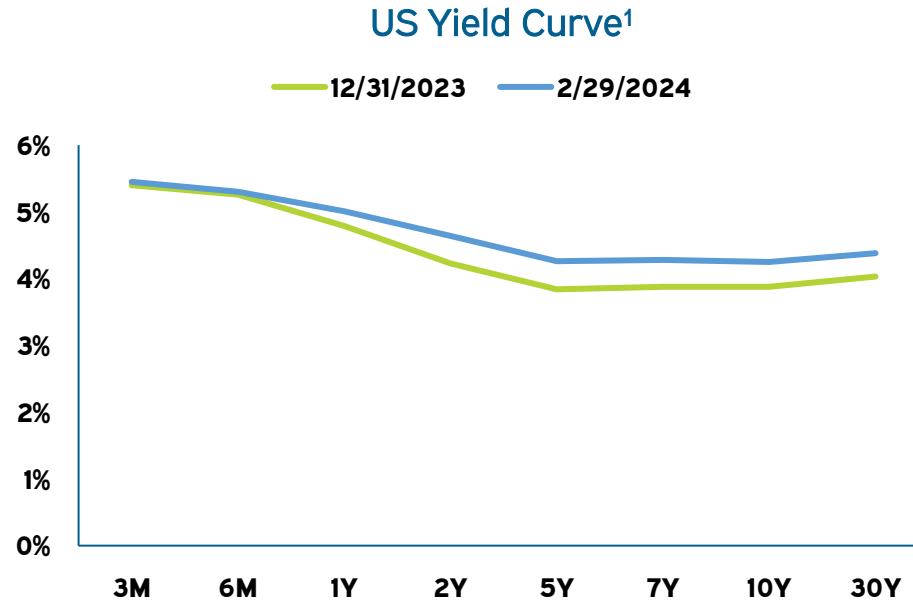
Fixed Income Returns¹

Fixed Income	February (%)	YTD (%)	1 YR (%)	3 YR (%)	5 YR (%)	10 YR (%)	Current Yield (%)	Duration (Years)
Bloomberg Universal	-1.2	-1.4	4.1	-2.8	0.8	1.7	5.2	6.0
Bloomberg Aggregate	-1.4	-1.7	3.3	-3.2	0.6	1.4	4.9	6.2
Bloomberg US TIPS	-1.1	-0.9	2.5	-0.9	2.7	2.1	4.6	6.9
Bloomberg Short-term TIPS	-0.2	0.2	4.5	2.2	3.2	1.9	4.8	2.5
Bloomberg High Yield	0.3	0.3	11.0	1.8	4.2	4.3	7.9	3.7
JPM GBI-EM Global Diversified (USD)	-0.6	-2.1	9.3	-2.6	-0.1	0.0	6.3	5.0

Fixed Income: The Bloomberg Universal index fell -1.2% in February bringing the year-to-date decline to -1.4%.

- Strong economic data for the last two months and comments by policy makers hinting that rate cuts were not imminent, drove rates up over the month and weighed on bond prices.
- The broad US bond market (Bloomberg Aggregate), as well as TIPS, fell due to the repricing of stronger growth expectations.
- High yield bonds, however, provided slightly positive returns as risk appetite remains robust for high yield credit.

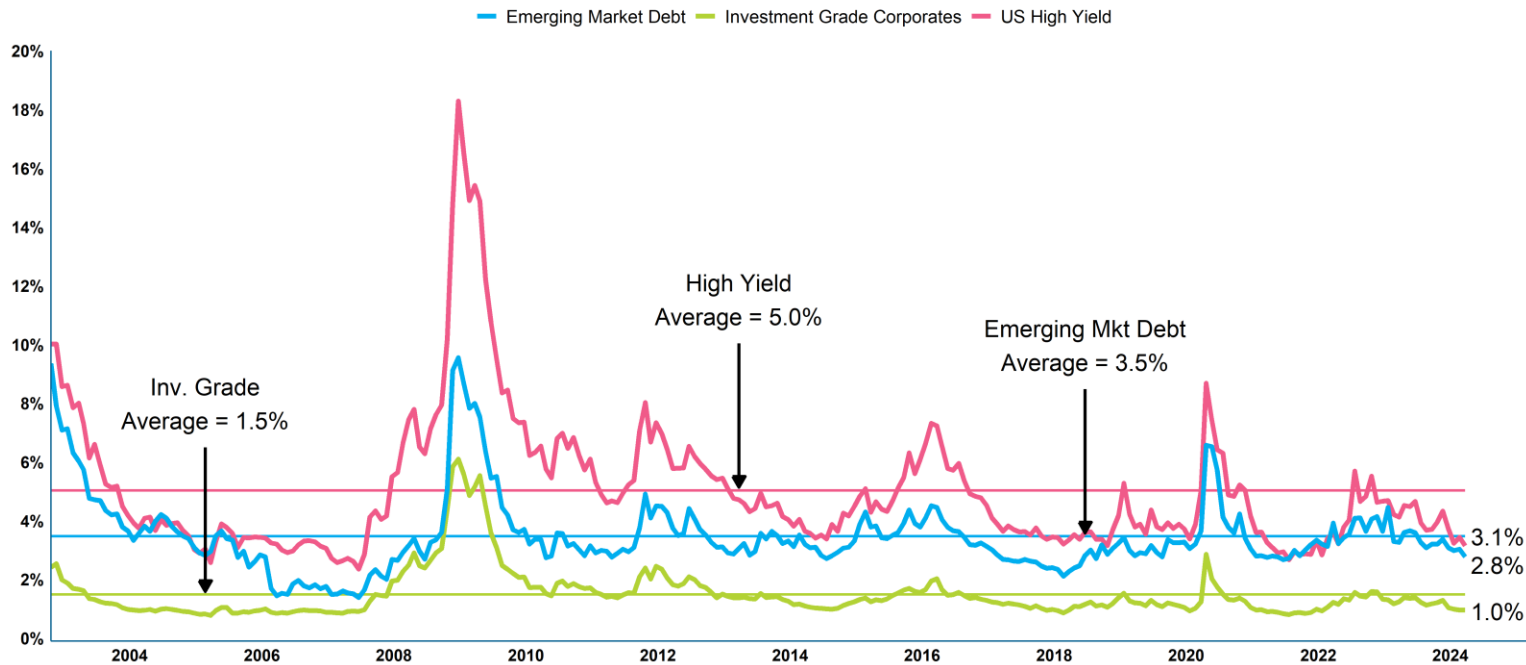
¹ Source: Bloomberg. JPM GBI-EM data is from InvestorForce. Data is as of February 29, 2024. The yield and duration data from Bloomberg is defined as the index's yield to worst and modified duration respectively.



- Both short-term and long-term maturity yields ended the month higher, largely from strong economic data and shifts in monetary policy expectations.
- For the month, the more policy sensitive two-year Treasury yield increased from 4.2% to 4.6% while 10-year Treasury yields rose from 3.9% to 4.3%.
- The yield curve remained inverted at month-end despite a recent flattening trend. The yield spread between the two-year and ten-year Treasury was -0.37% at the end of February.

¹ Source: Bloomberg. Data is as of February 29, 2024.

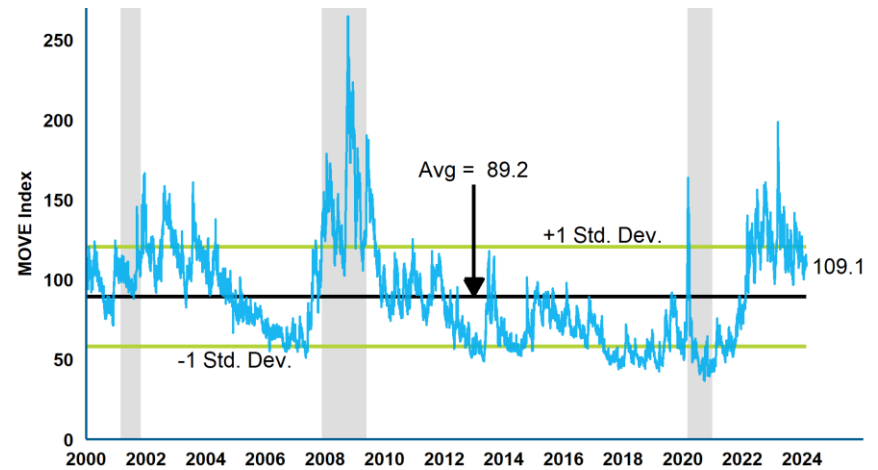
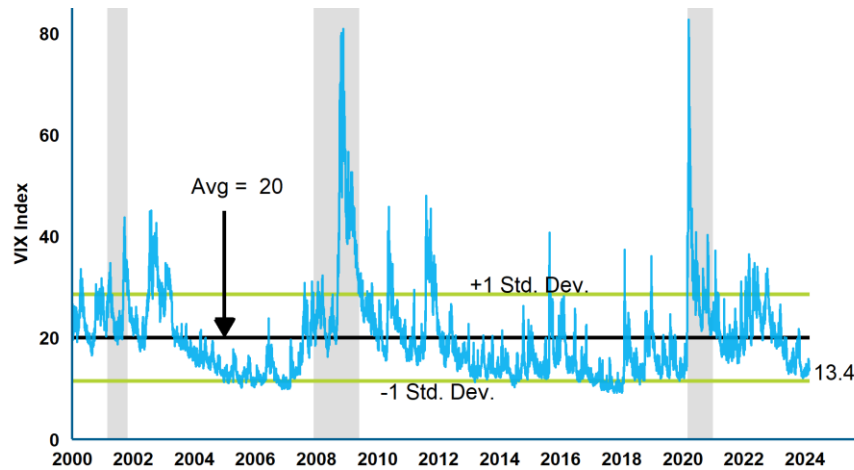
Credit Spreads vs. US Treasury Bonds¹



- A positive economic outlook along with expectations of lower interest rates has led to an increased risk appetite. This has benefited credit, with spreads (the added yield above a comparable maturity Treasury) narrowing.
- Credit spreads narrowed in February for high yield (3.4% to 3.1%) and emerging market bonds (3.0% to 2.8%) while spreads for investment grade corporate bonds remained the same.
- All spreads remain below their respective long-run averages, particularly within high yield.

¹ Source: Bloomberg. Data is as of February 29, 2024. Average lines denote the average of the investment grade, high yield, and emerging market spread values from September 2002 to the recent month-end, respectively.

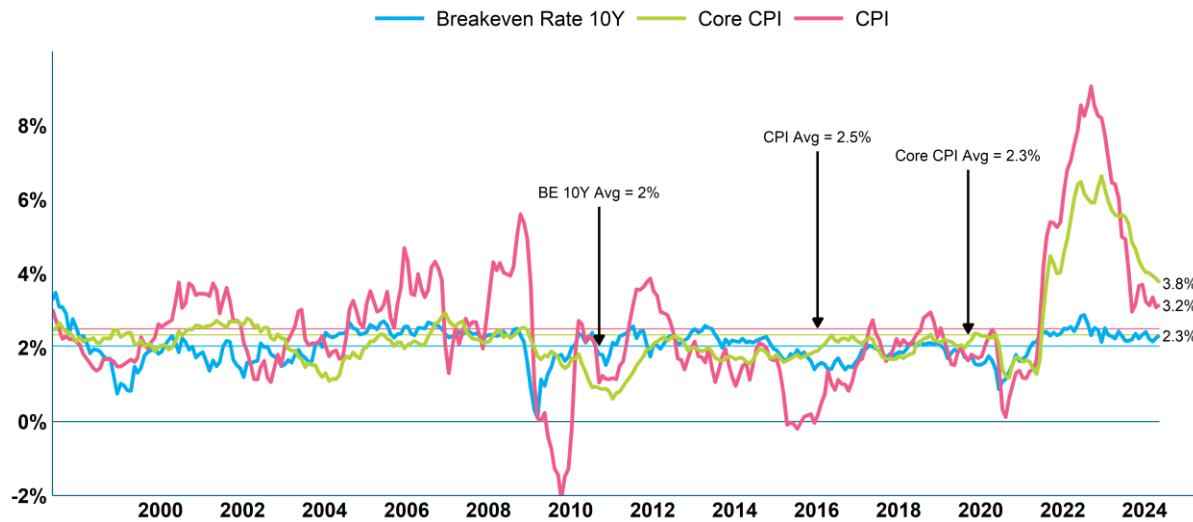
Equity and Fixed Income Volatility¹



- Volatility in equities (VIX) remains close to one standard deviation below the long-term average as the focus shifted late last year to peaking policy rates and the potential for a soft landing.
- Although volatility in the bond market (MOVE) remains above its long-run average (89.2) it has declined recently given falling inflation, growth expectations, and a likely cut in interest rates.

¹ Equity Volatility – Source: FRED. Fixed Income Volatility – Source: Bloomberg. Implied volatility as measured using VIX Index for equity markets and the MOVE Index to measure interest rate volatility for fixed income markets. Data is as of February 2024. The average line indicated is the average of the VIX and MOVE values between January 2000 and February 2024.

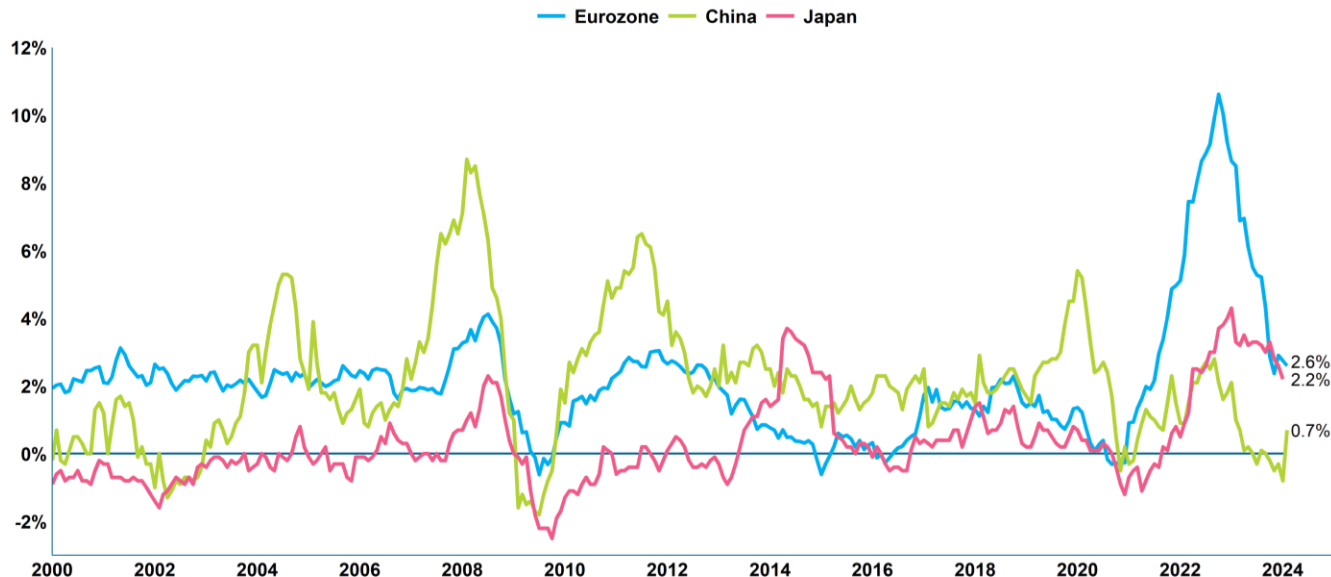
US Ten-Year Breakeven Inflation and CPI¹



- Year-over-year headline inflation rose in February (3.1% to 3.2%), coming in slightly above expectations. Inflation in services sectors, particularly shelter, remains a key reason consumer inflation is still above the Fed’s 2% average target.
- Month-over-month inflation rose to 0.4% from the 0.3% January reading again driven by shelter costs. Food prices were flat from a month prior, while increases in gas prices drove energy higher.
- Core inflation - excluding food and energy - fell slightly from 3.9% to 3.8 but also came in above expectations.
- Inflation expectations (breakevens) have remained stable despite the recent significant volatility in inflation.

¹ Source: FRED. Data is as February 2024. The CPI and 10 Year Breakeven average lines denote the average values from February 1997 to the present month-end, respectively. Breakeven values represent month-end values for comparative purposes.

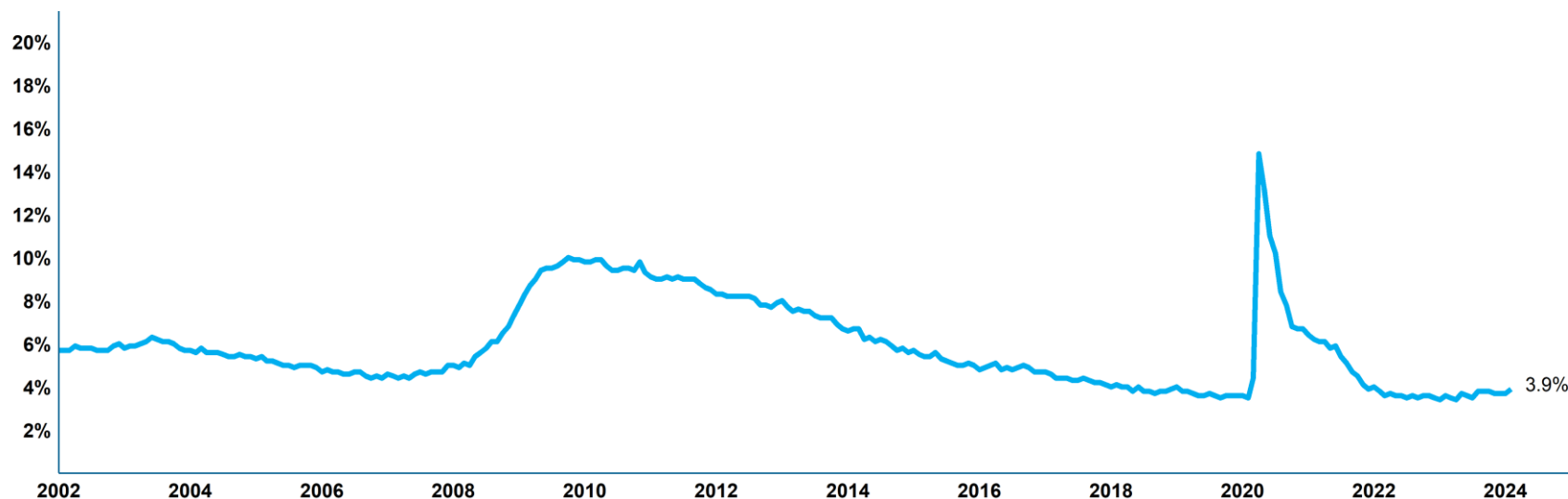
Global Inflation (CPI Trailing Twelve Months)¹



- Outside the US, inflation is also falling across major economies from the recent peaks.
- In the eurozone, prices experienced a dramatic decline last year but remains above the central bank's 2% target. In February, inflation fell further (2.8% to 2.6%), a level below the 3.2% year-over-year reading in the US.
- Inflation in Japan has slowly declined from the early 2023 peak of 4.3%, but it remains near levels not seen in a decade, driven by food prices.
- China emerged from deflationary pressures in February with the first positive reading (0.7%) since last September, driven largely by spending during the Lunar New Year holiday.

¹ Source: FRED for United States CPI and Eurozone CPI. Source: Bloomberg for Japan CPI, China CPI, and Eurozone CPI. Data is as February 29, 2024, except Japan which is as of January 31, 2024.

US Unemployment¹

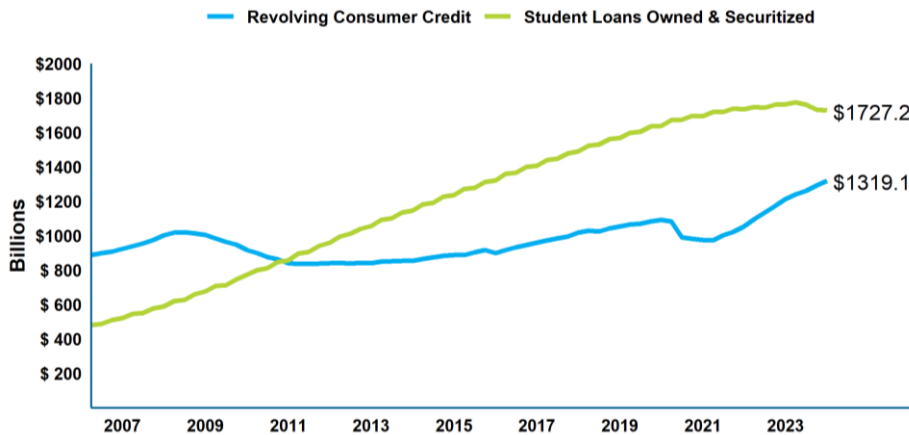


- Overall, the US labor market remains healthy, with the unemployment rate low, wage growth now positive in real terms, and initial claims for unemployment staying subdued.
- In February, the number of jobs added in the US was stronger than expected (275,000 versus 200,000) but with significant revisions to December and January data. The healthcare, government, and food service sectors added the most jobs for the month.
- The unemployment rate rose from 3.7% to 3.9%, while wage growth came in at 4.3% compared to a year prior, a level well off the 6.0% peak but above inflation levels.
- Quit rates have declined, and layoffs are stable, with 1.4 available workers per job opening.

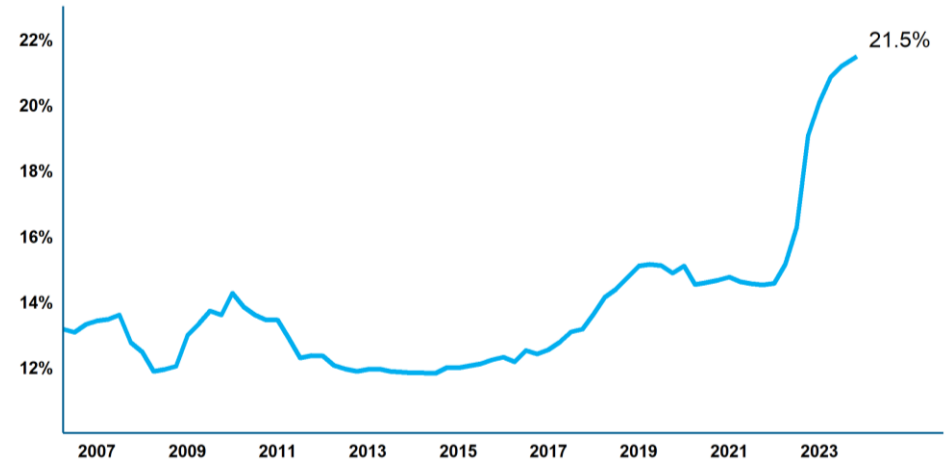
¹ Source: FRED. Data is as February 29, 2024.

US Consumer Under Stress?¹

Revolving Consumer Credit & Student Loans (\$B)



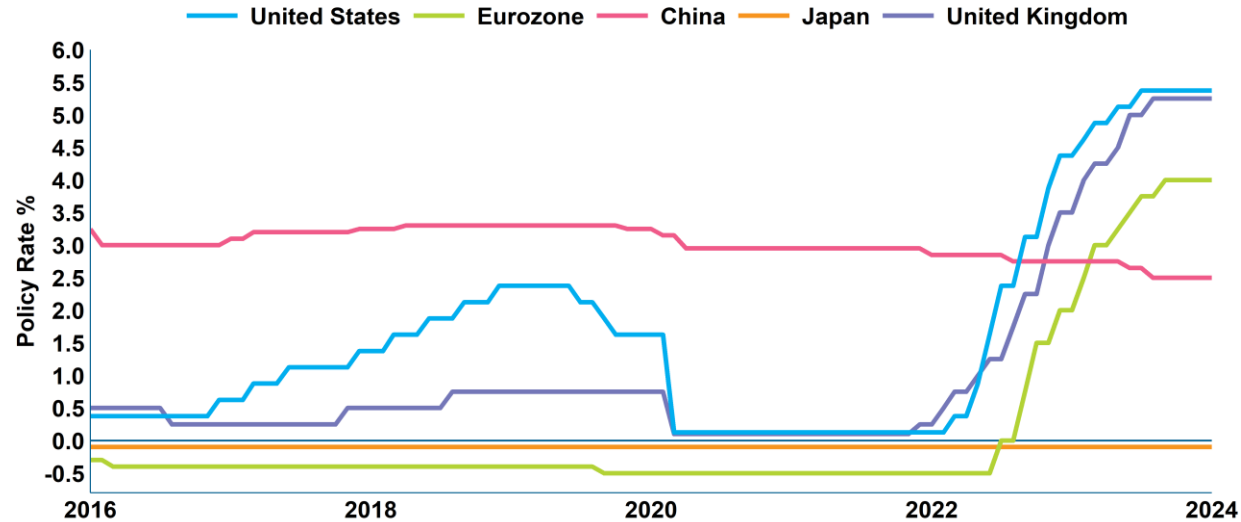
Consumer Credit Card Interest Rates (%)



- Despite the strong labor market and higher wages, pressures have started to build on the US consumer. This is an important consideration as consumer spending has been a key driver of economic growth.
- Revolving consumer credit surged to new highs in 2023 even as credit card interest rates hit levels not seen before (the prior peak was around 19% in the 1980s). Recently, we have also seen payment delinquencies on credit cards start to increase.
- The return of student loan repayments after a three-year pandemic-related reprieve could add to pressures on consumers' budgets. This might be partially mitigated by recently initiated repayment and forgiveness programs.
- As we look ahead, the strength of the US consumer will remain key as this sector makes up most of the domestic economy (GDP).

¹ Source: FRED. Data is as of December 31, 2023. Consumer Credit Card Rate data is as of November 30, 2023. Revolving Consumer Credit data is seasonally adjusted to remove distortions during the holiday season.

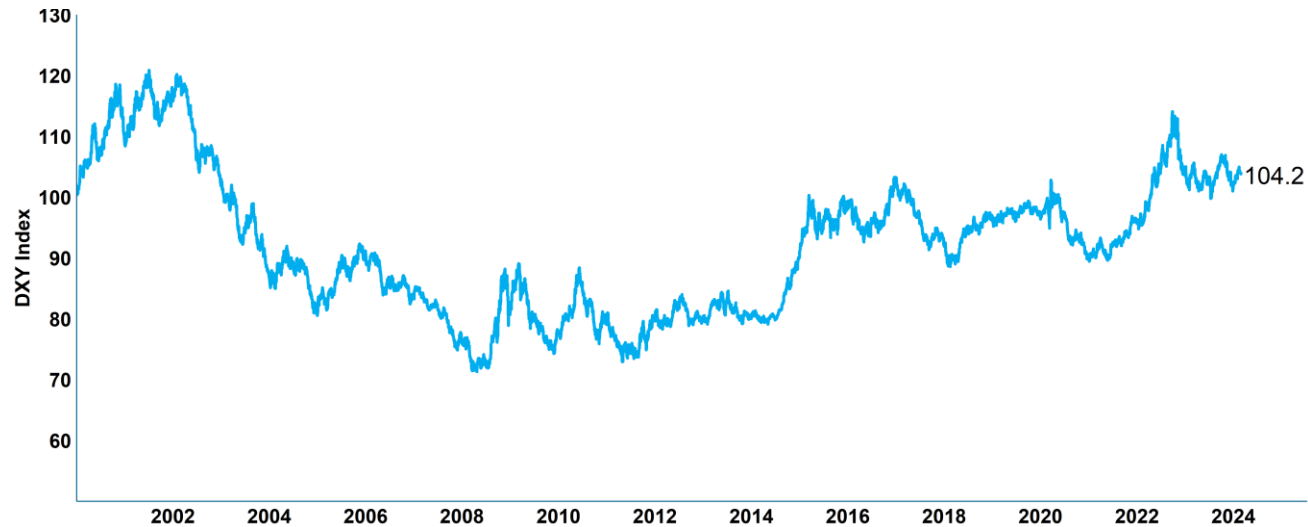
Policy Rates¹



- The Fed has been on hold since July 2023 when it raised rates to a range of 5.25%-5.50%. Markets are now pricing in slightly less than three rate cuts this year down from close to seven late last year as economic data has come in better than expectations. Market pricing for the first rate cut has also moved out from originally March to the summer or early fall.
- The European and UK central banks also recently paused their rate increases on slowing inflation with cuts likely to follow this year. In Japan, the BoJ has further relaxed its yield curve control on the 10-year bond, and expectations for further policy normalization are rising.
- The central bank in China has maintained interest rates at record low levels and continues to inject liquidity into the banking system, as weaker than expected economic data appears to indicate a widespread slowdown.

¹ Source: Bloomberg. Data is as of February 29, 2024.

US Dollar vs. Broad Currencies¹



- Overall, the dollar finished last year only slightly below where it started but it was a volatile year for the US currency as expectations related to monetary policy evolved.
- Strong economic data in the US may delay policy rate cuts this year, which could contribute to upward pressure on the dollar as other countries pivot to rate cuts.

¹ Source: Bloomberg. Data as of February 29, 2024.

Summary

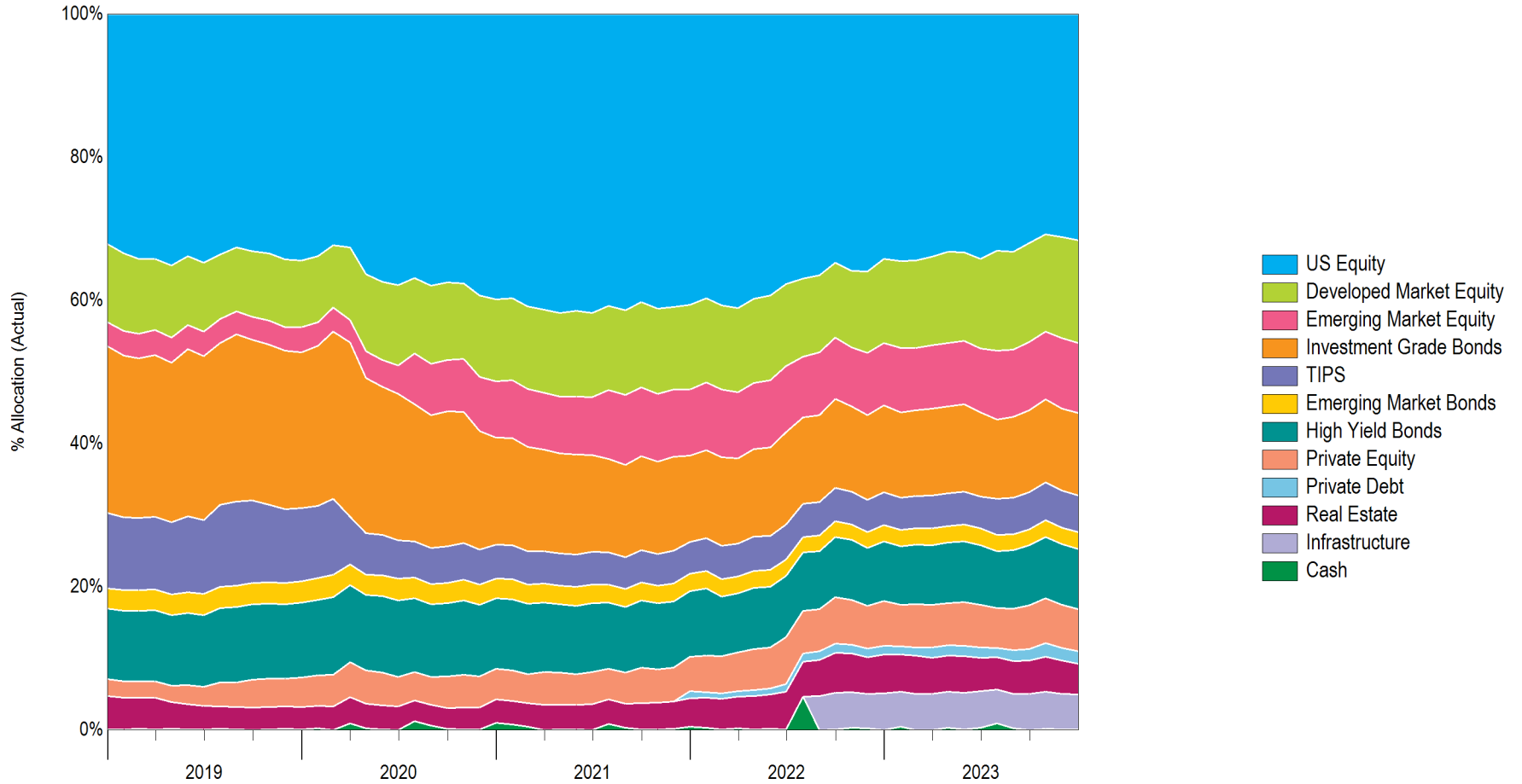
Key Trends:

- The impact of inflation still above policy targets will remain important, with bond market volatility likely to stay high.
- Global monetary policies could diverge going forward. The risk of policy errors remains elevated as central banks try to further reduce inflation toward targets while not tipping their economies into recession.
- Global growth is expected to slow this year, with some economies forecasted to enter recessions. However, optimism has been building that certain economies could experience soft landings. Inflation, monetary policy, and geopolitical issues will remain key in 2024.
- US consumers could feel pressure as certain components of inflation (e.g., shelter) remain high, borrowing costs are elevated, and the job market may weaken.
- A focus for US equities going forward will be whether earnings can remain resilient if growth continues to slow. Also, the future paths of the large technology companies that have driven market gains will be important.
- Equity valuations remain lower in emerging and developed markets, but risks remain, including China's economic uncertainty and on-going weakness in the real estate sector which could spill over into key trading partners' economies. Japan's recent hint at potentially tightening monetary policy along with changes in corporate governance in the country could influence relative results.

Performance Update
As Of December 31, 2023

Allocation vs. Targets and Policy				
	Current Balance	Current Allocation	Policy	Policy Range
US Equity	\$71,976,348	32%	20%	10% - 30%
Developed Market Equity	\$32,640,093	14%	20%	8% - 28%
Emerging Market Equity	\$22,264,469	10%	10%	5% - 15%
Investment Grade Bonds	\$26,152,301	11%	5%	3% - 10%
TIPS	\$11,703,996	5%	5%	3% - 10%
Emerging Market Bonds	\$5,374,433	2%	5%	2% - 8%
High Yield Bonds	\$19,052,960	8%	5%	2% - 8%
Private Equity	\$13,380,147	6%	15%	10% - 20%
Private Debt	\$4,039,366	2%	5%	0% - 10%
Real Estate	\$9,723,077	4%	5%	2% - 8%
Infrastructure	\$11,151,478	5%	5%	0% - 10%
Cash	\$215,662	0%	0%	0% - 5%
Total	\$227,674,331	100%	100%	

Asset Allocation History
5 Years Ending December 31, 2023



Asset Class Performance Summary											
	Market Value (\$)	% of Portfolio	QTD (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	20 Yrs (%)	Inception (%)	Inception Date
Total Retirement System (net)	227,674,331	100.0	7.5	13.2	13.2	4.1	8.6	6.5	6.7	7.6	Jul-88
55% MSCI World & 45% Barclays Aggregate			9.4	15.3	15.3	2.6	7.7	5.7	6.0	6.9	Jul-88
60% MSCI World & 40% Barclays Aggregate			9.6	16.3	16.3	3.1	8.3	6.1	6.2	7.0	Jul-88
InvMetrics Public DB \$50mm-\$250mm Net Median			8.1	13.2	13.2	3.6	8.7	6.6	6.3	8.0	Jul-88
Domestic Equity Assets (net)	71,976,348	31.6	11.4	24.0	24.0	8.7	13.2	10.2	8.8	8.8	Oct-06
Russell 3000			12.1	26.0	26.0	8.5	15.2	11.5	9.7	9.7	Oct-06
International Developed Markets Equity Assets (net)	32,640,093	14.3	10.4	18.5	18.5	4.3	8.4	4.0	--	3.6	Oct-06
MSCI EAFE			10.4	18.2	18.2	4.0	8.2	4.3	5.6	3.8	Oct-06
International Emerging Markets Equity Assets (net)	22,264,469	9.8	7.9	13.6	13.6	-2.1	6.5	--	--	5.0	Jan-15
MSCI Emerging Markets			7.9	9.8	9.8	-5.1	3.7	2.7	6.8	3.2	Jan-15
Investment Grade Bonds Assets (net)	26,152,301	11.5	6.7	5.6	5.6	-3.4	1.0	1.8	3.2	5.3	Jul-88
Bloomberg US Aggregate TR			6.8	5.5	5.5	-3.3	1.1	1.8	3.2	5.4	Jul-88
PRIT Core Fixed Income			8.6	5.2	5.2	-4.9	1.4	2.7	3.6	5.9	Jul-88
High Yield Bond Assets (net)	19,052,960	8.4	5.6	12.4	12.4	2.1	5.2	4.3	5.9	6.1	Sep-03
Bloomberg US High Yield TR			7.2	13.4	13.4	2.0	5.4	4.6	6.6	6.9	Sep-03
PRIT Public Value-Added Fixed Income			5.4	12.4	12.4	2.4	4.4	3.2	5.3	5.7	Sep-03
TIPS Assets (net)	11,703,996	5.1	4.5	3.8	3.8	-1.1	3.0	2.3	--	3.3	Oct-05
Bloomberg US TIPS TR			4.7	3.9	3.9	-1.0	3.2	2.4	3.6	3.4	Oct-05
Emerging Market Debt Assets (net)	5,374,433	2.4	10.2	12.4	12.4	-3.2	2.3	--	--	2.9	Jan-15
JP Morgan EMBI Global Diversified			9.2	11.1	11.1	-3.6	1.7	3.2	5.7	2.8	Jan-15
Open-Ended Real Estate (net)	5,882,190	2.6	-4.4	-15.5	-15.5	4.6	4.6	7.7	6.6	7.5	Oct-95
NCREIF ODCE			-4.8	-12.0	-12.0	4.9	4.2	7.3	7.2	8.3	Oct-95
Total Closed End Real Estate (net)	3,840,887	1.7	-3.0	-12.7	-12.7	3.2	-8.4	1.1	--	2.6	Jan-13
Private Equity Assets (net)	13,380,147	5.9	1.4	1.9	1.9	16.1	17.8	10.2	--	8.2	Oct-06
Private Debt Assets (net)	4,039,366	1.8	2.8	12.7	12.7	--	--	--	--	11.2	Dec-21
Infrastructure (net)	11,151,478	4.9	2.6	8.8	8.8	--	--	--	--	9.3	Aug-22
Cash (net)	215,662	0.1									

	Trailing Performance											Inception (%)	Inception Date
	Market Value (\$)	% of Portfolio	% of Sector	QTD (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	20 Yrs (%)			
Total Retirement System	227,674,331	100.0	--	7.5	13.2	13.2	4.1	8.6	6.5	6.7	7.6	Jul-88	
<i>55% MSCI World & 45% Barclays Aggregate</i>				9.4	15.3	15.3	2.6	7.7	5.7	6.0	6.9	Jul-88	
<i>60% MSCI World & 40% Barclays Aggregate</i>				9.6	16.3	16.3	3.1	8.3	6.1	6.2	7.0	Jul-88	
<i>InvMetrics Public DB \$50mm-\$250mm Net Median</i>				8.1	13.2	13.2	3.6	8.7	6.6	6.3	8.0	Jul-88	
Domestic Equity Assets	71,976,348	31.6	31.6	11.4	24.0	24.0	8.7	13.2	10.2	8.8	8.8	Oct-06	
<i>Russell 3000</i>				12.1	26.0	26.0	8.5	15.2	11.5	9.7	9.7	Oct-06	
RhumbLine S&P 500 Index	23,857,193	10.5	33.1	11.6	26.2	26.2	9.9	15.6	12.0	9.7	7.6	Mar-99	
<i>S&P 500</i>				11.7	26.3	26.3	10.0	15.7	12.0	9.7	7.6	Mar-99	
<i>eV US Passive S&P 500 Equity Net Median</i>				11.7	26.1	26.1	9.9	15.6	12.0	9.6	7.5	Mar-99	
Frontier Capital Appreciation	24,791,556	10.9	34.4	12.3	23.9	23.9	6.3	12.8	9.0	--	11.0	Feb-13	
<i>Russell 2500 Growth</i>				12.6	18.9	18.9	-2.7	11.4	8.8	9.4	10.8	Feb-13	
<i>eV US Small-Mid Cap Growth Equity Net Median</i>				11.5	17.6	17.6	-1.2	12.4	9.1	9.7	11.1	Feb-13	
RhumbLine HEDI	23,327,599	10.2	32.4	10.0	22.2	22.2	9.1	--	--	--	12.9	Nov-20	
<i>Russell 1000 HEDI Moderate GR USD</i>				9.9	22.1	22.1	9.2	15.4	12.9	11.0	13.0	Nov-20	
<i>eV US Large Cap Core Equity Gross Median</i>				11.7	22.8	22.8	9.6	15.0	11.6	10.1	14.0	Nov-20	

Total Retirement System | As of December 31, 2023

	Market Value (\$)	% of Portfolio	% of Sector	QTD (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	20 Yrs (%)	Inception (%)	Inception Date
International Developed Markets Equity Assets	32,640,093	14.3	14.3	10.4	18.5	18.5	4.3	8.4	4.0	--	3.6	Oct-06
<i>MSCI EAFE</i>				10.4	18.2	18.2	4.0	8.2	4.3	5.6	3.8	Oct-06
RhumbLine MSCI EAFE Index	32,640,093	14.3	100.0	10.4	18.5	18.5	4.3	8.4	--	--	4.4	Aug-14
<i>MSCI EAFE</i>				10.4	18.2	18.2	4.0	8.2	4.3	5.6	4.3	Aug-14
<i>eV EAFE All Cap Equity Net Median</i>				9.7	17.5	17.5	3.4	7.9	4.5	6.3	4.5	Aug-14
International Emerging Markets Equity Assets	22,264,469	9.8	9.8	7.9	13.6	13.6	-2.1	6.5	--	--	5.0	Jan-15
<i>MSCI Emerging Markets</i>				7.9	9.8	9.8	-5.1	3.7	2.7	6.8	3.2	Jan-15
DFA Emerging Markets	11,851,838	5.2	53.2	7.9	15.5	15.5	0.7	6.2	--	--	4.6	Jan-15
<i>MSCI Emerging Markets</i>				7.9	9.8	9.8	-5.1	3.7	2.7	6.8	3.2	Jan-15
<i>eV Emg Mkts All Cap Equity Net Median</i>				7.8	10.8	10.8	-5.3	4.9	3.3	7.4	3.8	Jan-15
Driehaus Emerging Market Equity	10,412,631	4.6	46.8	7.9	11.6	11.6	-5.2	6.5	--	--	5.1	Jan-15
<i>MSCI Emerging Markets</i>				7.9	9.8	9.8	-5.1	3.7	2.7	6.8	3.2	Jan-15
<i>eV Emg Mkts All Cap Equity Net Median</i>				7.8	10.8	10.8	-5.3	4.9	3.3	7.4	3.8	Jan-15
Investment Grade Bonds Assets	26,152,301	11.5	11.5	6.7	5.6	5.6	-3.4	1.0	1.8	3.2	5.3	Jul-88
<i>Bloomberg US Aggregate TR</i>				6.8	5.5	5.5	-3.3	1.1	1.8	3.2	5.4	Jul-88
<i>PRIT Core Fixed Income</i>				8.6	5.2	5.2	-4.9	1.4	2.7	3.6	5.9	Jul-88
SSgA U.S. Aggregate Bond Index	26,152,301	11.5	100.0	6.7	5.6	5.6	-3.4	1.0	1.8	3.2	3.7	May-01
<i>Bloomberg US Aggregate TR</i>				6.8	5.5	5.5	-3.3	1.1	1.8	3.2	3.7	May-01
<i>eV US Core Fixed Inc Net Median</i>				6.8	5.9	5.9	-3.1	1.4	2.0	3.4	3.9	May-01

	Market Value (\$)	% of Portfolio	% of Sector	QTD (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	20 Yrs (%)	Inception (%)	Inception Date
High Yield Bond Assets	19,052,960	8.4	8.4	5.6	12.4	12.4	2.1	5.2	4.3	5.9	6.1	Sep-03
<i>Bloomberg US High Yield TR</i>				7.2	13.4	13.4	2.0	5.4	4.6	6.6	6.9	Sep-03
<i>PRIT Public Value-Added Fixed Income</i>				5.4	12.4	12.4	2.4	4.4	3.2	5.3	5.7	Sep-03
Shenkman Capital	19,052,960	8.4	100.0	5.6	12.4	12.4	2.2	5.2	4.3	--	6.0	Apr-06
<i>Bloomberg US High Yield TR</i>				7.2	13.4	13.4	2.0	5.4	4.6	6.6	6.5	Apr-06
<i>eV US High Yield Fixed Inc Net Median</i>				6.6	12.2	12.2	2.1	5.1	4.2	6.0	5.9	Apr-06
TIPS Assets	11,703,996	5.1	5.1	4.5	3.8	3.8	-1.1	3.0	2.3	--	3.3	Oct-05
<i>Bloomberg US TIPS TR</i>				4.7	3.9	3.9	-1.0	3.2	2.4	3.6	3.4	Oct-05
SSgA TIPS Index-NL	11,703,996	5.1	100.0	4.5	3.8	3.8	-1.1	3.0	2.3	--	3.3	Oct-05
<i>Bloomberg US TIPS TR</i>				4.7	3.9	3.9	-1.0	3.2	2.4	3.6	3.4	Oct-05
<i>eV US TIPS / Inflation Fixed Inc Net Median</i>				4.6	3.9	3.9	-1.0	3.1	2.3	3.6	3.3	Oct-05
Emerging Market Debt Assets	5,374,433	2.4	2.4	10.2	12.4	12.4	-3.2	2.3	--	--	2.9	Jan-15
<i>JP Morgan EMBI Global Diversified</i>				9.2	11.1	11.1	-3.6	1.7	3.2	5.7	2.8	Jan-15
Payden Emerging Market Bond	5,374,433	2.4	100.0	10.2	12.4	12.4	-3.2	2.3	--	--	2.9	Jan-15
<i>JP Morgan EMBI Global Diversified</i>				9.2	11.1	11.1	-3.6	1.7	3.2	5.7	2.8	Jan-15
Open-Ended Real Estate	5,882,190	2.6	2.6	-4.4	-15.5	-15.5	4.6	4.6	7.7	6.6	7.5	Oct-95
<i>NCREIF ODCE</i>				-4.8	-12.0	-12.0	4.9	4.2	7.3	7.2	8.3	Oct-95
Clarion Partners	5,882,190	2.6	100.0	-4.4	-15.5	-15.5	4.6	4.6	7.7	6.6	6.7	Oct-02
<i>NCREIF ODCE</i>				-4.8	-12.0	-12.0	4.9	4.2	7.3	7.2	7.3	Oct-02

Total Retirement System | As of December 31, 2023

	Market Value (\$)	% of Portfolio	% of Sector	QTD (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	20 Yrs (%)	Inception (%)	Inception Date
Total Closed End Real Estate	3,840,887	1.7	1.7	-3.0	-12.7	-12.7	3.2	-8.4	1.1	--	2.6	Jan-13
Rockwood Capital Real Estate Partners Fund XI, L.P. <i>NCREIF-ODCE</i>	3,840,887	1.7	100.0	-3.0	-12.7	-12.7	3.2	--	--	--	2.3	Dec-19
				-4.8	-12.0	-12.0	4.9	4.2	7.3	7.2	4.3	Dec-19
Private Equity Assets	13,380,147	5.9	5.9	1.4	1.9	1.9	16.1	17.8	10.2	--	8.2	Oct-06
North American Strategic Partners 2006	14,091	0.0	0.1									
Ironsides Partnership Fund IV	2,445,265	1.1	18.3									
Ironsides Direct Investment Fund IV	1,262,130	0.6	9.4									
Ironsides Partnership Fund V, L.P.	2,324,122	1.0	17.4									
Ironsides Direct Investment Fund V, L.P.	3,468,379	1.5	25.9									
HarbourVest 2019 Global Fund	3,866,161	1.7	28.9									
Private Debt Assets	4,039,366	1.8	1.8	2.8	12.7	12.7	--	--	--	--	11.2	Dec-21
NB Private Debt Fund IV	4,039,366	1.8	100.0									
Infrastructure	11,151,478	4.9	4.9	2.6	8.8	8.8	--	--	--	--	9.3	Aug-22
IFM Global Infrastructure <i>CPI + 3%</i>	11,151,478	4.9	100.0	2.6	8.8	8.8	--	--	--	--	9.3	Aug-22
				0.4	6.4	6.4	8.8	7.2	5.9	5.7	5.5	Aug-22
Cash	215,662	0.1	0.1									

Closed End Real Estate, Private Equity, and Private Debt market values are as of September 30, 2023 and adjusted for subsequent flows.

North American Strategic Partners market value is cash adjusted as of December 31, 2022. The fund is currently in the liquidation process and will only be reported on annually (as of December 31).

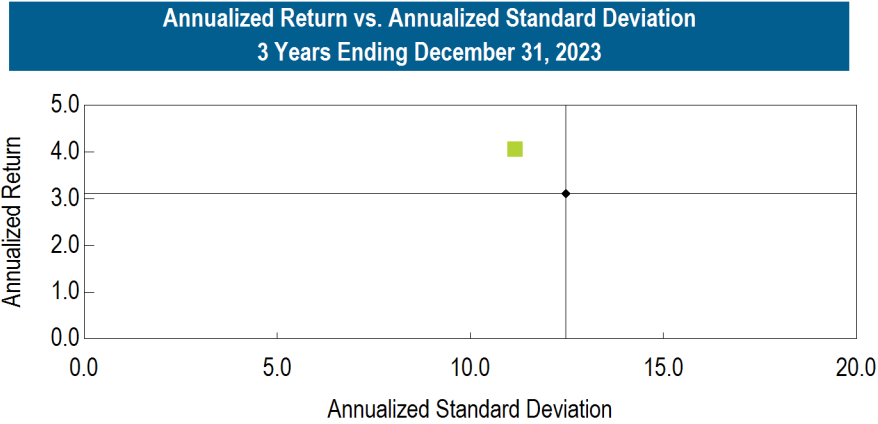
	Calendar Year Performance									
	2023 (%)	2022 (%)	2021 (%)	2020 (%)	2019 (%)	2018 (%)	2017 (%)	2016 (%)	2015 (%)	2014 (%)
Total Retirement System	13.2	-12.5	13.8	14.2	17.5	-4.5	13.0	8.7	-0.2	6.3
<i>55% MSCI World & 45% Barclays Aggregate</i>	15.3	-15.6	10.9	12.9	19.1	-4.6	13.6	5.5	0.0	5.5
<i>60% MSCI World & 40% Barclays Aggregate</i>	16.3	-15.9	12.0	13.3	20.0	-5.1	14.5	5.7	-0.1	5.4
Domestic Equity Assets	24.0	-16.9	24.8	13.4	27.6	-6.9	20.1	14.6	-1.6	13.1
<i>Russell 3000</i>	26.0	-19.2	25.7	20.9	31.0	-5.2	21.1	12.7	0.5	12.6
RhumbLine S&P 500 Index	26.2	-18.1	28.6	18.3	31.4	-4.4	21.8	11.9	1.4	13.6
<i>S&P 500</i>	26.3	-18.1	28.7	18.4	31.5	-4.4	21.8	12.0	1.4	13.7
Frontier Capital Appreciation	23.9	-18.0	18.2	18.1	28.9	-13.9	19.1	20.5	-6.5	12.4
<i>Russell 2500 Growth</i>	18.9	-26.2	5.0	40.5	32.7	-7.5	24.5	9.7	-0.2	7.1
RhumbLine HEDI	22.2	-15.2	25.5	--	--	--	--	--	--	--
<i>Russell 1000 HEDI Moderate GR USD</i>	22.1	-15.1	25.5	18.5	32.7	-0.9	23.4	11.4	4.8	15.4
International Developed Markets Equity Assets	18.5	-14.2	11.5	7.9	22.3	-13.5	24.9	1.4	-0.8	-8.7
<i>MSCI EAFE</i>	18.2	-14.5	11.3	7.8	22.0	-13.8	25.0	1.0	-0.8	-4.9
RhumbLine MSCI EAFE Index	18.5	-14.2	11.5	7.9	22.3	-13.5	24.9	1.4	-0.8	--
<i>MSCI EAFE</i>	18.2	-14.5	11.3	7.8	22.0	-13.8	25.0	1.0	-0.8	-4.9
International Emerging Markets Equity Assets	13.6	-19.3	2.3	21.1	20.7	-15.4	39.7	9.4	-12.7	--
<i>MSCI Emerging Markets</i>	9.8	-20.1	-2.5	18.3	18.4	-14.6	37.3	11.2	-14.9	-2.2
DFA Emerging Markets	15.5	-16.4	5.8	13.9	16.0	-15.2	36.6	12.4	-14.9	--
<i>MSCI Emerging Markets</i>	9.8	-20.1	-2.5	18.3	18.4	-14.6	37.3	11.2	-14.9	-2.2
Driehaus Emerging Market Equity	11.6	-22.4	-1.5	28.0	25.3	-15.6	43.0	6.5	-10.6	--
<i>MSCI Emerging Markets</i>	9.8	-20.1	-2.5	18.3	18.4	-14.6	37.3	11.2	-14.9	-2.2

Total Retirement System | As of December 31, 2023

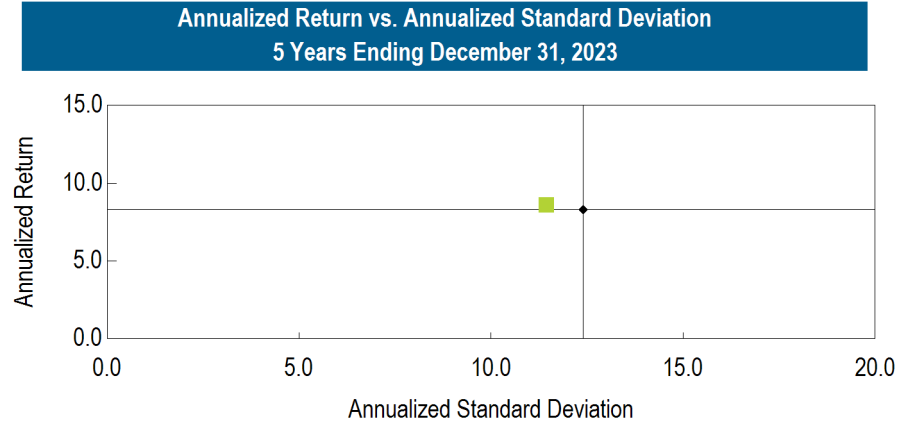
	2023 (%)	2022 (%)	2021 (%)	2020 (%)	2019 (%)	2018 (%)	2017 (%)	2016 (%)	2015 (%)	2014 (%)
Investment Grade Bonds Assets	5.6	-13.2	-1.6	7.5	8.7	0.0	3.6	2.6	0.6	6.0
<i>Bloomberg US Aggregate TR</i>	5.5	-13.0	-1.5	7.5	8.7	0.0	3.5	2.6	0.5	6.0
<i>PRIT Core Fixed Income</i>	5.2	-18.3	0.1	12.0	11.2	-0.9	5.3	3.9	-2.0	15.1
SSgA U.S. Aggregate Bond Index	5.6	-13.2	-1.6	7.5	8.7	0.0	3.6	2.6	0.6	6.0
<i>Bloomberg US Aggregate TR</i>	5.5	-13.0	-1.5	7.5	8.7	0.0	3.5	2.6	0.5	6.0
High Yield Bond Assets	12.4	-8.9	4.0	6.3	14.0	-1.8	6.5	12.6	-2.3	2.9
<i>Bloomberg US High Yield TR</i>	13.4	-11.2	5.3	7.1	14.3	-2.1	7.5	17.1	-4.5	2.5
<i>PRIT Public Value-Added Fixed Income</i>	12.4	-7.8	3.5	4.3	10.7	-2.5	8.5	11.2	-5.2	-0.7
Shenkman Capital	12.4	-8.8	4.0	6.3	14.0	-1.8	6.5	12.6	-2.3	2.9
<i>Bloomberg US High Yield TR</i>	13.4	-11.2	5.3	7.1	14.3	-2.1	7.5	17.1	-4.5	2.5
TIPS Assets	3.8	-12.1	5.8	10.9	8.4	-1.4	3.0	4.7	-1.4	3.6
<i>Bloomberg US TIPS TR</i>	3.9	-11.8	6.0	11.0	8.4	-1.3	3.0	4.7	-1.4	3.6
SSgA TIPS Index-NL	3.8	-12.1	5.8	10.9	8.4	-1.4	3.0	4.7	-1.4	3.6
<i>Bloomberg US TIPS TR</i>	3.9	-11.8	6.0	11.0	8.4	-1.3	3.0	4.7	-1.4	3.6
Emerging Market Debt Assets	12.4	-17.4	-2.4	6.2	16.5	-7.0	12.0	11.5	-0.8	--
<i>JP Morgan EMBI Global Diversified</i>	11.1	-17.8	-1.8	5.3	15.0	-4.3	10.3	10.2	1.2	7.4
Payden Emerging Market Bond	12.4	-17.4	-2.4	6.2	16.5	-7.0	12.0	11.5	-0.8	--
<i>JP Morgan EMBI Global Diversified</i>	11.1	-17.8	-1.8	5.3	15.0	-4.3	10.3	10.2	1.2	7.4
Open-Ended Real Estate	-15.5	9.6	23.4	2.2	7.3	8.6	7.9	9.1	15.7	13.2
<i>NCREIF ODCE</i>	-12.0	7.5	22.2	1.2	5.3	8.3	7.6	8.8	15.1	12.5
Clarion Partners	-15.5	9.6	23.4	2.2	7.3	8.6	7.9	9.1	15.7	13.2
<i>NCREIF ODCE</i>	-12.0	7.5	22.2	1.2	5.3	8.3	7.6	8.8	15.1	12.5

Total Retirement System | As of December 31, 2023

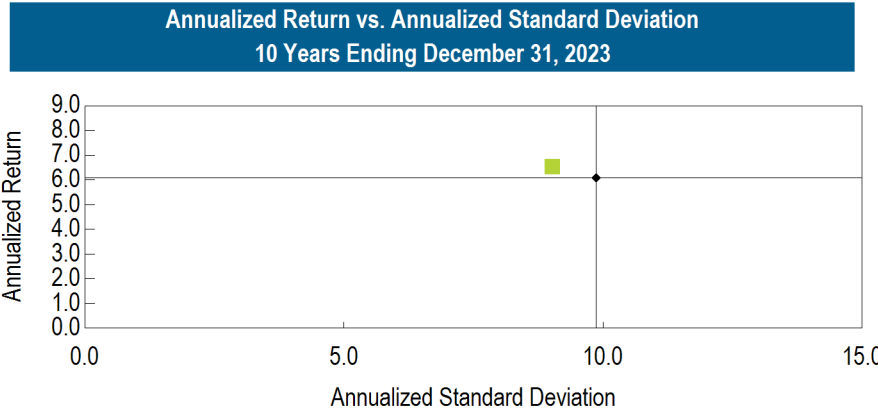
	2023 (%)	2022 (%)	2021 (%)	2020 (%)	2019 (%)	2018 (%)	2017 (%)	2016 (%)	2015 (%)	2014 (%)
Total Closed End Real Estate	-12.7	10.2	14.3	-5.3	-38.2	-1.8	15.1	9.5	23.8	13.3
Rockwood Capital Real Estate Partners Fund XI, L.P.	-12.7	10.2	14.3	0.0	--	--	--	--	--	--
<i>NCREIF-ODCE</i>	-12.0	7.5	22.2	1.2	5.3	8.3	7.6	8.8	15.0	12.5
Private Equity Assets	1.9	10.2	39.5	22.9	17.7	10.2	-5.3	-2.8	8.6	5.5
North American Strategic Partners 2006										
Ironsides Partnership Fund IV										
Ironsides Direct Investment Fund IV										
Ironsides Partnership Fund V, L.P.										
Ironsides Direct Investment Fund V, L.P.										
HarbourVest 2019 Global Fund										
Private Debt Assets	12.7	10.8	--	--	--	--	--	--	--	--
NB Private Debt Fund IV										
Infrastructure	8.8	--	--	--	--	--	--	--	--	--
IFM Global Infrastructure	8.8	--	--	--	--	--	--	--	--	--
<i>CPI + 3%</i>	6.4	9.6	10.2	4.4	5.3	5.0	5.2	5.1	3.7	3.8
Cash										



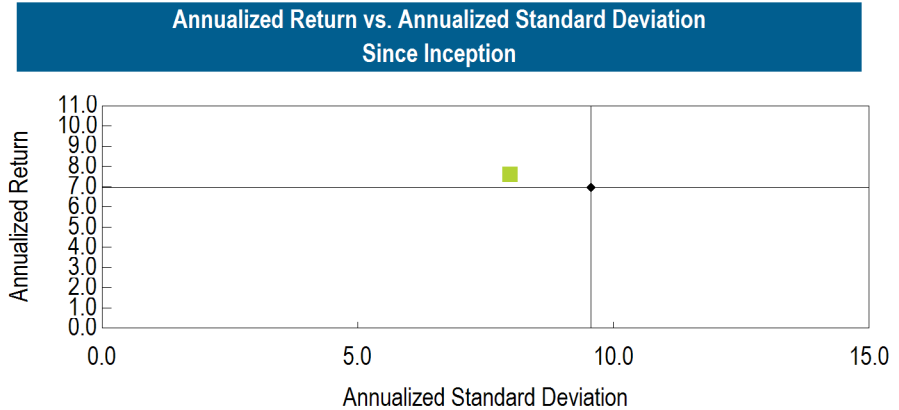
- Total Retirement System
- ◆ 60% MSCI World & 40% Barclays Aggregate



- Total Retirement System
- ◆ 60% MSCI World & 40% Barclays Aggregate

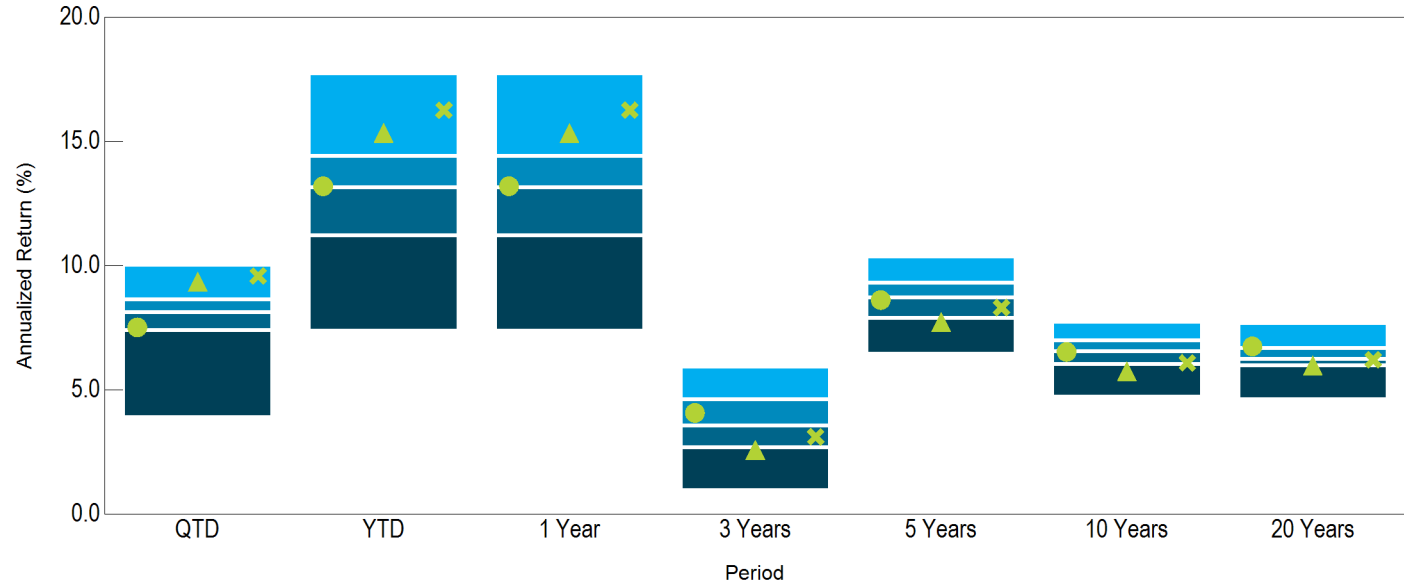


- Total Retirement System
- ◆ 60% MSCI World & 40% Barclays Aggregate



- Total Retirement System
- ◆ 60% MSCI World & 40% Barclays Aggregate

**InvMetrics Public DB \$50mm-\$250mm Net Return Comparison
Ending December 31, 2023**



	QTD		YTD		1 Year		3 Years		5 Years		10 Years		20 Years	
5th Percentile	10.0		17.7		17.7		5.9		10.4		7.7		7.7	
25th Percentile	8.7		14.4		14.4		4.6		9.3		7.0		6.7	
Median	8.1		13.2		13.2		3.6		8.7		6.6		6.3	
75th Percentile	7.4		11.2		11.2		2.7		7.9		6.1		6.0	
95th Percentile	3.9		7.4		7.4		1.0		6.5		4.7		4.6	
# of Portfolios	156		154		154		151		150		122		62	
● Total Retirement System	7.5	(74)	13.2	(50)	13.2	(50)	4.1	(41)	8.6	(53)	6.5	(54)	6.7	(22)
▲ 55% MSCI World & 45% Barclays Aggregate	9.4	(12)	15.3	(13)	15.3	(13)	2.6	(79)	7.7	(80)	5.7	(86)	6.0	(76)
✕ 60% MSCI World & 40% Barclays Aggregate	9.6	(10)	16.3	(10)	16.3	(10)	3.1	(66)	8.3	(65)	6.1	(74)	6.2	(58)

Statistics Summary

5 Years Ending December 31, 2023

	Anlzd Return	Anlzd Standard Deviation	Information Ratio	Beta	Sharpe Ratio	Tracking Error
Total Retirement System	8.6%	11.4%	0.4	1.0	0.6	2.1%
55% MSCI World & 45% Barclays Aggregate	7.7%	11.7%	--	1.0	0.5	0.0%
Equity Assets	11.2%	18.6%	-1.1	1.0	0.5	3.7%
Russell 3000	15.2%	19.1%	--	1.0	0.7	0.0%
Domestic Equity Assets	13.2%	19.9%	-0.7	1.0	0.6	2.8%
Russell 3000	15.2%	19.1%	--	1.0	0.7	0.0%
RhumbLine S&P 500 Index	15.6%	18.5%	-1.6	1.0	0.7	0.0%
S&P 500	15.7%	18.5%	--	1.0	0.8	0.0%
Frontier Capital Appreciation	12.8%	26.9%	0.1	1.1	0.4	9.4%
Russell 2500 Growth	11.4%	23.4%	--	1.0	0.4	0.0%
RhumbLine HEDI	--	--	--	--	--	--
Russell 1000 HEDI Moderate GR USD	15.4%	17.1%	--	1.0	0.8	0.0%
International Developed Markets Equity Assets	8.4%	18.0%	0.8	1.0	0.4	0.3%
MSCI EAFE	8.2%	18.1%	--	1.0	0.4	0.0%
RhumbLine MSCI EAFE Index	8.4%	18.0%	0.8	1.0	0.4	0.3%
MSCI EAFE	8.2%	18.1%	--	1.0	0.4	0.0%
International Emerging Markets Equity Assets	6.5%	18.1%	0.9	0.9	0.3	3.2%
MSCI Emerging Markets	3.7%	19.2%	--	1.0	0.1	0.0%

RhumbLine HEDI funded on 10/5/2020. Statistics will be reflected after first full five calendar years.

	Anlzd Return	Anlzd Standard Deviation	Information Ratio	Beta	Sharpe Ratio	Tracking Error
DFA Emerging Markets	6.2%	19.5%	0.6	1.0	0.2	3.9%
MSCI Emerging Markets	3.7%	19.2%	--	1.0	0.1	0.0%
Driehaus Emerging Market Equity	6.5%	17.4%	0.5	0.9	0.3	5.3%
MSCI Emerging Markets	3.7%	19.2%	--	1.0	0.1	0.0%
Investment Grade Bonds Assets	1.0%	6.2%	-0.6	1.0	-0.1	0.1%
Bloomberg US Aggregate TR	1.1%	6.2%	--	1.0	-0.1	0.0%
SSgA U.S. Aggregate Bond Index	1.0%	6.2%	-0.6	1.0	-0.1	0.1%
Bloomberg US Aggregate TR	1.1%	6.2%	--	1.0	-0.1	0.0%
High Yield Bond Assets	5.2%	8.4%	-0.1	0.9	0.4	1.3%
Bloomberg US High Yield TR	5.4%	9.5%	--	1.0	0.4	0.0%
Shenkman Capital	5.2%	8.4%	-0.1	0.9	0.4	1.3%
Bloomberg US High Yield TR	5.4%	9.5%	--	1.0	0.4	0.0%
TIPS Assets	3.0%	6.2%	-0.8	1.0	0.2	0.1%
Bloomberg US TIPS TR	3.2%	6.2%	--	1.0	0.2	0.0%
SSgA TIPS Index-NL	3.0%	6.2%	-0.8	1.0	0.2	0.1%
Bloomberg US TIPS TR	3.2%	6.2%	--	1.0	0.2	0.0%
Emerging Market Debt Assets	2.3%	13.1%	0.3	1.1	0.0	2.4%
JP Morgan EMBI Global Diversified	1.7%	11.7%	--	1.0	0.0	0.0%
Payden Emerging Market Bond	2.3%	13.1%	0.3	1.1	0.0	2.4%
JP Morgan EMBI Global Diversified	1.7%	11.7%	--	1.0	0.0	0.0%

	Anlzd Return	Anlzd Standard Deviation	Information Ratio	Beta	Sharpe Ratio	Tracking Error
Open-Ended Real Estate	4.6%	8.5%	0.2	1.1	0.3	2.3%
NCREIF ODCE	4.2%	7.5%	--	1.0	0.3	0.0%
Clarion Partners	4.6%	8.5%	0.2	1.1	0.3	2.3%
NCREIF ODCE	4.2%	7.5%	--	1.0	0.3	0.0%
Total Closed End Real Estate	-8.4%	22.1%	-0.6	0.6	-0.5	21.8%
NCREIF ODCE	4.2%	7.5%	--	1.0	0.3	0.0%
Rockwood Capital Real Estate Partners Fund XI, L.P.	--	--	--	--	--	--
NCREIF-ODCE	4.2%	7.5%	--	1.0	0.3	0.0%
IFM Global Infrastructure	--	--	--	--	--	--
CPI + 3%	7.2%	1.4%	--	1.0	4.0	0.0%
EB Temporary Investment Fund	2.2%	1.3%	0.4	1.6	0.3	1.1%
91 Day T-Bills	1.8%	0.6%	--	1.0	0.0	0.0%

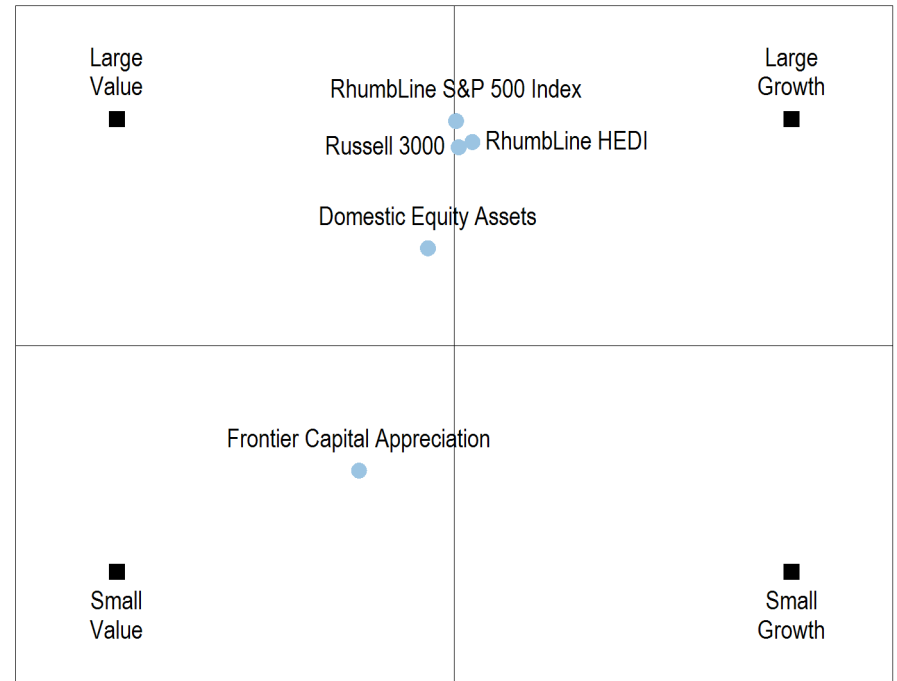
Rockwood Capital XI and IFM Global Infrastructure statistics will be reflected after first full five calendar years.

Retirement System Detail

Asset Allocation on December 31, 2023

	Actual	Actual
Frontier Capital Appreciation	\$24,791,556	34.4%
RhumbLine HEDI	\$23,327,599	32.4%
RhumbLine S&P 500 Index	\$23,857,193	33.1%
Total	\$71,976,348	100.0%

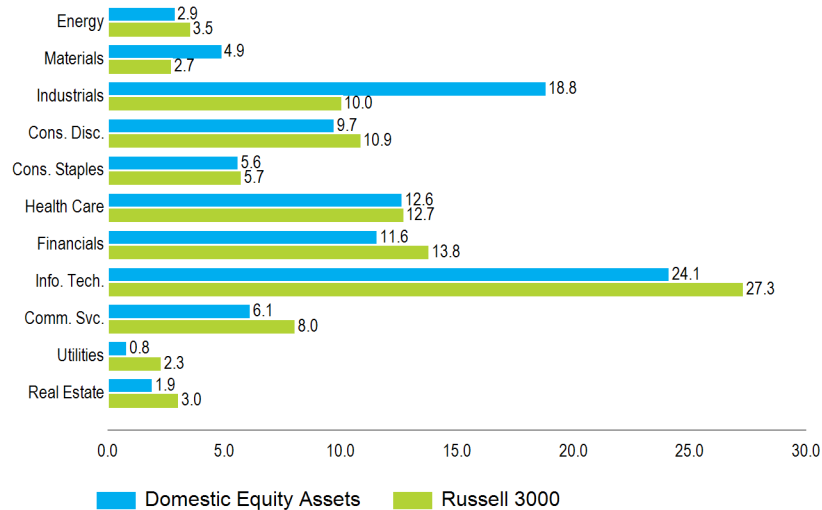
Domestic Equity Assets Style Map 3 Years Ending December 31, 2023



Domestic Equity Assets | As of December 31, 2023

Domestic Equity Assets Characteristics			
	Portfolio Q4-23	Index Q4-23	Portfolio Q3-23
Market Value			
Market Value (\$M)	72.0	--	68.8
Number Of Holdings	661	2967	665
Characteristics			
Weighted Avg. Market Cap. (\$B)	452.4	631.9	405.0
Median Market Cap (\$B)	26.6	2.7	23.4
P/E Ratio	23.2	23.5	21.2
Yield	1.2	1.5	1.3
EPS Growth - 5 Yrs.	16.1	15.6	17.4
Price to Book	3.9	4.1	3.7

Sector Allocation (%) vs Russell 3000



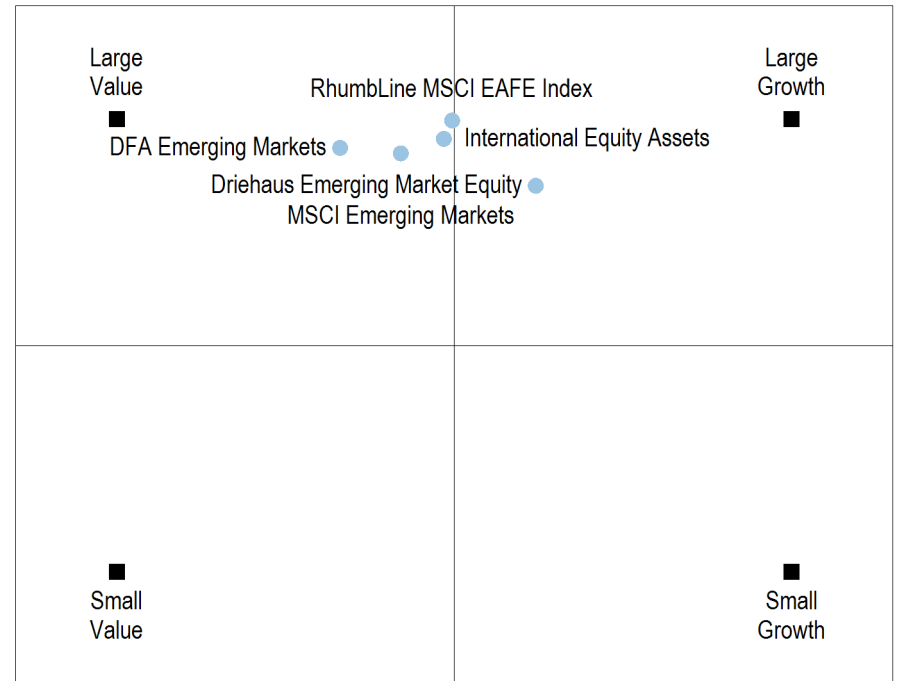
Top 10 Holdings

MICROSOFT CORP	4.5%
APPLE INC	4.4%
AMAZON.COM INC	1.7%
NVIDIA CORPORATION	1.5%
ALPHABET INC	1.3%
ALPHABET INC	1.3%
META PLATFORMS INC	1.0%
BERKSHIRE HATHAWAY INC	0.9%
UNITEDHEALTH GROUP INCORPORATED	0.9%
VISA INC	0.8%
Total	18.4%

Asset Allocation on December 31, 2023

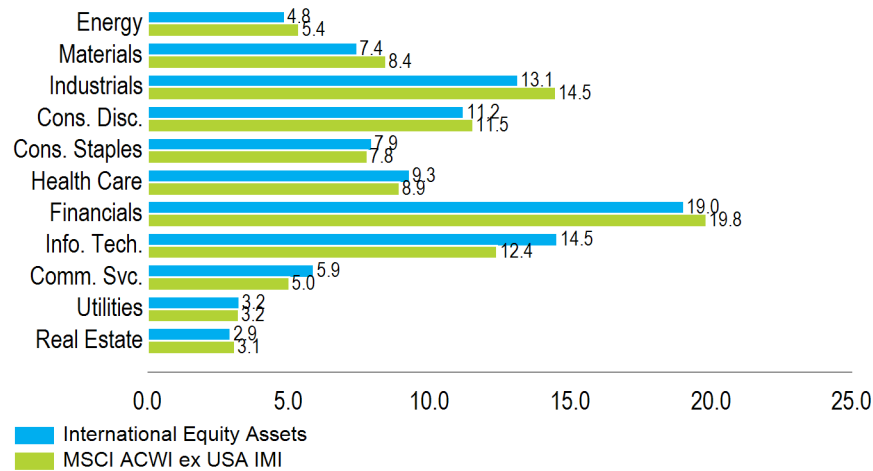
	Actual	Actual
DFA Emerging Markets	\$11,851,838	21.6%
Driehaus Emerging Market Equity	\$10,412,631	19.0%
RhumbLine MSCI EAFE Index	\$32,640,093	59.4%
Total	\$54,904,562	100.0%

International Equity Assets Style Map 3 Years Ending December 31, 2023



International Equity Characteristics			
	Portfolio Q4-23	Index Q4-23	Portfolio Q3-23
Market Value			
Market Value (\$M)	54.9	--	50.2
Number Of Holdings	7264	6637	7323
Characteristics			
Weighted Avg. Market Cap. (\$B)	95.7	80.9	87.4
Median Market Cap (\$B)	0.8	1.8	0.8
P/E Ratio	13.5	14.2	13.0
Yield	3.1	3.1	3.4
EPS Growth - 5 Yrs.	11.4	9.6	11.0
Price to Book	2.5	2.4	2.4

Sector Allocation (%) vs MSCI ACWI ex USA IMI



Top 10 Holdings

SAMSUNG ELECTRONICS CO LTD	1.8%
TENCENT HOLDINGS LTD	1.6%
TAIWAN SEMICONDUCTOR MANUFACTURING CO LTD	1.5%
NOVO NORDISK A/S	1.3%
NESTLE SA, CHAM UND VEVEY	1.1%
ASML HOLDING NV	1.1%
LVMH MOET HENNESSY LOUIS VUITTON SE	0.8%
SHELL PLC	0.8%
TAIWAN SEMICONDUCTOR MANUFACTURING CO LTD	0.8%
ASTRAZENECA PLC	0.8%
Total	11.7%

Country Allocation Report

As of 12/31/2023

Region	% of Total	% of Bench	% Diff
North America ex U.S.	0.2%	7.5%	-7.3%
United States	1.4%	0.0%	1.4%
Europe Ex U.K.	33.1%	31.3%	1.8%
United Kingdom	7.0%	9.5%	-2.5%
Pacific Basin Ex Japan	7.9%	7.5%	0.4%
Japan	13.5%	15.5%	-1.9%
Emerging Markets	35.8%	27.8%	8.0%
Other	1.0%	0.9%	0.1%
Total	100.0%	100.0%	0.0%

International Equity Country Allocation

vs MSCI ACWI ex USA IMI

Country	% of Total	% of Bench	% Diff
ARGENTINA	0.2%	0.0%	0.2%
AUSTRALIA	4.3%	5.1%	-0.8%
AUSTRIA	0.3%	0.2%	0.1%
BAHRAIN	0.0%	0.0%	0.0%
BANGLADESH	0.0%	0.0%	0.0%
BELGIUM	0.4%	0.6%	-0.2%
BRAZIL	3.0%	1.6%	1.3%
CANADA	0.2%	7.5%	-7.3%
CHILE	0.2%	0.2%	0.0%
CHINA	6.2%	6.7%	-0.5%
COLOMBIA	0.0%	0.0%	0.0%
CROATIA	0.0%	0.0%	0.0%
CZECH REPUBLIC	0.0%	0.0%	0.0%
DENMARK	2.0%	2.0%	0.0%
EGYPT	0.0%	0.0%	0.0%
ESTONIA	0.0%	0.0%	0.0%
FINLAND	0.6%	0.7%	-0.1%
FRANCE	6.7%	7.0%	-0.4%
GERMANY	5.0%	5.2%	-0.1%
GREECE	0.4%	0.1%	0.2%
HONG KONG	2.6%	1.3%	1.3%
HUNGARY	0.0%	0.1%	0.0%
INDIA	7.5%	5.1%	2.4%
INDONESIA	0.8%	0.5%	0.3%

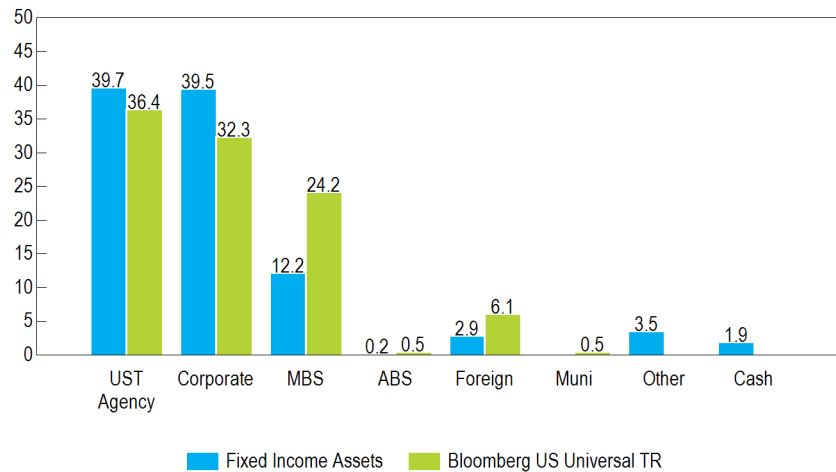
Country	% of Total	% of Bench	% Diff
IRELAND	0.6%	0.3%	0.3%
ISRAEL	0.2%	0.6%	-0.4%
ITALY	1.4%	1.7%	-0.4%
JAPAN	13.5%	15.5%	-1.9%
JORDAN	0.0%	0.0%	0.0%
KAZAKHSTAN	0.0%	0.0%	0.0%
KENYA	0.0%	0.0%	0.0%
KOREA	4.6%	3.7%	0.9%
KUWAIT	0.1%	0.2%	-0.2%
LEBANON	0.0%	0.0%	0.0%
LITHUANIA	0.0%	0.0%	0.0%
LUXEMBOURG	0.4%	0.0%	0.4%
MALAYSIA	0.3%	0.4%	-0.1%
MAURITIUS	0.0%	0.0%	0.0%
MEXICO	2.0%	0.8%	1.3%
MOROCCO	0.0%	0.0%	0.0%
NETHERLANDS	4.9%	2.7%	2.2%
NEW ZEALAND	0.2%	0.2%	0.0%
NIGERIA	0.0%	0.0%	0.0%
NORWAY	0.4%	0.6%	-0.2%
OMAN	0.0%	0.0%	0.0%
OTHER	0.5%	0.0%	0.5%
PAKISTAN	0.0%	0.0%	0.0%
PERU	0.0%	0.1%	-0.1%
PHILIPPINES	0.3%	0.2%	0.1%
POLAND	0.4%	0.3%	0.1%
PORTUGAL	0.1%	0.2%	0.0%

Country	% of Total	% of Bench	% Diff
QATAR	0.2%	0.2%	0.0%
ROMANIA	0.0%	0.0%	0.0%
SAUDI ARABIA	1.3%	1.2%	0.1%
SERBIA	0.0%	0.0%	0.0%
SINGAPORE	0.8%	0.9%	-0.1%
SLOVENIA	0.0%	0.0%	0.0%
SOUTH AFRICA	0.8%	0.9%	-0.1%
SPAIN	1.8%	1.6%	0.2%
SRI LANKA	0.0%	0.0%	0.0%
SWEDEN	1.9%	2.3%	-0.4%
SWITZERLAND	6.2%	5.9%	0.3%
TAIWAN	6.7%	4.8%	1.9%
THAILAND	0.5%	0.6%	-0.1%
TUNISIA	0.0%	0.0%	0.0%
TURKEY	0.4%	0.2%	0.2%
UNITED ARAB EMIRATES	0.6%	0.3%	0.3%
UNITED KINGDOM	7.0%	9.5%	-2.5%
UNITED STATES	1.4%	0.0%	1.4%
VIETNAM	0.0%	0.0%	0.0%
Total	100.0%	100.0%	0.0%

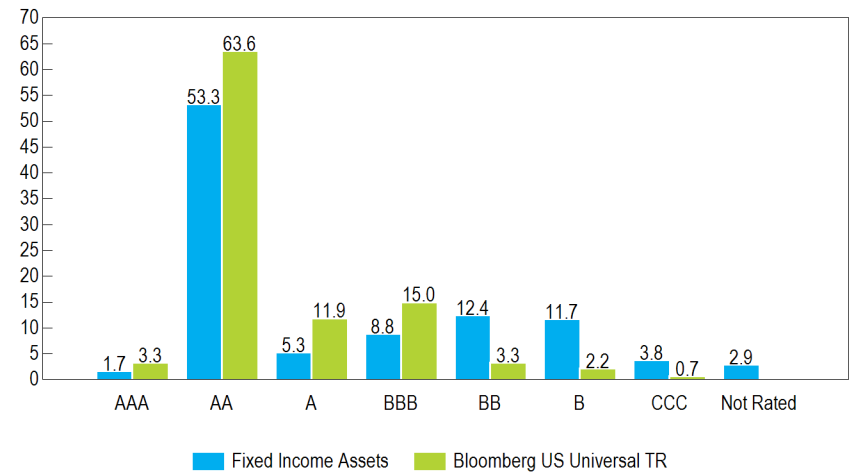
Asset Allocation on December 31, 2023		
	Actual	Actual
Payden Emerging Market Bond	\$5,374,433	8.6%
Shenkman Capital	\$19,052,960	30.6%
SSgA TIPS Index-NL	\$11,703,996	18.8%
SSgA U.S. Aggregate Bond Index	\$26,152,301	42.0%
Total	\$62,283,690	100.0%

Fixed Income Characteristics vs. Bloomberg US Universal TR			
	Portfolio Q4-23	Index Q4-23	Portfolio Q3-23
Fixed Income Characteristics			
Yield to Maturity	5.8	4.8	6.6
Average Duration	5.1	6.0	5.1
Average Quality	A	A	A
Weighted Average Maturity	7.5	8.3	7.4

Sector Allocation



Credit Quality Allocation



Portfolio Reviews

Account Information

Account Name	RhumbLine S&P 500 Index
Account Structure	Commingled Fund
Investment Style	Passive
Inception Date	3/01/99
Account Type	US Equity
Benchmark	S&P 500
Universe	eV US Passive S&P 500 Equity Net

Portfolio Performance Summary

	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
RhumbLine S&P 500 Index	11.6	26.2	9.9	15.6	12.0	7.6	Mar-99
S&P 500	11.7	26.3	10.0	15.7	12.0	7.6	Mar-99

Top 10 Holdings

APPLE INC	7.0%
MICROSOFT CORP	6.9%
AMAZON.COM INC	3.4%
NVIDIA CORPORATION	3.0%
ALPHABET INC	2.1%
META PLATFORMS INC	2.0%
ALPHABET INC	1.7%
TESLA INC	1.7%
BERKSHIRE HATHAWAY INC	1.6%
JPMORGAN CHASE & CO	1.2%
Total	30.7%

RhumbLine S&P 500 Index Equity Characteristics vs S&P 500

	Portfolio Q4-23	Index Q4-23	Portfolio Q3-23
Market Value			
Market Value (\$M)	23.9	--	23.4
Number Of Holdings	504	503	504
Characteristics			
Weighted Avg. Market Cap. (\$B)	715.2	718.0	623.2
Median Market Cap (\$B)	33.2	33.1	30.4
P/E Ratio	24.3	24.3	22.0
Yield	1.5	1.5	1.7
EPS Growth - 5 Yrs.	16.1	16.1	16.7
Price to Book	4.4	4.4	4.2
Sector Distribution			
Energy	3.9	3.8	4.7
Materials	2.4	2.3	2.4
Industrials	8.8	8.7	8.2
Consumer Discretionary	10.8	11.2	10.6
Consumer Staples	6.1	6.6	6.5
Health Care	12.5	12.4	13.2
Financials	13.4	13.2	13.4
Information Technology	28.7	28.3	27.3
Communication Services	8.5	8.8	8.8
Utilities	2.2	2.2	2.3
Real Estate	2.5	2.4	2.4

RhumbLine HEDI | As of December 31, 2023

Account Information	
Account Name	RhumbLine HEDI
Account Structure	Separate Account
Investment Style	Passive
Inception Date	11/01/20
Account Type	US Equity
Benchmark	Russell 1000 HEDI Moderate GR USD
Universe	eV US Large Cap Core Equity Gross

Portfolio Performance Summary							
	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
RhumbLine HEDI	10.0	22.2	9.1	--	--	12.9	Nov-20
<i>Russell 1000 HEDI Moderate GR USD</i>	9.9	22.1	9.2	15.4	12.9	13.0	Nov-20

Top 10 Holdings	
MICROSOFT CORP	6.7%
APPLE INC	6.5%
ALPHABET INC	2.1%
ALPHABET INC	2.0%
AMAZON.COM INC	1.9%
NVIDIA CORPORATION	1.6%
UNITEDHEALTH GROUP INCORPORATED	1.5%
VISA INC	1.3%
MASTERCARD INC	1.2%
BERKSHIRE HATHAWAY INC	1.2%
Total	26.0%

Rhumbline HEDI Characteristics		
	Portfolio Q4-23	Portfolio Q3-23
Market Value		
Market Value (\$M)	23.3	23.3
Number Of Holdings	225	226
Characteristics		
Weighted Avg. Market Cap. (\$B)	618.9	530.9
Median Market Cap (\$B)	37.0	33.6
P/E Ratio	25.8	23.9
Yield	1.5	1.6
EPS Growth - 5 Yrs.	15.0	15.8
Price to Book	5.3	5.0
Sector Distribution		
Energy	1.1	1.4
Materials	2.7	2.8
Industrials	17.7	17.3
Consumer Discretionary	9.4	9.3
Consumer Staples	10.3	10.9
Health Care	12.8	13.2
Financials	13.2	13.3
Information Technology	23.6	22.4
Communication Services	7.4	7.8
Utilities	0.2	0.2
Real Estate	1.6	1.5

Russell 1000 HEDI benchmark characteristic data is unavailable.

Frontier Capital Appreciation | As of December 31, 2023

Account Information

Account Name	Frontier Capital Appreciation
Account Structure	Commingled Fund
Investment Style	Active
Inception Date	2/01/13
Account Type	US Equity
Benchmark	Russell 2500 Growth
Universe	eV US Small-Mid Cap Growth Equity Net

Portfolio Performance Summary

	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Frontier Capital Appreciation	12.3	23.9	6.3	12.8	9.0	11.0	Feb-13
<i>Russell 2500 Growth</i>	<i>12.6</i>	<i>18.9</i>	<i>-2.7</i>	<i>11.4</i>	<i>8.8</i>	<i>10.8</i>	<i>Feb-13</i>

Top 10 Holdings

JABIL INC	2.0%
ATI INC	1.8%
BEACON ROOFING SUPPLY INC	1.7%
MRC GLOBAL INC	1.7%
BUILDERS FIRTSOURCE INC	1.6%
EAGLE MATERIALS INC	1.5%
XPO INC	1.5%
WOLFSPEED INC	1.5%
AZUL SA	1.4%
PLANET FITNESS INC	1.4%
Total	16.0%

Frontier Capital Appreciation Characteristics

	Portfolio Q4-23	Index Q4-23	Portfolio Q3-23
Market Value			
Market Value (\$M)	24.8	--	22.1
Number Of Holdings	140	1262	141
Characteristics			
Weighted Avg. Market Cap. (\$B)	8.8	6.7	7.7
Median Market Cap (\$B)	6.3	1.9	5.0
P/E Ratio	19.3	24.6	17.1
Yield	0.6	0.7	0.7
EPS Growth - 5 Yrs.	18.3	16.0	21.6
Price to Book	2.9	4.9	2.6
Sector Distribution			
Energy	3.6	4.1	4.3
Materials	9.4	3.6	8.9
Industrials	29.5	19.5	28.2
Consumer Discretionary	8.9	13.4	10.5
Consumer Staples	0.6	3.8	0.5
Health Care	12.6	21.1	11.6
Financials	8.3	8.6	8.5
Information Technology	20.2	21.3	20.4
Communication Services	2.6	2.0	2.4
Utilities	0.0	1.1	0.0
Real Estate	1.6	1.6	1.6

Account Information	
Account Name	RhumbLine MSCI EAFE Index
Account Structure	Commingled Fund
Investment Style	Passive
Inception Date	8/01/14
Account Type	Non-US Stock Developed
Benchmark	MSCI EAFE
Universe	eV EAFE All Cap Equity Net

Rhumbline MSCI EAFE Index Characteristics			
	Portfolio Q4-23	Index Q4-23	Portfolio Q3-23
Market Value			
Market Value (\$M)	32.6	--	29.6
Number Of Holdings	765	781	778
Characteristics			
Weighted Avg. Market Cap. (\$B)	90.6	89.2	83.0
Median Market Cap (\$B)	13.1	13.5	11.8
P/E Ratio	14.7	14.5	14.1
Yield	3.2	3.2	3.5
EPS Growth - 5 Yrs.	8.7	8.8	8.4
Price to Book	2.6	2.6	2.4

Portfolio Performance Summary							
	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
RhumbLine MSCI EAFE Index	10.4	18.5	4.3	8.4	--	4.4	Aug-14
MSCI EAFE	10.4	18.2	4.0	8.2	4.3	4.3	Aug-14

Sector Distribution			
Energy	4.4	4.3	4.9
Materials	7.4	7.8	7.3
Industrials	16.5	16.4	15.9
Consumer Discretionary	11.8	11.8	12.1
Consumer Staples	9.1	9.3	9.6
Health Care	12.7	12.7	13.3
Financials	19.0	19.0	19.2
Information Technology	8.4	8.6	7.6
Communication Services	4.1	4.0	4.1
Utilities	3.5	3.5	3.4
Real Estate	2.5	2.5	2.3

Top 10 Holdings	
NOVO NORDISK A/S	2.1%
NESTLE SA, CHAM UND VEVEY	1.9%
ASML HOLDING NV	1.9%
LVMH MOET HENNESSY LOUIS VUITTON SE	1.4%
SHELL PLC	1.3%
ASTRAZENECA PLC	1.3%
NOVARTIS AG	1.3%
ROCHE HOLDING AG	1.3%
TOYOTA MOTOR CORP	1.2%
BHP GROUP LTD	1.1%
Total	14.9%

DFA Emerging Markets | As of December 31, 2023

Account Information	
Account Name	DFA Emerging Markets
Account Structure	Mutual Fund
Investment Style	Active
Inception Date	1/01/15
Account Type	Non-US Stock Emerging
Benchmark	MSCI Emerging Markets
Universe	eV Emg Mkts All Cap Equity Net

Portfolio Performance Summary							
	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
DFA Emerging Markets	7.9	15.5	0.7	6.2	--	4.6	Jan-15
MSCI Emerging Markets	7.9	9.8	-5.1	3.7	2.7	3.2	Jan-15

Top 10 Holdings	
TAIWAN SEMICONDUCTOR MANUFACTURING CO LTD	3.2%
SAMSUNG ELECTRONICS CO LTD	2.7%
TENCENT HOLDINGS LTD	2.5%
TAIWAN SEMICONDUCTOR MANUFACTURING CO LTD	1.3%
ALIBABA GROUP HOLDING LTD	1.0%
PETROLEO BRASILEIRO S.A.- PETROBRAS	0.7%
CHINA CONSTRUCTION BANK CORP	0.6%
SK HYNIX INC	0.6%
INFOSYS LTD	0.6%
RELIANCE INDUSTRIES LTD	0.6%
Total	13.7%

DFA Emerging Markets Characteristics			
	Portfolio Q4-23	Index Q4-23	Portfolio Q3-23
Market Value			
Market Value (\$M)	11.9	--	11.0
Number Of Holdings	6482	1436	6522
Characteristics			
Weighted Avg. Market Cap. (\$B)	70.3	113.9	64.9
Median Market Cap (\$B)	0.6	7.5	0.5
P/E Ratio	11.9	13.0	11.2
Yield	3.2	2.9	3.7
EPS Growth - 5 Yrs.	13.0	11.8	13.5
Price to Book	2.3	2.5	2.2
Sector Distribution			
Energy	5.1	5.1	5.4
Materials	11.2	7.9	11.4
Industrials	10.2	6.8	10.0
Consumer Discretionary	11.5	12.8	11.6
Consumer Staples	6.1	6.0	6.2
Health Care	4.6	3.7	4.5
Financials	17.6	22.4	17.4
Information Technology	20.2	22.1	19.6
Communication Services	7.0	8.8	7.3
Utilities	3.0	2.7	2.9
Real Estate	2.7	1.6	2.8

Account Information

Account Name	Driehaus Emerging Market Equity
Account Structure	Commingled Fund
Investment Style	Active
Inception Date	1/01/15
Account Type	Non-US Stock Emerging
Benchmark	MSCI Emerging Markets
Universe	eV Emg Mkts All Cap Equity Net

Portfolio Performance Summary

	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Driehaus Emerging Market Equity	7.9	11.6	-5.2	6.5	--	5.1	Jan-15
MSCI Emerging Markets	7.9	9.8	-5.1	3.7	2.7	3.2	Jan-15

Top 10 Holdings

SAMSUNG ELECTRONICS CO LTD	6.6%
TAIWAN SEMICONDUCTOR MANUFACTURING CO LTD	6.4%
TENCENT HOLDINGS LTD	5.7%
BANCO DO BRASIL ON	2.1%
SK HYNIX INC	2.0%
GPO FINANCE BANORTE	1.9%
ICICI BANK LTD	1.9%
PT BANK MANDIRI (PERSERO) TBK	1.6%
RELIANCE INDUSTRIES LTD	1.5%
FOMENTO ECONOMICO MEXICAN SAB DE CV	1.4%
Total	31.2%

Driehaus Emerging Market Equity Characteristics

	Portfolio Q4-23	Index Q4-23	Portfolio Q3-23
Market Value			
Market Value (\$M)	10.4	--	9.6
Number Of Holdings	119	1436	121
Characteristics			
Weighted Avg. Market Cap. (\$B)	140.2	113.9	129.4
Median Market Cap (\$B)	17.3	7.5	16.4
P/E Ratio	13.5	13.0	13.2
Yield	2.5	2.9	2.7
EPS Growth - 5 Yrs.	17.3	11.8	16.9
Price to Book	2.6	2.5	2.4
Sector Distribution			
Energy	6.0	5.1	8.1
Materials	3.1	7.9	3.3
Industrials	5.9	6.8	5.9
Consumer Discretionary	8.9	12.8	10.9
Consumer Staples	6.3	6.0	8.3
Health Care	3.8	3.7	4.7
Financials	20.6	22.4	18.1
Information Technology	27.2	22.1	23.1
Communication Services	10.2	8.8	9.7
Utilities	2.8	2.7	3.3
Real Estate	4.5	1.6	3.8

Account Information

Account Name	SSgA U.S. Aggregate Bond Index
Account Structure	Commingled Fund
Investment Style	Passive
Inception Date	5/01/01
Account Type	US Fixed Income Investment Grade
Benchmark	Bloomberg US Aggregate TR
Universe	eV US Core Fixed Inc Net

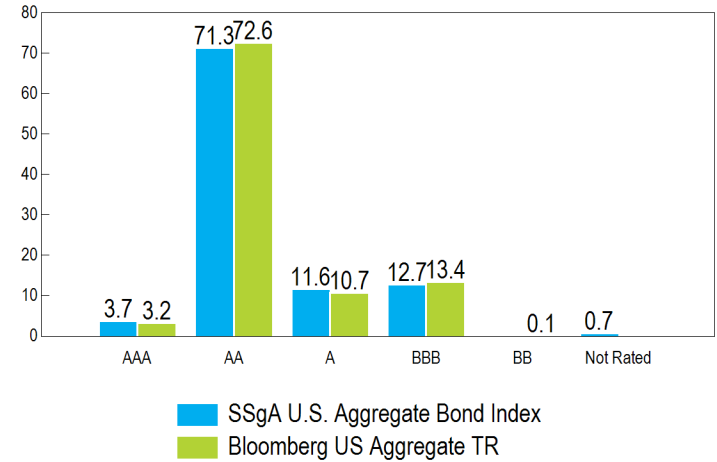
Portfolio Performance Summary

	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
SSgA U.S. Aggregate Bond Index	6.7	5.6	-3.4	1.0	1.8	3.7	May-01
Bloomberg US Aggregate TR	6.8	5.5	-3.3	1.1	1.8	3.7	May-01

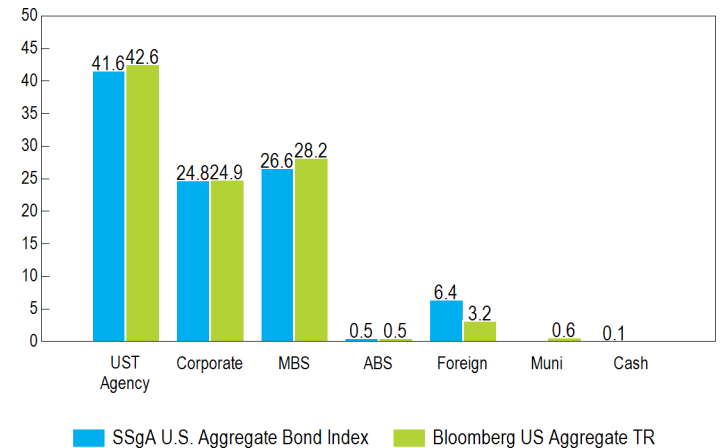
SSgA U.S. Aggregate Bond Index Characteristics vs. Bloomberg US Aggregate TR

	Portfolio Q4-23	Index Q4-23	Portfolio Q3-23
Fixed Income Characteristics			
Yield to Maturity	4.5	4.4	5.4
Average Duration	6.2	6.1	6.1
Average Quality	AA	AA	AA
Weighted Average Maturity	8.6	8.5	8.6

Credit Quality Allocation



Sector Allocation



Shenkman Capital | As of December 31, 2023

Account Information

Account Name	Shenkman Capital
Account Structure	Commingled Fund
Investment Style	Active
Inception Date	4/01/06
Account Type	US Fixed Income High Yield
Benchmark	Bloomberg US High Yield TR
Universe	eV US High Yield Fixed Inc Net

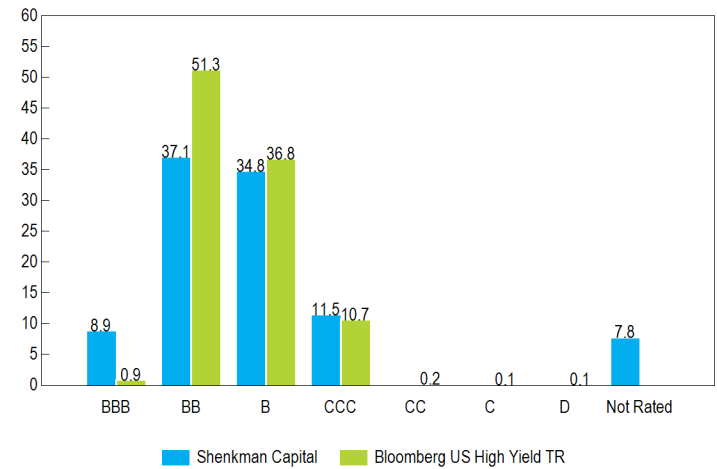
Portfolio Performance Summary

	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Shenkman Capital	5.6	12.4	2.2	5.2	4.3	6.0	Apr-06
Bloomberg US High Yield TR	7.2	13.4	2.0	5.4	4.6	6.5	Apr-06

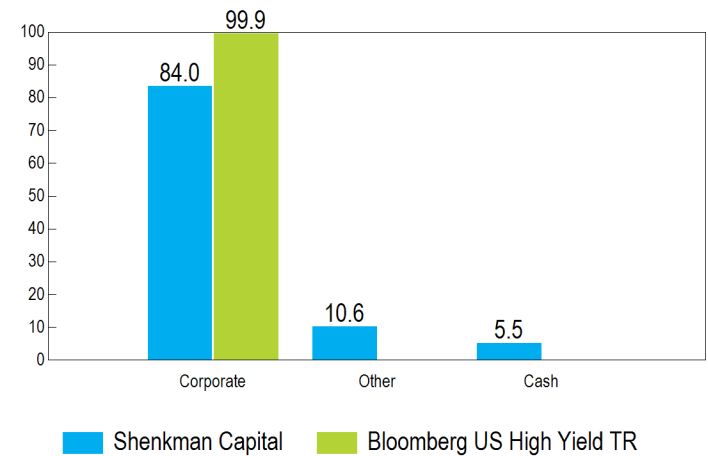
Shenkman Capital Characteristics vs. Bloomberg US High Yield TR

	Portfolio Q4-23	Index Q4-23	Portfolio Q3-23
Fixed Income Characteristics			
Yield to Maturity	7.5	7.7	8.3
Average Duration	2.6	3.9	3.2
Average Quality	BB	B	BB
Weighted Average Maturity	4.7	4.9	4.8

Credit Quality Allocation



Sector Allocation



SSgA TIPS Index-NL | As of December 31, 2023

Account Information

Account Name	SSgA TIPS Index-NL
Account Structure	Commingled Fund
Investment Style	Passive
Inception Date	10/01/05
Account Type	US Inflation Protected Fixed
Benchmark	Bloomberg US TIPS TR
Universe	eV US TIPS / Inflation Fixed Inc Net

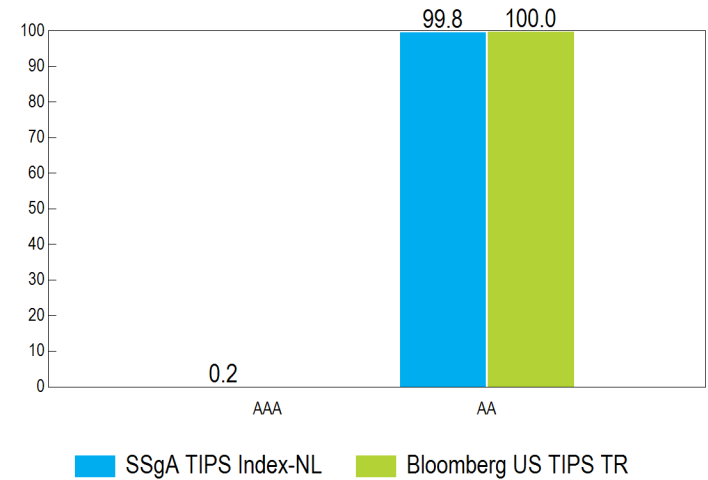
Portfolio Performance Summary

	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
SSgA TIPS Index-NL	4.5	3.8	-1.1	3.0	2.3	3.3	Oct-05
Bloomberg US TIPS TR	4.7	3.9	-1.0	3.2	2.4	3.4	Oct-05

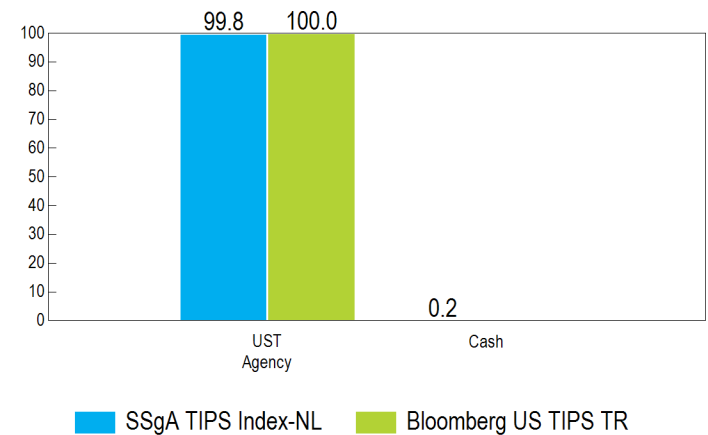
SSgA TIPS Index-NL Characteristics vs. Bloomberg US TIPS TR

	Portfolio Q4-23	Index Q4-23	Portfolio Q3-23
Fixed Income Characteristics			
Yield to Maturity	4.2	4.0	5.0
Average Duration	5.9	6.6	5.0
Average Quality	AAA	AA	AAA
Weighted Average Maturity	7.1	7.1	7.1

Credit Quality Allocation



Sector Allocation



Account Information

Account Name	Payden Emerging Market Bond
Account Structure	Mutual Fund
Investment Style	Active
Inception Date	1/01/15
Account Type	International Emerging Market Debt
Benchmark	JP Morgan EMBI Global Diversified
Universe	

Portfolio Performance Summary

	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Payden Emerging Market Bond	10.2	12.4	-3.2	2.3	--	2.9	Jan-15
JP Morgan EMBI Global Diversified	9.2	11.1	-3.6	1.7	3.2	2.8	Jan-15

Fund Characteristics as of November 30, 2023

Versus JP Morgan EMBI Global Diversified

Sharpe Ratio (3 Year)	-0.5
Average Duration	6.9
Average Coupon	5.9%
Average Effective Maturity	11.9
R-Squared (3 Year)	1.0
Alpha (3 Year)	0.1%
Beta (3 Year)	1.1

Payden Emerging Market Bond Characteristics vs. JP Morgan EMBI Global Diversified

	Portfolio Q4-23	Index Q4-23	Portfolio Q3-23
Fixed Income Characteristics			
Yield to Maturity	9.3	7.4	10.3
Average Duration	6.7	6.8	6.7
Average Quality	BB	BB	BB
Weighted Average Maturity	12.3	11.5	12.1

Fixed Income Sectors as of November 30, 2023

GOVERNMENT	64.8%
MUNICIPAL	0.0%
CORPORATE	13.1%
SECURITIZED	0.3%
CASH & EQUIVALENTS	5.1%
DERIVATIVE	16.7%

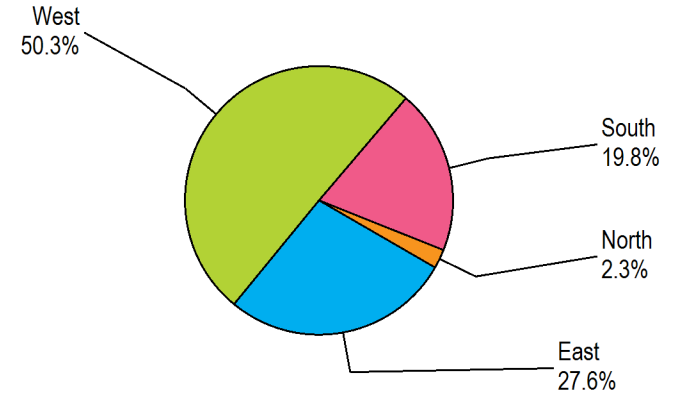
Credit Quality as of December 31, 2023

AAA	3.0%
AA	6.0%
A	10.0%
BBB	29.0%
BB	28.0%
B	15.0%
Below B	9.0%
Not Rated	0.0%

Account Information

Account Name	Clarion Partners
Account Structure	Commingled Fund
Investment Style	Active
Inception Date	10/01/02
Account Type	Real Estate
Benchmark	NCREIF ODCE
Universe	

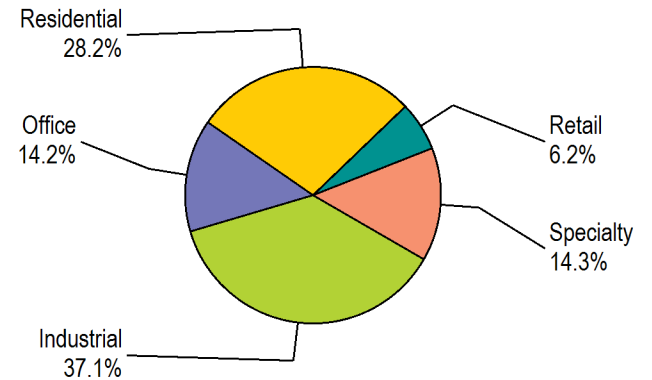
Geographic Diversification



Portfolio Performance Summary

	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Clarion Partners	-4.4	-15.5	4.6	4.6	7.7	6.7	Oct-02
NCREIF ODCE	-4.8	-12.0	4.9	4.2	7.3	7.3	Oct-02

Property Type Allocation

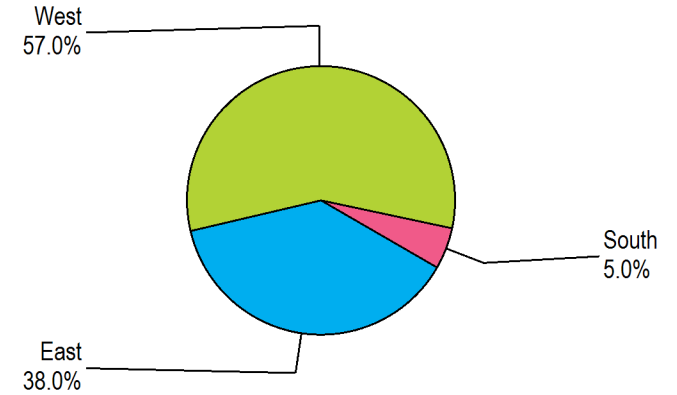


Clarion Partners characteristics are as of 9/30/2023.

Account Information

Account Name	Rockwood Capital Real Estate Partners Fund XI, L.P.
Account Structure	Other
Investment Style	Passive
Inception Date	12/01/19
Account Type	Real Estate
Benchmark	NCREIF-ODCE
Universe	

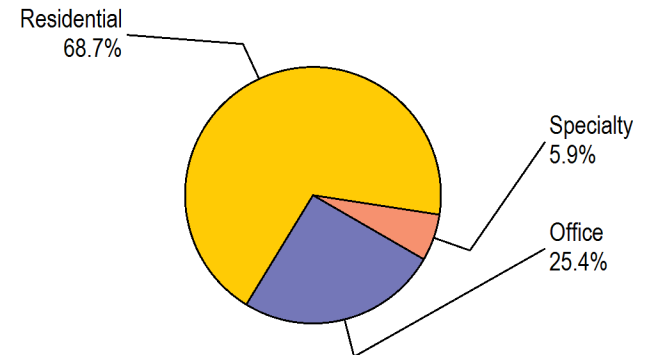
Geographic Diversification



Portfolio Performance Summary

	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Rockwood Capital Real Estate Partners Fund XI, L.P.	-3.0	-12.7	3.2	--	--	2.3	Dec-19
NCREIF-ODCE	-4.8	-12.0	4.9	4.2	7.3	4.3	Dec-19

Property Type Allocation



Rockwood Real Estate characteristics are as of 9/30/2023.

Non-Marketable Securities Overview						
As of December 31, 2023						
Account	Vintage Year	Commitment	Cumulative Takedown	Cumulative Distributions	Value (RV)	IRR (%)
North American Strategic Partners 2006	2006	\$4,539,998	\$4,411,659	\$2,094,251	\$14,091	6.4
Ironsides Partnership Fund IV	2015	\$2,500,000	\$1,544,324	\$1,738,376	\$2,445,265	28.7
Ironsides Direct Investment Fund IV	2015	\$2,500,000	\$2,419,534	\$3,126,965	\$1,262,130	18.4
Ironsides Partnership Fund V, L.P.	2019	\$2,000,000	\$1,591,789	\$0	\$2,324,122	24.2
Ironsides Direct Investment Fund V, L.P.	2019	\$2,000,000	\$2,730,292	\$436,888	\$3,468,379	17.9
HarbourVest 2019 Global Fund	2019	\$4,000,000	\$2,927,632	\$564,538	\$3,866,161	23.5
Total Account		\$17,539,998	\$15,625,230	\$3,772,515	\$13,380,147	

IRRs are as of 9/30/2023. Exceptions include North American Strategic Partners 2006 which is as of 12/31/2022

Non-Marketable Securities Overview							
As of December 31, 2023							
Account Type	Account	Vintage Year	Commitment	Cumulative Takedown	Cumulative Distributions	Value (RV)	IRR (%)
Private Debt	NB Private Debt Fund IV	2021	\$5,000,000	\$4,750,000	\$1,310,900	\$4,039,366	--
	Total Account		\$5,000,000	\$4,750,000	\$1,310,900	\$4,039,366	

IRRs for investments less than 2 years are not shown.

Annual Investment Expense Analysis				
As Of December 31, 2023				
Name	Fee Schedule	Market Value	Estimated Fee Value	Estimated Fee
Equity Assets		\$126,880,911		
Domestic Equity Assets		\$71,976,348		
RhumbLine S&P 500 Index	0.07% of First 25.0 Mil, 0.05% of Next 25.0 Mil, 0.04% Thereafter	\$23,857,193	\$16,700	0.07%
Frontier Capital Appreciation	0.79% of Assets	\$24,791,556	\$195,853	0.79%
RhumbLine HEDI	0.05% of Assets	\$23,327,599	\$11,664	0.05%
International Equity Assets		\$54,904,562		
International Developed Markets Equity Assets		\$32,640,093		
RhumbLine MSCI EAFE Index	0.08% of First 25.0 Mil, 0.07% of Next 25.0 Mil, 0.05% Thereafter	\$32,640,093	\$25,348	0.08%
International Emerging Markets Equity Assets		\$22,264,469		
DFA Emerging Markets	0.39% of Assets	\$11,851,838	\$46,222	0.39%
Driehaus Emerging Market Equity	0.90% of Assets	\$10,412,631	\$93,714	0.90%
Fixed Income Assets		\$62,283,690		
Investment Grade Bonds Assets		\$26,152,301		
SSgA U.S. Aggregate Bond Index	0.04% of Assets	\$26,152,301	\$10,461	0.04%
High Yield Bond Assets		\$19,052,960		
Shenkman Capital	0.45% of Assets	\$19,052,960	\$85,738	0.45%
TIPS Assets		\$11,703,996		
SSgA TIPS Index-NL	0.04% of Assets	\$11,703,996	\$4,682	0.04%
Emerging Market Debt Assets		\$5,374,433		
Payden Emerging Market Bond	0.69% of Assets	\$5,374,433	\$37,084	0.69%
Real Estate Assets		\$9,723,077		
Open-Ended Real Estate		\$5,882,190		
Clarion Partners	1.10% of Assets	\$5,882,190	\$64,704	1.10%

Name	Fee Schedule	Market Value	Estimated Fee Value	Estimated Fee
Total Closed End Real Estate		\$3,840,887		
Rockwood Capital Real Estate Partners Fund XI, L.P.	1.4% of committed capital during investment period; 1.4% on invested equity thereafter	\$3,840,887		
Private Equity Assets		\$13,380,147		
North American Strategic Partners 2006	0.8% on drawn and undrawn capital less investments sold or written off 5% carried interest, 8% preferred return	\$14,091		
Ironsides Partnership Fund IV	0% Management fee, 8% Preferred Return, 5% Carried Interest	\$2,445,265		
Ironsides Direct Investment Fund IV	0.5% Management fee, 8% Preferred Return, 15% Carried Interest	\$1,262,130		
Ironsides Partnership Fund V, L.P.		\$2,324,122		
Ironsides Direct Investment Fund V, L.P.	0.5% Management fee, 8% preferred return, 15% carried interest	\$3,468,379		
HarbourVest 2019 Global Fund	0.69% average annual management fee; 8.0% preferred return on secondary and direct investments and with corresponding carried interest of 12.5% on secondary and direct investments	\$3,866,161		
Private Debt Assets		\$4,039,366		
NB Private Debt Fund IV	1.0% on invested capital	\$4,039,366		
Infrastructure		\$11,151,478		
IFM Global Infrastructure	0.77% Management fee, 8% Preferred Return, 10% Carried Interest	\$11,151,478		
Cash		\$215,662		
EB Temporary Investment Fund		\$215,662		
Total		\$227,674,331	\$592,170	0.26%

Meketa has negotiated a 50% discount on fees for NB Private Debt Fund IV through June 2022. After June 2022, depending on Meketa's aggregate investment, the fee will become 0.7% or return to 1%.

Current Issues

Asset Allocation Update

2024 Capital Markets Expectations

Summary of Capital Markets Expectations

- We update our capital markets expectations each year in January.
 - Changes are driven by many factors, including interest rates, credit spreads, cap rates, and equity prices.
- 2023 was a volatile year for most investors, but ultimately most asset classes experienced positive returns, including double-digit gains for many risky assets.
- With the notable exception of China's markets, global bond and equity markets rallied at the end of the year, posting strong gains as inflation pressures eased and central banks appeared to be turning away from tightening policies.
 - Despite short-term interest rates climbing, the yield on most Treasury bonds finished the year near where they started it.
 - Credit spreads tightened, especially for lower quality credit such as high yield. The result is lower expected returns for many credit-oriented assets.
 - Most equity markets rallied in 2023, generally at a much faster pace than the gain in earnings. Hence many equity markets were trading at higher valuations at year-end, thus reducing their forward-looking returns.
- Our 10-year CMEs continue to be lower than our 20-year CMEs for the vast majority of asset classes, partly due to a higher assumed "risk-free" rate in the future.
- The net result is a meaningful decrease in return assumptions for most assets over the 10-year horizon, with much more mixed and modest changes at the 20-year horizon.

20-year Geometric Expected Returns
Rate Sensitive

	2024 E(R) (%)	2023 E(R) (%)	Δ From 2023 (%)	Notes
Cash Equivalents	2.5	2.9	-0.4	Lower projected short-term rates
Short-term Investment Grade Bonds	3.7	3.5	0.2	
Investment Grade (Core) Bonds	4.8	4.7	0.1	
Intermediate Government Bonds	4.1	3.7	0.4	Slightly higher yields
Long-term Government Bonds	5.0	5.0	0.0	
Mortgage Backed Securities	4.9	4.6	0.3	
Investment Grade Corporate Bonds	5.4	5.4	0.0	
Long-term Corporate Bonds	6.0	5.7	0.3	
Short-term TIPS	3.7	3.6	0.1	
TIPS	4.7	4.5	0.2	
Long-term TIPS	5.2	5.2	0.0	
Global ILBs	4.7	4.7	0.0	
Foreign Bonds	3.9	4.0	-0.1	Slightly lower yields
<i>US Inflation</i>	2.8	2.6	0.2	Higher long-term inflation expectations

20-year Geometric Expected Returns
Credit

	2024 E(R) (%)	2023 E(R) (%)	Δ From 2023 (%)	Notes
High Yield Bonds	6.8	7.3	-0.5	Tighter spreads
Higher Quality High Yield	6.4	6.7	-0.3	Tighter spreads
Bank Loans	6.6	7.0	-0.4	Tighter spreads
Collateralized Loan Obligations (CLOs)	7.2	7.2	0.0	
Convertible Bonds	6.2	6.4	-0.2	Tighter spreads
Emerging Market Bonds (major)	6.8	6.4	0.4	Higher yields
Emerging Market Bonds (local)	6.2	6.0	0.2	
Private Debt	9.2	9.0	0.2	
Direct Lending	8.4	8.3	0.1	Lower assumed leverage
Asset Based Lending	9.4	9.0	0.4	Lower average fees
Special Situations Lending	9.9	10.2	-0.3	Less extreme distressed pricing

20-year Geometric Expected Returns
Equities

	2024 E(R) (%)	2023 E(R) (%)	Δ From 2023 (%)	Notes
US Equity	8.5	8.7	-0.2	Higher valuations
US Small Cap	9.4	9.3	0.1	
Developed Non-US (EAFE) Equity	8.9	9.8	-0.9	Higher valuations, lower projected earnings growth
Dev. Non-US Small Cap	9.5	10.1	-0.6	Higher valuations
Emerging Market Equity	8.9	10.0	-1.1	Higher valuations, lower projected earnings growth
Emerging Market Small Cap	8.9	10.0	-1.1	Higher valuations, lower dividend yields
Emerging Market ex-China	9.0	10.3	-1.3	Higher valuations, lower projected earnings growth
China Equity	8.6	9.3	-0.7	Lower projected earnings growth
Frontier Market Equity	10.0	10.7	-0.7	Higher valuations, lower projected growth & dividends
Global Equity	8.7	9.2	-0.5	Higher valuations
Low Volatility Equity	7.8	8.3	-0.5	Higher valuations
Private Equity	11.2	11.0	0.2	Mixed valuations and slightly lower borrowing costs
Buyouts	10.8	10.7	0.1	Mixed valuations and slightly lower borrowing costs
Growth Equity	11.5	11.2	0.3	Mixed valuations and slightly lower borrowing costs
Venture Capital	12.0	11.6	0.4	Lower valuations

20-year Geometric Expected Returns
Real Estate & Infrastructure

	2024 E(R) (%)	2023 E(R) (%)	Δ From 2023 (%)	Notes
Real Estate	8.0	7.8	0.2	Higher cap rates
US REITs	7.8	8.0	-0.2	Lower yields
Core Private Real Estate	6.9	6.5	0.4	Higher cap rates
Value-Added Real Estate	9.0	8.3	0.7	Higher cap rates
Opportunistic Real Estate	10.3	9.6	0.7	Higher cap rates
Infrastructure	9.0	8.3	0.7	Lower borrowing costs, model changes
Infrastructure (Public)	9.1	8.8	0.3	
Infrastructure (Core Private)	8.0	7.8	0.2	
Infrastructure (Non-Core Private)	10.0	9.5	0.5	Lower borrowing costs

2023 Peer Survey

- Annually, Horizon Actuarial Services, LLC publishes a survey of capital market assumptions that they collect from various investment advisors.¹
- The Horizon survey is a useful tool to determine whether a consultant’s expectations for returns (and risk) are reasonable.

Asset Class	Horizon 10-Year		Horizon 20-Year	
	Average (%)	Meketa 10-Year (%)	Average (%)	Meketa 20-Year (%)
Cash Equivalents	3.4	3.1	3.2	2.9
TIPS	4.1	4.3	4.1	4.5
US Core Bonds	4.7	4.8	4.8	4.7
US High Yield Bonds	6.4	8.0	6.5	7.3
Emerging Market Debt	6.3	6.5	6.4	6.2
Private Debt	8.2	9.4	8.2	9.0
US Equity (large cap)	6.9	7.8	7.4	8.7
Developed Non-US Equity	7.5	10.1	7.8	9.8
Emerging Non-US Equity	8.2	10.3	8.6	10.0
Private Equity	9.5	9.7	10.1	11.0
Real Estate	6.0	5.9	6.3	7.8
Infrastructure	7.0	6.9	7.1	8.3
Commodities	5.0	6.3	4.9	5.7
Hedge Funds	6.0	5.4	6.2	6.1
Inflation	2.6	2.5	2.5	2.6

¹ The 10-year horizon included all 42 respondents to the survey, and the 20-year horizon included 27 respondents. Figures are based on Meketa’s 2023 CMEs.

Expected System Returns Over Time

Asset Allocation Policy Options

	Current Policy (2023 CME) (%)	Current Policy (2024 CME) (%)	Actual Allocation (2023 CME) (%)	Actual Allocation (2024 CME) (%)
Growth/Equity	65	65	62	62
US Equity	10	10	32	32
US Small Cap	10	10	0	0
Developed Market Equity (non-US)	15	15	14	14
Developed Market Small Cap	5	5	0	0
Emerging Market Equity	10	10	10	10
Private Equity	15	15	6	6
Credit	15	15	12	12
High Yield Bonds	5	5	8	8
Private Debt	5	5	2	2
Emerging Market Bonds (major)	5	5	2	2
Rate Sensitive	10	10	17	17
Investment Grade Bonds	5	5	12	12
TIPS	5	5	5	5
Real Assets	10	10	9	9
Real Estate	5	5	4	4
Infrastructure (Core Private)	5	5	5	5
Expected Return (20 years)	9.3	9.0	8.6	8.3
Sharpe Ratio	0.41	0.44	0.42	0.44
Standard Deviation	15.5	14.9	13.7	13.1
Probability of Achieving 7.5% over 20 Years	69.7	67.5	64.1	60.4

MVO Risk Analysis

MPT-Based Risk Analysis

Scenario	Current Policy (2024 CME) (%)	Actual Allocation (2024 CME) (%)
Worst Case Returns ¹		
OneYear (annualized)	-20.4	-18.1
ThreeYears (annualized)	-9.1	-7.8
FiveYears (annualized)	-5.3	-4.4
TenYears (annualized)	-1.3	-0.9
TwentyYears (annualized)	1.6	1.7
Probability of Experiencing Negative Returns		
OneYear	26.2	25.4
ThreeYears	13.5	12.6
FiveYears	7.7	6.9
TenYears	2.2	1.8
TwentyYears	0.2	0.2
Probability of Achieving at least a 7.5% Return		
OneYear	54.0	52.3
ThreeYears	57.0	54.1
FiveYears	59.0	55.2
TenYears	62.6	57.4
TwentyYears	67.5	60.4

¹ "Worst Case Returns" refers to the 99.7th percentile return.

Notes and Disclaimers

- ¹ The returns shown in the Policy Options and Risk Analysis sections rely on estimates of expected return, standard deviation, and correlation developed by Meketa Investment Group. To the extent that actual return patterns to the asset classes differ from our expectations, the results in the table will be incorrect. However, our inputs represent our best unbiased estimates of these simple parameters.
- ² The returns shown in the Policy Options and Risk Analysis sections use a lognormal distribution, which may or may not be an accurate representation of each asset classes' future return distribution. To the extent that it is not accurate in whole or in part, the probabilities listed in the table will be incorrect. As an example, if some asset classes' actual distributions are even more right-skewed than the lognormal distribution (i.e., more frequent low returns and less frequent high returns), then the probability of the portfolio hitting a given annual return will be lower than that stated in the table.
- ³ The standard deviation bars in the chart in the Risk Analysis section do not indicate the likelihood of a 1, 2, or 3 standard deviation event—they simply indicate the return we expect if such an event occurs. Since the likelihood of such an event is the same across allocations regardless of the underlying distribution, a relative comparison across policy choices remains valid.

Manager Due Diligence Agenda

MARLBOROUGH RETIREMENT SYSTEM

Manager Due Diligence Meetings
Tuesday, March 26, 2024

I. Manager Due Diligence Presentations

8:45 – 9:15 a.m.

Manager/Product	Asset Class	Phone Number
Rhumblin	Passive Index	617-257-1883
<i>S&P 500 Index</i>		
<i>Russell 1000 HEDI Index</i>		
<i>MSCI EAFE Index</i>		
SSGA	Passive Index	908-591-2934
<i>US Aggregate Bond Index</i>		
<i>US TIPS Index</i>		
Payden & Rygel	Emerging Markets Debt	617-807-1994
<i>Emerging Market Bond</i>		

Appendix

Disclaimer, Glossary, and Notes

WE HAVE PREPARED THIS REPORT (THIS "REPORT") FOR THE SOLE BENEFIT OF THE INTENDED RECIPIENT (THE "RECIPIENT").

SIGNIFICANT EVENTS MAY OCCUR (OR HAVE OCCURRED) AFTER THE DATE OF THIS REPORT AND THAT IT IS NOT OUR FUNCTION OR RESPONSIBILITY TO UPDATE THIS REPORT. ANY OPINIONS OR RECOMMENDATIONS PRESENTED HEREIN REPRESENT OUR GOOD FAITH VIEWS AS OF THE DATE OF THIS REPORT AND ARE SUBJECT TO CHANGE AT ANY TIME. ALL INVESTMENTS INVOLVE RISK. THERE CAN BE NO GUARANTEE THAT THE STRATEGIES, TACTICS, AND METHODS DISCUSSED HERE WILL BE SUCCESSFUL.

INFORMATION USED TO PREPARE THIS REPORT WAS OBTAINED FROM INVESTMENT MANAGERS, CUSTODIANS, AND OTHER EXTERNAL SOURCES. WHILE WE HAVE EXERCISED REASONABLE CARE IN PREPARING THIS REPORT, WE CANNOT GUARANTEE THE ACCURACY OF ALL SOURCE INFORMATION CONTAINED HEREIN.

CERTAIN INFORMATION CONTAINED IN THIS REPORT MAY CONSTITUTE "FORWARD - LOOKING STATEMENTS," WHICH CAN BE IDENTIFIED BY THE USE OF TERMINOLOGY SUCH AS "MAY," "WILL," "SHOULD," "EXPECT," "AIM," "ANTICIPATE," "TARGET," "PROJECT," "ESTIMATE," "INTEND," "CONTINUE" OR "BELIEVE," OR THE NEGATIVES THEREOF OR OTHER VARIATIONS THEREON OR COMPARABLE TERMINOLOGY. ANY FORWARD-LOOKING STATEMENTS, FORECASTS, PROJECTIONS, VALUATIONS, OR RESULTS IN THIS PRESENTATION ARE BASED UPON CURRENT ASSUMPTIONS. CHANGES TO ANY ASSUMPTIONS MAY HAVE A MATERIAL IMPACT ON FORWARD - LOOKING STATEMENTS, FORECASTS, PROJECTIONS, VALUATIONS, OR RESULTS. ACTUAL RESULTS MAY THEREFORE BE MATERIALLY DIFFERENT FROM ANY FORECASTS, PROJECTIONS, VALUATIONS, OR RESULTS IN THIS PRESENTATION.

PERFORMANCE DATA CONTAINED HEREIN REPRESENT PAST PERFORMANCE. PAST PERFORMANCE IS NO GUARANTEE OF FUTURE RESULTS.

Credit Risk: Refers to the risk that the issuer of a fixed income security may default (i.e., the issuer will be unable to make timely principal and/or interest payments on the security).

Duration: Measure of the sensitivity of the price of a bond to a change in its yield to maturity. Duration summarizes, in a single number, the characteristics that cause bond prices to change in response to a change in interest rates. For example, the price of a bond with a duration of three years will rise by approximately 3% for each 1% decrease in its yield to maturity. Conversely, the price will decrease 3% for each 1% increase in the bond's yield. Price changes for two different bonds can be compared using duration. A bond with a duration of six years will exhibit twice the percentage price change of a bond with a three-year duration. The actual calculation of a bond's duration is somewhat complicated, but the idea behind the calculation is straightforward. The first step is to measure the time interval until receipt for each cash flow (coupon and principal payments) from a bond. The second step is to compute a weighted average of these time intervals. Each time interval is measured by the present value of that cash flow. This weighted average is the duration of the bond measured in years.

Information Ratio: This statistic is a measure of the consistency of a portfolio's performance relative to a benchmark. It is calculated by subtracting the benchmark return from the portfolio return (excess return), and dividing the resulting excess return by the standard deviation (volatility) of this excess return. A positive information ratio indicates outperformance versus the benchmark, and the higher the information ratio, the more consistent the outperformance.

Jensen's Alpha: A measure of the average return of a portfolio or investment in excess of what is predicted by its beta or "market" risk. $\text{Portfolio Return} - [\text{Risk Free Rate} + \text{Beta} * (\text{market return} - \text{Risk Free Rate})]$.

Market Capitalization: For a firm, market capitalization is the total market value of outstanding common stock. For a portfolio, market capitalization is the sum of the capitalization of each company weighted by the ratio of holdings in that company to total portfolio holdings; thus it is a weighted-average capitalization. Meketa Investment Group considers the largest 65% of the broad domestic equity market as large capitalization, the next 25% of the market as medium capitalization, and the smallest 10% of stocks as small capitalization.

Market Weighted: Stocks in many indices are weighted based on the total market capitalization of the issue. Thus, the individual returns of higher market-capitalization issues will more heavily influence an index's return than the returns of the smaller market-capitalization issues in the index.

Maturity: The date on which a loan, bond, mortgage, or other debt/security becomes due and is to be paid off.

Prepayment Risk: The risk that prepayments will increase (homeowners will prepay all or part of their mortgage) when mortgage interest rates decline; hence, investors' monies will be returned to them in a lower interest rate environment. Also, the risk that prepayments will slow down when mortgage interest rates rise; hence, investors will not have as much money as previously anticipated in a higher interest rate environment. A prepayment is any payment in excess of the scheduled mortgage payment.

Price-Book Value (P/B) Ratio: The current market price of a stock divided by its book value per share. Meketa Investment Group calculates P/B as the current price divided by Compustat's quarterly common equity. Common equity includes common stock, capital surplus, retained earnings, and treasury stock adjusted for both common and nonredeemable preferred stock. Similar to high P/E stocks, stocks with high P/B's tend to be riskier investments.

Price-Earnings (P/E) Ratio: A stock's market price divided by its current or estimated future earnings. Lower P/E ratios often characterize stocks in low growth or mature industries, stocks in groups that have fallen out of favor, or stocks of established blue chip companies with long records of stable earnings and regular dividends. Sometimes a company that has good fundamentals may be viewed unfavorably by the market if it is an industry that is temporarily out of favor. Or a business may have experienced financial problems causing investors to be skeptical about its future. Either of these situations would result in lower relative P/E ratios. Some stocks exhibit above-average sales and earnings growth or expectations for above average growth. Consequently, investors are willing to pay more for these companies' earnings, which results in elevated P/E ratios. In other words, investors will pay more for shares of companies whose profits, in their opinion, are expected to increase faster than average. Because future events are in no way assured, high P/E stocks tend to be riskier and more volatile investments. Meketa Investment Group calculates P/E as the current price divided by the I/B/E/S consensus of twelve-month forecast earnings per share.

Quality Rating: The rank assigned a security by such rating services as Fitch, Moody's, and Standard & Poor's. The rating may be determined by such factors as (1) the likelihood of fulfillment of dividend, income, and principal payment of obligations; (2) the nature and provisions of the issue; and (3) the security's relative position in the event of liquidation of the company. Bonds assigned the top four grades (AAA, AA, A, BBB) are considered investment grade because they are eligible bank investments as determined by the controller of the currency.

Sharpe Ratio: A commonly used measure of risk-adjusted return. It is calculated by subtracting the risk free return (usually three-month Treasury bill) from the portfolio return and dividing the resulting excess return by the portfolio's total risk level (standard deviation). The result is a measure of return per unit of total risk taken. The higher the Sharpe ratio, the better the fund's historical risk adjusted performance.

STIF Account: Short-term investment fund at a custodian bank that invests in cash-equivalent instruments. It is generally used to safely invest the excess cash held by portfolio managers.

Standard Deviation: A measure of the total risk of an asset or a portfolio. Standard deviation measures the dispersion of a set of numbers around a central point (e.g., the average return). If the standard deviation is small, the distribution is concentrated within a narrow range of values. For a normal distribution, about two thirds of the observations will fall within one standard deviation of the mean, and 95% of the observations will fall within two standard deviations of the mean.

Style: The description of the type of approach and strategy utilized by an investment manager to manage funds. For example, the style for equities is determined by portfolio characteristics such as price-to-book value, price-to-earnings ratio, and dividend yield. Equity styles include growth, value, and core.

Tracking Error: A divergence between the price behavior of a position or a portfolio and the price behavior of a benchmark, as defined by the difference in standard deviation.

Yield to Maturity: The yield, or return, provided by a bond to its maturity date; determined by a mathematical process, usually requiring the use of a “basis book.” For example, a 5% bond pays \$5 a year interest on each \$100 par value. To figure its current yield, divide \$5 by \$95—the market price of the bond—and you get 5.26%. Assume that the same bond is due to mature in five years. On the maturity date, the issuer is pledged to pay \$100 for the bond that can be bought now for \$95. In other words, the bond is selling at a discount of 5% below par value. To figure yield to maturity, a simple and approximate method is to divide 5% by the five years to maturity, which equals 1% pro rata yearly. Add that 1% to the 5.26% current yield, and the yield to maturity is roughly 6.26%.

$$\frac{5\% \text{ (discount)}}{5 \text{ (yrs. to maturity)}} = 1\% \text{ pro rata, plus } 5.26\% \text{ (current yield)} = 6.26\% \text{ (yield to maturity)}$$

Yield to Worst: The lowest potential yield that can be received on a bond without the issuer actually defaulting. The yield to worst is calculated by making worst-case scenario assumptions on the issue by calculating the returns that would be received if provisions, including prepayment, call, or sinking fund, are used by the issuer.

NCREIF Property Index (NPI): Measures unleveraged investment performance of a very large pool of individual commercial real estate properties acquired in the private market by tax-exempt institutional investors for investment purposes only. The NPI index is capitalization-weighted for a quarterly time series composite total rate of return.

NCREIF Fund Index - Open End Diversified Core Equity (NFI-ODCE): Measures the investment performance of 28 open-end commingled funds pursuing a core investment strategy that reflects funds' leverage and cash positions. The NFI-ODCE index is equal-weighted and is reported gross and net of fees for a quarterly time series composite total rate of return.

Sources: [Investment Terminology](#), International Foundation of Employee Benefit Plans, 1999.

[The Handbook of Fixed Income Securities](#), Fabozzi, Frank J., 1991

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Throughout this report, numbers may not sum due to rounding.

Returns for periods greater than one year are annualized throughout this report.

Values shown are in millions of dollars, unless noted otherwise.