MEKETA
INVESTMENT GROUP

City of Marlborough
Contributory Retirement System

Meeting Materials
July 30, 2024

Fund Evaluation Report

Agenda

1. Economic and Market Update as of June 30, 2024
2. Performance Update as of June 30, 2024
3. Current Issues
   - Manager Due Diligence Agenda
   - Emerging Market Equity RFP Respondent Review
   - Emerging Market Debt Equity RFP Respondent Review
4. Appendix

Economic and Market Update

As of June 30, 2024

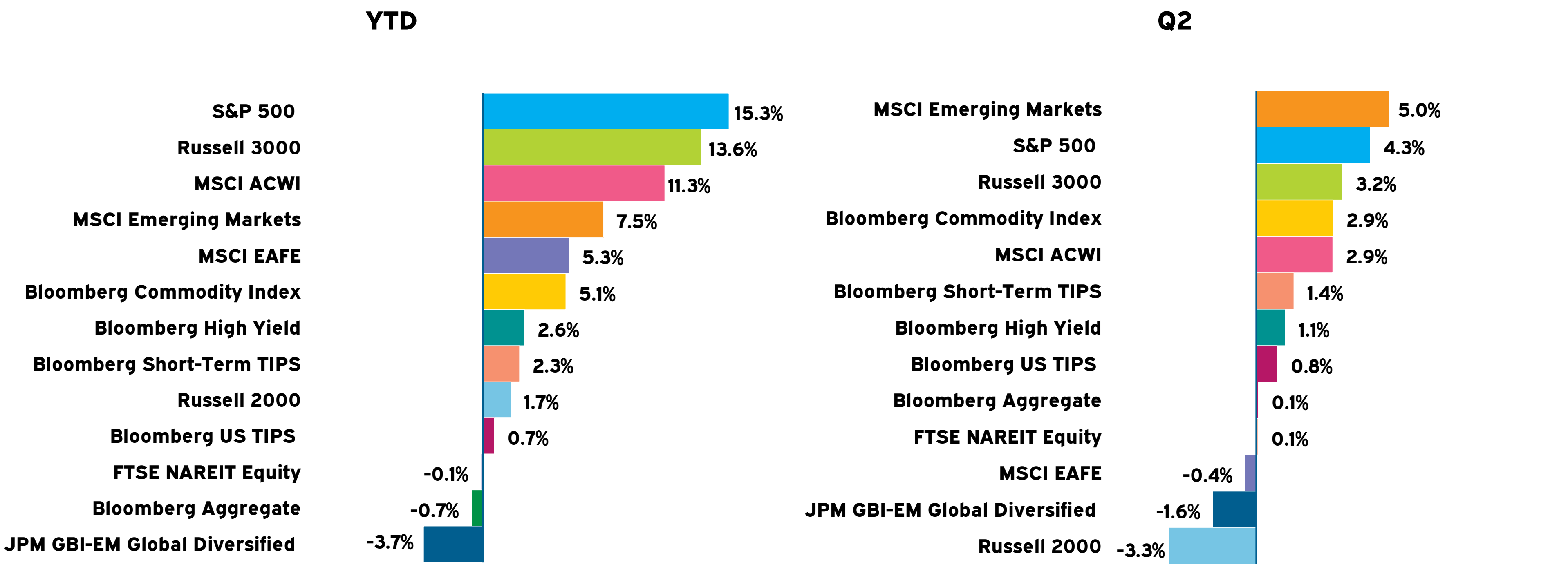
Commentary

→ Softening economic data, increased hopes of interest rate cuts, and ongoing AI optimism drove most asset classes higher in the second quarter.

- While the Fed remains data dependent, improvements in inflation and a cooling labor market may clear the way for several rate cuts this year.
- Inflation pressures have eased in most countries from their pandemic peaks, but some uncertainty remains and levels are still above most central bank targets. In the second quarter, headline and core inflation measures in the US both fell, with most readings coming in below expectations.
- The US equity markets (Russell 3000 index) added to its gains in the second quarter, rising 3.2%. Technology continued to drive results in the quarter due to AI demand and investment.
- Non-US developed equity markets fell in the second quarter (-0.4%) on continued strength in the US dollar and political uncertainty in Europe.
- Emerging market equities rallied (5.0%), for the quarter. Chinese stocks were up 7.1% as coordinated buying of Chinese exchange traded funds (ETFs) by state-backed financial services companies helped boost stock prices.
- US interest rates rose over the quarter but finished off their highs. Income offset capital losses though, leading to the broad US bond market rising 0.1% in the second quarter.

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

Index Returns[1]



→ Declining inflation, resilient growth, and strong corporate earnings supported most asset classes in the second quarter.

→ Mid-way through 2024, US stocks have significantly outperformed other asset classes on a year-to-date basis.

[1] Source: Bloomberg. Data is as of June 30, 2024.

Domestic Equity Returns[1]

Domestic Equity	June (%)	Q2 (%)	YTD (%)	1 YR (%)	3 YR (%)	5 YR (%)	10 YR (%)
S&P 500	3.6	4.3	15.3	24.6	10.0	15.1	12.9
Russell 3000	3.1	3.2	13.6	23.1	8.1	14.2	12.1
Russell 1000	3.3	3.6	14.2	23.9	8.8	14.6	12.5
Russell 1000 Growth	6.7	8.3	20.7	33.5	11.3	19.4	16.3
Russell 1000 Value	-0.9	-2.2	6.6	13.1	5.5	9.0	8.2
Russell MidCap	-0.7	-3.3	5.0	12.9	2.4	9.5	9.0
Russell MidCap Growth	1.7	-3.2	6.0	15.1	-0.1	9.9	10.5
Russell MidCap Value	-1.6	-3.4	4.5	12.0	3.7	8.5	7.6
Russell 2000	-0.9	-3.3	1.7	10.1	-2.6	6.9	7.0
Russell 2000 Growth	-0.2	-2.9	4.4	9.1	-4.9	6.2	7.4
Russell 2000 Value	-1.7	-3.6	-0.8	10.9	-0.5	7.1	6.2

US Equities: The Russell 3000 rose 3.2% in the second quarter, bringing the year-to-date results to 13.6%.

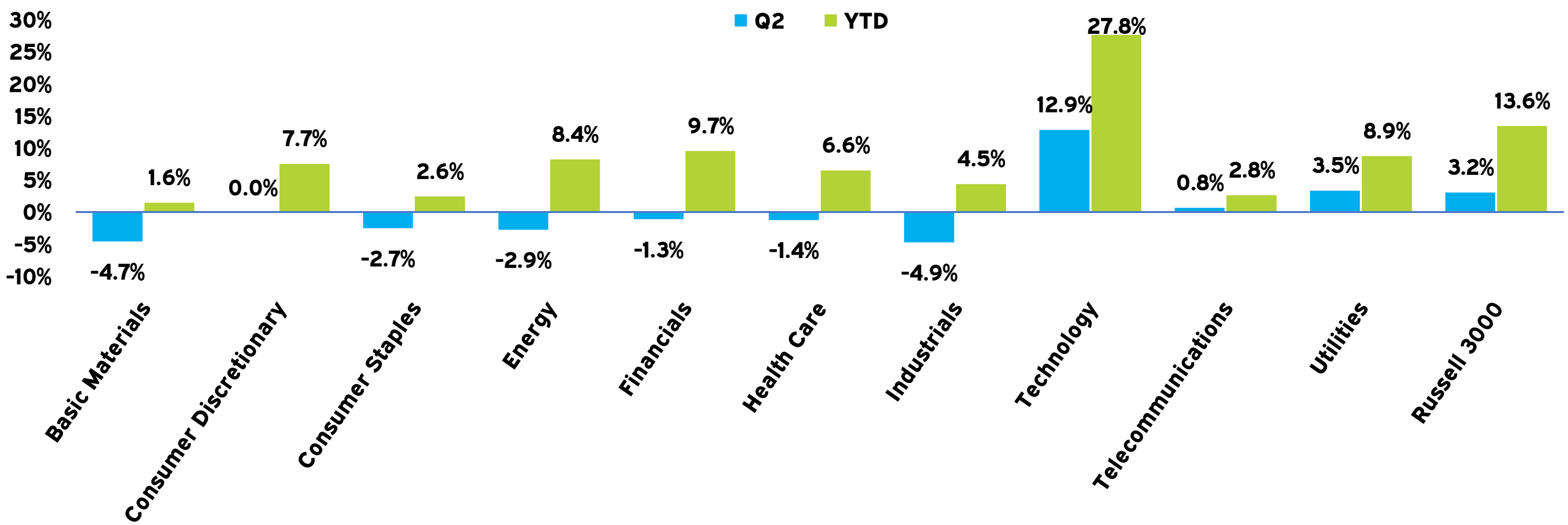
→ US stocks continued their rise in June driven by on-going AI optimism. Nearly all the quarterly market gains in the S&P 500 were driven by large cap technology stocks, with the S&P 500 equal weighted index down 3.1% for the quarter.

→ US large cap stocks continue to outperform small cap stocks. This dynamic is driven by the large technology stocks like NVIDIA, Apple, and Alphabet and the underperformance of small cap biopharma companies and banks.

→ Growth outperformed value for the quarter, with the most pronounced outperformance in the large cap space (8.3% versus -2.2%).

[1] Source: Bloomberg. Data is as of June 30, 2024.

Russell 3000 Sector Returns[1]



- → Unlike first quarter performance, where all sectors gained, the second quarter saw mixed results across the major sectors.
- → Technology (+12.9%) continued to drive results fueled by on-going AI optimism. Utilities where a distant second increasing 3.5%, on expectations of increased demand from AI-related companies.
- → Many other sectors fell, including financials (-1.3%), health care (-1.4%), consumer staples (-2.7%), energy (-2.9%), materials (-4.7%), and industrials (-4.9%).
- → All sectors have positive returns for the year-to-date period. Technology stocks (+27.8%) continues to lead the broader market, followed by financials (9.7%).

[1] Source: Bloomberg. Data is as of June 30, 2024.

Foreign Equity Returns[1]

Foreign Equity	June (%)	Q2 (%)	YTD (%)	1 YR (%)	3 YR (%)	5 YR (%)	10 YR (%)
MSCI ACWI ex. US	-0.1	1.0	5.7	11.6	0.5	5.6	3.8
MSCI EAFE	-1.6	-0.4	5.3	11.5	2.9	6.5	4.3
MSCI EAFE (Local Currency)	-0.6	1.0	11.1	15.1	8.1	9.0	7.4
MSCI EAFE Small Cap	-3.0	-1.8	0.5	7.8	-3.4	4.2	4.3
MSCI Emerging Markets	3.9	5.0	7.5	12.5	-5.1	3.1	2.8
MSCI Emerging Markets (Local Currency)	4.3	6.2	11.0	15.5	-1.6	5.6	5.8
MSCI EM ex. China	6.1	4.2	8.4	18.5	1.4	6.7	3.9
MSCI China	-1.9	7.1	4.7	-1.6	-17.7	-4.3	1.4

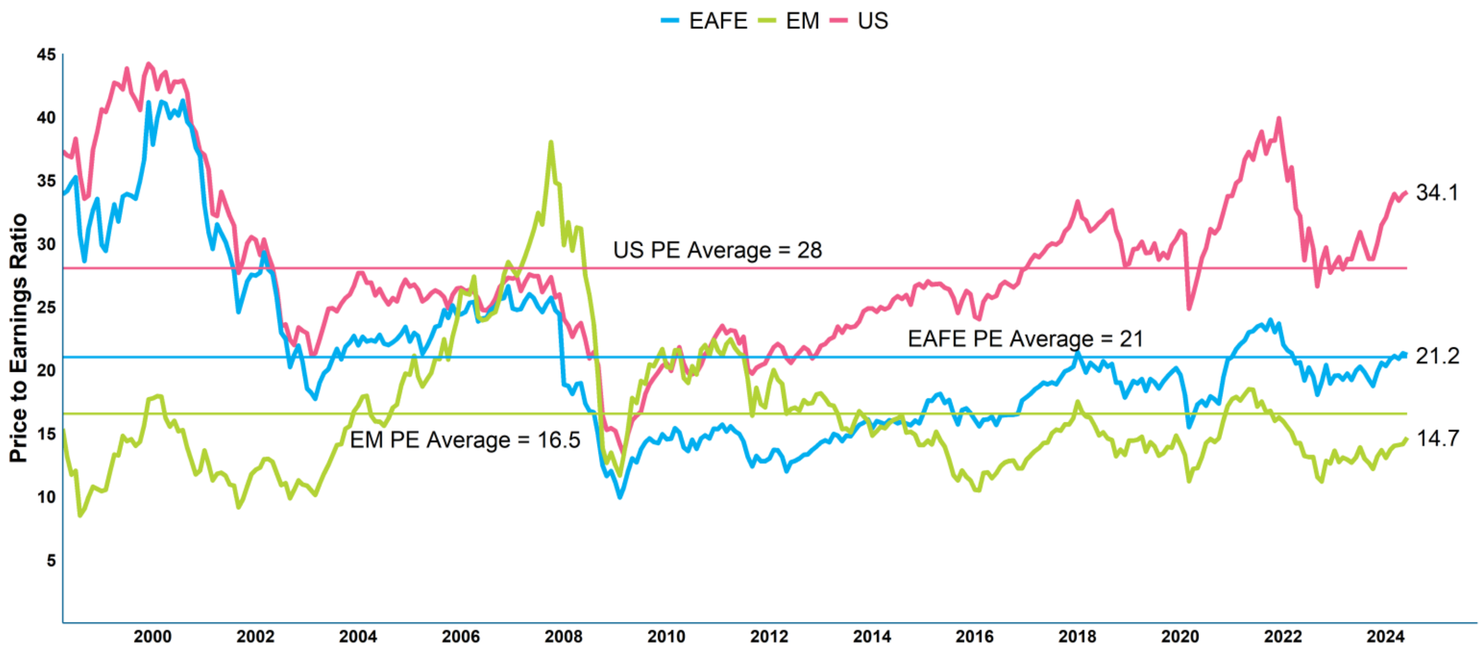
Foreign Equity: Developed international equities (MSCI EAFE) fell 0.4% in the second quarter, while emerging market equities (MSCI Emerging Markets) gained 5.0%.

→ For the second quarter, developed market equities declined driven by continued strength in the US dollar and regional political risks particularly in France. UK and Japanese equities made new all-time highs during the quarter, but this was not enough to offset losses in Europe.

→ Emerging market equities outpaced developed market equities during the quarter given strong results in China (7.1%). China equities moved into positive territory for the year (4.7%) due to government purchases of shares, improving economic data, and returning foreign investors.

[1] Source: Bloomberg. Data is as of June 30, 2024.

Equity Cyclically Adjusted P/E Ratios[1]



→ At the end of the second quarter, the US equity price-to-earnings ratio remained elevated and above its 21st century average.

→ International equity market valuations remain well below the US. International developed market valuations have increased to slightly above their long-term average, while emerging market equities remain below their long-term average despite recent gains.

[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 June 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 Returns[1]

Fixed Income	June (%)	Q2 (%)	YTD (%)	1 YR (%)	3 YR (%)	5 YR (%)	10 YR (%)	Current Yield (%)	Duration (Years)
Bloomberg Universal	0.9	0.2	-0.3	3.5	-2.7	0.1	1.6	5.3	6.0
Bloomberg Aggregate	0.9	0.1	-0.7	2.6	-3.0	-0.2	1.3	5.0	6.2
Bloomberg US TIPS	0.8	0.8	0.7	2.7	-1.3	2.1	1.9	4.8	6.6
Bloomberg Short-term TIPS	0.6	1.4	2.3	5.4	2.2	3.2	2.0	5.1	2.4
Bloomberg High Yield	0.9	1.1	2.6	10.4	1.6	3.9	4.3	7.9	3.7
JPM GBI-EM Global Diversified (USD)	-1.1	-1.6	-3.7	0.7	-3.3	-1.3	-0.9	--	--

Fixed Income: The Bloomberg Universal index rose 0.2% in the second quarter, reducing the year-to-date decline to -0.3%.

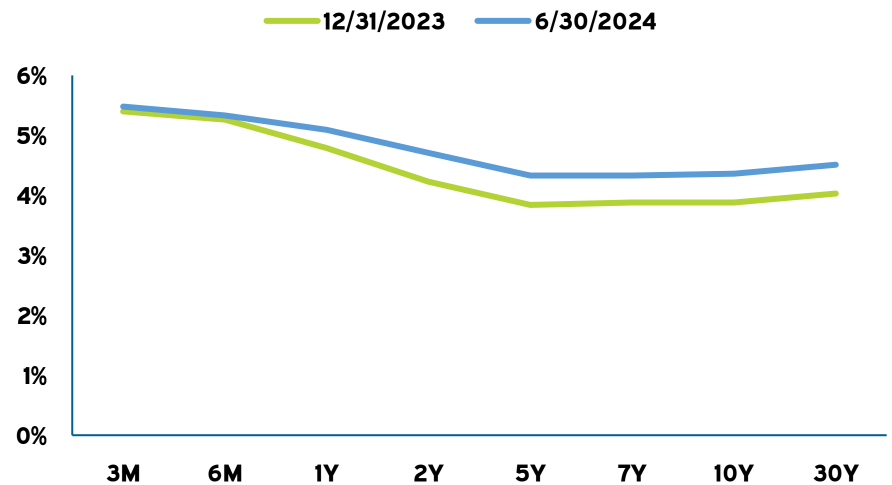
→ Bonds finished the quarter slightly up as May and June gains offset the April declines.

→ The broad US bond market (Bloomberg Aggregate) rose 0.1% in the second quarter, with the broad TIPS market gaining 0.8%. The less interest rate sensitive short-term TIPS index increased 1.4% for the quarter, leading to the best results.

→ High yield bonds (1.1%) also rose, as risk appetite remains strong.

[1] Source: Bloomberg. Data is as of June 30, 2024. The yield and duration data from Bloomberg is defined as the index's yield to worst and modified duration respectively. JPM GBI-EM data is from J.P. Morgan. Current yield and duration data is not available.

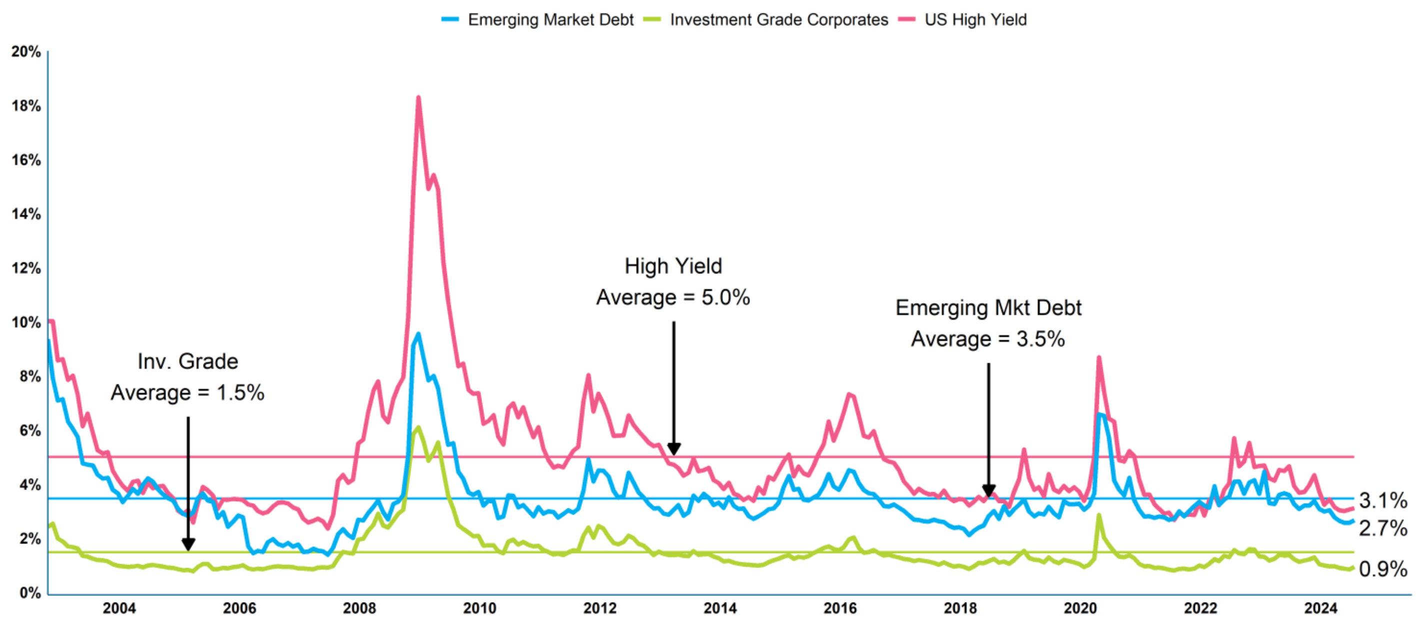
US Yield Curve[1]



- → After rates significantly increased in April on strong inflation data, they then declined in May and June. Chair Powell confirming that the FOMC would not raise rates again this year as economic data appears to be returning to long-run trends led to rates declining from the April highs.
- → The more policy sensitive 2-year Treasury yield finished the quarter roughly 0.2% higher at 4.76% but well off its peak of over 5.0%. The 10-year Treasury rose by a similar amount during the quarter finishing at 4.39%; also, off its April peak of 4.68%.
- → The yield curve remained inverted at month-end, with the spread between the 2-year and 10-year Treasury at roughly -35 basis points.

[1] Source: Bloomberg. Data is as of June 30, 2024.

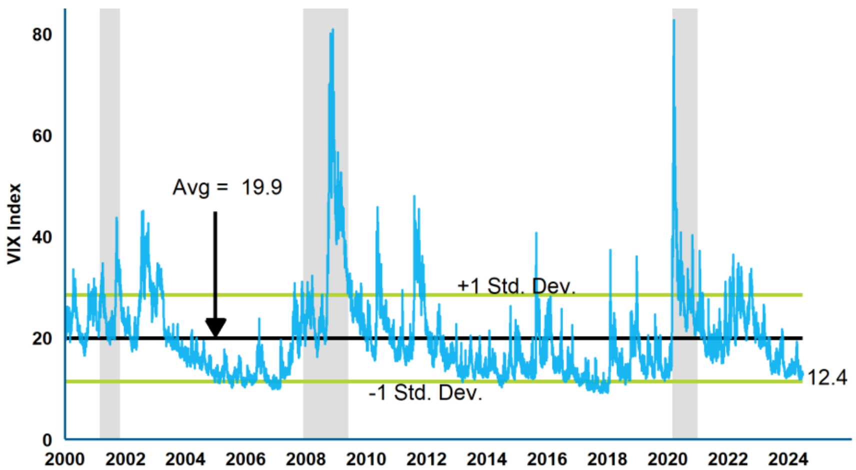
Credit Spreads vs. US Treasury Bonds[1]

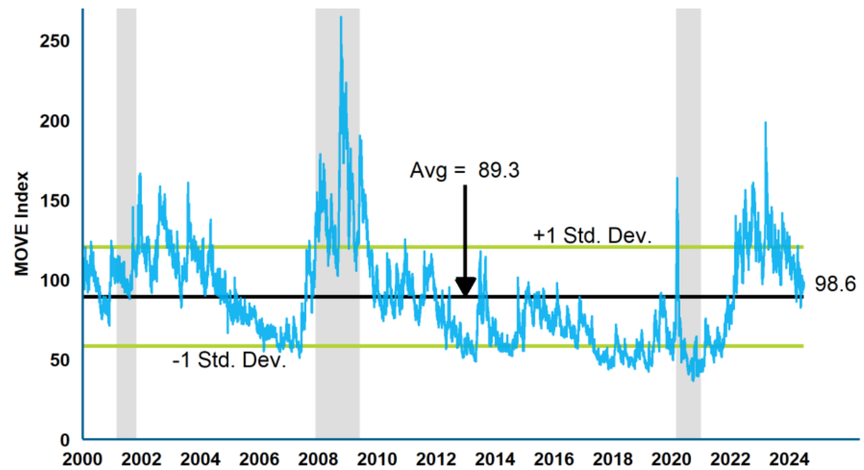


- → Despite rising rates, investor demand for risk exposure in credit markets remained strong in Q2 given measured weakness in the economic outlook and expectations of lower interest rates by year-end.
- → Spreads (the yield above a comparable maturity Treasury) stayed relatively steady over the quarter, near post-pandemic lows. All spreads remained below their respective long-run averages, particularly high yield.
- → Although spreads are relatively tight, yields remain at above-average levels compared to the last two decades, particularly for short-term issues.

[1] Source: Bloomberg. Data is as of June 30, 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 Volatility[1]



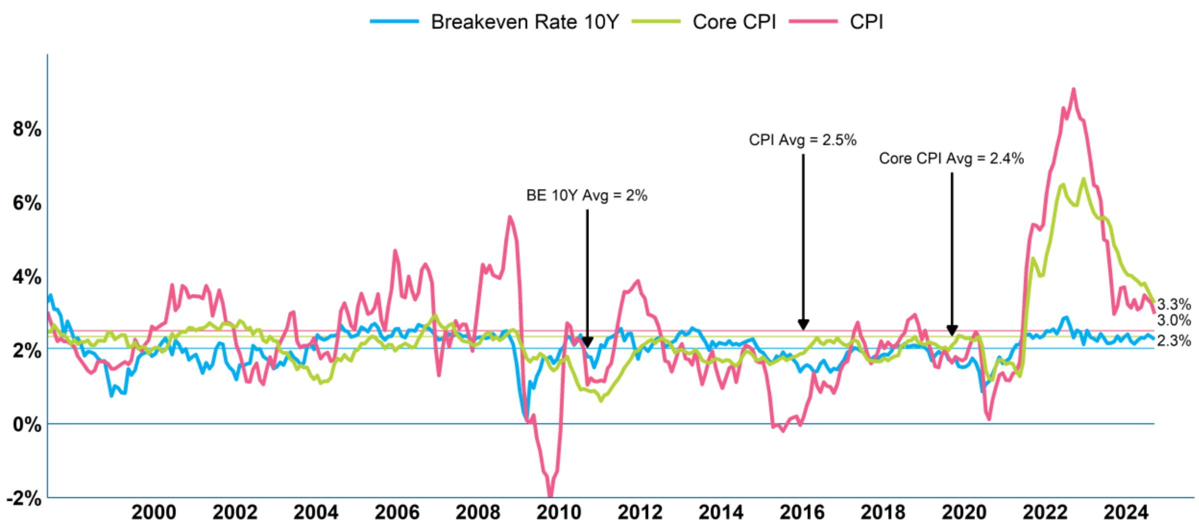


→ Volatility in equities was around one standard deviation below its long-term average at the end of the quarter as continued strength in technology stocks and weakening economic data has moderated fear in the markets.

→ Volatility in bonds (MOVE) ended June higher than where it started the quarter (98.6 versus 86.4) and above its long-run average.

[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 June 2024. The average line indicated is the average of the VIX and MOVE values between January 2000 and June 2024.

US Ten-Year Breakeven Inflation and CPI[1]



→ Year-over-year headline inflation continued to fall in June (3.3% to 3.0%) and again came in below expectations. Over the quarter, inflation fell by a total of 0.5%.

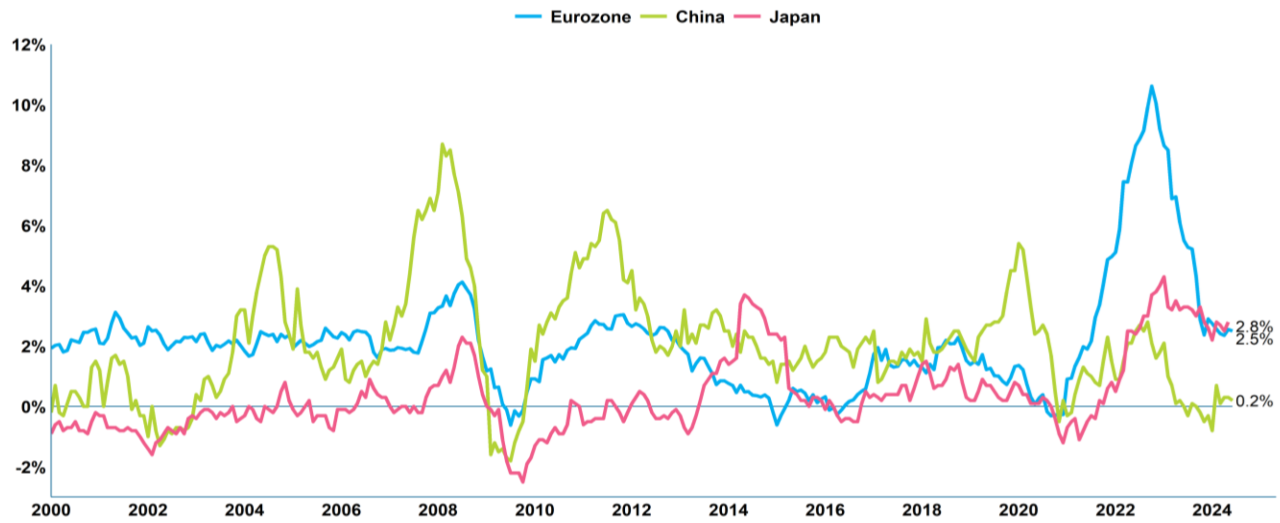
→ Month-over-month inflation was negative for the first time since March 2020, largely because of price declines in energy and core goods.

→ Core inflation (excluding food and energy) also declined in June (3.4% to 3.3%) and came in below expectations. A drop in used car prices, transportation services, and a slowing of the pace of shelter price increases all contributed to the decline.

→ Inflation expectations (breakevens) have been volatile, but they finished the quarter largely where they started.

[1] Source: FRED. Data is as June 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.

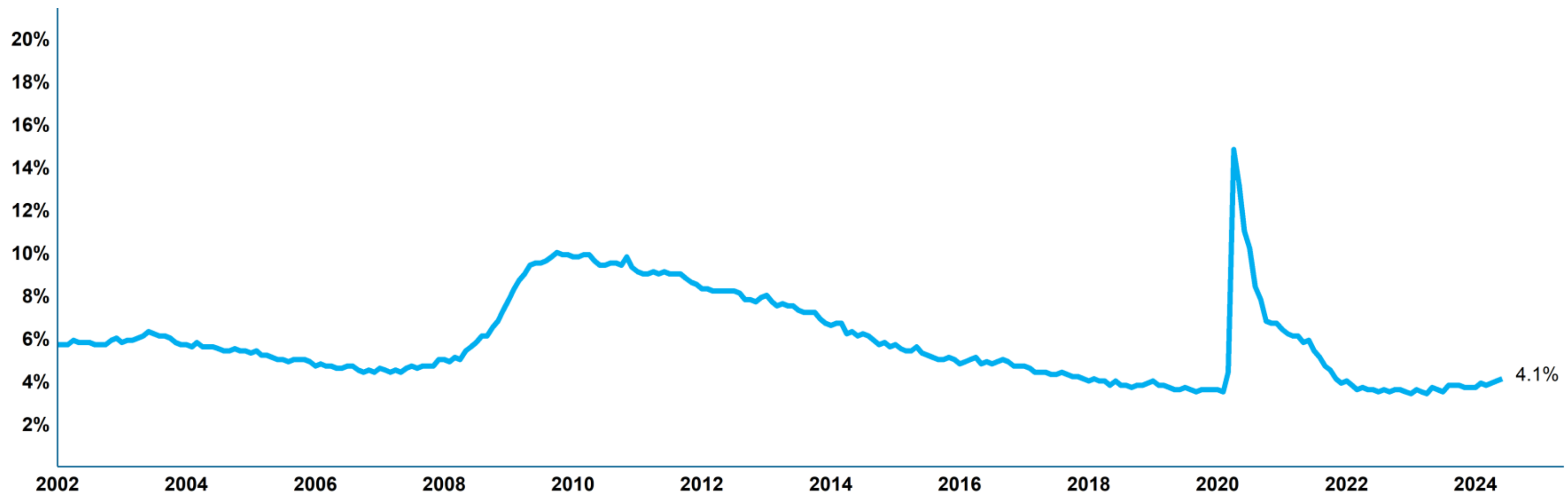
Global Inflation (CPI Trailing Twelve Months)[1]



- → Outside the US, inflation is also easing from the recent peaks.
- → In the eurozone, inflation experienced a dramatic decline last year but remains above the central bank's 2% target. In June, inflation fell slightly from 2.6% to 2.5% year-over-year.
- → Inflation in Japan has slowly dropped from the early 2023 peak of 4.3%, but it remains near levels not seen in a decade. In the most recent reading (May), inflation rose modestly from 2.5% to 2.8% as fuel and utility prices increased.
- → China appears to have emerged from deflationary pressures, but inflation levels remain well below other major economies due to slowing economic growth. Annual inflation levels have been positive for the last five readings signaling improvement in domestic demand. The June year-over-year number came in at 0.2%, slightly lower than the prior reading of 0.3%.

[1] Source: Bloomberg. Data is June 30, 2024, except Japan which is as of May 31, 2024.

US Unemployment[1]

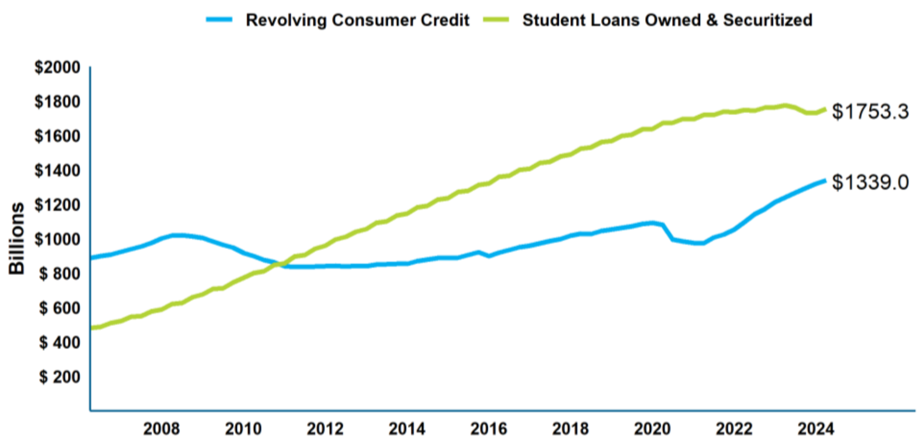


- → Overall, the US labor market remains healthy, but there have been some recent signs of softening.
- → The unemployment rate came in above expectations in June reaching 4.1%, a level not seen since early 2022. Over the second quarter unemployment increased 0.3%.
- → Wage growth remains strong though (around 3.9% annually), and initial claims for unemployment are still subdued.
- → Despite significant downward revisions to job gains in April and May, in June the economy added 206,000 jobs (above expectations). The government added the most jobs (70,000), followed by the healthcare sector (49,000).

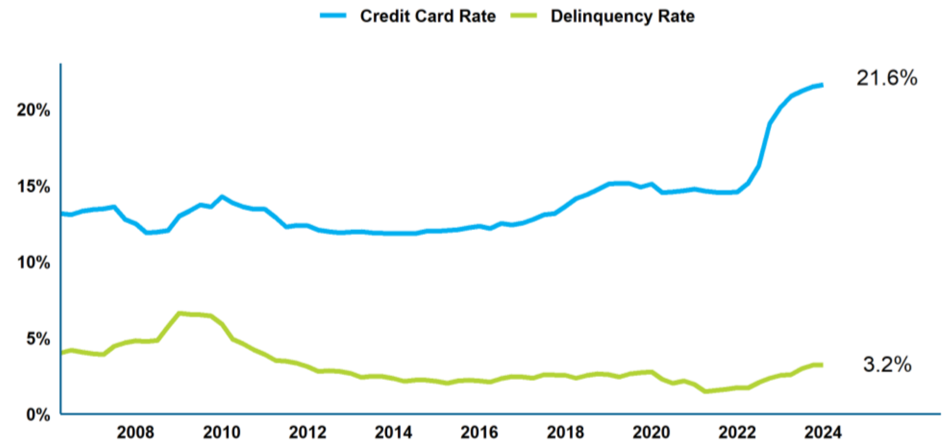
[1] Source: FRED. Data is as June 30, 2024.

US Consumer Under Stress?[1]

Revolving Consumer Credit & Student Loans ($B)



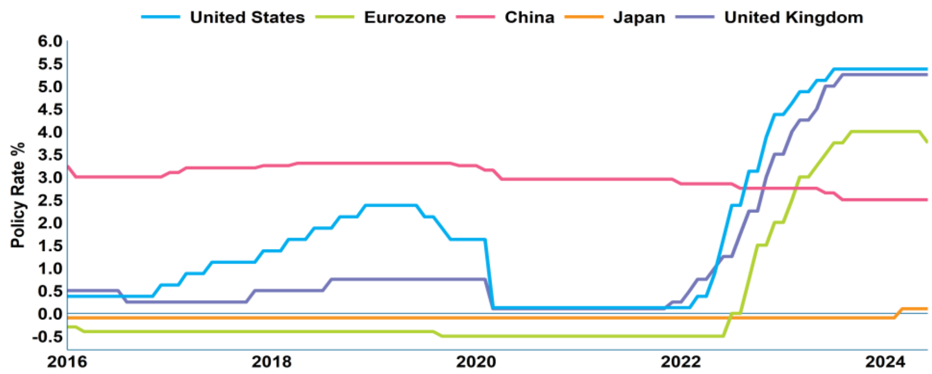
Consumer Credit Card Interest Rates (%)



- → Despite the strong labor market and higher wages, pressures are building 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 and auto loans start to increase, particularly for younger people.
- → 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.
- → It is worth noting though that many people locked in low-rate fixed mortgages before rates increased and many corporations issued debt at extremely low levels, reducing the sensitivity to higher rates.

[1] Source: FRED. Data is as of March 31, 2024. Revolving Consumer Credit data is seasonally adjusted to remove distortions during the holiday season.

Policy Rates[1]



→ In the US interest rates have remained at current levels (5.25%-5.50%) for a year now. The most recent "dot plot" (the Fed's expectation on the path of rates) showed a median expectation of roughly one rate cut this year. Markets are now pricing in two to three rate cuts in 2024 given the improving inflation data with the probability of a cut around 100% in September and slightly over 90% for December.

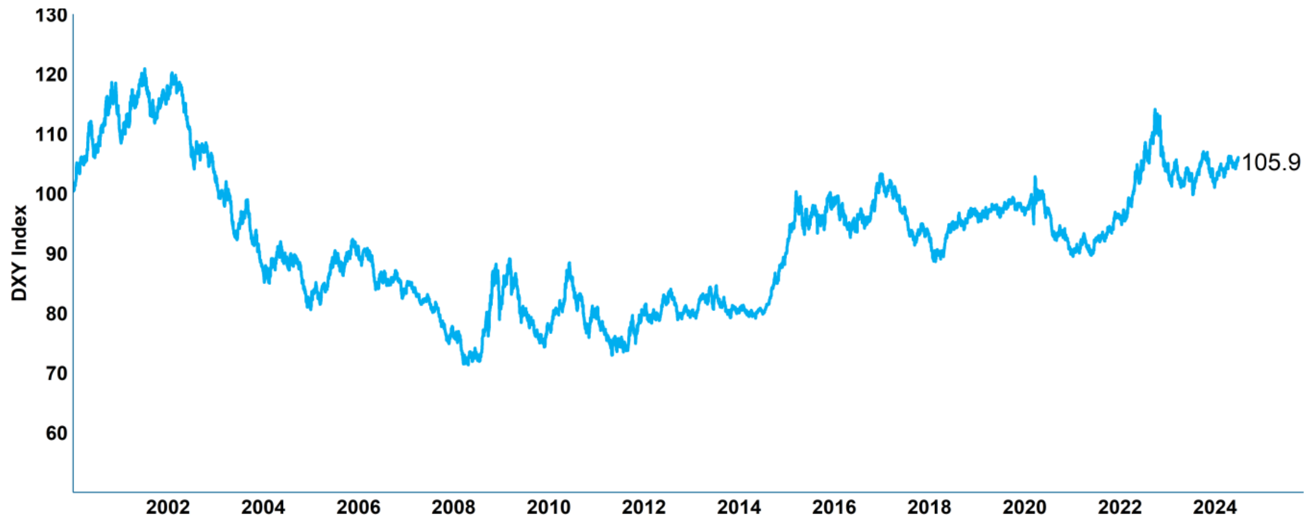
→ The European Central Bank (ECB) cut its policy rate by 25 basis points at the beginning of June, as expected. Like the US, cuts are also anticipated at the September and December meetings.

→ After ending the last negative interest rate policy given higher inflation levels, the Bank of Japan (BOJ) has since kept rates at slightly above 0%. Policy is expected to tighten going forward with the BOJ announcing at their recent meeting they would also start reducing their bond purchases. Interest rate futures markets are pricing in roughly two rate hikes (of 10 basis points) through the end of the year.

→ The central bank in China has maintained interest rates at record low levels and continues to inject liquidity into the banking system, to support economic growth.

[1] Source: Bloomberg. Data is as of June 30, 2024. United States rate is the mid-point of the Federal Funds Target Rate range. Eurozone rate is the ECB Deposit Facility Announcement Rate. Japan rate is the Bank of Japan Unsecured Overnight Call Rate Expected. China rate is the China Central Bank 1-Year Medium Term Interest Rate. UK rate is the UK Bank of England Official Bank Rate.

US Dollar vs. Broad Currencies[1]



→ Overall, the dollar rose in the second quarter (104.5 to 105.9) versus a basket of currencies of major trading partners.

→ China and the ECB cutting policy rates, stronger relative growth, and the weakening of the Japanese yen, have all collectively helped strengthen the dollar.

[1] Source: Bloomberg. Data as of June 30, 2024.

Summary

Key Trends:

→ According to the International Monetary Fund's (IMF) April report, global growth this year is expected to match the 2023 estimate at around 3.2% with most major economies predicted to avoid a recession. Continued strong economic growth does run the risk of inflation and interest rates staying higher for longer.

→ Key economic data in the US has largely weakened and come in below expectations, causing markets to expect between two and three rate cuts this year. Uncertainty remains though regarding the timing and pace of interest rate cuts in the coming year.

→ We have started to see some divergences in monetary policy with other central banks, such as the European Central Bank (ECB), starting to cut interest rates while the Fed remains on hold. This disparity will likely influence investment flows and currencies.

→ 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 slows. 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 ongoing weakness in the real estate sector. Japan's recent tightening of monetary policy along with changes in corporate governance in the country could influence relative results.

Performance Update
As of June 30, 2024

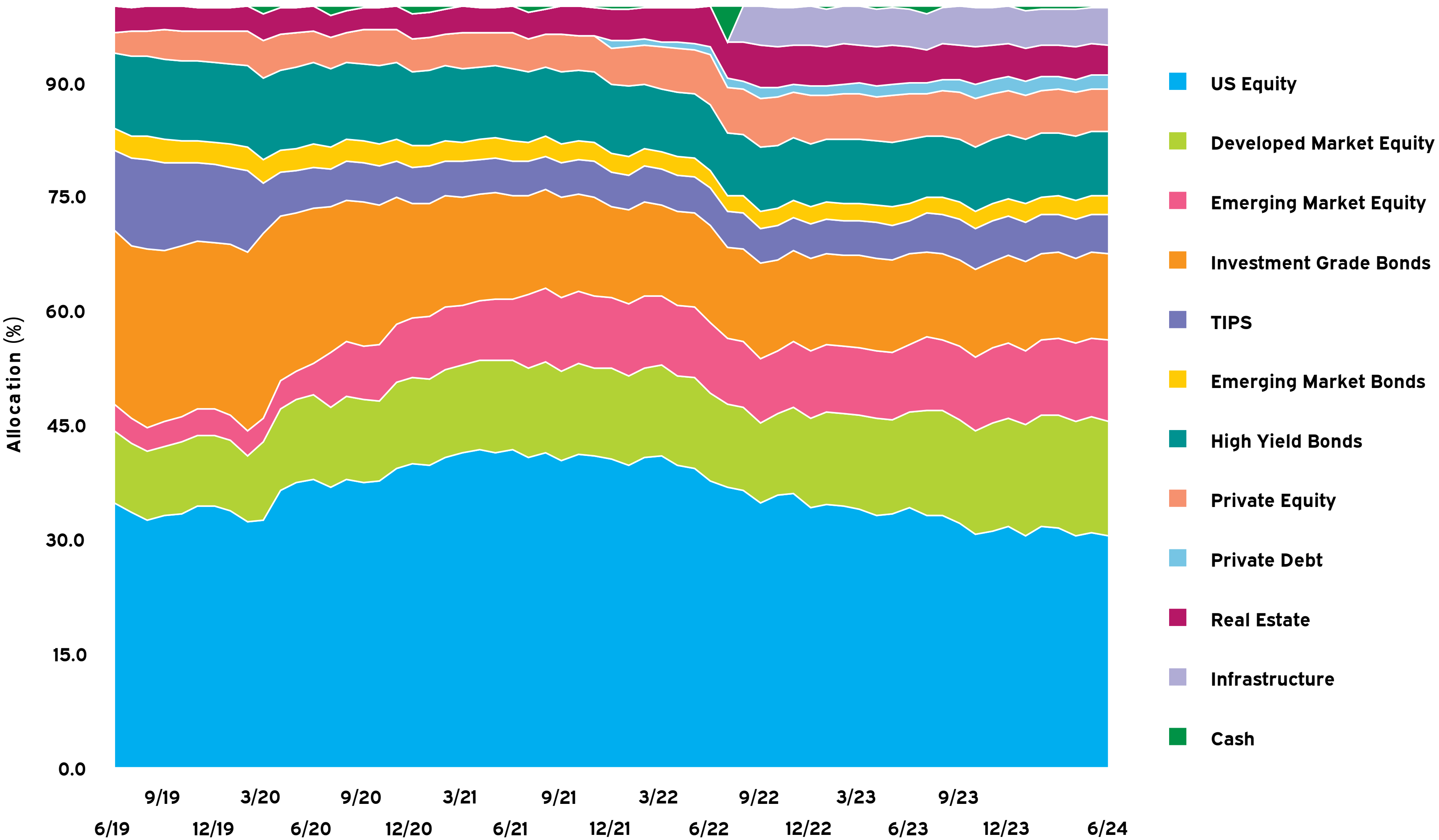
The Endowment Allocation vs. Targets and Policy

	Current Balance	Current Allocation (%)	Policy (%)	Policy Range (%)
US Equity	$69,966,452	30.5	20.0	10.0 - 30.0
Developed Market Equity	$34,429,521	15.0	20.0	8.0 - 28.0
Emerging Market Equity	$24,498,458	10.7	10.0	5.0 - 15.0
Investment Grade Bonds	$25,990,231	11.3	5.0	3.0 - 10.0
TIPS	$11,800,054	5.1	5.0	3.0 - 10.0
Emerging Market Bonds	$5,523,880	2.4	5.0	2.0 - 8.0
High Yield Bonds	$19,576,687	8.5	5.0	2.0 - 8.0
Private Equity	$12,960,373	5.6	15.0	10.0 - 20.0
Private Debt	$4,020,315	1.8	5.0	0.0 - 10.0
Real Estate	$9,158,392	4.0	5.0	2.0 - 8.0
Infrastructure	$11,163,113	4.9	5.0	0.0 - 10.0
Cash	$498,994	0.2	0.0	0.0 - 5.0
Total	**$229,586,470**	**100.0**	**100.0**	

Percentages may not sum to 100% due to rounding.

MEKETA

Asset Allocation
5 Years Ending June 30, 2024



Asset Allocation & Performance | As of June 30, 2024

	Market Value $	% of Portfolio	QTD (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	20 Yrs (%)	Since Inception	Inception Date
Total Retirement System	229,586,470	100.0	0.5	4.4	9.4	2.8	7.3	6.4	6.8	7.6	Jul-88
55% MSCI World & 45% Barclays Aggregate			*1.5*	*6.0*	*12.1*	*2.5*	*6.5*	*5.8*	*6.2*	*6.9*	
60% MSCI World /40% Blmbg. Global Aggregate			*1.1*	*5.6*	*12.2*	*1.9*	*6.3*	*5.4*	*6.0*	*--*	
Domestic Equity Assets	69,966,452	30.5	-0.6	7.9	14.8	6.8	11.3	10.2	--	9.0	Oct-06
Russell 3000 Index			*3.2*	*13.6*	*23.1*	*8.1*	*14.1*	*12.1*	*10.2*	*10.2*	
International Developed Markets Equity Assets	34,429,521	15.0	-0.1	5.5	11.8	3.1	6.7	4.2	--	3.8	Oct-06
MSCI EAFE			*-0.4*	*5.3*	*11.5*	*2.9*	*6.5*	*4.3*	*5.6*	*4.0*	
International Emerging Markets Equity Assets	24,498,458	10.7	5.3	10.0	16.1	-1.9	6.0	--	--	5.8	Jan-15
MSCI Emerging Markets			*5.0*	*7.5*	*12.5*	*-5.1*	*3.1*	*2.8*	*7.3*	*3.8*	
Investment Grade Bonds Assets	25,990,231	11.3	0.1	-0.6	2.6	-3.1	-0.3	1.3	3.1	5.2	Jul-88
Blmbg. U.S. Aggregate Index			*0.1*	*-0.7*	*2.6*	*-3.0*	*-0.2*	*1.3*	*3.1*	*5.3*	
High Yield Bond Assets	19,576,687	8.5	1.3	2.7	9.3	2.1	3.9	4.1	6.0	6.1	Sep-03
Blmbg. U.S. Corp: High Yield Index			*1.1*	*2.6*	*10.4*	*1.6*	*3.9*	*4.3*	*6.7*	*6.9*	
TIPS Assets	11,800,054	5.1	0.8	0.8	2.6	-1.4	2.0	1.9	--	3.3	Oct-05
Blmbg. U.S. TIPS Index			*0.8*	*0.7*	*2.7*	*-1.3*	*2.1*	*1.9*	*3.6*	*3.3*	
Emerging Market Debt Assets	5,523,880	2.4	0.1	2.8	10.2	-2.2	0.4	--	--	3.0	Jan-15
JPM EMBI Global Diversified			*0.3*	*2.3*	*9.2*	*-2.6*	*0.0*	*2.6*	*5.9*	*2.9*	
Open-Ended Real Estate	5,523,973	2.4	-2.6	-6.4	-12.4	-0.7	2.3	6.4	6.0	7.1	Oct-95
NCREIF ODCE (VW) (Monthly)			*-0.5*	*-2.8*	*-9.3*	*1.9*	*3.2*	*6.4*	*6.8*	*8.1*	
Total Closed End Real Estate	3,634,419	1.6	-3.8	-9.7	-17.9	0.2	0.3	-0.2	--	1.6	Jan-13
Private Equity Assets	12,960,373	5.6	1.2	2.7	4.6	9.4	16.7	10.1	--	8.1	Oct-06

	Market Value $	% of Portfolio	QTD (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	20 Yrs (%)	Since Inception	Inception Date
Private Debt Assets	4,020,315	1.8	2.8	6.6	12.7	--	--	--	--	12.1	Jan-22
Infrastructure	11,163,113	4.9	1.0	0.1	3.6	--	--	--	--	6.9	Aug-22
Cash	498,994	0.2									

	Market Value $	% of Portfolio	QTD (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	20 Yrs (%)	Since Inception	Inception Date
Total Retirement System	**229,586,470**	**100.0**	**0.5**	**4.4**	**9.4**	**2.8**	**7.3**	**6.4**	**6.8**	**7.6**	**Jul-88**
55% MSCI World & 45% Barclays Aggregate			*1.5*	*6.0*	*12.1*	*2.5*	*6.5*	*5.8*	*6.2*	*6.9*	
60% MSCI World/40% Bloomberg Global Agg			*1.1*	*5.6*	*12.2*	*1.9*	*6.3*	*5.4*	*6.0*	*--*	
InvMetrics Public DB $50mm-$250mm Net (USD) Median			*1.0*	*6.4*	*11.9*	*3.0*	*7.6*	*7.0*	*6.5*	*--*	
Domestic Equity Assets	**69,966,452**	**30.5**	**-0.6**	**7.9**	**14.8**	**6.8**	**11.3**	**10.2**	**--**	**9.0**	**Oct-06**
Russell 3000 Index			*3.2*	*13.6*	*23.1*	*8.1*	*14.1*	*12.1*	*10.2*	*10.2*	
RhumbLine S&P 500 Index	22,313,463	9.7	4.3	15.3	24.5	10.0	15.0	12.8	10.3	8.1	Mar-99
S&P 500 Index			*4.3*	*15.3*	*24.6*	*10.0*	*15.0*	*12.9*	*10.3*	*8.0*	
eV US Passive S&P 500 Equity Median			*4.3*	*15.2*	*24.5*	*9.9*	*15.0*	*12.8*	*10.2*	*7.9*	
Frontier Capital Appreciation	25,499,256	11.1	-3.8	2.9	7.6	2.5	9.8	8.4	--	10.8	Feb-13
Russell 2500 Growth Index			*-4.2*	*3.9*	*9.0*	*-4.1*	*7.6*	*8.8*	*9.4*	*10.6*	
eV US Small-Mid Cap Growth Equity Median			*-3.0*	*3.1*	*8.3*	*-3.1*	*8.7*	*9.5*	*9.8*	*10.9*	
RhumbLine HEDI	22,153,733	9.6	-1.6	6.5	13.1	7.3	--	--	--	13.0	Nov-20
Russell 1000 High Effic. Defensive Moderate Index			*2.4*	*10.9*	*17.7*	*8.8*	*13.4*	*13.5*	*11.3*	*14.3*	
eV US Large Cap Core Equity Median			*2.8*	*13.8*	*22.6*	*8.3*	*13.6*	*11.5*	*9.9*	*15.3*	
International Developed Markets Equity Assets	**34,429,521**	**15.0**	**-0.1**	**5.5**	**11.8**	**3.1**	**6.7**	**4.2**	**--**	**3.8**	**Oct-06**
MSCI EAFE			*-0.4*	*5.3*	*11.5*	*2.9*	*6.5*	*4.3*	*5.6*	*4.0*	
RhumbLine MSCI EAFE Index	34,429,521	15.0	-0.1	5.5	11.8	3.1	6.7	--	--	4.8	Aug-14
MSCI EAFE			*-0.4*	*5.3*	*11.5*	*2.9*	*6.5*	*4.3*	*5.6*	*4.6*	
eV EAFE All Cap Equity Median			*-0.4*	*4.7*	*10.9*	*1.6*	*6.1*	*4.4*	*6.1*	*4.7*	
International Emerging Markets Equity Assets	**24,498,458**	**10.7**	**5.3**	**10.0**	**16.1**	**-1.9**	**6.0**	**--**	**--**	**5.8**	**Jan-15**
MSCI Emerging Markets			*5.0*	*7.5*	*12.5*	*-5.1*	*3.1*	*2.8*	*7.3*	*3.8*	
DFA Emerging Markets	12,810,811	5.6	5.6	8.1	14.8	-0.5	5.9	--	--	5.2	Jan-15
MSCI Emerging Markets			*5.0*	*7.5*	*12.5*	*-5.1*	*3.1*	*2.8*	*7.3*	*3.8*	
eV Emg Mkts All Cap Equity Median			*4.0*	*7.2*	*11.4*	*-5.4*	*3.7*	*3.5*	*7.7*	*4.4*	

	Market Value $	% of Portfolio	QTD (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	20 Yrs (%)	Since Inception	Inception Date
Driehaus Emerging Market Equity	11,687,647	5.1	4.9	12.2	17.6	-3.5	5.9	--	--	6.2	Jan-15
MSCI Emerging Markets			*5.0*	*7.5*	*12.5*	*-5.1*	*3.1*	*2.8*	*7.3*	*3.8*	
eV Emg Mkts All Cap Equity Median			*4.0*	*7.2*	*11.4*	*-5.4*	*3.7*	*3.5*	*7.7*	*4.4*	
Investment Grade Bonds Assets	**25,990,231**	**11.3**	**0.1**	**-0.6**	**2.6**	**-3.1**	**-0.3**	**1.3**	**3.1**	**5.2**	**Jul-88**
Blmbg. U.S. Aggregate Index			*0.1*	*-0.7*	*2.6*	*-3.0*	*-0.2*	*1.3*	*3.1*	*5.3*	
SSgA U.S. Aggregate Bond Index	25,990,231	11.3	0.1	-0.6	2.6	-3.1	-0.3	1.3	3.1	3.6	May-01
Blmbg. U.S. Aggregate Index			*0.1*	*-0.7*	*2.6*	*-3.0*	*-0.2*	*1.3*	*3.1*	*3.6*	
eV US Core Fixed Inc Median			*0.2*	*-0.3*	*3.2*	*-2.8*	*0.1*	*1.6*	*3.4*	*3.8*	
High Yield Bond Assets	**19,576,687**	**8.5**	**1.3**	**2.7**	**9.3**	**2.1**	**3.9**	**4.1**	**6.0**	**6.1**	**Sep-03**
Blmbg. U.S. Corp: High Yield Index			*1.1*	*2.6*	*10.4*	*1.6*	*3.9*	*4.3*	*6.7*	*6.9*	
Shenkman Capital	19,576,687	8.5	1.3	2.7	9.3	2.1	3.9	4.1	--	6.0	Apr-06
Blmbg. U.S. Corp: High Yield Index			*1.1*	*2.6*	*10.4*	*1.6*	*3.9*	*4.3*	*6.7*	*6.4*	
eV US High Yield Fixed Inc Median			*1.2*	*2.8*	*9.9*	*1.8*	*3.7*	*4.0*	*6.0*	*5.8*	
TIPS Assets	**11,800,054**	**5.1**	**0.8**	**0.8**	**2.6**	**-1.4**	**2.0**	**1.9**	**--**	**3.3**	**Oct-05**
Blmbg. U.S. TIPS Index			*0.8*	*0.7*	*2.7*	*-1.3*	*2.1*	*1.9*	*3.6*	*3.3*	
SSgA TIPS Index-NL	11,800,054	5.1	0.8	0.8	2.6	-1.4	2.0	1.8	--	3.3	Oct-05
Blmbg. U.S. TIPS Index			*0.8*	*0.7*	*2.7*	*-1.3*	*2.1*	*1.9*	*3.6*	*3.3*	
eV US TIPS / Inflation Fixed Inc Median			*0.9*	*0.9*	*2.9*	*-1.3*	*2.0*	*1.9*	*3.5*	*3.3*	
Emerging Market Debt Assets	**5,523,880**	**2.4**	**0.1**	**2.8**	**10.2**	**-2.2**	**0.4**	**--**	**--**	**3.0**	**Jan-15**
JPM EMBI Global Diversified			*0.3*	*2.3*	*9.2*	*-2.6*	*0.0*	*2.6*	*5.9*	*2.9*	
Payden Emerging Market Bond	5,523,880	2.4	0.1	2.8	10.2	-2.2	0.4	--	--	3.0	Jan-15
JPM EMBI Global Diversified			*0.3*	*2.3*	*9.2*	*-2.6*	*0.0*	*2.6*	*5.9*	*2.9*	
Emerging Markets Bond Median			*0.3*	*2.4*	*9.1*	*-1.8*	*0.5*	*1.9*	*5.4*	*2.7*	

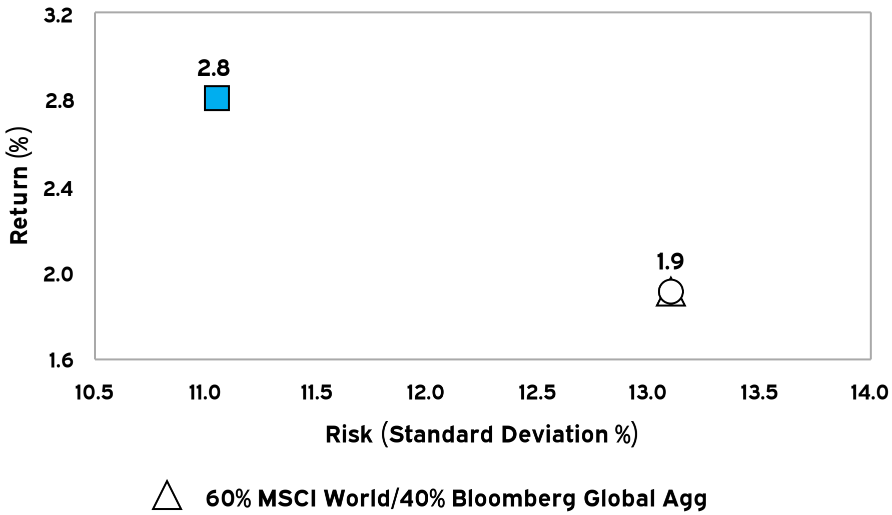
	Market Value $	% of Portfolio	QTD (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	20 Yrs (%)	Since Inception	Inception Date
Open-Ended Real Estate	**5,523,973**	**2.4**	**-2.6**	**-6.4**	**-12.4**	**-0.7**	**2.3**	**6.4**	**6.0**	**7.1**	**Oct-95**
NCREIF ODCE (VW) (Monthly)			*-0.5*	*-2.8*	*-9.3*	*1.9*	*3.2*	*6.4*	*6.8*	*8.1*	
Clarion Partners	5,523,973	2.4	-2.6	-6.4	-12.4	-0.7	2.3	6.4	5.9	6.2	Oct-02
NCREIF ODCE (VW) (Monthly)			*-0.5*	*-2.8*	*-9.3*	*1.9*	*3.2*	*6.4*	*6.8*	*7.0*	
Total Closed End Real Estate	**3,634,419**	**1.6**	**-3.8**	**-9.7**	**-17.9**	**0.2**	**0.3**	**-0.2**	**--**	**1.6**	**Jan-13**
Rockwood Capital Real Estate Partners Fund XI, L.P.	3,634,419	1.6	-3.8	-9.7	-17.9	0.2	--	--	--	-0.2	Dec-19
NCREIF Fund Index-ODCE (VW)			*-0.5*	*-2.8*	*-9.3*	*1.9*	*3.2*	*6.4*	*6.8*	*2.9*	
Private Equity Assets	**12,960,373**	**5.6**									
North American Strategic Partners 2006	9,272	0.0									
Ironsides Partnership Fund IV	2,456,492	1.1									
Ironsides Direct Investment Fund IV	747,227	0.3									
Ironsides Partnership Fund V, L.P.	2,397,424	1.0									
Ironsides Direct Investment Fund V, L.P.	3,338,736	1.5									
HarbourVest 2019 Global Fund	4,011,222	1.7									
Private Debt Assets	**4,020,315**	**1.8**	**2.8**	**6.6**	**12.7**	**--**	**--**	**--**	**--**	**12.1**	**Jan-22**
NB Private Debt Fund IV	4,020,315	1.8									
Infrastructure	**11,163,113**	**4.9**	**1.0**	**0.1**	**3.6**	**--**	**--**	**--**	**--**	**6.9**	**Aug-22**
IFM Global Infrastructure	11,163,113	4.9	1.0	0.1	3.6	--	--	--	--	6.9	Aug-22
CPI +3% (Unadjusted)			*1.3*	*3.9*	*6.1*	*8.1*	*7.3*	*5.9*	*5.6*	*6.2*	
Cash	**498,994**	**0.2**									

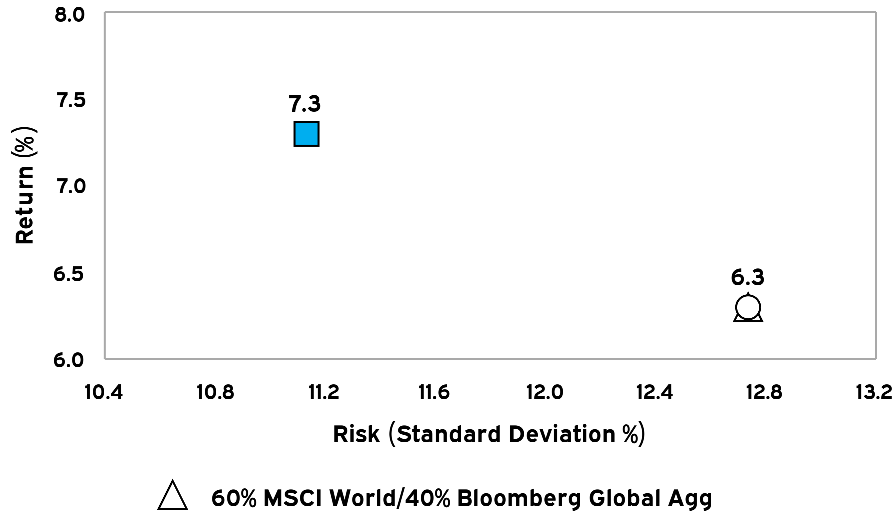
Closed End Real Estate, Private Equity, and Private Debt market values are as of March 31, 2024 and adjusted for subsequent flows.
North American Strategic Partners market value is cash adjusted as of December 31, 2023. The fund is currently in the liquidation process and will only be reported on annually (as of December 31).

	2023 (%)	2022 (%)	2021 (%)	2020 (%)	2019 (%)	2018 (%)	2017 (%)	2016 (%)	2015 (%)	2014 (%)
Total Retirement System	**13.6**	**-12.5**	**13.8**	**14.2**	**17.5**	**-4.5**	**13.0**	**8.7**	**-0.2**	**6.3**
55% MSCI World & 45% Barclays Aggregate	*15.3*	*-15.6*	*10.9*	*12.9*	*19.1*	*-4.6*	*13.6*	*5.5*	*0.0*	*5.5*
60% MSCI World/40% Bloomberg Global Agg	*16.3*	*-17.2*	*10.6*	*13.9*	*19.1*	*-5.5*	*16.2*	*5.5*	*-1.6*	*3.2*
Domestic Equity Assets	**24.0**	**-16.9**	**24.8**	**13.4**	**27.6**	**-6.9**	**20.1**	**14.6**	**-1.6**	**13.1**
Russell 3000 Index	*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
S&P 500 Index	*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
Russell 2500 Growth Index	*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	--	--	--	--	--	--	--
Russell 1000 High Effic. Defensive Moderate Index	*22.1*	*-15.1*	*25.5*	*18.5*	*32.7*	*-0.1*	*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**
MSCI EAFE	*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	--
MSCI EAFE	*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**	**--**
MSCI Emerging Markets	*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	--
MSCI Emerging Markets	*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	--
MSCI Emerging Markets	*9.8*	*-20.1*	*-2.5*	*18.3*	*18.4*	*-14.6*	*37.3*	*11.2*	*-14.9*	*-2.2*
Investment Grade Bonds Assets	**5.6**	**-13.2**	**-1.6**	**7.5**	**8.7**	**0.0**	**3.6**	**2.6**	**0.6**	**6.0**
Blmbg. U.S. Aggregate Index	*5.5*	*-13.0*	*-1.5*	*7.5*	*8.7*	*0.0*	*3.5*	*2.6*	*0.5*	*6.0*

	2023 (%)	2022 (%)	2021 (%)	2020 (%)	2019 (%)	2018 (%)	2017 (%)	2016 (%)	2015 (%)	2014 (%)
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
Blmbg. U.S. Aggregate Index	*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**
Blmbg. U.S. Corp: High Yield Index	*13.4*	*-11.2*	*5.3*	*7.1*	*14.3*	*-2.1*	*7.5*	*17.1*	*-4.5*	*2.5*
Shenkman Capital	12.4	-8.8	4.0	6.3	14.0	-1.8	6.5	12.6	-2.3	2.9
Blmbg. U.S. Corp: High Yield Index	*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**
Blmbg. U.S. TIPS Index	*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
Blmbg. U.S. TIPS Index	*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**	**--**
JPM EMBI Global Diversified	*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	--
JPM EMBI Global Diversified	*11.1*	*-17.8*	*-1.8*	*5.3*	*15.0*	*-4.3*	*10.3*	*10.2*	*1.2*	*7.4*
Open-Ended Real Estate	**-16.5**	**9.6**	**23.4**	**2.2**	**7.3**	**8.6**	**7.9**	**9.1**	**15.7**	**13.2**
NCREIF ODCE (VW) (Monthly)	*-12.0*	*7.5*	*22.2*	*1.2*	*5.3*	*8.3*	*7.6*	*8.8*	*15.0*	*12.5*
Clarion Partners	-16.5	9.6	23.4	2.2	7.3	8.6	7.9	9.1	15.7	13.2
NCREIF ODCE (VW) (Monthly)	*-12.0*	*7.5*	*22.2*	*1.2*	*5.3*	*8.3*	*7.6*	*8.8*	*15.0*	*12.5*
Total Closed End Real Estate	**-12.7**	**10.2**	**14.3**	**-5.3**	**-38.2**	**-1.8**	**15.1**	**9.5**	**23.8**	**13.4**
Rockwood Capital Real Estate Partners Fund XI, L.P.	-12.7	10.2	14.3	0.0	--	--	--	--	--	--
NCREIF Fund Index-ODCE (VW)	*-12.0*	*7.5*	*22.2*	*1.2*	*5.3*	*8.3*	*7.6*	*8.8*	*15.0*	*12.5*
Private Equity Assets										
North American Strategic Partners 2006										

	2023 (%)	2022 (%)	2021 (%)	2020 (%)	2019 (%)	2018 (%)	2017 (%)	2016 (%)	2015 (%)	2014 (%)
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	--	--	--	--	--	--	--	--	--
CPI +3% (Unadjusted)	*6.4*	*9.6*	*10.2*	*4.4*	*5.3*	*5.0*	*5.2*	*5.1*	*3.7*	*3.8*
Cash										


3.2
2.8
2.4
2.0
1.6
Return (%)
2.8
1.9
10.5
11.0
11.5
12.0
12.5
13.0
13.5
14.0
Risk (Standard Deviation %)
60% MSCI World/40% Bloomberg Global Agg


8.0
7.5
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6.0
Return (%)
7.3
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10.4
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12.4
12.8
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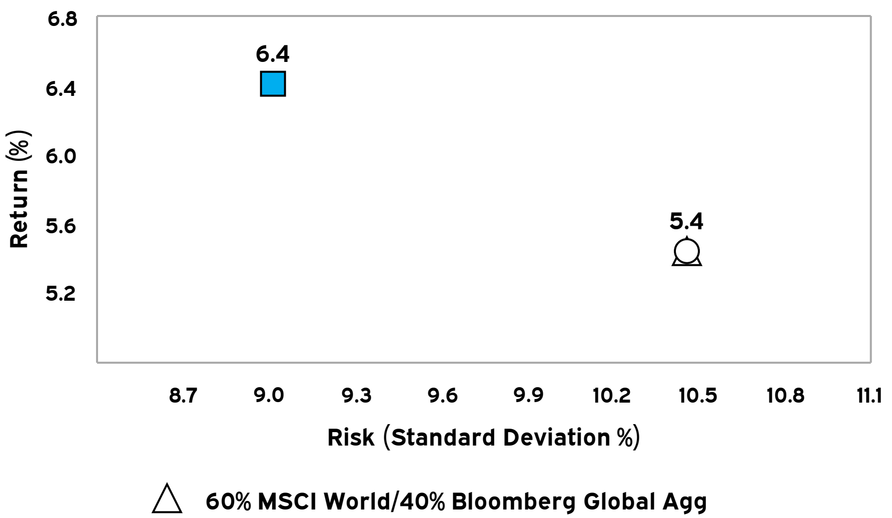
Risk (Standard Deviation %)
60% MSCI World/40% Bloomberg Global Agg


6.8
6.4
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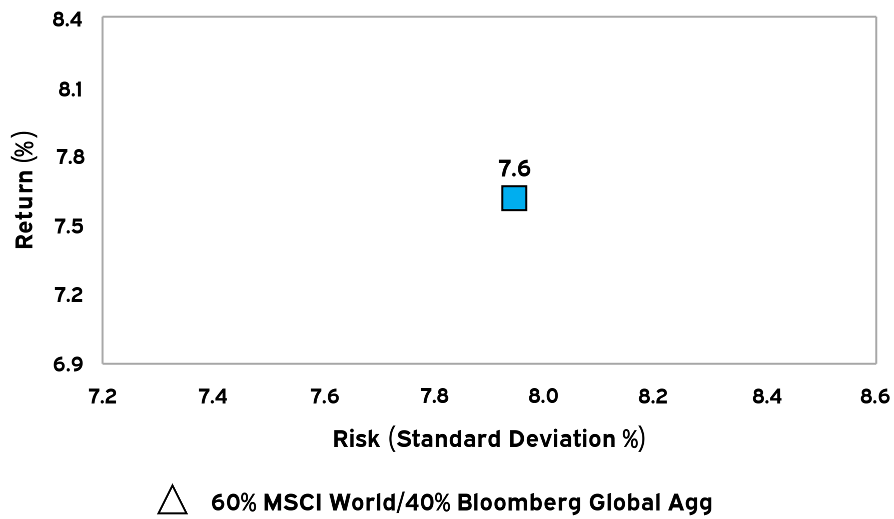
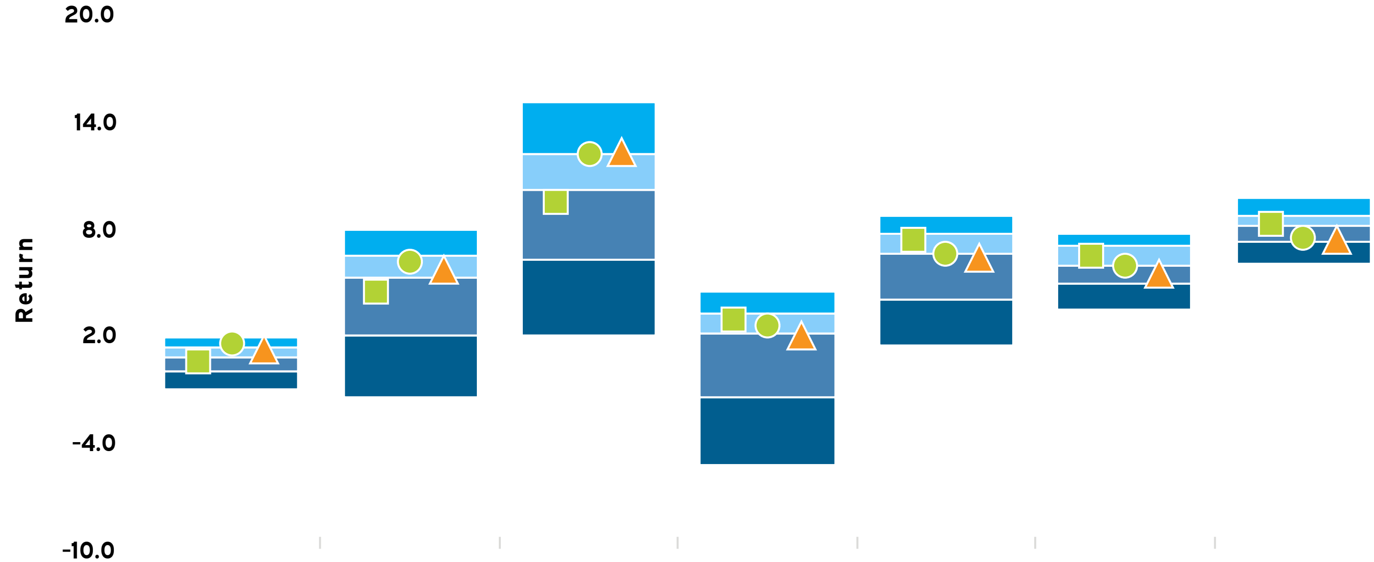
5.6
5.2
Return (%)
6.4
5.4
8.7
9.0
9.3
9.6
9.9
10.2
10.5
10.8
11.1
Risk (Standard Deviation %)
60% MSCI World/40% Bloomberg Global Agg


8.4
8.1
7.8
7.5
7.2
6.9
Return (%)
7.6
7.2
7.4
7.6
7.8
8.0
8.2
8.4
8.6
Risk (Standard Deviation %)
60% MSCI World/40% Bloomberg Global Agg



	QTD (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	15 Yrs (%)
Total Retirement System	0.5 (54)	4.4 (57)	9.4 (56)	2.8 (33)	7.3 (36)	6.4 (38)	8.2 (44)
55% MSCI World & 45% Barclays Aggregate	1.5 (14)	6.0 (35)	12.1 (24)	2.5 (40)	6.5 (51)	5.8 (52)	7.4 (69)
60% MSCI World/40% Bloomberg Global Agg	1.1 (29)	5.6 (44)	12.2 (23)	1.9 (51)	6.3 (53)	5.4 (59)	7.2 (71)
5th Percentile	1.8	7.9	15.0	4.4	8.7	7.6	9.6
1st Quartile	1.3	6.4	12.0	3.2	7.7	7.0	8.7
Median	0.7	5.2	10.1	2.0	6.5	5.9	8.0
3rd Quartile	-0.1	1.9	6.2	-1.5	4.0	4.8	7.1
95th Percentile	-1.1	-1.5	1.9	-5.3	1.4	3.4	5.9
Population	282	281	279	270	262	212	154

Peer group is "Taft Hartley DB Plans"
Parentheses contain percentile rankings.
Calculation based on monthly periodicity.

5-year risk statistics

	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio	Tracking Error	Information Ratio	Beta
Total Retirement System	7.31	12.24	0.47	2.40	0.32	0.99
55% MSCI World & 45% Barclays Aggregate	6.52	12.07	0.41	0.00	-	1.00
Equity Assets	9.48	20.36	0.45	3.43	-1.21	1.01
Russell 3000 Index	14.14	19.84	0.67	0.00	-	1.00
Domestic Equity Assets	11.28	21.15	0.52	3.15	-0.73	1.06
Russell 3000 Index	14.14	19.84	0.67	0.00	-	1.00
RhumbLine S&P 500 Index	14.98	18.92	0.74	0.05	-1.32	1.00
S&P 500 Index	15.05	18.96	0.74	0.00	-	1.00
Frontier Capital Appreciation	9.77	29.31	0.40	9.15	0.36	1.08
Russell 2500 Growth Index	7.58	25.88	0.33	0.00	-	1.00
RhumbLine HEDI	-	-	-	-	-	-
Russell 1000 High Effic. Defensive Moderate Index	13.43	17.19	0.71	0.00	-	1.00
International Developed Markets Equity Assets	6.67	19.47	0.33	0.22	0.74	0.99
MSCI EAFE	6.46	19.62	0.31	0.00	-	1.00
RhumbLine MSCI EAFE Index	6.67	19.47	0.33	0.22	0.74	0.99
MSCI EAFE	6.46	19.62	0.31	0.00	-	1.00
International Emerging Markets Equity Assets	6.05	20.74	0.29	2.51	1.15	1.00
MSCI Emerging Markets	3.10	20.54	0.15	0.00	-	1.00

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

	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio	Tracking Error	Information Ratio	Beta
DFA Emerging Markets	5.90	22.04	0.28	3.52	0.88	1.06
MSCI Emerging Markets	3.10	20.54	0.15	0.00	-	1.00
Driehaus Emerging Market Equity	5.91	20.07	0.28	4.92	0.52	0.95
MSCI Emerging Markets	3.10	20.54	0.15	0.00	-	1.00
Investment Grade Bonds Assets	-0.29	6.14	-0.38	0.15	-0.43	1.00
Blmbg. U.S. Aggregate Index	-0.23	6.15	-0.37	0.00	-	1.00
SSgA U.S. Aggregate Bond Index	-0.29	6.14	-0.38	0.15	-0.43	1.00
Blmbg. U.S. Aggregate Index	-0.23	6.15	-0.37	0.00	-	1.00
High Yield Bond Assets	3.89	9.05	0.24	1.46	-0.10	0.88
Blmbg. U.S. Corp: High Yield Index	3.92	10.29	0.22	0.00	-	1.00
Shenkman Capital	3.91	9.04	0.24	1.47	-0.09	0.88
Blmbg. U.S. Corp: High Yield Index	3.92	10.29	0.22	0.00	-	1.00
TIPS Assets	1.98	5.81	0.00	0.15	-0.66	1.00
Blmbg. U.S. TIPS Index	2.07	5.83	0.01	0.00	-	1.00
SSgA TIPS Index-NL	1.98	5.81	0.00	0.15	-0.66	1.00
Blmbg. U.S. TIPS Index	2.07	5.83	0.01	0.00	-	1.00
Emerging Market Debt Assets	0.44	14.49	-0.04	2.32	0.30	1.12
JPM EMBI Global Diversified	-0.03	12.88	-0.10	0.00	-	1.00
Payden Emerging Market Bond	0.44	14.49	-0.04	2.32	0.30	1.12
JPM EMBI Global Diversified	-0.03	12.88	-0.10	0.00	-	1.00

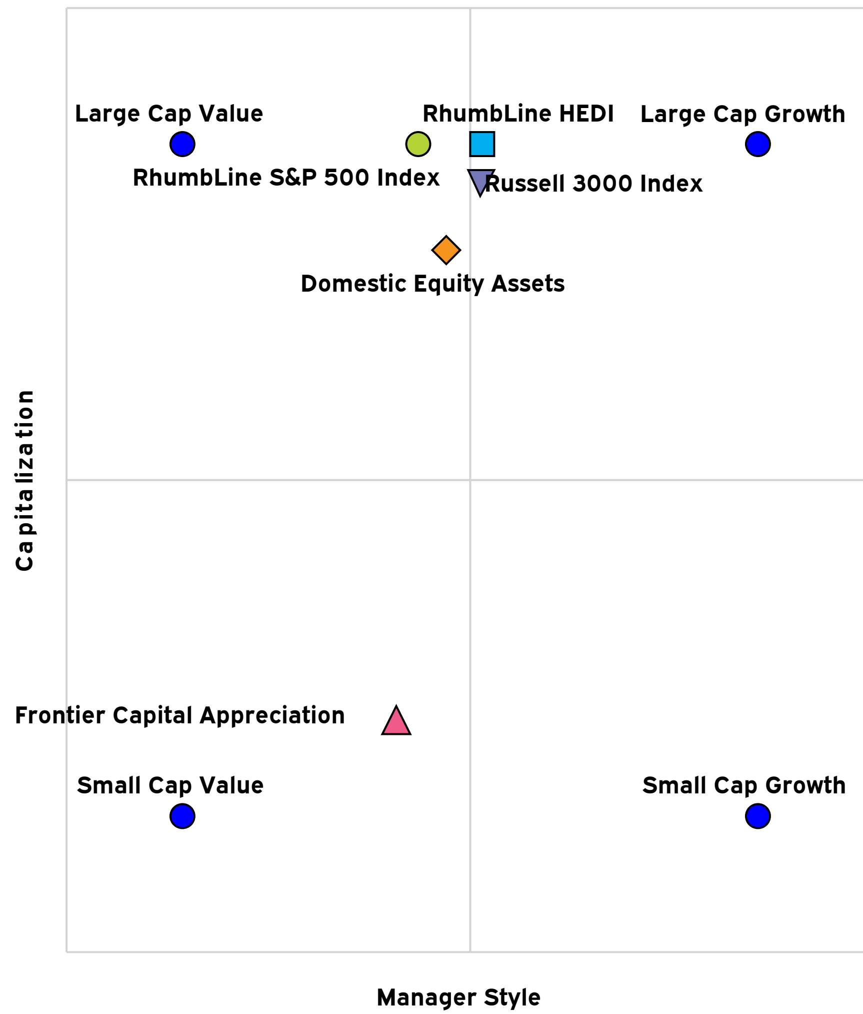
	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio	Tracking Error	Information Ratio	Beta
Open-Ended Real Estate	2.32	8.71	0.05	2.50	-0.29	1.13
NCREIF ODCE (VW) (Monthly)	3.16	7.41	0.15	0.00	-	1.00
Clarion Partners	2.32	8.71	0.05	2.50	-0.29	1.13
NCREIF ODCE (VW) (Monthly)	3.16	7.41	0.15	0.00	-	1.00
Total Closed End Real Estate	0.28	9.16	-0.15	7.29	-0.37	0.78
NCREIF ODCE (VW) (Monthly)	3.16	7.41	0.15	0.00	-	1.00
Rockwood Capital Real Estate Partners Fund XI, L.P.	-	-	-	-	-	-
NCREIF Fund Index-ODCE (VW)	3.16	7.41	0.15	0.00	-	1.00
IFM Global Infrastructure	-	-	-	-	-	-
CPI +3% (Unadjusted)	7.28	2.05	1.94	0.00	-	1.00
EB Temporary Investment Fund	11.99	25.50	0.47	25.12	0.47	9.10
ICE BofA 3 Month U.S. T-Bill	2.16	1.06	-	0.00	-	1.00

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

Retirement System Detail

	Total Fund $	Total Fund %
Frontier Capital Appreciation	25,499,256	36.44
RhumbLine HEDI	22,153,733	31.66
RhumbLine S&P 500 Index	22,313,463	31.89
Domestic Equity Assets	**69,966,452**	**100.00**

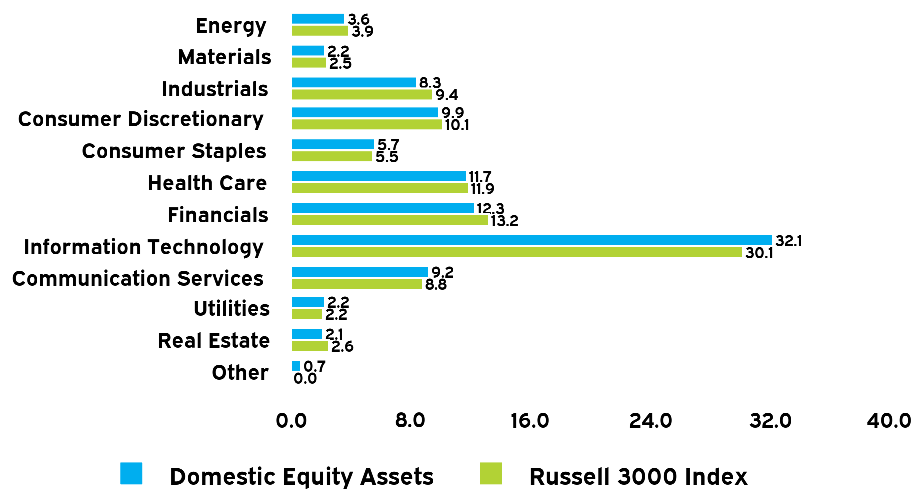
Domestic Equity Style Map
3 Years Ending June 30, 2024



Domestic Equity Characteristics

	Jun-2024	Mar-2024
Wtd. Avg. Mkt. Cap $M		
Domestic Equity Assets	1.0	0.8
Russell 3000 Index	0.9	0.7
Median Mkt. Cap $M		
Domestic Equity Assets	-	-
Russell 3000 Index	-	-
Price/Earnings ratio		
Domestic Equity Assets	27.0	25.8
Russell 3000 Index	25.8	24.8
Current Yield		
Domestic Equity Assets	1.4	1.4
Russell 3000 Index	1.4	1.4
5 Yr. EPS Growth Rate		
Domestic Equity Assets	17.9	15.3
Russell 3000 Index	17.5	15.1
Price/Book ratio		
Domestic Equity Assets	4.9	4.7
Russell 3000 Index	4.6	4.4

Sector Weights (%)

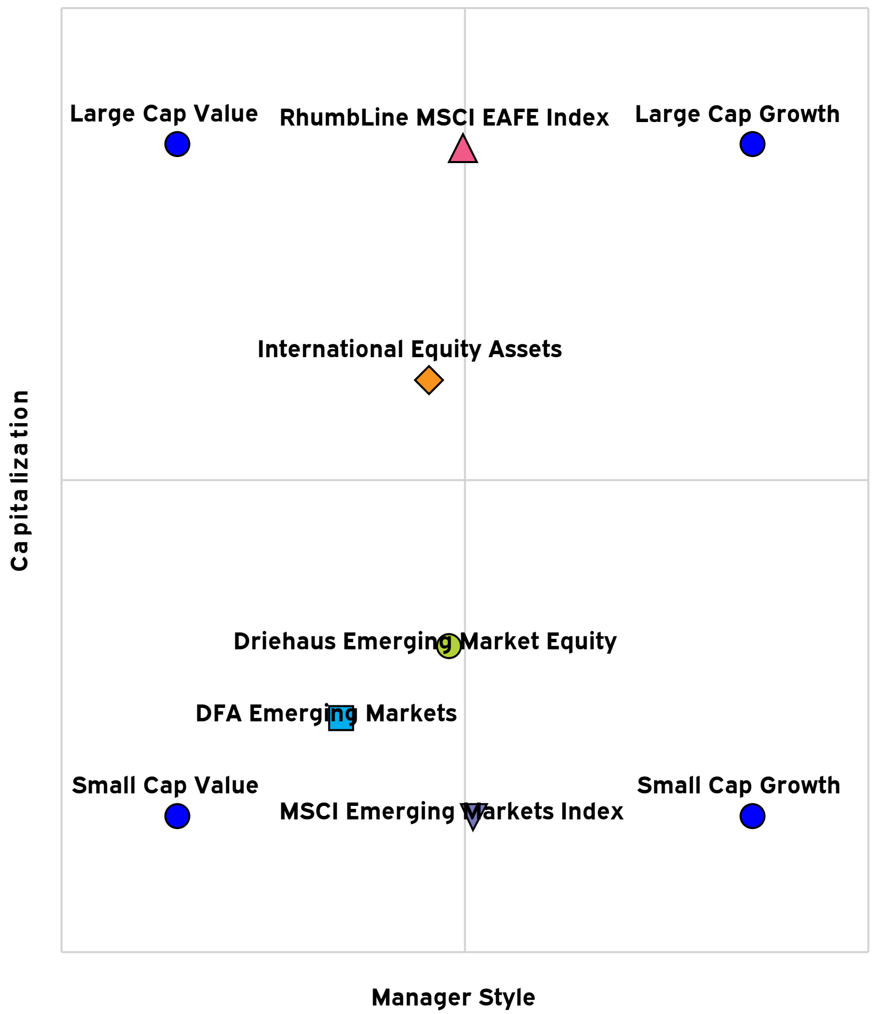


Domestic Equity Assets

	Weight %
Microsoft Corp	7.1
NVIDIA Corporation	6.5
Apple Inc	6.5
Amazon.com Inc	3.8
Meta Platforms Inc	2.4
Alphabet Inc Class A	2.3
Alphabet Inc Class C	1.9
Berkshire Hathaway Inc	1.6
Eli Lilly and Co	1.5
Broadcom Inc	1.5

	Total Fund $	Total Fund %
DFA Emerging Markets	12,810,811	21.74
Driehaus Emerging Market Equity	11,687,647	19.83
RhumbLine MSCI EAFE Index	34,429,521.43	58.43
International Equity Assets	**58,927,979**	**100.00**

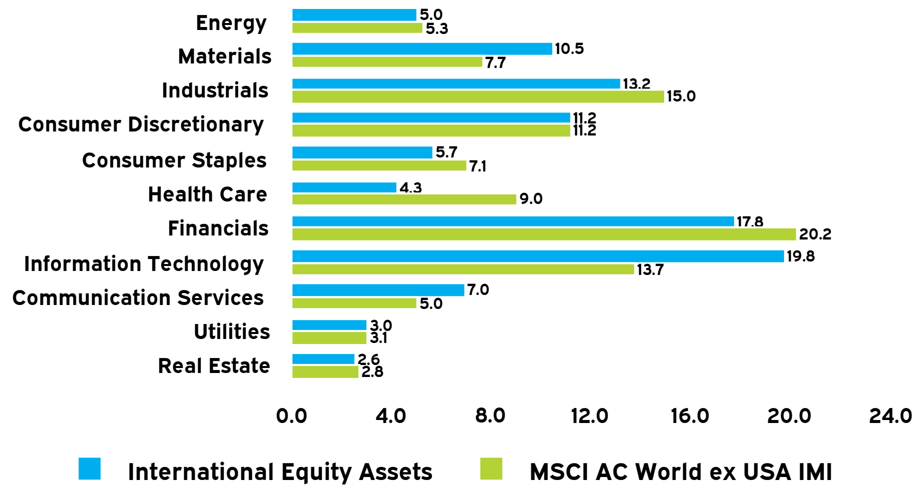
International Equity Assets Style Map
3 Years Ending June 30, 2024



International Equity Characteristics

	Jun-2024	Mar-2024
Wtd. Avg. Mkt. Cap $M		
International Equity Assets	0.1	0.1
MSCI AC World ex USA IMI	0.1	0.1
Median Mkt. Cap $M		
International Equity Assets	-	-
MSCI AC World ex USA IMI	-	-
Price/Earnings ratio		
International Equity Assets	13.6	12.8
MSCI AC World ex USA IMI	16.1	15.4
Current Yield		
International Equity Assets	2.8	3.0
MSCI AC World ex USA IMI	3.0	3.0
5 Yr. EPS Growth Rate		
International Equity Assets	14.9	14.6
MSCI AC World ex USA IMI	10.3	9.4
Price/Book ratio		
International Equity Assets	2.5	2.5
MSCI AC World ex USA IMI	2.5	2.5

Sector Weights (%)



International Equity Assets

	Weight %
Taiwan Semiconductor Manufacturing	4.6
Tencent Holdings LTD	2.9
TECHNO ELECTRIC & ENGINEERIN	2.2
Taiwan Semiconductor Manufacturing	2.0
Alibaba Group Holding Ltd	0.9
China Construction Bank Corp	0.7
SK Hynix Inc	0.7
Reliance Industries Ltd	0.7
Petroleo Brasileiro S.A.- Petrobras	0.5
Infosys Ltd	0.5

	International Equity Assets	MSCI AC World ex USA IMI
Canada	0.0	7.3
United States	0.1	0.1
Americas	**0.1**	**7.4**
Australia	0.0	4.7
Hong Kong	2.8	1.6
Japan	0.0	15.4
New Zealand	0.0	0.2
Singapore	0.2	1.0
Asia Pacific	**3.1**	**23.0**
Austria	0.0	0.2
Belgium	0.0	0.5
Denmark	0.0	2.4
Finland	0.0	0.7
France	0.0	6.0
Germany	0.0	5.0
Ireland	0.5	0.9
Israel	0.0	0.6
Italy	0.0	1.6
Netherlands	0.0	3.5
Norway	0.0	0.5
Portugal	0.0	0.1
Spain	0.0	1.6
Sweden	0.0	2.2
Switzerland	0.0	6.0
United Kingdom	0.0	8.9
EMEA	**0.6**	**40.7**

	International Equity Assets	MSCI AC World ex USA IMI
Developed Markets	3.8	71.2

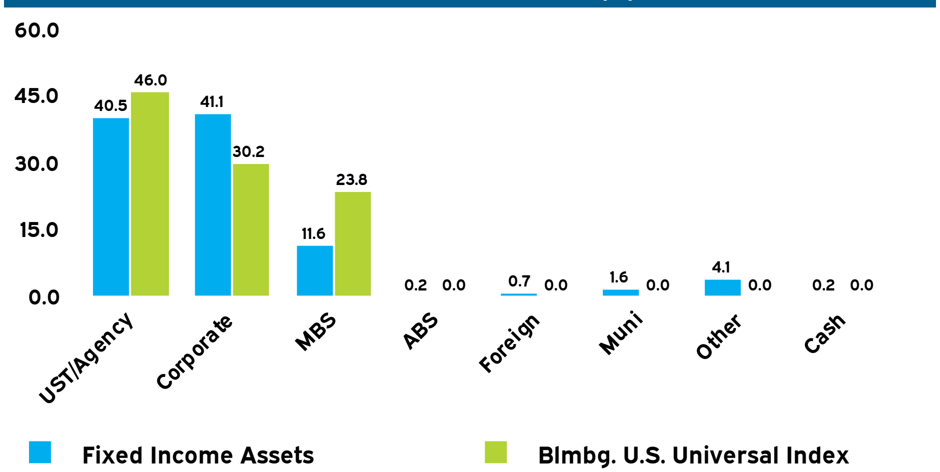
	International Equity Assets	MSCI AC World ex USA IMI
Brazil	4.4	1.2
Chile	0.4	0.1
Colombia	0.1	0.0
Mexico	2.1	0.6
Peru	0.1	0.0
Americas	7.1	2.0
China	18.6	5.7
India	23.8	6.2
Indonesia	1.5	0.5
Korea	9.1	3.6
Malaysia	1.5	0.5
Philippines	0.6	0.2
Taiwan	20.8	5.8
Thailand	1.4	0.4
Asia Pacific	77.5	22.9
Czech Republic	0.1	0.0
Egypt	0.0	0.0
Greece	0.4	0.1
Hungary	0.2	0.1
Kuwait	0.2	0.2
Poland	1.1	0.3
Qatar	0.7	0.2
Saudi Arabia	3.6	1.1
South Africa	2.7	0.8
Turkey	1.3	0.3
United Arab Emirates	1.2	0.3

	International Equity Assets	MSCI AC World ex USA IMI
EMEA	11.6	3.6
Emerging Markets	96.2	28.5
Argentina	0.0	0.0
Malta	0.0	0.0
Mauritius	0.0	0.0
Frontier Markets	0.0	0.0
Other	0.0	0.3
Total	100.0	100.0

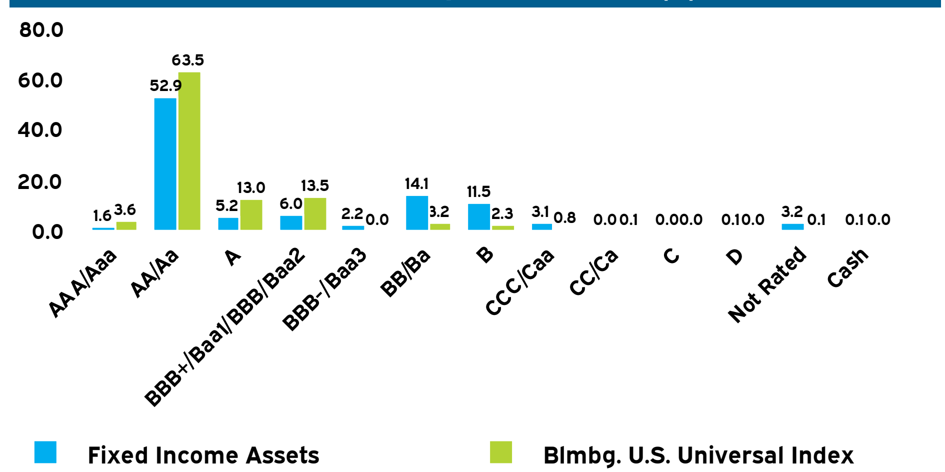
	Total Fund	
	$	*%*
Payden Emerging Market Bond	5,523,880	8.78
Shenkman Capital	19,576,687	31.13
SSgA TIPS Index-NL	11,800,054	18.76
SSgA U.S. Aggregate Bond Index	25,990,231	41.33
Fixed Income Assets	**62,890,851**	**100.00**

Portfolio Characteristics		
	Portfolio	**Benchmark**
Yield To Maturity (%)	6.3	5.3
Average Duration	5.3	5.9
Avg. Quality	BBB	AA
Weighted Average Maturity (Days)	7.4	8.2

Sector Distribution (%)



Credit Quality Distribution (%)



Portfolio Reviews

Top Holdings

Microsoft Corp	7.2
NVIDIA Corporation	6.6
Apple Inc	6.6
Amazon.com Inc	3.8
Meta Platforms Inc	2.4
Alphabet Inc Class A	2.3
Alphabet Inc Class C	1.9
Berkshire Hathaway Inc	1.6
Eli Lilly and Co	1.6
Broadcom Inc	1.5
% of Portfolio	35.5

Account Information

Account Name	RhumbLine S&P 500 Index
Account Structure	Commingled Fund
Inception Date	02/28/1999
Asset Class	US Equity
Benchmark	S&P 500 Index
Peer Group	eV US Passive S&P 500 Equity

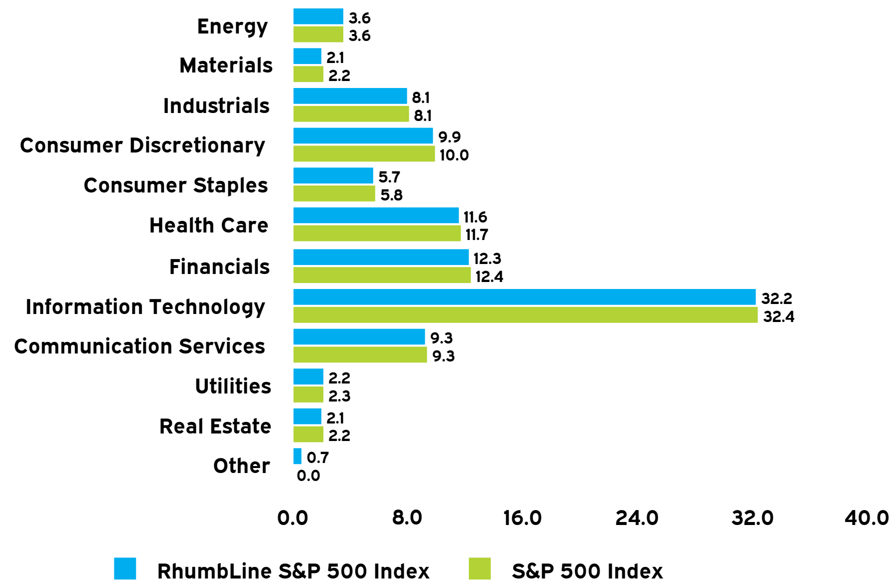
Equity Characteristics vs S&P 500 Index

	Portfolio	Benchmark
Number of Holdings	504	503
Wtd. Avg. Mkt. Cap $B	995.3	999.1
Median Mkt. Cap $B	34.8	34.7
P/E Ratio	27.1	27.1
Yield (%)	1.4	1.4
EPS Growth - 5 Yrs. (%)	17.8	17.8
Price to Book	5.0	5.0

Portfolio Performance Summary

	Quarter To Date	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Since Inception	Inception Date
RhumbLine S&P 500 Index	4.3	24.5	10.0	15.0	12.8	8.1	03/01/1999
S&P 500 Index	4.3	24.6	10.0	15.0	12.9	8.0	

Sector Weights (%)



Top Holdings

Microsoft Corp	6.5
Apple Inc	6.1
CNA Financial Corp	5.1
NVIDIA Corporation	4.2
Amazon.com Inc	3.0
Alphabet Inc Class C	2.3
Alphabet Inc Class A	2.2
Walmart Inc	1.8
Meta Platforms Inc	1.5
Brown-Forman Corp	1.3
% of Portfolio	34.0

Account Information

Account Name	RhumbLine HEDI
Account Structure	Separate Account
Inception Date	10/05/2020
Asset Class	US Equity
Benchmark	Russell 1000 High Effic. Defensive Moderate Index
Peer Group	eV US Large Cap Core Equity

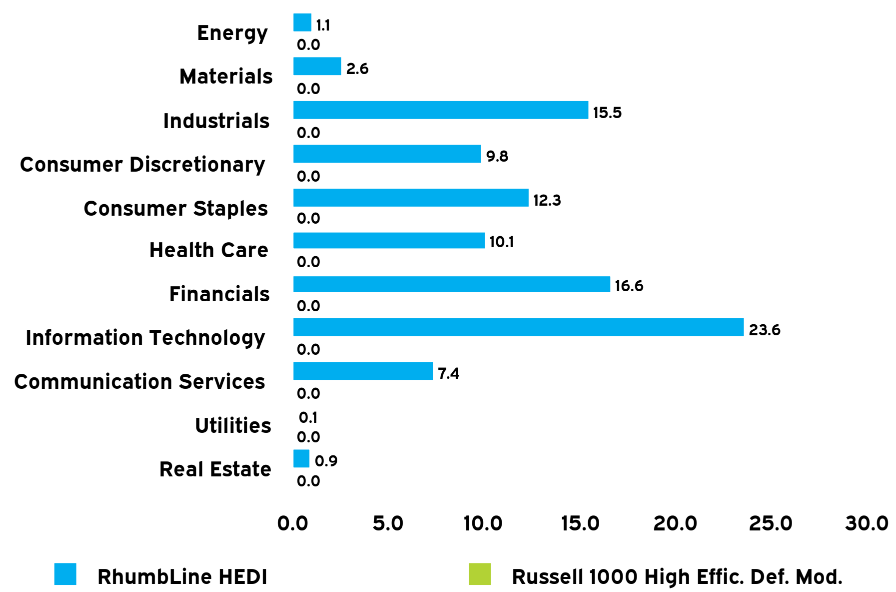
Equity Characteristics vs Russell 1000 High Effic. Def. Mod.

	Portfolio	Benchmark
Number of Holdings	209	0
Wtd. Avg. Mkt. Cap $B	822.5	-
Median Mkt. Cap $B	38.5	-
P/E Ratio	25.1	-
Yield (%)	1.6	-
EPS Growth - 5 Yrs. (%)	15.5	-
Price to Book	4.9	-

Portfolio Performance Summary

	Quarter To Date	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Since Inception	Inception Date
RhumbLine HEDI	-1.6	13.1	7.3	-	-	13.0	11/01/2020
Russell 1000 High Effic. Def. Mod.	2.4	17.7	8.8	13.4	13.5	14.3	

Sector Weights (%)



Russell 1000 HEDI benchmark characteristic data is unavailable.

Top Holdings

FTAI Aviation Ltd	2.6
ATI Inc	2.3
MRC Global Inc	2.1
Carpenter Technology Corp	1.7
Granite Construction Inc	1.6
XPO Inc	1.6
Jabil Inc	1.5
MasTec Inc.	1.5
Planet Fitness Inc	1.4
Summit Materials Inc	1.4
% of Portfolio	17.7

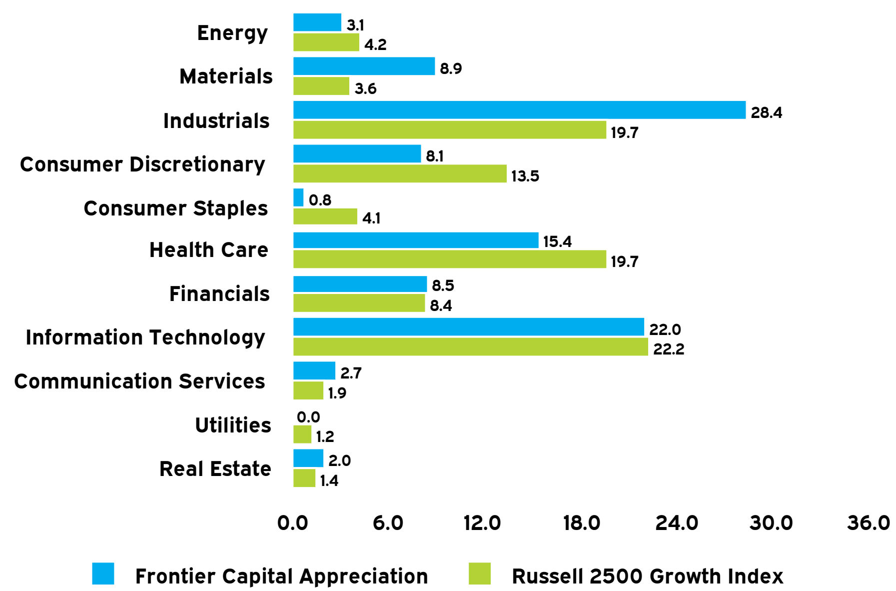
Account Information

Account Name	Frontier Capital Appreciation
Account Structure	Commingled Fund
Inception Date	02/01/2013
Asset Class	US Equity
Benchmark	Russell 2500 Growth Index
Peer Group	eV US Small-Mid Cap Growth Equity

Equity Characteristics vs Russell 2500 Growth Index

	Portfolio	Benchmark
Number of Holdings	145	1,245
Wtd. Avg. Mkt. Cap $B	8.8	8.2
Median Mkt. Cap $B	6.4	1.6
P/E Ratio	18.5	23.3
Yield (%)	0.6	0.7
EPS Growth - 5 Yrs. (%)	28.2	22.2
Price to Book	2.8	4.8

Sector Weights (%)



Portfolio Performance Summary

	Quarter To Date	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Since Inception	Inception Date
Frontier Capital Appreciation	-3.8	7.6	2.5	9.8	8.4	10.8	02/01/2013
Russell 2500 Growth Index	-4.2	9.0	-4.1	7.6	8.8	10.6	

Top Holdings

Novo Nordisk A/S	2.9
ASML Holding NV	2.5
Nestle SA, Cham Und Vevey	1.7
Astrazeneca PLC	1.5
Shell Plc	1.4
Toyota Motor Corp	1.3
SAP SE	1.3
LVMH Moet Hennessy Louis Vuitton SE	1.3
Novartis AG	1.3
Roche Holding AG	1.2
% of Portfolio	16.4

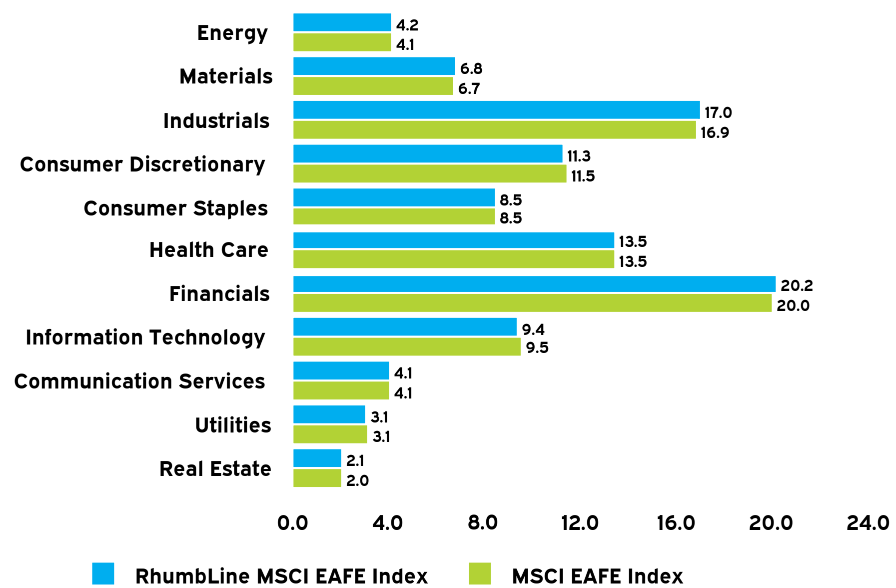
Account Information

Account Name	RhumbLine MSCI EAFE Index
Account Structure	Commingled Fund
Inception Date	07/21/2014
Asset Class	International Equity
Benchmark	MSCI EAFE (Net)
Peer Group	eV EAFE All Cap Equity

Equity Characteristics vs MSCI EAFE Index

	Portfolio	Benchmark
Number of Holdings	744	742
Wtd. Avg. Mkt. Cap $B	102.0	100.9
Median Mkt. Cap $B	14.0	14.0
P/E Ratio	16.8	16.7
Yield (%)	3.1	3.1
EPS Growth - 5 Yrs. (%)	9.1	9.1
Price to Book	2.7	2.7

Sector Weights (%)



Portfolio Performance Summary

	Quarter To Date	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Since Inception	Inception Date
RhumbLine MSCI EAFE Index	-0.1	11.8	3.1	6.7	-	4.8	08/01/2014
MSCI EAFE Index	-0.2	12.1	3.4	7.0	4.8	5.1	

Top Holdings

Taiwan Semiconductor Manufacturing	4.6
Tencent Holdings LTD	2.9
TECHNO ELECTRIC & ENGINEERIN	2.2
Taiwan Semiconductor Manufacturing	2.0
Alibaba Group Holding Ltd	0.9
China Construction Bank Corp	0.7
SK Hynix Inc	0.7
Reliance Industries Ltd	0.7
Petroleo Brasileiro S.A.- Petrobras	0.5
Infosys Ltd	0.5
% of Portfolio	15.7

Account Information

Account Name	DFA Emerging Markets
Account Structure	Mutual Fund
Inception Date	12/01/2014
Asset Class	International Equity
Benchmark	MSCI Emerging Markets (Net)
Peer Group	eV Emg Mkts All Cap Equity

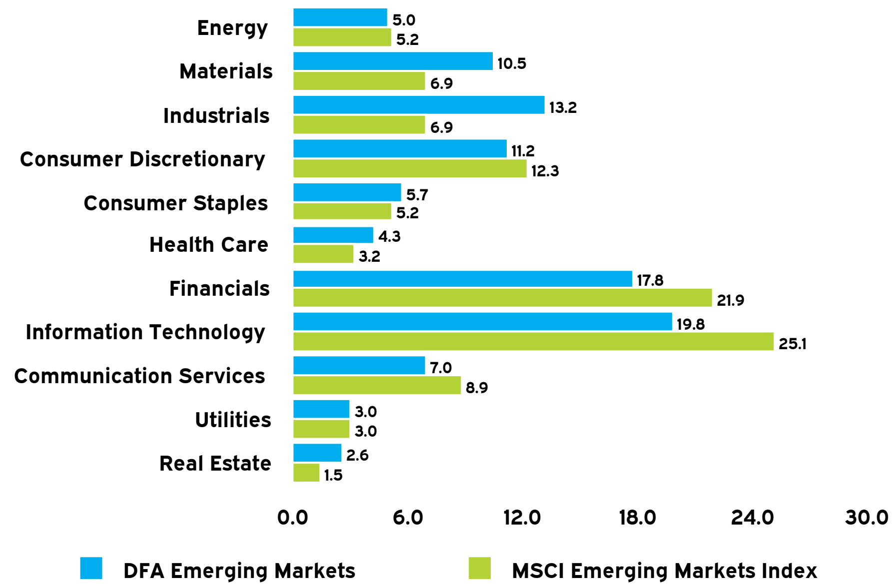
Equity Characteristics vs MSCI Emerging Markets Index

	Portfolio	Benchmark
Number of Holdings	6,915	1,330
Wtd. Avg. Mkt. Cap $B	88.6	152.4
Median Mkt. Cap $B	0.7	7.0
P/E Ratio	13.6	15.4
Yield (%)	2.8	2.8
EPS Growth - 5 Yrs. (%)	14.9	13.6
Price to Book	2.5	2.6

Portfolio Performance Summary

	Quarter To Date	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Since Inception	Inception Date
DFA Emerging Markets	5.6	14.8	-0.5	5.9	-	5.2	01/01/2015
MSCI Emerging Markets Index	5.1	13.0	-4.7	3.5	3.2	4.2	

Sector Weights (%)



Driehaus Emerging Market Equity | As of June 30, 2024

Top Holdings

Taiwan Semiconductor Manufacturing	9.2
Tencent Holdings LTD	6.8
Samsung Electronics Co Ltd	5.8
Icici Bank Ltd	2.7
SK Hynix Inc	2.0
China Merchants Bank Co Ltd	2.0
Reliance Industries Ltd	1.7
Kia Corporation	1.5
Shell Plc	1.5
PetroChina Company Limited	1.5
% of Portfolio	34.7

Account Information

Account Name	Driehaus Emerging Market Equity
Account Structure	Commingled Fund
Inception Date	12/01/2014
Asset Class	International Equity
Benchmark	MSCI Emerging Markets (Net)
Peer Group	eV Emg Mkts All Cap Equity

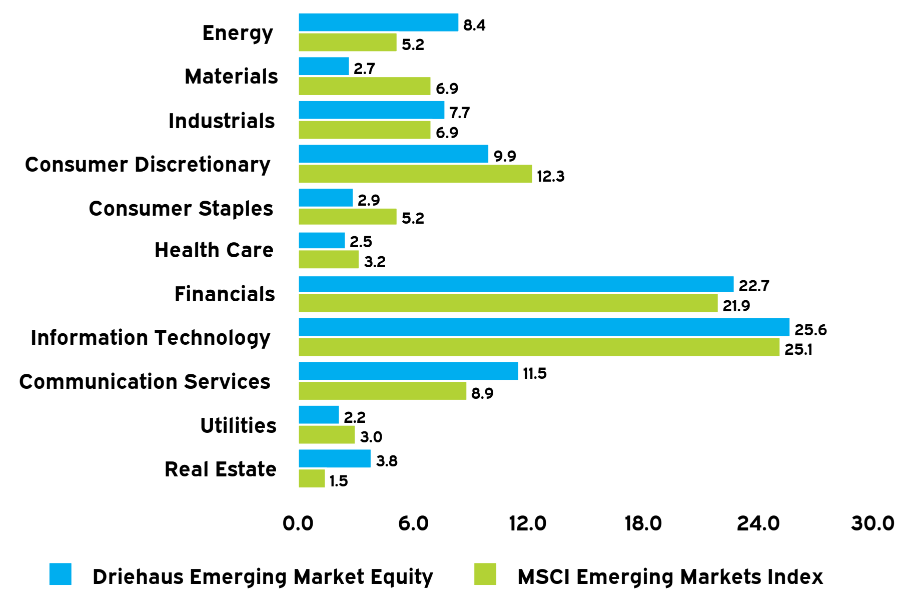
Equity Characteristics vs MSCI Emerging Markets Index

	Portfolio	Benchmark
Number of Holdings	117	1,330
Wtd. Avg. Mkt. Cap $B	178.8	152.4
Median Mkt. Cap $B	19.8	7.0
P/E Ratio	14.3	15.4
Yield (%)	2.5	2.8
EPS Growth - 5 Yrs. (%)	17.8	13.6
Price to Book	2.8	2.6

Portfolio Performance Summary

	Quarter To Date	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Since Inception	Inception Date
Driehaus Emerging Market Equity	4.9	17.6	-3.5	5.9	-	6.2	01/01/2015
MSCI Emerging Markets Index	5.1	13.0	-4.7	3.5	3.2	4.2	

Sector Weights (%)



Account Information

Account Name	SSgA U.S. Aggregate Bond Index
Account Structure	Commingled Fund
Inception Date	04/01/2001
Asset Class	US Fixed Income
Benchmark	Blmbg. U.S. Aggregate Index
Peer Group	eV US Core Fixed Inc

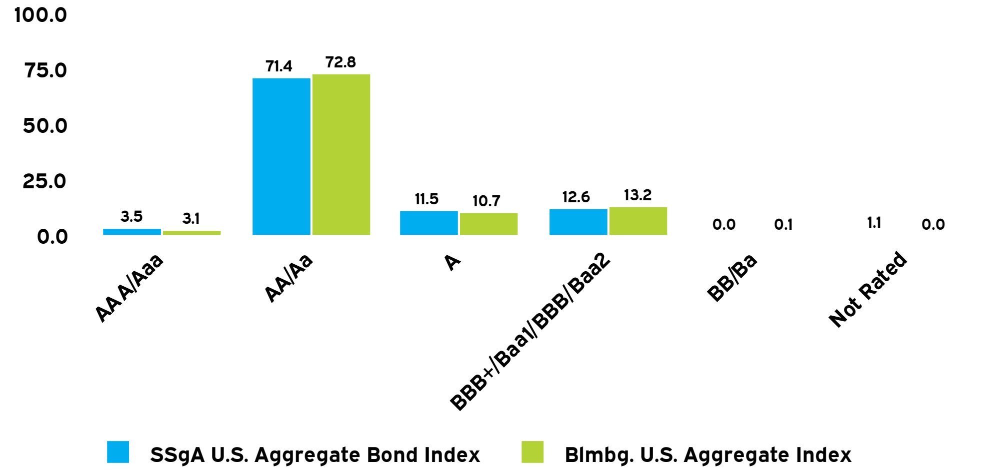
Portfolio Performance Summary

	Quarter To Date	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Since Inception	Inception Date
SSgA U.S. Aggregate Bond Index	0.1	2.6	-3.1	-0.3	1.3	3.6	05/01/2001

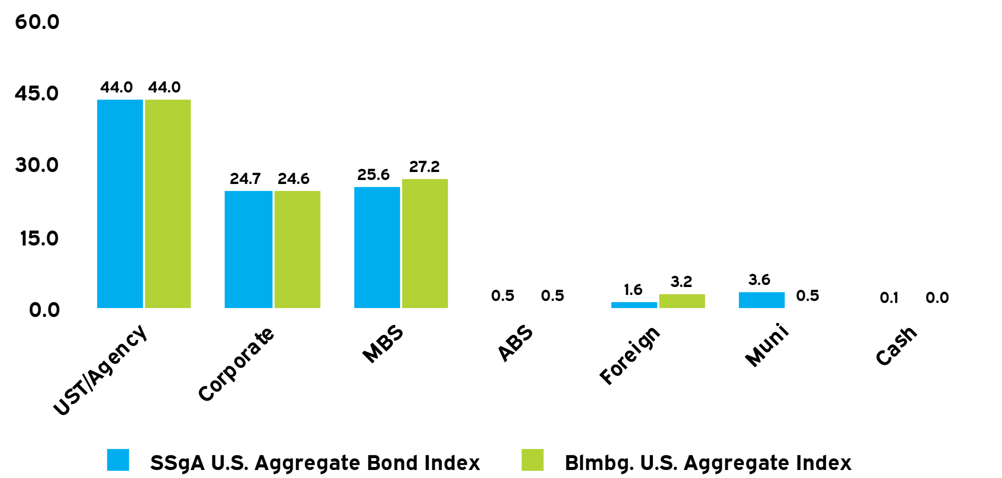
Portfolio Fixed Income Characteristics

	Q2-24 Portfolio	Q1-24 Portfolio
Yield To Maturity	5.0	4.9
Average Duration	6.1	6.2
Average Quality	AA	AA
Weighted Average Maturity	8.6	8.6

Credit Quality Allocation



Sector Allocation



Account Information

Account Name	Shenkman Capital
Account Structure	Commingled Fund
Inception Date	04/01/2006
Asset Class	US Fixed Income
Benchmark	Blmbg. U.S. Corp: High Yield Index
Peer Group	eV US High Yield Fixed Inc

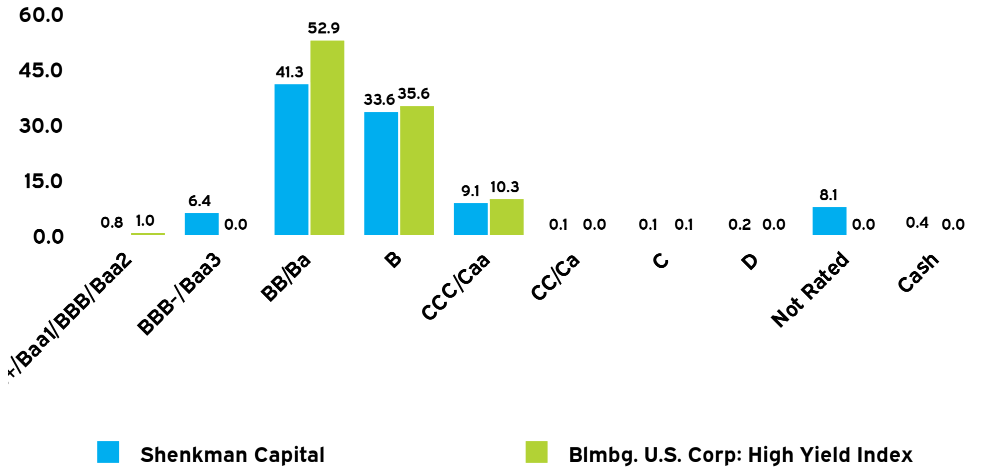
Portfolio Performance Summary

	Quarter To Date	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Since Inception	Inception Date
Shenkman Capital	1.3	9.3	2.1	3.9	4.1	6.0	04/01/2006

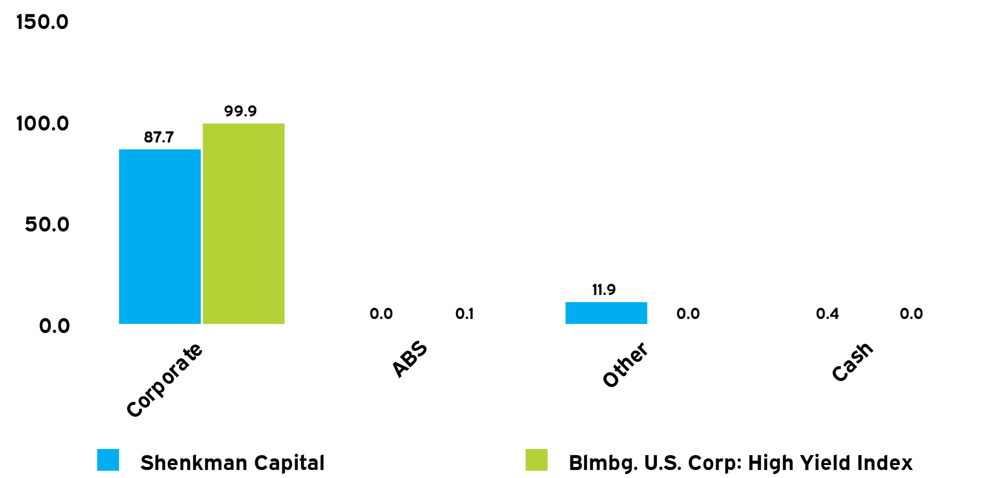
Portfolio Fixed Income Characteristics

	Q2-24 Portfolio	Q1-24 Portfolio
Yield To Maturity	7.6	7.4
Average Duration	3.0	2.9
Average Quality	B	B
Weighted Average Maturity	4.8	4.7

Credit Quality Allocation



Sector Allocation



Account Information

Account Name	SSgA TIPS Index-NL
Account Structure	Commingled Fund
Inception Date	09/30/2005
Asset Class	US Fixed Income
Benchmark	Blmbg. U.S. TIPS Index
Peer Group	eV US TIPS / Inflation Fixed Inc

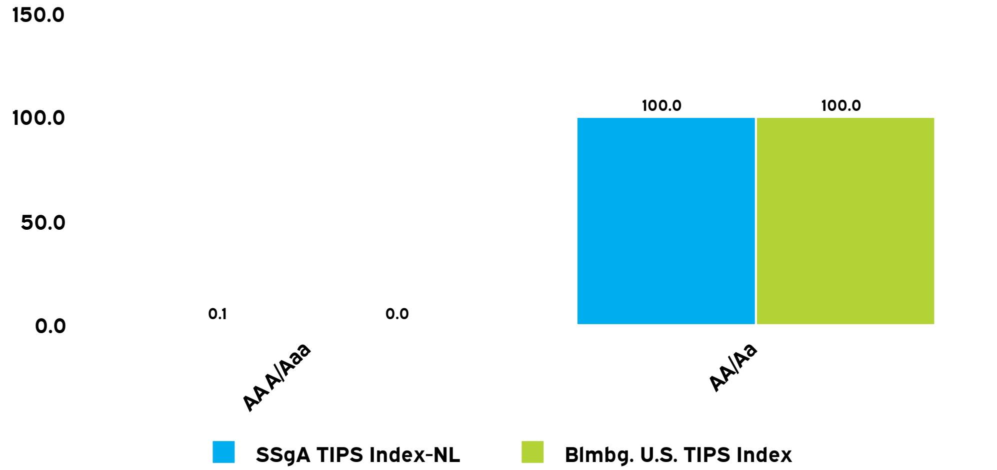
Portfolio Performance Summary

	Quarter To Date	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Since Inception	Inception Date
SSgA TIPS Index-NL	0.8	2.6	-1.4	2.0	1.8	3.3	10/01/2005

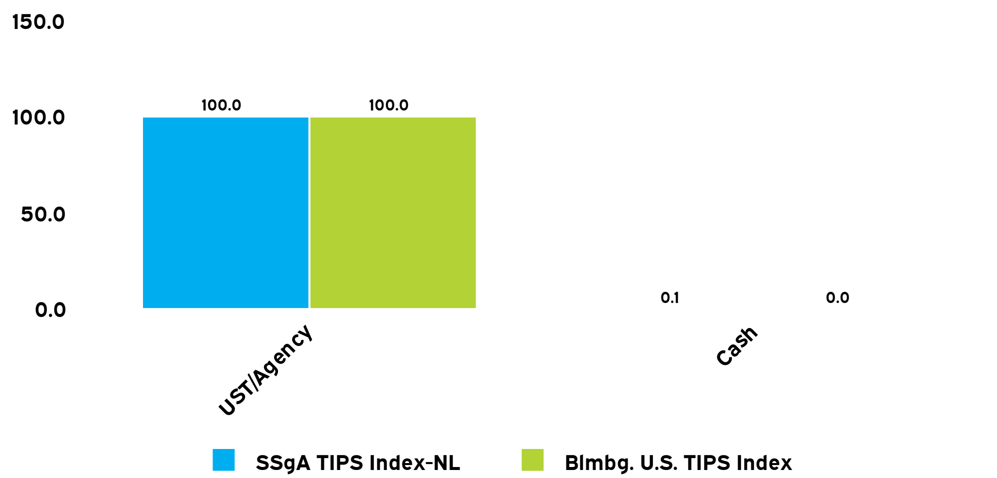
Portfolio Fixed Income Characteristics

	Q2-24 Portfolio	Q1-24 Portfolio
Yield To Maturity	4.7	4.6
Average Duration	6.6	6.8
Average Quality	AA	AA
Weighted Average Maturity	7.2	7.4

Credit Quality Allocation



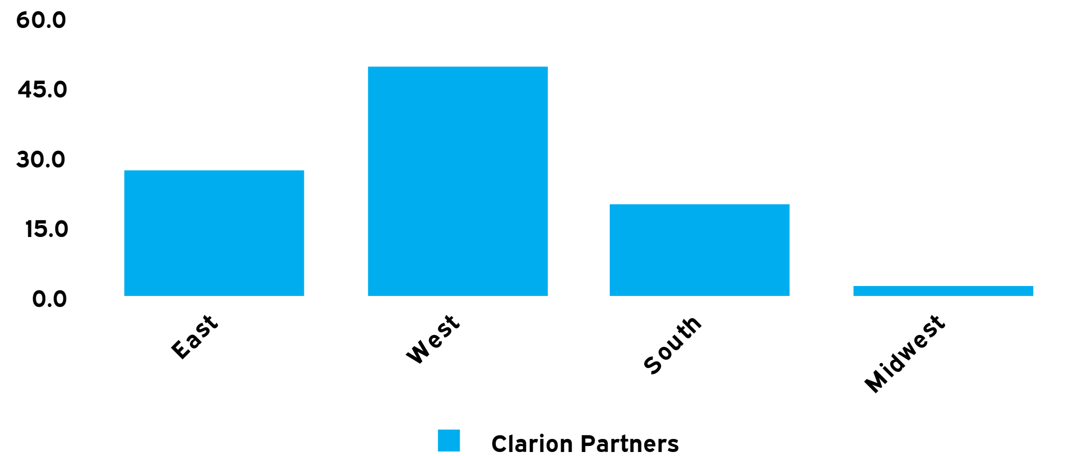
Sector Allocation



Account Information

Account Name	Clarion Partners
Account Structure	Commingled Fund
Inception Date	09/01/2002
Asset Class	US Private Real Estate
Benchmark	NCREIF ODCE (VW) (Gross) (Monthly)

Property Location



Portfolio Performance Summary

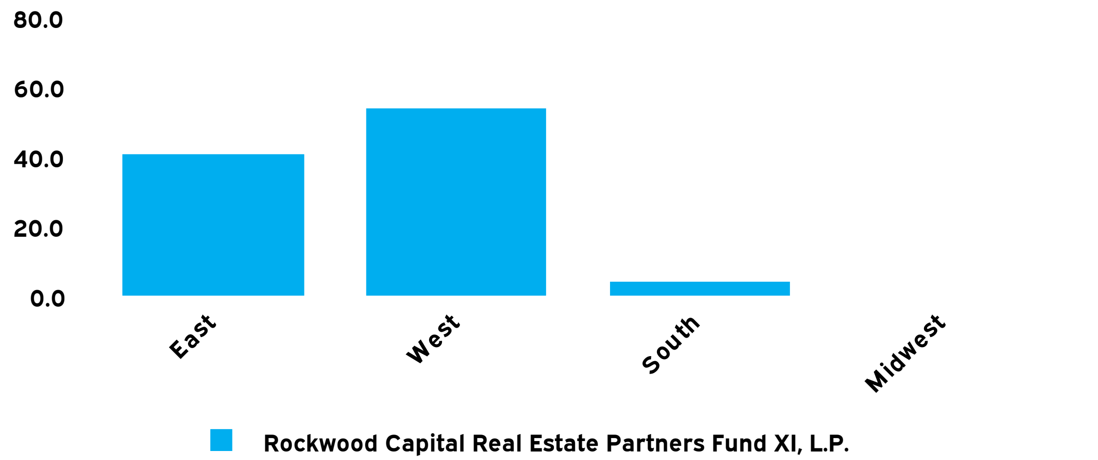
	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Since Inception	Inception Date
Clarion Partners	-2.6	-12.4	-0.7	2.3	6.4	6.2	10/01/2002
NCREIF ODCE (VW) (Gross) (Monthly)	-0.5	-9.3	1.9	3.2	6.4	7.0	

Clarion characteristics as of March 31, 2024

Account Information

Account Name	Rockwood Capital Real Estate Partners Fund XI, L.P.
Account Structure	Separate Account
Inception Date	12/01/2019
Asset Class	US Private Real Estate
Benchmark	NCREIF Fund Index-ODCE (VW)

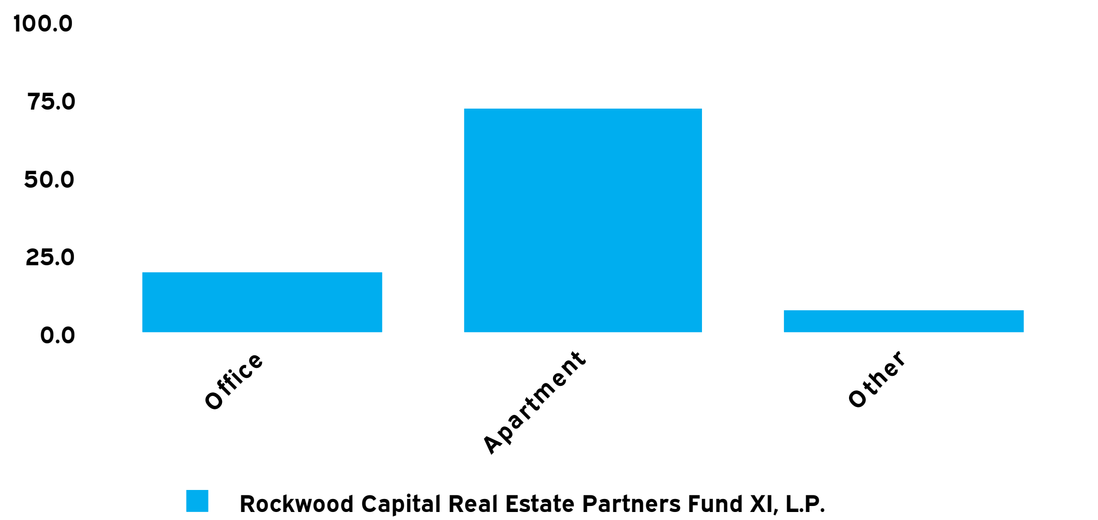
Property Location



Portfolio Performance Summary

	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Since Inception	Inception Date
Rockwood Capital Real Estate	-3.8	-17.9	0.2	-	-	-0.2	12/01/2019
NCREIF Fund Index-ODCE (VW)	-0.5	-9.3	1.9	3.2	6.4	2.9	

Property Type



Private Equity Market Investment Overview | As of June 30, 2024

Partnerships	Vintage Year	Capital Commitment $	Total Contribution $	Total Distribution $	Market Value $	Since Inception
North American Strategic Partners 2006	2006	4,539,998.0	4,411,658.9	-2,094,251.4	9,272.2	-40.3
Ironsides Direct Investment Fund IV	2015	2,500,000.0	2,419,534.3	3,593,229.9	747,226.5	14.1
Ironsides Direct Investment Fund V, L.P.	-	-	2,730,291.8	713,787.7	3,338,736.2	10.1
Ironsides Partnership Fund IV	2015	2,500,000.0	1,544,323.5	1,738,375.8	2,456,491.7	27.1
Ironsides Partnership Fund V, L.P.	2019	2,000,000.0	1,591,789.4	-	2,397,424.3	17.6
HarbourVest 2019 Global Fund	-	-	2,927,632.0	590,434.0	4,011,222.0	18.7

Annual Investment Expense Analysis

	Market Value	Estimated Expense	Expense Ratio (%)
Equity Assets	**128,894,431**	**409,892**	**0.32**
Domestic Equity Assets	**69,966,452**	**228,140**	**0.33**
RhumbLine S&P 500 Index	22,313,463	15,619	0.07
Frontier Capital Appreciation	25,499,256	201,444	0.79
RhumbLine HEDI	22,153,733	11,077	0.05
International Equity Assets	**58,927,979**	**181,752**	**0.31**
International Developed Markets Equity Assets	**34,429,521**	**26,601**	**0.08**
RhumbLine MSCI EAFE Index	34,429,521	26,601	0.08
International Emerging Markets Equity Assets	**24,498,458**	**155,151**	**0.63**
DFA Emerging Markets	12,810,811	49,962	0.39
Driehaus Emerging Market Equity	11,687,647	105,189	0.90
Fixed Income Assets	**62,890,851**	**142,983**	**0.23**
Investment Grade Bonds Assets	**25,990,231**	**10,396**	**0.04**
SSgA U.S. Aggregate Bond Index	25,990,231	10,396	0.04
High Yield Bond Assets	**19,576,687**	**88,095**	**0.45**
Shenkman Capital	19,576,687	88,095	0.45
TIPS Assets	**11,800,054**	**4,720**	**0.04**
SSgA TIPS Index-NL	11,800,054	4,720	0.04
Emerging Market Debt Assets	**5,523,880**	**39,772**	**0.72**
Payden Emerging Market Bond	5,523,880	39,772	0.72
Real Estate Assets	**9,158,392**	**60,764**	**0.66**
Open-Ended Real Estate	**5,523,973**	**60,764**	**1.10**
Clarion Partners	5,523,973	60,764	1.10

	Market Value	Estimated Expense	Expense Ratio (%)
Total Closed End Real Estate	**3,634,419**	**-**	**-**
Rockwood Capital Real Estate Partners Fund XI, L.P.	3,634,419	-	-
Private Equity Assets	**12,960,373**	**-**	**-**
North American Strategic Partners 2006	9,272	-	-
Ironsides Partnership Fund IV	2,456,492	-	-
Ironsides Direct Investment Fund IV	747,227	-	-
Ironsides Partnership Fund V, L.P.	2,397,424	-	-
Ironsides Direct Investment Fund V, L.P.	3,338,736	-	-
HarbourVest 2019 Global Fund	4,011,222	-	-
Private Debt Assets	**4,020,315**	**-**	**-**
NB Private Debt Fund IV	4,020,315	-	-
Infrastructure	**11,163,113**	**-**	**-**
IFM Global Infrastructure	11,163,113	-	-
Cash	**498,994**	**-**	**-**
EB Temporary Investment Fund	498,994	-	-

Current Issues

Manager Due Diligence Agenda

MEKETA
INVESTMENT GROUP

80 University Ave
Westwood, MA 02090
781.471.3500
Meketa.com

MARLBOROUGH RETIREMENT SYSTEM

Manager Due Diligence Meetings
Tuesday, July 30, 2024

I. Manager Due Diligence Presentations 8:45 – 9:15 a.m.

Manager/Product	Asset Class	Phone Number
Rockwood Capital	Closed End Real Estate	415-699-4985
Rockwood Capital Real Estate Partners Fund XI		
Constitution Capital Partners	Private Equity	978-888-4479
Ironsides Partnership Fund IV		
Ironsides Direct Investment Fund IV		
Ironsides Partnership Fund V		
Ironsides Direct Investment Fund V		
HarbourVest Partners	Private Equity	857-327-9423 Conf. ID 821400781#
HarbourVest 2019 Global Fund		
Neuberger Berman Group	Private Debt	646-497-4958
NB Private Debt Fund IV		

Emerging Market Equity
RFP Respondent Review

Background

→ The City of Marlborough Contributory Retirement System ("the System") adopted a 10% target allocation (previously 14%) to Emerging Market Equity at the November Board meeting.

→ As of June 30, 2024, the Association had approximately $24.5 million (~10.7% of total portfolio assets) invested in Emerging Market Equity. Currently, DFA and Driehaus manage Emerging Market Equity strategies on behalf of the System.

→ In April, to remain complaint with PERAC's seven-year investment vendor regulation, Meketa Investment Group issued an RFP on behalf of the System, to evaluate the Emerging Market Equity universe. Responses were due back on April 22, 2024.

- A total of 24 managers submitted responses to this search.

→ The following pages review the 24 qualified manager respondents.

Emerging Market Equity RFP Respondent Review

STRATEGY		abrdn Emerging Markets Equity Income (All Cap Core)	ABS Emerging Markets Strategic Portfolio	Acadian Emerging Markets Equity	Ashmore EM Equity (All Cap) Strategy
Overall		A	A	A	A
Firm	Rating	A	A	A	A
	Reason	98% publicly owned/ 2% employee-owned; AUM of $474.8B	Majority and increasing employee ownership; AUM of $7.1 B	96% owned by Brightsphere / 4% employee-owned; AUM of $109.1 B	68% publicly owned/ 32% employee-owned; AUM of $51.9B
Team	Rating	A	HA	A	A
	Reason	Experienced "pod" of 3PMs, 1 analyst, platform turnover	Experienced, well-resourced team with strong networks in various global markets	Tenured leaders supported by well-resourced team, some turnover	Experienced team, 3 PMs supported by 3 analysts. Track record is somewhat short
Philosophy	Rating	A	A	A	A
	Reason	Style agnostic, focused on identifying companies with undervalued fundamentals	Reasonable manager-of-managers (Fund of Funds) approach diversifying across manager styles and geographies	Reasonable systematic quantitative approach evaluating stocks based on Value, Growth, Quality and Technical signals	Style agnostic, focused on identifying companies with high quality characteristics and sustainable growth drivers
Process	Rating	A	A	HA	A
	Reason	Bottom-up approach focused on companies with undervalued and improving fundamentals offering the best expected risk adjusted returns. Team builds portfolio of 60-100 stocks, with turnover around 20-40%	Deep sourcing, rigorous qualitative, quantitative, and operational due diligence. Resulting multi-manager portfolio has 500-650 stocks with turnover around 30-60%	Solid quantitative process utilizing multiple proprietary and evolving models, diversified portfolio of 200-1000 stocks with turnover of 40-80%	Primarily bottom-up driven approach, though top-down elements account for some of the team's idea generation and risk management. Team seeks high quality, undervalued companies with sustainable growth drivers. Portfolio of 60-80 stocks with turnover around 60-80%
Performance	Rating	HA	HA	HA	A
	Reason	Strong performance over all periods	Strong medium & long-term performance. Middling short-term returns	Strong performance over all periods	Somewhat short track record. Middling short-term performance. First quartile medium-term returns
Fees	Rating	HA	A	A	HA
	Reason	First quartile fees	Second quartile fees; fund of funds	Near median fees	First quartile fees

Emerging Market Equity RFP Respondent Review

STRATEGY		Axiom Emerging Markets World Equity Strategy	Candriam Global Emerging Markets Equities Strategy	Coronation Global Emerging Markets Equity	Driehaus Emerging Markets Growth
Overall		A	A	A	HA
Firm	Rating	HA	A	A	A
	Reason	100% employee-owned boutique with AUM of $22.2B	95% Owned by NY Life Insurance, 5% employee-owned with AUM of $160.6B	71% Publicly owned, 29% employee-owned. Broad employee ownership. AUM of $33.4B	100% Owned by Driehaus Family Trust; AUM of $17.3B
Team	Rating	A	A	A	HA
	Reason	2 tenured PMs supported by 9 analysts (2 dedicated, 7 global); 2 PM departures since 2021.	3 PMs supported by both investment and ESG analysts	3 PMs supported by analysts	Strong, stable, experienced team of 2 PMs & 1 PM/Macro Strategist, supported by a few analysts
Philosophy	Rating	A	A	A	A
	Reason	Reasonable dynamic growth philosophy	GARP style, seeking quality companies with sustainable growth	Style agnostic, long-term and valuation driven	Growth/Momentum strategy that looks for companies with sustainable, accelerating growth that are also timely investments
Process	Rating	HA	A	A	HA
	Reason	Structured, repeatable and data-driven investment process with bottom-up elements. 100+ stocks with turnover averaging 38% since inception	Thematic approach seeking companies with competitive advantages in structurally growing markets, with strong management teams, high profitability and robust balance sheets. Portfolio of 80-120 names, aiming for turnover of 30-40% with recent spike	Primarily bottom-up driven with top-down considerations. Team is focused on determining the fair value of a company, believing valuation overrides everything, even quality. Portfolio of 50-70 names, turnover around 20-65%	Bottom-up approach incorporating macro considerations, identifying companies across growth spectrum (Dynamic, Cyclical, Growth, and Consistent Growth) while seeking to capitalize on positive momentum. Portfolio of 80-120 names, with turnover around 100-150%
Performance	Rating	A	A	NA	HA
	Reason	Short track record, middling short- and medium-term returns	Poor short-term performance, middling medium- and long-term returns	Poor short-, medium- and long-term returns.	Middling short-term performance, first quartile medium- and long-term returns
Fees	Rating	A	HA	A	HA
	Reason	High stated fees, discount available	First quartile fees	Third quartile fees	First quartile fees

Emerging Market Equity RFP Respondent Review

STRATEGY		Eastspring Global Emerging Markets Dynamic	Fisher Emerging Markets Equity	GQG Partners Emerging Markets Equity	JOHCM Emerging Markets
Overall		A	A	HA	A
Firm	Rating	A	HA	A	A
	Reason	100% owned by Prudential plc; AUM of $239B	100% employee ownership; AUM of $251.9B	24.1% public ownership; majority remains with founder Rajiv Jain. AUM of $143.4 B; rapid growth and many recent corporate developments	Recent ownership change: 100% Owned by Perpetual Limited (publicly traded ASX: PPT). AUM of $27.2B
Team	Rating	A	A	A	A
	Reason	Team of PM/generalist analysts led by experienced head of GEM; some change in leadership at executive level	Investment Policy Committee of 5 responsible for all strategies; supported by 120 investment professionals across strategies	Rajiv Jain supported by 2 PMs, 1 Deputy PM, and team of analysts; moderate broader team turnover	Seasoned, stable, focused team led by Emery Brewer and Dr. Ivo Kovachev
Philosophy	Rating	A	A	A	A
	Reason	Value philosophy looking to identify short-term mispricings owing to investor biases	Core philosophy focused on identifying and understanding macro forces	Future quality growth philosophy; can be contrarian and style opportunistic	Flexible, all-cap growth style. 70% of portfolio allocated to "Classical" Growth bucket, 30% allocated to "Recovery" Growth
Process	Rating	A	A	HA	A
	Reason	Bottom-up, value-oriented, fundamental investment process that seeks to minimize biases in their own decision-making to help identify short term mispricings and overreactions in the market. 40-60 holdings, turnover around 30-40%	Top-down, quantitatively-driven process that aims to identify country and sector themes, and allocate to countries/sectors most likely to outperform; portfolio of 50-100 names with annual turnover around 25%	In-depth fundamental process, incorporating traditional and non-traditional research to uncover future quality growth companies with wide moats and reasonable valuations; portfolio of 40-80 names with fairly high turnover of 100-120%	Allocates to best performing regions/sectors/industries and invests quickly to capitalize on positive momentum or favorable technical signals; lack of initial due diligence made up for by initiating at small weights and cutting losses early. Portfolio of 70-100 names with turnover from 50-125%
Performance	Rating	HA	A	HA	A
	Reason	Strong performance over all periods	Strong performance over all periods	Very strong short- and medium-term performance	Middling short-term returns, second quartile medium- and long-term performance
Fees	Rating	HA	NA	HA	A
	Reason	First quartile fees	Fourth quartile fees	First quartile fees	Third quartile fees

Emerging Market Equity RFP Respondent Review

STRATEGY		JPM GEM Diversified	Lazard Emerging Markets Equity	LSV Emerging Markets Value Equity	Parametric Emerging Markets Equity
Overall		A	A	A	A
Firm	Rating	A	A	A	A
	Reason	97% public ownership; AUM of $3.1 T	100% public ownership; AUM of $210.5B	61% employee ownership; AUM of $100.2B	61% employee ownership; AUM of $100.2B
Team	Rating	A	A	HA	A
	Reason	Experienced core team of 3 PMs; access to wide pool of analysts	Stable, experienced team of 4 PMs, 4 analysts; access to Lazard's wide network of research staff	Stable and experienced team of 5 PMs manage all LSV strategies; supported by 9 analysts	Large, experienced, stable team of 7 PMs
Philosophy	Rating	A	A	A	A
	Reason	Core/value strategy that uses top-down (country and sector) and bottom-up (stock) screens along with fundamental analysis to build a diversified portfolio of EM stocks	Straightforward relative value philosophy, seeking high quality companies	Straightforward value philosophy; quantitative implementation based on fundamentals	Top-down philosophy allocating to country first followed by sector, emphasis on diversification, compound growth and volatility capture
Process	Rating	A	A	HA	A
	Reason	Combination top-down, bottom-up approach that leverages deep fundamental research by global sector teams to create a balanced portfolio exhibiting value, quality, and momentum factors; portfolio of 100-175 names with annual turnover of 50-100%	Bottom-up, fundamental approach aimed at identifying high quality, financially productive companies whose valuations are attractive relative to the company's absolute level and stability of ROE. Portfolio of 70-90 stocks, with average turnover around 25%	Quantitative process that hinges on a proprietary model that emphasizes fundamental factors; portfolio construction minimizes residual benchmark risk and maximizes expected return; diversified portfolio of 175-200 names with annual turnover around 25%	Top-down, quant, all-cap approach that emphasizes broad exposure to emerging market economies, including frontier. Places countries into tiers based on size and liquidity; underweight large, overweight small. Generally holds 1,500+ securities, low turnover of 5-15%
Performance	Rating	A	A	HA	A
	Reason	Third quartile returns over all periods	Strong short and medium-term performance. Third quartile long-term performance	Very strong performance over all periods	Strong short -term, middling medium-term, poor long-term returns
Fees	Rating	HA	HA	NA	A
	Reason	First quartile fees	First quartile fees	Fourth quartile fees	First/second quartile fees, opex not disclosed

Emerging Market Equity RFP Respondent Review

STRATEGY		Polar Capital Emerging Market Stars Strategy	Pzena Emerging Markets Focused Value	RBC Emerging Markets Equity	SGA Emerging Markets Growth
Overall		A	A	HA	A
Firm	Rating	A	A	A	A
	Reason	80% Publicly owned, 20% employee-owned. AUM of $27.6B	100% Owned by current/former employees and select other partners. AUM of $64.3B	Wholly owned subsidiary of Royal Bank of Canada (RBC), a publicly traded company; $454B AUM	71% held by Virtus Investment Partners, 29% Employee Owned; AUM of $28.8B
Team	Rating	A	HA	HA	A
	Reason	Experienced lead PM supported by moderately experienced team of PMs/analysts; team joined from Nordea in 2018	Experienced team of 4 co-PM/analysts, supported by research/ESG analysts	Large, stable team of 8 PMs, led by seasoned lead investor	Stable, experienced team of 3PMs, including firm co-Founder Robert Rohn
Philosophy	Rating	A	A	A	A
	Reason	Economic Value Add (EVA) philosophy looking for companies with ROIC in excess of WACC; naturally biased towards quality/ growth companies as a result	Classic Value approach that emphasizes timeliness and patience	GARP style, seeking quality companies	Quality Growth philosophy favoring companies with sustainable growth prospects
Process	Rating	A	HA	HA	A
	Reason	Bottom-up approach with top-down considerations focused on identifying future "Star" quality growth companies with sustainable EVA creation. Portfolio of 50-55 stocks, turnover around 25-50%	Fundamental, bottom-up approach focusing on the most undervalued 20% of their universe. Seeks companies trading at attractive price-to-normal earnings levels. Team builds a portfolio of 40-80 companies with turnover of 20-40%	Combination of bottom-up and top-down research, seeking companies with sustainably high CFROI that also trade at reasonable valuations. 45-50 holdings, turnover around 20%	Fundamental, bottom-up approach focused on high-quality growth businesses with superior pricing power, recurring revenues, growth opportunity, financial and management strength that lead to sustainable earnings and cash flow growth. Portfolio of 25-35 stocks, with turnover around 30%.
Performance	Rating	A	HA	A	NA
	Reason	Short track record. Middling short-term performance. First quartile medium-term returns	Very strong performance over all periods	Middling short and medium-term returns, second quartile long-term performance	Short track record, fourth quartile near- and medium-term returns
Fees	Rating	HA	NA	HA	A
	Reason	First quartile fees	Fourth quartile fees	First/second quartile fees	Near median fees

Emerging Market Equity RFP Respondent Review

STRATEGY		TT EM Unconstrained Equity	Wasatch Emerging Markets Select	WCM Emerging Markets	WGI Emerging Markets Strategy
Overall		A	HA	A	A
Firm	Rating	A	HA	A	A
	Reason	Wholly owned subsidiary of Simitomo Mitsui Financial Group; $5.5B AUM	100% Employee owned; AUM of $27.3B	Majority employee owned; minority (25%) stake held by Natixis Investment Management; AUM of $90.8B	100% Employee-owned, split 50/50 between the 2 founders, one of whom is transitioning into an advisory role. AUM of $12B
Team	Rating	A	HA	HA	A
	Reason	2 PMs, supported by 7 analysts, PM changes	Experienced team led by Ajay Krishnan, supported by roughly a dozen analysts	Experienced, stable decision-making team, supported by deep bench of business and culture analysts	Experienced team led by Co-Founder/PM Meg Reynolds, who is supported by 2 Assistant PMs & 8 generalist analysts. Co-Founder/PM Bryan Ward is transitioning from PM to advisor after a hiatus.
Philosophy	Rating	A	A	A	A
	Reason	Core, all-cap approach with a growth tilt and a strong valuation overlay	GARP style, seeking businesses capable of sustainable earnings growth that also trade at reasonable valuations	Quality Growth philosophy, seeking businesses with wide economic moats trading at reasonable valuations	Core philosophy with valuation discipline, focused on investing in companies with strong management/free cash flow generation over a long-time horizon
Process	Rating	A	A	HA	HA
	Reason	Integrated top-down, bottom-up approach that seeks to identify mispriced equities that are favorably positioned within the macro environment they expect. Portfolio of 50-60 stocks with turnover of 125-150%	Primarily bottom-up, macro-aware process that aims to understand the key growth drivers of a business to assess its potential for long-term earnings growth. Team builds a portfolio of 20-40 names with turnover around 20-40%	Bottom-up fundamental process; team builds a concentrated, high conviction portfolio of 50 quality growth businesses from conventional growth sectors; target turnover is 15-35%, roughly half of which comes from trims and adds	Bottom-up approach focused on identfiying businesses that offer the best combination of fundamental characteristics and upside potential over a long-term investment horizon. Concentrated portfolio of 25-31 names, with low turnover around 10%
Performance	Rating	NA	HA	A	HA
	Reason	Short track record, poor short-term performance, middling medium-term returns	Middling short-term performance, very strong medium- & long-term returns	Poor short-term returns, second quartile medium- and long-term performance	Strong performance over all periods
Fees	Rating	NA	A	A	NA
	Reason	Fourth quartile fees	Third quartile fees	Near median fees	Fourth quartile fees

Emerging Market Equity Respondent Performance Preview

Strategy Name	RM	Returns - 3 Years (3/2024)	Rank	Returns - 5 Years (3/2024)	Rank	Returns - 10 Years (3/2024)	Rank
Highly Advantageous Respondents							
Driehaus Emerging Markets Growth	Gross	-1.98	43	6.69	24	5.87	19
GQG Partners Emerging Markets Equity	Gross	5.31	9	11.56	5	---	---
RBC Emerging Markets Equity	Gross	-2.79	47	3.85	55	5.45	26
Wasatch Emerging Markets Select	Gross	-2.64	46	9.91	8	6.76	10
Select Advantageous Respondents							
Abrdn Emerging Markets Eq. Income (All Cap Core)	Gross	-1.23	39	6.23	28	5.99	18
ABS Emerging Markets Strategic Portfolio	Gross	-3.10	50	5.16	38	6.22	15
Eastspring Global Emerging Markets Dynamic	Gross	4.03	14	6.98	21	5.34	28
LSV Emerging Markets Value Equity	Gross	6.57	6	7.24	19	5.70	22
Pzena Emerging Markets Focused Value	Gross	4.90	11	8.29	14	6.10	16
WGI Emerging Markets Strategy	Gross	4.57	12	7.64	17	5.76	21
Benchmarks							
MSCI – EM IMI-GD	Gross	-3.53		3.39		3.60	

Emerging Market Equity Respondent Full Performance Review

Strategy Name	RM	Returns - 3 Years (3/2024)	Rank	Returns - 5 Years (3/2024)	Rank	Returns - 10 Years (3/2024)	Rank
Abrdn Emerging Markets Eq. Income (All Cap Core)	Gross	-1.23	39	6.23	28	5.99	18
ABS Emerging Markets Strategic Portfolio	Gross	-3.10	50	5.16	38	6.22	15
Acadian Emerging Markets Equity	Gross	1.64	24	6.66	24	5.51	25
Ashmore EM Equity (All Cap) Strategy	Gross	-4.10	55	6.92	22	---	---
Axiom Emerging Markets World Equity Strategy	Gross	-5.17	65	5.13	38	---	---
Candriam Global Emerging Markets Equities	Gross	-8.34	92	3.59	59	4.61	46
Coronation Global Emerging Markets Equity	Gross	-10.48	97	0.83	94	1.61	97
Driehaus Emerging Markets Growth	Gross	-1.98	43	6.69	24	5.87	19
Eastspring Global Emerging Markets Dynamic	Gross	4.03	14	6.98	21	5.34	28
Fisher Investments Emerging Markets Equity	Gross	-7.31	85	2.91	68	3.72	69
GQG Partners Emerging Markets Equity	Gross	5.31	9	11.56	5	---	---
J O Hambro Capital Management Emerging Markets	Gross	-3.14	50	5.53	32	4.94	35

Emerging Market Equity Respondent Full Performance Review

Strategy Name	RM	Returns - 3 Years (3/2024)	Rank	Returns - 5 Years (3/2024)	Rank	Returns - 10 Years (3/2024)	Rank
J.P. Morgan Investment Management GEM	Gross	-4.57	59	3.53	60	3.53	74
Lazard Emerging Markets Equity	Gross	3.38	17	5.33	35	3.67	71
LSV Emerging Markets Value Equity	Gross	6.57	6	7.24	19	5.70	22
Parametric Emerging Markets Equity	Gross	1.46	24	3.53	60	2.80	89
Polar Capital Emerging Market Stars Strategy	Gross	-4.91	63	7.41	18	---	---
Pzena Emerging Markets Focused Value	Gross	4.90	11	8.29	14	6.10	16
RBC Emerging Markets Equity	Gross	-2.79	47	3.85	55	5.45	26
Sustainable Growth Advisers Emerging Markets	Gross	-9.08	94	2.43	76	---	---
TT International Asset Management EM	Gross	-7.61	87	4.36	48	---	---
Wasatch Emerging Markets Select	Gross	-2.64	46	9.91	8	6.76	10
WCM Emerging Markets	Gross	-8.22	91	4.81	42	4.88	37
Westwood Global Investments Emerging Markets	Gross	4.57	12	7.64	17	5.76	21

Emerging Equity RFP Respondent Review

Strategy Name	Vehicle Type	Management Fee
abrdn Emerging Markets Instl	Commingled	0.75% for the first US$50m
ABS Emerging Markets MA Fund	Commingled	0.75%
Acadian Emerging Markets Equity	Commingled	0.75%
Ashmore EM Equity Strategy	SICAV	0.60%
Axiom Emerging Markets World Equity	Separate Account	1.00% for the first US$25m
Candriam Global Emerging Markets Equities	CF	0.45%
Coronation Global Emerging Markets Equity	Commingled	0.45%
Driehaus Emerging Markets Growth	CIT	0.55%
Eastspring Global EM Dynamic	CIT	0.50%
Fisher Investments Emerging Markets Equity Strategy	Separate Account	1.00% for the first US$25m
GQG Partners Emerging Markets	Private Fund	0.65%
JO Hambro Emerging Markets Equity	CIT	0.80%

Emerging Equity RFP Respondent Review

Strategy Name	Vehicle Type	Management Fee
JPM Global Emerging Markets Focused	Commingled	0.55%
Lazard Emerging Markets Equity	Separate Account	1.00% for the first US$100m
LSV Emerging Markets	Separate Account	1.00% for the first US$50m
Parametric: Emerging Market Equity	CIT	0.78% for the first US$150m
Polar Capital Emerging Market Stars Strategy	CIT	0.50%
Pzena Emerging Markets Focused Value	Mutual Fund	1.00%
RBC Emerging Markets Equity	Commingled	0.70% for the first US$50m
SGA Emerging Markets Growth Equity	Separate Account	0.85% for the first US$25m
TT Emerging Markets Unconstrained Strategy	Separate Account	1.00% for the first US$50m
Wasatch Emerging Markets Select	CIT	0.80%
WCM Emerging Markets	Commingled	0.75%
Westwood Global Emerging Markets	Commingled	1.15%

Summary

→ Meketa Investment Group recommends the Board consider interviewing managers at a subsequent meeting.

Emerging Market Debt
RFP Respondent Review

Background

→ The City of Marlborough Contributory Retirement System ("the System") adopted a 5% target allocation (previously 2%) to Emerging Market Debt at the November Board meeting.

→ As of June 30, 2024, the Association had approximately $5.5 million (~2.4% of total portfolio assets) invested in Emerging Market Debt. Currently, Payden manages the Emerging Market Bond strategy on behalf of the System.

→ In April, to remain complaint with PERAC's seven-year investment vendor regulation, Meketa Investment Group issued an RFP on behalf of the System, to evaluate the Emerging Market Debt universe. Responses were due back on May 3, 2024.

- A total of 13 managers submitted responses to this search.

→ The following document provides a review of the responses for the Board's consideration.

Emerging Market Debt RFP Respondent Review

Manager	Headquarters	Strategy	Overall Rating
MetLife Investment Management	Whippany, NJ	Emerging Markets Debt - Blend	Highly Advantageous
Payden & Rygel	Los Angeles, CA	Emerging Markets Bond	Highly Advantageous
Neuberger Berman LLC	New York, NY	Emerging Markets Debt Blend	Highly Advantageous
abrdn Inc.	Edinburgh, UK & Philadelphia, PA	Emerging Markets Debt - Hard Currency Sovereign[1]	Advantageous
TCW Investment Management Company	Los Angeles, CA	Emerging Markets Fixed Income Total Return	Advantageous
Pacific Investment Management Company (PIMCO)	Newport Beach, CA	Emerging Markets Full Spectrum Bond	Advantageous
LM Capital Group	San Diego, CA	Emerging Markets Debt	Advantageous
Loomis, Sayles & Company	Boston, MA	Emerging Markets Debt Blended Total Return	Advantageous
Marathon Asset Management	New York, NY	Emerging Markets Optimal Beta Strategy	Advantageous
Grantham, Mayo, Van Otterloo & Co. LLC (GMO)	Boston, MA	Emerging Country Debt Strategy	Advantageous
Frontier Investment Management (FIM)	Dubai, UAE	Global Emerging Markets (GEM) Debt	Advantageous
VanEck Associates Corporation	New York, NY	Emerging Markets Bond Strategy	Advantageous
Global Evolution LLC	New York, NY	Hard Currency Debt & Local Currency Debt[2]	Not Advantageous

[1] abrdn Inc. – strategy formerly named Emerging Markets Debt Plus.

[2] Global Evolution LLC - does not have a blended currency vehicle available for a mandate of this size. They propose a 50/50 allocation between their hard and local currency private LLC funds.

MetLife Investment Management

Rating Criteria	Rating	Rationale
Overall	Highly Advantageous	
Organization	Highly Advantageous	• MetLife Investment Management is a wholly owned affiliate of MetLife, Inc., a publicly traded company listed on the New York Stock Exchange. On July 1, 2019, Logan Circle Partners, L.P. merged with and into its affiliate MetLife Investment Advisors, LLC and was renamed MetLife Investment Management, LLC. • MetLife Investment Management was established as an investment advisor in 2006 and has over $600.8 billion in assets under management as of December 31, 2023, of which $2.2 billion is managed in the Emerging Market Debt- Blend strategy that incepted in November 2006.
Team	Highly Advantageous	• Portfolio managers Scott Moses (EM Blend / Corporate) and Todd Howard (EM Blend / Government) have been managing the strategy since its inception. Messrs.' Moses and Howard are joined by 3 additional portfolio managers focused on EM Corporate, EM Government, and Asia Credit. • The Emerging Markets Debt team is comprised of 8 investment professionals, including 5 portfolio managers and 3 traders. The team leverages dedicated regional based sovereign and corporate analysts for fundamental research. These resources include 2 sovereign analysts in Santiago, 2 in London, and 1 in Tokyo. Corporate research includes seven analysts in Hong Kong, 15 in London, six in Santiago, and 30 in the US (Philadelphia & Whippany).
Investment Philosophy	Highly Advantageous	• MetLife believes that fixed income markets regularly misprice securities that are exposed to credit, country, and currency risk. In seeking to exploit inefficiencies and provide clients with consistent returns, the team uses proprietary, in-depth fundamental research, and focuses on relative value across the credit spectrum. • The objective of MetLife's EMD team is to produce predictable and consistent excess returns. The strategy is opportunistic and invest ins both U.S. dollar and local currency sovereign debt, as well as global credits across the capital structure.
Investment Process	Highly Advantageous	• MetLife's investment process blends bottom-up credit selection with top-down macroeconomic research. The team's analysts assess credits with a focus on asset quality, management, and capital structure. This fundamental work is paired with top-down research, which focuses on country and currency relative value. The team also monitors currency valuation with in-house regression models and tracks currency volatility as a leading indicator of risk. • Portfolio construction is driven by the team's blended top-down/bottom-up global relative value process, with a focus on maintaining geographic diversity. Mr. Howard focuses on the non-dollar portfolio and on macro-based idea generation and workflow while Mr. Moses focuses on higher risk hard currency exposures and overall risk positioning where he has final say.
Performance	Highly Advantageous	• Through December 31, 2023, MetLife outperformed the 50/50 JPM EMBI Global Diversified / JPM GBI-EM Global Diversified index over all 1-, 3-, 5-, and 10-year trailing periods, with excess returns of 1.8%, 2.0%, 1.9%, and 2.0%, respectively, gross of fees.
Fees	Advantageous	• CIT: Effective fee 0.55%; No minimum.

Wellington Management Company

Rating Criteria	Rating	Rationale
Overall	Highly Advantageous	
Organization	Advantageous	• The parent company of the Wellington Management organization is Wellington Management Group llp, a Massachusetts private limited liability partnership owned by 203 active partners, as of May 2024. Wellington Management Company was established in 1928 with headquarters located in Boston, Massachusetts. • Wellington has a long track record of investing in emerging markets debt (EMD) since 1990 within multiple strategies and began managing dedicated EMD portfolios on an advisory basis in 1998. • As of December 31, 2023, total firm asset was $1.2 trillion, of which $4.5 billion was in the Opportunistic Emerging Markets Debt strategy, incepted in December 2006.
Team	Highly Advantageous	• Kevin Murphy joined the team in 2016 and became co-Portfolio Manager in 2019 and lead Portfolio Manager in 2022. Former lead Portfolio Manager, Jim Valone, managed the approach since the inception. He retired and withdrew from Wellington Management's partnership on 31 December 2021. Kevin Murphy has assumed leadership of the product and the long-only Emerging Markets Debt platform. Murphy works on macro country/sector decisions while Evan Ouellette, Portfolio Manager, focuses primarily on portfolio construction and security selection. • The team has 5 additional portfolio managers who support actively in broad strategy discussions and are supported by a team of 27 dedicated Emerging Markets professionals in addition to over 100 other shared firm investment professionals.
Investment Philosophy	Highly Advantageous	• The team believes that emerging markets must be approached from a global perspective, recognizing that global market conditions will impact the attractiveness of emerging markets. They take both a quantitative and fundamental approach to assessing rates and currencies in a large universe of emerging markets countries.
Investment Process	Highly Advantageous	• The investment process begins with an assessment of global economic, liquidity, and market conditions. The portfolio managers have final responsibility for setting the total portfolio risk level. Country research assesses both the ability and willingness of emerging countries to service their external debt and summarizes this in a country score to quantify the team's sovereign credit outlook and rank countries according to credit strength from high to low. • Portfolios are constructed with the goal of generating attractive total returns while minimizing systemic risk. Mr. Valone has final decision-making power and all decisions are made under his guidance and approval.
Performance	Advantageous	• Through December 31. 2023, Wellington outperformed the 50/50 JPM EMBI Global Diversified / JPM GBI-EM Global Diversified index over all 1-, 3-, 5, and 10-year trailing periods, with excess returns of 0.3%, 0.4%, 1.5%, and 2.3%, respectively gross of fees.
Fees	Advantageous	• CF: Effective fee 0.55% plus operating expenses capped at 0.20% (currently ~0.045%); $1 million minimum.

Payden & Rygel

Rating Criteria	Rating	Rationale
Overall	Highly Advantageous	
Organization	Highly Advantageous	• Payden & Rygel was founded in 1983 and is based in Los Angeles, CA. Other office locations are Boston, London, and Milan. There are over 220 employees across all offices. The 100% employee-owned firm has over 30 employee shareholders, with most outstanding shares (just under 70%) owned by Joan Payden, the firm's founder, president, and CEO. The firm is also majority (75%) female owned. Payden also has a joint venture with the firm Metzler, which serves non-US clients. • As of December 31, 2023, Payden managed $151.0 billion in assets under management. Total fixed income assets comprise the majority of the firms AUM at $145.0 billion, with the AUM for the Emerging Markets Debt strategy at $3.2 billion.
Team	Highly Advantageous	• Payden & Rygel operates at the direction of its' Management Committee, which is comprised of eleven senior professionals, all of whom are active in day-to-day management of the firm. Committee members are key-area leaders which include investment strategy, research, client service, operations, technology, and risk, all of whom coordinate closely with every functional area at Payden. • Kristin J. Ceva has spearheaded the EMD effort since the strategies inception in 1998. She and Arthur Hovsepian, Director, have worked together since 2004, with zero leadership turnover. They remain the portfolio managers and ultimate decision makers. Vladimir Milev, Senior Vice President has also been part of the team for well over a decade.
Investment Philosophy	Advantageous	• Payden's emerging markets philosophy is based on the premise that country selection is the key alpha driver. The investment team focuses on countries implementing structural reforms, improving country fundamentals and smaller "next generation" sovereigns, which are often out of benchmark countries.
Investment Process	Highly Advantageous	• The team generates risk-adjusted return forecasts used in the asset allocation process. Sovereign credit investment decisions are based on fair value estimates and yield spread relationships within and between countries. Corporate credits are selected based on relative spread analysis, an assessment of comparable firms globally, and the team's country-specific economic outlook. • The team has tight risk controls and aims to have a higher quality and lower volatility portfolio than peers. Corporate exposure is limited to 35%, local currency exposure is limited to 40%, and the team rarely invests in securities rated CCC or below. The team emphasizes liquidity and quality, and does not invest in distressed corporates, equities, structured products, or credit derivatives.
Performance	Advantageous	• Through December 31, 2023, Payden outperformed 50/50 JPM EMBI Global Diversified / JPM GBI-EM Global Diversified index over all 1-, 3-, 5-, and 10-year trailing periods, with excess returns of 0.6%, 0.6%, 1.6%, and 2.2%, respectively, gross of fees.
Fees	Advantageous	• MF (PYEIX): SI Share Class; expense ratio 0.69%; $10 million minimum investment (waived). • CF: Effective fee 0.69%; $1 million minimum.

Neuberger Berman LLC

Rating Criteria	Rating	Rationale
Overall	Advantageous	
Organization	Advantageous	• Neuberger Berman LLC (NB) was founded in 1939 by Roy Neuberger and Robert Berman. Neuberger Berman is structured with the Neuberger Berman Group LLC as a holding company for which its subsidiaries provide a broad range of global investment solutions across equities, fixed income, and alternatives. Today, NB is a private, independent, employee—owned investment manager with approximately 730 employee owners as of June 30, 2024. • Although the firm has gone through a complicated history of mergers, acquisitions, and restructuring, we believe that the current structure and independence as an employee-owned firm is what we look for in an investment manager. • Total global AUM at NB was $463 billion, as of December 31, 2023. Total fixed income AUM was $180 billion, and the proposed Blended Strategy AUM was $2.9 billion.
Team	Highly Advantageous	• In 2013, seven senior investment professionals joined the firm from ING Investment Management to lead a dedicated emerging markets debt team, including an additional 13 colleagues joining to support the EMD platform. There are now 39 members on the EMD strategy team. • The emerging markets debt strategy is led by Rob Drijkoningen, (The Hague), and Gorky Urquieta, (Atlanta), with 34 and 30 years of industry experience, respectively. Bart van der Made (The Hague), Raoul Luttik (The Hague), and Prashant Singh (Singapore), are lead portfolio managers for hard currency, local bond currency, and Asia local bond portfolios, respectively. Jennifer Gorgoll (Atlanta) and Nish Popat (The Hague) are co-lead portfolio managers for corporate bonds.
Investment Philosophy	Advantageous	• NB believes that EMD is an improving asset class that is less efficient than developed debt markets while also seeing stronger growth potential in emerging economies than in developed markets allowing for greater alpha generating opportunities. They feel that inefficiencies exist largely due to a market that is under-researched, leading to a greater number and larger average size of mispricing opportunities to exploit, which is well suited to their fundamentally driven investment process.
Investment Process	Highly Advantageous	• Each sub-strategy is managed by the respective Hard Currency, Local Currency and EM Corporates lead managers, concentrating on selecting best ideas in their investment universe against their respective individual benchmarks. The construction of the blended portfolio is the responsibility of the TAA team, who is composed of the lead portfolio managers on the blend strategy. In deciding the risk allocation and tactical shifts across the sub-strategies, the TAA team relies on top-down views and expected returns, incorporating investment regimes, as well as thematic views. • The Blend strategy tends to take more concentrated positioning in each of the three sub-categories than the pure strategies themselves as a result of diversification benefits received at the aggregate level.
Performance	Advantageous	• Through December 31, 2023, Neuberger outperformed the blended 50/50 JPM EMBI Global Diversified / JPM GBI-EM Global Diversified over all 1-, 3-, 5-, and 10-year with excess returns of 1.0%, 1.0%, 0.7%, and 0.5%, respectively, gross of fees.
Fees	Advantageous	• CIT: Class I; Effective fee 0.69%; $10 million minimum (waived).

abrdn Inc.

Rating Criteria	Rating	Rationale
Overall	Advantageous	
Organization	Not Advantageous	• abrdn Inc.is located in Edinburgh, UK with offices in Philadelphia, PA. abrdn Inc. was created on August 14, 2017, following the public company's merger of Aberdeen Asset Management PLC and Standard Life PLC. Rebranding to abrdn Inc. occurred post-acquisition. Aberdeen Asset Management was formed in 1983 and Standard Life PLC traces back to 1825. • Recent leadership changes with CEO Stephen Bird, which he held for four years, stepped down effective June 30, 2024. Jason Windsor, current CFO, assumed the role of interim CEO while the firm seeks a replacement. in the coming months. • abrdn manages $4687 billion in assets under management across a mix of strategies. The Emerging Market Debt-Hard Currency Sovereign (formerly named Emerging Markets Debt Plus) strategy was incepted in August 1999 and had approximately $2.1 billion in assets as of December 31, 2023.
Team	Advantageous	• Brett Diment is Head of Global EMD and is based in London. He has 32 years of experience and structures the team with a Head of EMD Sovereign, a Head of Asian Fixed Income, and a Head of EMD Corporates. Edwin Gutierrez is Head of EMD Sovereigns and leads 12 sovereign debt analysts specializing in regions around the globe. The EMD Corporate team is led by Siddharth Dahiya and is also located London. He leads 16 EMD corporate industry specialist analysts in five offices around the world, primarily in Asia and London. The team also utilizes an extended group of specialized resources including quantitative, economists, investment council, dealers, and product specialists.
Investment Philosophy	Advantageous	• The strategy is centered on a bottom-up approach. Fundamental research is a core aspect of the investment philosophy and they are benchmark aware. • The team has a bias towards frontier markets. They believe frontier countries have the potential to provide attractive opportunities given that they are less well researched.
Investment Process	Highly Advantageous	• The team begins their investment process by conducting fundamental research on their investment universe, which consist of more than 80 countries which contains country specific macroeconomic information as well as their forward looking credit profile. They also use a proprietary local currency scorecard and ESGP framework. The goal of this first stage in the investment process is to understand all associated risks related to a specific country. • The second stage is relative value analysis where the team produces return forecasts for each asset type within their respective countries of coverage. The team compares countries for the best relative value opportunities. • Portfolio construction follows with a view on duration, asset correlation, beta exposures, volatility and tracking error. All team members are involved in the decision-making process., with Mr. Diment having the final decision-making authority.
Performance	Advantageous	• Through December 31. 2023, abrdn outperformed the 50/50 blended JPM EMBI GD / JPM GBI-EM GD index over all 1-, 3-, 5-, and 10-year trailing periods, with excess returns of 2.8%, 0.8%, 1.0%, and 1.5%, respectively, gross of fees.
Fees	Highly Advantageous	• CF: Effective fee 0.45%; $5 million minimum.

TCW Investment Management Company

Rating Criteria	Rating	Rationale
Overall	Advantageous	
Organization	Advantageous	• TCW, located in Los Angeles, CA, is a subsidiary of TCW Group, Inc.. TCW is 44% employee owned, 31% owned by Carlyle Global Partners via a private equity fund, and 24.75% owned by Nippon Life, a large Japanese insurance company. • The firm was founded in 1971 and manages $209.6 billion in assets across strategies as of December 31, 2023. The TCW Emerging Markets Fixed Income Total Return strategy was incepted in 2011 and has $6.7 billion in assets under management.
Team	Highly Advantageous	• Penny Foley, David Robbins, and Alex Stanojevic are the senior portfolio managers for the strategy and have longstanding tenure with TCW. Ms. Foley joined in 1990, Mr. Robbins joined in 2000, and Mr. Stanojevic joined in 2005. Investment decisions are made collectively by all three portfolio managers, with input from the entire team. • Sovereign analysts are organized by region and corporate analysts are organized by sector. • The full team is comprised of three senior portfolio managers (noted above), five sovereign research analysts, five corporate research analysts, two strategists, three traders, and one portfolio specialist. The team is further supported by five portfolio analytics/specialists.
Investment Philosophy	Advantageous	• The strategy employs a value driven approach, integrating both top-down and bottom-up factors to find the best reward-risk opportunities in the space. • The strategy is benchmark aware, but it is not tied to the benchmark, as the team will make significant overweight or underweight decisions based on evaluation of risk and reward.
Investment Process	Highly Advantageous	• In the first phase of the investment process the team evaluates all sovereign and corporate credits with the intention to analyze credit strengths, weaknesses, momentum and to develop a standardized way of looking across the universe. The team also conducts scenario analysis before making investment decisions. Currency and local rates forecasting is also a crucial step in the investment process. • The Emerging Markets Fixed Income Team does not imply an investment committee for decision making purposes. Instead, final decision making on specific investments is made by portfolio managers in conjunction with sovereign analysts, corporate credit analysts, strategists, and traders.
Performance	Advantageous	• Through December 31, 2023, TCW outperformed the 50/50 JPM EMBI Global Diversified / JPM GBI-EM Global Diversified index over the 1-, 5-, and 10-year trailing periods, with excess returns of 1.0%, 0.7%, and 1.5%, respectively gross of fees. The strategy minimally underperformed over the 3-year period by -0.1%, gross of fees.
Fees	Advantageous	• CIT: Consultant Share Class F effective fee 0.55%; $5 million minimum.

Pacific Investment Management Company (PIMCO)

Rating Criteria	Rating	Rationale
Overall	Advantageous	
Organization	Advantageous	• PIMCO is located in Newport Beach, CA and is a majority owned subsidiary of AAM, a subsidiary of Allianz SE, a financial services company based in Germany. • The firm was founded in 1971 and now totals $1.5 trillion in assets under management across strategies as of December 31, 2023. The PIMCO Emerging Markets Full Spectrum Bond fund was incepted in February 2013 and has $47.5 million in assets for the same time period.
Team	Highly Advantageous	• The strategy is managed in a team-based approach by the Emerging Markets Portfolio Committee (EMPC). Pramol Dhawan, Head of the Emerging Markets, is the chair of the EMPC and has final decision-making authority.
Investment Philosophy	Advantageous	• PIMCO seeks to generate strong risk adjusted returns independently of the market cycle. Their approach is based on three principles to bring discipline and consistency into their process. The first principle involves analyzing from every angle as they believe that no single approach holds the key to unlocking alpha. Secondly, they strive to avoid concentrations in order protect against low probability/high impact events. Lastly, the emerging markets team seeks ways to be different than their peers.
Investment Process	Advantageous	• The investment process centers on the Emerging Markets Portfolio Committee (EMPC), comprised of nine senior members with Pramol Dhawan as Chair. The EMPC meets several times per week and are in charge of building a model portfolio for all emerging markets strategies. PIMCO employs internal ratings that take into account country fundamentals, political landscape, reserve levels, debt profile and contingency measures. The EMPC then blends PIMCO's top-down views, which are developed through various forums, into the emerging markets process. • The investment process is a collaborative effort of the entire team, decisions tend to be made on a consensus basis. However, if no consensus can be reached Pramol Dhawan has final decision making authority.
Performance	Highly Advantageous	• Through December 31, 2023, PIMCO outperformed the 50/50JPM EMBI Global Diversified / JPM GBI-EM Global Diversified index over all 1-, 3-, 5-, and 10-year trailing period, with excess returns of 0.9%, 2.0%, 1.8%, and 0.6%, respectively, gross of fees.
Fees	Not Advantageous	• MF (PFSIX): Expense ratio 1.23%; $1 million minimum.

LM Capital Group

Rating Criteria	Rating	Rationale
Overall	Advantageous	
Organization	Advantageous	• LM Capital is located in San Diego, CA and is an employee-owned minority firm. Currently 93% of ownership is distributed among Luis Maizel, John Chalker, Mario Modiano, Rachel Wilson, Patrick Faul, and Mike Chalker with the remaining 7% distributed in lessor portions to key leaders in the firm. • LM Capital was founded in 1989 by Luis Maizel and John Chalker and had $5 billion in assets under management as of December 31, 2023. The Emerging Market Debt strategy was incepted in June 2015 and currently had $195.2 million in assets.
Team	Advantageous	• The investment team has 11 members and is divided into two groups: the Investment Strategy Group (ISG) (Luis Maizel, John Chalker, Mario Modiano, Rachel Wilson, Mike Chalker and Vikrant Khadilkar); and the Research Team (led by Patrick Faul) and trader, Ezra Betech. The ISG manages all seven strategies and client portfolios using a team-based approach with two Co-Portfolio Managers assigned to every client managing the day-to-day activities. • The Co-Portfolio managers for the EMD strategy are Vik Khadikar and Mike Chalker. This transition has occurred over the last few years is an integral part of their succession planning where, previously, portfolios were led by founder Luis Maizel.
Investment Philosophy	Advantageous	• The investment philosophy is centered on the belief that money is a commodity governed by the laws of supply and demand, influenced by political, global economic and social factors. The team believes that by understanding the macroeconomic landscape driving performance for each region they can take advantage of anomalies and inefficiencies. • The strategy is top-down focused and benchmark aware. The team prioritizes country and sector allocations as they consider them to be the primary drivers of performance.
Investment Process	Advantageous	• The investment process begins by building a matrix using six economic factors to come up with a trend identification score. The scores help the team determine portfolio positioning a well as country and currency allocations relative to the benchmark. Credit research is driven by the top-down overlay instituted by the ISG, and involves delving deeper into industry dynamics, financial filings and management reputation among other things. Once issuer and security research is completed it is reviewed by the ISG to see if I will be included in the approved issuer buy list. • Final decision-making is via the Investment Strategy group (ISG). A majority vote is required to act upon an investment idea, when no consensus is reached no actions are taken. Individual security selection is determined by each portfolio manager.
Performance	Not Advantageous	• Through December 31, 2023, LM underperformed the 50/50 JPM EMBI Global Diversified / JPM GBI-EM Global Diversified index by -3.8% over the 1-year trailing period, however, outperformed over the 3- and 5-year periods with excess returns of 3.9% and 2.5%, respectively, gross of fees.
Fees	Advantageous	• CF: Effective fee 0.40% plus operating expenses to be determined due to zero funding; $1 million minimum.

Loomis, Sayles & Company

Rating Criteria	Rating	Rationale
Overall	Advantageous	
Organization	Advantageous	• Loomis Sayles is structured as a limited partnership. It is a wholly-owned subsidiary of Natixis Investment Managers, the US-based subsidiary of Natixis which is based in Paris, France. Natixis Investment Managers is headquartered in Boston, Massachusetts. • Loomis Sayles has been providing investment management services since 1926, when it was established by founders Robert H. Loomis and Ralph T. Sayles. As of December 2023, the firm managed $335.2 billion with $139.8 million in Emerging Markets Debt. The Blended Total Return strategy incepted in March 2017 and the proposed NHIT vehicle incepted in January 2021.
Team	Not Advantageous	• The investment team is part of the broader Alpha Strategies team, which started at Loomis in 2009. Andrea DiCenso, one of the EMD Blend portfolio managers, was a strategist (with an EM focus) on the multi asset credit team and was later promoted to portfolio manager. Peter Yanulis was an analyst in the central macro research team before moving to Alpha Strategies to be a strategist (again, with an EM focus). Peter and Andrea, in conjunction with others on the Alpha Strategies team, developed the EM Blend process over a number of years.
Investment Philosophy	Advantageous	• The Emerging Market Blend (EMD) team's philosophy is that emerging markets are driven by economic cycles over the medium-to-long term and by regimes in the short-to-medium term. The team believes that correct identification of these cycles and regimes allow investors to capture a significant portion of the EMD return distribution, avoid tail risks, and generate outperformance.
Investment Process	Not Advantageous	• The Emerging Markets Debt Blended Total Return strategy is a carve out from a broader multi asset credit strategy called the World Credit Asset Fund. • The team uses a proprietary machine learning algorithm to guide top-down positioning. They then utilize the firm's macro, credit analysts, and traders to construct the portfolio. Proprietary tools ensure risk is constantly monitored across multiple dimensions. • The process is structured to infer credit cycles from market data, seeking to capture risk premiums by identifying and positioning for risk-on and risk-off regimes.
Performance	Not Advantageous	• Through December 31, 2023, Loomis underperformed the 50/50 JPM EMBI Global Diversified / JPM GBI-EM Global Diversified index over the 1- and 3-year trailing periods by -0.4% for both periods, however, the strategy outperformed over the 5-year period by 1.8%, gross of fees.
Fees	Highly Advantageous	• CF: Effective fee 0.28% plus 0.10% operating expenses (negotiable); $5 million min.

Marathon Asset Management

Rating Criteria	Rating	Rationale
Overall	Advantageous	
Organization	Advantageous	• Marathon Asset Management a New York-based asset management firm and is privately owned by 8 partners as well as a passive minority interest by Blackstone Alternative Asset Management. • Marathon was founded in 1998 and had $22.2 billion assets under management as of December 31, 2023. The Marathon Emerging Markets Bond Fund was launched in January 2015, and it had $3.3 million in assets for the same time period.
Team	Advantageous	• Marathon follows a team-based approach. There is a team of 8 dedicated EM investment professionals led by Gabriel Szpigiel, Head of Emerging Markets. Ms. Szpigiel has 35 years of industry experience with 20 years at Marathon. Andrew Szmulewicz is portfolio manager on the strategy along with 6 investment analysts. Mr. Szmulewicz has 20 years of industry experience with 9 years at Marathon. He joined from JPMorgan with extensive EMD benchmarking experience. • The research process utilizes professionals from Marathon's broader global credit research platform.
Investment Philosophy	Advantageous	• Marathon's investment strategy is founded on rigorous value-based fundamental analysis and a keen understanding of underlying securities, allowing the team to select high conviction long positions, coupled with Index-based exposures that intend to result in a value-added portfolio vis-à-vis the Index.
Investment Process	Advantageous	• Marathon's "Optimal Beta" strategy is built around the concept of benchmark replication which is supported by their knowledge in index architecture led by Andrew Szmulewicz who joined from JPMorgan where he developed key market benchmarks such as the CEMBI and NEXGEM indices and determined rules and instrument level composition for the widely followed EMBI, GBI-EM and ELMI+ index series. • The process involves neutralizing key portfolio variables vs the index and relying on credit selection to drive portfolio returns. If there is uncertainty, the team defaults to mirror index exposures. • Analysts are industry specific as opposed to country specific. The team spends significant time meeting with issuers, resulting in being anchor investors in many new issuances that supports alpha driven from primary deals.
Performance	Highly Advantageous	• Through December 31, 2023, Marathon outperformed the 50/50 JPM EMBI Global Diversified / JPM GBI-EM Global Diversified index over the 1-, 3-, and 5-year trailing periods, with excess returns of 1.1%, 0.5%, and 1.2%, respectively, gross of fees.
Fees	Advantageous	• CF: Effective fee 0.45% with operating expenses at 0.12%; $500 thousand minimum.

Grantham, Mayo, Van Otterloo & Co. (GMO)

Rating Criteria	Rating	Rationale
Overall	Advantageous	
Organization	Advantageous	• GMO is a Boston-based, privately owned firm, founded in 1977. Firm assets under management were $59.9 billion across multi-asset, equities, absolute return and fixed income strategies as of December 31, 2023. • GMO was an early entrant into EMD in 1994 and now has $5.5 billion in AUM including credit exposures. This consists of $2.2 billion in hard currency benchmarked to the JPM EMBIG and $1.1 billion in local currency benchmarked to the GBI-EM. They offer no blended strategy.
Team	Advantageous	• Tina Vandersteel is head of the Emerging Country Debt team following the retirement of Tom Cooper, co-founder of GMO Global Fixed Income, in 2016. Ms. Vandersteel is a partner of the firm. She has 30 years of experience analyzing and investing in emerging debt, 16 of which have been with GMO. Her focus is security selection and portfolio construction. • GMO's Emerging Country Debt team, all based in Boston, consists of eight core members: three portfolio managers, four individuals in research, and one individual focused on local currency rates and FX research. The team also utilizes shared resources in quantitative research (team of five) and FX and rates trading.
Investment Philosophy	Advantageous	• The team follows an active bottom-up value-driven philosophy believing bonds can be undervalued due to relative liquidity, form of issuance, or currency. Given high transaction costs and illiquidity, they believe a long-term buy and hold strategy is most appropriate. Alpha is driven by 2/3 security selection and 1/3 country selection.
Investment Process	Not Advantageous	• The team tends not to take a view on global macro issues; however, they do incorporate global macro considerations into their quantitative model assumptions. The team has a bottom-up orientation to their investment process that focuses on issue selection as opposed to country selection. Security selection is expected to generate 75% of all value added. • Security selection is conducted from the bottom up looking for relatively cheap securities and trying to understand the risks and any needs for hedging. Sovereign risk is assessed according to three quantitative factors (economic structure, fiscal sustainability, external liquidity) and qualitative factors like willingness to pay, quality of policy makers, political regime shifts. These factors contribute to a proprietary risk score. • There is no blended strategy. The proposed strategy rarely takes corporate exposure but does take quasi-sovereign exposure. The strategy is managed with less than 10% exposure to non-USD currencies.
Performance	Highly Advantageous	• Through December 31, 2023, GMO outperformed the 50/50 JPM EMBI Global Diversified / JPM GBI-EM Global Diversified index over all 1-, 3-, 5-, and 10-year trailing periods, with excess returns of 6.1%, 2.9%, 2.6%, and 3.1%, respectively, gross of fees.
Fees	Advantageous	• MF: Class III, Expense ratio 0.54%; $5 million minimum; purchase and redemption fees of 0.75% for each transaction.

Frontier Investment Management (FIM)

Rating Criteria	Rating	Rationale
Overall	Advantageous	
Organization	Advantageous	• Dubai-based FIM Partners was established in 2008 as a boutique, institutional asset manager in the emerging and frontier market space. The firm is co-owned equally by its founder, Hedi Ben Mlouka and EFG-Hermes UAE Limited, a subsidiary of EFG-Hermes Holding SAE. An additional 10% of phantom shares is owned by the senior employees of FIM. • As of December 2023, FIM had $3.3 billion assets under management with $1.0 billion in their Global Emerging Market (GEM) Debt strategy. Inception for the strategy was December 2019.
Team	Not Advantageous	• The lean, five-person EMD debt team averages 25 years' experience from international financial institutions, multi-lateral development banks (World Bank, IMF), investment banks and large asset managers. Francesc Balcells leads the team and is CIO of Global Emerging Markets Debt for FIM. • The team leans heavily on its EM equity analysts for research on countries and industries which it views as a competitive advantage, particularly in frontier markets where they are already invested in equity.
Investment Philosophy	Advantageous	• The Global Emerging Markets (GEM) fund uses a highly concentrated, unconstrained approach to seek the most attractive opportunities across global EM debt and frontier markets. The portfolio is anchored to hard currency debt but can dynamically allocate to corporates, local currency sovereigns and EM FX, finding the best "expression" of risk given the team's fundamental views.
Investment Process	Advantageous	• FIM manages a high conviction EMD strategy with a highly concentrated portfolio of 30-50 positions across approximately 10 countries with a higher allocation to frontier markets than most peers (~30%). They hold approximately 5% cash for liquidity and derivatives and they hold some shorter duration higher liquidity issues to meet obligations. There are several positions greater than 10%. Duration can be within three years of its blended index. • There is an issuer limit of 10% and country limit of 15%. They can use derivatives up to 25% (net basis) of the portfolio. Credit quality can be up to three notches +/- the benchmark average. The strategy is typically underweight duration and overweight carry (carries a higher yield) than the blended benchmark. • Filtering the EM universe through a proprietary research framework, they concentrate investment efforts on a narrower set of opportunities. The investment style is unconstrained and fundamentally based with high tracking error. The strategy is benchmark aware through management of risk factor exposures, not by name replication.
Performance	Highly Advantageous	• Through December 31, 2023, FIM outperformed the 50/50 blended JPM EMBI GD / JPM GBI-EM GD index over the 1-, 3-, and 5-year trailing periods, with excess returns of 1.0%, 2.7% and 2.8% respectively, gross of fees.
Fees	Not Advantageous	• CF: Share Class A effective fee 1.25%, excluding performance fees, plus operating expenses capped at 0.30%; $100 thousand min. • CF: Share Class B effective fee 0.85% plus performance fee 10% over 8%, plus operating expenses capped at 0.30%.

VanEck Associates

Rating Criteria	Rating	Rationale
Overall	Advantageous	
Organization	Not Advantageous	• VanEck is a privately held global asset management firm founded in 1955. The firm offers strategies to individual investors and institutions, including endowments, foundations, and pension plans across a range of vehicles including mutual funds, pooled funds, private funds, separate accounts, exchange traded funds (ETFs), and UCITS funds. • Ownership interest is held by the firm's President and Chief Executive Officer, Jan van Eck, and his immediate family, and the immediate family of the former Chief Investment Officer, Derek van Eck, who passed away in September 2010. 100% of the firm is held in three separate family trusts. • As of December 31, 2023, the firm managed $89.5 billion in assets across strategies. The VanEck Emerging Markets Bond strategy was incepted in July 2012 and has $363.0 million in assets under management.
Team	Not Advantageous	• There are four primary individuals on the Emerging Markets Investment Team. Eric Fine is a Portfolio Manager who brings 35 years of industry experience to the team, with 15 years at VanEck. Mr. Fine oversees the Emerging Markets Fixed Income Team including asset allocation, fixed income research and security selection. David Austerweil is a Deputy Portfolio Managers who also brings an extensive 22 years emerging markets experience to the team. Robert Schmieder is a Senior Corporate Analyst with 37 years of industry experience. Natalia Gurushina serves as the firms Chief Economist. Ms. Gurushina has 29 years of industry experience and 11 years at VanEck. • The EM team also receives support from extensive resources from the Active Investment Committee and Multi-Asset Solutions (MAS), which is a quantitative resource focused on asset allocation and risk management.
Investment Philosophy	Advantageous	• The VanEck Emerging Markets Bond Strategy seeks total return, consisting of income and capital appreciation centering on the idea that fundamentals and asset prices are related. The strategy seeks to identify the cheapest emerging markets bonds, regardless of whether they are corporate bonds, sovereign bonds in dollars, or sovereign bonds in local currency.
Investment Process	Advantageous	• The three distinguishing factors for value creation are: 1- the team casts a net across the entire emerging market debt universe, local, hard, corporate, and sovereigns; 2- the strategy is index-agnostic; and 3- the team uses a bottom-up approach that reflects a collection of cheap bonds, screened for non-systematic risk. • Macroeconomic assumptions are not incorporate into the 1st step of the investment process. In the 2nd step, however, macroeconomic assumptions are incorporated and involves stress tests that incorporate various macroeconomic assumptions.
Performance	Highly Advantageous	• Through December 31, 2023, VanEck outperformed the 50/50 JPM EMBI Global Diversified / JPM GBI-EM Global Diversified index over all 1-, 3-, 5-, and 10-year trailing periods, with excess returns of 1.0%, 4.3%, 3.6% and 1.3%, respectively, gross of fees.
Fees	Not Advantageous	• MF: Class I expense ratio 0.86%; $1 million minimum.

Global Evolution

Rating Criteria	Rating	Rationale
Overall	Not Advantageous	
Organization	Not Advantageous	• Global Evolution was founded in 2007 by Morten Bugge and Soren Rump as specialists in emerging and frontier markets debt. Their head office is located in Denmark with additional offices in New York and Zurich. • In 2018 Conning Holdings in Hartford, CT acquired 45% of the firm with the remaining 55% owned by Global Evolution management and employees. Conning was owned by Cathay Financial, a large Taiwan-based life insurance company, until July 2023 when Conning announced that it had entered into an agreement to be acquired by Italy-based Generali Group. The transaction was completed on April 3, 2024 resulting in Generali Investment Holdings owning 100% of Conning. • Global Evolution continues to operate as an independent boutique, with all business and investment decisions solely residing with Global Evolution's management committee and organizational structure. • As of December 31, 2023, Global Evolution had $9.6 billion in assets under management with $2.1 billion in their EM Hard Currency Debt strategy and $1.1 billion in their LC Currency Debt strategy, with both inceptions dates in December 2019.
Team	Advantageous	• Mr. Bugge is CIO and oversees both the EM Sovereign and EM Corporate Debt teams. The EM Sovereign Debt Team is led by Deputy CIO, Christian Mejrup and is supported by five senior portfolio managers, two traders (shared), and five other individuals that support economists and analysts. The EM Corporate Debt team is led by Alia Yousuf, who is supported by three portfolio managers, and three analysts. There are also five members of the Quantitative AI Research & Valuation Models team which is led by Research Director, Ole Jorgensen, along with four additional research analysts. • The entire team is located in, Denmark, with the exception of one frontier strategy portfolio manager located in London.
Investment Philosophy	Advantageous	• Global Evolution believes there is greater value to be found in the less advanced countries of the world that make up the emerging and frontier markets. They believe returns are less correlated than in more established markets because of the huge diversity and idiosyncratic nature of new evolving stories and the underdevelopment of their markets.
Investment Process	Not Advantageous	• Global Evolution does not have a blended strategy that can accommodate the stated $5mm mandate size. They have proposed utilizing their individual Hard and Local Currency Debt strategies with the appropriate 50/50 weighting. • The firms´s investment approach utilizes active risk management, is team-oriented, disciplined, conviction-based, and combines top-down and bottom-up analysis to identify attractive investment opportunities in sovereigns across emerging and frontier markets. Portfolio construction involves allocating to four distinct risk buckets; High Grade, High Yield Low Risk, High Yield Medium Risk, and High Yield High Risk.
Performance	Not Advantageous	• Global Evolution does not have a blended strategy that can accommodate the stated $5 million mandate size and thereby cannot provide a GIPS compliant performance a track record.
Fees	Not Advantageous	• CF: Effective fee 0.60% plus operating expenses capped at 0.12%; $1 million minimum.

Manager Trailing Performance (Gross of Fees)
As of December 31, 2023

Manager	Inception Date	1 Year (%)	3 Year (%)	5 Year (%)	10 Year (%)
MetLife Investment Management	Nov-06	13.7	-1.4	3.4	3.8
Payden & Rygel	Dec-98	12.5	-2.7	3.0	3.9
Neuberger Berman LLC	Oct-13	12.9	-2.4	2.1	2.2
abrdn Inc.	Aug-99	14.7	-2.5	2.4	3.2
TCW Investment Management Company	Oct-14	12.9	-3.4	2.2	3.2
Pacific Investment Management Company (PIMCO)	Feb-13	12.9	-1.4	3.2	2.3
LM Capital Group	Jul-15	8.1	0.6	3.9	-
Loomis, Sayles & Company	Mar-17	11.5	-3.8	3.2	-
Marathon Asset Management	Jan-15	13.0	-2.9	2.6	-
Grantham, Mayo, Van Otterloo & Co. LLC (GMO)	Apr-94	18.0	-0.5	4.1	4.8
Frontier Investment Management (FIM)	Dec-19	13.0	-0.7	4.3	-
VanEck Associates	Jul-12	12.9	0.9	5.1	3.0
Global Evolution LLC[1]	NA	-	-	-	-

[1] Global Evolution LLC - does not have a blended currency vehicle available for a mandate of this size. They propose a 50/50 allocation between their hard and local currency private LLC funds.

Proposed Fees

Manager	Proposed Vehicle	Stated Fee (%)[1]	Other Expenses	Minimum Investment
MetLife Investment Management	Collective Investment Trust	0.55	-	NA
Payden & Rygel	Mutual Fund (SI Class)	0.69	-	$10 million (waived)
	Commingled Fund	0.69	-	$1 million
Neuberger Berman LLC	CIT (Class I)	0.69	-	$10 million (waived)
	Mutual Fund	0.79	-	$1 million
abrdn Inc.	Commingled Fund	0.45	-	$5 million
TCW Investment Management Company	Commingled Investment Trust (Consultant Class F)	0.55	-	$5 million
	Mutual Fund	0.75	-	$2 thousand
Pacific Investment Management Company (PIMCO)	Mutual Fund	0.94	Operating expenses at 0.29%	$1 million
LM Capital Group	Commingled Fund	0.40	TBD[2]	$1 million
Loomis, Sayles & Company	Commingled Fund	0.28	Operating expenses at 0.10%	$5 million
Marathon Asset Management	Commingled Fund	0.45	Operating expenses at 0.12%	$500 thousand
Grantham, Mayo, Van Otterloo & Co. (GMO)	Mutual Fund Class I	0.54	Purchase/redemption Fees 0.75% (each)	$5 million
Frontier Investment Management (FIM)	Commingled Fund Class A	1.25	Performance fee excluded	$5 million
	Commingled Fund Class B	0.85	Performance fee 10% over 8% Operating expense capped at 0.30%	$5 million
VanEck Associates Corporation	Mutual Fund Class I	0.80	Operating expense at 0.06%	$1 million
Global Evolution USA LLC	Commingled Fund	0.60	Operating expense at 0.12%	$1 million

[1] Assumes a mandate size of $5 million. In certain cases, operating expenses for commingled fund/collective investment trust vehicles were included in the stated fee. Otherwise, the other operating expenses are listed separately and not included in the "Stated Fee."

[2] LM Capital - the proposed commingled fund vehicle is currently available for capital funding. AUM is zero as of this analysis.

Summary

→ A total of 13 managers submitted responses to this search. Based upon our review and evaluation of each respondent, Meketa Investment Group has rated three managers as “Highly Advantageous,” nine were ranked as “Advantageous,” and one was ranked as “Not Advantageous.”

→ We recommend the Board chooses to interview the “Highly Advantageous” managers at a subsequent meeting.

Appendix

Disclaimer, Glossary, and Notes

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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. Portfolio Return- [Risk Free Rate+Beta*(market return-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 is 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%.

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

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

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.