

City of Quincy Retirement System November 30, 2023 Performance Update



Agenda

Agenda

- **1.** Executive Summary
 - November Market Overview
 - Manager Highlights
- 2. Performance Update as of November 30, 2023
- **3.** Private Credit Education
- 4. Disclaimer, Glossary & Notes

Executive Summary



Economic and Market Update

Data as of November 30, 2023

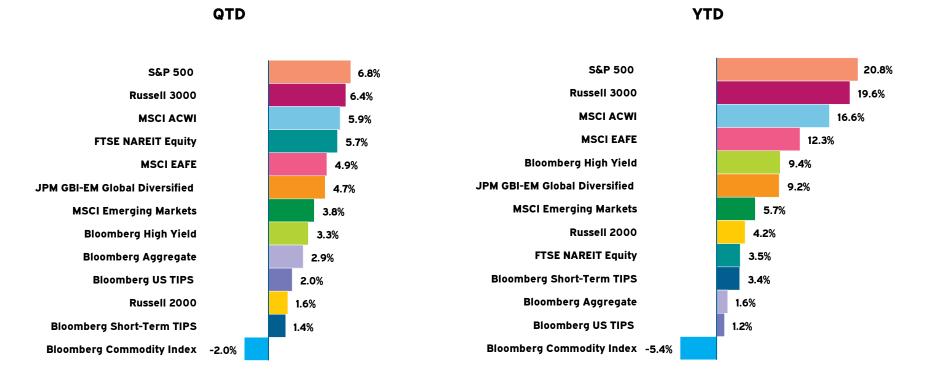


Commentary

- → After a few difficult months, global markets rallied in November on improving inflation data and optimism that central banks will not take rates higher.
 - Major central banks have largely paused interest rates hikes. Markets are now largely expecting the FOMC to maintain interest rates at the current levels through most of the first half of next year, with cuts to follow.
 - Inflation continued to fall in November in the US and Europe while China slipped further into disinflationary territory.
 - US equity markets (Russell 3000 index) posted strong gains in November (9.3%) raising year-to-date gains to 19.6%. Most sectors rallied, with more defensive sectors lagging.
 - Non-US developed equity markets matched the US in November (MSCI EAFE 9.3%), with the weakening of the US dollar boosting returns. This gap between US and international developed equities for the year remains wide (19.6% versus 12.3%).
 - Emerging market equities were up 8.0% in November, also helped by a weaker dollar, but they trailed developed markets due to lagging returns in China (2.5%). Emerging markets continue to significantly trail developed market equities year-to-date, returning 5.7%, again driven by China (-9.0%).
 - Interest rates generally fell in November, particularly for longer-dated maturities. The broad US bond market rallied (4.5%) in November, lifting year-to-date returns into positive territory (1.6%).
- → Looking to 2024, the paths of inflation and monetary policy, slowing global growth, and the wars in Ukraine and Israel will all be key.

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Economic and Market Update



Index Returns¹

→ After a weak stretch that started in July, both stocks and bonds rose in November, as declining inflation and a cooling job market sparked expectations that the Federal Reserve might really be done raising interest rates.

 \rightarrow Strong results for the month led to all asset classes being in positive territory year-to-date, except commodities.

¹Source: Bloomberg. Data is as of November 30, 2023.

Domestic Equity	November (%)	QTD (%)	YTD (%)	1 YR (%)	3 YR (%)	5 YR (%)	10 YR (%)
S&P 500	9.1	6.8	20.8	13.8	9.8	12.5	11.8
Russell 3000	9.3	6.4	19.6	12.6	8.3	11.8	11.2
Russell 1000	9.3	6.7	20.6	13.6	8.7	12.2	11.6
Russell 1000 Growth	10.9	9.3	36.6	26.2	8.9	16.3	14.7
Russell 1000 Value	7.5	3.8	5.6	1.4	8.3	7.5	8.1
Russell MidCap	10.2	4.7	8.8	2.9	4.9	8.7	8.9
Russell MidCap Growth	12.2	6.5	17.0	10.0	0.4	10.0	10.1
Russell MidCap Value	9.4	4.0	4.6	-0.7	7.3	7.1	7.7
Russell 2000	9.1	1.6	4.2	-2.6	1.1	4.8	6.1
Russell 2000 Growth	9.1	0.7	6.0	-0.8	-4.3	4.2	6.2
Russell 2000 Value	9.0	2.5	2.0	-4.7	6.5	4.7	5.7

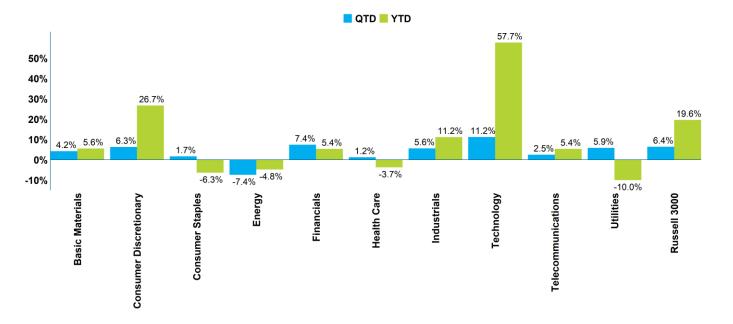
Domestic Equity Returns¹

US Equities: The Russell 3000 rallied 9.3% in November and is up 19.6% year to date.

- → A weaker than expected October jobs report and fewer job openings jolted US stocks higher as markets repriced policy rate cuts for 2024.
- \rightarrow Large and midcap growth stocks significantly outperformed value stocks with slight outperformance by growth in the small cap marketplace.
- → The rate sensitive technology sector particularly benefited from slowing inflation with the "Magnificent 7" stocks, continuing to drive the equity markets higher. As of the end of November, these seven stocks accounted for most of the gains in the Russell 3000 index year-to-date.

¹Source: Bloomberg. Data is as of November 30, 2023.





Russell 3000 Sector Returns¹

- \rightarrow All sectors have posted gains for the fourth quarter, except for energy given oil's recent declines.
- \rightarrow So far in 2023, the technology (+57.7%) and consumer discretionary (+26.7%) sectors had the best results, helped by artificial intelligence optimism in the case of technology. More traditionally defensive sectors utilities (-10.0%), consumer staples (-6.3%), and health care (-3.7%) have trailed.

¹Source: Bloomberg. Data is as of November 30, 2023.

Foreign Equity	November (%)	QTD (%)	YTD (%)	1 YR (%)	3 YR (%)	5 YR (%)	10 YR (%)
MSCI ACWI ex. US	9.0	4.5	10.1	9.3	1.7	5.1	3.4
MSCI EAFE	9.3	4.9	12.3	12.4	3.8	6.0	3.9
MSCI EAFE (Local Currency)	5.6	2.1	12.9	9.5	8.5	7.6	6.5
MSCI EAFE Small Cap	10.1	3.6	5.5	6.6	-0.8	3.7	4.3
MSCI Emerging Markets	8.0	3.8	5.7	4.2	-4.0	2.3	2.1
MSCI Emerging Markets (Local Currency)	6.2	2.4	6.5	4.4	-1.6	4.2	4.8
MSCI China	2.5	-1.8	-9.0	-4.3	-17.0	-3.5	0.7

Foreign Equity Returns¹

Foreign Equity: Developed international equities (MSCI EAFE) rallied 9.3% in November bringing the year-to-date gain to 12.3%. Emerging market equities (MSCI EM) rose 8.0% in the period and were up 5.7% year-to-date.

- \rightarrow In November, non-US equities also reversed course from their three-month lull, with markets seeing their strongest monthly gains since November 2020.
- → Optimism around lower inflation and potentially peaking policy rates contributed to gains in the UK and Europe. Japan continued to see strong performance and remains the top performer year-to-date, although disappointing Q3 GDP data dampened November performance. Weakness in the US dollar also contributed to November results across developed markets.
- → Emerging markets also experienced strong performance in November but trailed developed markets. China weighed on relative results, up only 2.5% for the month on mixed economic data.

¹Source: Bloomberg. Data is as of November 30, 2023.



								Current	
Fixed Income	November (%)	QTD (%)	YTD (%)	1 YR (%)	3 YR (%)	5 YR (%)	10 YR (%)	Yield (%)	Duration (Years)
Bloomberg Universal	4.5	2.9	2.3	1.9	-4.1	1.0	1.7	5.4	6.0
Bloomberg Aggregate	4.5	2.9	1.6	1.2	-4.5	0.7	1.4	5.1	6.2
Bloomberg US TIPS	2.7	2.0	1.2	0.1	-1.5	2.7	2.0	4.7	6.7
Bloomberg Short-term TIPS	1.0	1.4	3.4	3.2	2.3	3.2	1.8	5.0	2.4
Bloomberg High Yield	4.5	3.3	9.4	8.7	1.4	4.1	4.3	8.4	3.9
JPM GBI-EM Global Diversified (USD)	5.3	4.7	9.2	11.6	-3.1	0.8	-0.3	6.8	5.0

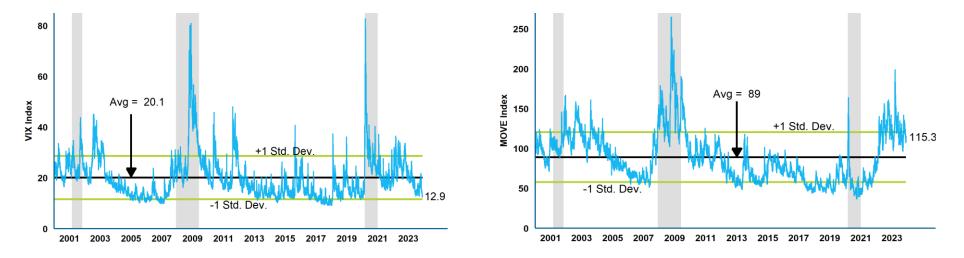
Fixed Income Returns¹

Fixed Income: The Bloomberg Universal index rose 4.5% in November and 2.3% YTD.

- → Policy rate expectations swung from pessimism to optimism in November. Signs of the labor market cooling and improving inflation led investors to bring forward expectations for interest rate cuts to early 2024.
- → The broad US bond market (Bloomberg Aggregate) rallied 4.5% in the month, lifting year-to-date performance into positive territory (+1.6%). The broader TIPS index rose 2.7%, while the less interest-rate-sensitive short-term TIPS index rose 1.0%.
- \rightarrow High yield bonds rallied on better risk sentiment (+4.5%), with emerging market bonds leading the way (+5.3%).

¹Source: Bloomberg. JPM GBI-EM data is from InvestorForce. Data is as of November 30, 2023. The yield and duration data from Bloomberg is defined as the index's yield to worst and modified duration respectively.





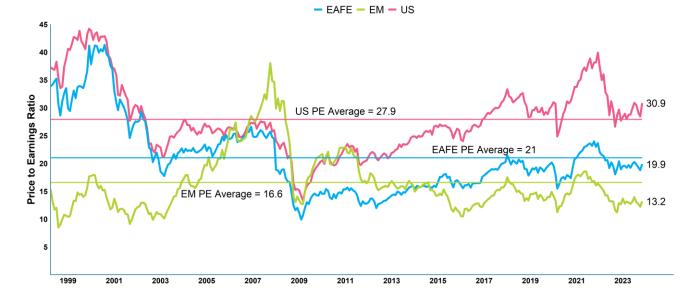
Equity and Fixed Income Volatility¹

- → Volatility in equities (VIX) declined in November, well-below the long-term average as the focus shifted to peaking policy rates and the potential for a soft landing.
- → Volatility in the bond market (MOVE) also declined for the month but is still well above its long-run average (89). The bond market remains on edge after last year's historic losses and ultimate uncertainty on the path of interest rates going forward.

¹Equity 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 November 2023. The average line indicated is the average of the VIX and MOVE values between January 2000 and November 2023.





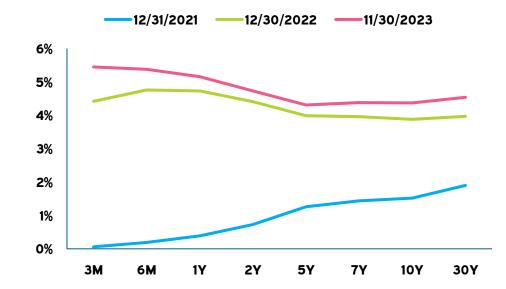


→ Given the strong technology-driven rally this year, the US equity price-to-earnings ratio increased above its long-run (21st century) average. The November gains brought valuation to their highest level for the year.

→ International developed market valuations also increased in November but remain well below the US and their respective long-term averages.

¹US 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 November 2023. 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.

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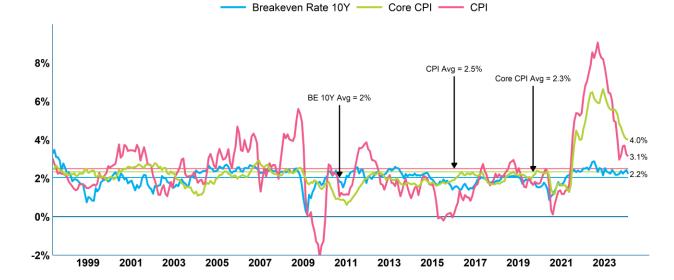


US Yield Curve¹

- → Overall US interest rates are higher this year. In November, rates dramatically fell, particularly at the longerend of the yield curve, on declining inflation and speculation that the Federal Reserve is done with their rate increases.
- → In November, policy sensitive two-year Treasury yields fell from 5.1% to 4.7% while ten-year Treasury yields declined from 4.9% to 4.3%.
- → As longer-term rates fell the most over the month, the yield curve inverted further (from 0.15% to 0.35%) after a trend of flattening through October.

¹Source: Bloomberg. Data is as of November 30, 2023.



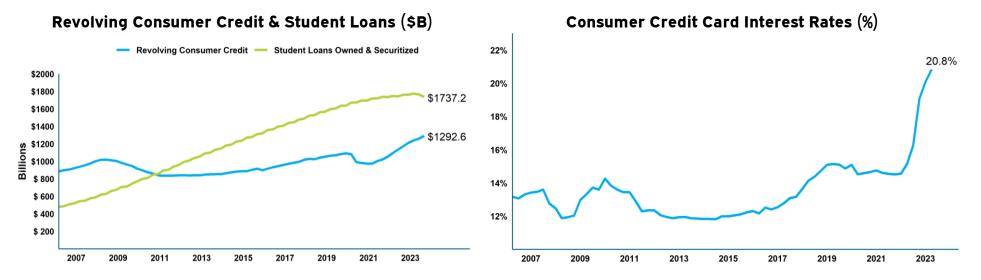


Ten-Year Breakeven Inflation and CPI¹

- → Year-over-year headline inflation fell slightly (3.2% to 3.1%) in November matching expectations. A decline in energy prices (-5.4%) was balanced by an increase in shelter (+5.5%) and transportation (+6.5%) costs.
 Month-over-month inflation ticked up (+0.1%) compared to expectations for a flat reading.
- \rightarrow Core inflation excluding food and energy was unchanged in November at 4.0% year-over-year, where shelter costs accounted for 70% of the total core index increase.
- → Inflation expectations (breakevens) remain below current inflation as investors continue to expect inflation to track back toward the Fed's 2% average target.

¹Source: FRED. Data is as November 30, 2023. 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.





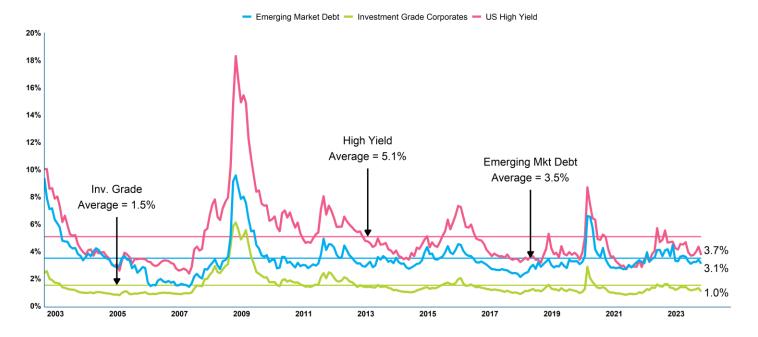
US Consumer Under Stress?¹

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

¹Source: FRED. Revolving Consumer Credit and Student Loans data is as of September 30,2023. Revolving Consumer Credit data is seasonally adjusted to remove distortions during the holiday season. Consumer Credit Card Interest Rates data is as of June 30,2023.



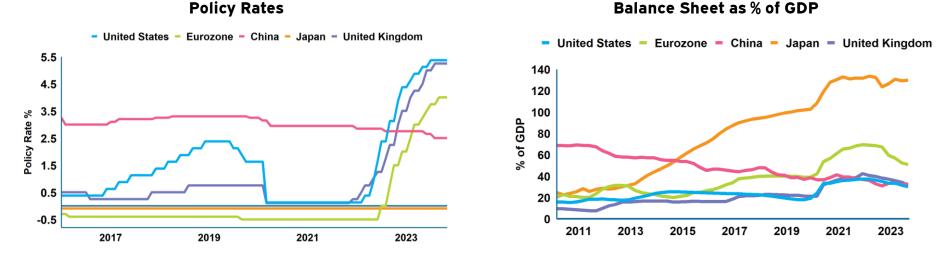
Credit Spreads vs. US Treasury Bonds¹



- → Expectations of peaking policy rates and the corresponding increase in risk appetite benefited credit in November with spreads (the added yield above a comparable maturity Treasury) narrowing. All spreads remain below their respective long run averages.
- → High yield spreads continue to be the furthest below their long-term average given the overall risk appetite this year and lower duration. Investment-grade corporate and emerging market spreads are also below their respective long-term averages, but by smaller margins.

¹Sources: Bloomberg. Data is as of November 30, 2023. 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.





Central Bank Response¹

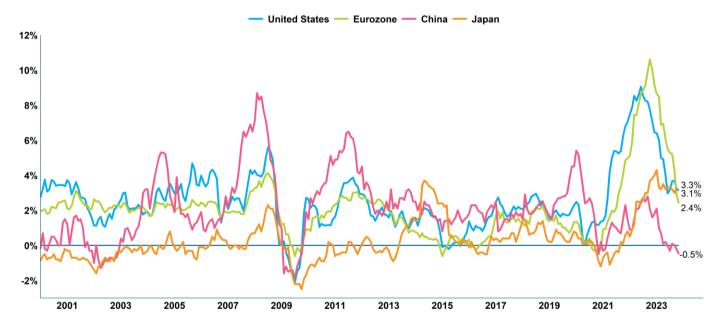
 \rightarrow Slowing inflation and growth have led to expectations for a reduction in the pace of aggressive policy tightening.

- → In July, the Fed raised rates another 25 basis points to a range of 5.25% to 5.50% and have kept them at this level since. Markets are not expecting any additional rate hikes. The key remains when will the Fed starting lower rates and at what pace.
- → The European and UK central banks also recently paused their rate increases on slowing inflation. In Japan, the BoJ has further relaxed its yield curve control on the 10-year bond, and expectations for further policy normalization are rising.
- → The central bank in China has continued to cut interest rates and inject liquidity into the banking system, as weaker than expected economic data appears to indicate a widespread slowdown.
- → Risks remain for a policy error as central banks attempt to balance bringing down inflation, maintaining financial stability, and supporting growth.

¹Source: Bloomberg. Policy rate data is as of November 30, 2023. China policy rate is defined as the medium-term lending facility 1 year interest rate. Balance sheet as % of GDP is based on quarterly data and is as of September 30, 2023.

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Inflation (CPI Trailing Twelve Months)¹

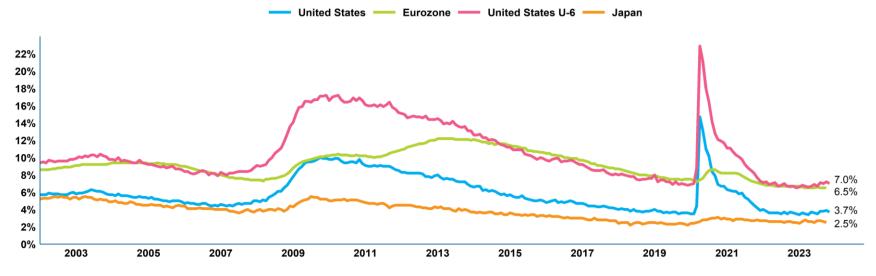


- \rightarrow Inflation is falling across major economies with China slipping into deflationary territory.
- → In the US, inflation fell from 3.2% to 3.1%, driven by falling energy prices. In the eurozone inflation experienced a dramatic decline in October (2.9% to 2.4%), to a level below the US, also driven by a decline in energy prices. Despite 2023's significant declines in the US and Europe, inflation levels remain elevated compared to central bank targets.
- → Inflation in Japan, has increased to levels not seen in almost a decade, driven by food and home related items. In China, deflationary pressures returned in November, driven by declines in food prices.

¹United States CPI and Eurozone CPI – Source: FRED. Japan CPI and China CPI - Source: Bloomberg. Data is as November 30, 2023. The most recent data for Japanese inflation is as of October 31, 2023.



Unemployment¹



- → Overall, the US labor market remains healthy with the unemployment rate relatively low, wage growth now positive in real terms, and initial claims for unemployment staying subdued. The pace of wage growth has slowed though, and despite remaining elevated, the number of job openings has declined from recent highs.
- → In November, US unemployment came in stronger than expected with the overall rate declining (3.9% to 3.7%), with job gains of 199,000 (compared to a forecast of 185,000). The labor force participation remained relatively stable at 62.8%, well off the lows of the pandemic (60.1%) but not back to pre-pandemic levels (63.3%). Broader measures of unemployment (U-6) fell slightly from 7.2% to 7.0%.
- → Unemployment in Europe (6.5%) remains higher than the US, while levels in Japan (2.5%) remained low through the pandemic given less layoffs.

¹Eurozone Unemployment - Source: Bloomberg. Japan, United States, United States U-6 Unemployment – Source: FRED. Data is as November 30, 2023, for the US. The most recent data for Japanese and Eurozone unemployment is as of October 31, 2023.





- → After a strong 2022, the US dollar declined late last year and into early this year as weaker economic data and lower inflation led to investors anticipating the end of FOMC tightening.
- → Recently though, the dollar reversed course and appreciated against major currencies as relative growth remains strong and investors anticipated the FOMC keeping interest rates higher for longer.
- \rightarrow More recently, the dollar has declined on expectations the Fed is done increasing interest rates for this cycle.

¹Source: Bloomberg. Data as of November 30, 2023.



Summary

Key Trends:

- \rightarrow The impact of inflation still above policy targets will remain key, with bond market volatility likely to stay high.
- → Global monetary policies could diverge going forward. The risk of policy errors remains elevated as central banks try to reduce persistent inflation while not tipping their economies into recession.
- → Growth is expected to slow globally next year, with some economies forecasted to tip into recession. However, optimism has been building that certain economies could experience soft landings. Inflation, monetary policy, and geopolitical issues will all be key.
- → In the 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.
- → The key for US equities going forward, will be whether earnings can remain resilient if growth continues to slow. Also, the future paths of the large technology companies that have driven market gains will be important.
- → Equity valuations remain lower in emerging and developed markets, but risks remain, including the potential for the US dollar to remain strong, higher inflation weighing particularly on Europe, and China's sluggish economic reopening and on-going weakness in the real estate sector. Japan's recent hint at potentially tightening monetary policy along with changes in corporate governance in the country could influence relative results.
- \rightarrow Recent, heightened tensions in Israel could add to overall uncertainty and drive safe haven flows.



Manager Highlights



Manager Highlights

Driehaus Emerging Markets Growth

- \rightarrow Driehaus outperformed its benchmark by 0.9% in the month of November, posting a return of 8.9% vs. the benchmark's 8.0%.
 - Stock selection in the consumer discretionary and information technology sectors, as well as exposure to China and Mexico were the largest sources of positive returns in November.
- → Since inception, Driehaus has returned 5.0%, well outpacing the benchmark return of 1.2%, net of fees over that time period.

Columbia High Yield

- \rightarrow Columbia outperformed its benchmark by 0.2% in the month of November, posting a return of 4.7% vs the benchmark's 4.5%.
 - Relative returns were modestly positive vs. the benchmark over the month due to positive security selection. Positive stock selection and an underweight position to telecommunications had a positive impact on performance. Stock selection was also favorable within the Software/Services sector, where an overweight allocation to connectivity services provider GoTo Group (LOGM) contributed to performance.
- \rightarrow Since inception, Columbia has returned 4.3%, in-line with the benchmark's return, net of fees, over that period.



Manager Highlights

Brown Small Cap Fundamental Value

 \rightarrow Brown underperformed its benchmark by 1.7% in November, posting a return of 7.3% vs. the benchmark's 9.0%.

- Stock selection in the Industrial and Financial sectors detracted from performance in November.
- → Since inception, Brown has returned 7.4%, outpacing the Russell 2000 Value index by 0.2%, net of fees over that time period.

Acadian Emerging Markets Small Cap

- → Acadian underperformed its benchmark by 1.0% in the month of November, posting a return of 8.6% vs the benchmark's 9.6%.
 - Key sources of negative active return included stock selection in South Korea, a combination of stock selection and an overweight position in Indonesia, and a combination of stock selection and an underweight position in Mexico.
 - From a sector perspective, key sources of negative active return included stock selection in materials, stock selection in consumer staples, and stock selection in consumer discretionary.
- → Since inception, Acadian has returned 7.7%, outpacing the benchmark return of 4.4%, net of fees, over that time period.

Performance Update As of November 30, 2023



	Poloped Market Equity \$90,253,327 11% 13% 8% - 18% rging Market Equity \$64,596,583 8% 8% 4% - 12% stment Grade Bonds \$67,946,651 8% 5% 2% - 8% -Term Government Bonds \$24,672,126 3% 7% 2% - 12% \$28,041,320 3% 4% 1% - 7%													
			Policy	Policy Range										
US Equity	\$189,144,186	23%	24%	19% - 29%										
Developed Market Equity	\$90,253,327	11%	13%	8% - 18%										
Emerging Market Equity	\$64,596,583	8%	8%	4% - 12%										
Investment Grade Bonds	\$67,946,651	8%	5%	2% - 8%										
Long-Term Government Bonds	\$24,672,126	3%	7%	2% - 12%										
TIPS	\$28,041,320	3%	4%	1% - 7%										
Emerging Market Bonds	-		2%	0% - 4%										
High Yield Bonds	\$40,796,815	5%	6%	3% - 9%										
Bank Loans	\$8,957,161	1%	2%	0% - 4%										
Private Equity	\$131,964,029	16%	14%	9% - 19%										
Real Estate	\$82,285,371	10%	10%	5% - 15%										
Natural Resources	\$16,456,409	2%	3%	0% - 6%										
Infrastructure	\$13,099,598	2%	2%	0% - 5%										
Opportunistic	\$36,961,337	5%	0%	0% - 5%										
Balanced Assets	\$14,946,457	2%												
Cash	\$6,525,017	1%	0%	0% - 5%										
Total	\$816,646,386	100%	100%											
	Current Balance	Current Allocation	Policy	Policy Range										
Total Equity Including PE	\$475,958,125	58%	59%											
Total Fixed Income	\$170,414,073	21%	26%											
Real Assets	\$111,841,378	14%	15%											
Other	\$58,432,810	7%	O%											

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City of Quincy Retirement System

Total Retirement System | As of November 30, 2023

	As	set Class F	Perform	nance S	ummar	·у						
	Market Value (\$)	% of Portfolio	1 Mo (%)	QTD (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	20 Yrs (%)	Inception (%)	Inception Date
Total Retirement System (gross)	816,646,386	100.0	4.8	3.0	7.7	6.0	6.3	8.0	6.8	6.6	8.1	Jan-89
Total Retirement System			4.8	3.0	7.6	5.9	6.2	7.9	6.5	6.3	7.8	
Domestic Equity Assets	189,144,186	23.2	8.9	5.9	16.2	9.8	8.7	10.7	10.5	9.2	9.9	Jul-93
Russell 3000			9.3	6.4	19.6	12.6	8.3	11.8	11.2	9.6	9.9	Jul-93
International Developed Market Equity Assets	90,253,327	11.1	9.3	4.2	11.0	11.0	2.1	4.9	3.4	5.3	4.7	Feb-98
MSCI EAFE			9.3	4.9	12.3	12.4	3.8	6.0	3.9	5.7	4.6	Feb-98
International Emerging Market Equity Assets	64,596,583	7.9	8.7	4.7	12.4	9.2	0.1	7.6	4.5		6.0	Sep-08
MSCI Emerging Markets			8.0	3.8	5.7	4.2	-4.0	2.3	2.1	7.0	2.7	Sep-08
Investment Grade Bond Assets	67,946,651	8.3	5.3	2.9	0.3	-0.7	-6.3	-0.5	0.8	2.7	4.0	Jul-93
Bloomberg US Aggregate TR			4.5	2.9	1.6	1.2	-4.5	0.7	1.4	3.0	4.3	Jul-93
Long-Term Government Bond Assets	24,672,126	3.0	5.6	3.0	-0.3	-1.6	-6.6	0.7			1.2	Dec-15
PRIT Core Fixed Income			6.0	3.2	0.0	-1.3	-6.5	0.8	2.1	3.4	1.2	Dec-15
TIPS Assets	28,041,320	3.4	2.7	1.9	1.3	0.1	-1.5	2.7	2.0		3.3	Mar-07
Bloomberg US TIPS TR			2.7	2.0	1.2	0.1	-1.5	2.7	2.0	3.5	3.3	Mar-07
High Yield Bond Assets	40,796,815	5.0	3.9	2.7	8.4	7.9	1.7	4.4	3.8	5.8	5.4	Apr-07
Bloomberg US High Yield TR			4.5	3.3	9.4	8.7	1.4	4.1	4.3	6.5	6.0	Apr-07
Bank Loan Assets	8,957,161	1.1	1.5	1.7	13.0	13.4	5.5	4.7			4.0	Aug-14
Credit Suisse Leveraged Loans			1.2	1.2	11.3	11.7	5.5	4.7	4.3	4.7	4.3	Aug-14
Total Real Estate	82,285,371	10.1	0.1	0.0	-6.8	-8.4	5.6	4.0	7.0			Jan-89
NCREIF ODCE			0.0	0.0	-7.6	-12.1	7.1	5.7	8.2	7.6	7.1	Jan-89

Some asset classes may show skewed performance relative to month over month changes in market value, this is due to PRIM General Allocation funds having their performance user entered while their market values are estimated using PRIM's current asset allocation.



	Market Value	% of	1 Mo	QTD	YTD	1 Yr	3 Yrs				Inception I	nception
	(\$)	Portfolio	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	Date
Private Equity Assets	131,964,029	16.2										
Natural Resources Assets	16,456,409	2.0										
Infrastructure Assets	13,099,598	1.6										
Opportunistic Assets	36,961,337	4.5										
Balanced Assets (PRIT General Allocation Fund)	14,946,457	1.8	4.8	3.1	8.2	6.4	6.5	8.1	7.5	7.5	8.2	Apr-90
60% Wilshire 5000 & 40% Barclays Aggregate			7.4	5.0	12.3	8.1	3.5	7.8	7.6	7.3	8.5	Apr-90
Cash	6,525,017	0.8										



		Trai	ling Net	Perforn	nance								
	Market Value (\$)	% of Portfolio	% of Sector	1 Mo (%)	QTD (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	20 Yrs (%)	Inception (%)	Inception Date
Total Retirement System (gross) Total Retirement System	816,646,386	100.0		4.8 4.8	3.0 3.0	7.7 7.6	6.0 5.9	6.3 6.2	8.0 7.9	6.8 6.5	6.6 6.3	8.1 7.8	Jan-89
Domestic Equity Assets	189,144,186	23.2	23.2	8.9	5.9	16.2	9.8	8.7	10.7	10.5	9.2	9.9	Jul-93
Russell 3000				9.3	6.4	19.6	12.6	8.3	11.8	11.2	9.6	9.9	Jul-93
RhumbLine Russell 1000 Growth Index	27,584,914	3.4	14.6	10.9	9.3	36.6	26.1	8.9	16.4	14.6		11.6	Jun-05
Russell 1000 Growth				10.9	9.3	36.6	26.2	8.9	16.4	14.7	11.2	11.7	Jun-05
RhumbLine Russell 1000 Value Index	27,768,789	3.4	14.7	7.5	3.7	5.6	1.4	8.3	7.5	8.0		7.4	Jun-05
Russell 1000 Value				7.5	3.8	5.6	1.4	8.3	7.5	8.1	8.0	7.4	Jun-05
Rhumbline QSI Index	32,593,843	4.0	17.2	8.6	6.2	10.9	5.3	8.0	9.9	10.5		10.9	Aug-13
QSI Index				8.6	6.2	10.9	5.3	8.0	9.9	10.6	9.8	11.0	Aug-13
Russell 3000				9.3	6.4	19.6	12.6	8.3	11.8	11.2	9.6	11.7	Aug-13
Brown Small Cap Fundamental Value	17,567,655	2.2	9.3	7.3	2.8	6.2	0.6	10.9	6.2			7.4	Jul-16
Russell 2000 Value				9.0	2.5	2.0	-4.7	6.5	4.7	5.7	7.2	7.2	Jul-16
PRIT General Allocation Domestic Equity	83,628,984	10.2	44.2	9.1	6.1	18.6	11.8					-1.7	Jan-22
PRIT Domestic Equity Benchmark				9.4	6.5	19.2	12.2					-1.6	Jan-22



	Market Value (\$)	% of Portfolio	% of Sector	1 Mo (%)	QTD (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	20 Yrs (%)	Inception (%)	Inception Date
International Developed Market Equity Assets	90,253,327	11.1	11.1	9.3	4.2	11.0	11.0	2.1	4.9	3.4	5.3	4.7	Feb-98
MSCI EAFE				9.3	4.9	12.3	12.4	3.8	6.0	3.9	5.7	4.6	Feb-98
SSgA MSCI EAFE Index	42,126,242	5.2	46.7	9.2	4.8	12.5	12.6	4.1	6.3	4.2		5.3	Oct-09
MSCI EAFE				9.3	4.9	12.3	12.4	3.8	6.0	3.9	5.7	5.1	Oct-09
Axiom International Small Cap Equity	10,760,943	1.3	11.9	9.9	2.5	4.2	3.1	-6.1				5.9	May-20
S&P Developed Ex-U.S. SmallCap				10.2	3.6	6.6	7.4	-1.0	3.9	4.3	7.3	7.6	May-20
MSCI EAFE Small Cap				10.1	3.6	5.5	6.6	-0.8	3.7	4.3	7.1	7.2	May-20
PRIT General Allocation Int. Equity	37,366,142	4.6	41.4	9.1	3.9	11.2	11.4					-4.0	Jan-22
Custom MSCI World Ex-US IMI Net Divs				9.4	4.5	10.9	10.5					-3.3	Jan-22
International Emerging Market Equity Assets	64,596,583	7.9	7.9	8.7	4.7	12.4	9.2	0.1	7.6	4.5		6.0	Sep-08
MSCI Emerging Markets				8.0	3.8	5.7	4.2	-4.0	2.3	2.1	7.0	2.7	Sep-08
Driehaus Emerging Markets Growth	37,818,560	4.6	58.5	8.9	5.2	9.2	4.8	-3.0				5.0	Mar-19
MSCI Emerging Markets				8.0	3.8	5.7	4.2	-4.0	2.3	2.1	7.0	1.2	Mar-19
Acadian Emerging Markets Small Cap	11,119,831	1.4	17.2	8.6	4.5	24.6	23.6	13.3	11.7			7.7	Jun-14
MSCI Emerging Markets Small Cap				9.6	4.3	18.7	17.4	7.6	8.6	4.8	8.7	4.4	Jun-14
PRIT General Allocation EME	15,658,193	1.9	24.2	8.3	3.8	12.3	10.6					-4.6	Jan-22
Custom MSCI Emerging Market IMI Net Divs				8.3	3.9	6.9	5.4					-7.7	Jan-22
Investment Grade Bond Assets	67,946,651	8.3	8.3	5.3	2.9	0.3	-0.7	-6.3	-0.5	0.8	2.7	4.0	Jul-93
Bloomberg US Aggregate TR				4.5	2.9	1.6	1.2	-4.5	0.7	1.4	3.0	4.3	Jul-93
SSgA U.S. Aggregate Bond Index-NL	20,616,205	2.5	30.3	4.5	2.9	1.8	1.2	-4.4	0.7	1.4		2.9	Apr-04
Bloomberg US Aggregate TR				4.5	2.9	1.6	1.2	-4.5	0.7	1.4	3.0	2.9	Apr-04
PRIT General Allocation Core FI	47,330,446	5.8	69.7	5.6	3.0	-0.3	-1.6					-10.2	Jan-22
PRIT Core Fixed Income				6.0	3.2	0.0	-1.3	-6.5	0.8	2.1	3.4	-10.0	Jan-22



	Market Value (\$)	% of Portfolio	% of Sector	1 Mo (%)	QTD (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	20 Yrs (%)	Inception (%)	Inception Date
Long-Term Government Bond Assets	24,672,126	3.0	3.0	5.6	3.0	-0.3	-1.6	-6.6	0.7			1.2	Dec-15
PRIT Core Fixed Income				6.0	3.2	0.0	-1.3	-6.5	0.8	2.1	3.4	1.2	Dec-15
PRIT Core Fixed Income	24,672,126	3.0	100.0	5.6	3.0	-0.3	-1.6	-6.6	0.7			1.2	Dec-15
PRIT Core Fixed Income				6.0	<i>3.2</i>	0.0	-1.3	-6.5	0.8	2.1	3.4	1.2	Dec-15
TIPS Assets	28,041,320	3.4	3.4	2.7	1.9	1.3	0.1	-1.5	2.7	2.0		3.3	Mar-07
Bloomberg US TIPS TR				2.7	2.0	1.2	0.1	-1.5	2.7	2.0	3.5	3.3	Mar-07
SSgA TIPS Index	28,041,320	3.4	100.0	2.7	1.9	1.3	0.1	-1.5	2.7	2.0		3.3	Mar-07
Bloomberg US TIPS TR				2.7	2.0	1.2	0.1	-1.5	2.7	2.0	3.5	3.3	Mar-07
High Yield Bond Assets	40,796,815	5.0	5.0	3.9	2.7	8.4	7.9	1.7	4.4	3.8	5.8	5.4	Apr-07
Bloomberg US High Yield TR				4.5	3.3	9.4	8.7	1.4	4.1	4.3	6.5	6.0	Apr-07
Loomis Sayles High Yield Conservative	12,078,719	1.5	29.6	4.1	1.9	5.9	5.4	-0.7	2.8	3.4		4.5	Feb-12
Bloomberg US High Yield TR				4.5	3.3	9.4	8.7	1.4	4.1	4.3	6.5	5.2	Feb-12
Columbia High Yield	12,348,168	1.5	30.3	4.7	3.7	9.4	8.4	1.7	4.6			4.3	Dec-16
Bloomberg US High Yield TR				4.5	3.3	9.4	8.7	1.4	4.1	4.3	6.5	4.3	Dec-16
PRIT General Allocation Value Added FI	16,369,929	2.0	40.1	3.1	2.5	9.4	9.4					1.8	Jan-22
PRIT Public Value-Added Fixed Income				3.1	2.4	9.3	9.3	2.1	3.5	2.9	5.3	0.4	Jan-22
Bank Loan Assets	8,957,161	1.1	1.1	1.5	1.7	13.0	13.4	5.5	4.7			4.0	Aug-14
Credit Suisse Leveraged Loans				1.2	1.2	11.3	11.7	5.5	4.7	4.3	4.7	4.3	Aug-14
Beach Point Loan Fund	8,957,161	1.1	100.0	1.5	1.7	13.0	13.4	5.5	4.7			4.0	Aug-14
Credit Suisse Leveraged Loans				1.2	1.2	11.3	11.7	5.5	4.7	4.3	4.7	4.3	Aug-14



	Market Value (\$)	% of Portfolio	% of Sector	1 Mo (%)	QTD (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	20 Yrs (%)	Inception (%)	Inception Date
Total Real Estate	82,285,371	10.1	10.1	0.1	0.0	-6.8	-8.4	5.6	4.0	7.0			Jan-89
NCREIF ODCE				0.0	0.0	-7.6	-12.1	7.1	5.7	8.2	7.6	7.1	Jan-89
UBS Trumbull Property Income Fund	10,460,140	1.3	12.7	0.0	0.0	-6.2	-8.9	3.9	3.7	5.8	6.7	7.0	Jan-89
NCREIF ODCE (net)				0.0	0.0	-8.1	-12.9	6.2	4.7	7.2	6.6	6.1	Jan-89
UBS Trumbull Property Fund	2,459,221	0.3	3.0	0.0	0.0	-12.0	-16.7	-1.2	-1.5	3.1	4.9	5.8	Jan-89
NCREIF ODCE (net)				0.0	0.0	-8.1	-12.9	6.2	4.7	7.2	6.6	6.1	Jan-89
JPMCB Strategic Property Fund	10,124,525	1.2	12.3	-3.0	-3.1	-10.3	-12.5	5.1				4.0	Jan-19
NCREIF ODCE (net)				0.0	0.0	-8.1	-12.9	6.2	4.7	7.2	6.6	4.5	Jan-19
AEW Partners VII	426,436	0.1	0.5										
Rockwood X	5,202,463	0.6	6.3										
Torchlight Debt Opportunity Fund VI	3,729,783	0.5	4.5										
TerraCap Partners IV (Institutional), L.P.	4,398,602	0.5	5.3										
Rockwood Capital Real Estate Partners Fund XI, L.P.	6,338,720	0.8	7.7										
PRIT General Allocation Real Estate	39,145,482	4.8	47.6	1.0	0.8	-2.7	-4.9					3.0	Jan-22
PRIT Real Estate Benchmark				0.8	0.4	-9.9	-9.9					3.4	Jan-22



	Market Value (\$)	% of Portfolio	% of Sector	1 Mo (%)	QTD (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	20 Yrs (%)	Inception (%)	Inception Date
Private Equity Assets	131,964,029	16.2	16.2										
Adams Street Partners 2010	5,300,362	0.6	4.0										
Goldman Sachs Private Equity Partners 2005	433,997	0.1	0.3										
North American Strategic Partners 2006	28,181	0.0	0.0										
Brookfield Capital Partners IV	2,670,704	0.3	2.0										
PRIT Vintage Year 2001	60,135	0.0	0.0										
PRIT Vintage Year 2002	1,745	0.0	0.0										
Ridgemont Equity Partners II	2,948,127	0.4	2.2										
ΤΑ ΧΙΙ	3,052,104	0.4	2.3										
LLR Equity Partners V	6,899,112	0.8	5.2										
Wellspring Capital Partners VI	6,702,776	0.8	5.1										
Trilantic Capital Partners VI	5,591,842	0.7	4.2										
Brookfield Capital Partners V, L.P.	5,143,012	0.6	3.9										
FS Equity Partners VIII L.P.	6,494,531	0.8	4.9										
Ridgemont Equity Partners III	8,124,847	1.0	6.2										
Searchlight Capital III	4,296,594	0.5	3.3										
Charlesbank Technology Opportunities Fund	8,036,726	1.0	6.1										
LLR Equity Partners VI, L.P	3,190,596	0.4	2.4										
PRIT General Allocation Private Equity State Street PE Index (SSPEI) All PE Excluding PD	62,988,639	7.7	47.7	1.0 0.0	1.2 0.0	9.7 <i>5.2</i>	9.8 <i>3.5</i>				-	2.3 <i>1.5</i>	Jan-22 <i>Jan-22</i>



	Market Value (\$)	% of Portfolio	% of Sector	1 Mo (%)	QTD (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	20 Yrs (%)	Inception (%)	Inception Date
Natural Resources Assets	16,456,409	2.0	2.0										
Hancock Timberland IX	3,918,403	0.5	23.8										
PRIT General Allocation Timberland NCREIF Timberland	11,031,909	1.4	67.0	0.6 <i>0.0</i>	0.4 <i>0.0</i>	3.6 <i>4.9</i>	6.6 10.0	 9.2	 5.9	 5.9	 7.0	2.4 <i>9.2</i>	Jan-22 <i>Jan-22</i>
Oppenheimer Natural Resources	1,506,097	0.2	9.2										
Infrastructure Assets	13,099,598	1.6	1.6										
IFM Global Infrastructure (U.S.), L.P. <i>CPI+5%</i>	8,726,381	1.1	66.6	1.0 <i>0.2</i>	0.9 <i>0.6</i>	6.5 <i>8.2</i>	9.6 <i>8.3</i>	11.9 <i>10.9</i>	10.5 <i>9.2</i>	 7.9	 7.7	10.1 9.0	Oct-18 <i>Oct-18</i>
Global Infrastructure Partners IV	4,373,217	0.5	33.4										
Opportunistic Assets	36,961,337	4.5	4.5										
HarbourVest Co-Investment Fund V, L.P.	4,793,411	0.6	13.0										
EnTrustPermal Special Opportunities Evergreen Fund, Ltd.	4,766,089	0.6	12.9										
PRIT General Allocation Hedge Funds	27,401,837	3.4	74.1	2.5	2.3	7.5	8.0					2.8	Jan-22
HFRI FOF Composite Index				2.2	1.1	4.0	4.3	2.6	4.2	3.1	3.3	-1.0	Jan-22
Balanced Assets (PRIT General Allocation Fund)	14,946,457	1.8	1.8	4.8	3.1	8.2	6.4	6.5	8.1	7.5	7.5	8.2	Apr-90
60% Wilshire 5000 & 40% Barclays Aggregate				7.4	5.0	12.3	8.1	3.5	7.8	7.6	7.3	8.5	Apr-90
PRIT General Allocation	14,946,457	1.8	100.0	4.8	3.1	8.2	6.4	6.5	8.1	7.5	7.6	8.2	Apr-90
60% Wilshire 5000 & 40% Barclays Aggregate				7.4	5.0	12.3	8.1	3.5	7.8	7.6	7.3	8.5	Apr-90
Cash	6,525,017	0.8	0.8										
Cash Account 91 Day T-Bills	3,504,390	0.4	53.7	0.4	0.9	4.5	4.9	2.0	1.7	1.2	1.4	1.4	Jan-02
PRIM Cash Account	3,020,627	0.4	46.3										



Cash Flow Summary							
	Beginning Market Value	Contributions	Withdrawals	Net Investment Change	Ending Market Value	Month Return	
Acadian Emerging Markets Small Cap	\$10,230,946	\$0	-\$11,583	\$900,468	\$11,119,831	8.57%	
Adams Street Partners 2010	\$5,300,362	\$0	\$0	\$0	\$5,300,362	0.00%	
AEW Partners VII	\$426,436	\$0	\$0	\$0	\$426,436	0.00%	
Axiom International Small Cap Equity	\$9,793,259	\$0	-\$7,174	\$974,859	\$10,760,943	9.88%	
Beach Point Loan Fund	\$8,822,012	\$0	-\$3,732	\$138,881	\$8,957,161	1.53%	
Brookfield Capital Partners IV	\$3,906,676	\$0	-\$1,235,972	\$0	\$2,670,704	0.00%	
Brookfield Capital Partners V, L.P.	\$5,143,012	\$0	\$0	\$0	\$5,143,012	0.00%	
Brown Small Cap Fundamental Value	\$16,350,921	\$0	-\$16,104	\$1,232,838	\$17,567,655	7.34%	
Cash Account	\$3,642,111	\$0	-\$137,722	\$0	\$3,504,390	0.00%	
Charlesbank Technology Opportunities Fund	\$8,036,726	\$0	\$0	\$0	\$8,036,726	0.00%	
Columbia High Yield	\$11,788,962	\$0	-\$4,219	\$563,424	\$12,348,168	4.74%	
Driehaus Emerging Markets Growth	\$34,737,759	\$0	\$0	\$3,080,801	\$37,818,560	8.87%	
EnTrustPermal Special Opportunities Evergreen Fund, Ltd.	\$4,766,089	\$0	\$0	\$0	\$4,766,089	0.00%	
FS Equity Partners VIII L.P.	\$6,494,531	\$0	\$0	\$0	\$6,494,531	0.00%	
Global Infrastructure Partners IV	\$4,373,217	\$0	\$0	\$0	\$4,373,217	0.00%	
Goldman Sachs Private Equity Partners 2005	\$433,997	\$0	\$0	\$0	\$433,997	0.00%	
Hancock Timberland IX	\$3,918,403	\$0	\$0	\$0	\$3,918,403	0.00%	
HarbourVest Co-Investment Fund V, L.P.	\$4,793,411	\$0	\$0	\$0	\$4,793,411	0.00%	
IFM Global Infrastructure (U.S.), L.P.	\$8,637,866	\$0	\$0	\$88,514	\$8,726,381	1.02%	
JPMCB Strategic Property Fund	\$10,437,687	\$0	\$0	-\$313,162	\$10,124,525	-3.00%	
LLR Equity Partners V	\$6,899,112	\$0	\$0	\$0	\$6,899,112	0.00%	
LLR Equity Partners VI, L.P	\$3,190,596	\$0	\$0	\$0	\$3,190,596	0.00%	
Loomis Sayles High Yield Conservative	\$11,594,121	\$0	-\$4,530	\$489,128	\$12,078,719	4.14%	
North American Strategic Partners 2006	\$28,181	\$0	\$0	\$0	\$28,181	0.00%	



	Beginning Market Value	Contributions	Withdrawals	Net Investment Change	Ending Market Value	Month Return
Oppenheimer Natural Resources	\$1,506,097	\$0	\$0	\$0	\$1,506,097	0.00%
PRIM Cash Account	\$2,521,585	\$2,479,530	-\$2,000,000	\$19,513	\$3,020,627	0.77%
PRIT Core Fixed Income	\$23,359,820	\$0	-\$2,262	\$1,314,567	\$24,672,126	5.62%
PRIT General Allocation	\$15,045,917	\$0	-\$2,473,472	\$2,374,012	\$14,946,457	4.83%
PRIT General Allocation Core FI	\$44,795,797	\$0	\$0	\$2,534,649	\$47,330,446	5.62%
PRIT General Allocation Domestic Equity	\$77,281,299	\$0	\$0	\$6,347,685	\$83,628,984	9.13%
PRIT General Allocation EME	\$14,362,011	\$0	\$0	\$1,296,181	\$15,658,193	8.31%
PRIT General Allocation Hedge Funds	\$27,014,259	\$0	\$0	\$387,578	\$27,401,837	2.45%
PRIT General Allocation Int. Equity	\$34,879,170	\$0	\$0	\$2,486,972	\$37,366,142	9.12%
PRIT General Allocation Private Equity	\$62,919,288	\$0	\$0	\$69,352	\$62,988,639	1.02%
PRIT General Allocation Real Estate	\$38,982,602	\$0	\$0	\$162,880	\$39,145,482	0.98%
PRIT General Allocation Timberland	\$10,942,485	\$0	\$0	\$89,424	\$11,031,909	0.64%
PRIT General Allocation Value Added Fl	\$15,729,822	\$0	\$0	\$640,107	\$16,369,929	3.05%
PRIT Vintage Year 2001	\$64,525	\$0	-\$6,057	\$1,667	\$60,135	2.59%
PRIT Vintage Year 2002	\$2,302	\$0	\$0	-\$557	\$1,745	-24.18%
Rhumbline QSI Index	\$30,006,445	\$0	-\$1,901	\$2,589,300	\$32,593,843	8.62%
RhumbLine Russell 1000 Growth Index	\$24,874,368	\$0	-\$1,552	\$2,712,097	\$27,584,914	10.90%
RhumbLine Russell 1000 Value Index	\$25,824,370	\$0	-\$1,562	\$1,945,982	\$27,768,789	7.53%
Ridgemont Equity Partners II	\$2,948,127	\$0	\$0	\$0	\$2,948,127	0.00%
Ridgemont Equity Partners III	\$8,366,985	\$0	-\$242,138	\$0	\$8,124,847	0.00%
Rockwood Capital Real Estate Partners Fund XI, L.P.	\$5,983,953	\$354,767	\$0	\$0	\$6,338,720	0.00%
Rockwood X	\$5,202,463	\$0	\$0	\$0	\$5,202,463	0.00%
Searchlight Capital III	\$4,856,913	\$0	-\$560,319	\$0	\$4,296,594	0.00%
SSgA MSCI EAFE Index	\$38,563,350	\$0	-\$3,511	\$3,566,403	\$42,126,242	9.23%
SSgA TIPS Index	\$27,298,790	\$0	-\$1,402	\$743,932	\$28,041,320	2.72%
SSgA U.S. Aggregate Bond Index-NL	\$19,722,243	\$0	-\$1,031	\$894,993	\$20,616,205	4.53%



	Beginning Market Value	Contributions	Withdrawals	Net Investment Change	Ending Market Value	Month Return
ΤΑ ΧΙΙ	\$3,220,854	\$0	-\$168,750	\$0	\$3,052,104	0.00%
TerraCap Partners IV (Institutional), L.P.	\$4,398,602	\$0	\$0	\$0	\$4,398,602	0.00%
Torchlight Debt Opportunity Fund VI	\$3,729,783	\$0	\$0	\$0	\$3,729,783	0.00%
Trilantic Capital Partners VI	\$5,591,842	\$0	\$0	\$0	\$5,591,842	0.00%
UBS Trumbull Property Fund	\$2,459,221	\$0	\$0	\$0	\$2,459,221	0.00%
UBS Trumbull Property Income Fund	\$10,460,140	\$0	\$0	\$0	\$10,460,140	0.00%
Wellspring Capital Partners VI	\$6,702,776	\$0	\$0	\$0	\$6,702,776	0.00%
Total	\$783,364,594	\$2,834,297	-\$6,884,992	\$37,332,488	\$816,646,386	



Real Estate and PE Managers

Private Market Managers' Performance Overview¹

		Vintage	Commitment Amount	%	Median Peer	Quartile	Net	Net
Managers	Strategy	Year	(\$mm)	Called	IRR	Rank	IRR	Multiple
Real Estate Managers								
AEW Partners VII	Opportunistic	2013	5.0	93%	13.0	4	10.4%	NA
Rockwood X	Value-Added	2016	10.0	94%	17.6	4	3.5%	1.1x
Torchlight Debt Opportunity Fund VI	Opportunistic	2017	5.0	100%	16.1	3	8.1%	1.3x
TerraCap Partners IV	Value-Added	2017	5.0	100%	15.4	4	9.9%	NA
Rockwood XI	Value-Added	2019	8.0	68%	11.6	3	6.7%	1.1x
Private Equity Managers								
Adams Street Partners	Fund of Funds	2010	10.0	90%	12.5	2	14.4	2.2x
Goldman Sachs PE Partners	Fund of Funds	2005	10.0	100%	7.2	NA	NA	NA
North American Strategic Partners	Fund of Funds	2006	9.1	96%	6.4	NA	NA	NA
PRIT Vintage Year 2001	Fund of Funds	2001	2.5	NA	10.0	NA	NA	NA
PRIT Vintage Year 2002	Fund of Funds	2002	0.5	NA	7.9	NA	NA	NA
Brookfield Capital Partners IV	Buyout	2015	4.0	95%	21.0	1	40.9%	2.5x
LLR Equity Partners V	Buyout	2017	5.0	84%	21.0	3	19.6%	1.8x
Ridgemont Equity Partners II	Buyout	2015	6.0	76%	21.0	3	18.8%	2.0x

¹As of 6/30/2023.

²NM indicates that a fund is early in its investment period; therefore, the return is not yet meaningful. NA indicates that the relevant data is not available at the time of report generation.



Real Estate and PE Managers

Managers	Strategy	Vintage Year	Commitment Amount (\$mm)	% Called	Median Peer IRR	Quartile Rank	Net IRR	Net Multiple
ΤΑ ΧΙΙ	Growth Equity	2016	4.0	99%	19.2	2	36.4%	3.0x
Wellspring VI	Buyout	2017	5.0	89%	21.0	3	19.2%	1.6x
Trilantic Capital Partners VI	Buyout	2018	5.0	89%	22.7	4	14.9%	1.4x
Brookfield Capital Partners V	Buyout	2019	4.0	88%	21.1	3	16.7%	1.4x
FS Equity Partners VIII	Buyout	2019	5.0	81%	21.1	2	23.5%	1.6x
Ridgemont Equity Partners III	Buyout	2019	6.0	82%	21.1	1	36.3%	1.8x
Searchlight Capital III	Special Situations	2020	5.0	62%	11.6	NM	NM	1.0x
Charlesbank Technology Opportunities	Buyout	2019	5.0	60%	21.1	1	60.9%	2.3x
LLR Equity Partners VI	Buyout	2020	4.0	78%	13.9	NM	NM	NM
Opportunistic Managers								
HarbourVest Co-Investment Fund V	Opportunistic	2019	4.0	78%	NA	NA	23.0%	1.8x
EnTrustPermal Spec. Opps. Evergreen Fund	Opportunistic	2020	6.0	87%	NM	NM	NM	NM
Infrastructure Managers								
Global Infrastructure Partners IV	Value-Added	2019	5.0	72%				
Natural Resources Managers								
Hancock Timberland	Timber	2008	8.0	100%			0.7%	1.1x
Oppenheimer Natural Resources	Natural Resources	2010	7.0	100%			-2.2%	NA

Private Market Managers' Performance Overview (con't)¹

²NM indicates that a fund is early in its investment period; therefore, the return is not yet meaningful. NA indicates that the relevant data is not available at the time of report generation.

¹As of 6/30/2023.

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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%.

 5% (discount)
 1% pro rata, plus
 =

 5 (yrs. to maturity)
 5.26% (current yield)
 =

= 6.26% (yield to maturity)

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

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

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

Sources: Investment Terminology, International Foundation of Employee Benefit Plans, 1999. The Handbook of Fixed Income Securities, Fabozzi, Frank J., 1991

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

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

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