

City of Quincy Retirement System

June 30, 2023

Interim Update

Agenda

1. Executive Summary
 - June Market Overview
 - Manager Highlights
2. Interim Update as of June 30, 2023
3. Disclaimer, Glossary & Notes

Executive Summary

Economic and Market Update
Data as of June 30, 2023

Commentary

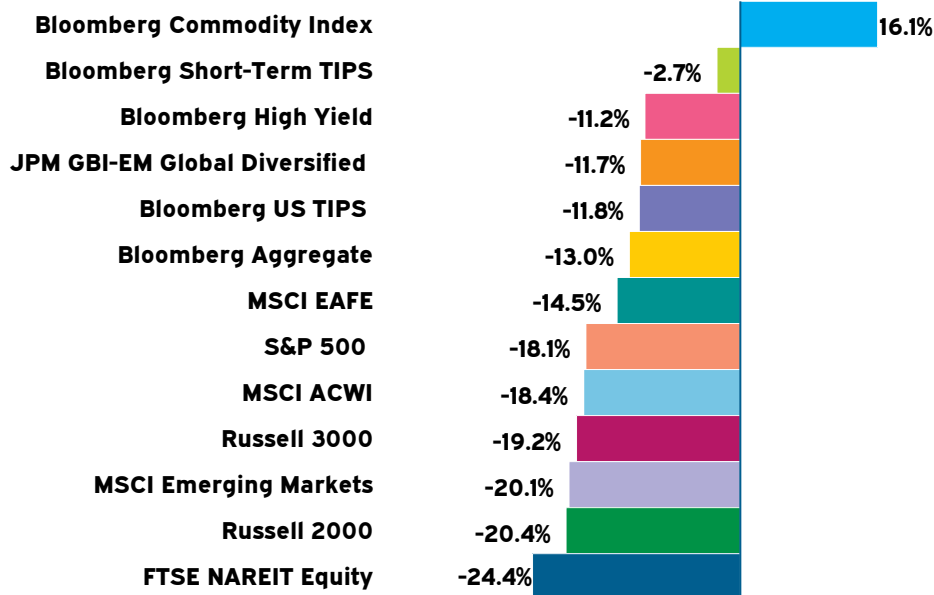
→ Asset returns were positive in June with US and Non-US equities posting gains, while most fixed income sectors sold-off on expectations for further interest rate hikes later this year. Except for commodities, most public market asset classes remain up for the year.

- Although the Fed skipped a rate-hike in June, Fed comments signaled further rate hikes in the 2H 2023; the US economy appears to be resilient supporting domestic demand and low unemployment.
- US equity markets (Russell 3000) rose in June (+6.8%) adding to YTD gains (+16.2%). Some of the largest technology names drove positive results. Growth stocks continued to outpace value stocks, particularly in the large cap space.
- Non-US developed equity markets rose in June (MSCI EAFE 4.6%) falling behind US equities in 2023 (+16.2% versus +11.7%). A strengthening US dollar weighed on returns.
- Emerging market equities rose in June (+3.8%) supported by positive returns in China (+4.0%). They significantly trail developed market equities YTD returning +4.9%, due partly to higher US-China tensions.
- Rates generally rose in June leading to bond markets declining, with the broad US bond market (Bloomberg Aggregate) falling 0.4% for the month. It remains positive (+2.1%) year-to-date, though, on declining inflation and expectations for the Fed to end their rate hikes soon.

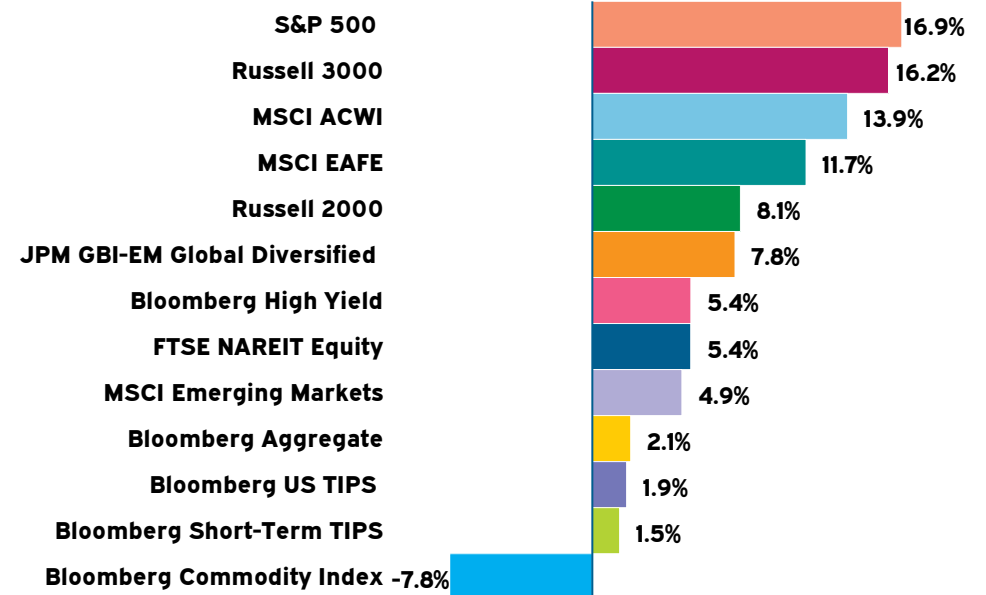
→ This year, the paths of inflation and monetary policy, slowing global growth and the war in Ukraine will all be key.

Index Returns¹

2022



YTD



→ After a particularly difficult 2022, most public market assets are up thus far in 2023, building on gains from the fourth quarter of last year.

→ Risk sentiment has been supported by expectations that policy tightening could be ending soon, as inflation continues to fall, and growth has slowed.

¹ Source: Bloomberg and FactSet. Data is as of June 30, 2023.

Domestic Equity Returns¹

Domestic Equity	June (%)	Q2 (%)	YTD (%)	1 YR (%)	3 YR (%)	5 YR (%)	10 YR (%)
S&P 500	6.6	8.7	16.9	19.6	14.6	12.3	12.8
Russell 3000	6.8	8.4	16.2	19.0	13.9	11.4	12.3
Russell 1000	6.8	8.6	16.7	19.4	14.1	11.9	12.6
Russell 1000 Growth	6.8	12.8	29.0	27.1	13.7	15.1	15.7
Russell 1000 Value	6.6	4.1	5.1	11.5	14.3	8.1	9.2
Russell MidCap	8.3	4.8	9.0	14.9	12.5	8.4	10.3
Russell MidCap Growth	7.7	6.2	15.9	23.1	7.6	9.7	11.5
Russell MidCap Value	8.7	3.9	5.2	10.5	15.0	6.8	9.0
Russell 2000	8.1	5.2	8.1	12.3	10.8	4.2	8.2
Russell 2000 Growth	8.3	7.1	13.6	18.5	6.1	4.2	8.8
Russell 2000 Value	7.9	3.2	2.5	6.0	15.4	3.5	7.3

US Equities: Russell 3000 Index rose 8.4% in the second quarter and 16.2% YTD.

- US stocks rose sharply in the second quarter of 2023. Most of the gains came in the month of June when the Fed kept its target rate unchanged for the first time since early 2022. Investors are expressing optimism that the Fed can tame inflation without widespread disruptions to the equity markets.
- With the exception of energy and utilities, each sector of the Russell 3000 index appreciated during the second quarter. Technology led all sectors and was driven by enthusiasm for growth stocks, particularly those with exposure to artificial intelligence (e.g., NVIDIA).
- Large cap stocks continue to outperform small cap stocks, driven by technology and the underperformance of small cap biotechnology stocks. Growth stocks continue to broadly outperform value stocks.

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

Foreign Equity Returns¹

Foreign Equity	June (%)	Q2 (%)	YTD (%)	1 YR (%)	3 YR (%)	5 YR (%)	10 YR (%)
MSCI ACWI ex. US	4.5	2.4	9.5	12.7	7.2	3.5	4.7
MSCI EAFE	4.6	3.0	11.7	18.8	8.9	4.4	5.4
MSCI EAFE (Local Currency)	3.6	4.3	12.1	17.5	11.7	6.4	7.7
MSCI EAFE Small Cap	2.9	0.6	5.5	10.2	5.7	1.3	6.2
MSCI Emerging Markets	3.8	0.9	4.9	1.8	2.3	0.9	2.9
MSCI Emerging Markets (Local Currency)	3.4	1.7	5.6	3.3	3.9	3.0	5.7
MSCI China	4.0	-9.7	-5.5	-16.8	-10.3	-5.3	3.0

Foreign Equity: Developed international equities (MSCI EAFE) rose 3.0% in the second quarter bringing the YTD results to +11.7%. Emerging market equities (MSCI EM) rose 0.9% in the quarter, rising 4.9% YTD.

- Eurozone and Japan markets continued their strength in June, wrapping up a strong second quarter. In Europe, financials and IT led returns whereas energy and communication services lagged. Enthusiasm for AI helped company fundamentals and prices for semiconductor stocks. Headline inflation was down in June, although core inflation was up slightly month over month. Energy and materials were the main drivers for falling UK equities, along with Bank of England rate hikes. Optimism continues to build for Japanese investors, while the Yen remains weak and Bank of Japan remains dovish.
- Emerging markets were laggards as China equities struggled from weak export demands and rising negative sentiments. Brazil, India and Taiwan are bright spots in EM, the former due to good earnings and macro, the latter from AI and IT strength.

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

Fixed Income Returns¹

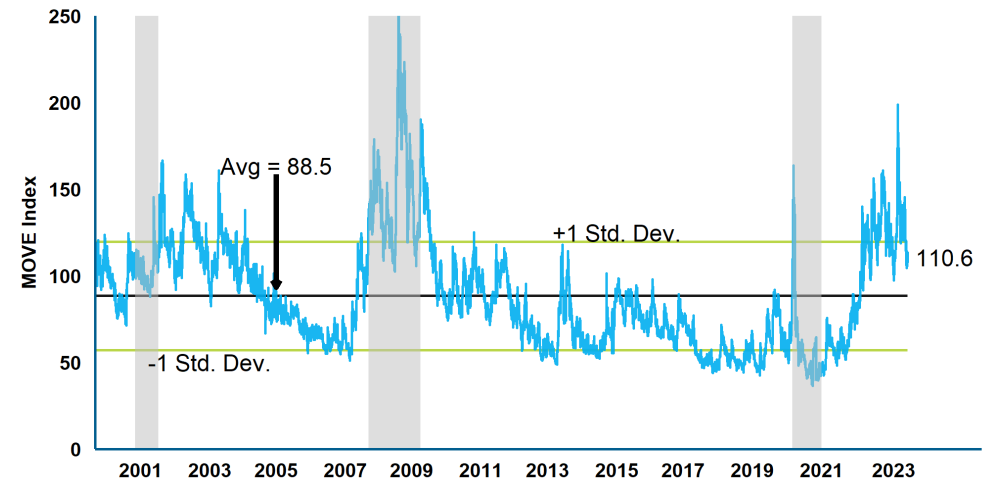
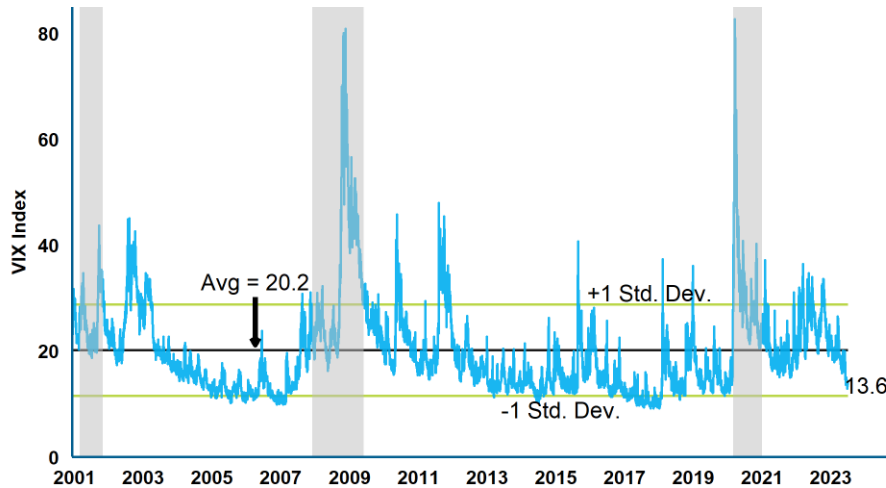
Fixed Income	June (%)	Q2 (%)	YTD (%)	1 YR (%)	3 YR (%)	5 YR (%)	10 YR (%)	Current Yield (%)	Duration (Years)
Bloomberg Universal	-0.2	-0.6	2.3	0.0	-3.4	1.0	1.8	5.2	6.3
Bloomberg Aggregate	-0.4	-0.8	2.1	-0.9	-4.0	0.8	1.5	4.8	6.5
Bloomberg US TIPS	-0.3	-1.4	1.9	-1.4	-0.1	2.5	2.1	4.6	6.8
Bloomberg Short-term TIPS	-0.2	-0.7	1.5	0.1	2.3	2.7	1.7	5.3	2.5
Bloomberg High Yield	1.7	1.7	5.4	9.1	3.1	3.4	4.4	8.5	4.1
JPM GBI-EM Global Diversified (USD)	3.3	2.5	7.8	11.4	-1.4	0.3	-0.6	6.6	5.0

Fixed Income: The Bloomberg Universal declined 0.6% in the second quarter as global sovereign debt yields generally rose. Bonds retained a positive start to the year (+2.3% YTD) though as inflation continues to decline.

- US Treasury yields generally rose over the month, with 1-year to 10-year maturity sector rising the most due to higher policy expectations.
- The TIPS index and the short-term TIPS index posted negative returns for the month as inflation concerns continued to ease.
- Continued risk appetite drove high yield bond performance (1.7%) and outperformance versus the broad US bond market (Bloomberg Aggregate). Emerging market bonds (3.3%) also performed well on investor risk sentiment.

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

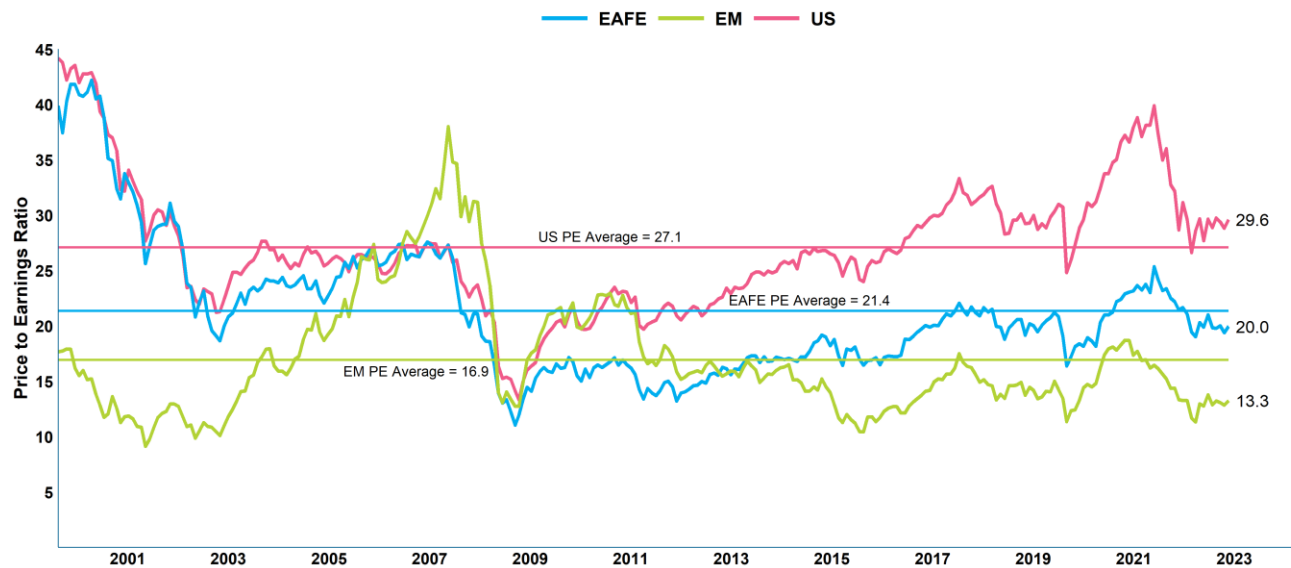
Equity and Fixed Income Volatility¹



- Volatility in equities (VIX) declined in June and remains low as investors continue to anticipate the end of the Fed's policy tightening.
- In comparison, the bond market remains on edge after last year's historic losses and continued volatility in interest rates this year due to policy uncertainty and issues in the banking sector. The MOVE (fixed income volatility) remains well above (110.6) its long-run average (88.4), but off its recent peak during the heart of the banking crisis.

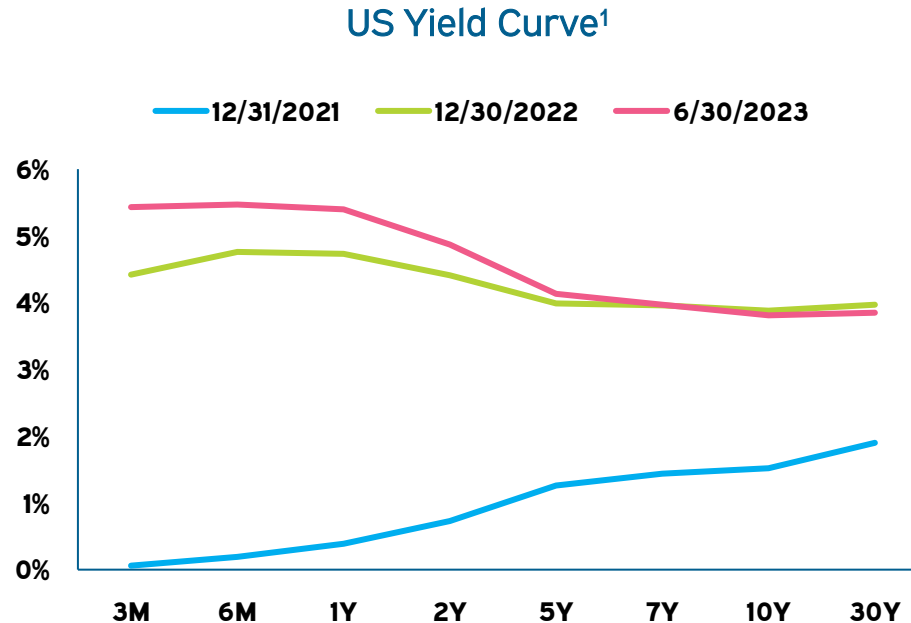
¹ Equity and Fixed Income Volatility – Source: Bloomberg. Implied volatility as measured using VIX Index for equity markets and the MOVE Index to measure interest rate volatility for fixed income markets. Data is as of June 2023. The average line indicated is the average of the VIX and MOVE values between January 2000 and June 2023.

Equity Cyclically Adjusted P/E Ratios¹



- After its dramatic decline last year the US equity price-to-earnings ratio remains above its long-run (21st century) average.
- International developed market valuations are below their own long-term average, with those for emerging markets the lowest and well under the long-term average.

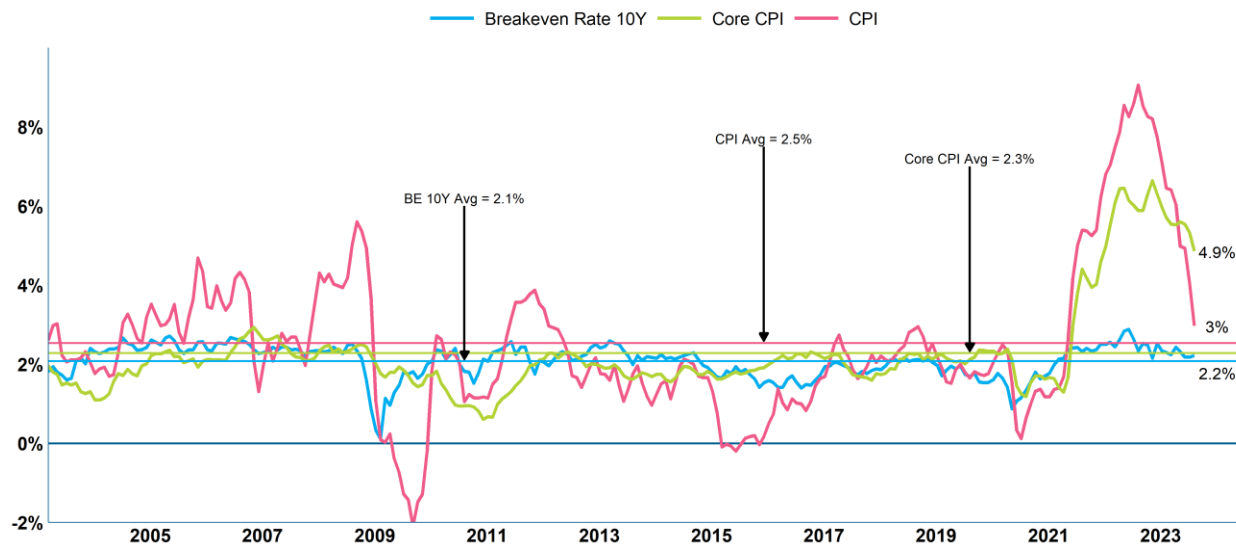
¹ US Equity Cyclically Adjusted P/E on S&P 500 Index. Source: Robert Shiller, Yale University, and Meketa Investment Group. Developed and Emerging Market Equity (MSCI EAFE and EM Index) Cyclically Adjusted P/E – Source: MSCI and Bloomberg. Earnings figures represent the average of monthly “as reported” earnings over the previous ten years. Data is as of June 2023. The average line is the long-term average of the US, EM, and EAFE PE values from December 1999 to the recent month-end respectively.



- Interest rates have started rising again across the curve given policy maker guidance that policy rates are likely to rise further and potentially stay longer at the terminal rate than market participants expect. The rise in rates was particularly acute at the very front-end (< 1 year). Maturities from two years out also drifted higher as market participants considered the possibility of additional policy rate increases as economic data (mainly inflation and labor markets) remains strong.
- The yield curve remains inverted with the spread between two-year and ten-year Treasuries finishing the month at -1.06%. The more closely watched measure (by the Fed) of the three-month and ten-year Treasuries spread also remained inverted at -1.62%. Inversions in the yield curve have often preceded recessions.

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

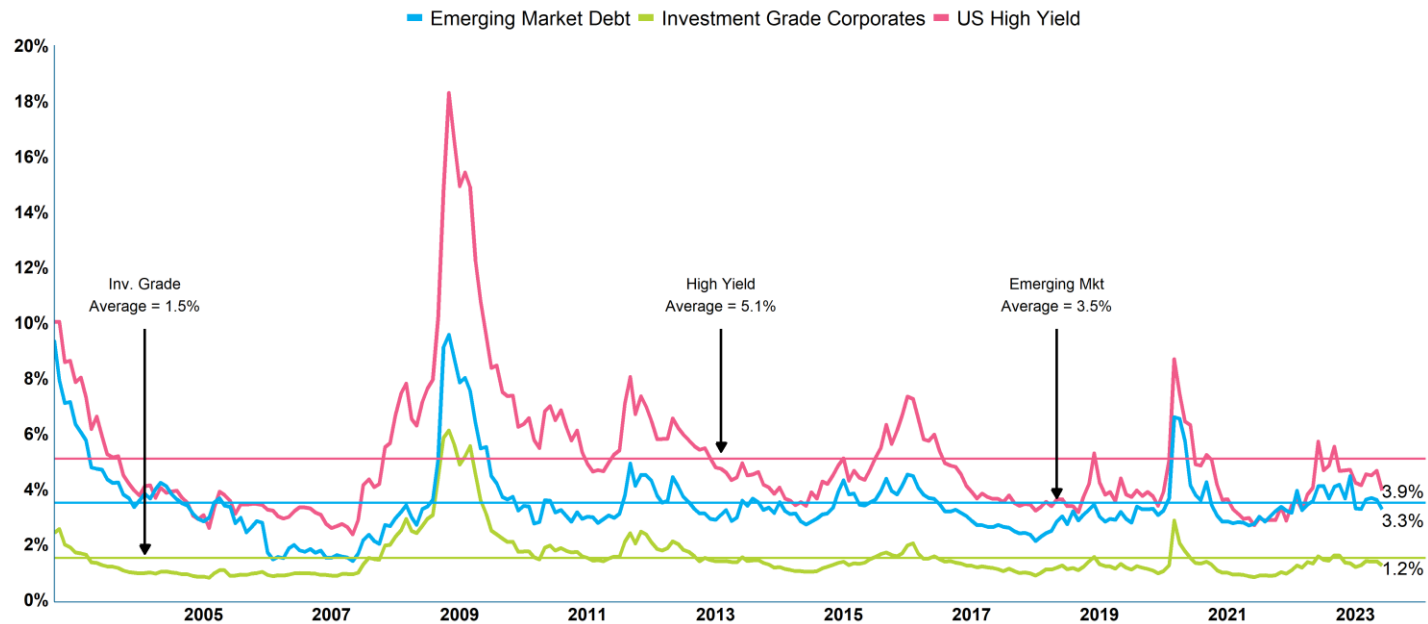
Ten-Year Breakeven Inflation and CPI¹



- Headline inflation continued to decline in June, with the year-over-year reading falling from 4.0% to 3.0% and coming in slightly below estimates. The month-over-month rate of price increases rose slightly (0.2% versus 0.1%), with food prices ticking up slightly (0.1%) and energy prices rose (0.6%).
- Core inflation – excluding food and energy - fell (5.3% to 4.9%), coming in slightly above forecasts. It remains stubbornly high driven by shelter costs.
- Inflation expectations (breakevens) remain well below current inflation as investors continue to expect inflation to track back toward the Fed’s 2% average target.

¹ Source: Bloomberg. Data is as June 30, 2023. The CPI and 10 Year Breakeven average lines denote the average values from August 1998 to the present month-end, respectively. Breakeven values represent month-end values for comparative purposes.

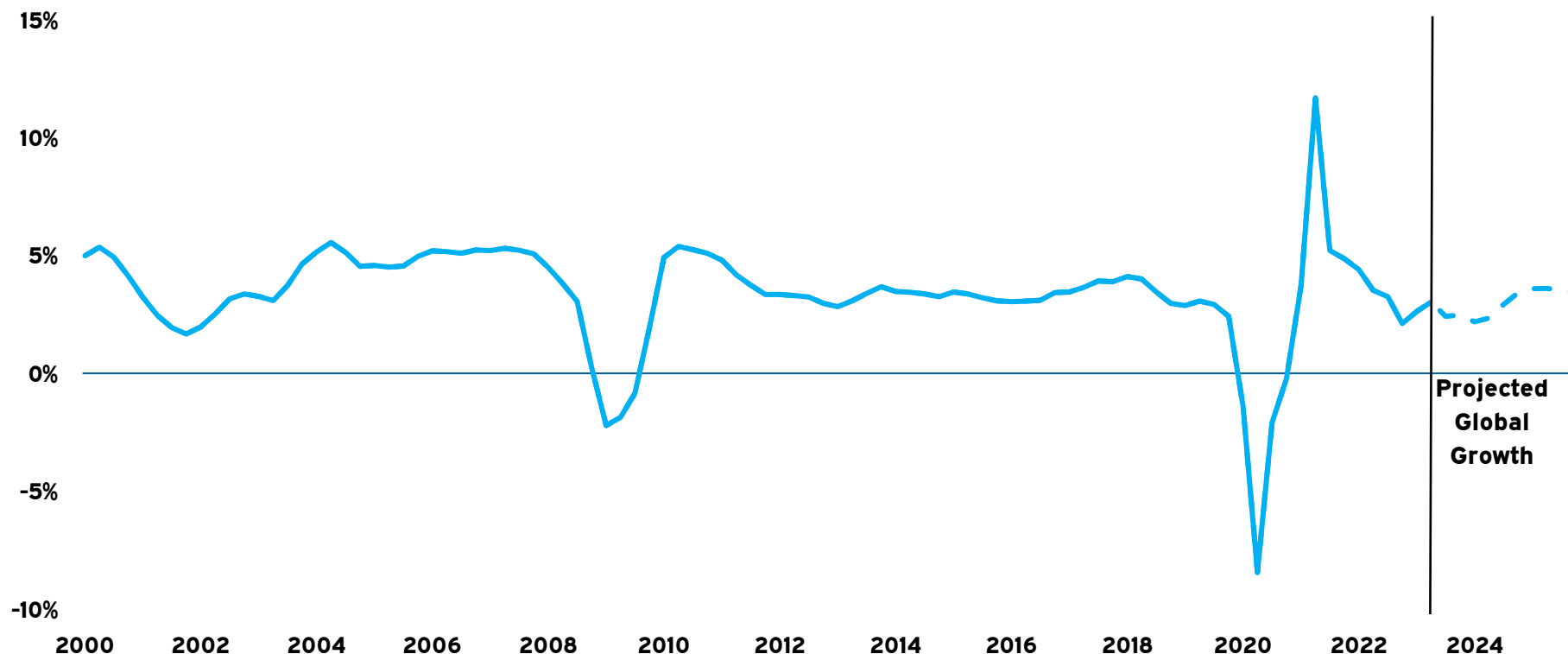
Credit Spreads vs. US Treasury Bonds¹



- Spreads (the added yield above a comparable maturity Treasury) declined in June as risk appetite remained robust for respective credit exposures.
- High yield spreads remain below their long-term average. Investment grade spreads and emerging market spreads are narrower than high yield spreads and close to their respective long-term averages.

¹ Sources: Bloomberg. Data is as of June 30, 2023. Average lines denote the average of the investment grade, high yield, and emerging market spread values from August 2000 to the recent month-end, respectively.

Global Real Gross Domestic Product (GDP) Growth¹

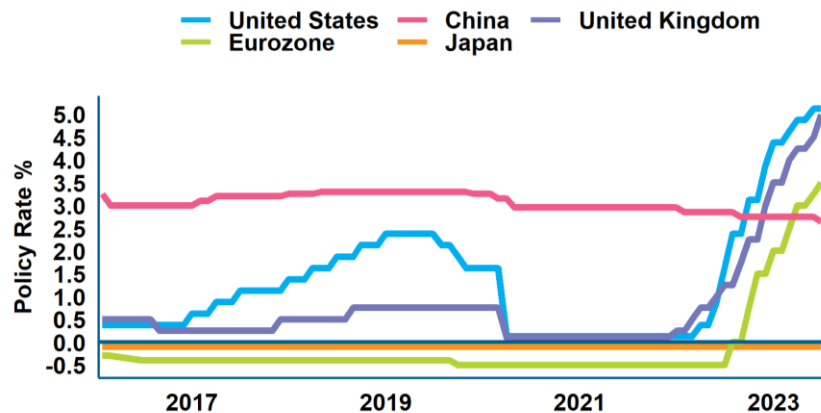


- Global economies are expected to slow this year compared to 2022, with risks of recession as the impacts of policymakers' aggressive tightening to fight inflation flow through economies.
- The delicate balancing act of central banks trying to reduce inflation without dramatically depressing growth will remain key.

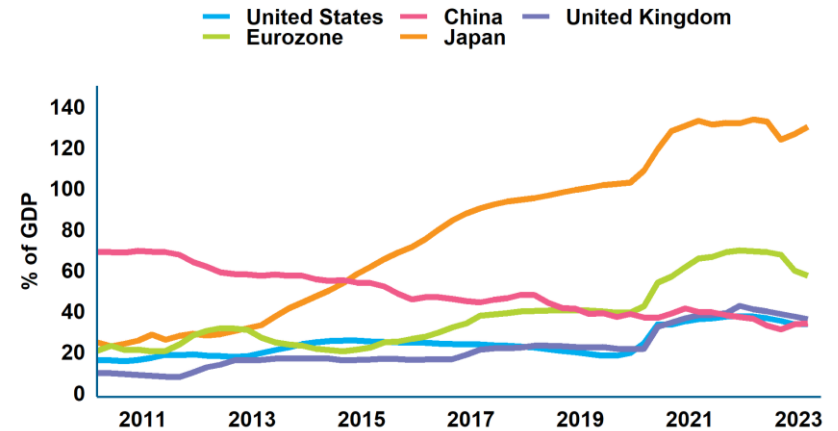
¹ Source: Oxford Economics (World GDP, US\$ prices & PPP exchange rate, real, % change YoY). Updated June 2023.

Central Bank Response¹

Policy Rates



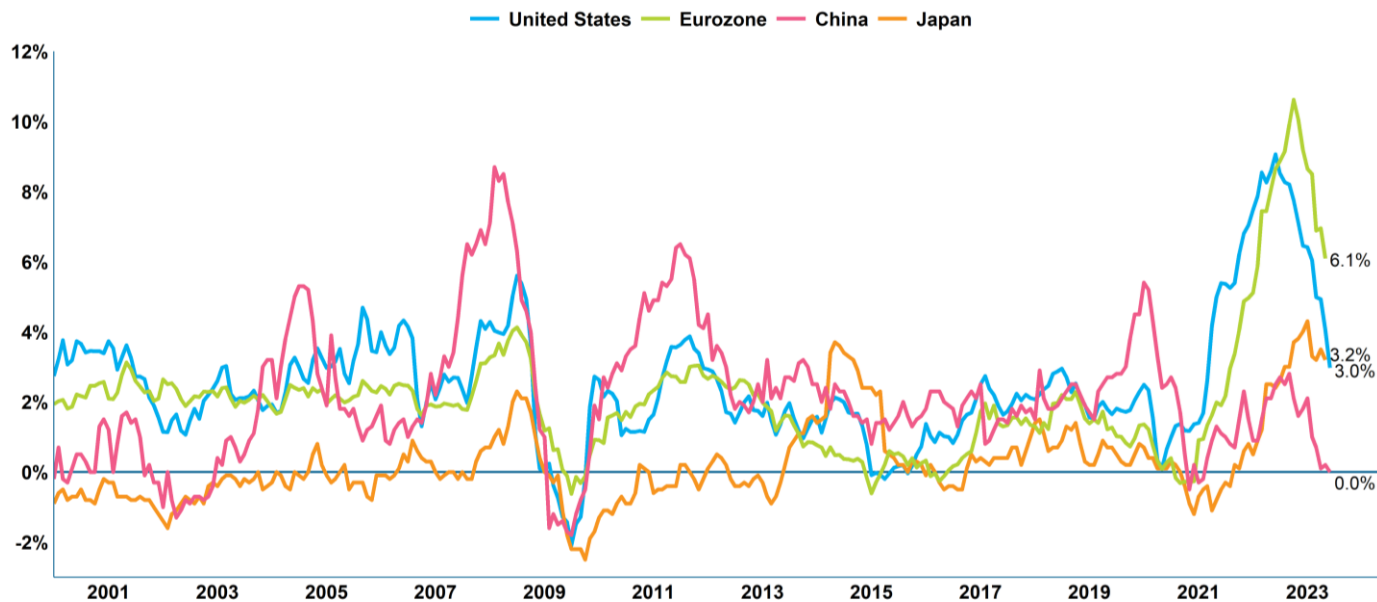
Balance Sheet as % of GDP



- In 2022, many central banks aggressively reduced pandemic-era policy support in the face of high inflation, with the US taking the most aggressive approach. Slowing inflation and growth have led to expectations for reductions in policy tightening going forward.
- In May the Fed raised rates another 25 basis points to a range of 5.0% to 5.25%. After month-end, the FOMC paused its tightening campaign but hinted that one or two additional rate hikes could come later this year.
- In China, the central bank 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.
- Looking ahead, risks remain for a policy error as central banks attempt to balance multiple goals, bringing down inflation, maintaining financial stability, and supporting growth.

¹ Source: Bloomberg. Policy rate data is as of June 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 March 31, 2023.

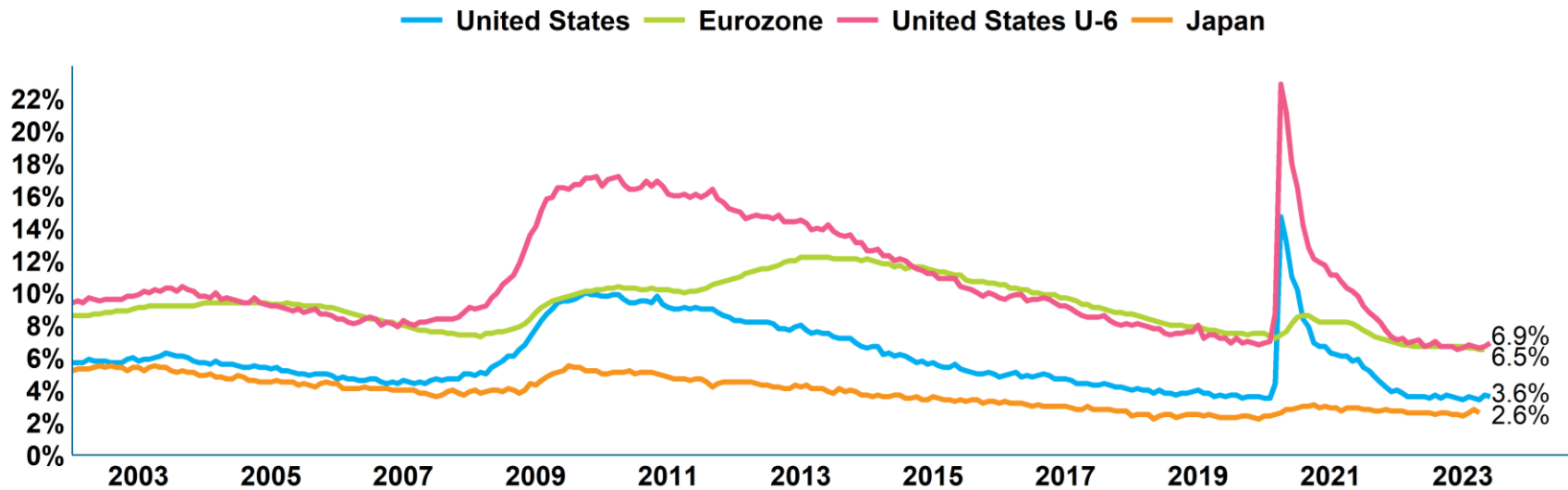
Inflation (CPI Trailing Twelve Months)¹



- Inflation pressures continued to decline globally due to the easing of supply chain issues from the pandemic, declining energy prices, and tighter monetary policy.
- In the US, inflation fell to 3.0% at month-end, while eurozone inflation also fell (6.1% from 7.0%) a level well off its peak. Despite 2023's significant declines in the US and Europe, inflation levels remain elevated compared to central bank targets.
- Inflation remains lower in China and Japan. In China, inflation levels were only slightly above 0% at month-end as the reopening of their economy has led to an uneven economic recovery.

¹ Source: Bloomberg. Data is as June 30, 2023. The most recent Japanese inflation data is as of May 2023.

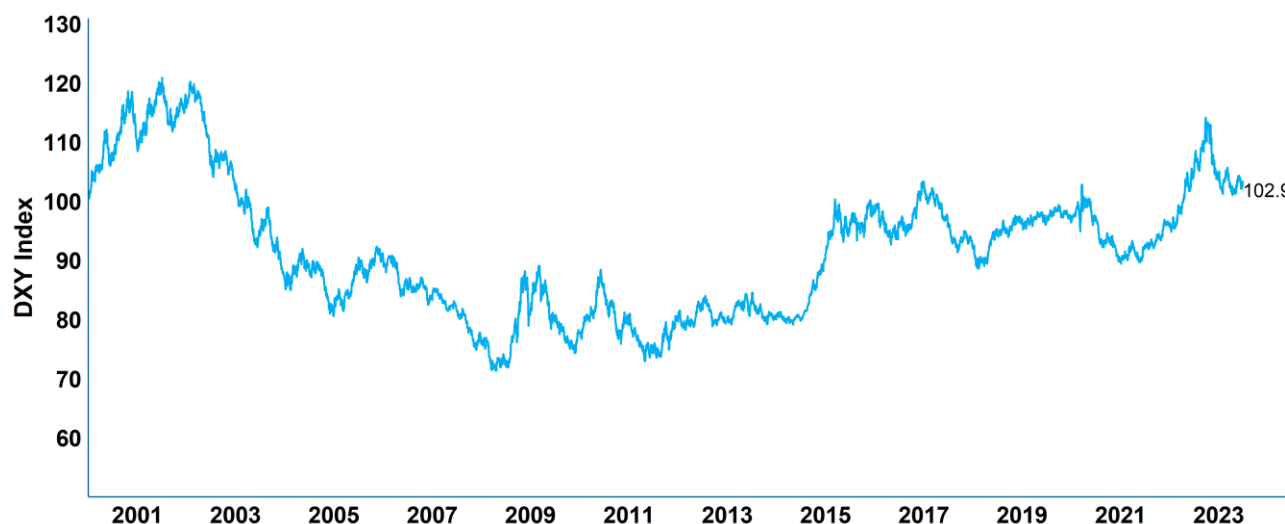
Unemployment¹



- Despite slowing growth and high inflation, the US labor market still shows signs of resiliency. Unemployment in the US, which experienced the steepest rise, recently returned to pre-pandemic levels. Broader measures of unemployment (U-6) remain higher at 6.9% but also declined dramatically from their peak.
- The strong labor market and higher wages, although beneficial for workers, motivates the Fed's efforts to fight inflation, leading to higher unemployment.
- Unemployment in Europe has also declined but remains higher than the US, while levels in Japan have been flat through the pandemic given less layoffs.

¹ Source: Bloomberg. Data is as June 30, 2023, for the US. The most recent data for Eurozone and Japanese unemployment is as of May 2023.

US Dollar versus Broad Currencies¹



- The dollar finished 2022 much higher than it started, due to the increased pace of policy tightening, stronger relative growth, and safe-haven flows.
- Late last year and into this year, the dollar declined, as weaker economic data and lower inflation led to investors anticipating the end of Fed tightening. In June, we did see a slight decline in the dollar though.
- This year, the track of inflation across economies and the corresponding monetary policies will be key drivers of currency moves.

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

Summary

Key Trends:

- The impacts of still relatively high inflation will remain key, with bond market volatility likely to stay high.
- Recent issues related to the banking sector seem to have subsided for now but are a reminder that there is a delicate balance for central banks to continue to fight inflation but also to try to maintain financial stability.
- Global monetary policies could diverge in 2023. 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 this year, with many economies forecast to tip into recession. Inflation, monetary policy, and the war will all be key.
- In the US, consumers could feel pressure as certain components of inflation remain high (e.g., shelter), borrowing cost 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.
- Equity valuations remain lower in both emerging and developed markets, but risks remain, including potential continued strength in the US dollar, higher inflation weighing particularly on Europe, and China's sluggish economic reopening and on-going weakness in the real estate sector.

Manager Highlights

Brown Small Cap Fundamental Value

- Brown outperformed its benchmark by 0.4% in the second quarter, posting a return of 3.6% vs. the benchmark's 3.2%.
- The portfolio's underweight to bank stocks contributed positively to performance when compared to the Russell 2000 Value index.
 - Financial sector outperformance was driven by solid results from insurance investments.
- Since inception, Brown has returned 7.3%, trailing the Russell 2000 Value index by 0.4%, net of fees.

Loomis Sayles High Yield

- Loomis beat its benchmark by 0.1% in June, posting a return of 1.8% vs the benchmark's 1.7%.
- Outperformance was driven primarily by security selection while yield curve positioning contributed modestly throughout the month.
 - High yield credit, convertibles, and equity sectors were the top contributors.
 - Exposure across the communications, consumer cyclical, and financials moderately aided excess return with the securities issued by CSC Holdings, Icahn Enterprises/Fin, and Carnival having the best performance in this sector.
- Since inception, Loomis has returned 4.4%, lagging the benchmark by 0.7%, net of fees, over that period.

Axiom International Small Cap Equity

→ Axiom trailed its benchmark in the second quarter, returning -1.0% vs. the benchmark 0.3%.

- The largest relative detractors for the quarter were IT, mainly due to Keywords Studios, a UK listed Irish video game testing company on concerns about impact from AI. Melexis, a Belgian auto sensor maker also detracted from returns based on concerns about slowing growth as auto inventories peaked.

→ Since inception, Axiom has returned 7.3%, trailing the benchmark's 8.7% return, net of fees.

Acadian Emerging Markets Small Cap

→ Acadian outperformed its benchmark by 3.3% in the second quarter, posting a return of 9.7% vs the benchmark's 6.4%.

- Key sources of positive active return included stock selection in China, South Korea, and Taiwan.
- From a sector perspective, key sources of positive active return included a combination of stock selection and an overweight position in industrials, a combination of stock selection and overweight position in technology, and a combination of stock selection and an underweight position in healthcare.

→ Since inception, Acadian has returned 7.0%, well outpacing the benchmark's 3.8% return, net of fees, over that period.

**Interim Update
As of May 31, 2023**

Total Retirement System | As of June 30, 2023

Allocation vs. Targets and Policy				
	Current Balance	Current Allocation	Policy	Policy Range
US Equity	\$189,191,746	23%	24%	19% - 29%
Developed Market Equity	\$96,925,201	12%	13%	8% - 18%
Emerging Market Equity	\$63,211,516	8%	12%	7% - 17%
Investment Grade Bonds	\$70,659,612	9%	5%	2% - 8%
Long-Term Government Bonds	\$25,475,393	3%	7%	2% - 12%
TIPS	\$15,865,266	2%	4%	1% - 7%
Emerging Market Bonds	--	--	2%	0% - 4%
High Yield Bonds	\$40,207,417	5%	6%	3% - 9%
Bank Loans	\$8,510,131	1%	2%	0% - 4%
Private Equity	\$135,182,470	17%	10%	5% - 15%
Real Estate	\$83,593,715	10%	10%	5% - 15%
Natural Resources	\$17,429,315	2%	3%	0% - 6%
Infrastructure	\$12,768,019	2%	2%	0% - 5%
Opportunistic	\$36,312,649	4%	0%	0% - 5%
Balanced Assets	\$15,424,288	2%	--	--
Cash	\$6,594,634	1%	0%	0% - 5%
Total	\$817,351,372	100%	100%	
	Current Balance	Current Allocation	Policy	Policy Range
Total Equity Including PE	\$484,510,933	59%	59%	--
Total Fixed Income	\$160,717,819	20%	26%	--
Real Assets	\$113,791,049	14%	15%	--
Other	\$58,331,571	7%	0%	--

Asset Class Performance Summary												
	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)	817,351,372	100.0	2.7	2.5	6.4	6.7	10.0	7.5	7.4	6.9	8.2	Jan-89
Total Retirement System			2.7	2.4	6.4	6.6	9.8	7.3	7.2	6.7	7.8	
Domestic Equity Assets	189,191,746	23.1	6.7	7.1	13.3	17.0	14.1	10.4	11.7	9.8	9.9	Jul-93
<i>Russell 3000</i>			<i>6.8</i>	<i>8.4</i>	<i>16.2</i>	<i>19.0</i>	<i>13.9</i>	<i>11.4</i>	<i>12.3</i>	<i>10.1</i>	<i>9.9</i>	<i>Jul-93</i>
International Developed Market Equity Assets	96,925,201	11.9	4.4	2.5	11.1	17.0	7.9	2.9	4.9	5.9	4.8	Feb-98
<i>MSCI EAFE</i>			<i>4.6</i>	<i>3.0</i>	<i>11.7</i>	<i>18.8</i>	<i>8.9</i>	<i>4.4</i>	<i>5.4</i>	<i>6.5</i>	<i>4.7</i>	<i>Feb-98</i>
International Emerging Market Equity Assets	63,211,516	7.7	5.3	3.8	8.4	6.3	6.1	5.9	4.4	--	5.9	Sep-08
<i>MSCI Emerging Markets</i>			<i>3.8</i>	<i>0.9</i>	<i>4.9</i>	<i>1.7</i>	<i>2.3</i>	<i>0.9</i>	<i>3.0</i>	<i>8.2</i>	<i>2.7</i>	<i>Sep-08</i>
Investment Grade Bond Assets	70,659,612	8.6	-0.1	-1.2	2.7	-2.3	-5.2	0.0	1.1	2.8	4.1	Jul-93
<i>Bloomberg US Aggregate TR</i>			<i>-0.4</i>	<i>-0.8</i>	<i>2.1</i>	<i>-0.9</i>	<i>-4.0</i>	<i>0.8</i>	<i>1.5</i>	<i>3.0</i>	<i>4.4</i>	<i>Jul-93</i>
Long-Term Government Bond Assets	25,475,393	3.1	0.0	-1.3	2.9	-2.8	-5.2	1.0	--	--	1.7	Dec-15
<i>PRIT Core Fixed Income</i>			<i>0.0</i>	<i>-1.3</i>	<i>3.2</i>	<i>-2.6</i>	<i>-5.1</i>	<i>1.0</i>	<i>2.6</i>	<i>3.5</i>	<i>1.7</i>	<i>Dec-15</i>
TIPS Assets	15,865,266	1.9	-0.4	-1.4	2.0	-1.4	-0.1	2.5	2.1	--	3.5	Mar-07
<i>Bloomberg US TIPS TR</i>			<i>-0.3</i>	<i>-1.4</i>	<i>1.9</i>	<i>-1.4</i>	<i>-0.1</i>	<i>2.5</i>	<i>2.1</i>	<i>3.6</i>	<i>3.5</i>	<i>Mar-07</i>
High Yield Bond Assets	40,207,417	4.9	1.6	1.6	4.7	8.0	3.6	3.7	4.0	--	5.4	Apr-07
<i>Bloomberg US High Yield TR</i>			<i>1.7</i>	<i>1.7</i>	<i>5.4</i>	<i>9.1</i>	<i>3.1</i>	<i>3.4</i>	<i>4.4</i>	<i>6.6</i>	<i>5.9</i>	<i>Apr-07</i>
Bank Loan Assets	8,510,131	1.0	2.4	3.5	7.3	11.4	5.7	3.8	--	--	3.6	Aug-14
<i>Credit Suisse Leveraged Loans</i>			<i>2.2</i>	<i>3.1</i>	<i>6.3</i>	<i>10.1</i>	<i>6.2</i>	<i>4.0</i>	<i>4.1</i>	<i>4.6</i>	<i>4.0</i>	<i>Aug-14</i>
Total Real Estate	83,593,715	10.2	-1.9	-1.8	-3.8	-5.0	7.9	5.0	7.8	--	--	Jan-89
<i>NCREIF ODCE</i>			<i>-2.7</i>	<i>-2.7</i>	<i>-5.8</i>	<i>-10.0</i>	<i>8.0</i>	<i>6.5</i>	<i>8.8</i>	<i>7.8</i>	<i>7.2</i>	<i>Jan-89</i>

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.

Total Retirement System | As of June 30, 2023

	Market Value (\$)	% of Portfolio	1 Mo (%)	QTD (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	20 Yrs (%)	Inception (%)	Inception Date
Private Equity Assets	135,182,470	16.5										
Natural Resources Assets	17,429,315	2.1										
Infrastructure Assets	12,768,019	1.6										
Opportunistic Assets	36,312,649	4.4										
Balanced Assets (PRIT General Allocation Fund)	15,424,288	1.9	2.5	2.8	6.7	6.0	9.9	7.5	8.2	8.0	8.3	Apr-90
<i>60% Wilshire 5000 & 40% Barclays Aggregate</i>			<i>4.0</i>	<i>4.7</i>	<i>10.5</i>	<i>11.0</i>	<i>6.9</i>	<i>7.6</i>	<i>8.3</i>	<i>7.6</i>	<i>8.5</i>	<i>Apr-90</i>
Cash	6,594,634	0.8										

	Trailing Net Performance												Inception (%)	Inception Date
	Market Value (\$)	% of Portfolio	% of Sector	1 Mo (%)	QTD (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	20 Yrs (%)			
Total Retirement System (gross)	817,351,372	100.0	--	2.7	2.5	6.4	6.7	10.0	7.5	7.4	6.9	8.2	Jan-89	
Total Retirement System				2.7	2.4	6.4	6.6	9.8	7.3	7.2	6.7	7.8		
Domestic Equity Assets	189,191,746	23.1	23.1	6.7	7.1	13.3	17.0	14.1	10.4	11.7	9.8	9.9	Jul-93	
<i>Russell 3000</i>				<i>6.8</i>	<i>8.4</i>	<i>16.2</i>	<i>19.0</i>	<i>13.9</i>	<i>11.4</i>	<i>12.3</i>	<i>10.1</i>	<i>9.9</i>	<i>Jul-93</i>	
RhumbLine Russell 1000 Growth Index	26,048,587	3.2	13.8	6.8	12.8	29.0	27.1	13.7	15.1	15.7	--	11.5	Jun-05	
<i>Russell 1000 Growth</i>				<i>6.8</i>	<i>12.8</i>	<i>29.0</i>	<i>27.1</i>	<i>13.7</i>	<i>15.1</i>	<i>15.7</i>	<i>11.5</i>	<i>11.6</i>	<i>Jun-05</i>	
RhumbLine Russell 1000 Value Index	27,638,174	3.4	14.6	6.6	4.1	5.1	11.5	14.3	8.1	9.2	--	7.5	Jun-05	
<i>Russell 1000 Value</i>				<i>6.6</i>	<i>4.1</i>	<i>5.1</i>	<i>11.5</i>	<i>14.3</i>	<i>8.1</i>	<i>9.2</i>	<i>8.5</i>	<i>7.6</i>	<i>Jun-05</i>	
Rhumbline QSI Index	31,894,585	3.9	16.9	5.2	4.3	8.5	12.1	12.9	10.2	--	--	11.2	Aug-13	
<i>QSI Index</i>				<i>5.2</i>	<i>4.3</i>	<i>8.5</i>	<i>12.1</i>	<i>13.0</i>	<i>10.3</i>	<i>11.7</i>	<i>10.2</i>	<i>11.3</i>	<i>Aug-13</i>	
<i>Russell 3000</i>				<i>6.8</i>	<i>8.4</i>	<i>16.2</i>	<i>19.0</i>	<i>13.9</i>	<i>11.4</i>	<i>12.3</i>	<i>10.1</i>	<i>11.8</i>	<i>Aug-13</i>	
Brown Small Cap Fundamental Value	16,917,803	2.1	8.9	8.4	3.6	2.7	12.6	15.9	4.3	--	--	7.3	Jul-16	
<i>Russell 2000 Value</i>				<i>7.9</i>	<i>3.2</i>	<i>2.5</i>	<i>6.0</i>	<i>15.4</i>	<i>3.5</i>	<i>7.3</i>	<i>8.3</i>	<i>7.7</i>	<i>Jul-16</i>	
PRIT General Allocation Domestic Equity	86,692,597	10.6	45.8	6.8	8.3	16.0	18.9	--	--	--	--	-3.6	Jan-22	
<i>PRIT Domestic Equity Benchmark</i>				<i>6.8</i>	<i>8.3</i>	<i>15.7</i>	<i>18.5</i>	<i>--</i>	<i>--</i>	<i>--</i>	<i>--</i>	<i>-4.0</i>	<i>Jan-22</i>	
International Developed Market Equity Assets	96,925,201	11.9	11.9	4.4	2.5	11.1	17.0	7.9	2.9	4.9	5.9	4.8	Feb-98	
<i>MSCI EAFE</i>				<i>4.6</i>	<i>3.0</i>	<i>11.7</i>	<i>18.8</i>	<i>8.9</i>	<i>4.4</i>	<i>5.4</i>	<i>6.5</i>	<i>4.7</i>	<i>Feb-98</i>	
SSgA MSCI EAFE Index	41,889,124	5.1	43.2	4.6	3.2	12.0	19.1	9.3	4.7	5.7	--	5.4	Oct-09	
<i>MSCI EAFE</i>				<i>4.6</i>	<i>3.0</i>	<i>11.7</i>	<i>18.8</i>	<i>8.9</i>	<i>4.4</i>	<i>5.4</i>	<i>6.5</i>	<i>5.2</i>	<i>Oct-09</i>	
Axiom International Small Cap Equity	10,971,942	1.3	11.3	2.8	-1.0	6.3	7.3	1.1	--	--	--	7.3	May-20	
<i>S&P Developed Ex-U.S. SmallCap</i>				<i>3.4</i>	<i>0.3</i>	<i>6.9</i>	<i>11.1</i>	<i>5.9</i>	<i>1.5</i>	<i>6.1</i>	<i>8.4</i>	<i>8.7</i>	<i>May-20</i>	
<i>MSCI EAFE Small Cap</i>				<i>2.9</i>	<i>0.6</i>	<i>5.5</i>	<i>10.2</i>	<i>5.7</i>	<i>1.3</i>	<i>6.2</i>	<i>8.3</i>	<i>8.2</i>	<i>May-20</i>	
PRIT General Allocation Int. Equity	44,064,135	5.4	45.5	4.7	2.8	11.5	17.5	--	--	--	--	-5.0	Jan-22	
<i>Custom MSCI World Ex-US IMI Net Divs</i>				<i>4.5</i>	<i>2.7</i>	<i>10.5</i>	<i>16.2</i>	<i>--</i>	<i>--</i>	<i>--</i>	<i>--</i>	<i>-4.4</i>	<i>Jan-22</i>	

Total Retirement System | As of June 30, 2023

	Market Value (\$)	% of Portfolio	% of Sector	1 Mo (%)	QTD (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	20 Yrs (%)	Inception (%)	Inception Date
International Emerging Market Equity Assets	63,211,516	7.7	7.7	5.3	3.8	8.4	6.3	6.1	5.9	4.4	--	5.9	Sep-08
<i>MSCI Emerging Markets</i>				3.8	0.9	4.9	1.7	2.3	0.9	3.0	8.2	2.7	Sep-08
Driehaus Emerging Markets Growth	36,999,402	4.5	58.5	5.0	2.3	6.8	2.6	3.3	--	--	--	5.0	Mar-19
<i>MSCI Emerging Markets</i>				3.8	0.9	4.9	1.7	2.3	0.9	3.0	8.2	1.1	Mar-19
Acadian Emerging Markets Small Cap	10,088,395	1.2	16.0	6.0	9.7	13.7	18.1	16.6	7.0	--	--	7.0	Jun-14
<i>MSCI Emerging Markets Small Cap</i>				4.5	6.4	10.5	13.3	13.7	4.9	4.6	9.6	3.8	Jun-14
PRIT General Allocation EME	16,123,719	2.0	25.5	5.3	3.8	9.1	8.4	--	--	--	--	-7.6	Jan-22
<i>Custom MSCI Emerging Market IMI Net Divs</i>				3.9	1.6	5.1	1.9	--	--	--	--	-10.7	Jan-22
Investment Grade Bond Assets	70,659,612	8.6	8.6	-0.1	-1.2	2.7	-2.3	-5.2	0.0	1.1	2.8	4.1	Jul-93
<i>Bloomberg US Aggregate TR</i>				-0.4	-0.8	2.1	-0.9	-4.0	0.8	1.5	3.0	4.4	Jul-93
SSgA U.S. Aggregate Bond Index-NL	20,705,534	2.5	29.3	-0.4	-0.8	2.3	-0.9	-3.9	0.8	1.5	--	3.0	Apr-04
<i>Bloomberg US Aggregate TR</i>				-0.4	-0.8	2.1	-0.9	-4.0	0.8	1.5	3.0	3.0	Apr-04
PRIT General Allocation Core FI	49,954,078	6.1	70.7	0.0	-1.3	2.9	-2.8	--	--	--	--	-11.0	Jan-22
<i>PRIT Core Fixed Income</i>				0.0	-1.3	3.2	-2.6	-5.1	1.0	2.6	3.5	-10.8	Jan-22
Long-Term Government Bond Assets	25,475,393	3.1	3.1	0.0	-1.3	2.9	-2.8	-5.2	1.0	--	--	1.7	Dec-15
<i>PRIT Core Fixed Income</i>				0.0	-1.3	3.2	-2.6	-5.1	1.0	2.6	3.5	1.7	Dec-15
PRIT Core Fixed Income	25,475,393	3.1	100.0	0.0	-1.3	2.9	-2.8	-5.2	1.0	--	--	1.7	Dec-15
<i>PRIT Core Fixed Income</i>				0.0	-1.3	3.2	-2.6	-5.1	1.0	2.6	3.5	1.7	Dec-15
TIPS Assets	15,865,266	1.9	1.9	-0.4	-1.4	2.0	-1.4	-0.1	2.5	2.1	--	3.5	Mar-07
<i>Bloomberg US TIPS TR</i>				-0.3	-1.4	1.9	-1.4	-0.1	2.5	2.1	3.6	3.5	Mar-07
SSgA TIPS Index	15,865,266	1.9	100.0	-0.4	-1.4	2.0	-1.4	-0.1	2.5	2.1	--	3.5	Mar-07
<i>Bloomberg US TIPS TR</i>				-0.3	-1.4	1.9	-1.4	-0.1	2.5	2.1	3.6	3.5	Mar-07

Total Retirement System | As of June 30, 2023

	Market Value (\$)	% of Portfolio	% of Sector	1 Mo (%)	QTD (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	20 Yrs (%)	Inception (%)	Inception Date
High Yield Bond Assets	40,207,417	4.9	4.9	1.6	1.6	4.7	8.0	3.6	3.7	4.0	--	5.4	Apr-07
<i>Bloomberg US High Yield TR</i>				1.7	1.7	5.4	9.1	3.1	3.4	4.4	6.6	5.9	Apr-07
Loomis Sayles High Yield Conservative	11,761,692	1.4	29.3	1.8	0.7	3.4	7.1	1.7	2.2	3.6	--	4.4	Feb-12
<i>Bloomberg US High Yield TR</i>				1.7	1.7	5.4	9.1	3.1	3.4	4.4	6.6	5.1	Feb-12
Columbia High Yield	11,880,261	1.5	29.5	1.5	1.5	5.3	9.7	3.2	3.8	--	--	3.9	Dec-16
<i>Bloomberg US High Yield TR</i>				1.7	1.7	5.4	9.1	3.1	3.4	4.4	6.6	4.0	Dec-16
PRIT General Allocation Value Added FI	16,565,464	2.0	41.2	1.5	2.4	5.3	7.6	--	--	--	--	-0.3	Jan-22
<i>PRIT Public Value-Added Fixed Income</i>				2.2	2.3	5.5	10.2	3.4	2.8	2.7	5.4	-1.8	Jan-22
Bank Loan Assets	8,510,131	1.0	1.0	2.4	3.5	7.3	11.4	5.7	3.8	--	--	3.6	Aug-14
<i>Credit Suisse Leveraged Loans</i>				2.2	3.1	6.3	10.1	6.2	4.0	4.1	4.6	4.0	Aug-14
Beach Point Loan Fund	8,510,131	1.0	100.0	2.4	3.5	7.3	11.4	5.7	3.8	--	--	3.6	Aug-14
<i>Credit Suisse Leveraged Loans</i>				2.2	3.1	6.3	10.1	6.2	4.0	4.1	4.6	4.0	Aug-14

Total Retirement System | As of June 30, 2023

	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	83,593,715	10.2	10.2	-1.9	-1.8	-3.8	-5.0	7.9	5.0	7.8	--	--	Jan-89
<i>NCREIF ODCE</i>				<i>-2.7</i>	<i>-2.7</i>	<i>-5.8</i>	<i>-10.0</i>	<i>8.0</i>	<i>6.5</i>	<i>8.8</i>	<i>7.8</i>	<i>7.2</i>	<i>Jan-89</i>
UBS Trumbull Property Income Fund	10,764,522	1.3	12.9	-1.4	-1.4	-3.5	-5.9	5.1	4.5	6.3	7.0	7.1	Jan-89
<i>NCREIF ODCE (net)</i>				<i>-2.9</i>	<i>-2.9</i>	<i>-6.2</i>	<i>-10.7</i>	<i>7.1</i>	<i>5.6</i>	<i>7.8</i>	<i>6.9</i>	<i>6.2</i>	<i>Jan-89</i>
UBS Trumbull Property Fund	2,559,618	0.3	3.1	-3.6	-3.6	-10.5	-15.5	-0.7	-1.0	3.5	5.1	5.9	Jan-89
<i>NCREIF ODCE (net)</i>				<i>-2.9</i>	<i>-2.9</i>	<i>-6.2</i>	<i>-10.7</i>	<i>7.1</i>	<i>5.6</i>	<i>7.8</i>	<i>6.9</i>	<i>6.2</i>	<i>Jan-89</i>
JPMCB Strategic Property Fund	10,835,002	1.3	13.0	-0.3	-1.6	-4.5	-10.4	7.3	--	--	--	5.8	Jan-19
<i>NCREIF ODCE (net)</i>				<i>-2.9</i>	<i>-2.9</i>	<i>-6.2</i>	<i>-10.7</i>	<i>7.1</i>	<i>5.6</i>	<i>7.8</i>	<i>6.9</i>	<i>5.4</i>	<i>Jan-19</i>
AEW Partners VII	433,095	0.1	0.5										
Rockwood X	5,493,513	0.7	6.6										
Torchlight Debt Opportunity Fund VI	3,709,792	0.5	4.4										
TerraCap Partners IV (Institutional), L.P.	4,529,855	0.6	5.4										
Rockwood Capital Real Estate Partners Fund XI, L.P.	6,063,385	0.7	7.3										
PRIT General Allocation Real Estate	39,204,932	4.8	46.9	-0.9	-0.5	-1.9	-1.9	--	--	--	--	4.4	Jan-22
<i>PRIT Real Estate Benchmark</i>				<i>-2.8</i>	<i>-3.0</i>	<i>-7.3</i>	<i>0.7</i>	<i>--</i>	<i>--</i>	<i>--</i>	<i>--</i>	<i>6.4</i>	<i>Jan-22</i>

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	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	135,182,470	16.5	16.5										
Adams Street Partners 2010	5,515,099	0.7	4.1										
Goldman Sachs Private Equity Partners 2005	446,551	0.1	0.3										
North American Strategic Partners 2006	28,181	0.0	0.0										
Brookfield Capital Partners IV	3,859,128	0.5	2.9										
PRIT Vintage Year 2001	62,751	0.0	0.0										
PRIT Vintage Year 2002	6,144	0.0	0.0										
Ridgemont Equity Partners II	6,406,058	0.8	4.7										
TA XII	3,121,242	0.4	2.3										
LLR Equity Partners V	6,861,549	0.8	5.1										
Wellspring Capital Partners VI	6,720,211	0.8	5.0										
Trilantic Capital Partners VI	6,243,579	0.8	4.6										
Brookfield Capital Partners V, L.P.	4,891,235	0.6	3.6										
FS Equity Partners VIII L.P.	6,540,100	0.8	4.8										
Ridgemont Equity Partners III	8,231,999	1.0	6.1										
Searchlight Capital III	4,628,769	0.6	3.4										
Charlesbank Technology Opportunities Fund	6,973,994	0.9	5.2										
LLR Equity Partners VI, L.P.	3,169,601	0.4	2.3										
PRIT General Allocation Private Equity	61,476,279	7.5	45.5	0.4	2.1	4.4	-2.1	--	--	--	--	-0.4	Jan-22

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	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	17,429,315	2.1	2.1										
Hancock Timberland IX	3,898,688	0.5	22.4										
PRIT General Allocation Timberland <i>NCREIF Timberland</i>	11,779,886	1.4	67.6	2.0 1.7	1.7 1.7	2.2 3.5	-1.4 11.1	-- 8.7	-- 5.8	-- 5.9	-- 7.0	2.2 10.9	Jan-22 Jan-22
Oppenheimer Natural Resources	1,750,741	0.2	10.0										
Infrastructure Assets	12,768,019	1.6	1.6										
IFM Global Infrastructure (U.S.), L.P. <i>CPI+5%</i>	8,690,945	1.1	68.1	2.7 0.7	2.5 2.3	5.2 5.3	9.6 8.1	12.4 11.0	-- 9.1	-- 7.8	-- 7.7	10.7 9.3	Oct-18 Oct-18
Global Infrastructure Partners IV	4,077,074	0.5	31.9										
Opportunistic Assets	36,312,649	4.4	4.4										
HarbourVest Co-Investment Fund V, L.P.	4,710,508	0.6	13.0										
EnTrustPermal Special Opportunities Evergreen Fund, Ltd.	4,766,089	0.6	13.1										
PRIT General Allocation Hedge Funds <i>HFRI FOF Composite Index</i>	26,836,052	3.3	73.9	1.3 1.2	1.9 1.5	3.6 2.3	4.5 3.7	-- 4.9	-- 3.2	-- 3.4	-- 3.4	1.1 -2.3	Jan-22 Jan-22
Balanced Assets (PRIT General Allocation Fund)	15,424,288	1.9	1.9	2.5	2.8	6.7	6.0	9.9	7.5	8.2	8.0	8.3	Apr-90
<i>60% Wilshire 5000 & 40% Barclays Aggregate</i>				4.0	4.7	10.5	11.0	6.9	7.6	8.3	7.6	8.5	Apr-90
PRIT General Allocation <i>60% Wilshire 5000 & 40% Barclays Aggregate</i>	15,424,288	1.9	100.0	2.5 4.0	2.8 4.7	6.7 10.5	6.0 11.0	9.9 6.9	7.5 7.6	8.2 8.3	8.0 7.6	8.3 8.5	Apr-90 Apr-90
Cash	6,594,634	0.8	0.8										
Cash Account <i>91 Day T-Bills</i>	5,574,731	0.7	84.5	0.5	1.2	2.3	3.6	1.3	1.5	0.9	1.3	1.3	Jan-02
PRIM Cash Account	1,019,903	0.1	15.5										

Cash Flow Summary						
	Beginning Market Value	Contributions	Withdrawals	Net Investment Change	Ending Market Value	Month Return
Acadian Emerging Markets Small Cap	\$9,504,522	\$0	-\$10,509	\$594,382	\$10,088,395	6.03%
Adams Street Partners 2010	\$5,589,344	\$0	\$0	-\$74,245	\$5,515,099	-1.33%
AEW Partners VII	\$449,065	\$0	\$0	-\$15,970	\$433,095	-3.56%
Axiom International Small Cap Equity	\$10,673,634	\$0	-\$7,315	\$305,623	\$10,971,942	2.79%
Beach Point Loan Fund	\$8,308,394	\$0	-\$3,546	\$205,282	\$8,510,131	2.43%
Brookfield Capital Partners IV	\$3,767,811	\$0	\$0	\$91,317	\$3,859,128	2.42%
Brookfield Capital Partners V, L.P.	\$4,329,688	\$213,437	\$0	\$348,110	\$4,891,235	8.03%
Brown Small Cap Fundamental Value	\$15,596,239	\$0	-\$15,508	\$1,337,072	\$16,917,803	8.37%
Cash Account	\$6,700,319	\$0	-\$1,125,588	\$0	\$5,574,731	0.00%
Charlesbank Technology Opportunities Fund	\$6,518,142	\$0	\$0	\$455,852	\$6,973,994	6.99%
Columbia High Yield	\$11,709,076	\$0	-\$4,059	\$175,244	\$11,880,261	1.46%
Driehaus Emerging Markets Growth	\$35,233,068	\$0	\$0	\$1,766,335	\$36,999,402	5.01%
EnTrustPermal Special Opportunities Evergreen Fund, Ltd.	\$4,875,090	\$0	\$0	-\$109,001	\$4,766,089	-2.24%
FS Equity Partners VIII L.P.	\$6,402,330	\$0	\$0	\$137,770	\$6,540,100	2.15%
Global Infrastructure Partners IV	\$4,030,362	\$0	\$0	\$46,712	\$4,077,074	1.16%
Goldman Sachs Private Equity Partners 2005	\$459,043	\$0	\$0	-\$12,492	\$446,551	-2.72%
Hancock Timberland IX	\$3,924,183	\$0	\$0	-\$25,495	\$3,898,688	-0.65%
HarbourVest Co-Investment Fund V, L.P.	\$4,786,715	\$0	\$0	-\$76,207	\$4,710,508	-1.59%
IFM Global Infrastructure (U.S.), L.P.	\$8,465,273	\$0	\$0	\$225,672	\$8,690,945	2.67%
JPMCB Strategic Property Fund	\$10,862,997	\$0	\$0	-\$27,995	\$10,835,002	-0.26%
LLR Equity Partners V	\$6,700,541	\$0	\$0	\$161,008	\$6,861,549	2.40%
LLR Equity Partners VI, L.P.	\$2,670,143	\$480,000	\$0	\$19,458	\$3,169,601	0.72%
Loomis Sayles High Yield Conservative	\$11,544,302	\$0	-\$4,411	\$221,801	\$11,761,692	1.84%
North American Strategic Partners 2006	\$28,181	\$0	\$0	\$0	\$28,181	0.00%

Total Retirement System | As of June 30, 2023

	Beginning Market Value	Contributions	Withdrawals	Net Investment Change	Ending Market Value	Month Return
Oppenheimer Natural Resources	\$1,750,741	\$0	\$0	\$0	\$1,750,741	0.00%
PRIM Cash Account	\$1,019,200	\$3,981,597	-\$4,000,000	\$19,107	\$1,019,903	1.88%
PRIT Core Fixed Income	\$25,475,433	\$0	-\$2,335	\$2,295	\$25,475,393	0.00%
PRIT General Allocation	\$15,386,511	\$0	-\$3,977,741	\$4,015,518	\$15,424,288	2.54%
PRIT General Allocation Core FI	\$50,405,339	\$0	\$0	-\$451,261	\$49,954,078	0.00%
PRIT General Allocation Domestic Equity	\$82,666,207	\$0	\$0	\$4,026,389	\$86,692,597	6.82%
PRIT General Allocation EME	\$15,531,667	\$0	\$0	\$592,052	\$16,123,719	5.34%
PRIT General Allocation Hedge Funds	\$26,345,771	\$0	\$0	\$490,281	\$26,836,052	1.26%
PRIT General Allocation Int. Equity	\$43,437,862	\$0	\$0	\$626,273	\$44,064,135	4.74%
PRIT General Allocation Private Equity	\$61,908,933	\$0	\$0	-\$432,654	\$61,476,279	0.38%
PRIT General Allocation Real Estate	\$39,155,767	\$0	\$0	\$49,165	\$39,204,932	-0.92%
PRIT General Allocation Timberland	\$11,685,039	\$0	\$0	\$94,847	\$11,779,886	2.00%
PRIT General Allocation Value Added FI	\$16,366,312	\$0	\$0	\$199,152	\$16,565,464	1.52%
PRIT Vintage Year 2001	\$62,266	\$1	\$0	\$484	\$62,751	0.78%
PRIT Vintage Year 2002	\$9,985	\$0	-\$3,857	\$16	\$6,144	0.16%
Rhumblin QSI Index	\$30,316,148	\$0	-\$1,861	\$1,580,297	\$31,894,585	5.21%
Rhumblin Russell 1000 Growth Index	\$24,383,874	\$0	-\$1,465	\$1,666,178	\$26,048,587	6.83%
Rhumblin Russell 1000 Value Index	\$25,921,648	\$0	-\$1,555	\$1,718,081	\$27,638,174	6.62%
Ridgemont Equity Partners II	\$6,189,254	\$0	\$0	\$216,804	\$6,406,058	3.50%
Ridgemont Equity Partners III	\$8,577,864	\$0	-\$22,762	-\$323,103	\$8,231,999	-3.77%
Rockwood Capital Real Estate Partners Fund XI, L.P.	\$6,194,948	\$0	\$0	-\$131,564	\$6,063,385	-2.12%
Rockwood X	\$6,257,550	\$0	\$0	-\$764,037	\$5,493,513	-12.21%
Searchlight Capital III	\$4,379,487	\$0	\$0	\$249,282	\$4,628,769	5.69%
SSgA MSCI EAFE Index	\$40,063,515	\$0	-\$3,491	\$1,829,100	\$41,889,124	4.56%
SSgA TIPS Index	\$15,921,007	\$0	-\$793	-\$54,948	\$15,865,266	-0.35%

Total Retirement System | As of June 30, 2023

	Beginning Market Value	Contributions	Withdrawals	Net Investment Change	Ending Market Value	Month Return
SSgA U.S. Aggregate Bond Index-NL	\$20,778,744	\$0	-\$1,035	-\$72,175	\$20,705,534	-0.35%
TA XII	\$3,052,668	\$0	\$0	\$68,574	\$3,121,242	2.25%
TerraCap Partners IV (Institutional), L.P.	\$4,586,956	\$0	\$0	-\$57,101	\$4,529,855	-1.24%
Torchlight Debt Opportunity Fund VI	\$3,679,287	\$0	\$0	\$30,505	\$3,709,792	0.83%
Trilantic Capital Partners VI	\$5,919,769	\$331,728	\$0	-\$7,918	\$6,243,579	-0.13%
UBS Trumbull Property Fund	\$2,672,098	\$0	-\$23,338	-\$89,142	\$2,559,618	-3.57%
UBS Trumbull Property Income Fund	\$10,912,024	\$0	-\$25,386	-\$122,116	\$10,764,522	-1.35%
Wellspring Capital Partners VI	\$6,403,291	\$73,249	\$0	\$243,671	\$6,720,211	3.80%
Total	\$800,545,626	\$5,080,013	-\$9,236,554	\$20,962,287	\$817,351,372	--

Private Market Managers' Performance Overview¹

Managers	Strategy	Vintage Year	Commitment Amount (\$mm)	% called	Median Peer IRR	Quartile Rank	Net IRR	Net Multiple
Real Estate Managers								
AEW Partners VII	Opportunistic	2013	5.0	93%	11.2	3	10.5%	NA
Rockwood X	Value-Added	2016	10.0	94%	18.8	4	8.6%	1.3x
Torchlight Debt Opportunity Fund VI	Opportunistic	2017	5.0	100%	10.7	3	8.4%	1.3x
TerraCap Partners IV	Value-Added	2017	5.0	100%	15.5	3	12.0%	NA
Rockwood XI	Value-Added	2019	8.0	71%	13.6	2	16.5%	1.3x
Private Equity Managers								
Adams Street Partners	Fund of Funds	2010	10.0	94%	16.9	3	14.7	2.4x
Goldman Sachs PE Partners	Fund of Funds	2005	10.0	100%	7.0	NA	NA	NA
North American Strategic Partners	Fund of Funds	2006	9.1	88%	6.5	NA	NA	NA
PRIT Vintage Year 2001	Fund of Funds	2001	2.5	NA	8.6	NA	NA	NA
PRIT Vintage Year 2002	Fund of Funds	2002	0.5	NA	10.4	NA	NA	NA
Brookfield Capital Partners IV	Buyout	2015	4.0	100%	20.5	1	41.8%	2.5x
LLR Equity Partners V	Buyout	2017	5.0	97%	21.3	3	20.7%	1.7x
Ridgemont Equity Partners II	Buyout	2015	6.0	97%	20.5	2	21.5%	2.1x

¹ As of 12/31/2022.

² NM 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.

Private Market Managers' Performance Overview (continued)¹

Managers	Strategy	Vintage Year	Commitment Amount (\$mm)	% called	Median Peer IRR	Quartile Rank	Net IRR	Net Multiple
TA XII	Growth Equity	2016	4.0	100%	19.7	1	37.4%	3.0x
Wellspring VI	Buyout	2017	5.0	97%	21.3	3	22.5%	1.6x
Trilantic Capital Partners VI	Buyout	2018	5.0	88%	21.7	3	17.9%	1.4x
Brookfield Capital Partners V	Buyout	2019	4.0	92%	19.9	3	15.0%	1.3x
FS Equity Partners VIII	Buyout	2019	5.0	71%	19.9	2	30.0%	1.7x
Ridgemont Equity Partners III	Buyout	2019	6.0	99%	19.9	1	45.8%	1.9x
Searchlight Capital III	Special Situations	2020	5.0	66%	21.0	1	35.2%	1.7x
Charlesbank Technology Opportunities	Buyout	2019	5.0	71%	19.9	1	72.6%	2.1x
LLR Equity Partners VI	Buyout	2020	4.0	66%	14.9	NM	NM	NM
Opportunistic Managers								
HarbourVest Co-Investment Fund V	Opportunistic	2019	4.0	78%	NA	NA	27.4%	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%	--	--	-1.2%	1.1x
Oppenheimer Natural Resources	Natural Resources	2010	7.0	100%	--	--	-2.2%	0.7x

¹ As of 12/31/2022.

² NM 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.

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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. $\text{Portfolio Return} - [\text{Risk Free Rate} + \text{Beta} * (\text{market return} - \text{Risk Free Rate})]$.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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