

City of Memphis Retirement System

Analysis of Investment Performance

Quarter Ending June 30, 2024

Rosemary E. Guillette
Senior Vice President

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Financial Market Conditions

Quarter In Review: Global Equity Overview

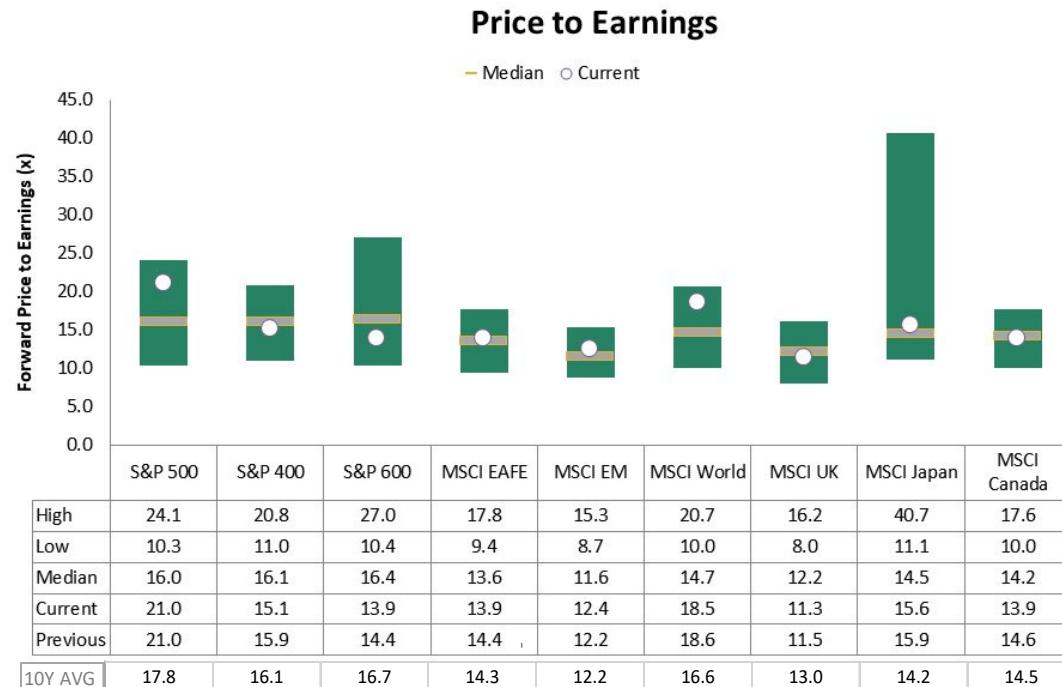
Equity Indices	QTD	YTD	1-Year	3-Year	5-Year	10-Year
S&P 500	4.28	15.29	24.56	10.01	15.05	12.86
MSCI Europe, Australasia and Far East (EAFE)*	-0.42	5.34	11.54	2.89	6.46	4.33
MSCI Emerging Markets (EM)*	5.00	7.49	12.55	-5.07	3.10	2.79

All data in the table are percentages.

* Net dividends reinvested

Global Equity Performance and Valuations

- Emerging Markets (+5.0%) led the Global markets, for the first time since the second quarter of 2020, followed by the U.S. markets (+4.3%), showing signs of deceleration this quarter, and a slight lag from International Developed (-0.4%).
- U.S. large capitalization (“cap”) stocks continue to trade at consistent valuations as the S&P 500’s [12 month] forward P/E ratio was 21.0 compared to 21.0 at the end of the first quarter 2024 which is above its 10-year average of 17.8.
- International Developed large cap stocks, per the MSCI EAFE Index, had a [12 month] forward P/E ratio of 13.6, down from 14.3 the previous quarter but still relatively close to its 10-year average of 14.3.
- Emerging Markets equities, per the MSCI Emerging Markets Index, in the first quarter were just 20 bps above the 10-year average valuation (12-month forward P/E ratio of 12.4 to 12.2) while also up from the previous quarter (12.2).



Data range is from 3/31/00-6/30/24. P/E ratios are forward 12 months.

Quarter In Review: U.S. Equity

U.S. Equity Indices	QTD	YTD	1-Year	3-Year	5-Year	10-Year
S&P 500	4.28	15.29	24.56	10.01	15.05	12.86
Russell 1000	3.57	14.24	23.88	8.74	14.61	12.51
Russell 1000 Growth	8.33	20.70	33.48	11.28	19.34	16.33
Russell 1000 Value	-2.17	6.62	13.06	5.52	9.01	8.23
Russell 2000	-3.28	1.73	10.06	-2.58	6.94	7.00
Russell 2000 Growth	-2.92	4.44	9.14	-4.86	6.17	7.39
Russell 2000 Value	-3.64	-0.85	10.90	-0.53	7.07	6.23
Russell Midcap	-3.35	4.96	12.88	2.37	9.46	9.04
Russell 3000	3.22	13.56	23.13	8.05	14.14	12.15

All data in the tables are percentages.

Performance

- The U.S. market demonstrated continued strength, as the S&P 500 gained 4.3% in the quarter ending June 30.
- Rallying in 2024, large cap stocks (+3.6%) continue to lead the way as mid cap (-3.4%) and small cap (-3.3%) stocks posted negative returns in the second quarter.
- Growth continues its outperformance over value in large caps as the Russell 1000 Growth Index posted +8.3% compared to the value index at -2.2%. Similarly, growth also beat out value amongst small caps (-2.9% vs. -3.6%), a dip from the previous quarter ending March 31 [2024].
- Half of the sectors in the S&P 500 Index generated positive returns in the second quarter. Information Technology led the index, driven by strong economic expansion, posting +13.8% in the quarter ending June 30. Materials was lowest performing sector this quarter posting a (-4.5%).

S&P 500 Sector Returns	QTD	1-Year
Communication Services	9.37	44.87
Consumer Discretionary	0.65	13.08
Consumer Staples	1.35	8.15
Energy	-2.42	15.85
Financials	-2.03	24.21
Healthcare	-0.96	11.68
Industrials	-2.90	15.53
Information Technology	13.81	41.78
Materials	-4.50	8.69
Real Estate	-1.91	5.60
Utilities	4.66	7.82

Quarter In Review: International Equity

MSCI International Equity Indices	QTD	YTD	1-Year	3-Year	5-Year	10-Year
World ex. U.S.	-0.60	4.96	11.22	2.82	6.55	4.27
EAFE	-0.42	5.34	11.54	2.89	6.46	4.33
EAFE Local Currency	1.00	11.06	15.08	8.10	8.98	7.40
Europe	0.55	5.81	11.68	3.87	7.13	4.16
Europe ex U.K.	-0.35	5.49	11.46	2.97	7.60	4.72
U.K.	3.69	6.91	12.49	6.92	5.71	2.66
Japan	-4.27	6.27	13.15	2.29	6.62	5.54
Pacific ex Japan	2.47	0.70	6.84	-1.25	2.43	3.23

All data in the tables are percentages and net dividends reinvested.

Performance

- International developed markets continued to trail the U.S. (+4.3%) during the second quarter of 2024 and dipped with -0.4% return over the quarter.
- The U.K. (+3.7%) posted the strongest returns in international markets, with economic resilience post-Brexit (due to Brexit relation detachment from EU), favorable commodity prices and strong corporate earnings in financials, energy and consumer goods.
- Japan fell with the weakest returns in international markets with a -4.3% in the second quarter. Deflationary pressures and slower consumer spending persisted, disproportionately impacting smaller companies.
- Healthcare (+4.7%), Financials (+3.3%) and Energy (+1.3%) led the International markets during the quarter. Consumer Discretionary (-9.0%), Real Estate (-6.7%) and Materials (-3.2%) lagged the market.

MSCI EAFE Sector Returns	QTD	1-Year
Communication Services	0.54	10.06
Consumer Discretionary	-9.01	0.05
Consumer Staples	-1.60	-6.83
Energy	1.25	15.89
Financials	3.27	24.21
Healthcare	4.72	11.53
Industrials	-0.75	15.02
Information Technology	0.21	24.13
Materials	-3.22	8.53
Real Estate	-6.71	7.59
Utilities	0.76	-0.55

Quarter In Review: Emerging Market Equity

MSCI EM Equity Indices	QTD	YTD	1-Year	3-Year	5-Year	10-Year
Emerging Markets	5.00	7.49	12.55	-5.07	3.10	2.79
EM Local Currency	6.22	11.00	15.52	-1.62	5.60	5.84
Asia	7.44	11.04	15.06	-5.45	4.57	4.53
EMEA	1.60	2.66	9.28	-6.79	-2.22	-1.76
Latin America	-12.20	-15.68	-5.59	0.95	0.14	-0.31

All data in the tables are percentages and net dividends reinvested.

Performance

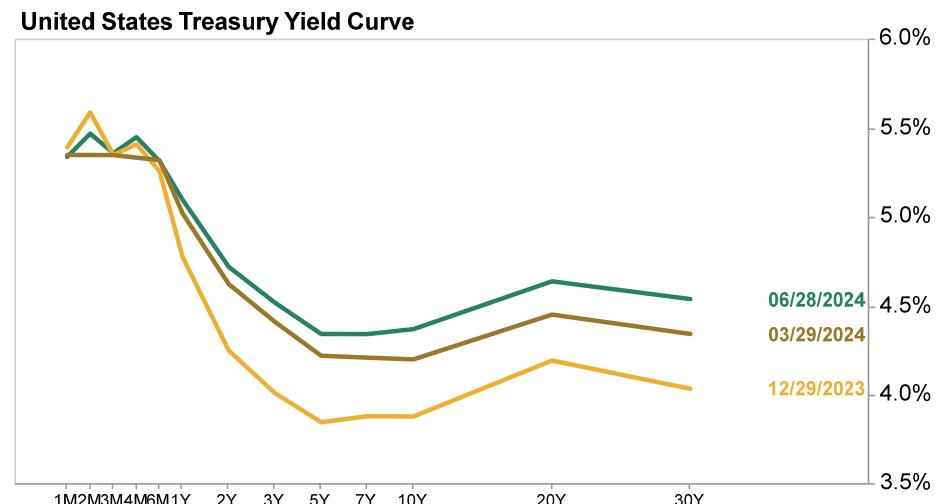
- Emerging Market equities (+5.0%) outperformed U.S. (+4.3%) and International Developed equities (-0.4%) during the quarter.
- Despite China's (-1.4%) underperformance and continuous falling index weight, Asia posted the strongest second quarter returns with investor focus on India's equities following post-election optimism and Taiwan's continued AI enthusiasm.
- Latin America posted negative returns the past two quarters after a year of strong positive returns in 2023 as Brazil's expansionary fiscal policy, with primary expenditures growing at a double-digit rate, and potential rate hikes hindering investor confidence.
- Information Technology (+11.3%), Communication Services (+8.2%), and Utilities (+6.24%) were the strongest sectors in Emerging Markets while sectors including Healthcare (-4.3%), Consumer Staples (-3.0%) and Materials (-1.8%) were the weakest.

MSCI EM Sector Returns	QTD	1-Year
Communication Services	8.22	2.71
Consumer Discretionary	5.10	6.29
Consumer Staples	-2.97	-5.72
Energy	3.27	25.24
Financials	3.45	12.61
Healthcare	-4.32	-2.78
Industrials	4.01	6.85
Information Technology	11.26	34.22
Materials	-1.84	-3.08
Real Estate	2.80	-4.09
Utilities	6.24	20.27

Quarter In Review: Fixed Income Overview

Yield Curve

- US Treasury Yield Curve remained inverted in Q2 2024 with yields slightly rising in the intermediate to long end of the curve. The yield curve has now been inverted for seven quarters. A “soft landing” scenario is becoming a likely outcome with the Fed expected to begin cutting rates later this year, potentially as early as September 2024.
- Short-term yields remained mostly unchanged versus the prior quarter.
- 5-, 10- and 30-year Treasury yields increased the most by 12 bps, 17 bps and 20 bps respectively, ending the quarter at 4.34%, 4.37% and 4.54%.



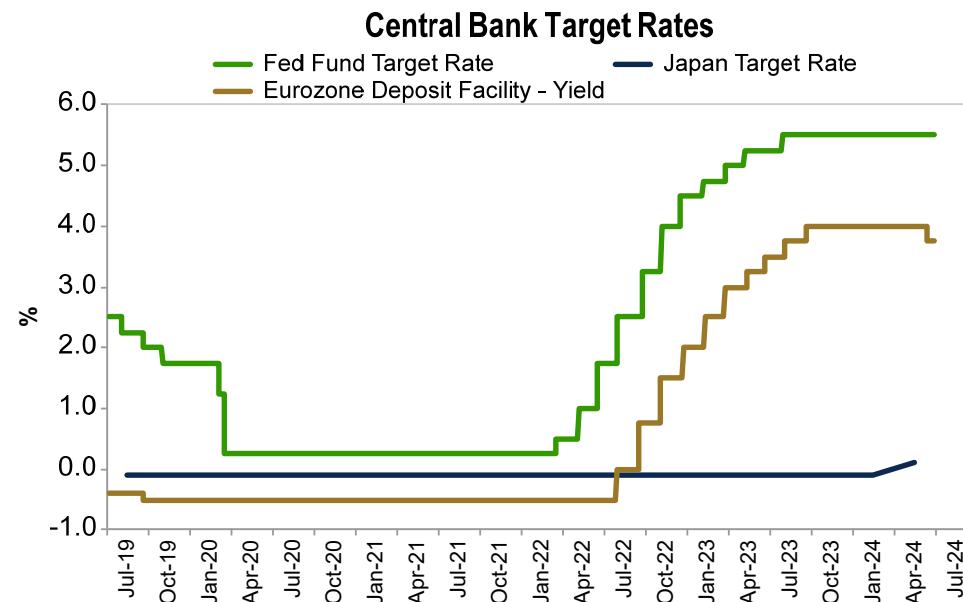
Monetary Policies/Global Interest Rates

- The Bank of Japan kept its policy rate unchanged in Q2 2024 ending the quarter at 0.10%. The European Central Bank cut its interest rate by 0.25% in June of 2024, ending the quarter at 4.25% and easing ahead of the Fed and the BOE as other major central banks around the world consider lowering borrowing costs. The Bank of England kept its policy rate unchanged at 5.25%.
- The U.S. policy rate is above those of the Eurozone, the United Kingdom and Japan, at 5.50%.

Interest Rates	Fed Funds Rate	EZ Deposit Facility Rate
Average	4.96	0.99
Max	20.00	4.00
Min	0.25	-0.50

Source: FactSet

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Quarter In Review: U.S. Fixed Income

U.S. Fixed Income Indices*	QTD	YTD	1-Year	3-Year	5-Year	10-Year
U.S. Aggregate	0.07	-0.71	2.63	-3.02	-0.23	1.35
Government/Credit	0.05	-0.68	2.74	-3.11	-0.07	1.51
Government	0.11	-0.83	1.61	-3.19	-0.61	0.92
Investment Grade Credit	-0.09	-0.49	4.63	-3.03	0.62	2.34
Investment Grade CMBS	0.74	1.75	6.00	-1.78	0.66	2.00
U.S. Corporate High Yield	1.09	2.58	10.44	1.64	3.92	4.31
FTSE** 3-Month T-Bill	1.37	2.76	5.64	3.17	2.22	1.53
Hueler Stable Value	0.74	1.48	2.98	2.35	2.30	2.14

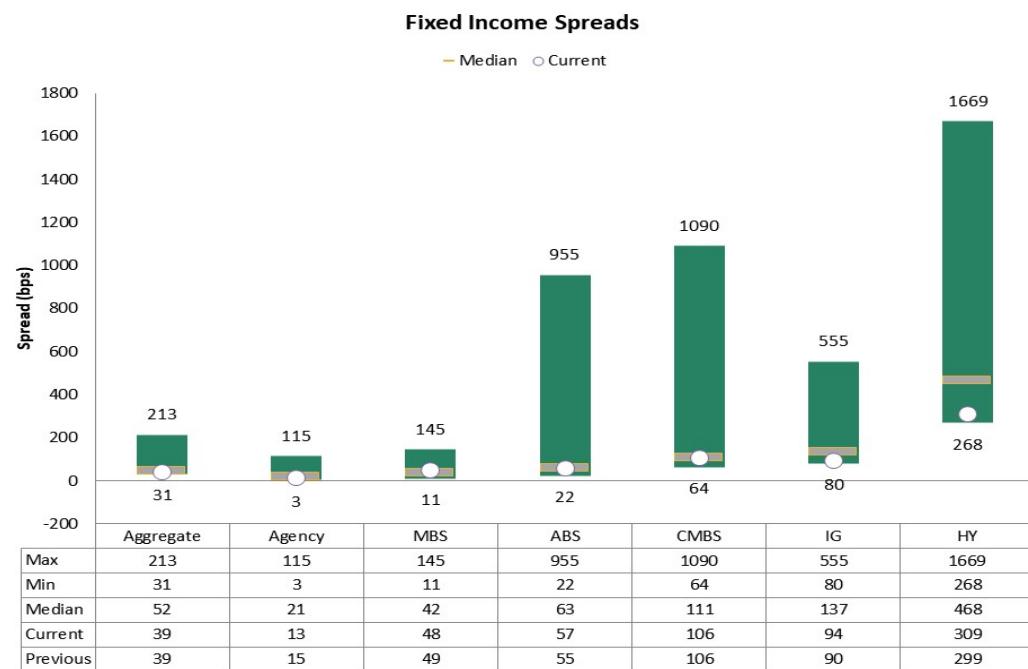
* Bloomberg Indices, unless otherwise noted.

** Formerly Citigroup. Citigroup's fixed income indices were purchased by London Stock Exchange Group (LSEG) and were rebranded to FTSE by July 31, 2018. FTSE Russell is a unit of LSEG's Information Services Division and a wholly owned subsidiary of LSEG.

All data in the table are percentages.

Performance and Spreads

- The U.S. Aggregate Index was positive during the second quarter. With the exception of Investment Grade Credit, all U.S. Aggregate Index sectors generated positive returns for the quarter.
- 3-Month T-Bill had the strongest performance at +1.37% for the quarter. The IG Credit sector experienced the weakest performance in the quarter ended June 30 (-0.09%).
- For the quarter, ABS, IG Credit and High Yield spreads slightly widened while the spreads on Agency and MBS narrowed, and spreads on the US Aggregate Index and CMBS remained unchanged. The largest change was in the High Yield sector with spreads widening by 10 basis points.



Quarter In Review: International Fixed Income

Global Fixed Income Indices	QTD	YTD	1-Year	3-Year	5-Year	10-Year
Bloomberg Global Aggregate	-1.10	-3.16	0.93	-5.49	-2.02	-0.42
Bloomberg Global Aggregate (Hgd)	0.12	0.13	4.20	-1.57	0.25	2.02
FTSE Non-U.S. WGBI*	-2.84	-6.17	-2.19	-9.40	-5.02	-2.45
FTSE Non-U.S. WGBI (Hgd)	-0.61	-0.40	3.62	-2.23	-0.59	2.03
JPM EMBI Global Diversified**	0.30	2.34	9.23	-2.60	-0.03	2.60
JPM GBI-EM Global Diversified***	-1.63	-3.71	0.67	-3.27	-1.29	-0.87

All data in the table are percentages.

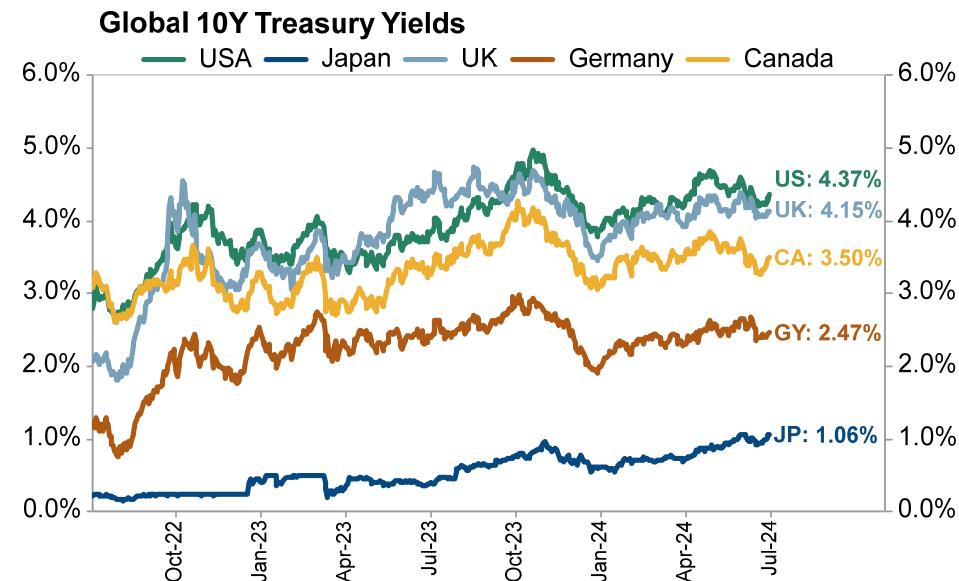
* Formerly Citigroup. The FTSE Non-U.S. World Government Bond Index (WGBI) measures the performance of fixed-rate, local currency, investment grade sovereign bonds excluding the U.S.

** The JP Morgan Emerging Market Bond Index (EMBI) Global Diversified index measures government bonds in hard currencies.

*** The JP Morgan Government Bond Index – Emerging Markets (GBI-EM) Global Diversified index measures government bonds in local currencies.

Global Performance and Yields

- Yields rose in most developed markets during the quarter. The ECB cut its policy rate in June of 2024 while the Fed and the Bank of England kept policy rates unchanged during the second quarter.
- The U.S. dollar appreciated relative to the yen and Euro, and slightly depreciated relative to British pound.
- Global government bond returns were negative for the quarter ended June 30, with Non-U.S. sovereign bonds exhibiting the weakest performance.



Disclaimer

The information and opinions herein provided by third parties have been obtained from sources believed to be reliable, but accuracy and completeness cannot be guaranteed. This article and the data and analysis herein is intended for general education only and not as investment advice. It is not intended for use as a basis for investment decisions, nor should it be construed as advice designed to meet the needs of any particular investor. Please contact Segal Marco Advisors or another qualified investment professional for advice regarding the evaluation of any specific information, opinion, advice, or other content. On all matters involving legal interpretations and regulatory issues, investors should consult legal counsel.

Total Fund Composite

City of Memphis

Asset Allocation Comparison as of June 30, 2024

\$2,567,475							
Target Allocations		Current Managers & Allocations			Difference		Range
Equity							
Large Cap Equity	20.00%	\$513,495 (000)	Barrow, Hanley (large cap value) Rhumbline Russell 1000 Growth (large cap growth) Winslow (large cap growth) Rhumbline S&P 500 (large cap core)	6.60% 3.54% 3.63% 8.79%	\$169,373 (000) \$90,975 \$93,201 \$225,759	2.56%	15%-25%
Mid/SMID Cap Equity	4.00%	\$102,699	Northern Trust (mid cap core) Attucks SMID Cap*	2.19% 2.44%	\$56,343 \$62,705	0.64%	0%-7%
Small Cap Equity	4.00%	\$102,699	Attucks Small Cap Value* Conestoga (small cap growth) Nicholas (small cap growth)	2.79% 1.01% 1.16%	\$71,754 \$26,013 \$29,703	0.96%	0%-7%
Domestic Equity	28.00%	\$718,893	Domestic Equity	32.16%	\$825,826	4.16%	18%-38%
Developed International	15.00%	\$385,121	1607 Capital Partners Channing International Frontier International Marathon Asset Mgmt Principal Global Investors Strategic Global Advisors	4.23% 0.57% 0.58% 4.18% 4.27% 2.88%	\$108,715 \$14,619 \$14,922 \$107,202 \$109,662 \$74,059	0.57%	10%-20%
Emerging Markets	7.00%	\$179,723	Acadian JPMorgan	4.06% 3.41%	\$104,145 \$87,593	0.47%	5%-12%
International	22.00%	\$564,844	International	24.18%	\$620,918	2.18%	15%-30%
Equity Total	50.00%	\$1,283,737	Equity Total	56.35%	\$1,446,744	6.35%	
Fixed Income							
Core Fixed Income	13.00%	\$333,772	Barrow Hanley High Quality Core Garcia Hamilton Aggregate PIMCO Prudential Core Consv. Bond	1.27% 2.92% 3.80% 3.62%	\$32,699 \$74,921 \$97,554 \$93,066	-1.38%	8%-18%
Global Fixed Income	8.00%	\$205,398	Brandywine	7.46%	\$191,532	-0.54%	3%-13%
Global High Yield	5.00%	\$128,374	Mackay Shields	5.27%	\$135,215	0.27%	2%-10%
Fixed Income Total	26.00%	\$667,543	Fixed Income Total	24.34%	\$624,988	-1.66%	18%-34%

Target Allocations		Current Managers & Allocations			Difference		Range
<u>Real Estate</u>							
Core/Value Add/REITs	10.00%	\$256,747	BlackRock US Core Property Fund RREEF REIT II TA Realty Core Property Fund Vanguard REIT Index Cornerstone (Barings) Real Estate Fund X ¹ Dune Real Estate Partners Fund IV Green Cities III Green Cities IV Green Cities V Long Wharf Real Estate Partners IV Long Wharf Real Estate Partners Fund V Long Wharf Real Estate Partners Fund VI Long Wharf Real Estate Partners Fund VII Mesirov Financial Real Estate Value Fund III TA Realty Fund XI TA Realty Fund XIII	2.26% 0.64% 1.11% 0.14% 0.00% 1.12% 0.19% 0.50% 0.00% 0.00% 0.39% 0.52% 0.21% 1.02% 0.01% 0.57%	\$58,116 \$16,408 \$28,625 \$3,482 \$20 (Total Commitment \$10M, Total Drawn \$8.4M, Total Distributed \$11.6M) \$28,879 (Total Commitment \$30M, Total Drawn \$27.7M, Total Distributed \$1.5M) \$5,002 (Total Commitment \$20M, Total Drawn \$24.0M, Total Distributed \$10.7M) \$12,867 (Total Commitment \$20M, Total Drawn \$20.0, Total Distributed \$1.1M) \$15 (Total Commitment \$20M, Total Drawn \$0.4, Total Distributed \$0.0M) \$86 (Total Commitment \$20M, Total Drawn \$21.5M, Total Distributed \$29.6M) \$10,019 (Total Commitment \$20M, Total Drawn \$20.0M, Total Distributed \$15.1M) \$13,373 (Total Commitment \$20M, Total Drawn \$21.0M, Total Distributed \$12.2M) \$5,470 (Total Commitment \$20M, Total Drawn \$6.0M, Total Distributed \$0.0M) \$26,060 (Total Commitment \$20M, Total Drawn \$22.6M, Total Distributed \$8.3M) \$146 (Total Commitment \$20M, Total Drawn \$20.0M, Total Distributed \$31.8M) \$14,545 (Total Commitment \$30M, Total Drawn \$16.5M, Total Distributed \$0.0M)		
<i>LaFayette Square Grocery Anchored Impact Fund - \$5M Commitment*</i>							
Real Estate Total	10.00%	\$256,747	Real Estate Total	8.69%	\$223,110	-1.31%	5%-15%
Private Equity							
Private Equity	5.00%	\$128,374	GSAM Black Equity Opportunities Fund* Neuberger Berman Crossroads XXI Neuberger Berman Crossroads XXIV Pantheon Global Secondary Fund V RPS Ventures II Siguler Guff Small Buyout Opportunities Fund V SSM Growth Equity Fund II* SSM Growth Equity Fund III*	0.06% 1.80% 0.30% 0.90% 0.11% 0.35% 0.30% 0.61%	\$1,625 (Total Commitment \$15M, Total Drawn \$1.9M, Total Distributed \$0.0M) \$46,342 (Total Commitment \$50M, Total Drawn \$36.5M, Total Distributed \$38.6M) \$7,706 (Total Commitment \$40M, Total Drawn \$7.2, Total Distributed \$0.0M) \$23,023 (Total Commitment \$50M, Total Drawn \$39.7M, Total Distributed \$39.3M) \$2,717 (Total Commitment \$15M, Total Drawn \$3.3M, Total Distributed \$0.0M) \$9,099 (Total Commitment \$20M, Total Drawn \$8.8M, Total Distributed \$1.0M) \$7,651 (Total Commitment \$10M, Total Drawn \$9.5, Total Distributed \$6.0M) \$15,559 (Total Commitment \$10M, Total Drawn \$14.7, Total Distributed \$5.3M)		
Private Equity Total	5.00%	\$128,374		4.43%	\$113,722	-0.57%	3%-7%
Private Credit							
	5.00%		Brightwood Capital Fund V Churchill Middle Market Senior Loan Fund III Neuberger Berman Private Debt Fund IV	0.21% 0.30% 0.94%	\$5,271 (Total Commitment \$10M, Total Drawn \$5.0, Total Distributed \$0.8M) \$7,819 (Total Commitment \$10M, Total Drawn \$13.0, Total Distributed \$7.0M) \$24,155 (Total Commitment \$30M, Total Drawn \$24.2, Total Distributed \$5.4M)		
Private Credit Total	5.00%	\$128,374		1.45%	\$37,245	-3.55%	3%-7%
Hedge Fund of Funds							
	4.00%		Aetos Grosvenor	2.00% 2.08%	\$51,253 \$53,354		
Hedge Fund of Funds Total	4.00%	\$102,699		4.07%	\$104,607	0.07%	2%-6%
Internal Account	0.00%	\$0	Internal Account	0.66%	\$17,058		
Cash	0.00%	\$0	Cash	0.66%	\$17,058	0.66%	0%-5%
Total	100%	\$2,567,475	Total	100.00%	\$2,567,475		

* Emerging Managers

¹ Cornerstone Real Estate Advisers now operates under the investment adviser name "Barings Real Estate Advisers," how the name Cornerstone. All new products open to new investors will operate under the name "Barings Real Estate Advisers" moving forward.

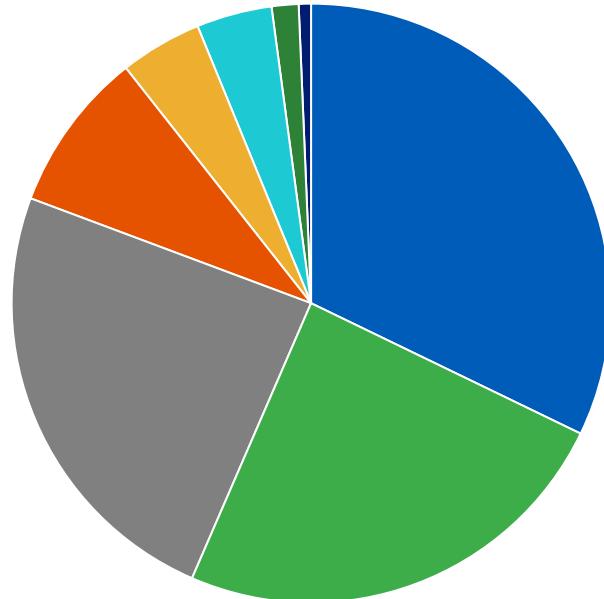
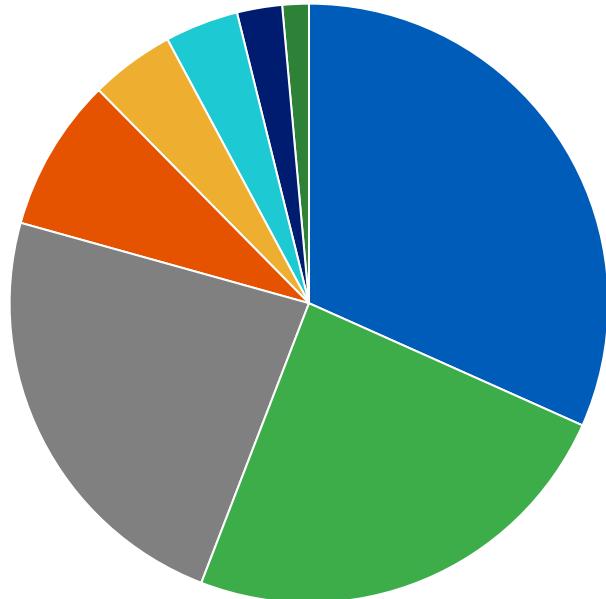
City of Memphis Retirement System

Asset Allocation Chart

As of June 30, 2024

March 31, 2024 : \$2,589,792,527.6

June 30, 2024 : \$2,567,474,876.4



	Market Value (\$)	Allocation (%)
Domestic Equity Composite	820,548,930	31.7
Fixed Income Composite	626,078,404	24.2
International Equity Composite	607,723,459	23.5
Total Real Estate Composite	214,230,598	8.3
Private Equity Composite	118,099,376	4.6
Hedge Fund Composite	102,820,721	4.0
In House Cash	63,138,841	2.4
Private Debt Composite	37,152,198	1.4

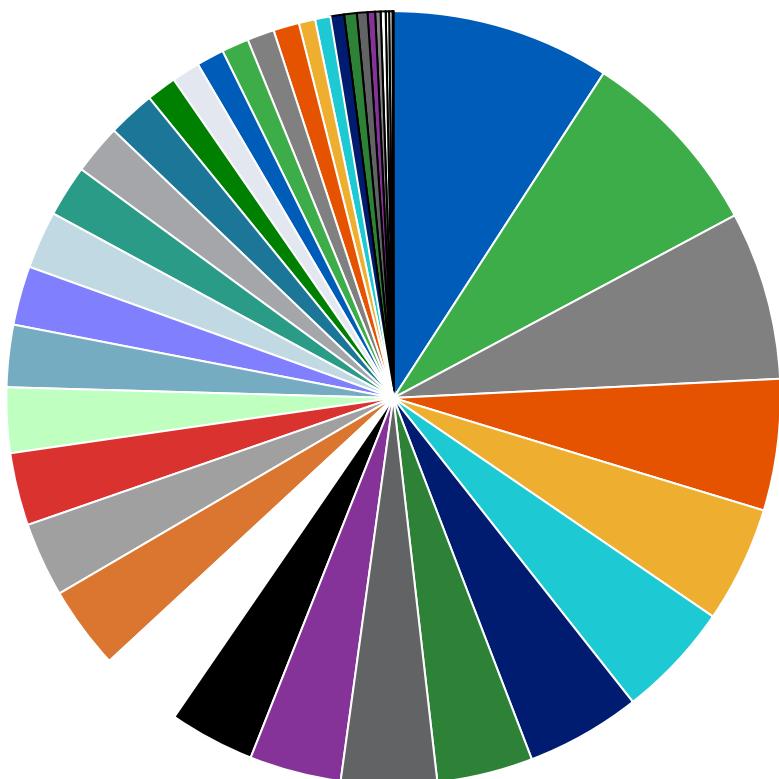
	Market Value (\$)	Allocation (%)
Domestic Equity Composite	825,825,966	32.2
Fixed Income Composite	624,988,134	24.3
International Equity Composite	620,918,253	24.2
Total Real Estate Composite	223,110,433	8.7
Private Equity Composite	113,722,295	4.4
Hedge Fund Composite	104,606,826	4.1
Private Debt Composite	37,245,332	1.5
In House Cash	17,057,638	0.7

City of Memphis Retirement System

Asset Allocation Chart

As of June 30, 2024

March 31, 2024 : \$2,426,349,498.5

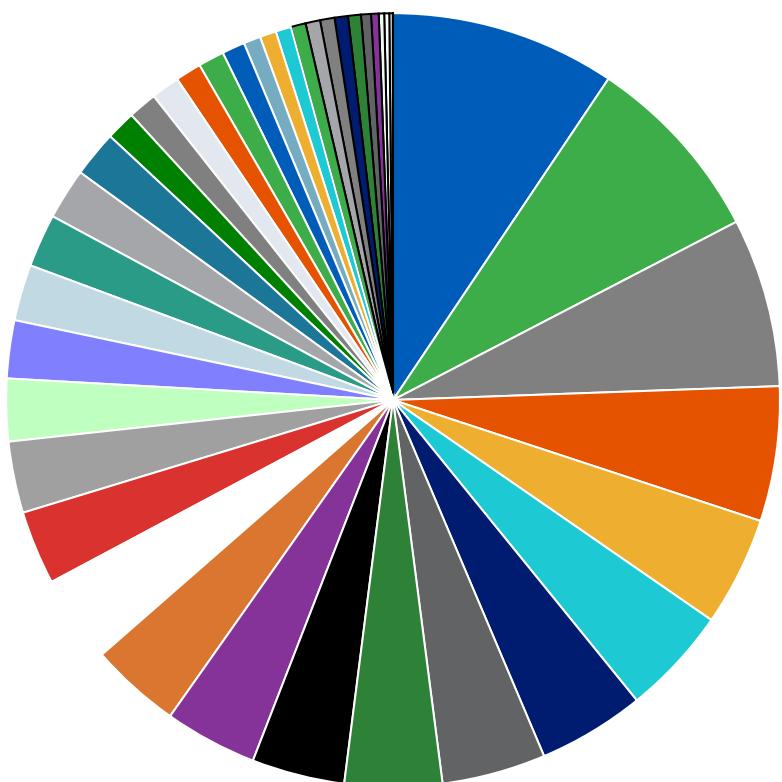


	Market Value (\$)	Allocation (%)
Rhumbline S&P 500	221,692,781	9.1
Brandywine	195,078,176	8.0
Barrow, Hanley	170,533,491	7.0
Mackay Shields	133,250,501	5.5
Principal Global Investors	117,834,731	4.9
1607 Capital Partners	117,246,833	4.8
Marathon Asset Mgmt	116,323,006	4.8
PIMCO	97,294,770	4.0
Acadian EM Equity II	96,797,697	4.0
Prudential Core Conserv Bond	92,945,659	3.8
Winslow Capital Management	86,498,915	3.6
J.P. Morgan Global Emerging Markets Discovery Fund	85,749,167	3.5
Rhumbline Russell 1000 Growth	83,981,593	3.5
Attucks Small Cap Value	75,394,750	3.1
Strategic Global Advisors	73,772,025	3.0
Attucks SMID	66,067,986	2.7
In House Cash	63,138,841	2.6
BlackRock US Core Property Fund	59,806,997	2.5
NTGI S&P 400	58,356,201	2.4
Grosvenor Institutional Partners, L.P.	52,320,206	2.2
Aetos	50,500,515	2.1
Neuberger Berman Crossroads Fund XXI	48,084,319	2.0
Nicholas Investment Partners	30,505,362	1.3
TA Realty Core Property Fund	28,562,472	1.2
Pantheon Global Secondary Fund V	28,023,242	1.2
Conestoga Capital Advisors	27,517,851	1.1
Dune Real Estate Fund IV	27,472,617	1.1
Mesirow Real Estate Value Fund III, L.P.	26,204,756	1.1
RREEF REIT II	16,587,391	0.7
SSM Partners Growth Equity III, LP	15,559,486	0.6
Long Wharf RE Partners VI, L.P.	13,783,333	0.6
Green Cities IV, L.P.	12,801,930	0.5
Long Wharf RE Partners V, L.P.	10,650,108	0.4
SSM Partners Growth Equity II L.P.	7,650,796	0.3
TA Realty Fund XIII	5,544,500	0.2
Green Cities III, L.P.	5,001,653	0.2
Vanguard REIT Index Inv	3,549,453	0.1
Long Wharf RE Partners VII, L.P.	3,390,065	0.1
TA Realty Fund XI	620,615	0.0
Long Wharf Real Estate Partners IV, L.P.	234,054	0.0
Cornerstone (Barings) Real Estate Advisers Fund X	19,802	0.0
Green Cities V, L.P.	852	0.0
Preserver, L.P.	0.0	0.0
Frontier International	0.0	0.0
Channing Int'l Developed	0.0	0.0
Smith Graham	0.0	0.0

City of Memphis Retirement System
Asset Allocation Chart

As of June 30, 2024

June 30, 2024 : \$2,401,462,828.0



	Market Value (\$)	Allocation (%)
Rhumbline S&P 500	225,759,046	9.4
Brandywine	191,532,016	8.0
Barrow, Hanley	169,373,393	7.1
Mackay Shields	135,215,433	5.6
Principal Global Investors	109,662,213	4.6
1607 Capital Partners	108,715,016	4.5
Marathon Asset Mgmt	107,202,219	4.5
Acadian EM Equity II	104,145,323	4.3
PIMCO	97,554,494	4.1
Winslow Capital Management	93,200,738	3.9
Prudential Core Conserv Bond	93,066,310	3.9
Rhumbline Russell 1000 Growth	90,974,655	3.8
J.P. Morgan Global Emerging Markets Discovery Fund	87,593,314	3.6
Strategic Global Advisors	74,059,468	3.1
Attucks Small Cap Value	71,754,143	3.0
Attucks SMID	62,705,079	2.6
BlackRock US Core Property Fund	58,115,793	2.4
NTGI S&P 400	56,342,520	2.3
Grosvenor Institutional Partners, L.P.	53,354,107	2.2
Aetos	51,252,719	2.1
Neuberger Berman Crossroads Fund XXI	46,341,935	1.9
Nicholas Investment Partners	29,703,008	1.2
Dune Real Estate Fund IV	28,878,632	1.2
TA Realty Core Property Fund	28,624,728	1.2
Mesirow Real Estate Value Fund III, L.P.	26,060,088	1.1
Conestoga Capital Advisors	26,013,384	1.1
Pantheon Global Secondary Fund V	23,023,243	1.0
In House Cash	17,057,638	0.7
RREEF REIT II	16,407,740	0.7
SSM Partners Growth Equity III, L.P.	15,559,486	0.6
Frontier International	14,921,681	0.6
Channing Infl Developed	14,619,020	0.6
TA Realty Fund XIII	14,544,500	0.6
Long Wharf RE Partners VI, L.P.	13,372,731	0.6
Green Cities IV, L.P.	12,866,640	0.5
Long Wharf RE Partners V, L.P.	10,018,606	0.4
SSM Partners Growth Equity II L.P.	7,650,796	0.3
Long Wharf RE Partners VII, L.P.	5,470,230	0.2
Green Cities III, L.P.	5,001,653	0.2
Vanguard REIT Index Inv	3,482,119	0.1
TA Realty Fund XI	145,592	0.0
Long Wharf Real Estate Partners IV, L.P.	86,304	0.0
Cornerstone (Barings) Real Estate Advisers Fund X	19,802	0.0
Green Cities V, L.P.	15,275	0.0
Preserver, L.P.	0.0	0.0
Smith Graham	0.0	0.0

City of Memphis

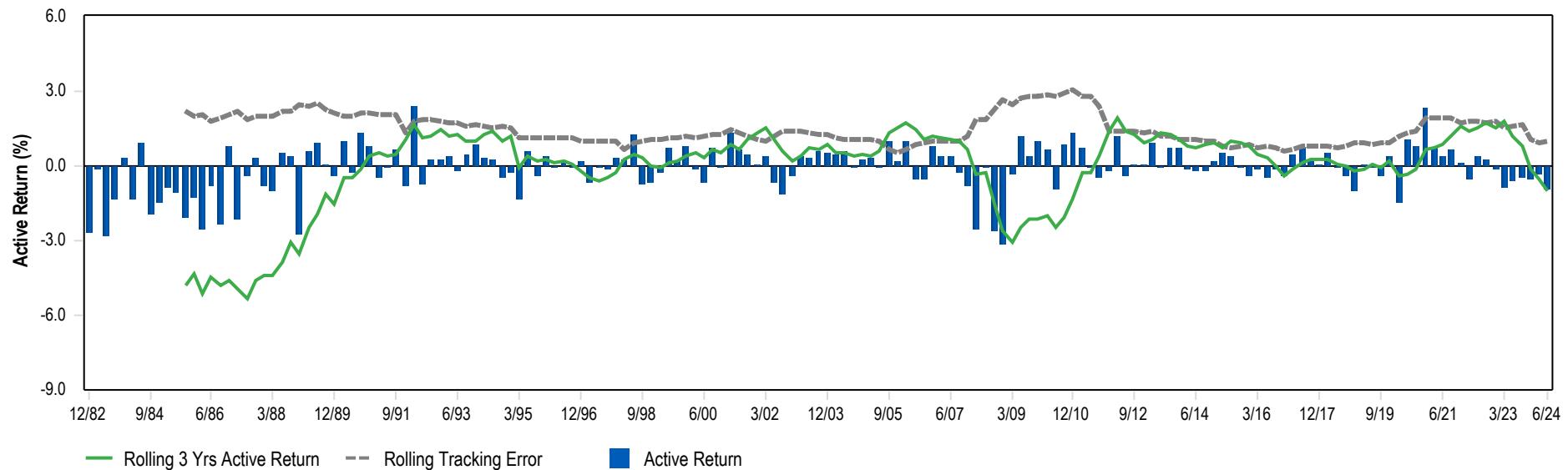
Total Fund Composite

As of June 30, 2024

Gain / Loss

	1 Quarter	Year To Date	1 Year	3 Years	5 Years	7 Years	10 Years
Total Fund Composite							
Beginning Market Value	2,589,792,528	2,520,018,360	2,468,216,556	2,821,552,192	2,337,277,267	2,265,726,463	2,244,990,971
Net Cash Flows	-40,118,546	-75,878,137	-129,396,804	-421,326,966	-645,871,025	-890,956,307	-1,224,610,952
Income	10,767,957	19,553,205	37,422,812	106,422,895	165,462,834	236,203,783	354,126,787
Gain/Loss	7,032,937	103,781,448	191,232,313	60,826,756	710,605,800	956,500,938	1,192,968,070
Ending Market Value	2,567,474,876	2,567,474,876	2,567,474,876	2,567,474,876	2,567,474,876	2,567,474,876	2,567,474,876

Rolling Return and Tracking Error



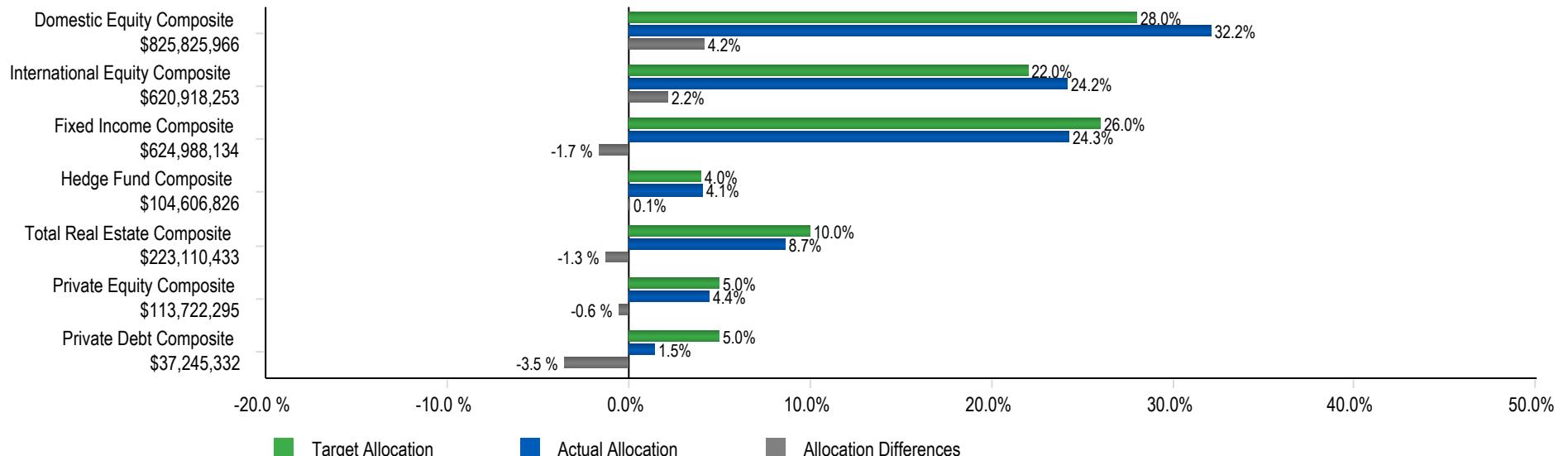
Performance

	1 Qtr	YTD	1 Yr	3 Yrs	5 Yrs	7 Yrs	10 Yrs
Total Fund Composite	0.7	5.0	9.6	2.2	7.2	7.1	6.7
Policy Index	1.7	6.3	12.0	3.2	7.2	7.2	6.7
Difference	-1.0	-1.3	-2.4	-1.0	0.0	-0.1	0.0

City of Memphis

Total Fund Composite

As of June 30, 2024



	Asset Allocation (\$)	Asset Allocation (%)	Target Allocation (%)	Differences (%)	Minimum Allocation (%)	Maximum Allocation (%)
Total Fund Composite	2,567,474,876	100.00	100.00	0.00	-	-
Domestic Equity Composite	825,825,966	32.16	28.00	4.16	18.00	38.00
International Equity Composite	620,918,253	24.18	22.00	2.18	15.00	30.00
Fixed Income Composite	624,988,134	24.34	26.00	-1.66	18.00	34.00
Hedge Fund Composite	104,606,826	4.07	4.00	0.07	2.00	6.00
Total Real Estate Composite	223,110,433	8.69	10.00	-1.31	5.00	15.00
Private Equity Composite	113,722,295	4.43	5.00	-0.57	3.00	7.00
Private Debt Composite	37,245,332	1.45	5.00	-3.55	3.00	7.00

**City of Memphis
Asset Allocation**

As of June 30, 2024

	Total Fund (\$)	%
Total Fund Composite	2,567,474,876	100.0
In House Cash	17,057,638	0.7
Domestic Equity Composite	825,825,966	32.2
Barrow, Hanley	169,373,393	6.6
Rhumbline Russell 1000 Growth	90,974,655	3.5
Winslow Capital Management	93,200,738	3.6
Rhumbline S&P 500	225,759,046	8.8
NTGI S&P 400	56,342,520	2.2
Attucks SMID	62,705,079	2.4
Attucks Small Cap Value	71,754,143	2.8
Conestoga Capital Advisors	26,013,384	1.0
Nicholas Investment Partners	29,703,008	1.2
International Equity Composite	620,918,253	24.2
1607 Capital Partners	108,715,016	4.2
Channing Int'l Developed	14,619,020	0.6
Frontier International	14,921,681	0.6
Marathon Asset Mgmt	107,202,219	4.2
Principal Global Investors	109,662,213	4.3
Strategic Global Advisors	74,059,468	2.9
Acadian EM Equity II	104,145,323	4.1
J.P. Morgan Global Emerging Markets Discovery Fund	87,593,314	3.4
Fixed Income Composite	624,988,134	24.3
Barrow Hanley High Quality Core	32,699,170	1.3
Garcia Hamilton Aggregate	74,920,712	2.9
PIMCO	97,554,494	3.8
Prudential Core Conserv Bond	93,066,310	3.6
Brandywine	191,532,016	7.5
Mackay Shields	135,215,433	5.3
Hedge Fund Composite	104,606,826	4.1
Aetos	51,252,719	2.0
Grosvenor Institutional Partners, L.P.	53,354,107	2.1

	Total Fund (\$)	%
Total Real Estate Composite	223,110,433	8.7
Core Private Real Estate Composite	106,630,380	4.2
BlackRock US Core Property Fund	58,115,793	2.3
RREEF REIT II	16,407,740	0.6
TA Realty Core Property Fund	28,624,728	1.1
Vanguard REIT Index Inv	3,482,119	0.1
Private Real Estate Composite	116,480,053	4.5
Cornerstone (Barings) Real Estate Advisers Fund X	19,802	0.0
Dune Real Estate Fund IV	28,878,632	1.1
Green Cities III, L.P.	5,001,653	0.2
Green Cities IV, L.P.	12,866,640	0.5
Green Cities V, L.P.	15,275	0.0
Long Wharf Real Estate Partners IV, L.P.	86,304	0.0
Long Wharf RE Partners V, L.P.	10,018,606	0.4
Long Wharf RE Partners VI, L.P.	13,372,731	0.5
Long Wharf RE Partners VII, L.P.	5,470,230	0.2
Mesirow Real Estate Value Fund III, L.P.	26,060,088	1.0
TA Realty Fund XI	145,592	0.0
TA Realty Fund XIII	14,544,500	0.6
Private Equity Composite	113,722,295	4.4
Goldman Sachs Black Equity Opportunities LLC	1,624,821	0.1
Neuberger Berman Crossroads Fund XXI	46,341,935	1.8
Neuberger Berman Crossroads Fund XXIV	7,705,666	0.3
Pantheon Global Secondary Fund V	23,023,243	0.9
RPS Ventures II	2,716,908	0.1
Siguler Guff Small Buyout Opportunities Fund V	9,099,439	0.4
SSM Partners Growth Equity II L.P.	7,650,796	0.3
SSM Partners Growth Equity III, LP	15,559,486	0.6
Private Debt Composite	37,245,332	1.5
Brightwood Capital Fund V	5,271,323	0.2
Churchill Middle Market Senior Loan Fund III	7,818,646	0.3

**City of Memphis
Asset Allocation**

As of June 30, 2024

	Total Fund (\$)	%
Neuberger Berman Private Debt Fund IV	24,155,363	0.9

City of Memphis

Comparative Performance

As of June 30, 2024

	<u>Performance (%)</u>								
	<u>1 Quarter</u>	<u>Year To Date</u>	<u>1 Year</u>	<u>3 Years</u>	<u>5 Years</u>	<u>7 Years</u>	<u>10 Years</u>	<u>Since Inception</u>	<u>Inception Date</u>
Total Fund Composite	0.70	4.96	9.56	2.25	7.24	7.15	6.67	9.21	10/01/1982
Policy Index	1.65	6.26	12.02	3.20	7.15	7.18	6.65	9.58	
Policy Index2	0.93	5.37	10.75	2.23	6.48	6.55	6.20	9.47	
In House Cash	1.31	2.67	5.39	3.08	2.08	1.99	1.48	3.89	10/01/1982
90 Day U.S. Treasury Bill	1.32	2.63	5.40	3.03	2.16	2.07	1.50	3.68	
Domestic Equity Composite	1.29	11.83	22.19	7.75	14.02	13.39	11.51	12.14	10/01/1982
Russell 3000 Index	3.22	13.56	23.12	8.05	14.14	13.48	12.15	11.97	
Domestic Equity Index	1.26	10.84	19.54	5.99	12.54	12.09	11.14	N/A	
Fixed Income Composite	-0.17	-1.70	2.69	-2.51	0.89	1.75	2.24	6.69	10/01/1982
Fixed Income Index	-0.12	-0.83	3.51	-2.91	-0.03	1.08	1.54	6.50	
International Equity Composite	1.31	6.66	12.83	-0.43	6.77	6.10	5.55	5.48	01/01/1990
International Equity Index	1.34	6.12	11.99	0.45	5.52	5.14	3.98	5.16	
Hedge Fund Composite	1.74	5.86	10.04	4.55	6.33	5.46	N/A	5.86	04/01/2016
90-Day T-Bill+ 5%	2.57	5.17	10.67	8.18	7.26	7.17	6.58	6.90	
HFRI FOF: Conservative Index	0.53	3.15	6.68	3.45	4.85	4.35	3.47	4.38	
Core Private Real Estate Composite	-1.28	-3.51	-12.34	-0.08	2.87	4.21	6.18	7.25	09/01/1999
NCREIF Property Index	-0.26	-1.24	-5.53	2.33	3.39	4.37	6.07	7.81	

Gross of Fees.

City of Memphis

Comparative Performance

As of June 30, 2024

	Performance (%)									
	2023	2022	2021	2020	2019	2018	2017	2016	2015	2014
Total Fund Composite	11.74	-12.92	13.57	15.06	18.86	-5.39	18.36	6.76	0.24	5.49
Policy Index	14.44	-12.94	11.35	12.73	18.81	-4.51	16.69	8.04	-0.19	5.86
Policy Index2	13.42	-13.32	10.73	12.60	18.46	-5.36	16.39	8.12	-0.19	5.86
In House Cash	5.08	1.50	0.04	0.26	2.12	1.93	0.67	0.35	0.18	0.11
90 Day U.S. Treasury Bill	5.02	1.46	0.05	0.67	2.28	1.87	0.86	0.25	0.03	0.04
Domestic Equity Composite	24.76	-17.48	25.47	22.41	30.07	-5.88	22.62	10.04	-1.26	8.80
Russell 3000 Index	25.96	-19.21	25.66	20.89	31.02	-5.24	21.13	12.74	0.48	12.56
Domestic Equity Index	23.55	-18.82	23.52	20.08	29.94	-6.47	20.20	13.76	0.19	11.60
Fixed Income Composite	7.29	-11.71	-0.36	9.51	9.88	-0.98	6.94	5.14	-0.23	4.70
Fixed Income Index	7.08	-13.63	-1.25	7.78	9.24	-0.91	5.50	4.83	-0.86	4.89
International Equity Composite	17.14	-20.51	9.15	17.83	24.67	-15.52	33.29	3.30	-0.50	-1.08
International Equity Index	15.56	-16.14	6.88	11.18	20.94	-13.98	28.77	3.16	-4.06	-4.13
Hedge Fund Composite	8.10	-3.41	7.59	11.20	7.95	-1.55	6.72	N/A	N/A	N/A
90-Day T-Bill+ 5%	10.27	6.53	5.05	5.70	7.39	6.97	5.90	5.27	5.03	5.04
HFRI FOF: Conservative Index	5.48	0.08	7.62	6.47	6.30	-0.87	4.12	1.89	0.37	3.14
Core Private Real Estate Composite	-14.75	5.06	25.04	2.55	10.16	4.91	7.75	8.50	11.92	20.06
NCREIF Property Index	-7.94	5.51	17.70	1.60	6.42	6.72	6.96	7.97	13.33	11.82

Gross of Fees.

City of Memphis

Comparative Performance

As of June 30, 2024

	Performance (%)								
	1 Quarter	Year To Date	1 Year	3 Years	5 Years	7 Years	10 Years	Since Inception	Inception Date
Total Fund Composite	0.70	4.96	9.56	2.25	7.24	7.15	6.67	9.21	10/01/1982
Policy Index	1.65	6.26	12.02	3.20	7.15	7.18	6.65	9.58	
Policy Index2	0.93	5.37	10.75	2.23	6.48	6.55	6.20	9.47	
In House Cash	1.31	2.67	5.39	3.08	2.08	1.99	1.48	3.89	10/01/1982
90 Day U.S. Treasury Bill	1.32	2.63	5.40	3.03	2.16	2.07	1.50	3.68	
Domestic Equity Composite	1.29	11.83	22.19	7.75	14.02	13.39	11.51	12.14	10/01/1982
Russell 3000 Index	3.22	13.56	23.12	8.05	14.14	13.48	12.15	11.97	
Domestic Equity Index	1.26	10.84	19.54	5.99	12.54	12.09	11.14	N/A	
IM U.S. Equity (SA+CF) Median	-1.26	7.28	15.67	5.85	11.33	10.98	10.03	12.69	
Domestic Equity Composite Rank	33	31	29	35	29	32	37	78	
Barrow, Hanley	-0.68	10.07	19.99	8.45	11.86	10.95	10.22	12.78	10/01/1982
Russell 1000 Value Index	-2.17	6.62	13.06	5.52	9.01	8.61	8.23	11.50	
IM U.S. Large Cap Value Equity (SA+CF) Median	-1.24	8.20	16.79	7.72	11.47	10.68	9.59	12.60	
Barrow, Hanley Rank	36	27	25	38	46	45	33	37	
Winslow Capital Management	7.75	22.57	40.02	10.50	18.22	18.78	16.22	16.76	11/01/2011
Russell 1000 Growth Index	8.33	20.70	33.48	11.28	19.34	18.64	16.33	17.12	
IM U.S. Large Cap Growth Equity (SA+CF) Median	5.62	18.76	30.72	8.78	16.69	16.91	14.96	15.85	
Winslow Capital Management Rank	26	27	7	28	28	18	21	29	
Rhumbline Russell 1000 Growth	8.33	20.68	33.46	11.28	19.34	N/A	N/A	18.38	10/01/2017
Russell 1000 Growth Index	8.33	20.70	33.48	11.28	19.34	18.64	16.33	18.39	
IM U.S. Large Cap Growth Equity (SA+CF) Median	5.62	18.76	30.72	8.78	16.69	16.91	14.96	16.72	
Rhumbline Russell 1000 Growth Rank	18	38	39	17	15	N/A	N/A	20	
Rhumbline S&P 500	4.28	15.26	24.49	10.02	15.03	14.26	12.83	10.24	01/01/2004
S&P 500	4.28	15.29	24.56	10.01	15.05	14.28	12.86	10.21	
IM U.S. Large Cap Core Equity (SA+CF) Median	3.44	15.15	24.63	9.44	14.68	13.80	12.65	10.55	
Rhumbline S&P 500 Rank	35	49	54	38	38	41	44	77	

Gross of Fees.

City of Memphis

Comparative Performance

As of June 30, 2024

					Performance (%)				
	1 Quarter	Year To Date	1 Year	3 Years	5 Years	7 Years	10 Years	Since Inception	Inception Date
NTGI S&P 400	-3.45	6.17	13.58	4.47	10.28	9.41	9.14	10.25	04/01/2011
S&P MidCap 400	-3.45	6.17	13.57	4.47	10.27	9.40	9.14	10.25	
IM U.S. Mid Cap Core Equity (SA+CF) Median	-3.46	6.06	13.59	4.49	10.31	9.63	9.20	10.51	
NTGI S&P 400 Rank	49	43	55	58	56	68	64	78	
Attucks SMID	-5.09	3.75	8.88	-0.15	9.24	10.34	N/A	12.40	02/01/2016
Russell 2500 Index	-4.27	2.35	10.47	-0.29	8.31	8.44	7.99	10.89	
IM U.S. SMID Cap Equity (SA+CF) Median	-3.56	3.59	10.85	2.11	9.83	9.83	9.19	12.18	
Attucks SMID Rank	84	47	67	72	62	44	N/A	47	
Attucks Small Cap Value	-4.83	0.06	15.90	7.62	12.30	N/A	N/A	11.92	04/01/2019
Russell 2000 Value Index	-3.64	-0.85	10.90	-0.53	7.07	5.89	6.23	7.00	
IM U.S. Small Cap Value Equity (SA+CF) Median	-3.48	1.97	12.96	4.12	9.92	8.22	8.09	9.83	
Attucks Small Cap Value Rank	77	73	26	18	20	N/A	N/A	23	
Nicholas Investment Partners	-2.63	13.24	19.42	-1.65	13.15	13.54	10.84	13.59	07/01/2012
Russell 2000 Growth Index	-2.92	4.44	9.14	-4.86	6.17	7.28	7.39	10.02	
IM U.S. Small Cap Growth Equity (SA+CF) Median	-2.59	5.02	9.47	-2.78	8.73	11.09	10.22	12.46	
Nicholas Investment Partners Rank	51	17	14	41	15	22	35	29	
Conestoga Capital Advisors	-5.47	-1.74	2.16	-0.97	7.09	N/A	N/A	7.19	08/01/2018
Russell 2000 Growth Index	-2.92	4.44	9.14	-4.86	6.17	7.28	7.39	4.80	
IM U.S. Small Cap Growth Equity (SA+CF) Median	-2.59	5.02	9.47	-2.78	8.73	11.09	10.22	8.67	
Conestoga Capital Advisors Rank	82	89	82	38	77	N/A	N/A	71	

Gross of Fees.

City of Memphis

Comparative Performance

As of June 30, 2024

					Performance (%)				
	1 Quarter	Year To Date	1 Year	3 Years	5 Years	7 Years	10 Years	Since Inception	Inception Date
International Equity Composite	1.31	6.66	12.83	-0.43	6.77	6.10	5.55	5.48	01/01/1990
<i>International Equity Index</i>	1.34	6.12	11.99	0.45	5.52	5.14	3.98	5.16	
IM International Equity (SA+CF) Median	0.35	5.34	11.44	1.83	6.99	6.27	5.27	7.49	
International Equity Composite Rank	30	36	39	71	55	54	43	88	
1607 Capital Partners	1.45	4.16	9.86	-0.13	6.80	6.15	5.54	5.39	06/01/2008
<i>MSCI EAFE (Net)</i>	-0.42	5.34	11.54	2.89	6.46	5.73	4.33	3.28	
IM International Large Cap Core Equity (SA+CF) Median	0.41	6.27	12.22	2.54	7.13	6.48	5.23	4.31	
1607 Capital Partners Rank	21	86	74	87	65	62	41	16	
Channing Int'l Developed	N/A	N/A	N/A	N/A	N/A	N/A	N/A	-2.75	06/01/2024
<i>MSCI EAFE (Net)</i>	-0.42	5.34	11.54	2.89	6.46	5.73	4.33	-1.61	
IM International Large Cap Core Equity (SA+CF) Median	0.18	5.88	11.23	1.41	6.44	5.79	4.57	-1.26	
Channing Int'l Developed Rank	N/A	N/A	N/A	N/A	N/A	N/A	N/A	88	
Frontier International	N/A	N/A	N/A	N/A	N/A	N/A	N/A	-2.42	06/01/2024
<i>MSCI AC World ex USA (Net)</i>	0.96	5.69	11.62	0.46	5.55	5.17	3.84	-0.10	
IM International Large Cap Core Equity (SA+CF) Median	0.18	5.88	11.23	1.41	6.44	5.79	4.57	-1.26	
Frontier International Rank	N/A	N/A	N/A	N/A	N/A	N/A	N/A	86	
Marathon Asset Mgmt	-1.33	5.19	10.76	2.09	6.98	5.93	5.21	7.95	04/01/2004
<i>MSCI AC World ex USA (Net)</i>	0.96	5.69	11.62	0.46	5.55	5.17	3.84	5.66	
IM International Large Cap Core Equity (SA+CF) Median	0.41	6.27	12.22	2.54	7.13	6.48	5.23	6.74	
Marathon Asset Mgmt Rank	92	75	67	54	57	68	54	12	
Principal Global Investors	-0.50	7.15	11.05	0.77	7.39	6.29	5.74	3.83	07/01/2007
<i>MSCI World ex U.S. Growth (Net)</i>	-0.94	5.91	9.36	0.02	6.46	6.55	5.23	3.75	
IM International Large Cap Core Equity (SA+CF) Median	0.41	6.27	12.22	2.54	7.13	6.48	5.23	4.07	
Principal Global Investors Rank	81	41	65	76	43	60	34	71	

Gross of Fees.

City of Memphis

Comparative Performance

As of June 30, 2024

					Performance (%)						
					1 Year	3 Years	5 Years	7 Years	10 Years	Since Inception	Inception Date
Strategic Global Advisors		0.39	7.82	17.32	4.01	8.13	6.73	6.00	8.97		07/01/2012
<i>MSCI World ex-U.S. (Net)</i>		-0.60	4.96	11.22	2.82	6.55	5.86	4.27	6.80		
IM International Core Equity (SA+CF) Median		0.29	5.64	11.97	1.82	7.03	6.34	5.32	7.99		
Strategic Global Advisors Rank		47	25	15	23	26	36	30	22		
Acadian EM Equity II		7.59	13.85	24.75	1.99	8.00	6.10	4.91	3.96		05/01/2011
<i>MSCI EM (net)</i>		5.00	7.49	12.55	-5.07	3.10	3.54	2.79	1.70		
IM Emerging Markets Equity (SA+CF) Median		4.71	7.69	13.59	-2.85	4.70	4.95	4.31	3.19		
Acadian EM Equity II Rank		11	11	13	27	25	34	33	34		
J.P. Morgan Global Emerging Markets Discovery Fund		2.15	3.84	7.04	-10.17	2.90	4.81	N/A	7.34		12/01/2016
<i>MSCI EM (net)</i>		5.00	7.49	12.55	-5.07	3.10	3.54	2.79	5.62		
IM Emerging Markets Equity (SA+CF) Median		4.71	7.69	13.59	-2.85	4.70	4.95	4.31	6.96		
J.P. Morgan Global Emerging Markets Discovery Fund Rank		77	80	80	90	75	53	N/A	45		
Fixed Income Composite		-0.17	-1.70	2.69	-2.51	0.89	1.75	2.24	6.69		10/01/1982
<i>Fixed Income Index</i>		-0.12	-0.83	3.51	-2.91	-0.03	1.08	1.54	6.50		
Mackay Shields		1.47	3.47	10.57	3.37	5.08	5.37	5.49	7.74		01/01/1999
<i>Credit Suisse High Yield Index</i>		0.98	2.73	10.22	1.95	3.78	4.11	4.14	6.37		
IM U.S. High Yield Bonds (SA+CF) Median		1.37	3.02	10.33	2.20	4.21	4.43	4.46	6.54		
Mackay Shields Rank		39	26	40	19	16	9	6	5		
PIMCO		0.27	-0.04	3.56	-2.18	0.70	1.79	2.10	3.27		04/01/2009
<i>Blmbg. U.S. Aggregate</i>		0.07	-0.71	2.63	-3.02	-0.23	0.86	1.35	2.58		
IM U.S. Broad Market Core Fixed Income (SA+CF) Median		0.26	-0.19	3.21	-2.63	0.31	1.38	1.82	3.43		
PIMCO Rank		49	36	37	15	21	17	20	60		
Prudential Core Conserv Bond		0.16	-0.48	3.18	-2.82	-0.04	1.01	1.51	2.52		09/01/2009
<i>Blmbg. U.S. Aggregate</i>		0.07	-0.71	2.63	-3.02	-0.23	0.86	1.35	2.35		
IM U.S. Broad Market Core Fixed Income (SA+CF) Median		0.26	-0.19	3.21	-2.63	0.31	1.38	1.82	2.96		
Prudential Core Conserv Bond Rank		70	67	53	64	80	81	79	81		

Gross of Fees.

City of Memphis

Comparative Performance

As of June 30, 2024

	Performance (%)								
	1 Quarter	Year To Date	1 Year	3 Years	5 Years	7 Years	10 Years	Since Inception	Inception Date
Barrow Hanley High Quality Core	0.26	-0.19	3.43	N/A	N/A	N/A	N/A	5.64	11/01/2022
<i>Blmbg. U.S. Aggregate</i>	0.07	-0.71	2.63	-3.02	-0.23	0.86	1.35	4.81	
IM U.S. Broad Market Core Fixed Income (SA+CF) Median	0.17	-0.33	2.96	-2.89	0.05	1.09	1.53	5.23	
Barrow Hanley High Quality Core Rank	25	37	29	N/A	N/A	N/A	N/A	22	
Garcia Hamilton Aggregate	0.03	-1.26	1.05	N/A	N/A	N/A	N/A	4.64	11/01/2022
<i>Blmbg. U.S. Aggregate</i>	0.07	-0.71	2.63	-3.02	-0.23	0.86	1.35	4.81	
IM U.S. Broad Market Core Fixed Income (SA+CF) Median	0.17	-0.33	2.96	-2.89	0.05	1.09	1.53	5.23	
Garcia Hamilton Aggregate Rank	88	98	98	N/A	N/A	N/A	N/A	80	
Brandywine	-1.82	-6.74	-2.69	-5.93	-1.20	-0.09	N/A	0.59	08/01/2015
<i>Blmbg. Global Aggregate</i>	-1.10	-3.16	0.93	-5.49	-2.02	-0.45	-0.42	0.33	
<i>FTSE World Government Bond Index</i>	-1.58	-3.96	-0.63	-6.92	-3.20	-1.28	-1.20	-0.34	
IM Global Fixed Income (SA+CF) Median	0.55	1.16	7.08	-0.93	1.85	2.51	2.55	2.92	
Brandywine Rank	93	97	97	87	82	86	N/A	88	
Hedge Fund Composite	1.74	5.86	10.04	4.55	6.33	5.46	N/A	5.86	04/01/2016
90-Day T-Bill + 5%	2.57	5.17	10.67	8.18	7.26	7.17	6.58	6.90	
<i>HFRI FOF: Conservative Index</i>	0.53	3.15	6.68	3.45	4.85	4.35	3.47	4.38	
Grosvenor Institutional Partners, L.P.	1.98	6.16	10.46	4.21	6.93	5.78	N/A	5.98	04/01/2016
90-Day T-Bill + 5%	2.57	5.17	10.67	8.18	7.26	7.17	6.58	6.90	
<i>HFRI FOF: Conservative Index</i>	0.53	3.15	6.68	3.45	4.85	4.35	3.47	4.38	
Aetos	1.49	5.64	9.57	4.95	5.91	5.21	N/A	5.61	05/01/2016
90-Day T-Bill + 5%	2.57	5.17	10.67	8.18	7.26	7.17	6.58	6.92	
<i>HFRI FOF: Conservative Index</i>	0.53	3.15	6.68	3.45	4.85	4.35	3.47	4.37	
Total Real Estate Composite	-0.90	-2.29	-13.08	-0.43	2.38	4.27	6.69	8.79	07/01/1996
<i>NCREIF Property Index</i>	-0.26	-1.24	-5.53	2.33	3.39	4.37	6.07	8.37	
Core Private Real Estate Composite	-1.28	-3.51	-12.34	-0.08	2.87	4.21	6.18	7.25	09/01/1999
<i>NCREIF Property Index</i>	-0.26	-1.24	-5.53	2.33	3.39	4.37	6.07	7.81	

Gross of Fees.

City of Memphis

Comparative Performance

As of June 30, 2024

					Performance (%)									
					1 Quarter	Year To Date	1 Year	3 Years	5 Years	7 Years	10 Years	Since Inception	Inception Date	
BlackRock US Core Property Fund		-2.39	-5.68	-16.11									3.26	10/01/2006
<i>NCREIF Property Index</i>		-0.26	-1.24	-5.53									6.07	
RREEF REIT II		0.28	0.25	-7.75									7.40	07/01/1999
<i>NCREIF Property Index</i>		-0.26	-1.24	-5.53									7.76	
Vanguard REIT Index Inv		-1.90	-4.22	4.78									4.21	01/01/2017
<i>Vanguard REIT Spliced Index</i>		-1.88	-3.01	4.88									4.32	
IM Real Estate Sector (MF) Median		-0.53	-1.64	5.78									4.38	
Vanguard REIT Index Inv Rank		84	95	71									57	
TA Realty Core Property Fund		0.22	-0.92	-7.96									7.55	04/01/2019
<i>NCREIF ODCE Equal Weighted</i>		-0.45	-2.81	-9.26									3.43	

Gross of Fees.

**City of Memphis Retirement System
Comparative Performance - IRR**

As of June 30, 2024

	Market Value (\$)	%	1 Quarter	Year To Date	1 Year	3 Years	5 Years	7 Years	Since Inception	Inception Date
Real Estate										
Private Real Estate Composite	116,480,053	4.5	-0.7	-1.3	-14.1	-1.1	1.5	3.7	8.7	09/30/2009
Dune Real Estate Fund IV	28,878,632	1.1	0.0	1.8	-1.0	10.0			3.9	08/22/2019
Green Cities III, L.P.	5,001,653	0.2	0.0	-4.7	-50.8	-33.4	-19.8	-12.2	-9.8	11/13/2015
Green Cities IV, L.P.	12,866,640	0.5	0.0	-1.8	-31.5	-14.5	-13.3		-13.5	06/27/2019
Green Cities V, L.P.	15,275	0.0	-86.8	-98.7	-100.0				-100.0	03/27/2023
Long Wharf RE Partners V, L.P.	10,018,606	0.4	-4.2	-11.3	-13.8	-1.0	2.2	6.4	5.6	11/20/2015
Long Wharf RE Partners VI, L.P.	13,372,731	0.5	-0.1	0.3	2.0	13.0	14.5		13.7	06/27/2019
Long Wharf RE Partners VII, L.P.	5,470,230	0.2	-0.5	-1.4	-6.2				-14.9	03/30/2023
Mesirow Real Estate Value Fund III, L.P.	26,060,088	1.0	-0.2	1.0	-3.4	13.7	11.6		10.7	05/07/2018
TA Realty Fund XI	145,592	0.0	0.0	8.3	-14.5	3.7	11.7	11.5	10.6	05/25/2016
TA Realty Fund XIII	14,544,500	0.6	0.0	-2.3					-22.0	11/17/2023
Private Equity										
Private Equity Composite	113,722,295	4.4	0.0	0.9	1.3	6.9	12.1	12.2	13.2	12/15/2015
Goldman Sachs Black Equity Opportunities LLC	1,624,821	0.1	0.0	-4.1					-21.9	11/02/2023
Neuberger Berman Crossroads Fund XXI	46,341,935	1.8	0.0	0.5	0.5	7.7	16.5	16.4	15.7	04/27/2016
Neuberger Berman Crossroads Fund XXIV	7,705,666	0.3	0.0	4.1	10.0				8.1	07/11/2022
Pantheon Global Secondary Fund V	23,023,243	0.9	0.0	1.6	-3.5	0.5	6.8	7.6	11.1	12/22/2015
RPS Ventures II	2,716,908	0.1	0.0	-3.4	-24.4				-24.4	07/21/2023
Siguler Guff Small Buyout Opportunities Fund V	9,099,439	0.4	0.0	0.8	10.2				16.1	08/05/2022
SSM Partners Growth Equity II L.P.	7,650,796	0.3	0.0	1.0	5.1	10.2	6.3	7.3	8.0	12/15/2015
SSM Partners Growth Equity III, LP	15,559,486	0.6	0.0	0.8	9.7	20.2			15.2	12/02/2019
Private Debt										
Private Debt Composite	37,245,332	1.5	0.0	2.9	10.0	11.2			11.2	07/30/2021
Churchill Middle Market Senior Loan Fund III	7,818,646	0.3	0.0	3.7	13.5				9.7	10/07/2021
Brightwood Capital Fund V	5,271,323	0.2	0.0	2.1	4.9	9.7			9.7	07/30/2021
Neuberger Berman Private Debt Fund IV	24,155,363	0.9	0.0	2.7	9.9				12.2	10/21/2021

City of Memphis

Comparative Performance

As of June 30, 2024

	2023	2022	2021	2020	2019	2018	2017	2016	2015	2014
In House Cash	5.08	1.50	0.04	0.26	2.12	1.93	0.67	0.35	0.18	0.11
90 Day U.S. Treasury Bill	5.02	1.46	0.05	0.67	2.28	1.87	0.86	0.25	0.03	0.04
Domestic Equity Composite	24.76	-17.48	25.47	22.41	30.07	-5.88	22.62	10.04	-1.26	8.80
Russell 3000 Index	25.96	-19.21	25.66	20.89	31.02	-5.24	21.13	12.74	0.48	12.56
Domestic Equity Index	23.55	-18.82	23.52	20.08	29.94	-6.47	20.20	13.76	0.19	11.60
IM U.S. Equity (SA+CF) Median	19.37	-16.40	26.09	16.71	28.64	-7.07	19.43	13.21	-0.50	9.99
Domestic Equity Composite Rank	32	55	54	35	42	43	32	68	56	58
Barrow, Hanley	12.82	-2.54	26.34	4.53	26.10	-5.94	16.37	14.95	-1.57	13.68
Russell 1000 Value Index	11.46	-7.54	25.16	2.80	26.54	-8.27	13.66	17.34	-3.83	13.45
IM U.S. Large Cap Value Equity (SA+CF) Median	14.32	-5.39	27.98	4.51	27.57	-8.39	17.16	14.79	-2.40	12.04
Barrow, Hanley Rank	58	28	66	50	63	28	64	48	43	28
Winslow Capital Management	44.11	-30.74	24.86	38.77	34.63	4.19	33.24	-1.53	7.17	11.14
Russell 1000 Growth Index	42.68	-29.14	27.60	38.49	36.39	-1.51	30.21	7.08	5.67	13.05
IM U.S. Large Cap Growth Equity (SA+CF) Median	39.65	-29.03	25.02	35.31	34.01	-0.54	28.47	4.63	5.43	11.87
Winslow Capital Management Rank	27	61	53	35	45	11	20	93	35	59
Rhumbline Russell 1000 Growth	42.61	-29.11	27.58	38.51	36.35	-1.51	N/A	N/A	N/A	N/A
Russell 1000 Growth Index	42.68	-29.14	27.60	38.49	36.39	-1.51	30.21	7.08	5.67	13.05
IM U.S. Large Cap Growth Equity (SA+CF) Median	39.65	-29.03	25.02	35.31	34.01	-0.54	28.47	4.63	5.43	11.87
Rhumbline Russell 1000 Growth Rank	33	51	32	35	28	58	N/A	N/A	N/A	N/A
Rhumbline S&P 500	26.25	-18.09	28.72	18.40	31.39	-4.41	21.78	11.94	1.38	13.58
S&P 500	26.29	-18.11	28.71	18.40	31.49	-4.38	21.83	11.96	1.38	13.69
IM U.S. Large Cap Core Equity (SA+CF) Median	24.67	-16.49	27.71	17.65	30.11	-5.04	22.10	10.52	1.47	13.42
Rhumbline S&P 500 Rank	39	65	37	45	36	42	56	32	54	47
NTGI S&P 400	16.44	-13.06	24.84	13.64	26.22	-11.10	16.22	20.74	-2.17	9.75
S&P MidCap 400	16.44	-13.06	24.76	13.66	26.20	-11.08	16.24	20.74	-2.18	9.77
IM U.S. Mid Cap Core Equity (SA+CF) Median	16.51	-13.09	24.80	13.76	27.08	-11.02	17.47	16.61	-1.33	10.09
NTGI S&P 400 Rank	62	39	49	62	71	60	76	22	69	63

Gross of Fees.

City of Memphis

Comparative Performance

As of June 30, 2024

	Performance (%)									
	2023	2022	2021	2020	2019	2018	2017	2016	2015	2014
Attucks SMID	16.14	-20.88	23.82	21.47	27.70	-4.36	23.75	N/A	N/A	N/A
Russell 2500 Index	17.42	-18.37	18.18	19.99	27.77	-10.00	16.81	17.59	-2.90	7.07
IM U.S. SMID Cap Equity (SA+CF) Median	17.45	-16.87	23.21	17.56	28.92	-9.87	17.99	16.34	-1.42	6.70
Attucks SMID Rank	57	66	47	42	60	22	24	N/A	N/A	N/A
Attucks Small Cap Value	25.51	-8.69	38.00	3.48	N/A	N/A	N/A	N/A	N/A	N/A
Russell 2000 Value Index	14.65	-14.48	28.27	4.63	22.39	-12.86	7.84	31.74	-7.47	4.22
IM U.S. Small Cap Value Equity (SA+CF) Median	17.24	-10.59	30.09	5.18	24.99	-14.08	11.56	27.12	-4.29	5.72
Attucks Small Cap Value Rank	11	33	17	57	N/A	N/A	N/A	N/A	N/A	N/A
Nicholas Investment Partners	21.32	-31.08	9.62	69.08	36.26	-10.37	27.38	3.01	-1.36	-0.13
Russell 2000 Growth Index	18.66	-26.36	2.83	34.63	28.48	-9.31	22.17	11.32	-1.38	5.60
IM U.S. Small Cap Growth Equity (SA+CF) Median	18.84	-27.32	12.12	43.32	29.54	-3.83	24.51	10.60	-0.72	3.90
Nicholas Investment Partners Rank	32	74	61	14	28	87	37	89	55	75
Conestoga Capital Advisors	23.11	-27.05	17.47	32.97	26.95	N/A	N/A	N/A	N/A	N/A
Russell 2000 Growth Index	18.66	-26.36	2.83	34.63	28.48	-9.31	22.17	11.32	-1.38	5.60
IM U.S. Small Cap Growth Equity (SA+CF) Median	18.84	-27.32	12.12	43.32	29.54	-3.83	24.51	10.60	-0.72	3.90
Conestoga Capital Advisors Rank	17	48	32	72	64	N/A	N/A	N/A	N/A	N/A
International Equity Composite	17.14	-20.51	9.15	17.83	24.67	-15.52	33.29	3.30	-0.50	-1.08
International Equity Index	15.56	-16.14	6.88	11.18	20.94	-13.98	28.77	3.16	-4.06	-4.13
IM International Equity (SA+CF) Median	17.71	-16.30	11.76	11.61	23.56	-14.58	28.70	2.41	1.17	-3.36
International Equity Composite Rank	54	72	66	31	44	60	28	44	61	30
1607 Capital Partners	15.28	-19.27	12.25	16.08	25.34	-14.21	32.93	2.69	-0.08	-1.55
MSCI EAFE (Net)	18.24	-14.45	11.26	7.82	22.01	-13.79	25.03	1.00	-0.81	-4.90
IM International Large Cap Core Equity (SA+CF) Median	18.09	-15.93	11.97	11.76	23.61	-14.32	27.86	1.71	0.50	-3.67
1607 Capital Partners Rank	84	78	47	30	37	50	11	40	56	22

Gross of Fees

City of Memphis

Comparative Performance

As of June 30, 2024

					Performance (%)					
	2023	2022	2021	2020	2019	2018	2017	2016	2015	2014
Channing Int'l Developed	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
MSCI EAFE (Net)	18.24	-14.45	11.26	7.82	22.01	-13.79	25.03	1.00	-0.81	-4.90
IM International Large Cap Core Equity (SA+CF) Median	17.34	-16.76	11.29	11.16	23.08	-14.85	27.15	0.94	-0.31	-4.28
Channing Int'l Developed Rank	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Frontier International	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
MSCI AC World ex USA (Net)	15.62	-16.00	7.82	10.65	21.51	-14.20	27.19	4.50	-5.66	-3.87
IM International Large Cap Core Equity (SA+CF) Median	17.34	-16.76	11.29	11.16	23.08	-14.85	27.15	0.94	-0.31	-4.28
Frontier International Rank	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Marathon Asset Mgmt	16.55	-13.54	10.00	9.94	23.94	-13.22	24.34	-1.17	7.15	-3.95
MSCI AC World ex USA (Net)	15.62	-16.00	7.82	10.65	21.51	-14.20	27.19	4.50	-5.66	-3.87
IM International Large Cap Core Equity (SA+CF) Median	18.09	-15.93	11.97	11.76	23.61	-14.32	27.86	1.71	0.50	-3.67
Marathon Asset Mgmt Rank	68	25	68	59	48	35	81	82	6	55
Principal Global Investors	19.51	-24.40	12.61	22.60	26.96	-17.31	26.47	-0.37	4.95	-1.10
MSCI World ex U.S. Growth (Net)	17.45	-22.68	11.57	18.41	27.92	-13.14	27.61	-1.87	1.65	-3.26
IM International Large Cap Core Equity (SA+CF) Median	18.09	-15.93	11.97	11.76	23.61	-14.32	27.86	1.71	0.50	-3.67
Principal Global Investors Rank	35	97	42	11	28	87	60	75	12	18
Strategic Global Advisors	20.20	-16.24	17.09	8.22	22.95	-16.55	30.04	0.01	3.84	1.30
MSCI World ex-U.S. (Net)	17.94	-14.29	12.62	7.59	22.49	-14.09	24.21	2.75	-3.04	-4.32
IM International Core Equity (SA+CF) Median	17.27	-16.75	12.44	12.17	23.97	-15.06	29.43	1.74	1.46	-3.43
Strategic Global Advisors Rank	21	44	15	72	59	66	45	72	31	9
Acadian EM Equity II	22.79	-19.83	8.59	12.47	17.83	-18.46	38.83	13.85	-17.49	2.28
MSCI EM (net)	9.83	-20.09	-2.54	18.31	18.42	-14.57	37.28	11.19	-14.92	-2.19
IM Emerging Markets Equity (SA+CF) Median	12.87	-19.69	0.94	18.29	20.15	-15.20	36.95	10.07	-12.06	0.12
Acadian EM Equity II Rank	19	53	26	75	67	80	39	23	90	34

Gross of Fees.

City of Memphis

Comparative Performance

As of June 30, 2024

	Performance (%)									
	2023	2022	2021	2020	2019	2018	2017	2016	2015	2014
J.P. Morgan Global Emerging Markets Discovery Fund	8.43	-28.06	-3.29	34.80	30.36	-15.05	46.95	N/A	N/A	N/A
MSCI EM (net)	9.83	-20.09	-2.54	18.31	18.42	-14.57	37.28	11.19	-14.92	-2.19
IM Emerging Markets Equity (SA+CF) Median	12.87	-19.69	0.94	18.29	20.15	-15.20	36.95	10.07	-12.06	0.12
J.P. Morgan Global Emerging Markets Discovery Fund Rank	75	90	69	14	11	49	12	N/A	N/A	N/A
Fixed Income Composite	7.29	-11.71	-0.36	9.51	9.88	-0.98	6.94	5.14	-0.23	4.70
Fixed Income Index	7.08	-13.63	-1.25	7.78	9.24	-0.91	5.50	4.83	-0.86	4.89
Mackay Shields	12.82	-6.92	6.26	6.25	14.24	-0.61	7.77	17.63	-0.68	2.55
Credit Suisse High Yield Index	13.55	-10.55	5.50	5.48	14.00	-2.37	7.03	18.26	-4.93	1.86
IM U.S. High Yield Bonds (SA+CF) Median	12.61	-9.37	5.31	6.58	14.25	-1.64	7.50	14.07	-2.04	2.61
Mackay Shields Rank	45	24	27	58	51	31	38	13	27	51
PIMCO	6.57	-12.46	-0.41	8.78	9.11	0.82	5.49	3.58	0.17	4.46
Blmbg. U.S. Aggregate	5.53	-13.01	-1.55	7.51	8.72	0.01	3.54	2.65	0.55	5.97
IM U.S. Broad Market Core Fixed Income (SA+CF) Median	5.99	-12.95	-1.24	8.34	9.17	0.06	3.99	3.07	0.81	6.13
PIMCO Rank	21	27	21	38	54	9	5	34	89	96
Prudential Core Conserv Bond	6.04	-13.02	-1.54	7.75	8.82	-0.09	3.69	2.86	0.83	6.19
Blmbg. U.S. Aggregate	5.53	-13.01	-1.55	7.51	8.72	0.01	3.54	2.65	0.55	5.97
IM U.S. Broad Market Core Fixed Income (SA+CF) Median	5.99	-12.95	-1.24	8.34	9.17	0.06	3.99	3.07	0.81	6.13
Prudential Core Conserv Bond Rank	50	56	66	69	68	72	69	61	49	45
Brandywine	5.69	-13.45	-3.50	11.98	8.14	-2.74	11.09	1.05	N/A	N/A
Blmbg. Global Aggregate	5.72	-16.25	-4.71	9.20	6.84	-1.19	7.39	2.09	-3.15	0.59
FTSE World Government Bond Index	5.18	-18.26	-6.97	10.11	5.90	-0.84	7.49	1.60	-3.57	-0.48
IM Global Fixed Income (SA+CF) Median	9.04	-12.16	0.52	8.39	9.75	-1.76	7.76	6.19	-2.35	2.61
Brandywine Rank	81	59	75	18	76	67	14	93	N/A	N/A
Hedge Fund Composite	8.10	-3.41	7.59	11.20	7.95	-1.55	6.72	N/A	N/A	N/A
90-Day T-Bill+ 5%	10.27	6.53	5.05	5.70	7.39	6.97	5.90	5.27	5.03	5.04
HFRI FOF: Conservative Index	5.48	0.08	7.62	6.47	6.30	-0.87	4.12	1.89	0.37	3.14

Gross of Fees.

City of Memphis

Comparative Performance

As of June 30, 2024

	Performance (%)									
	2023	2022	2021	2020	2019	2018	2017	2016	2015	2014
Grosvenor Institutional Partners, L.P.	8.11	-5.86	7.78	17.17	6.06	-1.49	6.14	N/A	N/A	N/A
90-Day T-Bill+ 5%	10.27	6.53	5.05	5.70	7.39	6.97	5.90	5.27	5.03	5.04
HFRI FOF: Conservative Index	5.48	0.08	7.62	6.47	6.30	-0.87	4.12	1.89	0.37	3.14
Aetos	8.27	-0.68	6.46	6.99	9.26	-1.61	7.30	N/A	N/A	N/A
90-Day T-Bill + 5%	10.27	6.53	5.05	5.70	7.39	6.97	5.90	5.27	5.03	5.04
HFRI FOF: Conservative Index	5.48	0.08	7.62	6.47	6.30	-0.87	4.12	1.89	0.37	3.14
Total Real Estate Composite	-15.87	2.66	24.73	2.36	9.80	8.23	6.97	9.06	15.74	20.84
NCREIF Property Index	-7.94	5.51	17.70	1.60	6.42	6.72	6.96	7.97	13.33	11.82
Core Private Real Estate Composite	-14.75	5.06	25.04	2.55	10.16	4.91	7.75	8.50	11.92	20.06
NCREIF Property Index	-7.94	5.51	17.70	1.60	6.42	6.72	6.96	7.97	13.33	11.82
BlackRock US Core Property Fund	-18.23	9.61	19.62	2.86	6.39	7.76	8.87	10.95	15.25	11.63
NCREIF Property Index	-7.94	5.51	17.70	1.60	6.42	6.72	6.96	7.97	13.33	11.82
RREEF REIT II	-14.49	8.60	24.92	1.32	6.28	7.99	7.44	9.14	16.70	13.00
NCREIF Property Index	-7.94	5.51	17.70	1.60	6.42	6.72	6.96	7.97	13.33	11.82
Vanguard REIT Index Inv	13.17	-26.19	40.47	-4.67	28.95	-5.93	4.86	N/A	N/A	N/A
Vanguard REIT Spliced Index	11.96	-26.12	40.56	-4.55	29.03	-5.86	5.07	8.60	2.52	30.38
IM Real Estate Sector (MF) Median	11.91	-26.17	41.32	-4.31	27.32	-5.71	5.32	6.34	2.91	29.47
Vanguard REIT Index Inv Rank	27	51	61	54	34	54	59	N/A	N/A	N/A
TA Realty Core Property Fund	-8.83	9.59	30.41	6.23	N/A	N/A	N/A	N/A	N/A	N/A
NCREIF ODCE Equal Weighted	-12.01	7.46	22.62	1.57	6.08	8.25	7.80	9.27	15.17	12.38

Gross of Fees.

City of Memphis

Comparative Performance

As of June 30, 2024

	<u>Performance (%)</u>								
	<u>1 Quarter</u>	<u>Year To Date</u>	<u>1 Year</u>	<u>3 Years</u>	<u>5 Years</u>	<u>7 Years</u>	<u>10 Years</u>	<u>Since Inception</u>	<u>Inception Date</u>
Total Fund Composite	0.62	4.78	9.18	1.87	6.83	6.72	6.24	7.19	07/01/1996
Policy Index	1.65	6.26	12.02	3.20	7.15	7.18	6.65	7.26	
Policy Index2	0.93	5.37	10.75	2.23	6.48	6.55	6.20	7.09	
In House Cash	1.31	2.67	5.39	3.08	2.08	1.99	1.48	3.89	10/01/1982
90 Day U.S. Treasury Bill	1.32	2.63	5.40	3.03	2.16	2.07	1.50	3.68	
Domestic Equity Composite	1.22	11.67	21.86	7.46	13.69	13.06	11.16	12.95	10/01/2009
Russell 3000 Index	3.22	13.56	23.12	8.05	14.14	13.48	12.15	13.59	
Domestic Equity Index	1.26	10.84	19.54	5.99	12.54	12.09	11.14	12.89	
Fixed Income Composite	-0.25	-1.85	2.39	-2.81	0.57	1.43	1.92	3.21	10/01/2009
Fixed Income Index	-0.12	-0.83	3.51	-2.91	-0.03	1.08	1.54	2.70	
International Equity Composite	1.18	6.34	12.12	-1.06	6.07	5.40	4.85	6.31	10/01/2009
International Equity Index	1.34	6.12	11.99	0.45	5.52	5.14	3.98	5.30	
Hedge Fund Composite	1.74	5.86	10.04	4.55	6.33	5.46	N/A	5.86	04/01/2016
90-Day T-Bill+ 5%	2.57	5.17	10.67	8.18	7.26	7.17	6.58	6.90	
HFRI FOF: Conservative Index	0.53	3.15	6.68	3.45	4.85	4.35	3.47	4.38	
Core Private Real Estate Composite	-1.28	-3.51	-12.34	-0.08	2.87	4.21	6.18	7.25	09/01/1999
NCREIF Property Index	-0.26	-1.24	-5.53	2.33	3.39	4.37	6.07	7.81	

Net of Fees.

City of Memphis

Comparative Performance

As of June 30, 2024

	Performance (%)								
	1 Quarter	Year To Date	1 Year	3 Years	5 Years	7 Years	10 Years	Since Inception	Inception Date
In House Cash	1.31	2.67	5.39	3.08	2.08	1.99	1.48	3.89	10/01/1982
90 Day U.S. Treasury Bill	1.32	2.63	5.40	3.03	2.16	2.07	1.50	3.68	
Domestic Equity Composite	1.22	11.67	21.86	7.46	13.69	13.06	11.16	12.95	10/01/2009
Russell 3000 Index	3.22	13.56	23.12	8.05	14.14	13.48	12.15	13.59	
Domestic Equity Index	1.26	10.84	19.54	5.99	12.54	12.09	11.14	12.89	
IM U.S. Equity (SA+CF) Median	-1.26	7.28	15.67	5.85	11.33	10.98	10.03	12.77	
Domestic Equity Composite Rank	33	31	30	38	31	34	39	47	
Barrow, Hanley	-0.76	9.90	19.62	8.13	11.52	10.59	9.84	12.53	10/01/1982
Russell 1000 Value Index	-2.17	6.62	13.06	5.52	9.01	8.61	8.23	11.50	
IM U.S. Large Cap Value Equity (SA+CF) Median	-1.24	8.20	16.79	7.72	11.47	10.68	9.59	12.60	
Barrow, Hanley Rank	38	28	27	43	49	52	45	66	
Winslow Capital Management	7.59	22.22	39.21	9.87	17.54	18.09	15.54	16.10	11/01/2011
Russell 1000 Growth Index	8.33	20.70	33.48	11.28	19.34	18.64	16.33	17.12	
IM U.S. Large Cap Growth Equity (SA+CF) Median	5.62	18.76	30.72	8.78	16.69	16.91	14.96	15.85	
Winslow Capital Management Rank	29	31	10	36	36	25	35	44	
Rhumbline Russell 1000 Growth	8.32	20.67	33.43	11.25	19.31	N/A	N/A	18.27	09/01/2017
Russell 1000 Growth Index	8.33	20.70	33.48	11.28	19.34	18.64	16.33	18.37	
IM U.S. Large Cap Growth Equity (SA+CF) Median	5.62	18.76	30.72	8.78	16.69	16.91	14.96	16.72	
Rhumbline Russell 1000 Growth Rank	18	38	39	17	16	N/A	N/A	20	
Rhumbline S&P 500	4.27	15.25	24.47	9.99	15.00	14.23	12.80	10.21	01/01/2004
S&P 500	4.28	15.29	24.56	10.01	15.05	14.28	12.86	10.21	
IM U.S. Large Cap Core Equity (SA+CF) Median	3.44	15.15	24.63	9.44	14.68	13.80	12.65	10.55	
Rhumbline S&P 500 Rank	36	49	54	41	39	42	45	78	
NTGI S&P 400	-3.46	6.14	13.53	4.42	10.23	9.36	9.09	10.20	04/01/2011
S&P MidCap 400	-3.45	6.17	13.57	4.47	10.27	9.40	9.14	10.25	
IM U.S. Mid Cap Core Equity (SA+CF) Median	-3.46	6.06	13.59	4.49	10.31	9.63	9.20	10.51	
NTGI S&P 400 Rank	54	50	58	62	62	73	70	84	

Net of Fees.

City of Memphis

Comparative Performance

As of June 30, 2024

					Performance (%)						
					1 Year	3 Years	5 Years	7 Years	10 Years	Since Inception	Inception Date
Attucks SMID		-5.20	3.51	8.37	-0.62	8.73	9.81	N/A	11.87	02/01/2016	
Russell 2500 Index		-4.27	2.35	10.47	-0.29	8.31	8.44	7.99	10.89		
IM U.S. SMID Cap Equity (SA+CF) Median		-3.56	3.59	10.85	2.11	9.83	9.83	9.19	12.18		
Attucks SMID Rank		84	54	71	75	68	51	N/A	55		
Attucks Small Cap Value		-4.93	-0.15	15.40	7.15	11.79	N/A	N/A	11.43	04/01/2019	
Russell 2000 Value Index		-3.64	-0.85	10.90	-0.53	7.07	5.89	6.23	7.00		
IM U.S. Small Cap Value Equity (SA+CF) Median		-3.48	1.97	12.96	4.12	9.92	8.22	8.09	9.83		
Attucks Small Cap Value Rank		80	76	29	21	24	N/A	N/A	29		
Nicholas Investment Partners		-2.87	12.68	18.23	-2.55	12.08	12.46	9.76	12.86	06/01/2012	
Russell 2000 Growth Index		-2.92	4.44	9.14	-4.86	6.17	7.28	7.39	10.41		
IM U.S. Small Cap Growth Equity (SA+CF) Median		-2.59	5.02	9.47	-2.78	8.73	11.09	10.22	12.72		
Nicholas Investment Partners Rank		55	19	15	49	21	31	61	47		
Conestoga Capital Advisors		-5.66	-2.15	1.32	-1.77	6.23	N/A	N/A	6.33	08/01/2018	
Russell 2000 Growth Index		-2.92	4.44	9.14	-4.86	6.17	7.28	7.39	4.80		
IM U.S. Small Cap Growth Equity (SA+CF) Median		-2.59	5.02	9.47	-2.78	8.73	11.09	10.22	8.67		
Conestoga Capital Advisors Rank		83	89	84	42	87	N/A	N/A	83		
International Equity Composite		1.18	6.34	12.12	-1.06	6.07	5.40	4.85	6.31	10/01/2009	
International Equity Index		1.34	6.12	11.99	0.45	5.52	5.14	3.98	5.30		
IM International Equity (SA+CF) Median		0.35	5.34	11.44	1.83	6.99	6.27	5.27	7.20		
International Equity Composite Rank		32	38	44	74	66	70	64	75		
1607 Capital Partners		1.26	3.78	9.09	-0.96	5.97	5.36	4.77	4.65	06/01/2008	
MSCI EAFE (Net)		-0.42	5.34	11.54	2.89	6.46	5.73	4.33	3.28		
IM International Large Cap Core Equity (SA+CF) Median		0.41	6.27	12.22	2.54	7.13	6.48	5.23	4.31		
1607 Capital Partners Rank		25	88	79	88	78	81	70	33		

Net of Fees.

City of Memphis

Comparative Performance

As of June 30, 2024

	1 Quarter	Year To Date	1 Year	3 Years	5 Years	7 Years	10 Years	Performance (%)	
								Since Inception	Inception Date
Channing Int'l Developed	N/A	N/A	N/A	N/A	N/A	N/A	N/A	-2.75	06/01/2024
MSCI EAFE (Net)	-0.42	5.34	11.54	2.89	6.46	5.73	4.33	-1.61	
IM International Large Cap Core Equity (SA+CF) Median	0.18	5.88	11.23	1.41	6.44	5.79	4.57	-1.26	
Channing Int'l Developed Rank	N/A	N/A	N/A	N/A	N/A	N/A	N/A	88	
Frontier International	N/A	N/A	N/A	N/A	N/A	N/A	N/A	-2.42	06/01/2024
MSCI AC World ex USA (Net)	0.96	5.69	11.62	0.46	5.55	5.17	3.84	-0.10	
IM International Large Cap Core Equity (SA+CF) Median	0.18	5.88	11.23	1.41	6.44	5.79	4.57	-1.26	
Frontier International Rank	N/A	N/A	N/A	N/A	N/A	N/A	N/A	86	
Marathon Asset Mgmt	-1.33	5.03	10.23	1.49	6.34	5.28	4.55	7.23	04/01/2004
MSCI AC World ex USA (Net)	0.96	5.69	11.62	0.46	5.55	5.17	3.84	5.66	
IM International Large Cap Core Equity (SA+CF) Median	0.41	6.27	12.22	2.54	7.13	6.48	5.23	6.74	
Marathon Asset Mgmt Rank	92	76	69	65	74	85	77	28	
Principal Global Investors	-0.63	6.87	10.48	0.36	6.89	5.75	5.18	3.26	07/01/2007
MSCI World ex U.S. Growth (Net)	-0.94	5.91	9.36	0.02	6.46	6.55	5.23	3.75	
IM International Large Cap Core Equity (SA+CF) Median	0.41	6.27	12.22	2.54	7.13	6.48	5.23	4.07	
Principal Global Investors Rank	83	46	67	81	61	71	55	89	
Strategic Global Advisors	0.21	7.44	16.48	3.25	7.33	5.95	5.23	8.29	06/01/2012
MSCI World ex-U.S. (Net)	-0.60	4.96	11.22	2.82	6.55	5.86	4.27	7.32	
IM International Core Equity (SA+CF) Median	0.29	5.64	11.97	1.82	7.03	6.34	5.32	8.46	
Strategic Global Advisors Rank	52	32	18	32	42	60	54	59	
Acadian EM Equity II	7.41	13.47	23.90	1.27	7.24	5.36	4.18	3.34	05/01/2011
MSCI EM (net)	5.00	7.49	12.55	-5.07	3.10	3.54	2.79	1.70	
IM Emerging Markets Equity (SA+CF) Median	4.71	7.69	13.59	-2.85	4.70	4.95	4.31	3.19	
Acadian EM Equity II Rank	13	12	14	29	28	42	53	46	

Net of Fees.

City of Memphis

Comparative Performance

As of June 30, 2024

					Performance (%)				
	1 Quarter	Year To Date	1 Year	3 Years	5 Years	7 Years	10 Years	Since Inception	Inception Date
J.P. Morgan Global Emerging Markets Discovery Fund	1.95	3.43	6.20	-10.88	2.10	3.99	N/A	6.50	12/01/2016
MSCI EM (net)	5.00	7.49	12.55	-5.07	3.10	3.54	2.79	5.62	
IM Emerging Markets Equity (SA+CF) Median	4.71	7.69	13.59	-2.85	4.70	4.95	4.31	6.96	
J.P. Morgan Global Emerging Markets Discovery Fund Rank	78	82	83	92	88	68	N/A	62	
Channing Int'l Developed	N/A	N/A	N/A	N/A	N/A	N/A	N/A	-2.71	05/01/2024
MSCI EAFE (Net)	-0.42	5.34	11.54	2.89	6.46	5.73	4.33	2.20	
IM International Large Cap Core Equity (SA+CF) Median	0.18	5.88	11.23	1.41	6.44	5.79	4.57	2.76	
Channing Int'l Developed Rank	N/A	N/A	N/A	N/A	N/A	N/A	N/A	100	
Frontier International	N/A	N/A	N/A	N/A	N/A	N/A	N/A	-0.52	05/01/2024
MSCI AC World ex USA (Net)	0.96	5.69	11.62	0.46	5.55	5.17	3.84	2.81	
IM International Large Cap Core Equity (SA+CF) Median	0.18	5.88	11.23	1.41	6.44	5.79	4.57	2.76	
Frontier International Rank	N/A	N/A	N/A	N/A	N/A	N/A	N/A	99	
Fixed Income Composite	-0.25	-1.85	2.39	-2.81	0.57	1.43	1.92	3.21	10/01/2009
Fixed Income Index	-0.12	-0.83	3.51	-2.91	-0.03	1.08	1.54	2.70	
IM U.S. Fixed Income (SA+CF) Median	0.67	0.92	4.71	-0.63	1.36	2.01	2.15	3.09	
Fixed Income Composite Rank	89	93	89	83	77	79	64	48	
Mackay Shields	1.35	3.22	10.18	2.92	4.63	4.93	5.05	7.28	01/01/1999
Credit Suisse High Yield Index	0.98	2.73	10.22	1.95	3.78	4.11	4.14	6.37	
IM U.S. High Yield Bonds (SA+CF) Median	1.37	3.02	10.33	2.20	4.21	4.43	4.46	6.54	
Mackay Shields Rank	53	37	64	27	24	24	16	10	
PIMCO	0.18	-0.21	3.16	-2.54	0.33	1.42	1.74	2.93	04/01/2009
Bloomberg U.S. Aggregate	0.07	-0.71	2.63	-3.02	-0.23	0.86	1.35	2.58	
IM U.S. Broad Market Core Fixed Income (SA+CF) Median	0.26	-0.19	3.21	-2.63	0.31	1.38	1.82	3.43	
PIMCO Rank	67	52	53	39	48	44	60	79	

Net of Fees.

City of Memphis

Comparative Performance

As of June 30, 2024

	Performance (%)								
	1 Quarter	Year To Date	1 Year	3 Years	5 Years	7 Years	10 Years	Since Inception	Inception Date
Prudential Core Conserv Bond	0.16	-0.48	3.18	-2.86	-0.11	0.91	1.41	2.42	09/01/2009
Blmbg. U.S. Aggregate	0.07	-0.71	2.63	-3.02	-0.23	0.86	1.35	2.35	
IM U.S. Broad Market Core Fixed Income (SA+CF) Median	0.26	-0.19	3.21	-2.63	0.31	1.38	1.82	2.96	
Prudential Core Conserv Bond Rank	70	67	53	66	84	88	86	88	
Barrow Hanley High Quality Core	0.20	-0.31	3.17	N/A	N/A	N/A	N/A	5.37	11/01/2022
Blmbg. U.S. Aggregate	0.07	-0.71	2.63	-3.02	-0.23	0.86	1.35	4.81	
IM U.S. Broad Market Core Fixed Income (SA+CF) Median	0.17	-0.33	2.96	-2.89	0.05	1.09	1.53	5.23	
Barrow Hanley High Quality Core Rank	43	46	40	N/A	N/A	N/A	N/A	38	
Garcia Hamilton Aggregate	-0.02	-1.32	0.91	N/A	N/A	N/A	N/A	4.49	11/01/2022
Blmbg. U.S. Aggregate	0.07	-0.71	2.63	-3.02	-0.23	0.86	1.35	4.81	
IM U.S. Broad Market Core Fixed Income (SA+CF) Median	0.17	-0.33	2.96	-2.89	0.05	1.09	1.53	5.23	
Garcia Hamilton Aggregate Rank	93	98	98	N/A	N/A	N/A	N/A	83	
Brandywine	-1.91	-6.92	-3.05	-6.28	-1.57	-0.46	N/A	0.22	08/01/2015
Blmbg. Global Aggregate	-1.10	-3.16	0.93	-5.49	-2.02	-0.45	-0.42	0.33	
FTSE World Government Bond Index	-1.58	-3.96	-0.63	-6.92	-3.20	-1.28	-1.20	-0.34	
IM Global Fixed Income (SA+CF) Median	0.55	1.16	7.08	-0.93	1.85	2.51	2.55	2.92	
Brandywine Rank	93	98	99	90	87	90	N/A	94	
Hedge Fund Composite	1.74	5.86	10.04	4.55	6.33	5.46	N/A	5.86	04/01/2016
90-Day T-Bill+ 5%	2.57	5.17	10.67	8.18	7.26	7.17	6.58	6.90	
HFRI FOF: Conservative Index	0.53	3.15	6.68	3.45	4.85	4.35	3.47	4.38	
Grosvenor Institutional Partners, L.P.	1.98	6.16	10.46	4.21	6.93	5.78	N/A	5.98	04/01/2016
90-Day T-Bill+ 5%	2.57	5.17	10.67	8.18	7.26	7.17	6.58	6.90	
HFRI FOF: Conservative Index	0.53	3.15	6.68	3.45	4.85	4.35	3.47	4.38	
Aetos	1.49	5.64	9.57	4.95	5.91	5.21	N/A	5.61	05/01/2016
90-Day T-Bill + 5%	2.57	5.17	10.67	8.18	7.26	7.17	6.58	6.92	
HFRI FOF: Conservative Index	0.53	3.15	6.68	3.45	4.85	4.35	3.47	4.37	

Net of Fees.

City of Memphis

Comparative Performance

As of June 30, 2024

	Performance (%)								
	1 Quarter	Year To Date	1 Year	3 Years	5 Years	7 Years	10 Years	Since Inception	Inception Date
Total Real Estate Composite	-1.02	-2.54	-13.50	-0.93	1.83	3.65	6.01	8.62	10/01/2009
NCREIF Property Index	-0.26	-1.24	-5.53	2.33	3.39	4.37	6.07	7.63	
BlackRock US Core Property Fund	-2.58	-6.05	-16.78	-2.36	0.60	2.51	5.01	2.48	10/01/2006
NCREIF Property Index	-0.26	-1.24	-5.53	2.33	3.39	4.37	6.07	6.07	
RREEF REIT II	0.04	-0.23	-8.70	2.09	2.97	4.01	6.07	6.53	07/01/1999
NCREIF Property Index	-0.26	-1.24	-5.53	2.33	3.39	4.37	6.07	7.76	
Vanguard REIT Index Inv	-1.90	-4.22	4.78	-2.54	2.98	4.14	N/A	4.21	01/01/2017
Vanguard REIT Spliced Index	-1.88	-3.01	4.88	-2.44	3.08	4.25	5.41	4.32	
IM Real Estate Sector (MF) Median	-0.53	-1.64	5.78	-1.54	3.26	4.32	5.27	4.38	
Vanguard REIT Index Inv Rank	84	95	71	78	58	57	N/A	57	
TA Realty Core Property Fund	0.22	-0.92	-7.96	6.10	7.49	N/A	N/A	7.55	04/01/2019
NCREIF ODCE Equal Weighted	-0.45	-2.81	-9.26	1.81	3.33	4.58	6.64	3.43	

Net of Fees.

City of Memphis

Comparative Performance

As of June 30, 2024

	Performance (%)									
	2023	2022	2021	2020	2019	2018	2017	2016	2015	2014
Total Fund Composite	11.33	-13.24	13.13	14.58	18.36	-5.79	17.86	6.33	-0.17	5.09
Policy Index	14.44	-12.94	11.35	12.73	18.81	-4.51	16.69	8.04	-0.19	5.86
Policy Index2	13.42	-13.32	10.73	12.60	18.46	-5.36	16.39	8.12	-0.19	5.86
In House Cash	5.08	1.50	0.04	0.26	2.12	1.93	0.67	0.35	0.18	0.11
90 Day U.S. Treasury Bill	5.02	1.46	0.05	0.67	2.28	1.87	0.86	0.25	0.03	0.04
Domestic Equity Composite	24.42	-17.70	25.11	22.02	29.67	-6.17	22.22	9.62	-1.61	8.44
Russell 3000 Index	25.96	-19.21	25.66	20.89	31.02	-5.24	21.13	12.74	0.48	12.56
Domestic Equity Index	23.55	-18.82	23.52	20.08	29.94	-6.47	20.20	13.76	0.19	11.60
Fixed Income Composite	6.96	-11.98	-0.70	9.17	9.51	-1.28	6.58	4.83	-0.53	4.42
Fixed Income Index	7.08	-13.63	-1.25	7.78	9.24	-0.91	5.50	4.83	-0.86	4.89
International Equity Composite	16.36	-21.01	8.44	17.01	23.83	-16.10	32.40	2.64	-1.18	-1.73
International Equity Index	15.56	-16.14	6.88	11.18	20.94	-13.98	28.77	3.16	-4.06	-4.13
Hedge Fund Composite	8.10	-3.41	7.59	11.20	7.95	-1.55	6.72	N/A	N/A	N/A
90-Day T-Bill+ 5%	10.27	6.53	5.05	5.70	7.39	6.97	5.90	5.27	5.03	5.04
HFRI FOF: Conservative Index	5.48	0.08	7.62	6.47	6.30	-0.87	4.12	1.89	0.37	3.14
Total Real Estate Composite	-16.27	2.12	24.06	1.81	9.01	7.46	6.29	8.20	14.65	20.16
NCREIF Property Index	-7.94	5.51	17.70	1.60	6.42	6.72	6.96	7.97	13.33	11.82

Net of Fees.

City of Memphis

Comparative Performance

As of June 30, 2024

	Market Value (\$000)	Performance (%)									
		2023	2022	2021	2020	2019	2018	2017	2016	2015	2014
In House Cash	17,058	5.08	1.50	0.04	0.26	2.12	1.93	0.67	0.35	0.18	0.11
90 Day U.S. Treasury Bill		5.02	1.46	0.05	0.67	2.28	1.87	0.86	0.25	0.03	0.04
Domestic Equity Composite	825,826	24.42	-17.70	25.11	22.02	29.67	-6.17	22.22	9.62	-1.61	8.44
Russell 3000 Index		25.96	-19.21	25.66	20.89	31.02	-5.24	21.13	12.74	0.48	12.56
Domestic Equity Index		23.55	-18.82	23.52	20.08	29.94	-6.47	20.20	13.76	0.19	11.60
IM U.S. Equity (SA+CF) Median		19.37	-16.40	26.09	16.71	28.64	-7.07	19.43	13.21	-0.50	9.99
Domestic Equity Composite Rank		33	56	56	35	44	45	34	70	58	61
Barrow, Hanley	169,373	12.48	-2.83	25.97	4.19	25.67	-6.30	15.92	14.50	-1.92	13.29
Russell 1000 Value Index		11.46	-7.54	25.16	2.80	26.54	-8.27	13.66	17.34	-3.83	13.45
IM U.S. Large Cap Value Equity (SA+CF) Median		14.32	-5.39	27.98	4.51	27.57	-8.39	17.16	14.79	-2.40	12.04
Barrow, Hanley Rank		60	31	68	53	67	31	69	55	45	34
Winslow Capital Management	93,201	43.28	-31.14	24.15	37.97	33.81	3.57	32.46	-2.13	6.55	10.67
Russell 1000 Growth Index		42.68	-29.14	27.60	38.49	36.39	-1.51	30.21	7.08	5.67	13.05
IM U.S. Large Cap Growth Equity (SA+CF) Median		39.65	-29.03	25.02	35.31	34.01	-0.54	28.47	4.63	5.43	11.87
Winslow Capital Management Rank		32	65	58	37	53	13	26	95	41	63
Rhumbline Russell 1000 Growth	90,975	42.61	-29.11	27.58	38.51	36.35	-1.51	N/A	N/A	N/A	N/A
Russell 1000 Growth Index		42.68	-29.14	27.60	38.49	36.39	-1.51	30.21	7.08	5.67	13.05
IM U.S. Large Cap Growth Equity (SA+CF) Median		39.65	-29.03	25.02	35.31	34.01	-0.54	28.47	4.63	5.43	11.87
Rhumbline Russell 1000 Growth Rank		33	51	32	35	28	58	N/A	N/A	N/A	N/A
Rhumbline S&P 500	225,759	26.22	-18.11	28.69	18.37	31.36	-4.43	21.75	11.89	1.35	13.55
S&P 500		26.29	-18.11	28.71	18.40	31.49	-4.38	21.83	11.96	1.38	13.69
IM U.S. Large Cap Core Equity (SA+CF) Median		24.67	-16.49	27.71	17.65	30.11	-5.04	22.10	10.52	1.47	13.42
Rhumbline S&P 500 Rank		39	67	37	46	36	42	57	33	55	48
NTGI S&P 400	56,343	16.39	-13.10	24.79	13.59	26.16	-11.14	16.17	20.68	-2.22	9.70
S&P MidCap 400		16.44	-13.06	24.76	13.66	26.20	-11.08	16.24	20.74	-2.18	9.77
IM U.S. Mid Cap Core Equity (SA+CF) Median		16.51	-13.09	24.80	13.76	27.08	-11.02	17.47	16.61	-1.33	10.09
NTGI S&P 400 Rank		65	51	56	66	73	62	79	26	74	66

Net of Fees.

City of Memphis

Comparative Performance

As of June 30, 2024

	Market Value (\$000)	Performance (%)									
		2023	2022	2021	2020	2019	2018	2017	2016	2015	2014
Attucks SMID	62,705	15.60	-21.26	23.27	20.87	27.08	-4.83	23.15	N/A	N/A	N/A
Russell 2500 Index		17.42	-18.37	18.18	19.99	27.77	-10.00	16.81	17.59	-2.90	7.07
IM U.S. SMID Cap Equity (SA+CF) Median		17.45	-16.87	23.21	17.56	28.92	-9.87	17.99	16.34	-1.42	6.70
Attucks SMID Rank		62	67	50	43	66	24	25	N/A	N/A	N/A
Attucks Small Cap Value	71,754	24.97	-9.09	37.37	2.98	N/A	N/A	N/A	N/A	N/A	N/A
Russell 2000 Value Index		14.65	-14.48	28.27	4.63	22.39	-12.86	7.84	31.74	-7.47	4.22
IM U.S. Small Cap Value Equity (SA+CF) Median		17.24	-10.59	30.09	5.18	24.99	-14.08	11.56	27.12	-4.29	5.72
Attucks Small Cap Value Rank		11	38	20	61	N/A	N/A	N/A	N/A	N/A	N/A
Nicholas Investment Partners	29,703	20.11	-31.60	8.52	67.40	34.93	-11.26	26.11	1.98	-2.34	-1.12
Russell 2000 Growth Index		18.66	-26.36	2.83	34.63	28.48	-9.31	22.17	11.32	-1.38	5.60
IM U.S. Small Cap Growth Equity (SA+CF) Median		18.84	-27.32	12.12	43.32	29.54	-3.83	24.51	10.60	-0.72	3.90
Nicholas Investment Partners Rank		37	77	65	17	31	90	42	91	65	82
Conestoga Capital Advisors	26,013	22.11	-27.66	16.41	32.04	26.02	N/A	N/A	N/A	N/A	N/A
Russell 2000 Growth Index		18.66	-26.36	2.83	34.63	28.48	-9.31	22.17	11.32	-1.38	5.60
IM U.S. Small Cap Growth Equity (SA+CF) Median		18.84	-27.32	12.12	43.32	29.54	-3.83	24.51	10.60	-0.72	3.90
Conestoga Capital Advisors Rank		24	54	37	74	69	N/A	N/A	N/A	N/A	N/A
International Equity Composite	620,918	16.36	-21.01	8.44	17.01	23.83	-16.10	32.40	2.64	-1.18	-1.73
International Equity Index		15.56	-16.14	6.88	11.18	20.94	-13.98	28.77	3.16	-4.06	-4.13
IM International Equity (SA+CF) Median		17.71	-16.30	11.76	11.61	23.56	-14.58	28.70	2.41	1.17	-3.36
International Equity Composite Rank		61	74	71	33	49	65	31	49	66	35
1607 Capital Partners	108,715	14.50	-20.18	11.46	15.28	24.50	-14.82	32.05	1.97	-0.82	-2.22
MSCI EAFE (Net)		18.24	-14.45	11.26	7.82	22.01	-13.79	25.03	1.00	-0.81	-4.90
IM International Large Cap Core Equity (SA+CF) Median		18.09	-15.93	11.97	11.76	23.61	-14.32	27.86	1.71	0.50	-3.67
1607 Capital Partners Rank		89	85	55	32	44	60	15	47	62	30

Net of Fees.

City of Memphis

Comparative Performance

As of June 30, 2024

	Market Value (\$000)	Performance (%)									
		2023	2022	2021	2020	2019	2018	2017	2016	2015	2014
Channing Int'l Developed	14,619	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
MSCI EAFE (Net)		18.24	-14.45	11.26	7.82	22.01	-13.79	25.03	1.00	-0.81	-4.90
IM International Large Cap Core Equity (SA+CF) Median		17.34	-16.76	11.29	11.16	23.08	-14.85	27.15	0.94	-0.31	-4.28
Channing Int'l Developed Rank		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Frontier International	14,922	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
MSCI AC World ex USA (Net)		15.62	-16.00	7.82	10.65	21.51	-14.20	27.19	4.50	-5.66	-3.87
IM International Large Cap Core Equity (SA+CF) Median		17.34	-16.76	11.29	11.16	23.08	-14.85	27.15	0.94	-0.31	-4.28
Frontier International Rank		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Marathon Asset Mgmt	107,202	15.81	-14.09	9.29	9.30	23.13	-13.78	23.53	-1.82	6.45	-4.59
MSCI AC World ex USA (Net)		15.62	-16.00	7.82	10.65	21.51	-14.20	27.19	4.50	-5.66	-3.87
IM International Large Cap Core Equity (SA+CF) Median		18.09	-15.93	11.97	11.76	23.61	-14.32	27.86	1.71	0.50	-3.67
Marathon Asset Mgmt Rank		75	32	71	64	54	42	89	86	9	62
Principal Global Investors	109,662	18.89	-24.52	11.97	21.89	26.23	-17.79	25.75	-0.95	4.34	-1.67
MSCI World ex U.S. Growth (Net)		17.45	-22.68	11.57	18.41	27.92	-13.14	27.61	-1.87	1.65	-3.26
IM International Large Cap Core Equity (SA+CF) Median		18.09	-15.93	11.97	11.76	23.61	-14.32	27.86	1.71	0.50	-3.67
Principal Global Investors Rank		41	97	50	13	32	90	68	79	13	23
Strategic Global Advisors	74,059	19.33	-16.85	16.18	7.36	22.09	-17.09	29.13	-0.74	3.08	0.54
MSCI World ex-U.S. (Net)		17.94	-14.29	12.62	7.59	22.49	-14.09	24.21	2.75	-3.04	-4.32
IM International Core Equity (SA+CF) Median		17.27	-16.75	12.44	12.17	23.97	-15.06	29.43	1.74	1.46	-3.43
Strategic Global Advisors Rank		32	51	20	75	66	71	52	77	38	13
Acadian EM Equity II	104,145	21.93	-20.42	7.84	11.67	17.03	-19.04	37.87	13.08	-18.07	1.60
MSCI EM (net)		9.83	-20.09	-2.54	18.31	18.42	-14.57	37.28	11.19	-14.92	-2.19
IM Emerging Markets Equity (SA+CF) Median		12.87	-19.69	0.94	18.29	20.15	-15.20	36.95	10.07	-12.06	0.12
Acadian EM Equity II Rank		22	57	27	77	70	84	43	30	92	38

Net of Fees.

City of Memphis

Comparative Performance

As of June 30, 2024

	Market Value (\$000)	Performance (%)									
		2023	2022	2021	2020	2019	2018	2017	2016	2015	2014
J.P. Morgan Global Emerging Markets Discovery Fund	87,593	7.56	-28.67	-3.87	33.64	29.38	-15.74	45.78	N/A	N/A	N/A
MSCI EM (net)		9.83	-20.09	-2.54	18.31	18.42	-14.57	37.28	11.19	-14.92	-2.19
IM Emerging Markets Equity (SA+CF) Median		12.87	-19.69	0.94	18.29	20.15	-15.20	36.95	10.07	-12.06	0.12
J.P. Morgan Global Emerging Markets Discovery Fund Rank		79	91	72	16	14	57	13	N/A	N/A	N/A
Fixed Income Composite	624,988	6.96	-11.98	-0.70	9.17	9.51	-1.28	6.58	4.83	-0.53	4.42
Fixed Income Index		7.08	-13.63	-1.25	7.78	9.24	-0.91	5.50	4.83	-0.86	4.89
IM U.S. Fixed Income (SA+CF) Median		6.33	-9.19	0.01	6.94	8.72	0.47	4.16	3.60	0.75	4.41
Fixed Income Composite Rank		41	65	69	27	39	77	27	40	74	50
Mackay Shields	135,215	12.40	-7.36	5.77	5.87	13.72	-0.96	7.27	17.20	-1.13	2.09
Credit Suisse High Yield Index		13.55	-10.55	5.50	5.48	14.00	-2.37	7.03	18.26	-4.93	1.86
IM U.S. High Yield Bonds (SA+CF) Median		12.61	-9.37	5.31	6.58	14.25	-1.64	7.50	14.07	-2.04	2.61
Mackay Shields Rank		55	25	39	66	56	35	55	17	34	62
PIMCO	97,554	6.15	-12.74	-0.80	8.36	8.73	0.49	5.14	3.24	-0.15	4.15
Blmbg. U.S. Aggregate		5.53	-13.01	-1.55	7.51	8.72	0.01	3.54	2.65	0.55	5.97
IM U.S. Broad Market Core Fixed Income (SA+CF) Median		5.99	-12.95	-1.24	8.34	9.17	0.06	3.99	3.07	0.81	6.13
PIMCO Rank		43	38	33	50	77	17	7	45	97	98
Prudential Core Conserv Bond	93,066	6.04	-13.06	-1.65	7.59	8.66	-0.21	3.56	2.75	0.73	6.09
Blmbg. U.S. Aggregate		5.53	-13.01	-1.55	7.51	8.72	0.01	3.54	2.65	0.55	5.97
IM U.S. Broad Market Core Fixed Income (SA+CF) Median		5.99	-12.95	-1.24	8.34	9.17	0.06	3.99	3.07	0.81	6.13
Prudential Core Conserv Bond Rank		50	61	83	81	82	81	81	66	59	55
Brandywine	191,532	5.29	-13.77	-3.86	11.57	7.74	-3.10	10.67	0.67	N/A	N/A
Blmbg. Global Aggregate		5.72	-16.25	-4.71	9.20	6.84	-1.19	7.39	2.09	-3.15	0.59
FTSE World Government Bond Index		5.18	-18.26	-6.97	10.11	5.90	-0.84	7.49	1.60	-3.57	-0.48
IM Global Fixed Income (SA+CF) Median		9.04	-12.16	0.52	8.39	9.75	-1.76	7.76	6.19	-2.35	2.61
Brandywine Rank		85	61	78	22	80	71	16	93	N/A	N/A

Net of Fees.

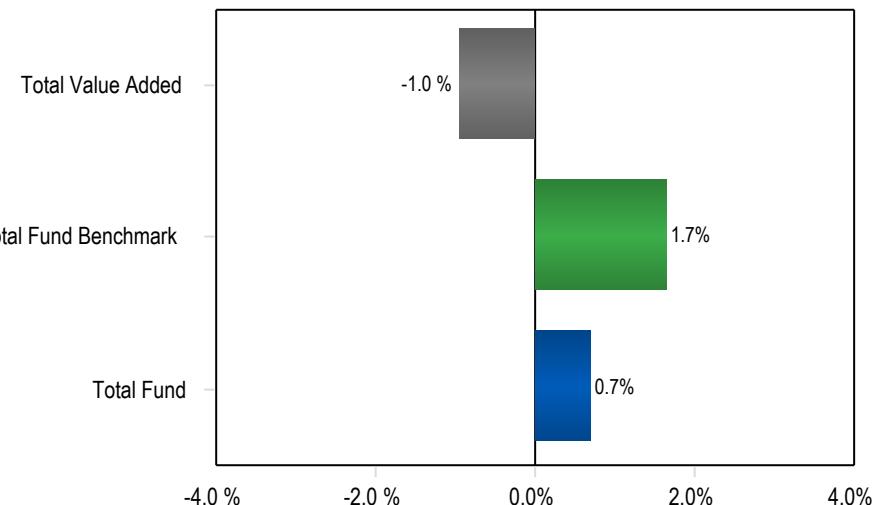
City of Memphis

Comparative Performance

As of June 30, 2024

	Market Value (\$000)	Performance (%)									
		2023	2022	2021	2020	2019	2018	2017	2016	2015	2014
Hedge Fund Composite	104,607	8.10	-3.41	7.59	11.20	7.95	-1.55	6.72	N/A	N/A	N/A
90-Day T-Bill+ 5%		10.27	6.53	5.05	5.70	7.39	6.97	5.90	5.27	5.03	5.04
HFRI FOF: Conservative Index		5.48	0.08	7.62	6.47	6.30	-0.87	4.12	1.89	0.37	3.14
Grosvenor Institutional Partners, L.P.	53,354	8.11	-5.86	7.78	17.17	6.06	-1.49	6.14	N/A	N/A	N/A
90-Day T-Bill+ 5%		10.27	6.53	5.05	5.70	7.39	6.97	5.90	5.27	5.03	5.04
HFRI FOF: Conservative Index		5.48	0.08	7.62	6.47	6.30	-0.87	4.12	1.89	0.37	3.14
Aetos	51,253	8.27	-0.68	6.46	6.99	9.26	-1.61	7.30	N/A	N/A	N/A
90-Day T-Bill + 5%		10.27	6.53	5.05	5.70	7.39	6.97	5.90	5.27	5.03	5.04
HFRI FOF: Conservative Index		5.48	0.08	7.62	6.47	6.30	-0.87	4.12	1.89	0.37	3.14
Total Real Estate Composite	223,110	-16.27	2.12	24.06	1.81	9.01	7.46	6.29	8.20	14.65	20.16
NCREIF Property Index		-7.94	5.51	17.70	1.60	6.42	6.72	6.96	7.97	13.33	11.82
BlackRock US Core Property Fund	58,116	-18.88	8.74	18.65	2.08	5.58	7.20	8.29	10.10	14.38	10.71
NCREIF Property Index		-7.94	5.51	17.70	1.60	6.42	6.72	6.96	7.97	13.33	11.82
RREEF REIT II	16,408	-15.36	7.59	23.79	0.37	5.29	6.98	6.43	8.12	15.63	11.95
NCREIF Property Index		-7.94	5.51	17.70	1.60	6.42	6.72	6.96	7.97	13.33	11.82
Vanguard REIT Index Inv	3,482	13.17	-26.19	40.47	-4.67	28.95	-5.93	4.86	N/A	N/A	N/A
Vanguard REIT Spliced Index		11.96	-26.12	40.56	-4.55	29.03	-5.86	5.07	8.60	2.52	30.38
IM Real Estate Sector (MF) Median		11.91	-26.17	41.32	-4.31	27.32	-5.71	5.32	6.34	2.91	29.47
Vanguard REIT Index Inv Rank		27	51	61	54	34	54	59	N/A	N/A	N/A
TA Realty Core Property Fund	28,625	-8.83	8.84	29.56	5.50	N/A	N/A	N/A	N/A	N/A	N/A
NCREIF ODCE Equal Weighted		-12.01	7.46	22.62	1.57	6.08	8.25	7.80	9.27	15.17	12.38

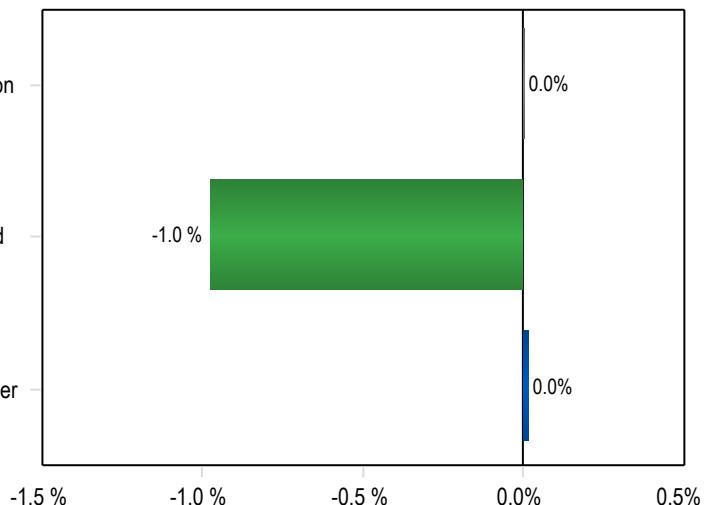
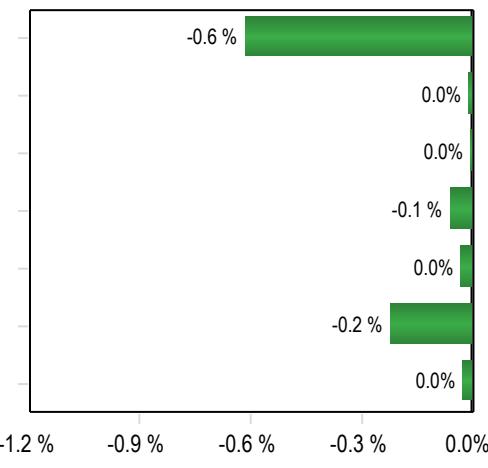
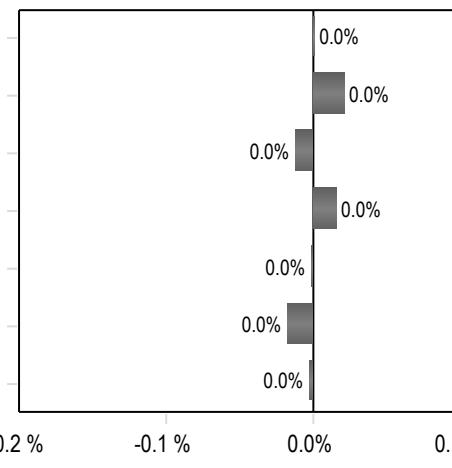
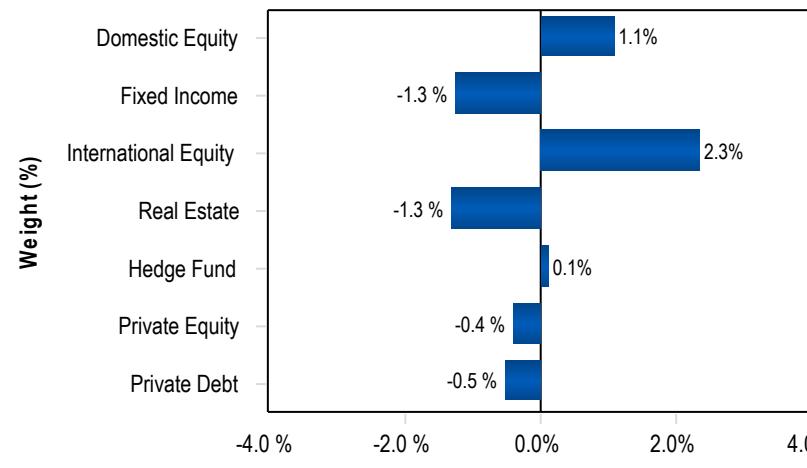
Net of Fees.

Total Fund Performance**Total Value Added:-1.0 %**

Asset Allocation

Manager Value Added

Other

**Total Asset Allocation:0.0%****Total Manager Value Added:-1.0 %**

■ Average Active Weight

■ Asset Allocation Value Added

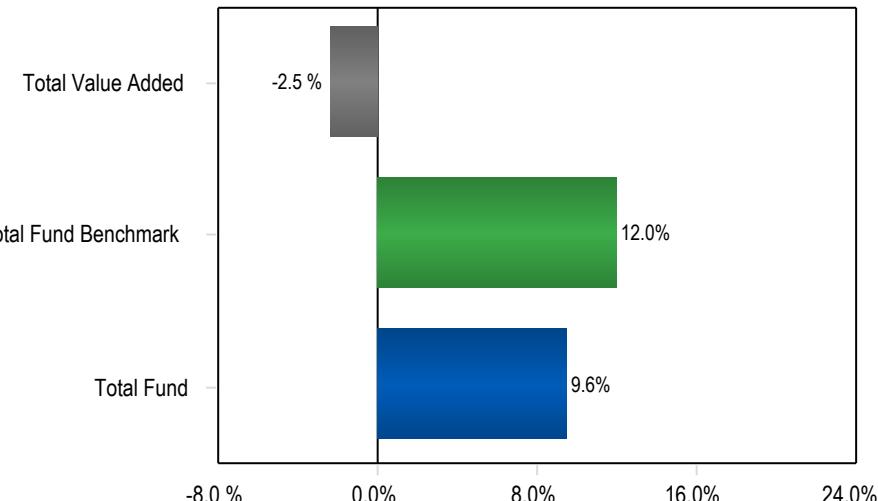
■ Manager Value Added

City of Memphis

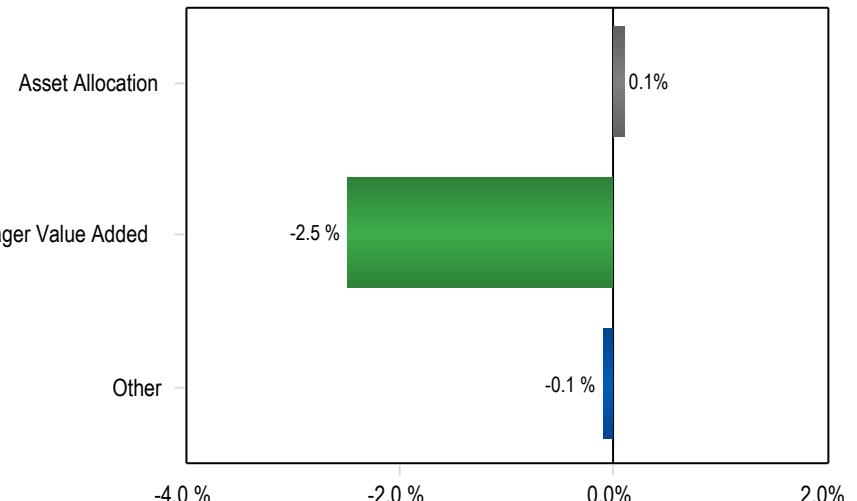
Total Fund Attribution

1 Year Ending June 30, 2024

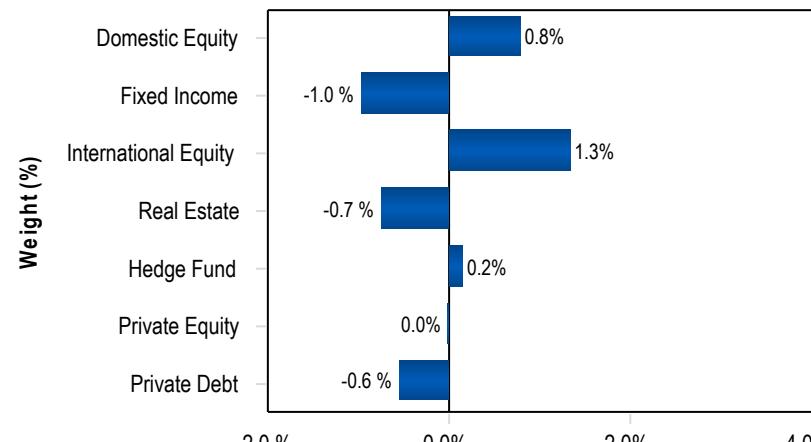
Total Fund Performance



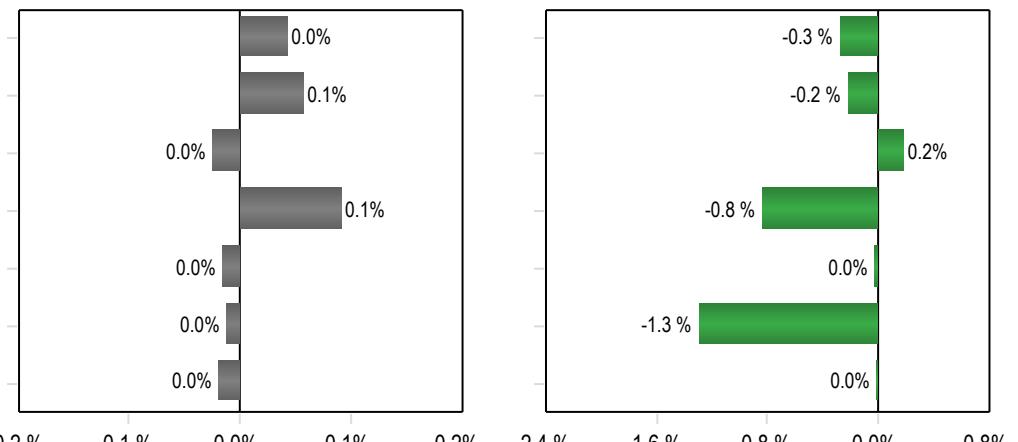
Total Value Added:-2.5 %



Total Asset Allocation:0.1%



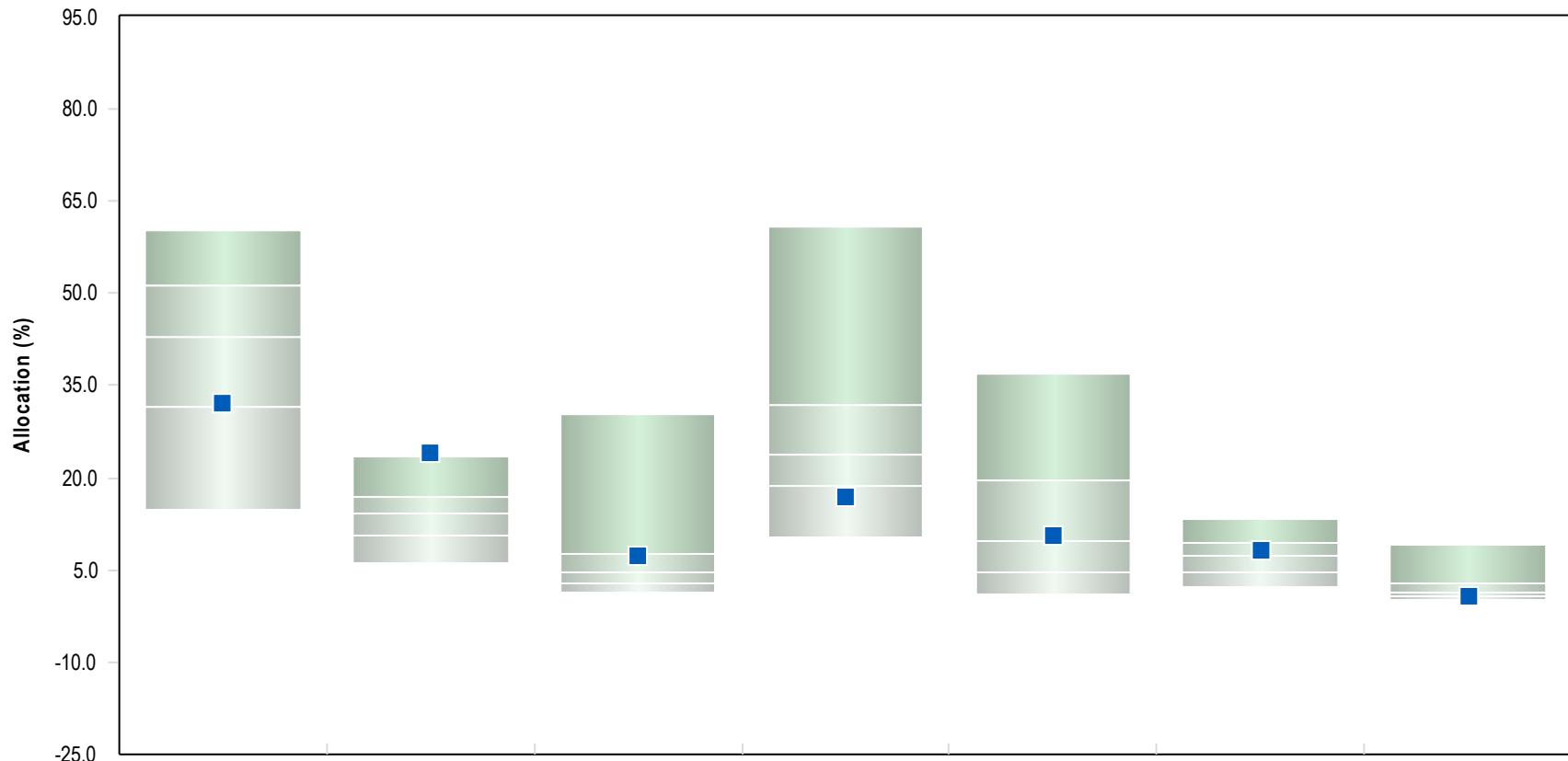
Total Manager Value Added:-2.5 %



■ Average Active Weight

■ Asset Allocation Value Added

■ Manager Value Added



	US Equity	Global ex-US Equity	Global Fixed Income	US Fixed	Alternatives	Total Real Estate	Cash & Equivalents
■ Total Fund Composite	32.2 (75)	24.2 (5)	7.5 (27)	16.9 (82)	10.5 (47)	8.1 (39)	0.7 (76)
5th Percentile	60.4	23.6	30.5	60.9	36.9	13.2	9.1
1st Quartile	51.3	16.9	7.6	31.8	19.7	9.4	2.8
Median	42.9	14.3	4.6	23.7	9.7	7.2	1.4
3rd Quartile	31.4	10.7	2.8	18.6	4.6	4.8	0.7
95th Percentile	14.8	6.2	1.4	10.4	1.1	2.2	0.1
Population	570	529	144	580	316	412	523

(Parentheses contain percentile rankings.)

City of Memphis

All Public Plans-Total Fund

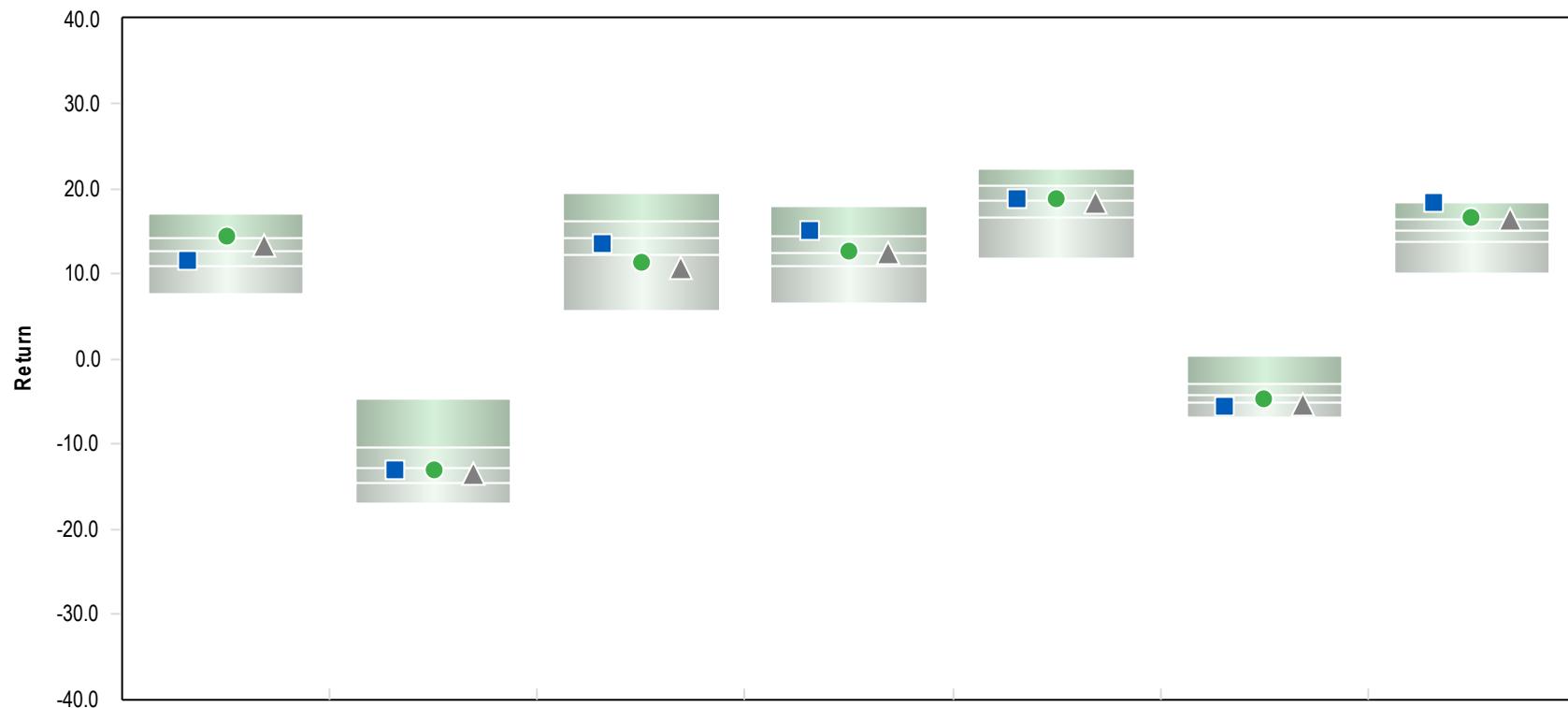
As of June 30, 2024



	1 Qtr	YTD	1 Yr	3 Yrs	5 Yrs	7 Yrs	10 Yrs
■ Total Fund Composite	0.70 (74)	4.96 (69)	9.56 (72)	2.25 (73)	7.24 (60)	7.15 (61)	6.67 (57)
● Policy Index	1.65 (15)	6.26 (34)	12.02 (33)	3.20 (48)	7.15 (62)	7.18 (60)	6.65 (58)
▲ Policy Index2	0.93 (61)	5.37 (58)	10.75 (53)	2.23 (73)	6.48 (79)	6.55 (80)	6.20 (73)

5th Percentile	1.95	7.66	14.28	5.48	9.28	8.80	8.18
1st Quartile	1.48	6.56	12.54	3.97	8.18	8.07	7.34
Median	1.11	5.72	10.86	3.10	7.49	7.47	6.82
3rd Quartile	0.67	4.65	9.25	2.08	6.60	6.74	6.09
95th Percentile	-0.04	2.20	5.79	0.31	4.22	4.63	4.34
Population	428	423	420	402	389	366	341

Parentheses contain percentile rankings.
Calculation based on monthly periodicity.



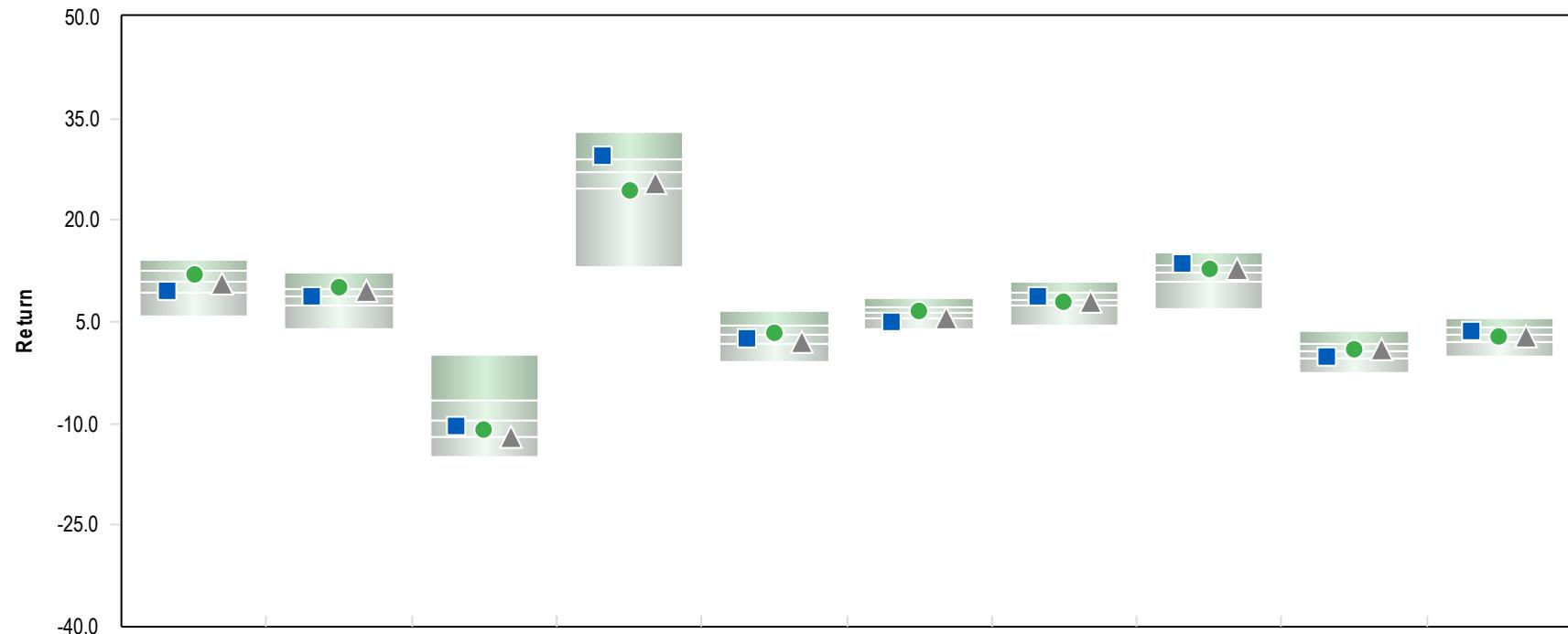
	2023	2022	2021	2020	2019	2018	2017
Total Fund Composite	11.74 (63)	-12.92 (56)	13.57 (60)	15.06 (20)	18.86 (46)	-5.39 (80)	18.36 (6)
Policy Index	14.44 (24)	-12.94 (56)	11.35 (84)	12.73 (46)	18.81 (47)	-4.51 (60)	16.69 (20)
Policy Index2	13.42 (39)	-13.32 (61)	10.73 (89)	12.60 (48)	18.46 (54)	-5.36 (79)	16.39 (26)
5th Percentile	17.04	-4.65	19.52	17.95	22.45	0.41	18.55
1st Quartile	14.31	-10.41	16.16	14.49	20.33	-2.90	16.43
Median	12.68	-12.66	14.18	12.47	18.63	-4.08	15.16
3rd Quartile	10.96	-14.53	12.40	10.92	16.68	-5.13	13.88
95th Percentile	7.80	-16.91	5.81	6.65	11.80	-6.86	10.02
Population	734	790	865	926	950	831	830

Parentheses contain percentile rankings.
Calculation based on monthly periodicity.

City of Memphis

All Public Plans-Total Fund

As of June 30, 2024

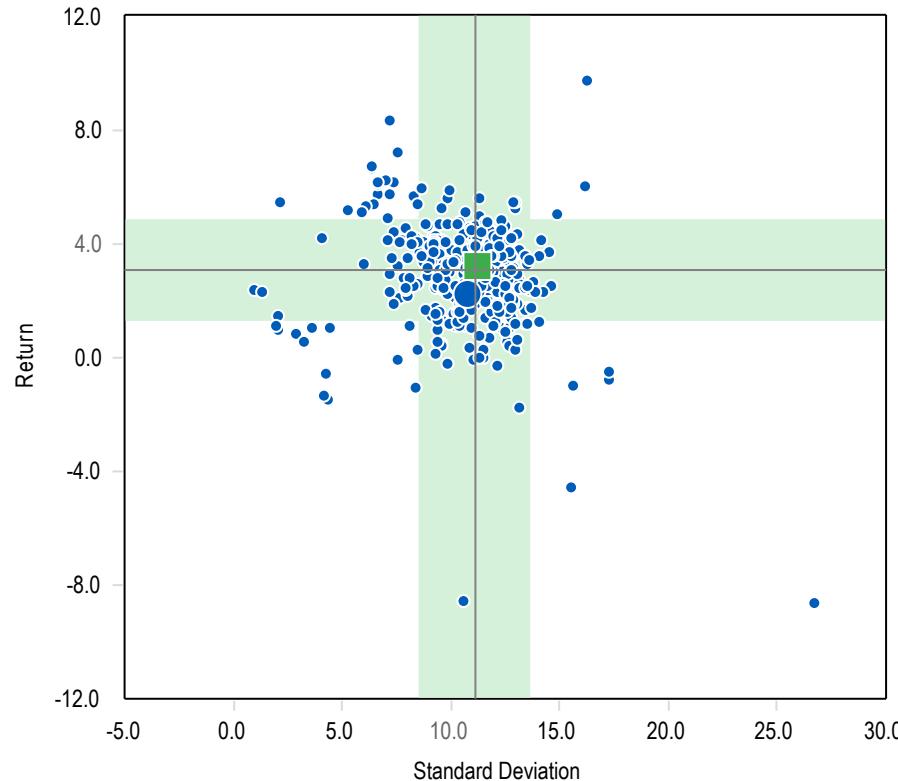


	Jul-2023 To Jun-2024	Jul-2022 To Jun-2023	Jul-2021 To Jun-2022	Jul-2020 To Jun-2021	Jul-2019 To Jun-2020	Jul-2018 To Jun-2019	Jul-2017 To Jun-2018	Jul-2016 To Jun-2017	Jul-2015 To Jun-2016	Jul-2014 To Jun-2015
■ Total Fund Composite	9.56 (72)	8.77 (52)	-10.31 (57)	29.46 (21)	2.48 (59)	5.10 (82)	8.78 (35)	13.55 (22)	-0.10 (69)	3.72 (35)
● Policy Index	12.02 (33)	10.15 (22)	-10.93 (65)	24.40 (77)	3.33 (45)	6.55 (44)	7.91 (58)	12.89 (34)	1.02 (42)	2.78 (62)
▲ Policy Index2	10.75 (53)	9.63 (32)	-12.00 (77)	25.44 (66)	2.10 (68)	5.61 (74)	7.85 (60)	12.77 (37)	1.02 (42)	2.78 (62)
5th Percentile	14.28	12.34	0.11	32.89	6.67	8.51	10.92	15.26	3.60	5.45
1st Quartile	12.54	9.93	-6.69	28.94	4.42	7.19	9.25	13.35	1.74	4.07
Median	10.86	8.81	-9.57	26.97	3.01	6.36	8.19	12.19	0.75	3.20
3rd Quartile	9.25	7.32	-11.88	24.58	1.66	5.54	7.32	10.82	-0.46	2.09
95th Percentile	5.79	3.92	-14.83	13.01	-0.88	3.94	4.34	6.91	-2.57	-0.08
Population	420	754	797	894	944	764	605	631	637	579

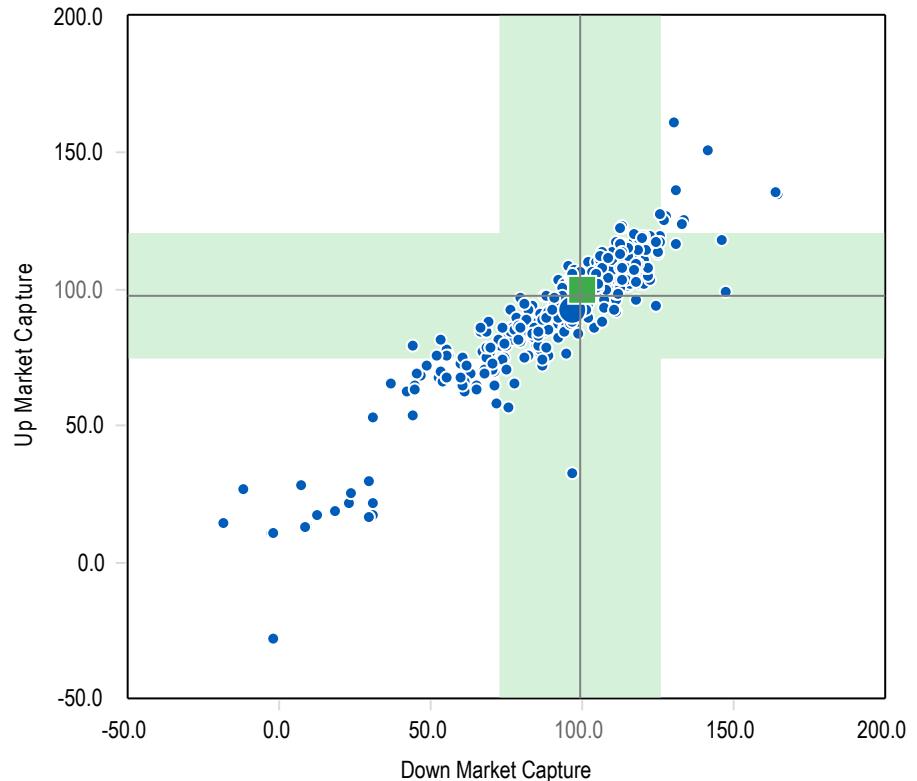
Parentheses contain percentile rankings.

Calculation based on monthly periodicity.

3 Years Annualized Return vs. Annualized Standard Deviation



3 Years Upside Capture Ratio vs. Downside Capture Ratio

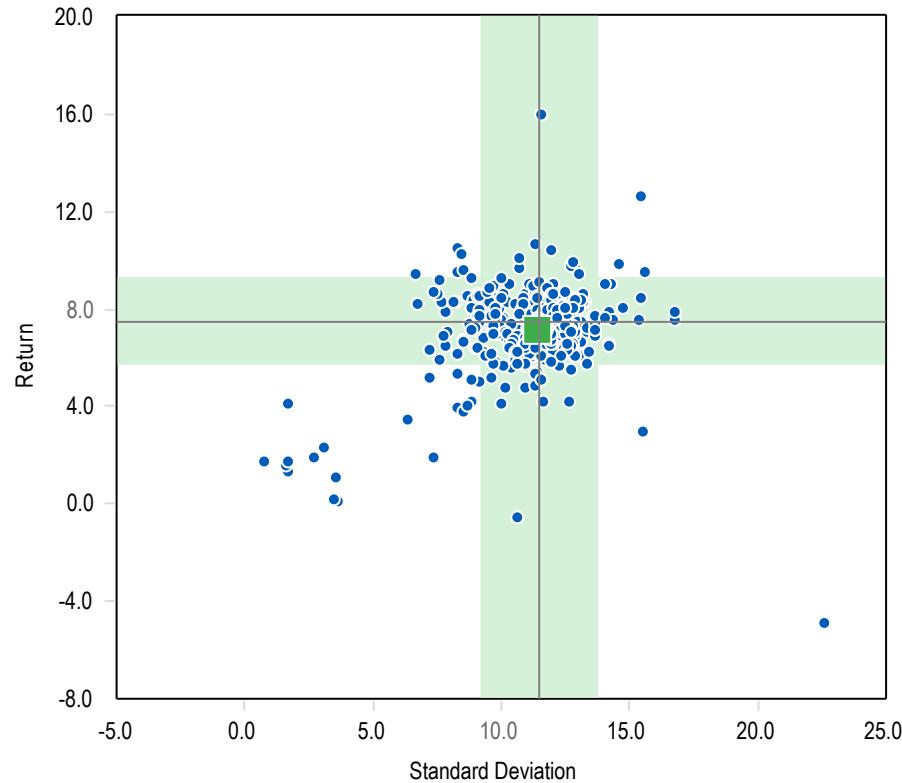


	Return	Standard Deviation
Total Fund Composite	2.2	10.8
Policy Index	3.2	11.3
Median	3.1	11.1
Population	402	402

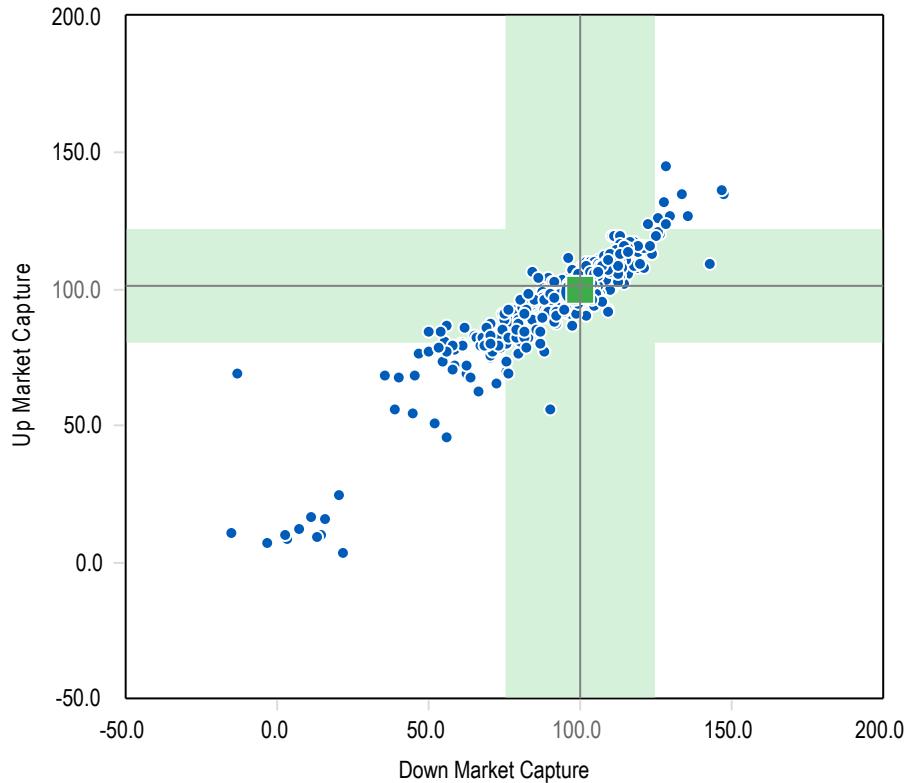
	Up Market Capture	Down Market Capture
Total Fund Composite	92.3	96.9
Policy Index	100.0	100.0
Median	97.9	99.6
Population	402	402

The shaded area is one sigma range from the median.

5 Years Annualized Return vs. Annualized Standard Deviation



5 Years Upside Capture Ratio vs. Downside Capture Ratio



The shaded area is one sigma range from the median.

City of Memphis

Policy Index

As of June 30, 2024

Policy Index	Weight (%)	Policy Index	Weight (%)
Jan-1979		Apr-2011	
Russell 3000 Index	45.0	S&P 500	26.0
Bloomberg U.S. Aggregate	40.0	Russell Midcap Index	4.0
MSCI EAFE (Net)	10.0	Russell 2000 Index	4.0
Wilshire REOC	5.0	MSCI EAFE (Net)	17.0
Apr-1997		MSCI Emerging Markets Index	5.0
Russell 3000 Index	40.0	Bloomberg U.S. Aggregate	29.0
Bloomberg U.S. Aggregate	40.0	Credit Suisse High Yield	10.0
MSCI EAFE (Net)	15.0	NCREIF ODCE Equal Weighted	5.0
Wilshire REOC	5.0	Sep-2016	
Oct-1999		Russell 3000 Index	27.0
Russell 3000 Index	40.0	MSCI EAFE (Net)	18.5
Bloomberg U.S. Aggregate	40.0	MSCI EM (net)	8.5
MSCI AC World ex USA	15.0	Bloomberg U.S. Aggregate	12.0
Wilshire REOC	5.0	NCREIF Property Index	10.0
Jul-2001		Bloomberg Global Aggregate	10.0
Russell 3000 Index	40.0	S&P 500 + 3%	4.0
Bloomberg U.S. Aggregate	40.0	T Bills + 5%	4.0
MSCI AC World ex USA	15.0	Credit Suisse High Yield Index	6.0
NCREIF Property Index	5.0	Dec-2021	
Apr-2007		Russell 3000 Index	32.0
Russell 3000 Index	35.0	MSCI EAFE (Net)	15.0
Bloomberg U.S. Aggregate	40.0	MSCI EM (net)	7.0
MSCI AC World ex USA	20.0	Bloomberg U.S. Aggregate	13.0
NCREIF Property Index	5.0	NCREIF Property Index	10.0
		Bloomberg Global Aggregate	8.0
		S&P 500 + 3%	4.0
		T Bills + 5%	4.0
		Credit Suisse High Yield Index	5.0
		Morningstar LSTA US Leveraged Loan	2.0

**City of Memphis
Policy Index**

As of June 30, 2024

Policy Index	Weight (%)
Jan-2023	
Russell 3000 Index	31.0
MSCI EAFE (Net)	15.0
MSCI EM (net)	7.0
Bloomberg U.S. Aggregate	13.0
NCREIF Property Index	10.0
Bloomberg Global Aggregate	8.0
S&P 500 + 3%	5.0
T Bills + 5%	4.0
Credit Suisse High Yield Index	5.0
Morningstar LSTA US Leveraged Loan	2.0

**City of Memphis
Policy Index2**

As of June 30, 2024

Policy Index	Weight (%)	Policy Index	Weight (%)
Jan-1979		Apr-2011	
Russell 3000 Index	45.0	S&P 500	26.0
Bloomberg U.S. Aggregate	40.0	Russell Midcap Index	4.0
MSCI EAFE (Net)	10.0	Russell 2000 Index	4.0
Wilshire REOC	5.0	MSCI EAFE (Net)	17.0
Apr-1997		MSCI Emerging Markets Index	5.0
Russell 3000 Index	40.0	Bloomberg U.S. Aggregate	29.0
Bloomberg U.S. Aggregate	40.0	Credit Suisse High Yield	10.0
MSCI EAFE (Net)	15.0	NCREIF ODCE Equal Weighted	5.0
Wilshire REOC	5.0	Sep-2016	
Oct-1999		Domestic Equity Index	27.0
Russell 3000 Index	40.0	MSCI EAFE (Net)	18.5
Bloomberg U.S. Aggregate	40.0	MSCI EM (net)	8.5
MSCI AC World ex USA	15.0	Bloomberg U.S. Aggregate	12.0
Wilshire REOC	5.0	NCREIF Property Index	10.0
Jul-2001		Bloomberg Global Aggregate	10.0
Russell 3000 Index	40.0	S&P 500	4.0
Bloomberg U.S. Aggregate	40.0	HFRI Fund of Funds Composite Index	4.0
MSCI AC World ex USA	15.0	Credit Suisse High Yield Index	6.0
NCREIF Property Index	5.0	Dec-2021	
Apr-2007		Domestic Equity Index	32.0
Russell 3000 Index	35.0	MSCI EAFE (Net)	15.0
Bloomberg U.S. Aggregate	40.0	MSCI EM (net)	7.0
MSCI AC World ex USA	20.0	Bloomberg U.S. Aggregate	13.0
NCREIF Property Index	5.0	NCREIF Property Index	10.0
		Bloomberg Global Aggregate	8.0
		S&P 500	4.0
		HFRI Fund of Funds Composite Index	4.0
		Credit Suisse High Yield Index	5.0
		Morningstar LSTA US Leveraged Loan	2.0

**City of Memphis
Policy Index2**

As of June 30, 2024

Policy Index	Weight (%)
Jan-2023	
Domestic Equity Index	31.0
MSCI EAFE (Net)	15.0
MSCI EM (net)	7.0
Bloomberg U.S. Aggregate	13.0
NCREIF Property Index	10.0
Bloomberg Global Aggregate	8.0
S&P 500	5.0
HFRI Fund of Funds Composite Index	4.0
Credit Suisse High Yield Index	5.0
Morningstar LSTA US Leveraged Loan	2.0

**City of Memphis
International Equity Index**

As of June 30, 2024

Policy Index	Weight (%)
Jan-1970	
MSCI AC World ex USA	100.0
Apr-2011	
MSCI EAFE (Net)	77.0
MSCI Emerging Markets Index	23.0
Sep-2016	
MSCI EAFE (Net)	69.0
MSCI EM (net)	31.0
Dec-2021	
MSCI EAFE (Net)	68.0
MSCI EM (net)	32.0

City of Memphis

Fixed Income Index

As of June 30, 2024

Policy Index	Weight (%)	Policy Index	Weight (%)
Jan-1976		Jan-2021	
Blmbg. U.S. Aggregate	100.0	Blmbg. U.S. Aggregate	43.0
Apr-2011		Credit Suisse High Yield Index	21.0
Blmbg. U.S. Aggregate	74.0	Blmbg. Global Aggregate	36.0
Credit Suisse High Yield	26.0		
Sep-2016		Jan-2023	
Blmbg. U.S. Aggregate	43.0	Blmbg. U.S. Aggregate	50.0
Credit Suisse High Yield	21.0	Credit Suisse High Yield Index	19.0
Blmbg. Global Aggregate	36.0	Blmbg. Global Aggregate	31.0
Jan-2017			
Blmbg. U.S. Aggregate	47.0		
Credit Suisse High Yield	22.0		
Blmbg. Global Aggregate	31.0		
Jan-2018			
Blmbg. U.S. Aggregate	43.0		
Credit Suisse High Yield	22.5		
Blmbg. Global Aggregate	34.5		
Jan-2019			
Blmbg. U.S. Aggregate	43.5		
Credit Suisse High Yield	22.0		
Blmbg. Global Aggregate	34.5		
Jan-2020			
Blmbg. U.S. Aggregate	44.0		
Credit Suisse High Yield Index	23.0		
Blmbg. Global Aggregate	33.0		

City of Memphis

Schedule of Investable Assets

Since Inception Ending June 30, 2024

Periods Ending	Beginning Market Value (\$)	Net Cash Flow (\$)	Gain/Loss (\$)	Ending Market Value (\$)	%Return
From 06/1996	1,291,734,891	-14,742,714	101,140,788	1,378,132,965	7.9
1997	1,378,132,965	-34,096,344	234,250,900	1,578,287,521	17.2
1998	1,578,287,521	-42,268,539	240,063,429	1,776,082,411	15.4
1999	1,776,082,411	-47,808,437	240,291,082	1,968,565,056	13.2
2000	1,968,565,056	-64,387,008	7,639,956	1,911,818,004	0.4
2001	1,911,818,004	-77,481,199	-14,124,868	1,820,211,937	-0.7
2002	1,820,211,937	-81,528,582	-150,191,752	1,588,491,603	-8.4
2003	1,588,491,603	-75,424,638	350,796,286	1,863,863,251	22.6
2004	1,863,863,251	-79,808,593	216,220,232	2,000,274,890	11.9
2005	2,000,274,890	-90,832,853	173,260,464	2,082,702,500	8.5
2006	2,082,702,500	-86,039,647	266,362,298	2,263,025,152	13.6
2007	2,263,025,152	-96,032,638	180,996,824	2,347,989,338	8.3
2008	2,347,989,338	-105,220,477	-662,432,769	1,580,336,092	-28.9
2009	1,580,336,092	-102,169,783	337,471,803	1,815,638,112	22.2
2010	1,815,638,112	-107,265,723	244,019,890	1,952,392,279	14.0
2011	1,952,392,279	-113,653,688	14,703,206	1,853,441,798	0.7
2012	1,853,441,798	-64,856,098	206,277,288	1,994,862,988	13.7
2013	1,994,862,988	-135,949,680	344,705,536	2,203,618,845	17.7
2014	2,203,618,845	-133,361,482	120,224,286	2,190,481,650	5.5
2015	2,190,481,650	-122,787,070	9,420,065	2,077,114,644	0.2
2016	2,077,114,644	-90,342,269	135,585,599	2,122,357,975	6.8
2017	2,122,357,975	-117,949,337	385,214,135	2,389,622,772	18.4
2018	2,389,622,772	-134,023,080	-122,005,142	2,133,594,551	-5.4
2019	2,133,594,551	-109,150,662	398,812,740	2,423,256,628	18.9
2020	2,423,256,628	-136,045,892	343,923,054	2,631,133,790	15.1
2021	2,631,133,790	-96,972,374	343,958,578	2,878,119,994	13.6
2022	2,878,119,994	-155,042,272	-349,373,506	2,373,704,216	-12.9
2023	2,373,704,216	-124,144,634	270,458,779	2,520,018,360	11.7
To 06/2024	2,520,018,360	-75,878,137	123,334,654	2,567,474,876	5.0

Gain/Loss includes income received and change in accrued income for the period.

Appendix

City of Memphis Retirement System

Comparative Performance

As of June 30, 2024

	1 Quarter	Year To Date	1 Year	3 Years	5 Years	Since Inception	Inception Date
Barrow, Hanley	-0.7	10.1	20.0	8.5	11.9	12.8	10/01/1982
Russell 1000 Value + 75 bps	-2.0	7.0	13.9	6.3	9.8	12.3	10/01/1982
1607 Capital Partners	1.5	4.2	9.9	-0.1	6.8	6.0	07/01/2008
MSCI EAFE Net + 400 bps	0.6	7.4	16.0	7.0	10.7	8.0	07/01/2008
Marathon Asset Mgmt	-1.3	5.2	10.8	2.1	7.0	7.9	04/01/2004
MSCI ACWI ex. US + 200 bps	1.7	7.1	14.4	3.0	8.2	8.3	04/01/2004
Principal Global Investors	-0.5	7.1	11.1	0.8	7.4	3.8	07/01/2007
MSCI EAFE Net + 240 bps	0.2	6.6	14.2	5.4	9.0	5.4	07/01/2007
PIMCO	0.3	0.0	3.6	-2.2	0.7	3.3	04/01/2009
BC Aggregate + 75 bps	0.3	-0.3	3.4	-2.3	0.5	3.3	04/01/2009

Returns for periods greater than one year are annualized.

Returns are expressed as percentages.

**City of Memphis
Manager Roster
As of June 30, 2024**

Manager	Date	Assets Under Management	Assignment	Benchmark	Stated Style	Fee Structure	Estimated Annual Fee (\$)	Estimated Annual Fee (bps)	Universe Median Fee (bps)
Barrow Hanley	6/30/2024	\$169,373,393	Equity Only	Russell 1000 Value	Large Cap Value	75 bps on first \$10.0M, 50 bps on next \$15.0M, 25 bps on next \$175M, 20 bps on next \$600M, 15 bps over \$800M	\$510,933	0.30%	0.54%
Rhumbline Russell 1000 Growth Index	6/30/2024	\$90,974,655	Equity Only	Russell 1000 Growth	Large Cap Growth	3 bps on first \$100.0M, 2 bps on next \$200.0M (Assets of Rhumbline S&P 500 combined with Rhumbline Russell 1000 Growth Index for pricing)	\$20,828	0.02%	0.55%
Winslow Capital	6/30/2024	\$93,200,738	Equity Only	Russell 1000 Growth	Large Cap Growth	60 bps for the first \$50M, 55 bps next \$50M, and 50 bps next \$150M	\$537,604	0.58%	0.55%
Rhumbline S&P 500 Index	6/30/2024	\$225,759,046	Equity Only	S&P 500	Large Cap Core	3 bps on first \$100.0M, 2 bps on next \$200.0M (Assets of Rhumbline S&P 500 combined with Rhumbline Russell 1000 Growth Index for pricing)	\$51,684	0.02%	N/A
Northern Trust	6/30/2024	\$56,342,520	Equity Only	S&P 400	Mid Cap Core	5 bps on first \$50.0M, 4 bps thereafter	\$27,537	0.05%	N/A
Capital Prospects SMID	6/30/2024	\$62,705,079	Equity Only	Russell 2500 Index	SMID Cap	75 bps on all assets	\$470,288	0.75%	0.85%
Capital Prospects SCV	6/30/2024	\$71,754,143	Equity Only	Russell 2000 Value	Small Cap Value	100 bps on first \$5.0M, 85 bps on next \$5.0M, 60 bps on the balance	\$538,156	0.75%	0.90%
Nicholas Investment Partners	6/30/2024	\$29,703,008	Equity Only	Russell 2000 Growth	Small Cap Growth	100 bps on all assets	\$297,030	1.00%	0.91%
Conestoga Small Cap Growth	6/30/2024	\$26,013,384	Equity Only	Russell 2000 Growth	Small Cap Growth	90 bps on first \$10.0M, 80 bps on next \$15.0M, 65 bps thereafter	\$216,587	0.83%	0.91%
I607 Capital Partners	6/30/2024	\$108,715,016	Int'l Equity	MSCI EAFE	Int'l Equity	70 bps on all assets	\$761,005	0.70%	0.60%
Channing Int'l Developed	6/30/2024	\$14,619,020	Int'l Equity	MSCI EAFE	Int'l Equity	75 bps on first \$10M 60 bps on next \$40M 54 bps thereafter	\$102,714	0.70%	0.60%
Frontier International	6/30/2024	\$14,921,681	Int'l Equity	MSCI ACWI ex US	Int'l Equity	65 bps on first \$25M 60 bps on next \$25M 55 bps on next \$50M 50 bps thereafter	\$96,991	0.65%	0.60%
Principal Global Investors	6/30/2024	\$109,662,213	Int'l Equity	MSCI World ex US Growth	Int'l Equity	60 bps on first \$50.0M, 55 bps on next \$50.0M, \$50 bps over \$100.0M	\$628,142	0.57%	0.66%
Marathon Asset Management	6/30/2024	\$107,202,219	Int'l Equity	MSCI ACWI ex US	Int'l Equity	95 bps on the first \$25.0M, 75 bps on next \$25.0M, and 52.5 bps thereafter	\$725,312	0.68%	0.60%
Strategic Global Advisors	6/30/2024	\$74,059,468	Int'l Equity	MSCI ACWI ex US	Int'l All Cap	100 bps on first \$5.0M, 70 bps on next \$50.0M, 65 bps on the next \$50.0M, and 50 bps on the remaining balance	\$533,416	0.72%	0.66%
Acadian	6/30/2024	\$104,145,323	Emerging Markets	MSCI EM	Emerging Markets	75 basis points on the first \$50 million and 65 basis points thereafter	\$726,945	0.70%	0.85%
JPMorgan	6/30/2024	\$87,593,314	Emerging Markets	MSCI EM	Emerging Markets	80 bps on first \$100.0M, 75 bps on balance	\$700,747	0.80%	0.85%

**City of Memphis
Manager Roster
As of June 30, 2024**

Manager	Date	Assets Under Management	Assignment	Benchmark	Stated Style	Fee Structure	Estimated Annual Fee (\$)	Estimated Annual Fee (bps)	Universe Median Fee (bps)
Barrow Hanley	6/30/2024	\$32,699,170	Fixed Income	Barclays US Aggregate	Fixed Income	30 bps on first \$50M	\$82,836	0.25%	0.25%
Garcia Hamilton	6/30/2024	\$74,920,712	Fixed Income	Barclays US Aggregate	Fixed Income	20 bps on first \$50.0M, 16 bps on next \$50.0M, 14 bps thereafter	\$139,873	0.19%	0.25%
PIMCO	6/30/2024	\$97,554,494	Fixed Income	Barclays US Aggregate	Fixed Income	50 bps on first \$25.0M, 37.5 bps on next \$25.0M, 25 bps over \$50.0M: Separate Account min \$75M	\$337,636	0.35%	0.25%
Prudential	6/30/2024	\$93,066,310	Fixed Income	Barclays US Aggregate	Fixed Income	12 bps on first \$100.0M, 7 bps on next \$100.0M, 5 bps thereafter	\$115,146	0.12%	0.25%
Brandywine	6/30/2024	\$191,532,016	Global FI	Barclays Global Aggregate	Global Fixed Income	37 bps on the first \$220.0M; 35 bps thereafter	\$714,362	0.37%	0.35%
Mackay Shields	6/30/2024	\$135,215,433	High Yield FI	Credit Suisse HY	High Yield Fixed Income	50 bps on first \$100.0M, 40 bps over \$100.0M	\$640,862	0.47%	0.48%
BlackRock US Core Property	6/30/2024	\$58,115,793	Real Estate	NCREIF Property Index	Real Estate	66 bps on net capital contributions, 14 bps on reinvested amounts	\$460,731	0.79%	0.75% - 1.50%
RREEF II	6/30/2024	\$16,407,740	Real Estate	NCREIF Property Index	Real Estate	50-55 bps on net asset value + performance fee	\$155,917	0.95%	0.75% - 1.50%
Vanguard REIT Index	6/30/2024	\$3,482,119	Real Estate	Wilshire US REIT	Real Estate	10 bps on all assets	\$3,482	0.10%	N/A
TA Realty Core Property Fund	6/30/2024	\$28,624,728	Real Estate	NCREIF Property Index	Real Estate	70 bps on all assets	\$200,373	0.70%	0.75% - 1.50%
Cornerstone (Barings) Real Estate Fund X	3/31/2024	\$19,802	Real Estate	NCREIF Property Index	Real Estate	1.5% of equity investment	-	0.97%	1.00% - 1.50%
Dune Real Estate Fund IV	3/31/2024	\$28,878,632	Real Estate	NCREIF Property Index	Real Estate	1.5% on committed capital until end of investment period, 1.5% on called capital thereafter	\$450,000	1.50%	1.00 - 1.50%

**City of Memphis
Manager Roster
As of June 30, 2024**

Manager	Date	Assets Under Management	Assignment	Benchmark	Stated Style	Fee Structure	Estimated Annual Fee (\$)	Estimated Annual Fee (bps)	Universe Median Fee (bps)
Green Cities III	3/31/2024	\$5,001,653	Real Estate	NCREIF Property Index	Real Estate	1.5% on committed capital until end of investment period, 1.5% of unreturned capital contributions	\$24,023	0.12%	1.00% - 1.50%
Green Cities IV	3/31/2024	\$12,866,640	Real Estate	NCREIF Property Index	Real Estate	1.5% on committed capital until end of investment period, 1.5% of unreturned capital contributions	\$300,000	1.50%	1.00% - 1.50%
Green Cities V	3/31/2024	\$15,275	Real Estate	NCREIF Property Index	Real Estate	1.5% on committed capital until end of investment period, 1.5% of unreturned capital contributions	\$300,000	1.50%	1.00% - 1.50%
Long Wharf RE Partners IV	6/30/2024	\$86,304	Real Estate	NCREIF Property Index	Real Estate	1.0% of unfunded capital commitments and 1.5% of funded capital commitments during investment period; thereafter 1.5% of contributed capital less capital attributed to investments that have been sold	N/A	N/A	1.00% - 1.50%
Long Wharf RE Partners V	6/30/2024	\$10,018,606	Real Estate	NCREIF Property Index	Real Estate	1.5% of committed capital during investment period; 1.5% of invested capital after investment period	\$142,316	0.71%	1.00% - 1.50%
Long Wharf RE Partners VI	6/30/2024	\$13,372,731	Real Estate	NCREIF Property Index	Real Estate	1.5% of committed capital during investment period; 1.5% of invested capital after investment period	\$189,160	0.95%	1.00% - 1.50%
Long Wharf RE Partners VII	6/30/2024	\$5,470,230	Real Estate	NCREIF Property Index	Real Estate	1.5% of committed capital during investment period; 1.5% of invested capital after investment period	\$300,000	1.50%	1.00% - 1.50%
Mesirow Real Estate Value Fund III	3/31/2024	\$26,060,088	Real Estate	NCREIF Property Index	Real Estate	Commitments < \$25M: 1.5% on invested capital subject to a minimum of 1.1% on committed capital during investment period	\$220,000	1.10%	1.00% - 1.50%
TA Realty Associates Fund XI	3/31/2024	\$145,592	Real Estate	NCREIF Property Index	Real Estate	Years 1-3 on committed capital. Year 1: 0.50%, Year 2: 0.85%, Year 3: 1.15%. Thereafter, based on invested equity. Year 4: 1.20%, Year 5: 1.25%, Year 6: 1.20%, Year 7: 1.00%, and 0.60% thereafter.	\$1,747	1.20%	1.00% - 1.50%
TA Realty Associates Fund XIII	3/31/2024	\$14,544,500	Real Estate	NCREIF Property Index	Real Estate	Years 1-3 on committed capital. Year 1: 0.50%, Year 2: 0.85%, Year 3: 1.15%. Thereafter, based on invested equity: Year 4: 1.20%, Year 5: 1.25%, Year 6: 1.20%, Year 7: 1.00%, and 0.60% thereafter.	\$252,748	0.84%	1.00% - 1.50%
GSAM Black Equity Opportunities Fund	3/31/2024	\$1,624,821	Private Equity	S&P + 3%	Fund of Funds	45 bps average over 12 year life of fund	\$73,500	0.49%	1.00% - 1.50%
NB Crossroads Fund XXI	3/31/2024	\$46,341,935	Private Equity	S&P + 3%	Fund of Funds	Based on committed capital: Year 1: 20bps, Years 2-4: 40bps, Years 5-8: 40 bps, Years 9-10: 5 bps, Years 11-12: 0 bps	\$200,000	0.40%	1.00% - 2.00%
NB Crossroads Fund XXIV	3/31/2024	\$7,705,666	Private Equity	S&P + 3%	Fund of Funds	Based on committed capital: Average Fee Schedule on Commitments \$50M - \$100M	\$200,000	0.40%	1.00% - 2.00%
Pantheon Global Secondary Fund V	3/31/2024	\$23,023,243	Private Equity	S&P + 3%	Secondaries	1% on committed capital during investment period; 90% annual reduction of prior year	\$293,628	0.59%	1.00% - 2.00%
RPS Ventures II	3/31/2024	\$2,716,908	Private Equity	S&P + 3%	Venture Capital	Year 1-5: 2% on committed; Year 6-10: 0.25% annual step down	\$300,000	2.00%	1.00% - 2.00%
SSM Growth Equity Fund II	3/31/2024	\$7,650,796	Private Equity	S&P + 3%	Growth Equity	2.0% on committed capital during investment period	\$200,000	2.00%	1.00% - 2.00%
SSM Growth Equity Fund III	3/31/2024	\$15,559,486	Private Equity	S&P + 3%	Growth Equity	2.0% on committed capital during investment period	\$200,000	2.00%	1.00% - 2.00%
Siguler Guff Small Buyout Opportunities V	3/31/2024	\$9,099,439	Private Equity	S&P + 3%	Fund of Funds	Reduced Fee Schedule: 82 bps on first \$10M of commitment; 69.7 bps on remaining \$10M of commitment.	\$151,700	0.76%	1.00% - 2.00%
Brightwood Capital Fund V	3/31/2024	\$5,271,323	Private Debt	Barclays US Aggregate	Direct Lending	1.5% on equity capital	\$79,070	1.50%	1.00% - 2.00%
Churchill Middle Market Senior Loan Fund III	3/31/2024	\$7,818,646	Private Debt	Barclays US Aggregate	Direct Lending	0.50% on invested capital	\$39,093	0.50%	1.00% - 2.00%
Neuberger Berman Private Debt Fund IV	3/31/2024	\$24,155,363	Private Debt	Barclays US Aggregate	Direct Lending	0.50% on invested capital through June 2022	\$120,777	0.50%	1.00% - 2.00%
Aetos	6/30/2024	\$51,252,719	Hedge Fund	90 Day T Bills + 5%	Hedge Fund of Funds	75 bps plus a 5% performance fee	\$381,713	0.64%	1.00%-2.00%
Grosvenor	6/30/2024	\$53,354,107	Hedge Fund	90 Day T Bills + 5%	Hedge Fund of Funds	115 bps on the first \$25M, 100 bps on next \$25M, 80 bps on next \$50M, 60 bps thereafter	\$571,041	1.07%	1.00%-2.00%
TOTAL		\$2,550,417,239					\$14,787,654	0.58%	

* Estimated Fee reflects actual Q4 2022 fees multiplied by 4 to estimate annual fee. Figure includes base management fee plus/minus performance fee if achieved.
Total Market Value does not include Cash account.