

# City of Memphis Retirement System OPEB Report

## Analysis of Investment Performance

*Quarter Ending June 30, 2024*

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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

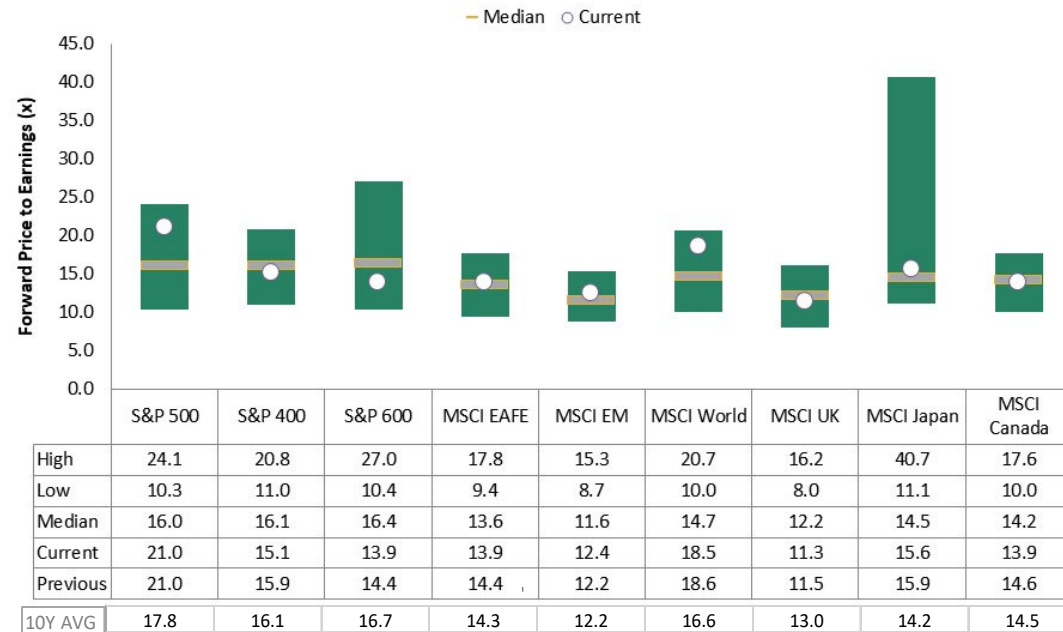
All data in the table are percentages.

\* 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).

## Price to Earnings



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

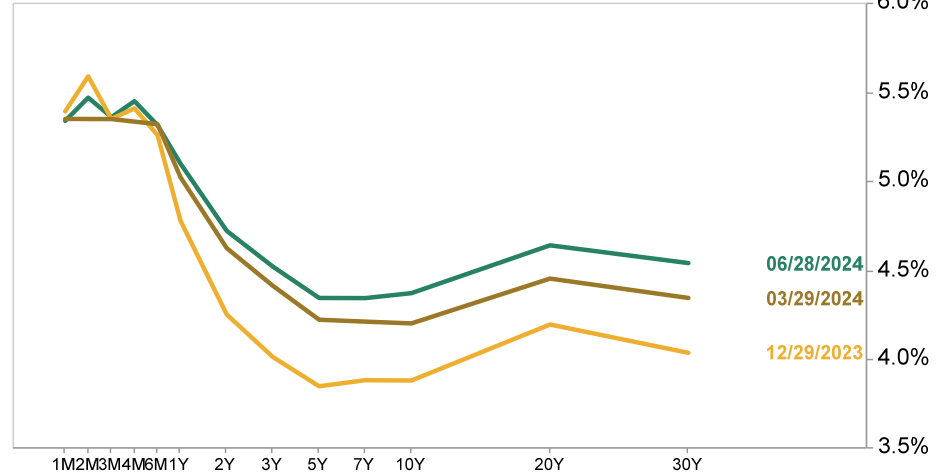


# Quarter In Review: Fixed Income Overview

## 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%.

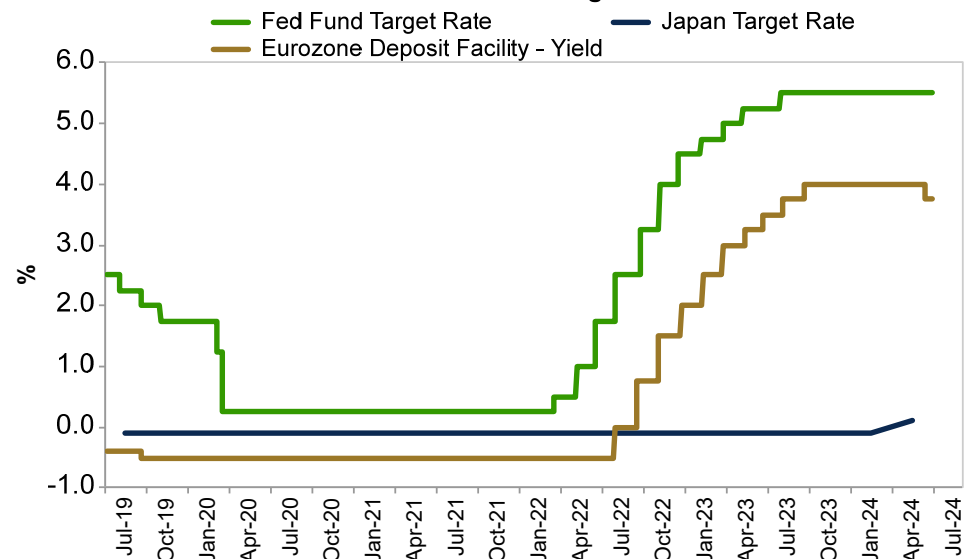
United States Treasury Yield Curve



## 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%.

Central Bank Target Rates



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

# 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
Hueller Stable Value	0.74	1.48	2.98	2.35	2.30	2.14

\* Bloomberg Indices, unless otherwise noted.

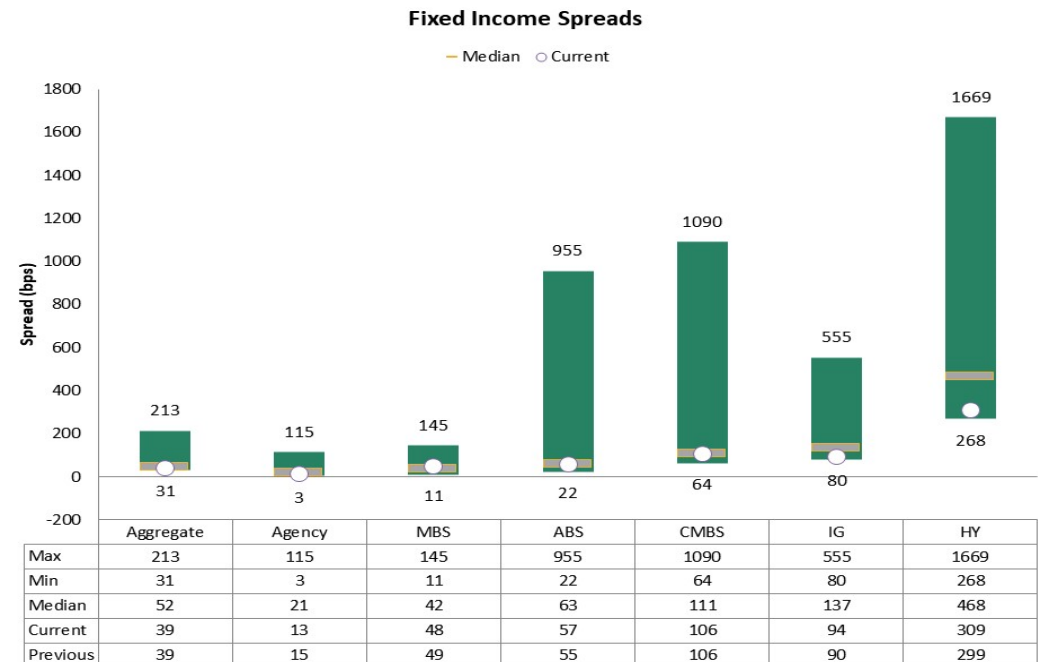
\*\* Formerly Citigroup. Citigroup's fixed income indices were purchased by London Stock Exchange Group (LSEG) and were rebranded to FTSE by July 31, 2018. FTSE Russell is a unit of LSEG's Information Services Division and a wholly owned subsidiary of LSEG.

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.

Source: FactSet



Data range is from 9/30/00-6/30/24

# 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.

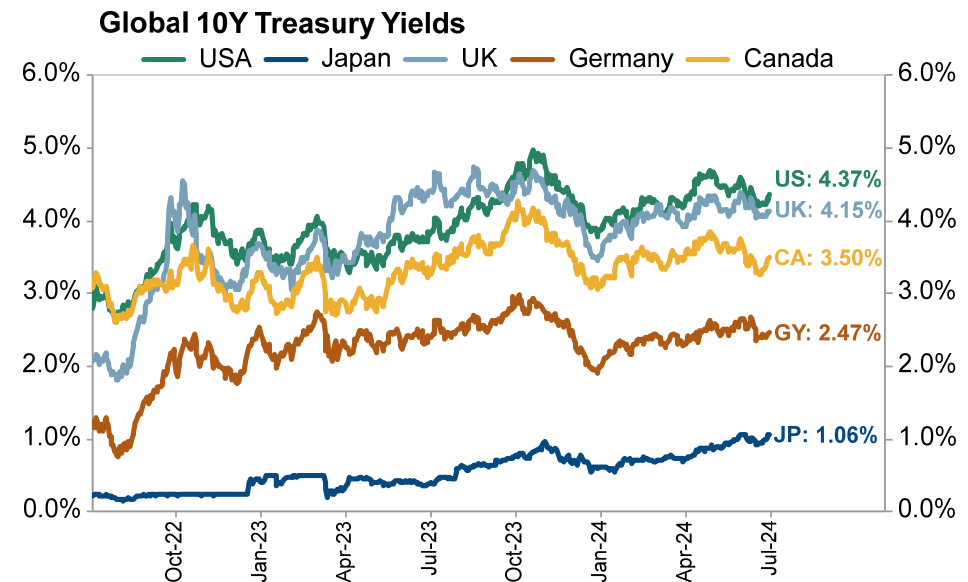
\* Formerly Citigroup. The FTSE Non-U.S. World Government Bond Index (WGBI) measures the performance of fixed-rate, local currency, investment grade sovereign bonds excluding the U.S.

\*\* 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 OPEB Trust

## Asset Allocation Comparison

Portfolio Value 6/30/24

\$4,718,671

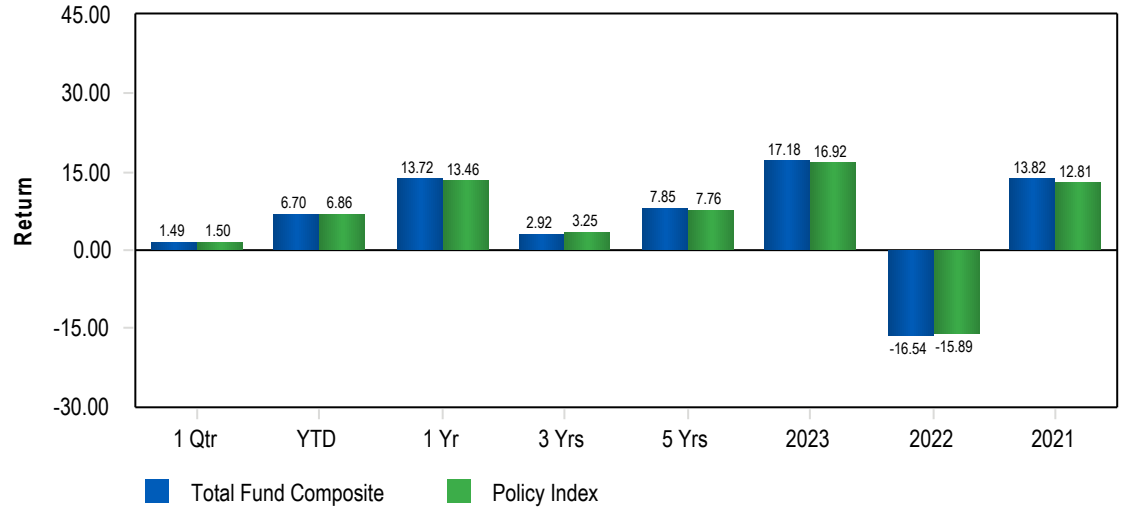
<u>Target Allocations</u>			<u>Current Managers &amp; Allocations</u>			<u>Difference</u>	<u>Range</u>
<b>Equity</b>		(000)			(000)		
Domestic Equity	47.50%	\$2,241	Vanguard Total Stock Market Index	52.44%	\$2,474		40.0%-55.0%
International Equity	15.00%	\$708	Vanguard Developed Market Index	13.05%	\$616		10.0%-20.0%
<b>Equity Total</b>	<b>62.50%</b>	<b>\$2,949</b>	<b>Equity Total</b>	<b>65.48%</b>	<b>\$3,090</b>	<b>2.98%</b>	<b>50.0%-65.0%<sup>1</sup></b>
<b>Fixed Income</b>							
Fixed Income	37.50%	\$1,770	Vanguard Total Bond Market Index	34.51%	\$1,629		
<b>Fixed Income Total</b>	<b>37.50%</b>	<b>\$1,770</b>	<b>Fixed Income Total</b>	<b>34.51%</b>	<b>\$1,629</b>	<b>-2.99%</b>	<b>30.0%-45.0%</b>
Internal Account	0.00%	\$0	Fidelity Money Market Fund	0.00%	\$0		
<b>Cash</b>	<b>0.00%</b>	<b>\$0</b>	<b>Cash</b>	<b>0.00%</b>	<b>\$0</b>		<b>0%-2%</b>
<b>Total</b>	<b>100%</b>	<b>\$4,719</b>	<b>Total</b>	<b>100%</b>	<b>\$4,719</b>		

<sup>1</sup> Total Equity may not exceed 65%.

Asset Allocation by Segment

Segments	Market Value (\$)	Allocation (%)
Domestic Equity	2,474,360	52.4
Domestic Fixed Income	1,623,727	34.4
International Equity	615,585	13.0
Cash	4,998	0.1

Performance Bar Chart



Gain / Loss

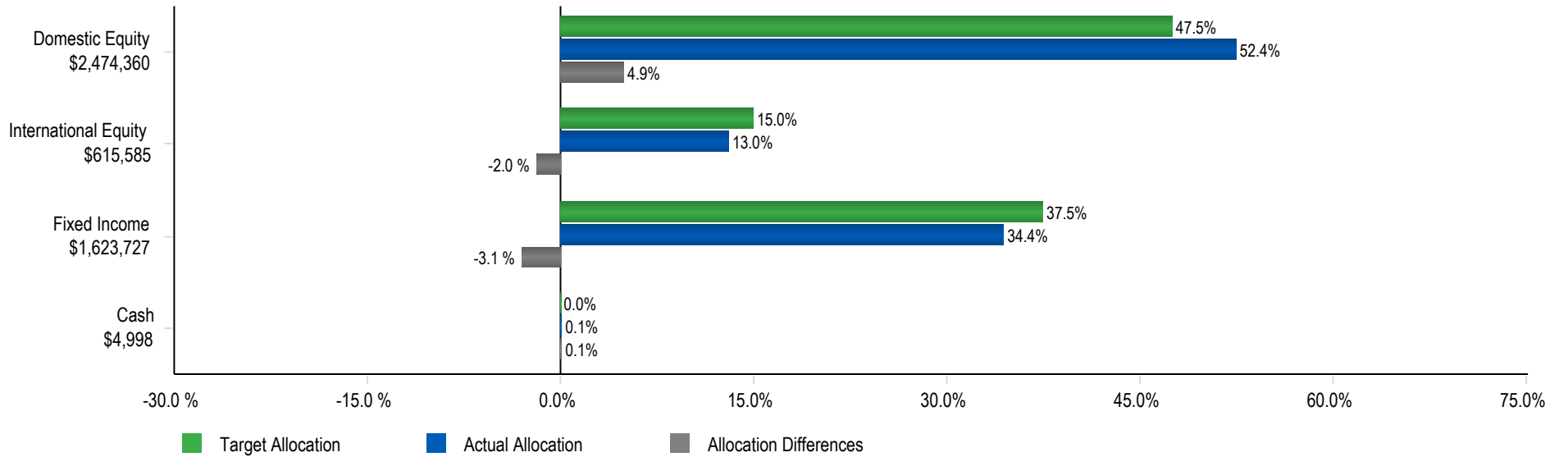
	1 Qtr	YTD	1 Yr	3 Yrs	5 Yrs
Total Fund Composite					
Beginning Market Value	4,649,476	4,422,411	4,149,423	4,324,878	3,230,750
Net Cash Flows					
Income	143	320	13,072	154,408	359,538
Gain/Loss	69,051	295,940	556,175	239,385	1,128,382
Ending Market Value	4,718,671	4,718,671	4,718,671	4,718,671	4,718,671



City of Memphis OPEB

Total Fund Composite

As of June 30, 2024



	Asset Allocation (\$)	Asset Allocation (%)	Target Allocation (%)	Differences (%)	Minimum Allocation (%)	Maximum Allocation (%)
Domestic Equity	2,474,360	52.4	47.5	4.9	40.0	55.0
International Equity	615,585	13.0	15.0	-2.0	10.0	20.0
Fixed Income	1,623,727	34.4	37.5	-3.1	30.0	45.0
Cash	4,998	0.1	0.0	0.1	0.0	2.0
<b>Total Fund</b>	<b>4,718,671</b>	<b>100.0</b>	<b>100.0</b>	<b>0.0</b>		

		Total Fund	
	(\$)		%
Total Fund Composite	4,718,671		100.0
Vanguard Total Stock Market	2,474,360		52.4
Vanguard Developed Markets Index	615,585		13.0
Vanguard Total Bond Market	1,628,565		34.5
Fidelity Money Market Fund	160		0.0

	Performance (%)								
	1 Quarter	Year To Date	1 Year	3 Years	5 Years	7 Years	10 Years	Since Inception	Inception Date
<b>Total Fund Composite</b>	1.5	6.7	13.7	2.9	7.9	7.7	7.1	7.8	07/01/2008
<i>Policy Index</i>	1.5	6.9	13.5	3.2	7.8	7.8	7.1	7.6	
All Public Plans-Total Fund Median	1.1	5.7	10.9	3.1	7.5	7.5	6.8	7.0	
Total Fund Composite Rank	25	23	10	55	37	39	39	11	
<b>Vanguard Total Stock Market</b>	2.9	12.7	22.8	7.8	14.0	13.4	12.1	11.4	07/01/2008
<i>Russell 3000 Index</i>	3.2	13.6	23.1	8.1	14.1	13.5	12.1	11.4	
IM U.S. Multi-Cap Equity (MF) Median	-0.3	9.5	17.7	5.9	11.1	10.7	9.6	9.4	
Vanguard Total Stock Market Rank	26	33	31	29	24	22	18	17	
<b>Vanguard Developed Markets Index</b>	-0.7	4.4	10.6	1.8	6.5	5.6	4.5	7.1	01/01/2012
<i>Developed Market Policy Index</i>	-0.6	4.5	11.4	2.1	6.8	6.0	4.8	7.4	
IM International Equity (MF) Median	0.6	5.5	10.5	-0.7	5.4	4.8	3.8	6.2	
Vanguard Developed Markets Index Rank	76	63	50	28	30	31	32	29	
<b>Vanguard Total Bond Market</b>	0.2	-0.9	2.7	-3.0	-0.2	0.9	1.3	2.7	07/01/2008
<i>Blmbg. U.S. Aggregate</i>	0.1	-0.7	2.6	-3.0	-0.2	0.9	1.3	2.7	
IM U.S. Broad Market Core Fixed Income (MF) Median	0.2	-0.3	3.1	-3.1	-0.1	0.9	1.3	2.9	
Vanguard Total Bond Market Rank	66	92	67	42	60	54	52	63	
<b>Fidelity Money Market Fund</b>	1.3	2.5	5.2	2.9	2.0	1.8	1.3	1.4	10/01/2014
<i>90 Day U.S. Treasury Bill</i>	1.3	2.6	5.4	3.0	2.2	2.1	1.5	1.5	
IM U.S. Taxable Money Market (MF) Median	1.3	2.5	5.2	2.9	2.0	1.8	1.3	1.3	
Fidelity Money Market Fund Rank	53	51	53	52	52	49	48	48	

City of Memphis OPEB

Comparative Performance

As of June 30, 2024

	2023	2022	2021	2020	Performance (%)		2017	2016	2015	2014
					2019	2018				
Total Fund Composite	17.2	-16.5	13.8	14.9	21.0	-4.7	15.0	7.4	0.3	7.1
<i>Policy Index</i>	16.9	-15.9	12.8	14.6	21.2	-4.4	14.8	7.3	0.6	7.4
Vanguard Total Stock Market	26.5	-19.5	25.7	21.0	30.8	-5.2	21.2	12.7	0.4	12.5
<i>Russell 3000 Index</i>	26.0	-19.2	25.7	20.9	31.0	-5.2	21.1	12.7	0.5	12.6
Vanguard Developed Markets Index	17.7	-15.3	11.4	10.3	21.9	-14.6	26.3	2.4	-0.3	-5.7
<i>Developed Market Policy Index</i>	18.3	-15.3	11.9	10.3	22.7	-14.5	26.7	2.7	0.0	-4.6
Vanguard Total Bond Market	6.0	-13.2	-1.7	7.7	8.7	0.0	3.6	2.6	0.4	6.0
<i>Blmbg. U.S. Aggregate</i>	5.5	-13.0	-1.5	7.5	8.7	0.0	3.5	2.6	0.5	6.0
Fidelity Money Market Fund	4.9	1.4	0.0	0.3	1.9	1.6	0.6	0.1	0.0	0.0
<i>90 Day U.S. Treasury Bill</i>	5.0	1.5	0.0	0.7	2.3	1.9	0.9	0.3	0.0	0.0

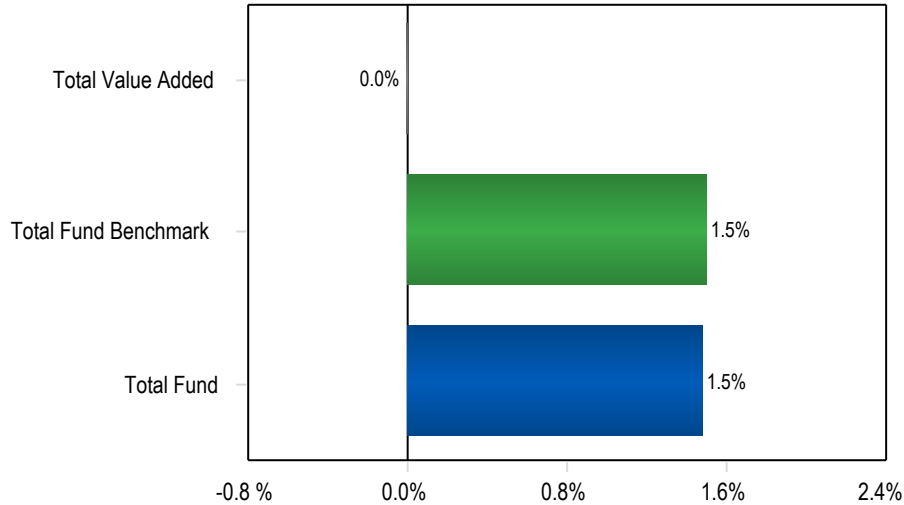
City of Memphis OPEB

Comparative Performance

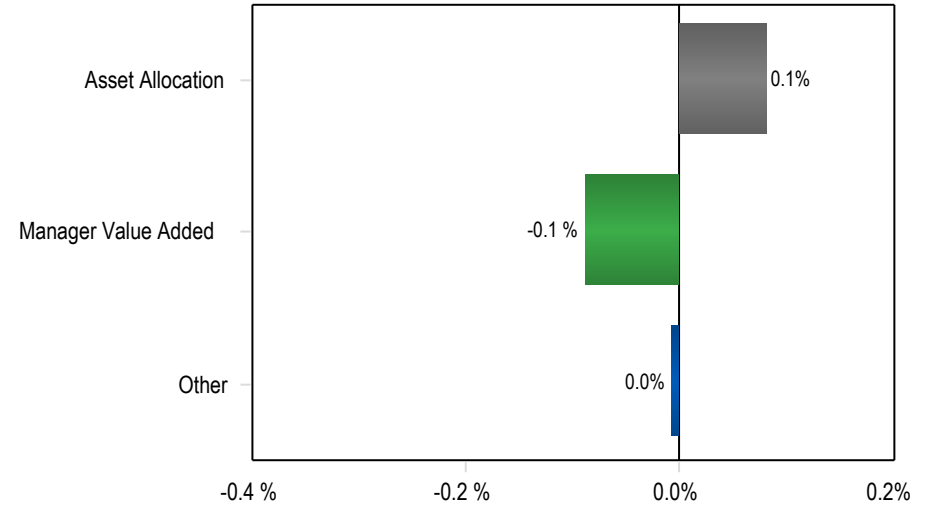
As of June 30, 2024

	Performance (%)									
	2023	2022	2021	2020	2019	2018	2017	2016	2015	2014
Vanguard Total Stock Market	26.5	-19.5	25.7	21.0	30.8	-5.2	21.2	12.7	0.4	12.5
<i>Russell 3000 Index</i>	26.0	-19.2	25.7	20.9	31.0	-5.2	21.1	12.7	0.5	12.6
IM U.S. Multi-Cap Equity (MF) Median	20.5	-17.4	24.7	14.7	28.2	-7.1	20.5	10.0	-1.4	10.5
Vanguard Total Stock Market Rank	26	60	41	34	30	33	44	33	37	25
Vanguard Developed Markets Index	17.7	-15.3	11.4	10.3	21.9	-14.6	26.3	2.4	-0.3	-5.7
<i>Developed Market Policy Index</i>	18.3	-15.3	11.9	10.3	22.7	-14.5	26.7	2.7	0.0	-4.6
IM International Equity (MF) Median	15.2	-19.0	8.5	13.7	22.1	-16.0	28.6	1.8	-2.3	-4.5
Vanguard Developed Markets Index Rank	30	31	32	60	51	36	64	47	36	64
Vanguard Total Bond Market	6.0	-13.2	-1.7	7.7	8.7	0.0	3.6	2.6	0.4	6.0
<i>Blmbg. U.S. Aggregate</i>	5.5	-13.0	-1.5	7.5	8.7	0.0	3.5	2.6	0.5	6.0
IM U.S. Broad Market Core Fixed Income (MF) Median	5.8	-13.7	-1.3	8.2	8.8	-0.6	3.6	2.9	0.0	5.5
Vanguard Total Bond Market Rank	38	27	65	65	53	20	52	64	32	28
Fidelity Money Market Fund	4.9	1.4	0.0	0.3	1.9	1.6	0.6	0.1	0.0	0.0
<i>90 Day U.S. Treasury Bill</i>	5.0	1.5	0.0	0.7	2.3	1.9	0.9	0.3	0.0	0.0
IM U.S. Taxable Money Market (MF) Median	4.9	1.4	0.0	0.3	1.9	1.5	0.5	0.1	0.0	0.0
Fidelity Money Market Fund Rank	52	57	57	56	46	47	45	43	54	48

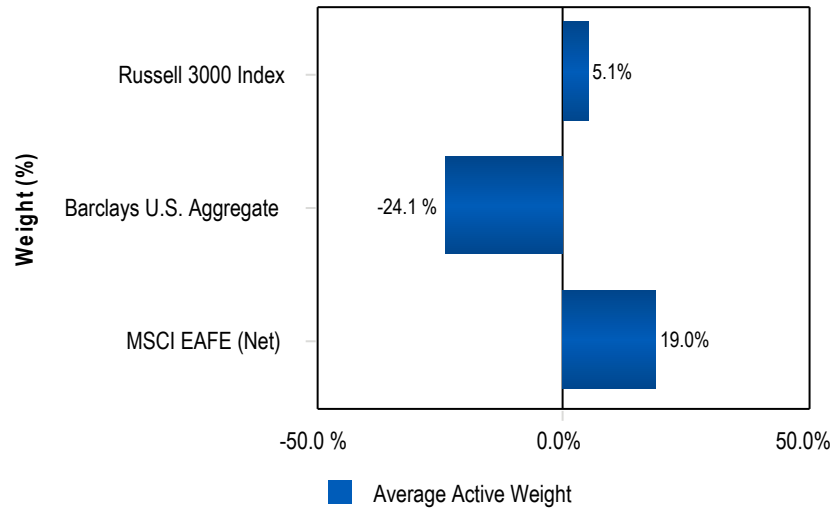
Total Fund Performance



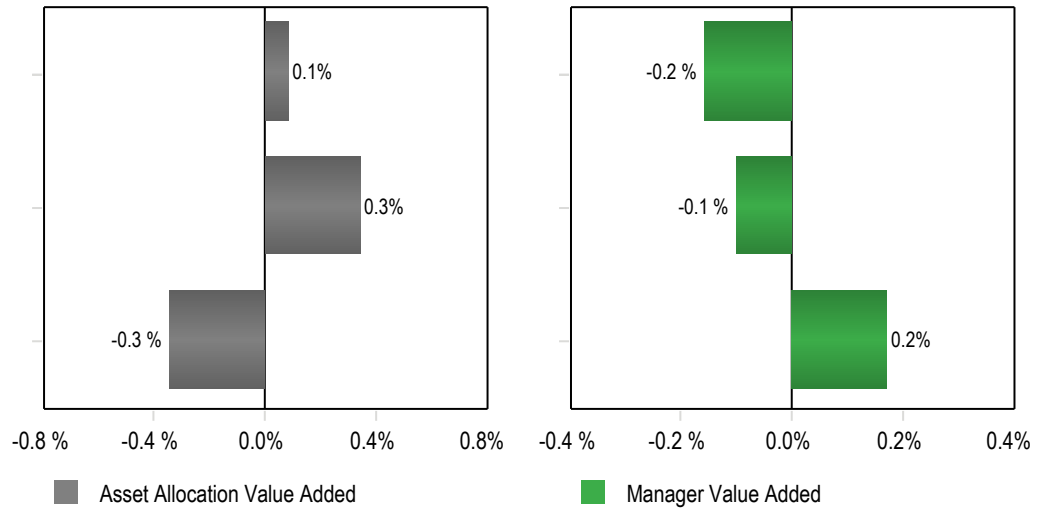
Total Value Added:0.0%

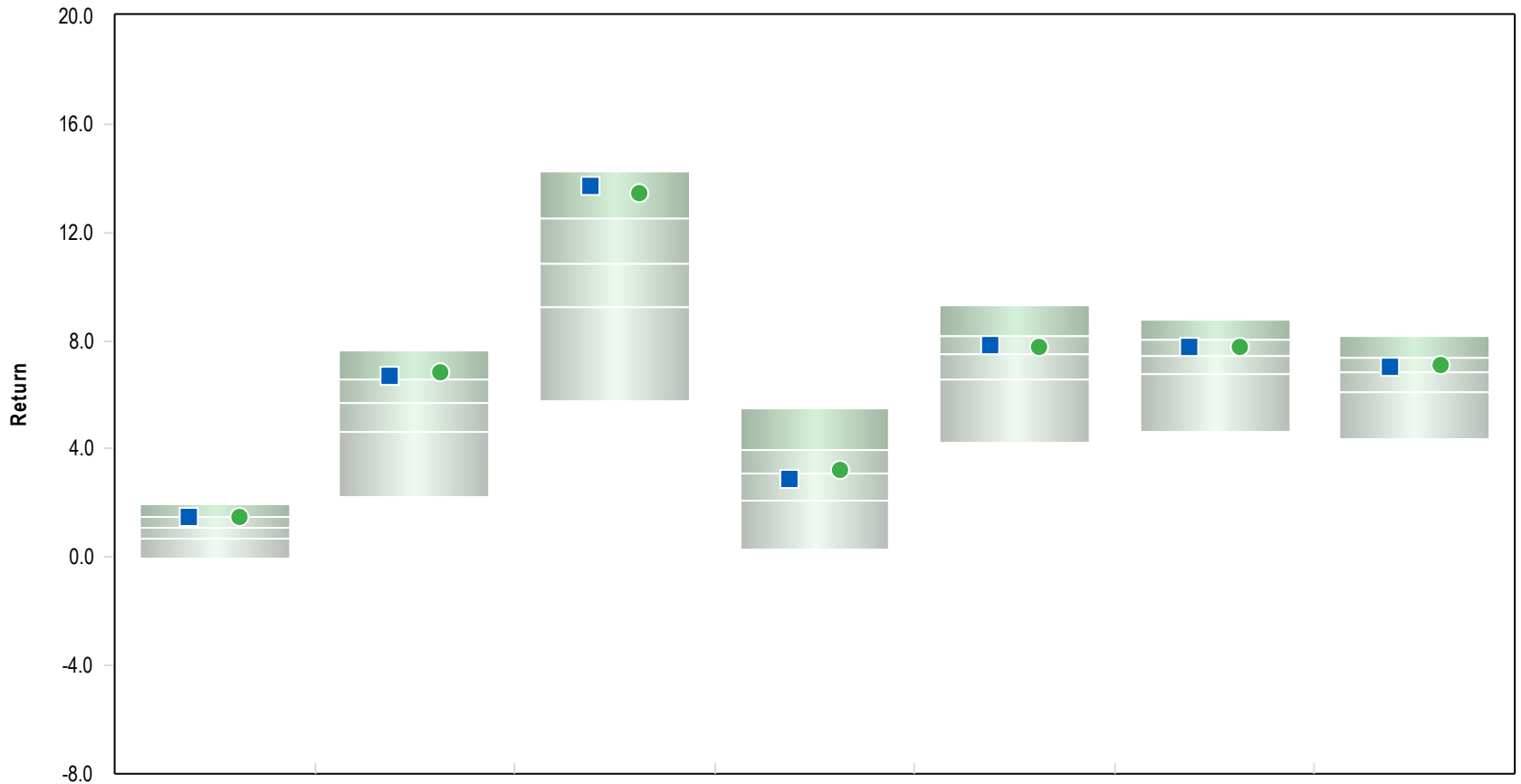


Total Asset Allocation:0.1%



Total Manager Value Added:-0.1%

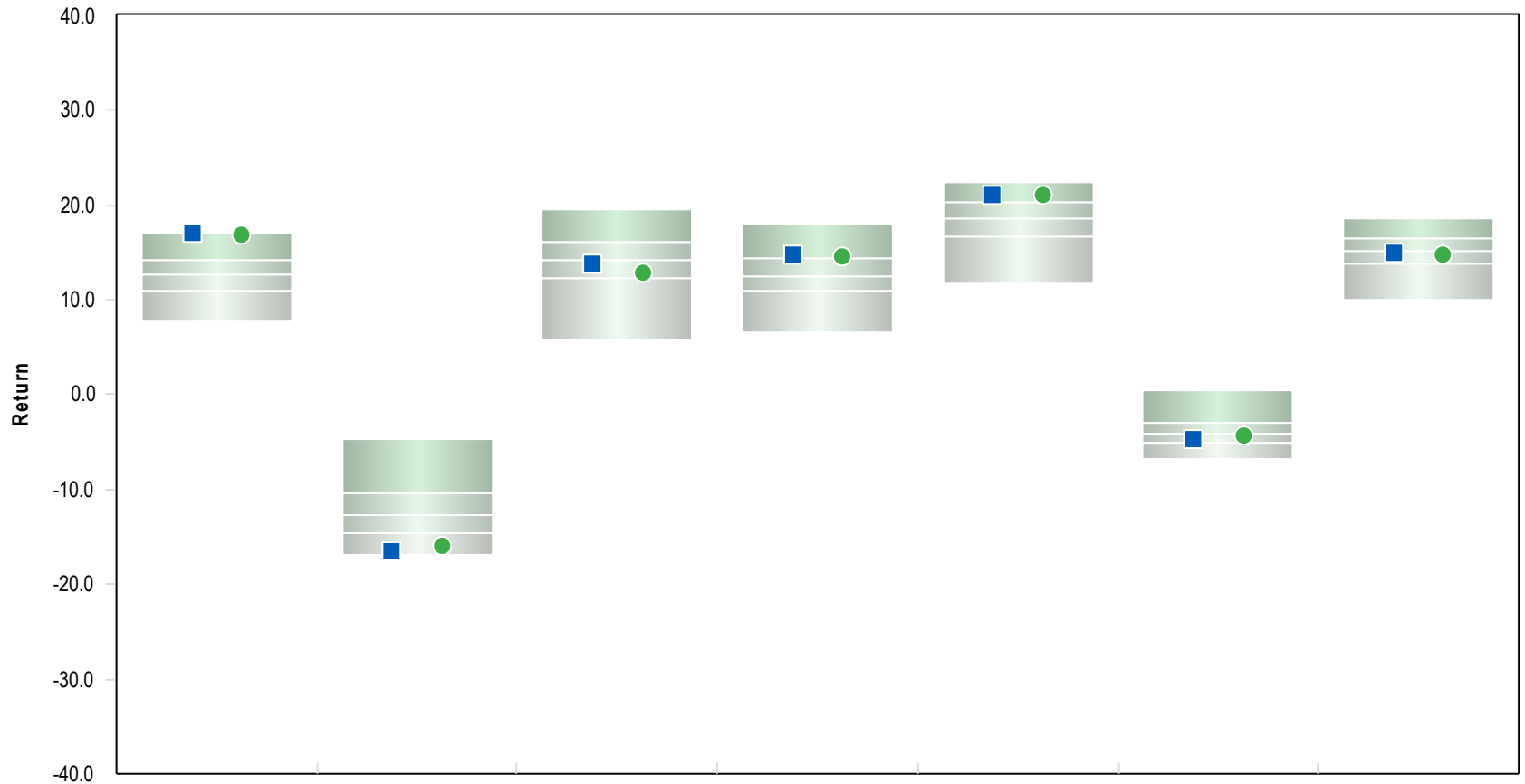




	1 Qtr	YTD	1 Yr	3 Yrs	5 Yrs	7 Yrs	10 Yrs
■ Total Fund Composite	1.5 (25)	6.7 (23)	13.7 (10)	2.9 (55)	7.9 (37)	7.7 (39)	7.1 (39)
● Policy Index	1.5 (23)	6.9 (19)	13.5 (11)	3.2 (47)	7.8 (41)	7.8 (38)	7.1 (38)

5th Percentile	1.9	7.7	14.3	5.5	9.3	8.8	8.2
1st Quartile	1.5	6.6	12.5	4.0	8.2	8.1	7.3
Median	1.1	5.7	10.9	3.1	7.5	7.5	6.8
3rd Quartile	0.7	4.7	9.2	2.1	6.6	6.7	6.1
95th Percentile	0.0	2.2	5.8	0.3	4.2	4.6	4.3

Parentheses contain percentile rankings.  
Calculation based on monthly periodicity.

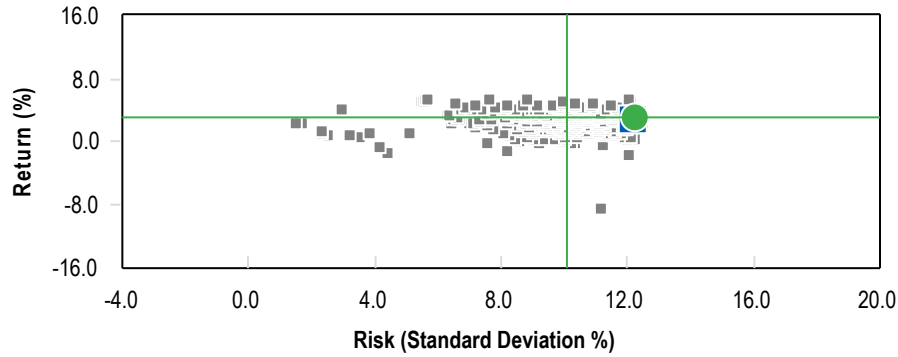


	2023	2022	2021	2020	2019	2018	2017
■ Total Fund Composite	17.2 (5)	-16.5 (93)	13.8 (57)	14.9 (22)	21.0 (17)	-4.7 (65)	15.0 (53)
● Policy Index	16.9 (6)	-15.9 (89)	12.8 (71)	14.6 (24)	21.2 (15)	-4.4 (56)	14.8 (59)
5th Percentile	17.0	-4.7	19.5	18.0	22.4	0.4	18.6
1st Quartile	14.3	-10.4	16.2	14.5	20.3	-2.9	16.4
Median	12.7	-12.7	14.2	12.5	18.6	-4.1	15.2
3rd Quartile	11.0	-14.5	12.4	10.9	16.7	-5.1	13.9
95th Percentile	7.8	-16.9	5.8	6.6	11.8	-6.9	10.0

Parenteses contain percentile rankings.  
Calculation based on monthly periodicity.

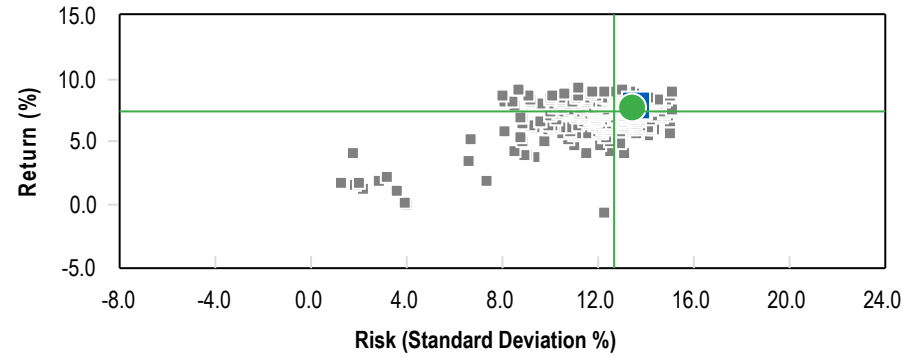


Risk & Return Plan Sponsor — 3 Years



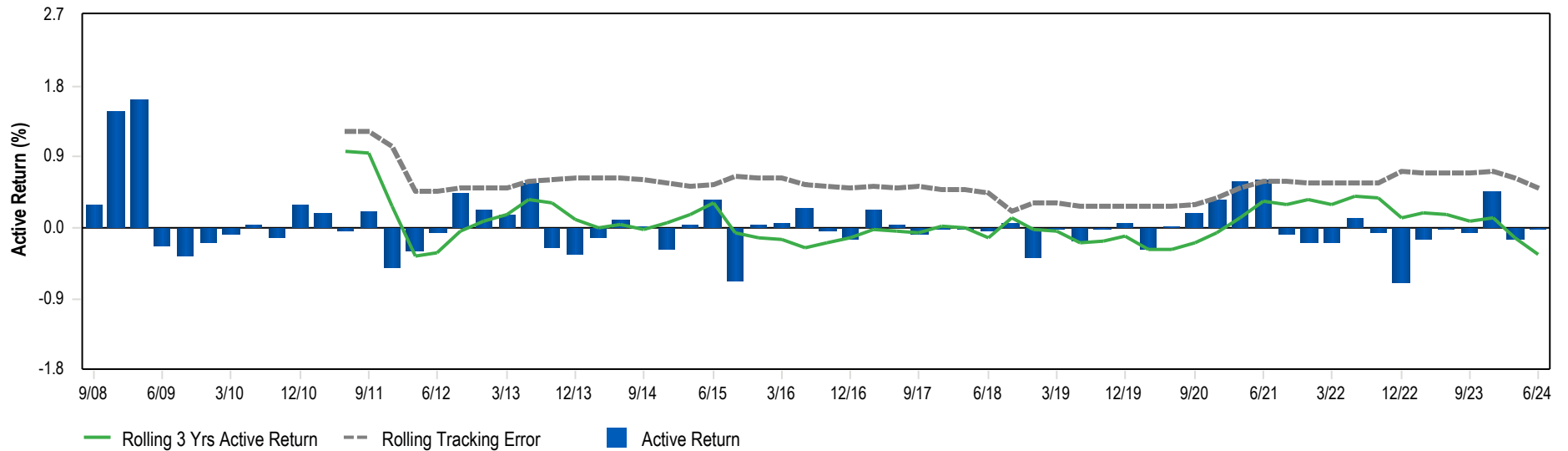
	Return	Standard Deviation
Total Fund Composite	2.9	12.2
Policy Index	3.2	12.2
Median	3.1	10.1

Risk & Return Plan Sponsor — 5 Years



	Return	Standard Deviation
Total Fund Composite	7.9	13.6
Policy Index	7.8	13.4
Median	7.5	12.7

Rolling Return and Tracking Error



Policy Index	Weight (%)
Jun-2003	
Russell 3000 Index	62.5
Blmbg. U.S. Aggregate	37.5
Jan-2012	
Russell 3000 Index	47.5
Blmbg. U.S. Aggregate	37.5
MSCI EAFE (Net)	15.0

Policy Index	Weight (%)
Jan-2012 MSCI EAFE Index	100.0
Jun-2013 FTSE Developed x North America Index	100.0
Jan-2016 FTSE Developed All-Cap ex US Transition Index	100.0
Jun-2016 FTSE Developed All Cap ex-U.S. Index	100.0

Periods Ending	Beginning Market Value (\$)	Net Cash Flow (\$)	Gain/Loss (\$)	Ending Market Value (\$)	%Return
From 06/2008	2,910,974		-474,478	2,436,496	-16.3
2009	2,436,496	6,000,000	1,023,156	9,459,652	21.3
2010	9,459,652	1,000,000	1,445,483	11,905,135	13.6
2011	11,905,135		455,833	12,360,968	3.8
2012	12,360,968	-929,020	2,479,823	13,911,771	12.4
2013	13,911,771	1,188,894	1,634,497	16,735,162	17.8
2014	16,735,162	-9,032,562	1,030,125	8,732,726	7.1
2015	8,732,726	-6,540,086	233,076	2,425,715	0.3
2016	2,425,715		179,552	2,605,267	7.4
2017	2,605,267	1	391,729	2,996,996	15.0
2018	2,996,996		-141,433	2,855,563	-4.7
2019	2,855,563		600,131	3,455,694	21.0
2020	3,455,694		513,928	3,969,622	14.9
2021	3,969,622		552,241	4,521,862	13.8
2022	4,521,862		-747,857	3,774,005	-16.5
2023	3,774,005		648,406	4,422,411	17.2
To 06/2024	4,422,411		296,260	4,718,671	6.7

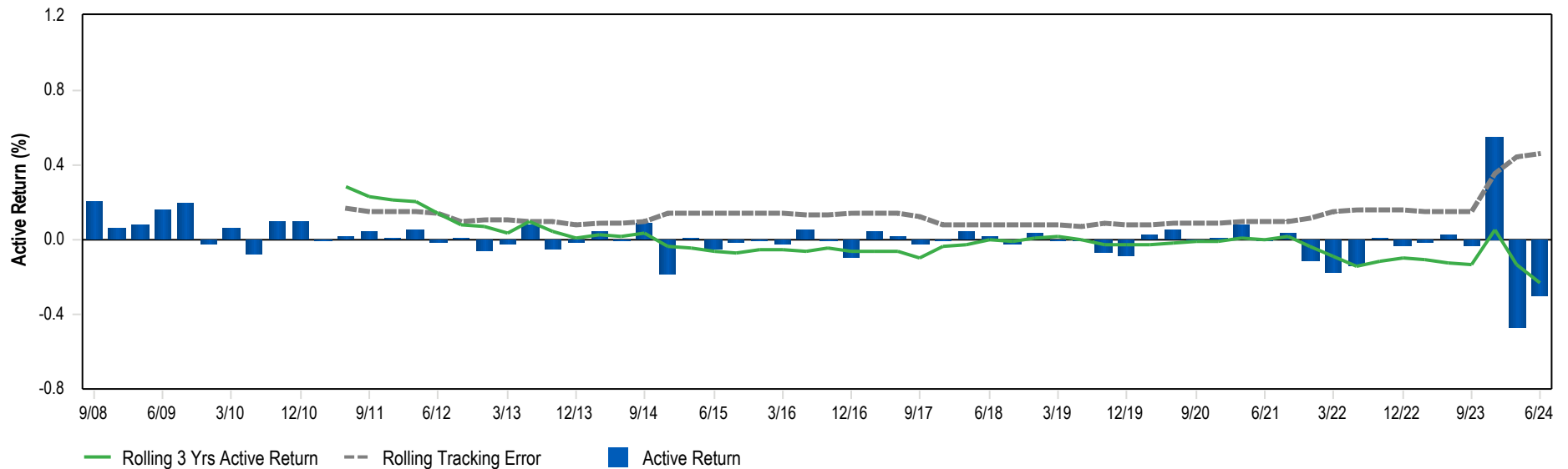
Gain/Loss includes income received and change in accrued income for the period.

# Vanguard Total Stock Market Index Fund



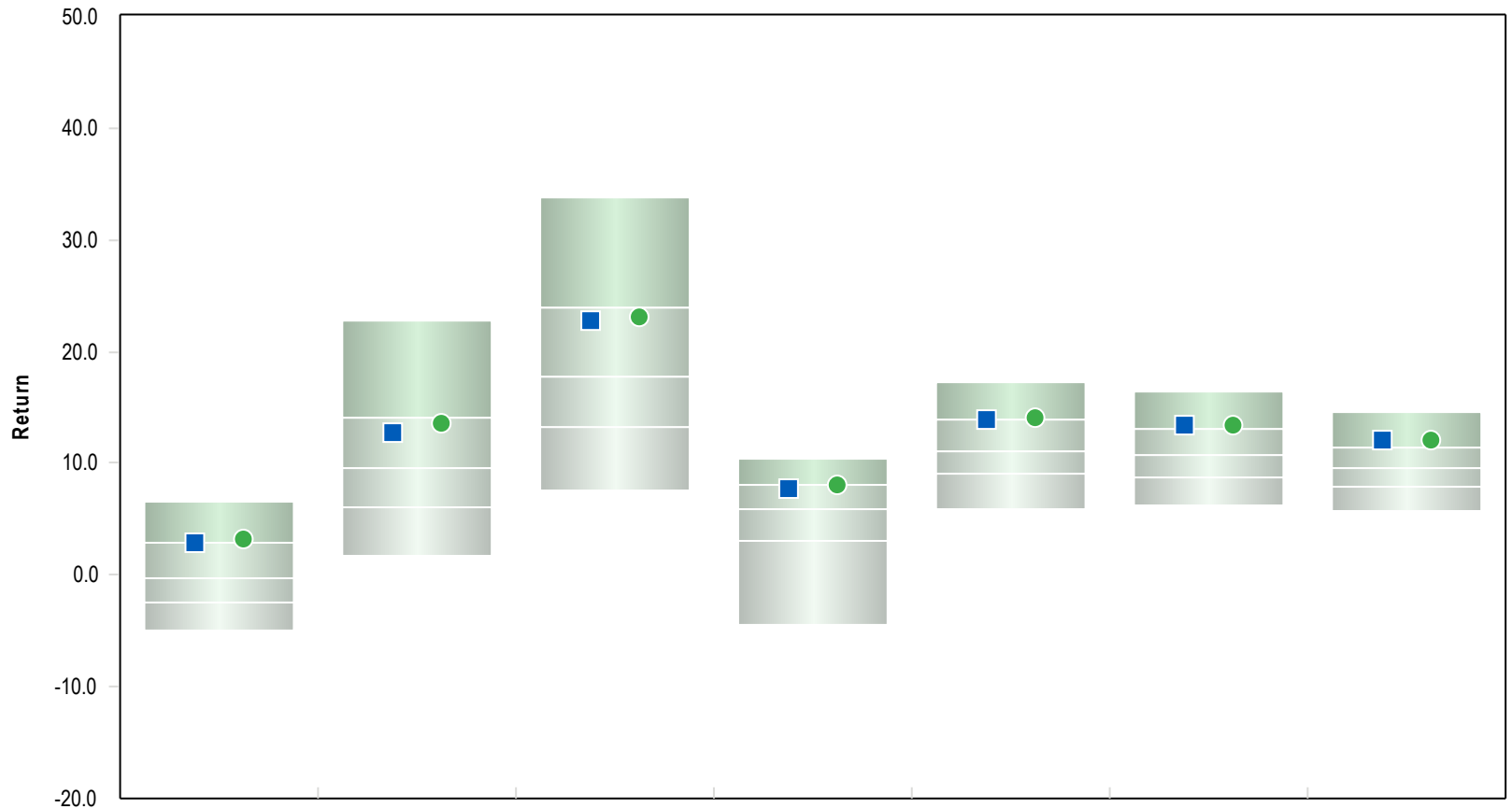
	Gain / Loss				
	1 Qtr	YTD	1 Yr	3 Yrs	5 Yrs
<b>Vanguard Total Stock Market</b>					
Beginning Market Value	2,453,423	2,239,585	2,056,243	2,407,490	1,607,131
Net Cash Flows	-50,000	-50,000	-50,000	-450,000	-508,894
Income				34,683	119,681
Gain/Loss	70,937	284,775	468,118	482,186	1,256,442
Ending Market Value	2,474,360	2,474,360	2,474,360	2,474,360	2,474,360

Rolling Return and Tracking Error



Performance

	1 Qtr	YTD	1 Yr	3 Yrs	5 Yrs	7 Yrs	10 Yrs
Vanguard Total Stock Market	2.9	12.7	22.8	7.8	14.0	13.4	12.1
Russell 3000 Index	3.2	13.6	23.1	8.1	14.1	13.5	12.1
Difference	-0.3	-0.9	-0.3	-0.3	-0.1	-0.1	0.0

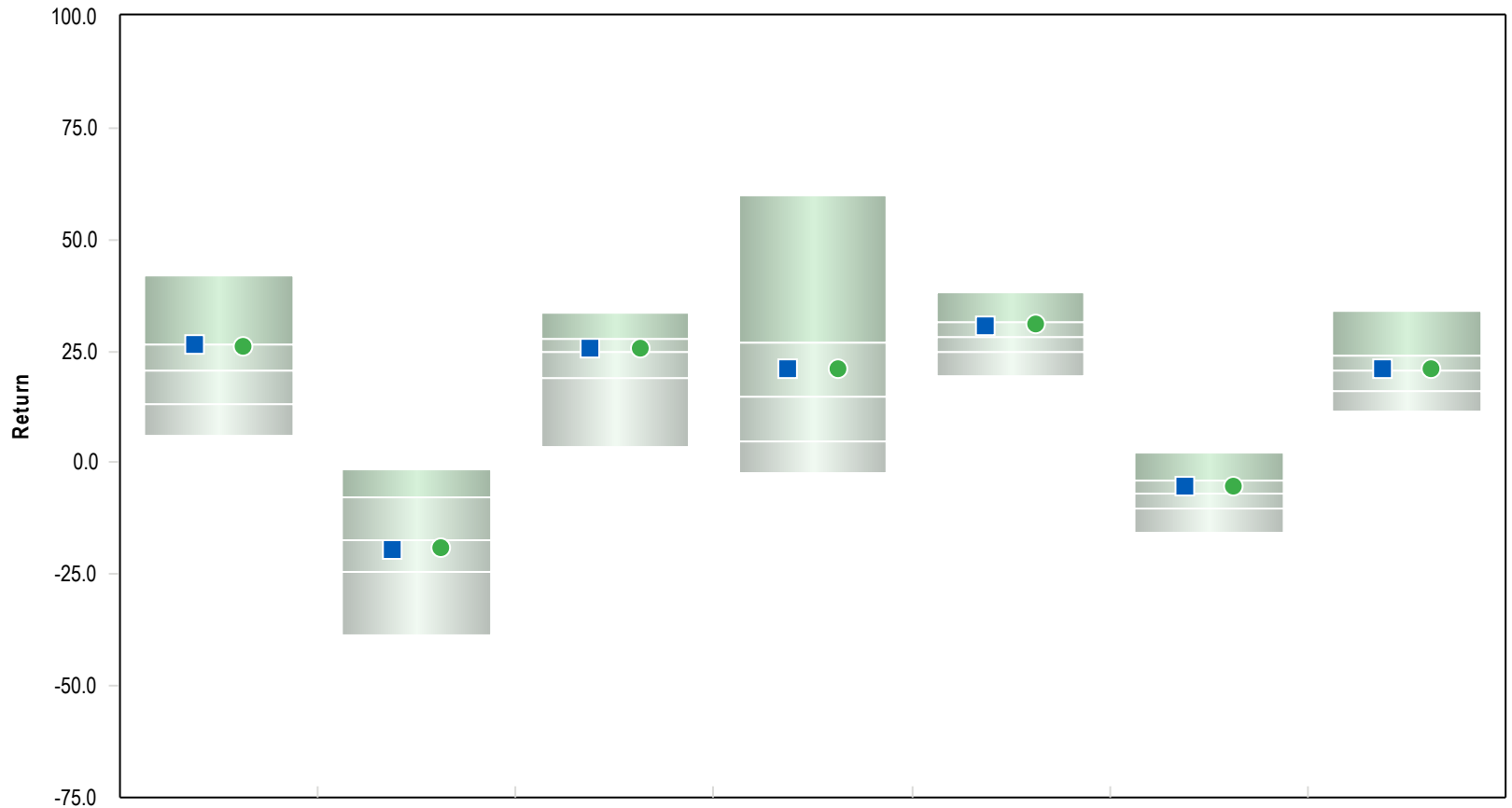


	1 Qtr	YTD	1 Yr	3 Yrs	5 Yrs	7 Yrs	10 Yrs
■ Vanguard Total Stock Market	2.9 (26)	12.7 (33)	22.8 (31)	7.8 (29)	14.0 (24)	13.4 (22)	12.1 (18)
● Russell 3000 Index	3.2 (23)	13.6 (29)	23.1 (30)	8.1 (24)	14.1 (21)	13.5 (20)	12.1 (17)

5th Percentile	6.6	22.7	33.8	10.5	17.2	16.5	14.5
1st Quartile	3.0	14.0	23.9	8.0	13.9	13.0	11.5
Median	-0.3	9.5	17.7	5.9	11.1	10.7	9.6
3rd Quartile	-2.5	6.1	13.3	3.0	9.1	8.7	7.9
95th Percentile	-5.0	1.8	7.5	-4.4	5.9	6.2	5.8

Parentheses contain percentile rankings.  
Calculation based on monthly periodicity.

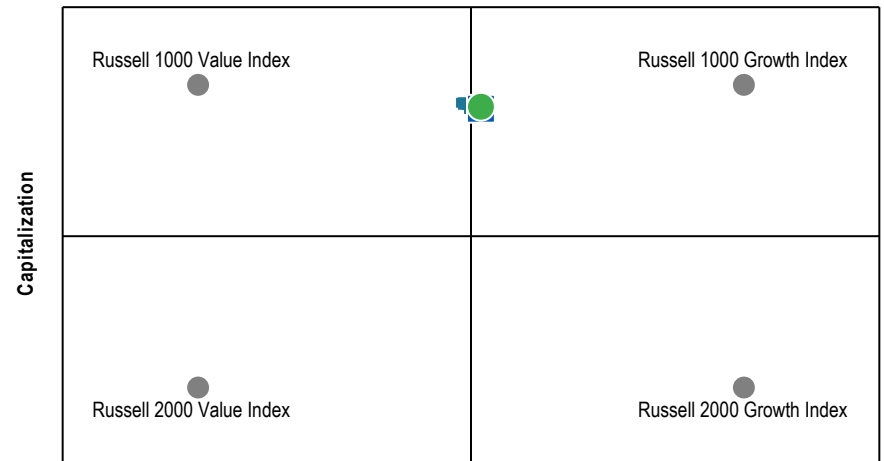
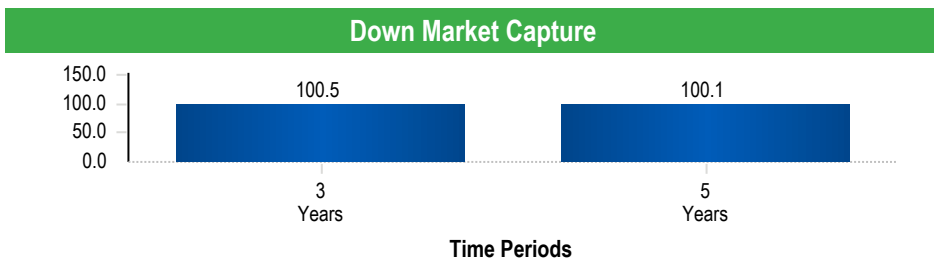
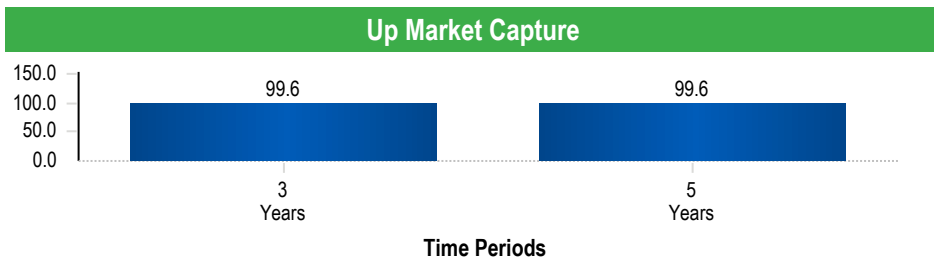
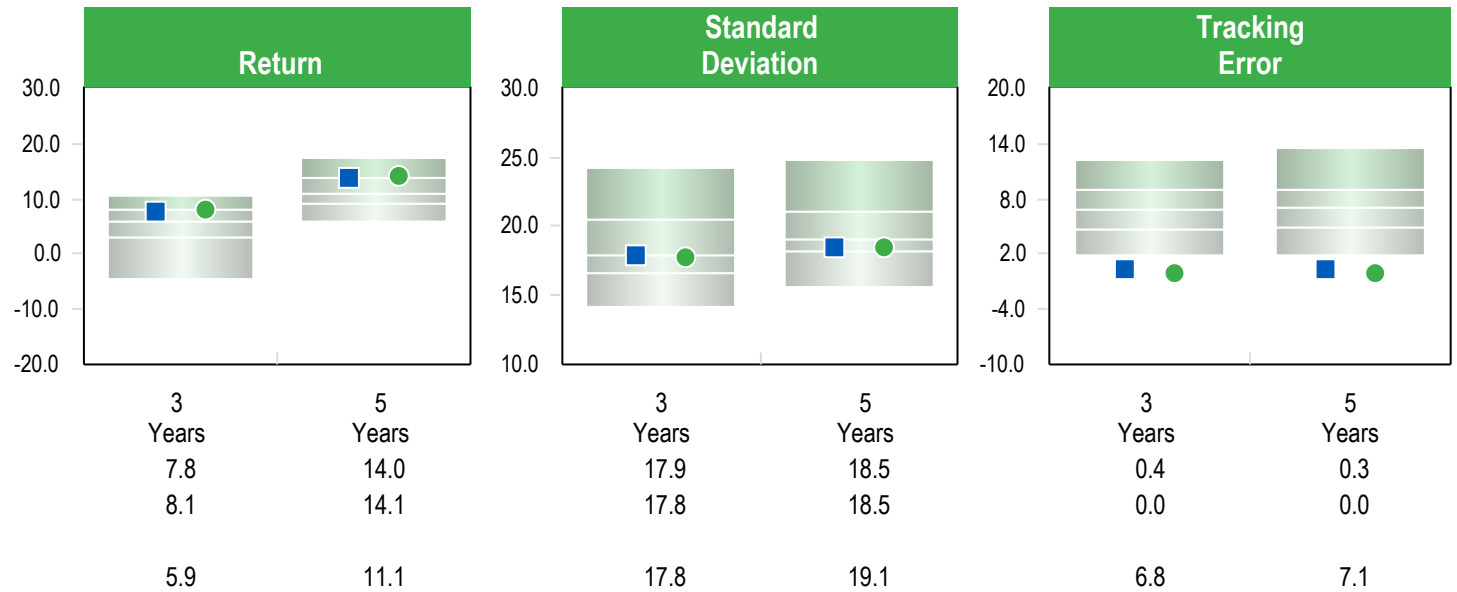




	2023	2022	2021	2020	2019	2018	2017
■ Vanguard Total Stock Market	26.5 (26)	-19.5 (60)	25.7 (41)	21.0 (34)	30.8 (30)	-5.2 (33)	21.2 (44)
● Russell 3000 Index	26.0 (29)	-19.2 (58)	25.7 (41)	20.9 (34)	31.0 (29)	-5.2 (34)	21.1 (45)

5th Percentile	42.0	-1.3	33.5	60.1	38.2	2.3	34.0
1st Quartile	26.7	-7.9	27.8	26.8	31.6	-4.0	24.2
Median	20.5	-17.4	24.7	14.7	28.2	-7.1	20.5
3rd Quartile	13.1	-24.6	18.9	4.9	24.7	-10.1	16.1
95th Percentile	6.0	-38.7	3.3	-2.5	19.3	-15.9	11.5

Parentheses contain percentile rankings.  
Calculation based on monthly periodicity.



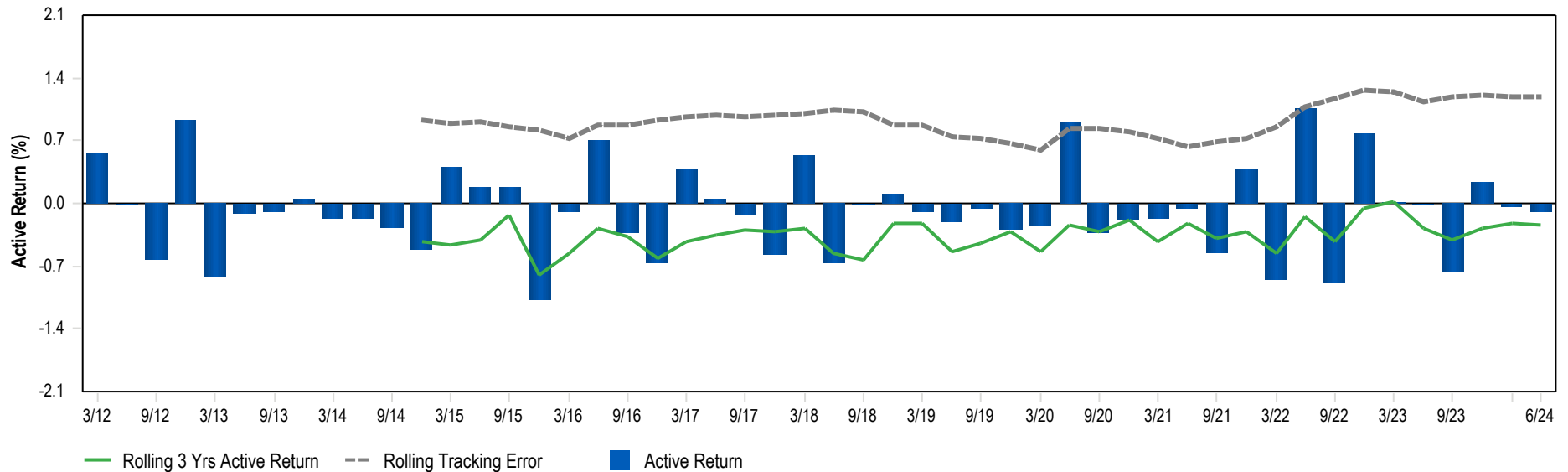
Style History Jun-2024 Average Style Exposure

# Vanguard Total Developed Markets Index Fund



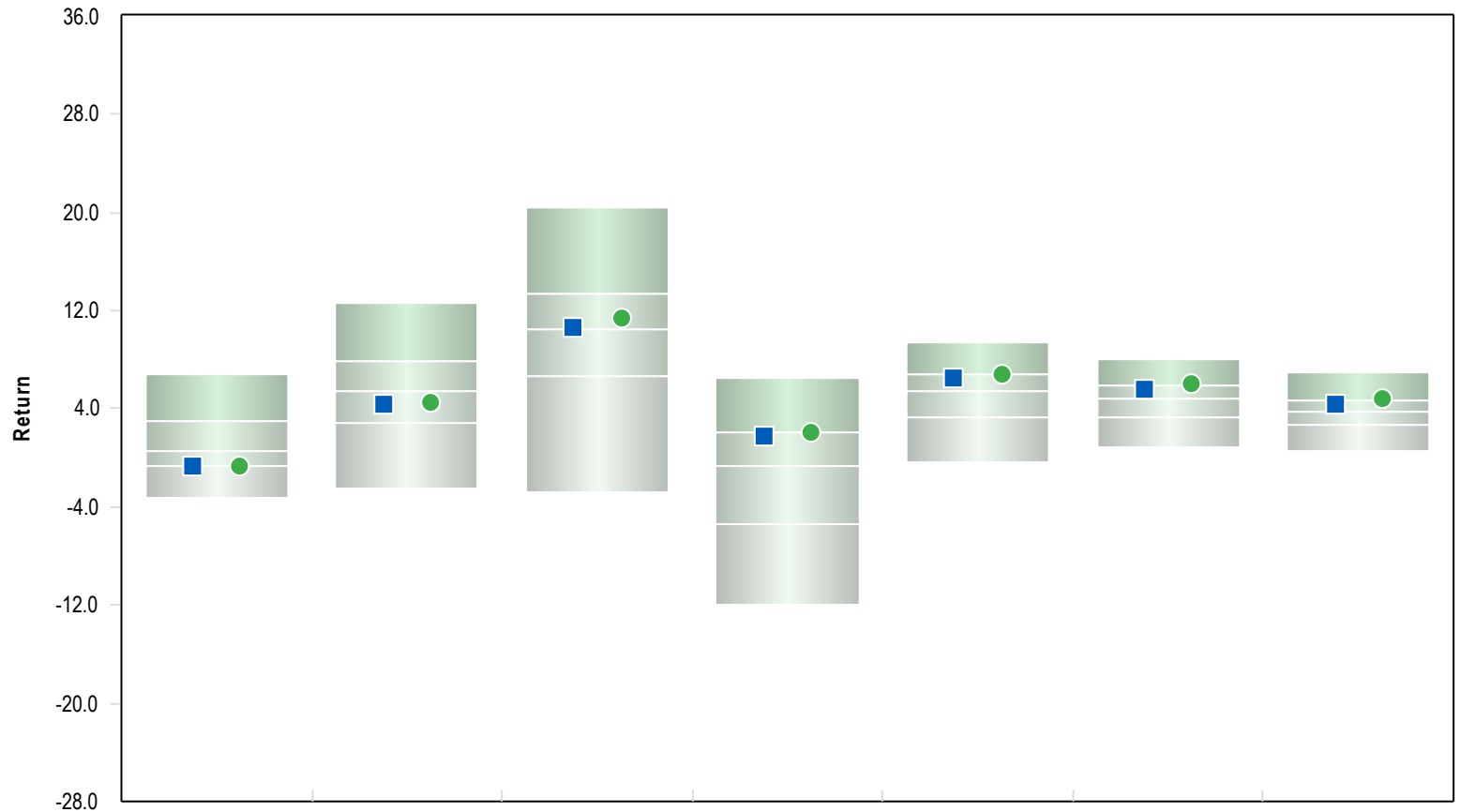
	Gain / Loss				
	1 Qtr	YTD	1 Yr	3 Yrs	5 Yrs
<b>Vanguard Developed Markets Index</b>					
Beginning Market Value	619,899	589,555	556,646	583,607	449,242
Net Cash Flows					
Income				31,939	66,499
Gain/Loss	-4,314	26,030	58,939	40	99,844
Ending Market Value	615,585	615,585	615,585	615,585	615,585

Rolling Return and Tracking Error



Performance

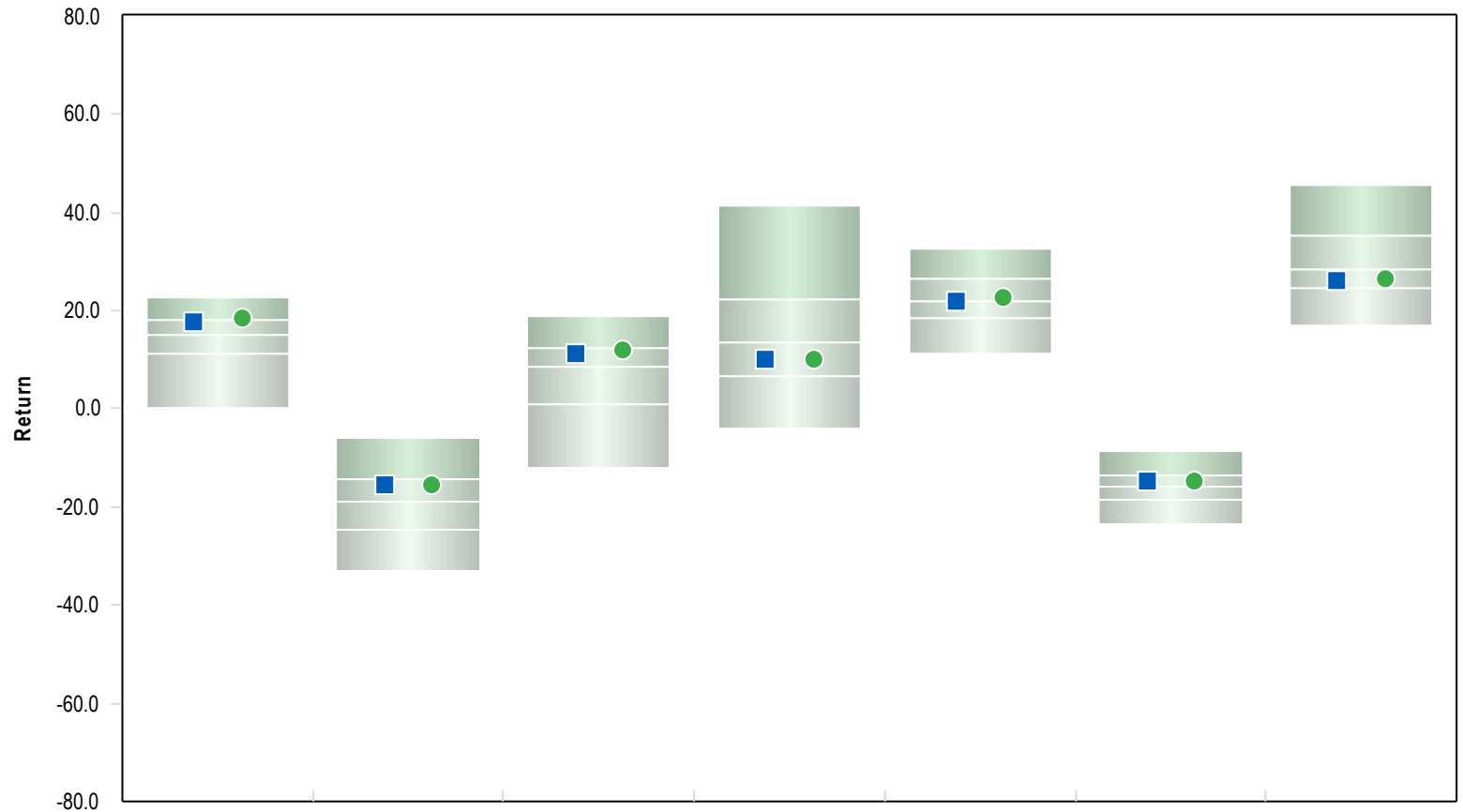
	1 Qtr	YTD	1 Yr	3 Yrs	5 Yrs	7 Yrs	10 Yrs
Vanguard Developed Markets Index	-0.7	4.4	10.6	1.8	6.5	5.6	4.5
Developed Market Policy Index	-0.6	4.5	11.4	2.1	6.8	6.0	4.8
Difference	-0.1	-0.1	-0.8	-0.3	-0.3	-0.4	-0.3



	1 Qtr	YTD	1 Yr	3 Yrs	5 Yrs	7 Yrs	10 Yrs
■ Vanguard Developed Markets Index	-0.7 (76)	4.4 (63)	10.6 (50)	1.8 (28)	6.5 (30)	5.6 (31)	4.5 (32)
● Developed Market Policy Index	-0.6 (74)	4.5 (61)	11.4 (41)	2.1 (25)	6.8 (25)	6.0 (23)	4.8 (24)

5th Percentile	6.8	12.7	20.4	6.5	9.4	8.1	6.9
1st Quartile	3.0	7.9	13.3	2.1	6.8	5.9	4.7
Median	0.6	5.5	10.5	-0.7	5.4	4.8	3.8
3rd Quartile	-0.7	2.9	6.7	-5.5	3.4	3.3	2.6
95th Percentile	-3.3	-2.6	-2.8	-12.0	-0.3	0.8	0.6

Parentheses contain percentile rankings.  
Calculation based on monthly periodicity.



	2023	2022	2021	2020	2019	2018	2017
■ Vanguard Developed Markets Index	17.7 (30)	-15.3 (31)	11.4 (32)	10.3 (60)	21.9 (51)	-14.6 (36)	26.3 (64)
● Developed Market Policy Index	18.3 (25)	-15.3 (31)	11.9 (29)	10.3 (60)	22.7 (46)	-14.5 (35)	26.7 (63)

5th Percentile	22.8	-6.1	18.7	41.5	32.8	-8.8	45.6
1st Quartile	18.2	-14.3	12.4	22.3	26.5	-13.4	35.3
Median	15.2	-19.0	8.5	13.7	22.1	-16.0	28.6
3rd Quartile	11.2	-24.7	0.8	6.6	18.4	-18.6	24.7
95th Percentile	0.1	-33.0	-11.9	-3.8	11.2	-23.3	17.0

Parentheses contain percentile rankings.  
Calculation based on monthly periodicity.

# Vanguard Total Bond Market Index Fund

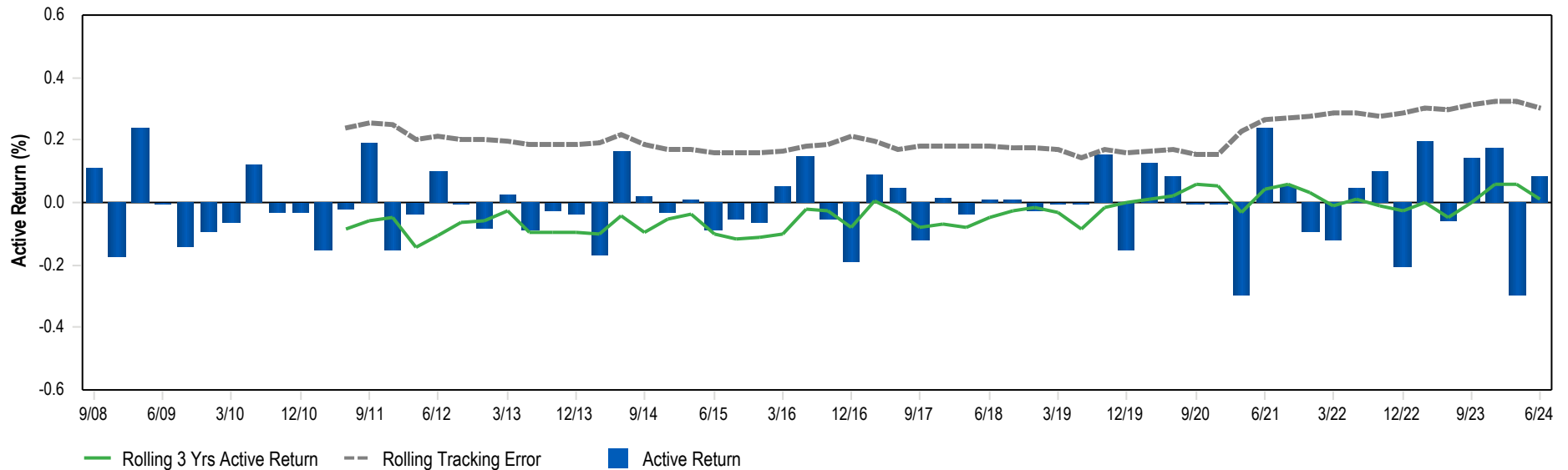




Gain / Loss

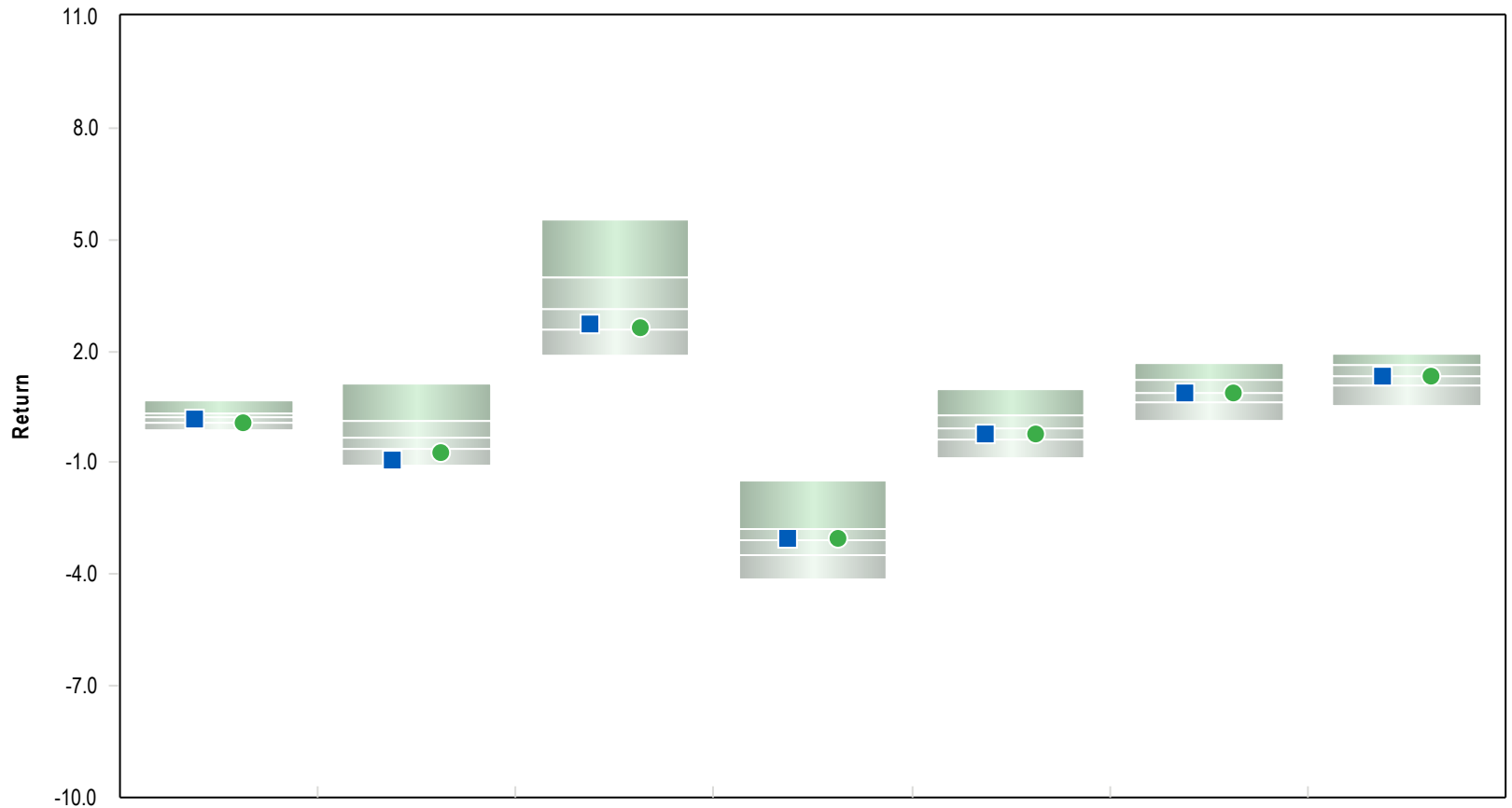
	1 Qtr	YTD	1 Yr	3 Yrs	5 Yrs
<b>Vanguard Total Bond Market</b>					
Beginning Market Value	1,575,995	1,593,113	1,536,383	1,333,633	1,173,772
Net Cash Flows	50,000	50,000	50,000	450,000	509,360
Income	144	320	13,073	87,777	173,332
Gain/Loss	2,426	-14,869	29,109	-242,845	-227,899
Ending Market Value	1,628,565	1,628,565	1,628,565	1,628,565	1,628,565

Rolling Return and Tracking Error



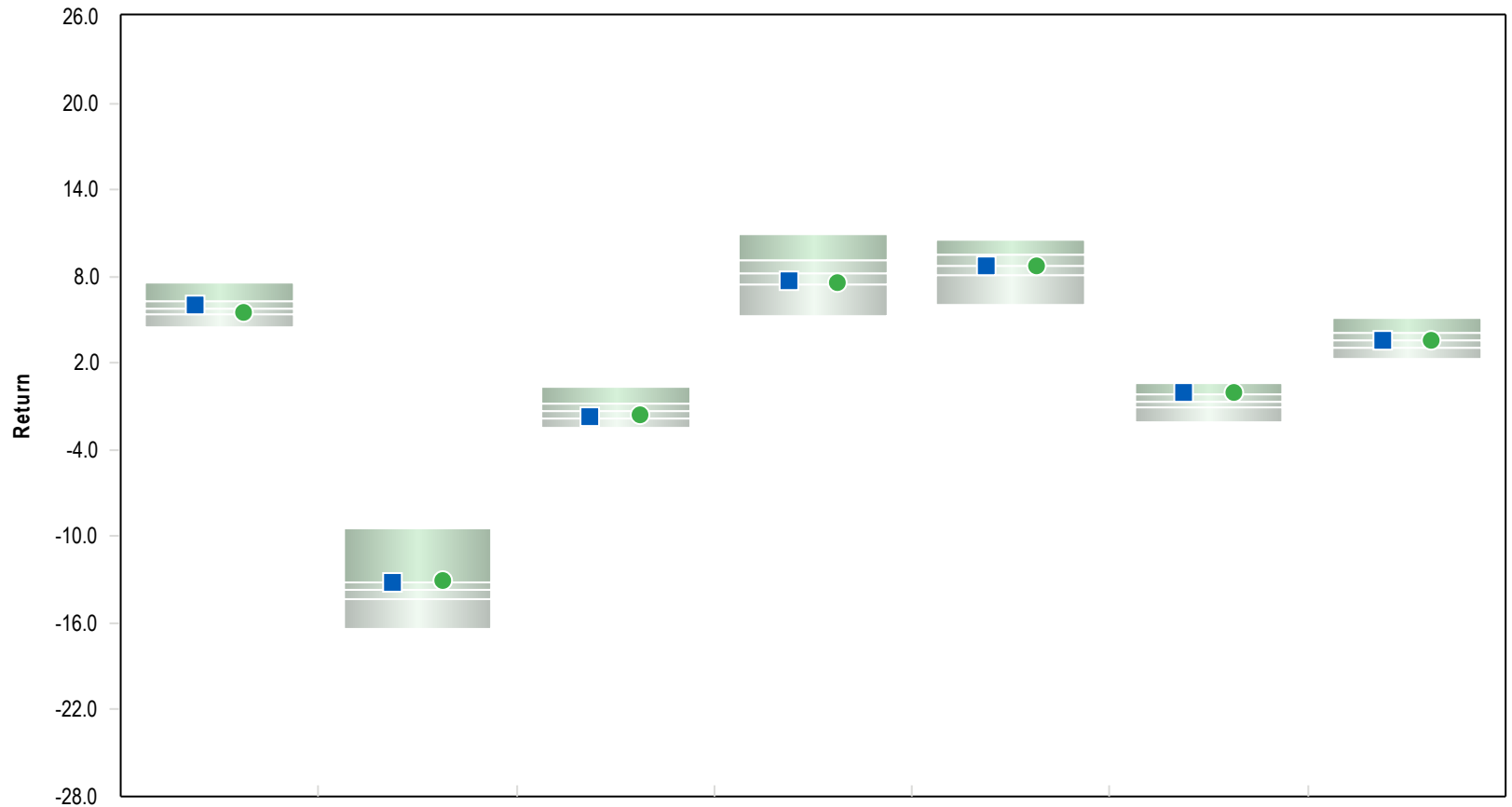
Performance

	1 Qtr	YTD	1 Yr	3 Yrs	5 Yrs	7 Yrs	10 Yrs
Vanguard Total Bond Market	0.2	-0.9	2.7	-3.0	-0.2	0.9	1.3
Bloomberg, U.S. Aggregate	0.1	-0.7	2.6	-3.0	-0.2	0.9	1.3
Difference	0.1	-0.2	0.1	0.0	0.0	0.0	0.0



	1 Qtr	YTD	1 Yr	3 Yrs	5 Yrs	7 Yrs	10 Yrs
■ Vanguard Total Bond Market	0.2 (66)	-0.9 (92)	2.7 (67)	-3.0 (42)	-0.2 (60)	0.9 (54)	1.3 (52)
● Blmbg. U.S. Aggregate	0.1 (80)	-0.7 (82)	2.6 (73)	-3.0 (42)	-0.2 (63)	0.9 (54)	1.3 (50)
5th Percentile	0.7	1.2	5.6	-1.5	1.0	1.7	1.9
1st Quartile	0.3	0.1	4.0	-2.8	0.3	1.2	1.6
Median	0.2	-0.3	3.1	-3.1	-0.1	0.9	1.3
3rd Quartile	0.1	-0.6	2.6	-3.5	-0.4	0.6	1.1
95th Percentile	-0.1	-1.1	1.9	-4.1	-0.9	0.1	0.5

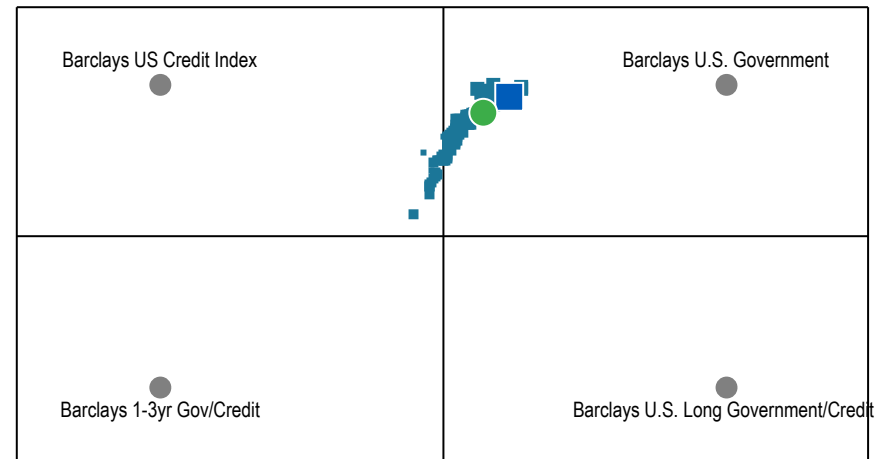
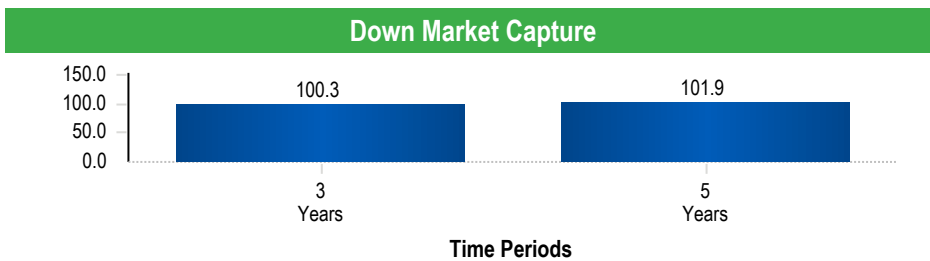
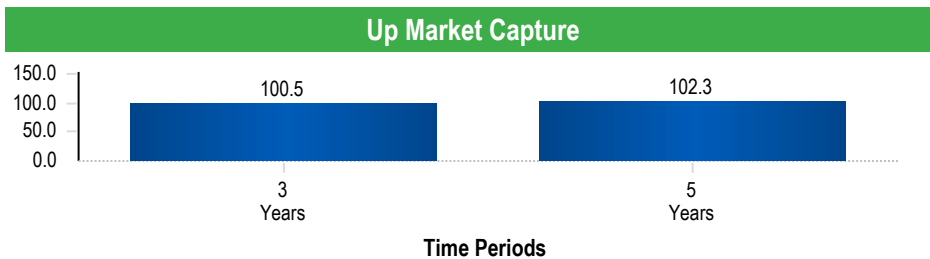
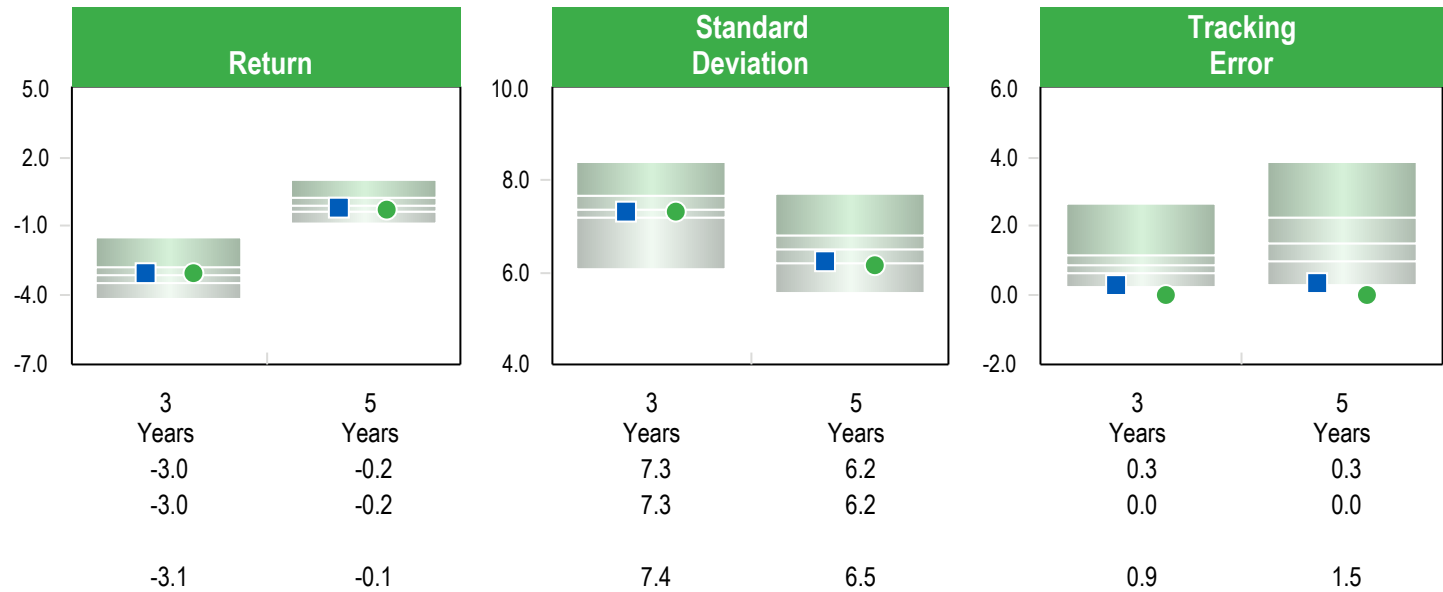
Parentheses contain percentile rankings.  
Calculation based on monthly periodicity.



	2023	2022	2021	2020	2019	2018	2017
■ Vanguard Total Bond Market	6.0 (38)	-13.2 (27)	-1.7 (65)	7.7 (65)	8.7 (53)	0.0 (20)	3.6 (52)
● Blmbg. U.S. Aggregate	5.5 (65)	-13.0 (22)	-1.5 (60)	7.5 (73)	8.7 (53)	0.0 (18)	3.5 (54)

5th Percentile	7.5	-9.5	0.3	11.0	10.6	0.6	5.1
1st Quartile	6.3	-13.1	-0.8	9.1	9.5	-0.1	4.2
Median	5.8	-13.7	-1.3	8.2	8.8	-0.6	3.6
3rd Quartile	5.3	-14.3	-1.8	7.5	8.1	-1.1	3.1
95th Percentile	4.4	-16.4	-2.5	5.2	6.0	-2.1	2.2

Parentheses contain percentile rankings.  
Calculation based on monthly periodicity.



■ Style History    ■ Jun-2024    ● Average Style Exposure

# Appendix



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

Manager	Date	Assets Under Management	Assignment	Benchmark	Stated Style	Fee Structure	Annual Dollar Fee	Average Fee
Vanguard Total Stock Market Index	6/30/2024	\$2,474,360	Equity Only	Russell 3000 Index	All Cap Equity	4 bps on all assets	\$990	0.04%
Vanguard Developed Market Index	6/30/2024	\$615,585	Equity Only	FTSE Developed x North America	International Equity	16 bps on all assets	\$985	0.16%
Vanguard Total Bond Market Index	6/30/2024	\$1,628,565	Fixed Income	Barclays U.S. Aggregate	Core Fixed Income	3.5 bps on all assets	\$570	0.035%
Fidelity Money Market	6/30/2024	\$160	Cash	90 Day U.S. Treasury Bill	Cash	33 bps on all assets	\$1	0.33%
<b>OPEB Total</b>		<b>\$4,718,671</b>					<b>\$2,545</b>	<b>0.05%</b>